



Open Source Used In Prime Cable Provisioning 7.1

Cisco Systems, Inc.

www.cisco.com

Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco website at www.cisco.com/go/offices.

Text Part Number: 78EE117C99-1348337939

This document contains licenses and notices for open source software used in this product. With respect to the free/open source software listed in this document, if you have any questions or wish to receive a copy of any source code to which you may be entitled under the applicable free/open source license(s) (such as the GNU Lesser/General Public License), please contact us at external-opensource-requests@cisco.com.

In your requests please include the following reference number 78EE117C99-1348337939

Contents

1.1 shadow-utils 4.6-16.el8

1.1.1 Available under license

1.2 dojo 1.10.4

1.2.1 Available under license

1.3 usermode 1.113-2.el8

1.3.1 Available under license

1.4 postgresql 42.2.24

1.4.1 Available under license

1.5 libsigsegv 2.11 5.el8

1.5.1 Available under license

1.6 gpgme 1.13.1-11.el8

1.6.1 Available under license

1.7 djit 1.10.4

1.7.1 Available under license

1.8 tzdata 2022e-1.el8

1.8.1 Available under license

1.9 libpsl 0.20.2 6.el8

1.9.1 Available under license

1.10 systemd 239-58.el8_6.7

1.10.1 Available under license

1.11 commons-pool 2.10.0

1.11.1 Available under license

1.12 commons-cli 1.2

1.12.1 Available under license

1.13 libusb 1.0.23-4.el8

1.13.1 Available under license

- 1.14 zookeeper-jute 3.6.3**
 - 1.14.1 Available under license
- 1.15 berkeley-db 5.3.28-42.el8_4**
 - 1.15.1 Available under license
- 1.16 jaxb-runtime 2.3.4**
 - 1.16.1 Available under license
- 1.17 gnutls 3.6.16-4.el8**
 - 1.17.1 Available under license
- 1.18 springfox-schema 3.0.0**
 - 1.18.1 Available under license
- 1.19 html5lib 1.0b10**
 - 1.19.1 Available under license
- 1.20 audit 3.0.7-2.el8.2**
 - 1.20.1 Available under license
- 1.21 args4j 2.0.16**
 - 1.21.1 Available under license
- 1.22 spring-web 5.3.21**
 - 1.22.1 Available under license
- 1.23 postgresql-jdbc 42.2.24**
 - 1.23.1 Available under license
- 1.24 openssl 1.1.1k-7.el8_6**
 - 1.24.1 Available under license
- 1.25 saaj 1.2**
 - 1.25.1 Available under license
- 1.26 fdisk 2.32.1**
 - 1.26.1 Available under license
- 1.27 open-ldap 2.4.46-18.el8**
 - 1.27.1 Available under license
- 1.28 python-dateutil 2.6.1-1.ph1**
 - 1.28.1 Available under license
- 1.29 json-smart 2.3.1**
 - 1.29.1 Available under license
- 1.30 npth 1.5 4.el8**
 - 1.30.1 Available under license
- 1.31 cxf-rt-bindings-xml 3.4.5**
 - 1.31.1 Available under license
- 1.32 e2fsprogs 1.45.6-4.el8**
 - 1.32.1 Available under license
- 1.33 curl 7.61.1-22.el8_6.4**

- 1.33.1 Available under license
- 1.34 txw2 2.3.4**
 - 1.34.1 Available under license
- 1.35 slf4j 1.7.21**
 - 1.35.1 Available under license
- 1.36 libverto 0.3.0 5.el8**
 - 1.36.1 Available under license
- 1.37 libxml2 2.9.7-13.el8_6.1**
 - 1.37.1 Available under license
- 1.38 tomcat-jdbc 8.5.82**
 - 1.38.1 Available under license
- 1.39 which 2.21-17.el8**
 - 1.39.1 Available under license
- 1.40 pythonurllib 1.24.2-5.el8**
 - 1.40.1 Available under license
- 1.41 cxf-rt-management 3.4.5**
 - 1.41.1 Available under license
- 1.42 libseccomp 2.5.2-1.el8**
 - 1.42.1 Available under license
- 1.43 xalan 2.7.1**
 - 1.43.1 Available under license
- 1.44 less 1.3.3**
 - 1.44.1 Available under license
- 1.45 gmp 6.1.2 10.el8**
 - 1.45.1 Available under license
- 1.46 python-setuptools 39.2.0**
 - 1.46.1 Available under license
- 1.47 librepo 1.14.2-1.el8**
 - 1.47.1 Available under license
- 1.48 stax 4.2.1**
 - 1.48.1 Available under license
- 1.49 gobject-introspection 1.56.1 1.el8**
 - 1.49.1 Available under license
- 1.50 chkconfig 1.19.1-1.el8**
 - 1.50.1 Available under license
- 1.51 p11-kit 0.23.22-1.el8**
 - 1.51.1 Available under license
- 1.52 libnsl 1.2.0-2.20180605git4a062cf.el8**
 - 1.52.1 Available under license

- 1.53 commons-io 2.11.0**
 - 1.53.1 Available under license
- 1.54 lz4 1.9.3**
 - 1.54.1 Available under license
- 1.55 simpleclient 0.12.0**
 - 1.55.1 Available under license
- 1.56 libpwquality 1.4.4-3.el8**
 - 1.56.1 Available under license
- 1.57 paranamer 2.8**
 - 1.57.1 Available under license
- 1.58 cxf-rt-bindings-soap 3.4.5**
 - 1.58.1 Available under license
- 1.59 jackson 2.12.5**
 - 1.59.1 Available under license
- 1.60 crimson 1.1**
 - 1.60.1 Available under license
- 1.61 cxf-rt-databinding-jaxb 3.4.5**
 - 1.61.1 Available under license
- 1.62 jsp 2.3.FR**
 - 1.62.1 Available under license
- 1.63 xerces-j 2.0.1**
 - 1.63.1 Available under license
- 1.64 cxf-rt-wsdl 3.4.5**
 - 1.64.1 Available under license
- 1.65 snappy-java 1.1.8.4**
 - 1.65.1 Available under license
- 1.66 openjdk 1.8.0u352**
 - 1.66.1 Available under license
- 1.67 spring-security-config 5.2.15.RELEASE**
 - 1.67.1 Available under license
- 1.68 webencodings 0.5.1**
 - 1.68.1 Available under license
- 1.69 simpleclient-common 0.12.0**
 - 1.69.1 Available under license
- 1.70 libmodulemd 2.13.0-1.el8**
 - 1.70.1 Available under license
- 1.71 kerberos 1.18.2-14.el8**
 - 1.71.1 Available under license
- 1.72 python-requests 2.20.0**

- 1.72.1 Available under license
- 1.73 jradius-client 2.0.0**
 - 1.73.1 Available under license
- 1.74 json-simple 1.1.1**
 - 1.74.1 Available under license
- 1.75 rootfiles 8.1-22.el8**
 - 1.75.1 Available under license
- 1.76 cxf 3.4.5**
 - 1.76.1 Available under license
- 1.77 woodstox-core 6.2.6**
 - 1.77.1 Available under license
- 1.78 dbus-glib 0.110 2.el8**
 - 1.78.1 Available under license
- 1.79 tomcat 8.5.x-dev**
 - 1.79.1 Available under license
- 1.80 cxf-rt-ws-policy 3.4.5**
 - 1.80.1 Available under license
- 1.81 libcap 2.48-2.el8**
 - 1.81.1 Available under license
- 1.82 classgraph 4.8.83**
 - 1.82.1 Available under license
- 1.83 accessors-smart 2.3.1**
 - 1.83.1 Available under license
- 1.84 libtirpc 1.1.4-6.el8**
 - 1.84.1 Available under license
- 1.85 protobuf-java 2.4.1**
 - 1.85.1 Available under license
- 1.86 mapstruct 1.3.1.Final**
 - 1.86.1 Available under license
- 1.87 cxf-rt-ws-addr 3.4.5**
 - 1.87.1 Available under license
- 1.88 python 3.6.8-47.el8_6**
 - 1.88.1 Available under license
- 1.89 dnf-plugins-core 4.0.21-11.el8**
 - 1.89.1 Available under license
- 1.90 publicsuffix-list 20180723 1.el8**
 - 1.90.1 Available under license
- 1.91 libidn 2.2.0 1.el8**
 - 1.91.1 Available under license

1.92 copy-jdk-configs 4.0-2.el8

1.92.1 Available under license

1.93 listenablefuture 9999.0-empty-to-avoid-conflict-with-guava

1.93.1 Available under license

1.94 shadow 4.6-16.el8

1.94.1 Available under license

1.95 js 1.7R1

1.95.1 Available under license

1.96 pyinotify 0.9.6

1.96.1 Available under license

1.97 activation 1.2.2

1.97.1 Available under license

1.98 redhatrelease 8.6-0.1.el8

1.98.1 Available under license

1.99 xerces-j 2.7.1

1.99.1 Available under license

1.100 pcre 10.32-3.el8_6

1.100.1 Available under license

1.101 springfox-spi 3.0.0

1.101.1 Available under license

1.102 telnetd-x 1.0.0

1.102.1 Available under license

1.103 scala-java8-compat_2.13 1.0.0

1.103.1 Available under license

1.104 log4j-slf4j-impl 2.17.1

1.104.1 Available under license

1.105 commons-daemon 1.3.1

1.105.1 Available under license

1.106 audience-annotations 0.5.0

1.106.1 Available under license

1.107 groovy-all 2.4.21

1.107.1 Available under license

1.108 libpgp-error 1.31 1.el8

1.108.1 Available under license

1.109 metrics 2.2.0

1.109.1 Available under license

1.110 cyrus-sasl 2.1.27-6.el8_5

1.110.1 Available under license

1.111 rpm 4.14.3-23.el8

- 1.111.1 Available under license
- 1.112 nettle 3.4.1-7.el8**
 - 1.112.1 Available under license
- 1.113 springfox-swagger-ui 3.0.0**
 - 1.113.1 Available under license
- 1.114 python-iniparse 0.4 31.el8**
 - 1.114.1 Available under license
- 1.115 syspurpose 1.28.29**
 - 1.115.1 Available under license
- 1.116 netty-codec 4.1.78.Final**
 - 1.116.1 Available under license
- 1.117 dom 2.0**
 - 1.117.1 Available under license
- 1.118 commons-dbcp 2.9.0**
 - 1.118.1 Available under license
- 1.119 ima-evm-utils 1.3.2-12.el8**
 - 1.119.1 Available under license
- 1.120 lockfile 2.0**
 - 1.120.1 Available under license
- 1.121 kmod 25-19.el8**
 - 1.121.1 Available under license
- 1.122 selinux 2.9-5.el8**
 - 1.122.1 Available under license
- 1.123 byte-buddy 1.10.20**
 - 1.123.1 Available under license
- 1.124 setup 2.12.2 6.el8**
 - 1.124.1 Available under license
- 1.125 nghttp2 1.33.0 3.el8_2.1**
 - 1.125.1 Available under license
- 1.126 grep 3.1 6.el8**
 - 1.126.1 Available under license
- 1.127 colorama 0.3.7**
 - 1.127.1 Available under license
- 1.128 libdevmapper 1.02.181**
 - 1.128.1 Available under license
- 1.129 activation 1.1**
 - 1.129.1 Available under license
- 1.130 net-snmp 5.7.2-49.el7_9.1**
 - 1.130.1 Notifications

- 1.130.2 Available under license
- 1.131 ncurses 6.1-9.20180224.el8**
 - 1.131.1 Available under license
- 1.132 spring-jdbc 5.2.19.RELEASE**
 - 1.132.1 Available under license
- 1.133 libyaml 0.1.7 5.el8**
 - 1.133.1 Available under license
- 1.134 jax-ws-api 2.2.2-promoted-b02**
 - 1.134.1 Available under license
- 1.135 cglib 3.3.0**
 - 1.135.1 Available under license
- 1.136 zstd 1.5.0**
 - 1.136.1 Available under license
- 1.137 coreutils 8.30-12.el8**
 - 1.137.1 Available under license
- 1.138 j2objc-annotations 1.3**
 - 1.138.1 Available under license
- 1.139 commons-collections 3.2.2**
 - 1.139.1 Available under license
- 1.140 xwt 3.4.2.0**
 - 1.140.1 Available under license
- 1.141 libtasn 4.13-3.el8**
 - 1.141.1 Available under license
- 1.142 jackson-datatype-jsr310 2.12.6**
 - 1.142.1 Available under license
- 1.143 error_prone_annotations 2.3.4**
 - 1.143.1 Available under license
- 1.144 cxf-rt-frontend-simple 3.4.5**
 - 1.144.1 Available under license
- 1.145 jsr305 1.3.9**
 - 1.145.1 Available under license
- 1.146 python-six 1.11.0 8.el8**
 - 1.146.1 Available under license
- 1.147 xmlschema 2.2.5**
 - 1.147.1 Available under license
- 1.148 argparse 0.7.0**
 - 1.148.1 Available under license
- 1.149 langpacks 1.0 12.el8**
 - 1.149.1 Available under license

1.150 zstd-jni 1.5.0-4

1.150.1 Available under license

1.151 activation-api 1.2.2

1.151.1 Available under license

1.152 jackson-mapper-asl 1.9.13.redhat-00007

1.152.1 Available under license

1.153 commons-cli 1.4

1.153.1 Available under license

1.154 openjdk-jre 1.8.0u352

1.154.1 Available under license

1.155 swagger-annotations 1.5.20

1.155.1 Available under license

1.156 six 1.11.0

1.156.1 Available under license

1.157 commons-lang3 2.6

1.157.1 Available under license

1.158 iniparse 0.4

1.158.1 Available under license

1.159 jsr305 3.0.2

1.159.1 Available under license

1.160 python-ethtool 0.14-5.el8

1.160.1 Available under license

1.161 jose4j 0.7.8

1.161.1 Available under license

1.162 rhino 1.7R3

1.162.1 Available under license

1.163 jackson-annotations 2.14.0-rc2

1.163.1 Available under license

1.164 crypto-policies 20211116-1.gitae470d6.el8

1.164.1 Available under license

1.165 dnf 4.7.0-8.el8

1.165.1 Available under license

1.166 tzdata 2022c-1.el8

1.166.1 Available under license

1.167 virt-what 1.18-13.el8

1.167.1 Available under license

1.168 activation-api 1.1

1.168.1 Available under license

1.169 rxtx 2.1-7r2

- 1.169.1 Available under license
- 1.170 python-requests 2.20.0 2.1.el8_1**
 - 1.170.1 Available under license
- 1.171 bsf 2.4.0-4.1.el6**
 - 1.171.1 Available under license
- 1.172 log4j-api 2.17.1**
 - 1.172.1 Available under license
- 1.173 gnupg 2.2.20-3.el8_6**
 - 1.173.1 Available under license
- 1.174 gson 2.8.9**
 - 1.174.1 Available under license
- 1.175 cxf-rt-transport-http 3.4.5**
 - 1.175.1 Available under license
- 1.176 scala-logging_2.13 3.9.3**
 - 1.176.1 Available under license
- 1.177 gdbm 1.18 1.el8**
 - 1.177.1 Available under license
- 1.178 jackson-module-scala_2.13 2.12.6**
 - 1.178.1 Available under license
- 1.179 keyutils 1.5.10-9.el8**
 - 1.179.1 Available under license
- 1.180 net-snmp 4.2.1**
 - 1.180.1 Available under license
- 1.181 commons-dbcp 2.9.0**
 - 1.181.1 Available under license
- 1.182 xml-commons-resolver 1.2**
 - 1.182.1 Available under license
- 1.183 subscription-manager 1.28.29-3.el8**
 - 1.183.1 Available under license
- 1.184 python-pysocks 1.6.8 3.el8**
 - 1.184.1 Available under license
- 1.185 jaxb-core 2.3.4**
 - 1.185.1 Available under license
- 1.186 spring-expression 5.3.21**
 - 1.186.1 Available under license
- 1.187 gawk 4.2.1-4.el8**
 - 1.187.1 Available under license
- 1.188 springfox-spring-web 3.0.0**
 - 1.188.1 Available under license

1.189 classmate 1.5.1

1.189.1 Available under license

1.190 libcap 2.26-5.el8

1.190.1 Available under license

1.191 scala 2.13.9.v20220913-140622-VFINAL-986dcc1

1.191.1 Available under license

1.192 ant-apache-bsf 1.6.5

1.192.1 Available under license

1.193 openorb 1.8.0.312

1.193.1 Notifications

1.193.2 Available under license

1.194 libgcrypt 1.8.5-7.el8_6

1.194.1 Available under license

1.195 openssl 1.0.2u

1.195.1 Available under license

1.196 glib 2.56.4-158.el8

1.196.1 Available under license

1.197 elfutils 0.186-1.el8

1.197.1 Available under license

1.198 guava 14.0

1.198.1 Available under license

1.199 lz4 1.8.3-3.el8_4

1.199.1 Available under license

1.200 lua 5.3.4-12.el8

1.200.1 Available under license

1.201 lz4-java 1.8.0

1.201.1 Available under license

1.202 python-requests 2.18.4

1.202.1 Available under license

1.203 springfoxswagger 3.0.0

1.203.1 Available under license

1.204 acl 2.2.53-1.el8

1.204.1 Available under license

1.205 commons-lang3 3.7

1.205.1 Available under license

1.206 expat 2.2.5-8.el8_6.2

1.206.1 Available under license

1.207 python-pip 9.0.3

1.207.1 Available under license

1.208 cryptix 3.2.0

1.208.1 Available under license

1.209 jctools-core 3.1.0

1.209.1 Available under license

1.210 tpm2-tss-tcti 2.3.2-4.el8

1.210.1 Available under license

1.211 bcel 5.2

1.211.1 Available under license

1.212 readline 7.0-10.el8

1.212.1 Available under license

1.213 tpm2-tss 2.3.2-4.el8

1.213.1 Available under license

1.214 spring-web-mvc 5.3.21

1.214.1 Available under license

1.215 swagger-annotations 2.1.2

1.215.1 Available under license

1.216 python-setuptools 39.2.0 6.el8

1.216.1 Available under license

1.217 springfox-core 3.0.0

1.217.1 Available under license

1.218 libarchive 3.3.3-3.el8_5

1.218.1 Available under license

1.219 python-chardet 3.0.4 7.el8

1.219.1 Available under license

1.220 bash 4.4.20-4.el8_6

1.220.1 Available under license

1.221 aop-alliance 1.0

1.221.1 Available under license

1.222 tomcat 8.5.82

1.222.1 Available under license

1.223 groovy 2.4.21

1.223.1 Available under license

1.224 lvm2 2.02.187-2.ph3

1.224.1 Available under license

1.225 libcomps 0.1.18-1.el8

1.225.1 Available under license

1.226 jackson 1.9.13

1.226.1 Available under license

1.227 pysocks 1.6.8

1.227.1 Available under license

1.228 neethi 3.1.1

1.229 commons-el 8.5.60

1.229.1 Available under license

1.230 libjpeg-turbo 1.5.3-12.el8

1.230.1 Available under license

1.231 spring-plugin-core 2.0.0.RELEASE

1.231.1 Available under license

1.232 json-glib 1.4.4 1.el8

1.232.1 Available under license

1.233 json-c 0.13.1-3.el8

1.233.1 Available under license

1.234 libssh 0.9.6-3.el8

1.234.1 Available under license

1.235 libunistring 0.9.9 3.el8

1.235.1 Available under license

1.236 avahi 0.7-20.el8

1.236.1 Available under license

1.237 pcre 8.42-6.el8

1.237.1 Available under license

1.238 libutempter 1.1.6 14.el8

1.238.1 Available under license

1.239 libsolv 0.7.20-1.el8

1.239.1 Available under license

1.240 gridx 1.3.2

1.240.1 Available under license

1.241 nspr 4.34.0-3.el8_6

1.241.1 Available under license

1.242 guava 30.1-jre

1.242.1 Available under license

1.243 swagger 1.5.20

1.243.1 Available under license

1.244 sqlite 3.26.0-15.el8

1.244.1 Available under license

1.245 spring-security-acl 5.2.15.RELEASE

1.245.1 Available under license

1.246 mime-pull 1.8.0.312

1.246.1 Available under license

1.247 netty-transport-native-epoll 4.1.78.Final

1.247.1 Available under license
1.248 libassuan 2.5.1 3.el8
1.248.1 Available under license
1.249 java-cc 3.2
1.249.1 Available under license
1.250 checker-qual 3.5.0
1.250.1 Available under license
1.251 free-type 2.9.1 4.el8_3.1
1.251.1 Available under license
1.252 brotli 1.0.6-3.el8
1.252.1 Available under license
1.253 libsemanage 2.9-8.el8
1.253.1 Available under license
1.254 decorator 4.2.1
1.254.1 Available under license
1.255 saxon 9.0
1.255.1 Available under license
1.256 python-inotify 0.9.6 13.el8
1.256.1 Available under license
1.257 attr 2.4.48 3.el8
1.257.1 Available under license
1.258 libuser 0.62-24.el8
1.258.1 Available under license
1.259 iconv 2.28
1.259.1 Available under license
1.260 mpfr 3.1.6 1.el8
1.260.1 Available under license
1.261 asm 9.2
1.261.1 Available under license
1.262 idna 2.5-2.ph2
1.262.1 Available under license
1.263 isorelax 20090621
1.263.1 Available under license
1.264 libnl3 3.5.0 1.el8
1.264.1 Available under license
1.265 libsepol 2.9-3.el8
1.265.1 Available under license
1.266 bzip2 1.0.6 26.el8
1.266.1 Available under license

- 1.267 scala-reflect 2.13.6**
 - 1.267.1 Available under license
- 1.268 kerberos 1.18.2-14.el8**
 - 1.268.1 Available under license
- 1.269 jackson-module-parameter-names 2.12.6**
 - 1.269.1 Available under license
- 1.270 cpp 8.5.0-10.1.el8_6**
 - 1.270.1 Available under license
- 1.271 asm 9.1**
 - 1.271.1 Available under license
- 1.272 commons-jxpath 1.3**
 - 1.272.1 Available under license
- 1.273 glibc 2.28-189.1.el8**
 - 1.273.1 Available under license
- 1.274 sed 4.5-5.el8**
 - 1.274.1 Available under license
- 1.275 pygobject 3.28.3 2.el8**
 - 1.275.1 Available under license
- 1.276 scala-collection-compat_2.13 2.4.4**
 - 1.276.1 Available under license
- 1.277 file 5.33-20.el8**
 - 1.277.1 Available under license
- 1.278 spring-context 5.3.21**
 - 1.278.1 Available under license
- 1.279 jackson-databind 2.14.0-rc2**
 - 1.279.1 Available under license
- 1.280 json-simple 1.1**
 - 1.280.1 Available under license
- 1.281 libusb 1.0.23 4.el8**
 - 1.281.1 Available under license
- 1.282 wsdl4j 1.6.3**
 - 1.282.1 Available under license
- 1.283 aspect-j 1.8.0**
 - 1.283.1 Available under license
- 1.284 netty-resolver 4.1.78.Final**
 - 1.284.1 Available under license
- 1.285 libpng 1.6.34 5.el8**
 - 1.285.1 Available under license
- 1.286 springfox-swagger-common 3.0.0**

- 1.286.1 Available under license
- 1.287 cups 2.2.6-45.el8_6.2**
- 1.287.1 Available under license
- 1.288 spring-framework 5.3.21**
- 1.288.1 Available under license
- 1.289 xz 5.2.4-4.el8_6**
- 1.289.1 Available under license
- 1.290 jboss-logging 3.3.2.Final**
- 1.290.1 Available under license
- 1.291 libdnf 0.63.0-8.2.el8_6**
- 1.291.1 Available under license
- 1.292 taglibs-standard 1.2**
- 1.292.1 Available under license
- 1.293 netty-handler 4.1.78.Final**
- 1.293.1 Available under license
- 1.294 pam 1.3.1-16.el8_6.1**
- 1.294.1 Available under license
- 1.295 ecj 3.12.3**
- 1.295.1 Available under license
- 1.296 jopt-simple 5.0.4**
- 1.296.1 Available under license
- 1.297 dbus-python 1.2.4 15.el8**
- 1.297.1 Available under license
- 1.298 libcap-ng 0.7.11-1.el8**
- 1.298.1 Available under license
- 1.299 libksba 1.3.5 7.el8**
- 1.299.1 Available under license
- 1.300 commons-configuration 1.8**
- 1.300.1 Available under license
- 1.301 jakarta.xml.bind.api 2.3.3**
- 1.301.1 Available under license
- 1.302 classmate 1.3.4**
- 1.302.1 Available under license
- 1.303 util-linux 2.32.1-35.el8**
- 1.303.1 Available under license
- 1.304 dmidecode 3.3-4.el8**
- 1.304.1 Available under license
- 1.305 commons-compress 1.21**
- 1.305.1 Available under license

- 1.306 slf4j-log4j 1.7.21**
 - 1.306.1 Available under license
- 1.307 avro 1.11.0**
 - 1.307.1 Available under license
- 1.308 apache-commons-text 1.4**
 - 1.308.1 Available under license
- 1.309 glibc 2.28-189.5.el8_6**
 - 1.309.1 Available under license
- 1.310 commons-logging 1.1.1**
 - 1.310.1 Available under license
- 1.311 audit 3.0-0.17.20191104git1c2f876.el8**
 - 1.311.1 Available under license
- 1.312 urlib3 1.24.2**
 - 1.312.1 Available under license
- 1.313 jackson-datatype-jdk8 2.12.6**
 - 1.313.1 Available under license
- 1.314 json-path 2.4.0**
 - 1.314.1 Available under license
- 1.315 ethtool 0.14-3.ph4**
 - 1.315.1 Available under license
- 1.316 libxcrypt 4.1.1-6.el8**
 - 1.316.1 Available under license
- 1.317 d-bus 1.12.8-18.el8_6.1**
 - 1.317.1 Available under license
- 1.318 spring-beans 5.3.21**
 - 1.318.1 Available under license
- 1.319 jackson-module-scala 2.12.6**
 - 1.319.1 Available under license
- 1.320 librhsm 0.0.3-4.el8**
 - 1.320.1 Available under license
- 1.321 commons-beanutils 1.9.4**
 - 1.321.1 Available under license
- 1.322 simpleclient-hotspot 0.12.0**
 - 1.322.1 Available under license
- 1.323 lvm2 1.02.181-3.el8_6.2**
 - 1.323.1 Available under license
- 1.324 commons-logging 1.2**
 - 1.324.1 Available under license
- 1.325 python-decorator 4.2.1 2.el8**

- 1.325.1 Available under license
- 1.326 cryptsetup 2.3.7-2.el8**
- 1.326.1 Available under license
- 1.327 xml-commons-resolver 1,2**
- 1.327.1 Available under license
- 1.328 libffi 3.1-23.el8**
- 1.328.1 Available under license
- 1.329 jakarta-annotation-api 1.3.5**
- 1.329.1 Available under license
- 1.330 zookeeper 3.6.3-1.ph4**
- 1.330.1 Available under license
- 1.331 urlib3 1.22**
- 1.331.1 Available under license
- 1.332 jackson 2.14.0-rc2**
- 1.332.1 Available under license
- 1.333 tar 1.30 5.el8**
- 1.333.1 Available under license
- 1.334 failureaccess 1.0.1**
- 1.334.1 Available under license
- 1.335 netty-transport-native-unix-common 4.1.78.Final**
- 1.335.1 Available under license
- 1.336 bean-validation-api 2.0.1.Final**
- 1.336.1 Available under license
- 1.337 safeclib 4.0.45**
- 1.337.1 Available under license
- 1.338 spring-aop 5.3.21**
- 1.338.1 Available under license
- 1.339 nss 3.79.0-10.el8_6**
- 1.339.1 Available under license
- 1.340 futures 3.1.1**
- 1.340.1 Available under license
- 1.341 python-pip 9.0.3-22.el8**
- 1.341.1 Available under license
- 1.342 spring-tx 5.2.19.RELEASE**
- 1.342.1 Available under license
- 1.343 netty 4.1.78.Final**
- 1.343.1 Available under license
- 1.344 cracklib 2.9.6 15.el8**
- 1.344.1 Available under license

1.345 jstl 1.2

1.345.1 Available under license

1.346 springfox-spring-webflux 3.0.0

1.346.1 Available under license

1.347 dmidecode 3.12.2-15.el8

1.347.1 Available under license

1.348 taglibs-standard 1.2.5

1.348.1 Available under license

1.349 packaging 16.8

1.349.1 Available under license

1.350 idna 2.4

1.350.1 Available under license

1.351 gzip 1.9-13.el8_5

1.351.1 Available under license

1.352 readline 7.0 10.el8

1.352.1 Available under license

1.353 zstd 1.4.4 1.el8

1.353.1 Available under license

1.354 springfox-spring-webmvc 3.0.0

1.354.1 Available under license

1.355 jackson-dataformat-csv 2.12.6

1.355.1 Available under license

1.356 berkeley-db 5.1.19

1.356.1 Available under license

1.357 zlib 1.2.11-18.el8_5

1.357.1 Available under license

1.358 python-certifi 2018.01.18

1.358.1 Available under license

1.359 jcl-over-slf4j 1.7.21

1.359.1 Available under license

1.360 bouncy-castle 124

1.360.1 Available under license

1.361 xsdlib 2013.6.1

1.361.1 Available under license

1.362 lksctp-tools 1.0.18 3.el8

1.362.1 Available under license

1.363 passwd 0.80-4.el8

1.363.1 Available under license

1.364 taglibs-standard-spec 1.2.5

- 1.364.1 Available under license
- 1.365 tiny-radius 1.0.0-BAC**
- 1.365.1 Available under license
- 1.366 cxf-rt-frontend-jaxws 3.4.5**
- 1.366.1 Available under license
- 1.367 spring-security-core 5.2.15.RELEASE**
- 1.367.1 Available under license
- 1.368 netty-transport 4.1.78.Final**
- 1.368.1 Available under license
- 1.369 python-dmidecode 3.12.2 15.el8**
- 1.369.1 Available under license
- 1.370 acl 2.2.53 1.el8**
- 1.370.1 Available under license
- 1.371 json-java 20080701**
- 1.371.1 Available under license
- 1.372 istack-commons 3.0.12**
- 1.372.1 Available under license
- 1.373 metrics 4.1.12.1**
- 1.373.1 Available under license
- 1.374 tomcat-coyote 8.5.82**
- 1.374.1 Available under license
- 1.375 apache-log4j 2.17.1**
- 1.375.1 Available under license
- 1.376 hibernate-validator 6.0.23.Final**
- 1.376.1 Available under license
- 1.377 libdb 5.3.28-42.el8_4**
- 1.377.1 Available under license
- 1.378 chardet 3.0.4**
- 1.378.1 Available under license
- 1.379 python-idna 2.5 5.el8**
- 1.379.1 Available under license
- 1.380 texinfo 6.5-7.el8**
- 1.380.1 Available under license
- 1.381 objenesis 2.1**
- 1.381.1 Available under license
- 1.382 chardet 3.0.4-2.ph4**
- 1.382.1 Available under license
- 1.383 stlport 5.1.0**
- 1.383.1 Available under license

1.384 findutils 4.6.0 20.el8

1.384.1 Available under license

1.385 popt 1.18-1.el8

1.385.1 Available under license

1.386 ca-certificates 2022.2.54-80.2.el8_6

1.386.1 Available under license

1.387 mail 1.4.5

1.387.1 Available under license

1.388 drbd 9.0.0-1.el7.centos

1.388.1 Available under license

1.389 simpleclient-httpserver 0.12.0

1.389.1 Available under license

1.390 spring-plugin-metadata 2.0.0.RELEASE

1.390.1 Available under license

1.391 jaxb-api 2.2.1

1.391.1 Available under license

1.1 shadow-utils 4.6-16.el8

1.1.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it

if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE

TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not

covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of

this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as

distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any

such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF

MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this

when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

```
/*
```

```
* Copyright (c) 1990 - 1994, Julianne Frances Haugh
* Copyright (c) 1996 - 2000, Marek Michakiewicz
* Copyright (c) 2000 - 2006, Tomasz Koczko
* Copyright (c) 2007 - 2011, Nicolas Franois
* All rights reserved.
*
* Redistribution and use in source and binary forms, with or without
* modification, are permitted provided that the following conditions
* are met:
* 1. Redistributions of source code must retain the above copyright
* notice, this list of conditions and the following disclaimer.
* 2. Redistributions in binary form must reproduce the above copyright
* notice, this list of conditions and the following disclaimer in the
* documentation and/or other materials provided with the distribution.
* 3. The name of the copyright holders or contributors may not be used to
* endorse or promote products derived from this software without
* specific prior written permission.
*
* THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
* ``AS IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
```

* LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

*/

NOTE:

This license has been obsoleted by the change to the BSD-style copyright. You may continue to use this license if you wish, but you are under no obligation to do so.

(*

This document is freely plagiarised from the 'Artistic Licence', distributed as part of the Perl v4.0 kit by Larry Wall, which is available from most major archive sites. I stole it from CrackLib.

\$Id\$

*)

This documents purpose is to state the conditions under which this Package (See definition below) viz: "Shadow", the Shadow Password Suite which is held by Julianne Frances Haugh, may be copied, such that the copyright holder maintains some semblance of artistic control over the development of the package, while giving the users of the package the right to use and distribute the Package in a more-or-less customary fashion, plus the right to make reasonable modifications.

So there.

Definitions:

A "Package" refers to the collection of files distributed by the Copyright Holder, and derivatives of that collection of files created through textual modification, or segments thereof.

"Standard Version" refers to such a Package if it has not been modified, or has been modified in accordance with the wishes of the Copyright Holder.

"Copyright Holder" is whoever is named in the copyright or copyrights for the package.

"You" is you, if you're thinking about copying or distributing this Package.

"Reasonable copying fee" is whatever you can justify on the basis of media cost, duplication charges, time of people involved, and so on. (You will not be required to justify it to the Copyright Holder, but only to the computing community at large as a market that must bear the fee.)

"Freely Available" means that no fee is charged for the item itself, though there may be fees involved in handling the item. It also means that recipients of the item may redistribute it under the same conditions they received it.

1. You may make and give away verbatim copies of the source form of the Standard Version of this Package without restriction, provided that you duplicate all of the original copyright notices and associated disclaimers.
2. You may apply bug fixes, portability fixes and other modifications derived from the Public Domain or from the Copyright Holder. A Package modified in such a way shall still be considered the Standard Version.
3. You may otherwise modify your copy of this Package in any way, provided that you insert a prominent notice in each changed file stating how and when AND WHY you changed that file, and provided that you do at least ONE of the following:
 - a) place your modifications in the Public Domain or otherwise make them Freely Available, such as by posting said modifications to Usenet or an equivalent medium, or placing the modifications on a major archive site such as uunet.uu.net, or by allowing the Copyright Holder to include your modifications in the Standard Version of the Package.
 - b) use the modified Package only within your corporation or organization.
 - c) rename any non-standard executables so the names do not conflict with standard executables, which must also be provided, and provide separate documentation for each non-standard executable that clearly documents how it differs from the Standard Version.
 - d) make other distribution arrangements with the Copyright Holder.
4. You may distribute the programs of this Package in object code or executable form, provided that you do at least ONE of the following:

a) distribute a Standard Version of the executables and library files, together with instructions (in the manual page or equivalent) on where to get the Standard Version.

b) accompany the distribution with the machine-readable source of the Package with your modifications.

c) accompany any non-standard executables with their corresponding Standard Version executables, giving the non-standard executables non-standard names, and clearly documenting the differences in manual pages (or equivalent), together with instructions on where to get the Standard Version.

d) make other distribution arrangements with the Copyright Holder.

5. You may charge a reasonable copying fee for any distribution of this Package. You may charge any fee you choose for support of this Package. YOU MAY NOT CHARGE A FEE FOR THIS PACKAGE ITSELF. However, you may distribute this Package in aggregate with other (possibly commercial) programs as part of a larger (possibly commercial) software distribution provided that YOU DO NOT ADVERTISE this package as a product of your own.

6. The name of the Copyright Holder may not be used to endorse or promote products derived from this software without specific prior written permission.

7. THIS PACKAGE IS PROVIDED "AS IS" AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

The End

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

675 Mass Ave, Cambridge, MA 02139, USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to

using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below,

refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include

anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

1.2 dojo 1.10.4

1.2.1 Available under license :

License Disclaimer:

All contents of this directory are Copyright (c) the Dojo Foundation, with the following exceptions:

firebug.html, firebug.js, errIcon.png, infoIcon.png, warningIcon.png:

* Copyright (c) 2006-2007, Joe Hewitt, All rights reserved.

Distributed under the terms of the BSD License (see below)

Copyright (c) 2006-2007, Joe Hewitt

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

* Redistributions of source code must retain the above copyright notice, this

list of conditions and the following disclaimer.

* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

* Neither the name of the Dojo Foundation nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Dojo is available under *either* the terms of the modified BSD license *or* the Academic Free License version 2.1. As a recipient of Dojo, you may choose which license to receive this code under (except as noted in per-module LICENSE files). Some modules may not be the copyright of the Dojo Foundation. These modules contain explicit declarations of copyright in both the LICENSE files in the directories in which they reside and in the code itself. No external contributions are allowed under licenses which are fundamentally incompatible with the AFL or BSD licenses that Dojo is distributed under.

The text of the AFL and BSD licenses is reproduced below.

The "New" BSD License:

Copyright (c) 2005-2014, The Dojo Foundation
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

* Neither the name of the Dojo Foundation nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The Academic Free License, v. 2.1:

This Academic Free License (the "License") applies to any original work of authorship (the "Original Work") whose owner (the "Licensor") has placed the following notice immediately following the copyright notice for the Original Work:

Licensed under the Academic Free License version 2.1

1) Grant of Copyright License. Licensor hereby grants You a world-wide, royalty-free, non-exclusive, perpetual, sublicenseable license to do the following:

- a) to reproduce the Original Work in copies;
- b) to prepare derivative works ("Derivative Works") based upon the Original Work;
- c) to distribute copies of the Original Work and Derivative Works to the public;
- d) to perform the Original Work publicly; and
- e) to display the Original Work publicly.

2) Grant of Patent License. Licensor hereby grants You a world-wide, royalty-free, non-exclusive, perpetual, sublicenseable license, under patent claims owned or controlled by the Licensor that are embodied in the Original Work as furnished by the Licensor, to make, use, sell and offer for sale the Original Work and Derivative Works.

3) Grant of Source Code License. The term "Source Code" means the preferred form of the Original Work for making modifications to it and all available documentation describing how to modify the Original Work. Licensor hereby agrees to provide a machine-readable copy of the Source Code of the Original

Work along with each copy of the Original Work that Licensor distributes.

Licensor reserves the right to satisfy this obligation by placing a machine-readable copy of the Source Code in an information repository reasonably calculated to permit inexpensive and convenient access by You for as long as Licensor continues to distribute the Original Work, and by publishing the address of that information repository in a notice immediately following the copyright notice that applies to the Original Work.

4) Exclusions From License Grant. Neither the names of Licensor, nor the names of any contributors to the Original Work, nor any of their trademarks or service marks, may be used to endorse or promote products derived from this Original Work without express prior written permission of the Licensor. Nothing in this License shall be deemed to grant any rights to trademarks, copyrights, patents, trade secrets or any other intellectual property of Licensor except as expressly stated herein. No patent license is granted to make, use, sell or offer to sell embodiments of any patent claims other than the licensed claims defined in Section 2. No right is granted to the trademarks of Licensor even if such marks are included in the Original Work. Nothing in this License shall be interpreted to prohibit Licensor from licensing under different terms from this License any Original Work that Licensor otherwise would have a right to license.

5) This section intentionally omitted.

6) Attribution Rights. You must retain, in the Source Code of any Derivative Works that You create, all copyright, patent or trademark notices from the Source Code of the Original Work, as well as any notices of licensing and any descriptive text identified therein as an "Attribution Notice." You must cause the Source Code for any Derivative Works that You create to carry a prominent Attribution Notice reasonably calculated to inform recipients that You have modified the Original Work.

7) Warranty of Provenance and Disclaimer of Warranty. Licensor warrants that the copyright in and to the Original Work and the patent rights granted herein by Licensor are owned by the Licensor or are sublicensed to You under the terms of this License with the permission of the contributor(s) of those copyrights and patent rights. Except as expressly stated in the immediately preceding sentence, the Original Work is provided under this License on an "AS IS" BASIS and WITHOUT WARRANTY, either express or implied, including, without limitation, the warranties of NON-INFRINGEMENT, MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY OF THE ORIGINAL WORK IS WITH YOU. This DISCLAIMER OF WARRANTY constitutes an essential part of this License. No license to Original Work is granted hereunder except under this disclaimer.

8) Limitation of Liability. Under no circumstances and under no legal theory, whether in tort (including negligence), contract, or otherwise, shall the Licensor be liable to any person for any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License

or the use of the Original Work including, without limitation, damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses. This limitation of liability shall not apply to liability for death or personal injury resulting from Licensor's negligence to the extent applicable law prohibits such limitation. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so this exclusion and limitation may not apply to You.

9) Acceptance and Termination. If You distribute copies of the Original Work or a Derivative Work, You must make a reasonable effort under the circumstances to obtain the express assent of recipients to the terms of this License. Nothing else but this License (or another written agreement between Licensor and You) grants You permission to create Derivative Works based upon the Original Work or to exercise any of the rights granted in Section 1 herein, and any attempt to do so except under the terms of this License (or another written agreement between Licensor and You) is expressly prohibited by U.S. copyright law, the equivalent laws of other countries, and by international treaty. Therefore, by exercising any of the rights granted to You in Section 1 herein, You indicate Your acceptance of this License and all of its terms and conditions.

10) Termination for Patent Action. This License shall terminate automatically and You may no longer exercise any of the rights granted to You by this License as of the date You commence an action, including a cross-claim or counterclaim, against Licensor or any licensee alleging that the Original Work infringes a patent. This termination provision shall not apply for an action alleging patent infringement by combinations of the Original Work with other software or hardware.

11) Jurisdiction, Venue and Governing Law. Any action or suit relating to this License may be brought only in the courts of a jurisdiction wherein the Licensor resides or in which Licensor conducts its primary business, and under the laws of that jurisdiction excluding its conflict-of-law provisions. The application of the United Nations Convention on Contracts for the International Sale of Goods is expressly excluded. Any use of the Original Work outside the scope of this License or after its termination shall be subject to the requirements and penalties of the U.S. Copyright Act, 17 U.S.C. 101 et seq., the equivalent laws of other countries, and international treaty. This section shall survive the termination of this License.

12) Attorneys Fees. In any action to enforce the terms of this License or seeking damages relating thereto, the prevailing party shall be entitled to recover its costs and expenses, including, without limitation, reasonable attorneys' fees and costs incurred in connection with such action, including any appeal of such action. This section shall survive the termination of this License.

13) Miscellaneous. This License represents the complete agreement concerning the subject matter hereof. If any provision of this License is held to be

unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable.

14) Definition of "You" in This License. "You" throughout this License, whether in upper or lower case, means an individual or a legal entity exercising rights under, and complying with all of the terms of, this License. For legal entities, "You" includes any entity that controls, is controlled by, or is under common control with you. For purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

15) Right to Use. You may use the Original Work in all ways not otherwise restricted or conditioned by this License or by law, and Licensor promises not to interfere with or be responsible for such uses by You.

This license is Copyright (C) 2003-2004 Lawrence E. Rosen. All rights reserved. Permission is hereby granted to copy and distribute this license without modification. This license may not be modified without the express written permission of its copyright owner.

License Disclaimer:

All contents of this directory are Copyright (c) the Dojo Foundation, with the following exceptions:

dojo.css:

* parts Copyright (c) 2007, Yahoo! Inc. All rights reserved.
Distributed under the terms of the BSD License

The Program includes all or portions of the following software which was obtained under the terms and conditions of the BSD License.

<http://developer.yahoo.com/yui/license.html>

Copyright (c) 2007, Yahoo! Inc.

All rights reserved.

Redistribution and use of this software in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

* Neither the name of Yahoo! Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission of Yahoo! Inc.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE. UNICODE, INC. LICENSE AGREEMENT - DATA FILES AND SOFTWARE

Unicode Data Files include all data files under the directories <http://www.unicode.org/Public/>, <http://www.unicode.org/reports/>, and <http://www.unicode.org/cldr/data/>. Unicode Software includes any source code published in the Unicode Standard or under the directories <http://www.unicode.org/Public/>, <http://www.unicode.org/reports/>, and <http://www.unicode.org/cldr/data/>.

NOTICE TO USER: Carefully read the following legal agreement. BY DOWNLOADING, INSTALLING, COPYING OR OTHERWISE USING UNICODE INC.'S DATA FILES ("DATA FILES"), AND/OR SOFTWARE ("SOFTWARE"), YOU UNEQUIVOCALLY ACCEPT, AND AGREE TO BE BOUND BY, ALL OF THE TERMS AND CONDITIONS OF THIS AGREEMENT. IF YOU DO NOT AGREE, DO NOT DOWNLOAD, INSTALL, COPY, DISTRIBUTE OR USE THE DATA FILES OR SOFTWARE.

COPYRIGHT AND PERMISSION NOTICE

Copyright 1991-2007 Unicode, Inc. All rights reserved. Distributed under the Terms of Use in <http://www.unicode.org/copyright.html>.

Permission is hereby granted, free of charge, to any person obtaining a copy of the Unicode data files and any associated documentation (the "Data Files") or Unicode software and any associated documentation (the "Software") to deal in the Data Files or Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, and/or sell copies of the Data Files or Software, and to permit persons to whom the Data Files or Software are furnished to do so, provided that (a) the above copyright notice(s) and this permission notice appear with all copies of the Data Files or Software, (b) both the above copyright notice(s) and this permission notice appear in associated documentation, and (c) there is clear notice in each modified Data File

or in the Software as well as in the documentation associated with the Data File(s) or Software that the data or software has been modified.

THE DATA FILES AND SOFTWARE ARE PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF THIRD PARTY RIGHTS. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR HOLDERS INCLUDED IN THIS NOTICE BE LIABLE FOR ANY CLAIM, OR ANY SPECIAL INDIRECT OR CONSEQUENTIAL DAMAGES, OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THE DATA FILES OR SOFTWARE.

Except as contained in this notice, the name of a copyright holder shall not be used in advertising or otherwise to promote the sale, use or other dealings in these Data Files or Software without prior written authorization of the copyright holder.

1.3 usermode 1.113-2.e18

1.3.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it

in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE

TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of

running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the

entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not

compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the

integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS

TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this

when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands ``show w'` and ``show c'` should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than ``show w'` and ``show c'`; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

1.4 postgresql 42.2.24

1.4.1 Available under license :

Copyright (c) 1997, PostgreSQL Global Development Group
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE

LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

1.5 libsigsegv 2.11 5.el8

1.5.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

51 Franklin Street, Fifth Floor,
Boston, MA 02110-1301, USA.

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the

source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty;

and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under

the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY

YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

Appendix: How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307, USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author  
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.  
This is free software, and you are welcome to redistribute it  
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

1.6 gpgme 1.13.1-11.el8

1.6.1 Available under license :

```
hkp4py
requests
\input texinfo @c -*- texinfo -*-
@c %**start of header
@setfilename what-was-new.info
@settitle What Was New in the GPGME Python Bindings and Documentation
@documentencoding utf-8
@documentlanguage en
@c %**end of header

@finalout
@titlepage
@title What Was New in the GPGME Python Bindings and Documentation
@author Ben McGinnes
@end titlepage

@contents

@ifnottex
@node Top
@top What Was New in the GPGME Python Bindings and Documentation
@end ifnottex

@menu
* What Was New::

@detailmenu
```

--- The Detailed Node Listing ---

What Was New

* What Was New in GPGME 1120::

What Was New in GPGME 1120

* New in GPGME 1120::

@end detailmenu

@end menu

@node What Was New

@chapter What Was New

@multitable {aaaaaaaaaaaaaaaa} {aa}

@item Version:

@tab 0.0.1

@item GPGME Version:

@tab 1.13.0

@item Author:

@tab Ben McGinnes <ben@gnupg.org>

@item Author GPG Key:

@tab DB4724E6FA4286C92B4E55C4321E4E2373590E5D

@item Language:

@tab Australian English, British English

@item xml:lang:

@tab en-AU, en-GB, en

@end multitable

The following are all the past @emph{What's New} sections for the Python Bindings HOWTO and other documentation.

@menu

* What Was New in GPGME 1120::

@end menu

@node What Was New in GPGME 1120

@section What Was New in GPGME 1120

The most obviously new point for those reading this guide is this section on other new things, but that's hardly important. Not given all the other things which spurred the need for adding this section and its subsections.

@menu

* New in GPGME 1120::

@end menu

@node New in GPGME 1120

@subsection New in GPGME 1120

There have been quite a number of additions to GPGME and the Python bindings to it since the last release of GPGME with versions 1.11.0 and 1.11.1 in April, 2018.

The bullet points of new additions are:

@itemize

@item

an expanded section on @uref{gpgme-python-howto#installation, installing} and @uref{gpgme-python-howto#snafu, troubleshooting} the Python bindings.

@item

The release of Python 3.7.0; which appears to be working just fine with our bindings, in spite of intermittent reports of problems for many other Python projects with that new release.

@item

Python 3.7 has been moved to the head of the specified python versions list in the build process.

@item

In order to fix some other issues, there are certain underlying functions which are more exposed through the @uref{gpgme-python-howto#howto-get-context, gpg.Context()}, but ongoing documentation ought to clarify that or otherwise provide the best means of using the bindings. Some additions to @samp{gpg.core} and the @samp{Context()}, however, were intended (see below).

@item

Continuing work in identifying and confirming the cause of oft-reported @uref{gpgme-python-howto#snafu-runtime-not-funtime, problems installing the Python bindings on Windows}.

@item

GSOC: Google's Surreptitiously Ordered Conscriptio@dots{} erm @dots{} oh, right; Google's Summer of Code. Though there were two hopeful candidates this year; only one ended up involved with the GnuPG Project directly, the other concentrated on an unrelated third party project with closer ties to one of the GNU/Linux distributions than to the GnuPG Project. Thus the Python bindings benefited from GSOC participant Jacob Adams, who added the key@math{import} function; building on prior work by Tobias Mueller.

@item

Several new methods functions were added to the gpg.Context(), including: @uref{gpgme-python-howto#howto-import-key, key@math{import}}, @uref{gpgme-python-howto#howto-export-key, key@math{export}}, @uref{gpgme-python-howto#howto-export-public-key, key@math{export}@math{minimal}} and

@uref{gpgme-python-howto#howto-export-secret-key, key@math{export}@math{secret}}.

@item

Importing and exporting examples include versions integrated with Marcel Fest's recently released [@uref{https://github.com/Selfnet/hkp4py}](https://github.com/Selfnet/hkp4py), HKP for Python} module. Some [@uref{gpgme-python-howto#hkp4py}](https://github.com/Selfnet/hkp4py), additional notes on this module} are included at the end of the HOWTO.

@item

Instructions for dealing with semi-walled garden implementations like ProtonMail are also included. This is intended to make things a little easier when communicating with users of ProtonMail's services and should not be construed as an endorsement of said service. The GnuPG Project neither favours, nor disfavors ProtonMail and the majority of this deals with interacting with the ProtonMail keyserver.

@item

Semi-formalised the location where [@uref{gpgme-python-howto#draft-editions}](https://github.com/Selfnet/hkp4py), draft versions} of this HOWTO may periodically be accessible. This is both for the reference of others and testing the publishing of the document itself. Renamed this file at around the same time.

@item

The Texinfo documentation build configuration has been replicated from the parent project in order to make to maintain consistency with that project (and actually ship with each release).

@item

a reStructuredText (`@samp{.rst}`) version is also generated for Python developers more used to and comfortable with that format as it is the standard Python documentation format and Python developers may wish to use it with Sphinx. Please note that there has been no testing of the reStructuredText version with Sphinx at all. The reST file was generated by the simple expedient of using [@uref{https://pandoc.org/}](https://pandoc.org/), Pandoc}.

@item

Added a new section for [@uref{gpgme-python-howto#advanced-use}](https://github.com/Selfnet/hkp4py), advanced or experimental use}.

@item

Began the advanced use cases with [@uref{gpgme-python-howto#cython}](https://github.com/Selfnet/hkp4py), a section} on using the module with [@uref{https://cython.org/}](https://cython.org/), Cython}.

@item

Added a number of new scripts to the `@samp{example/howto/}` directory; some of which may be in advance of their planned sections of the HOWTO (and some are just there because it seemed like a good idea at the time).

@item

Cleaned up a lot of things under the hood.

@end itemize

@bye

This is gpgme.info, produced by makeinfo version 6.3 from gpgme.texi.

Copyright 20022008, 2010, 20122018 g10 Code GmbH.

Permission is granted to copy, distribute and/or modify this document under the terms of the GNU General Public License as published by the Free Software Foundation; either version 3 of the License, or (at your option) any later version. The text of the license can be found in the section entitled Copying.

This document is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

INFO-DIR-SECTION GNU Libraries

START-INFO-DIR-ENTRY

* GPGME: (gpgme). Adding support for cryptography to your program.

END-INFO-DIR-ENTRY

This file documents the GPGME library.

This is Edition 1.12.1-beta100, last updated 3 December 2018, of The GnuPG Made Easy Reference Manual, for Version 1.12.1-beta100.

Copyright 20022008, 2010, 20122018 g10 Code GmbH.

Permission is granted to copy, distribute and/or modify this document under the terms of the GNU General Public License as published by the Free Software Foundation; either version 3 of the License, or (at your option) any later version. The text of the license can be found in the section entitled Copying.

This document is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

File: gpgme.info, Node: Top, Next: Introduction, Up: (dir)

Main Menu

This is Edition 1.12.1-beta100, last updated 3 December 2018, of The GnuPG Made Easy Reference Manual, for Version 1.12.1-beta100 of the GPGME library.

* Menu:

- * Introduction:: How to use this manual.
- * Preparation:: What you should do before using the library.
- * Protocols and Engines:: Supported crypto protocols.

- * Algorithms:: Supported algorithms.
- * Error Handling:: Error numbers and their meanings.
- * Exchanging Data:: Passing data to and from GPGME.
- * Contexts:: Handling GPGME contexts.

Appendices

- * UI Server Protocol:: The GnuPG UI Server Protocol.
- * Debugging:: How to solve problems.
- * Deprecated Functions:: Documentation of deprecated functions.
- * Library Copying:: The GNU Lesser General Public License says how you can copy and share GnuPG Made Easy.
- * Copying:: The GNU General Public License says how you can copy and share this manual.

Indices

- * Concept Index:: Index of concepts and programs.
- * Function and Data Index:: Index of functions, variables and data types.

The Detailed Node Listing

Introduction

- * Getting Started:: Purpose of the manual, and how to use it.
- * Features:: Reasons to install and use GPGME.
- * Overview:: Basic architecture of the GPGME library.

Preparation

- * Header:: What header file you need to include.
- * Building the Source:: Compiler options to be used.
- * Largefile Support (LFS):: How to use GPGME with LFS.
- * Using Automake:: Compiler options to be used the easy way.
- * Using Libtool:: Avoiding compiler options entirely.
- * Library Version Check:: Getting and verifying the library version.
- * Signal Handling:: How GPGME affects signal handling.
- * Multi-Threading:: How GPGME can be used in an MT environment.

Protocols and Engines

- * Engine Version Check:: Verifying the engine version.
- * Engine Information:: Obtaining more information about the engines.
- * Engine Configuration:: Changing the engine configuration.
- * OpenPGP:: Support for the OpenPGP protocol.
- * Cryptographic Message Syntax:: Support for the CMS.

Algorithms

- * Public Key Algorithms:: A list of all public key algorithms.
- * Hash Algorithms:: A list of all hash algorithms.

Error Handling

- * Error Values:: The error value and what it means.
- * Error Codes:: A list of important error codes.
- * Error Sources:: A list of important error sources.
- * Error Strings:: How to get a descriptive string from a value.

Exchanging Data

- * Creating Data Buffers:: Creating new data buffers.
- * Destroying Data Buffers:: Releasing data buffers.
- * Manipulating Data Buffers:: Operations on data buffers.

Creating Data Buffers

- * Memory Based Data Buffers:: Creating memory based data buffers.
- * File Based Data Buffers:: Creating file based data buffers.
- * Callback Based Data Buffers:: Creating callback based data buffers.

Manipulating Data Buffers

- * Data Buffer I/O Operations:: I/O operations on data buffers.
- * Data Buffer Meta-Data:: Meta-data manipulation of data buffers.
- * Data Buffer Convenience:: Convenience function for data buffers.

Contexts

- * Creating Contexts:: Creating new GPGME contexts.
- * Destroying Contexts:: Releasing GPGME contexts.
- * Result Management:: Managing the result of crypto operations.
- * Context Attributes:: Setting properties of a context.
- * Key Management:: Managing keys with GPGME.
- * Trust Item Management:: Managing trust items with GPGME.
- * Crypto Operations:: Using a context for cryptography.
- * Miscellaneous:: Miscellaneous operations.
- * Run Control:: Controlling how operations are run.

Context Attributes

- * Protocol Selection:: Selecting the protocol used by a context.
- * Crypto Engine:: Configuring the crypto engine.
- * Setting the Sender:: How to tell the engine the sender.
- * ASCII Armor:: Requesting ASCII armored output.

- * Text Mode:: Choosing canonical text mode.
- * Offline Mode:: Choosing offline mode.
- * Included Certificates:: Including a number of certificates.
- * Key Listing Mode:: Selecting key listing mode.
- * Passphrase Callback:: Getting the passphrase from the user.
- * Progress Meter Callback:: Being informed about the progress.
- * Status Message Callback:: Status messages received from gpg.
- * Locale:: Setting the locale of a context.

Key Management

- * Key objects:: Description of the key structures.
- * Listing Keys:: Browsing the list of available keys.
- * Information About Keys:: Requesting detailed information about keys.
- * Manipulating Keys:: Operations on keys.
- * Generating Keys:: Creating new key pairs.
- * Signing Keys:: Adding key signatures to public keys.
- * Exporting Keys:: Retrieving key data from the key ring.
- * Importing Keys:: Adding keys to the key ring.
- * Deleting Keys:: Removing keys from the key ring.
- * Changing Passphrases:: Change the passphrase of a key.
- * Changing TOFU Data:: Changing data pertaining to TOFU.
- * Advanced Key Editing:: Advanced key edit operation.

Trust Item Management

- * Listing Trust Items:: Browsing the list of available trust items.
- * Manipulating Trust Items:: Operations on trust items.

Crypto Operations

- * Decrypt:: Decrypting a ciphertext.
- * Verify:: Verifying a signature.
- * Decrypt and Verify:: Decrypting a signed ciphertext.
- * Sign:: Creating a signature.
- * Encrypt:: Encrypting a plaintext.

Sign

- * Selecting Signers:: How to choose the keys to sign with.
- * Creating a Signature:: How to create a signature.
- * Signature Notation Data:: How to add notation data to a signature.

Encrypt

- * Encrypting a Plaintext:: How to encrypt a plaintext.

Miscellaneous

- * Running other Programs:: Running other Programs.
- * Using the Assuan protocol:: Using the Assuan protocol.
- * Checking for updates:: How to check for software updates.

Run Control

- * Waiting For Completion:: Waiting until an operation is completed.
- * Using External Event Loops:: Advanced control over what happens when.
- * Cancellation:: How to end pending operations prematurely.

Using External Event Loops

- * I/O Callback Interface:: How I/O callbacks are registered.
- * Registering I/O Callbacks:: How to use I/O callbacks for a context.
- * I/O Callback Example:: An example how to use I/O callbacks.
- * I/O Callback Example GTK+:: How to integrate GPGME in GTK+.
- * I/O Callback Example GDK:: How to integrate GPGME in GDK.
- * I/O Callback Example Qt:: How to integrate GPGME in Qt.

File: gpgme.info, Node: Introduction, Next: Preparation, Prev: Top, Up: Top

1 Introduction

GnuPG Made Easy (GPGME) is a C language library that allows to add support for cryptography to a program. It is designed to make access to public key crypto engines like GnuPG or GpgSM easier for applications. GPGME provides a high-level crypto API for encryption, decryption, signing, signature verification and key management.

GPGME uses GnuPG and GpgSM as its backends to support OpenPGP and the Cryptographic Message Syntax (CMS).

* Menu:

- * Getting Started:: Purpose of the manual, and how to use it.
- * Features:: Reasons to install and use GPGME.
- * Overview:: Basic architecture of the GPGME library.

File: gpgme.info, Node: Getting Started, Next: Features, Up: Introduction

1.1 Getting Started

=====

This manual documents the GPGME library programming interface. All functions and data types provided by the library are explained.

The reader is assumed to possess basic knowledge about cryptography in general, and public key cryptography in particular. The underlying cryptographic engines that are used by the library are not explained, but where necessary, special features or requirements by an engine are mentioned as far as they are relevant to GPGME or its users.

This manual can be used in several ways. If read from the beginning to the end, it gives a good introduction into the library and how it can be used in an application. Forward references are included where necessary. Later on, the manual can be used as a reference manual to get just the information needed about any particular interface of the library. Experienced programmers might want to start looking at the examples at the end of the manual, and then only read up those parts of the interface which are unclear.

The documentation for the language bindings is currently not included in this manual. Those languages bindings follow the general programming model of GPGME but may provide some extra high level abstraction on top of the GPGME style API. For now please see the README files in the lang/ directory of the source distribution.

File: gpgme.info, Node: Features, Next: Overview, Prev: Getting Started, Up: Introduction

1.2 Features

=====

GPGME has a couple of advantages over other libraries doing a similar job, and over implementing support for GnuPG or other crypto engines into your application directly.

its free software

Anybody can use, modify, and redistribute it under the terms of the GNU Lesser General Public License (*note Library Copying::).

its flexible

GPGME provides transparent support for several cryptographic protocols by different engines. Currently, GPGME supports the OpenPGP protocol using GnuPG as the backend, and the Cryptographic Message Syntax using GpgSM as the backend.

its easy

GPGME hides the differences between the protocols and engines from the programmer behind an easy-to-use interface. This way the programmer can focus on the other parts of the program, and still

integrate strong cryptography in his application. Once support for GPGME has been added to a program, it is easy to add support for other crypto protocols once GPGME backends provide them.

its language friendly

GPGME comes with languages bindings for several common programming languages: Common Lisp, C++, Python 2, and Python 3.

File: [gpgme.info](#), Node: [Overview](#), [Prev: Features](#), [Up: Introduction](#)

1.3 Overview

=====

GPGME provides a data abstraction that is used to pass data to the crypto engine, and receive returned data from it. Data can be read from memory or from files, but it can also be provided by a callback function.

The actual cryptographic operations are always set within a context. A context provides configuration parameters that define the behaviour of all operations performed within it. Only one operation per context is allowed at any time, but when one operation is finished, you can run the next operation in the same context. There can be more than one context, and all can run different operations at the same time.

Furthermore, GPGME has rich key management facilities including listing keys, querying their attributes, generating, importing, exporting and deleting keys, and acquiring information about the trust path.

With some precautions, GPGME can be used in a multi-threaded environment, although it is not completely thread safe and thus needs the support of the application.

File: [gpgme.info](#), Node: [Preparation](#), [Next: Protocols and Engines](#), [Prev: Introduction](#), [Up: Top](#)

2 Preparation

To use GPGME, you have to perform some changes to your sources and the build system. The necessary changes are small and explained in the following sections. At the end of this chapter, it is described how the library is initialized, and how the requirements of the library are verified.

* Menu:

- * Header:: What header file you need to include.
- * Building the Source:: Compiler options to be used.
- * Largefile Support (LFS):: How to use GPGME with LFS.
- * Using Automake:: Compiler options to be used the easy way.
- * Using Libtool:: Avoiding compiler options entirely.
- * Library Version Check:: Getting and verifying the library version.
- * Signal Handling:: How GPGME affects signal handling.
- * Multi-Threading:: How GPGME can be used in an MT environment.

File: gpgme.info, Node: Header, Next: Building the Source, Up: Preparation

2.1 Header

=====

All interfaces (data types and functions) of the library are defined in the header file `gpgme.h`. You must include this in all programs using the library, either directly or through some other header file, like this:

```
#include <gpgme.h>
```

The name space of GPGME is `gpgme_*` for function names and data types and `GPGME_*` for other symbols. Symbols internal to GPGME take the form `_gpgme_*` and `_GPGME_*`.

Because GPGME makes use of the GPG Error library, using GPGME will also use the `GPG_ERR_*` name space directly, and the `gpg_err*`, `gpg_str*`, and `gpgrt_*` name space indirectly.

File: gpgme.info, Node: Building the Source, Next: Largefile Support (LFS), Prev: Header, Up: Preparation

2.2 Building the Source

=====

If you want to compile a source file including the `gpgme.h` header file, you must make sure that the compiler can find it in the directory hierarchy. This is accomplished by adding the path to the directory in which the header file is located to the compilers include file search path (via the `-I` option).

However, the path to the include file is determined at the time the source is configured. To solve this problem, `gpgme` ships with a small helper program `gpgme-config` that knows about the path to the include file and other configuration options. The options that need to be added to the compiler invocation at compile time are output by the `--cflags`

option to `gpgme-config`. The following example shows how it can be used at the command line:

```
gcc -c foo.c `gpgme-config --cflags`
```

Adding the output of `gpgme-config --cflags` to the compiler command line will ensure that the compiler can find the GPGME header file.

A similar problem occurs when linking the program with the library. Again, the compiler has to find the library files. For this to work, the path to the library files has to be added to the library search path (via the `-L` option). For this, the option `--libs` to `gpgme-config` can be used. For convenience, this option also outputs all other options that are required to link the program with GPGME (in particular, the `-lgpgme` option). The example shows how to link `foo.o` with the GPGME library to a program `foo`.

```
gcc -o foo foo.o `gpgme-config --libs`
```

Of course you can also combine both examples to a single command by specifying both options to `gpgme-config`:

```
gcc -o foo foo.c `gpgme-config --cflags --libs`
```

If you need to detect the installed language bindings you can use list them using:

```
gpgme-config --print-lang
```

or test for the availability using

```
gpgme-config --have-lang=python && echo 'Bindings for Pythons available'
```

File: [gpgme.info](#), Node: [Largefile Support \(LFS\)](#), Next: [Using Automake](#), Prev: [Building the Source](#), Up: [Preparation](#)

2.3 Largefile Support (LFS)

=====

GPGME is compiled with largefile support by default, if it is available on the system. This means that GPGME supports files larger than two gigabyte in size, if the underlying operating system can. On some systems, largefile support is already the default. On such systems, nothing special is required. However, some systems provide only support for files up to two gigabyte in size by default. Support for larger file sizes has to be specifically enabled.

To make a difficult situation even more complex, such systems provide two different types of largefile support. You can either get all relevant functions replaced with alternatives that are largefile capable, or you can get new functions and data types for largefile support added. Those new functions have the same name as their smallfile counterparts, but with a suffix of 64.

An example: The data type `off_t` is 32 bit wide on GNU/Linux PC systems. To address offsets in large files, you can either enable largefile support add-on. Then a new data type `off64_t` is provided, which is 64 bit wide. Or you can replace the existing `off_t` data type with its 64 bit wide counterpart. All occurrences of `off_t` are then automatically replaced.

As if matters were not complex enough, there are also two different types of file descriptors in such systems. This is important because if file descriptors are exchanged between programs that use a different maximum file size, certain errors must be produced on some file descriptors to prevent subtle overflow bugs from occurring.

As you can see, supporting two different maximum file sizes at the same time is not at all an easy task. However, the maximum file size does matter for GPGME, because some data types it uses in its interfaces are affected by that. For example, the `off_t` data type is used in the `gpgme_data_seek` function, to match its POSIX counterpart. This affects the call-frame of the function, and thus the ABI of the library. Furthermore, file descriptors can be exchanged between GPGME and the application.

For you as the user of the library, this means that your program must be compiled in the same file size mode as the library. Luckily, there is absolutely no valid reason for new programs to not enable largefile support by default and just use that. The compatibility modes (small file sizes or dual mode) can be considered an historic artefact, only useful to allow for a transitional period.

On POSIX platforms GPGME is compiled using largefile support by default. This means that your application must do the same, at least as far as it is relevant for using the `gpgme.h` header file. All types in this header files refer to their largefile counterparts, if they are different from any default types on the system.

On 32 and 64 bit Windows platforms `off_t` is declared as 32 bit signed integer. There is no specific support for LFS in the C library. The recommendation from Microsoft is to use the native interface (`CreateFile` et al.) for large files. Released binary versions of GPGME (`libpgpme-11.dll`) have always been build with a 32 bit `off_t`. To avoid an ABI break we stick to this convention for 32 bit Windows by

using long there. GPGME versions for 64 bit Windows have never been released and thus we are able to use `int64_t` instead of `off_t` there. For easier migration the typedef `gpgme_off_t` has been defined. The reason we cannot use `off_t` directly is that some toolchains (e.g. mingw64) introduce a POSIX compatible hack for `off_t`. Some widely used toolkits make use of this hack and in turn GPGME would need to use it also. However, this would introduce an ABI break and existing software making use of `libgpgme` might suffer from a severe break. Thus with version 1.4.2 we redefined all functions using `off_t` to use `gpgme_off_t` which is defined as explained above. This way we keep the ABI well defined and independent of any toolchain hacks. The bottom line is that LFS support in GPGME is only available on 64 bit versions of Windows.

On POSIX platforms you can enable largefile support, if it is different from the default on the system the application is compiled on, by using the Autoconf macro `AC_SYS_LARGEFILE`. If you do this, then you don't need to worry about anything else: It will just work. In this case you might also want to use `AC_FUNC_FSEEKO` to take advantage of some new interfaces, and `AC_TYPE_OFF_T` (just in case).

If you do not use Autoconf, you can define the preprocessor symbol `_FILE_OFFSET_BITS` to 64 `_before_` including any header files, for example by specifying the option `-D_FILE_OFFSET_BITS=64` on the compiler command line. You will also want to define the preprocessor symbol `LARGEFILE_SOURCE` to 1 in this case, to take advantage of some new interfaces.

If you do not want to do either of the above, you probably know enough about the issue to invent your own solution. Just keep in mind that the GPGME header file expects that largefile support is enabled, if it is available. In particular, we do not support dual mode (`_LARGEFILE64_SOURCE`).

File: `gpgme.info`, Node: Using Automake, Next: Using Libtool, Prev: Largefile Support (LFS), Up: Preparation

2.4 Using Automake

=====

It is much easier if you use GNU Automake instead of writing your own Makefiles. If you do that you do not have to worry about finding and invoking the `gpgme-config` script at all. GPGME provides an extension to Automake that does all the work for you.

```
-- Macro: AM_PATH_GPGME ([MINIMUM-VERSION], [ACTION-IF-FOUND],  
    [ACTION-IF-NOT-FOUND])  
-- Macro: AM_PATH_GPGME_PTH ([MINIMUM-VERSION], [ACTION-IF-FOUND],
```

[ACTION-IF-NOT-FOUND])
-- Macro: AM_PATH_GPGME_PTHREAD ([MINIMUM-VERSION], [ACTION-IF-FOUND],
[ACTION-IF-NOT-FOUND])

Check whether GPGME (at least version MINIMUM-VERSION, if given) exists on the host system. If it is found, execute ACTION-IF-FOUND, otherwise do ACTION-IF-NOT-FOUND, if given.

Additionally, the function defines GPGME_CFLAGS to the flags needed for compilation of the program to find the gpgme.h header file, and GPGME_LIBS to the linker flags needed to link the program to the GPGME library. If the used helper script does not match the target type you are building for a warning is printed and the string libgcrypt is appended to the variable gpg_config_script_warn.

AM_PATH_GPGME_PTH checks for the version of GPGME that can be used with GNU Pth, and defines GPGME_PTH_CFLAGS and GPGME_PTH_LIBS.

AM_PATH_GPGME_PTHREAD checks for the version of GPGME that can be used with the native pthread implementation, and defines GPGME_PTHREAD_CFLAGS and GPGME_PTHREAD_LIBS. Since version 1.8.0 this is no longer required to GPGME_PTHREAD as GPGME itself is thread safe.

This macro searches for gpgme-config along the PATH. If you are cross-compiling, it is useful to set the environment variable SYSROOT to the top directory of your target. The macro will then first look for the helper program in the bin directory below that top directory. An absolute directory name must be used for SYSROOT. Finally, if the configure command line option --with-gpgme-prefix is used, only its value is used for the top directory below which the helper script is expected.

You can use the defined Autoconf variables like this in your Makefile.am:

```
AM_CPPFLAGS = $(GPGME_CFLAGS)
LDADD = $(GPGME_LIBS)
```

File: gpgme.info, Node: Using Libtool, Next: Library Version Check, Prev: Using Automake, Up: Preparation

2.5 Using Libtool

=====

The easiest way is to just use GNU Libtool. If you use libtool, and link to libgpgme.la, libgpgme-pth.la or libgpgme-pthread.la

respectively, everything will be done automatically by Libtool.

File: gpgme.info, Node: Library Version Check, Next: Signal Handling, Prev: Using Libtool, Up: Preparation

2.6 Library Version Check

=====

-- Function: `const char * gpgme_check_version`
(`const char *REQUIRED_VERSION`)

The function `gpgme_check_version` has four purposes. It can be used to retrieve the version number of the library. In addition it can verify that the version number is higher than a certain required version number. In either case, the function initializes some sub-systems, and for this reason alone it must be invoked early in your program, before you make use of the other functions in GPGME. The last purpose is to run selftests.

As a side effect for W32 based systems, the socket layer will get initialized.

If `REQUIRED_VERSION` is `NULL`, the function returns a pointer to a statically allocated string containing the version number of the library.

If `REQUIRED_VERSION` is not `NULL`, it should point to a string containing a version number, and the function checks that the version of the library is at least as high as the version number provided. In this case, the function returns a pointer to a statically allocated string containing the version number of the library. If `REQUIRED_VERSION` is not a valid version number, or if the version requirement is not met, the function returns `NULL`.

If you use a version of a library that is backwards compatible with older releases, but contains additional interfaces which your program uses, this function provides a run-time check if the necessary features are provided by the installed version of the library.

If a selftest fails, the function may still succeed. Selftest errors are returned later when invoking `gpgme_new` or `gpgme_data_new`, so that a detailed error code can be returned (historically, `gpgme_check_version` does not return a detailed error code).

-- Function: `int gpgme_set_global_flag` (`const char *NAME`,
`const char *VALUE`)

SINCE: 1.4.0

On some systems it is not easy to set environment variables and thus hard to use GPGMEs internal trace facility for debugging. This function has been introduced as an alternative way to enable debugging and for a couple of other rarely used tweaks. It is important to assure that only one thread accesses GPGME functions between a call to this function and after the return from the call to `gpgme_check_version`.

All currently supported features require that this function is called as early as possible even before `gpgme_check_version`. The features are identified by the following values for NAME:

debug

To enable debugging use the string `debug` for NAME and VALUE identical to the value used with the environment variable `GPGME_DEBUG`.

disable-gpgconf

Using this feature with any VALUE disables the detection of the `gpgconf` program and thus forces GPGME to fallback into the simple OpenPGP only mode. It may be used to force the use of GnuPG-1 on systems which have both GPG versions installed. Note that in general the use of `gpgme_set_engine_info` is a better way to select a specific engine version.

gpgconf-name

gpg-name

Set the name of the `gpgconf` respective `gpg` binary. The defaults are `GNU/GnuPG/gpgconf` and `GNU/GnuPG/gpg`. Under Unix the leading directory part is ignored. Under Windows the leading directory part is used as the default installation directory; the `.exe` suffix is added by GPGME. Use forward slashed even under Windows.

require-gnupg

Set the minimum version of the required GnuPG engine. If that version is not met, GPGME fails early instead of trying to use the existent version. The given version must be a string with major, minor, and micro number. Example: "2.1.0".

w32-inst-dir

On Windows GPGME needs to know its installation directory to find its spawn helper. This is in general no problem because a DLL has this information. Some applications however link statically to GPGME and thus GPGME can only figure out the installation directory of this application which may be wrong

in certain cases. By supplying an installation directory as value to this flag, GPGME will assume that that directory is the installation directory. This flag has no effect on non-Windows platforms.

This function returns 0 on success. In contrast to other functions the non-zero return value on failure does not convey any error code. For setting debug the only possible error cause is an out of memory condition; which would exhibit itself later anyway. Thus the return value may be ignored.

After initializing GPGME, you should set the locale information to the locale required for your output terminal. This locale information is needed for example for the curses and Gtk pinentry. Here is an example of a complete initialization:

```
#include <locale.h>
#include <gpgme.h>

void
init_gpgme (void)
{
    /* Initialize the locale environment. */
    setlocale (LC_ALL, "");
    gpgme_check_version (NULL);
    gpgme_set_locale (NULL, LC_CTYPE, setlocale (LC_CTYPE, NULL));
#ifdef LC_MESSAGES
    gpgme_set_locale (NULL, LC_MESSAGES, setlocale (LC_MESSAGES, NULL));
#endif
}
```

Note that you are highly recommended to initialize the locale settings like this. GPGME can not do this for you because it would not be thread safe. The conditional on LC_MESSAGES is only necessary for portability to W32 systems.

File: gpgme.info, Node: Signal Handling, Next: Multi-Threading, Prev: Library Version Check, Up: Preparation

2.7 Signal Handling

=====

The GPGME library communicates with child processes (the crypto engines). If a child process dies unexpectedly, for example due to a bug, or system problem, a SIGPIPE signal will be delivered to the application. The default action is to abort the program. To protect against this, gpgme_check_version sets the SIGPIPE signal action to SIG_IGN, which means that the signal will be ignored.

GPGME will only do that if the signal action for SIGPIPE is SIG_DEF at the time `gpgme_check_version` is called. If it is something different, GPGME will take no action.

This means that if your application does not install any signal handler for SIGPIPE, you don't need to take any precautions. If you do install a signal handler for SIGPIPE, you must be prepared to handle any SIGPIPE events that occur due to GPGME writing to a defunct pipe. Furthermore, if your application is multi-threaded, and you install a signal action for SIGPIPE, you must make sure you do this either before `gpgme_check_version` is called or afterwards.

File: `gpgme.info`, Node: Multi-Threading, Prev: Signal Handling, Up: Preparation

2.8 Multi-Threading

=====

The GPGME library is mostly thread-safe, and can be used in a multi-threaded environment but there are some requirements for multi-threaded use:

The function `gpgme_check_version` must be called before any other function in the library, because it initializes the thread support subsystem in GPGME. To achieve this in multi-threaded programs, you must synchronize the memory with respect to other threads that also want to use GPGME. For this, it is sufficient to call `gpgme_check_version` before creating the other threads using `GPGME(1)`.

Any `gpgme_data_t` and `gpgme_ctx_t` object must only be accessed by one thread at a time. If multiple threads want to deal with the same object, the caller has to make sure that operations on that object are fully synchronized.

Only one thread at any time is allowed to call `gpgme_wait`. If multiple threads call this function, the caller must make sure that all invocations are fully synchronized. It is safe to start asynchronous operations while a thread is running in `gpgme_wait`.

The function `gpgme_strerror` is not thread safe. You have to use `gpgme_strerror_r` instead.

----- Footnotes -----

(1) At least this is true for POSIX threads, as `pthread_create` is a function that synchronizes memory with respects to other threads. There

are many functions which have this property, a complete list can be found in POSIX, IEEE Std 1003.1-2003, Base Definitions, Issue 6, in the definition of the term Memory Synchronization. For other thread packages other, more relaxed or more strict rules may apply.

File: gpgme.info, Node: Protocols and Engines, Next: Algorithms, Prev: Preparation, Up: Top

3 Protocols and Engines

GPGME supports several cryptographic protocols, however, it does not implement them. Rather it uses backends (also called engines) which implement the protocol. GPGME uses inter-process communication to pass data back and forth between the application and the backend, but the details of the communication protocol and invocation of the backend is completely hidden by the interface. All complexity is handled by GPGME. Where an exchange of information between the application and the backend is necessary, GPGME provides the necessary callback function hooks and further interfaces.

-- Data type: enum gpgme_protocol_t

The gpgme_protocol_t type specifies the set of possible protocol values that are supported by GPGME. The following protocols are supported:

GPGME_PROTOCOL_OpenPGP

GPGME_PROTOCOL_OPENPGP

This specifies the OpenPGP protocol.

GPGME_PROTOCOL_CMS

This specifies the Cryptographic Message Syntax.

GPGME_PROTOCOL_GPGCONF

Under development. Please ask on <gnupg-devel@gnupg.org> for help.

GPGME_PROTOCOL_ASSUAN

SINCE: 1.2.0

This specifies the raw Assuan protocol.

GPGME_PROTOCOL_G13

SINCE: 1.3.0

Under development. Please ask on <gnupg-devel@gnupg.org> for help.

GPGME_PROTOCOL_UISERVER

Under development. Please ask on <gnupg-devel@gnupg.org> for help.

GPGME_PROTOCOL_SPAWN

SINCE: 1.5.0

Special protocol for use with `gpgme_op_spawn`.

GPGME_PROTOCOL_UNKNOWN

Reserved for future extension. You may use this to indicate that the used protocol is not known to the application.

Currently, GPGME does not accept this value in any operation, though, except for `gpgme_get_protocol_name`.

-- Function: `const char * gpgme_get_protocol_name`

(`gpgme_protocol_t PROTOCOL`)

The function `gpgme_get_protocol_name` returns a statically allocated string describing the protocol `PROTOCOL`, or `NULL` if the protocol number is not valid.

* Menu:

- * Engine Version Check:: Verifying the engine version.
- * Engine Information:: Obtaining more information about the engines.
- * Engine Configuration:: Changing the engine configuration.
- * OpenPGP:: Support for the OpenPGP protocol.
- * Cryptographic Message Syntax:: Support for the CMS.
- * Assuan:: Support for the raw Assuan protocol.

File: `gpgme.info`, Node: Engine Version Check, Next: Engine Information, Up: Protocols and Engines

3.1 Engine Version Check

=====

-- Function: `const char * gpgme_get_dirinfo (const char *WHAT)`

SINCE: 1.5.0

The function `gpgme_get_dirinfo` returns a statically allocated string with the value associated to `WHAT`. The returned values are the defaults and wont change even after `gpgme_set_engine_info` has been used to configure a different engine. `NULL` is returned if no value is available. Commonly supported values for `WHAT` are:

`homedir`

Return the default home directory.

sysconfdir

Return the name of the system configuration directory

bindir

Return the name of the directory with GnuPG program files.

libdir

Return the name of the directory with GnuPG related library files.

libexecdir

Return the name of the directory with GnuPG helper program files.

datadir

Return the name of the directory with GnuPG shared data.

localedir

Return the name of the directory with GnuPG locale data.

agent-socket

Return the name of the socket to connect to the gpg-agent.

agent-ssh-socket

Return the name of the socket to connect to the ssh-agent component of gpg-agent.

dirmngr-socket

Return the name of the socket to connect to the dirmngr.

uiserver-socket

Return the name of the socket to connect to the user interface server.

gpgconf-name

Return the file name of the engine configuration tool.

gpg-name

Return the file name of the OpenPGP engine.

gpgsm-name

Return the file name of the CMS engine.

g13-name

Return the name of the file container encryption engine.

gpg-wks-client-name

Return the name of the Web Key Service tool.

-- Function: `gpgme_error_t gpgme_engine_check_version`
(`gpgme_protocol_t PROTOCOL`)

The function `gpgme_engine_check_version` verifies that the engine implementing the protocol `PROTOCOL` is installed in the expected path and meets the version requirement of GPGME.

This function returns the error code `GPG_ERR_NO_ERROR` if the engine is available and `GPG_ERR_INV_ENGINE` if it is not.

File: `gpgme.info`, Node: Engine Information, Next: Engine Configuration, Prev: Engine Version Check, Up: Protocols and Engines

3.2 Engine Information

=====

-- Data type: `gpgme_engine_info_t`

The `gpgme_engine_info_t` type specifies a pointer to a structure describing a crypto engine. The structure contains the following elements:

`gpgme_engine_info_t next`

This is a pointer to the next engine info structure in the linked list, or `NULL` if this is the last element.

`gpgme_protocol_t protocol`

This is the protocol for which the crypto engine is used. You can convert this to a string with `gpgme_get_protocol_name` for printing.

`const char *file_name`

This is a string holding the file name of the executable of the crypto engine. Currently, it is never `NULL`, but using `NULL` is reserved for future use, so always check before you use it.

`const char *home_dir`

This is a string holding the directory name of the crypto engines configuration directory. If it is `NULL`, then the default directory is used. See `gpgme_get_dirinfo` on how to get the default directory.

`const char *version`

This is a string containing the version number of the crypto engine. It might be `NULL` if the version number can not be determined, for example because the executable doesn't exist or is invalid.

```
const char *req_version
```

This is a string containing the minimum required version number of the crypto engine for GPGME to work correctly. This is the version number that `gpgme_engine_check_version` verifies against. Currently, it is never NULL, but using NULL is reserved for future use, so always check before you use it.

```
-- Function: gpgme_error_t gpgme_get_engine_info  
           (gpgme_engine_info_t *INFO)
```

The function `gpgme_get_engine_info` returns a linked list of engine info structures in `INFO`. Each info structure describes the defaults of one configured backend.

The memory for the info structures is allocated the first time this function is invoked, and must not be freed by the caller.

This function returns the error code `GPG_ERR_NO_ERROR` if successful, and a system error if the memory could not be allocated.

Here is an example how you can provide more diagnostics if you receive an error message which indicates that the crypto engine is invalid.

```
gpgme_ctx_t ctx;  
gpgme_error_t err;
```

```
[...]
```

```
if (gpgme_err_code (err) == GPG_ERR_INV_ENGINE)  
{  
    gpgme_engine_info_t info;  
    err = gpgme_get_engine_info (&info);  
    if (!err)  
    {  
        while (info && info->protocol != gpgme_get_protocol (ctx))  
            info = info->next;  
        if (!info)  
            fprintf (stderr, "GPGME compiled without support for protocol %s",  
                    gpgme_get_protocol_name (info->protocol));  
        else if (info->file_name && !info->version)  
            fprintf (stderr, "Engine %s not installed properly",  
                    info->file_name);  
        else if (info->file_name && info->version && info->req_version)  
            fprintf (stderr, "Engine %s version %s installed, "  
                    "but at least version %s required", info->file_name,
```

```

        info->version, info->req_version);
    else
        fprintf(stderr, "Unknown problem with engine for protocol %s",
                gpgme_get_protocol_name (info->protocol));
    }
}

```

File: gpgme.info, Node: Engine Configuration, Next: OpenPGP, Prev: Engine Information, Up: Protocols and Engines

3.3 Engine Configuration

=====

You can change the configuration of a backend engine, and thus change the executable program and configuration directory to be used. You can make these changes the default or set them for some contexts individually.

```

-- Function: gpgme_error_t gpgme_set_engine_info
   (gpgme_protocol_t PROTO, const char *FILE_NAME,
    const char *HOME_DIR)
SINCE: 1.1.0

```

The function `gpgme_set_engine_info` changes the default configuration of the crypto engine implementing the protocol `PROTO`.

`FILE_NAME` is the file name of the executable program implementing this protocol, and `HOME_DIR` is the directory name of the configuration directory for this crypto engine. If `HOME_DIR` is `NULL`, the engines default will be used.

The new defaults are not applied to already created GPGME contexts.

This function returns the error code `GPG_ERR_NO_ERROR` if successful, or an error code on failure.

The functions `gpgme_ctx_get_engine_info` and `gpgme_ctx_set_engine_info` can be used to change the engine configuration per context. *Note Crypto Engine::.

File: gpgme.info, Node: OpenPGP, Next: Cryptographic Message Syntax, Prev: Engine Configuration, Up: Protocols and Engines

3.4 OpenPGP

=====

OpenPGP is implemented by GnuPG, the GNU Privacy Guard. This is the first protocol that was supported by GPGME.

The OpenPGP protocol is specified by GPGME_PROTOCOL_OpenPGP.

File: gpgme.info, Node: Cryptographic Message Syntax, Next: Assuan, Prev: OpenPGP, Up: Protocols and Engines

3.5 Cryptographic Message Syntax

=====

CMS is implemented by GpgSM, the S/MIME implementation for GnuPG.

The CMS protocol is specified by GPGME_PROTOCOL_CMS.

File: gpgme.info, Node: Assuan, Prev: Cryptographic Message Syntax, Up: Protocols and Engines

3.6 Assuan

=====

Assuan is the RPC library used by the various GnuPG components. The Assuan protocol allows one to talk to arbitrary Assuan servers using GPGME. *Note Using the Assuan protocol::

The ASSUAN protocol is specified by GPGME_PROTOCOL_ASSUAN.

File: gpgme.info, Node: Algorithms, Next: Error Handling, Prev: Protocols and Engines, Up: Top

4 Algorithms

The crypto backends support a variety of algorithms used in public key cryptography.(1) The following sections list the identifiers used to denote such an algorithm.

* Menu:

* Public Key Algorithms:: A list of all public key algorithms.

* Hash Algorithms:: A list of all hash algorithms.

----- Footnotes -----

(1) Some engines also provide symmetric only encryption; see the description of the encryption function on how to use this.

4.1 Public Key Algorithms

=====

Public key algorithms are used for encryption, decryption, signing and verification of signatures.

-- Data type: enum gpgme_pubkey_algo_t

The gpgme_pubkey_algo_t type specifies the set of all public key algorithms that are supported by GPGME. Possible values are:

GPGME_PK_RSA

This value indicates the RSA (Rivest, Shamir, Adleman) algorithm.

GPGME_PK_RSA_E

Deprecated. This value indicates the RSA (Rivest, Shamir, Adleman) algorithm for encryption and decryption only.

GPGME_PK_RSA_S

Deprecated. This value indicates the RSA (Rivest, Shamir, Adleman) algorithm for signing and verification only.

GPGME_PK_DSA

This value indicates DSA, the Digital Signature Algorithm.

GPGME_PK_ELG

This value indicates ElGamal.

GPGME_PK_ELG_E

This value also indicates ElGamal and is used specifically in GnuPG.

GPGME_PK_ECC

SINCE: 1.5.0

This value is a generic indicator for elliptic curve algorithms.

GPGME_PK_ECDSA

SINCE: 1.3.0

This value indicates ECDSA, the Elliptic Curve Digital Signature Algorithm as defined by FIPS 186-2 and RFC-6637.

GPGME_PK_ECDH

SINCE: 1.3.0

This value indicates ECDH, the Elliptic Curve Diffie-Hellmann encryption algorithm as defined by RFC-6637.

GPGME_PK_EDDSA

SINCE: 1.7.0

This value indicates the EdDSA algorithm.

-- Function: const char * gpgme_pubkey_algo_name
(gpgme_pubkey_algo_t ALGO)

The function gpgme_pubkey_algo_name returns a pointer to a statically allocated string containing a description of the public key algorithm ALGO. This string can be used to output the name of the public key algorithm to the user.

If ALGO is not a valid public key algorithm, NULL is returned.

-- Function: char * gpgme_pubkey_algo_string (gpgme_subkey_t KEY)
SINCE: 1.7.0

The function gpgme_pubkey_algo_string is a convenience function to build and return an algorithm string in the same way GnuPG does (e.g. rsa2048 or ed25519). The caller must free the result using gpgme_free. On error (e.g. invalid argument or memory exhausted), the function returns NULL and sets ERRNO.

File: gpgme.info, Node: Hash Algorithms, Prev: Public Key Algorithms, Up: Algorithms

4.2 Hash Algorithms

=====

Hash (message digest) algorithms are used to compress a long message to make it suitable for public key cryptography.

-- Data type: enum gpgme_hash_algo_t

The gpgme_hash_algo_t type specifies the set of all hash algorithms that are supported by GPGME. Possible values are:

GPGME_MD_MD5
GPGME_MD_SHA1
GPGME_MD_RMD160
GPGME_MD_MD2
GPGME_MD_TIGER
GPGME_MD_HAVAL
GPGME_MD_SHA256

GPGME_MD_SHA384
GPGME_MD_SHA512
GPGME_MD_SHA224
SINCE: 1.5.0

GPGME_MD_MD4
GPGME_MD_CRC32
GPGME_MD_CRC32_RFC1510
GPGME_MD_CRC24_RFC2440

-- Function: const char * gpgme_hash_algo_name (gpgme_hash_algo_t ALGO)

The function gpgme_hash_algo_name returns a pointer to a statically allocated string containing a description of the hash algorithm ALGO. This string can be used to output the name of the hash algorithm to the user.

If ALGO is not a valid hash algorithm, NULL is returned.

File: gpgme.info, Node: Error Handling, Next: Exchanging Data, Prev: Algorithms, Up: Top

5 Error Handling

Many functions in GPGME can return an error if they fail. For this reason, the application should always catch the error condition and take appropriate measures, for example by releasing the resources and passing the error up to the caller, or by displaying a descriptive message to the user and cancelling the operation.

Some error values do not indicate a system error or an error in the operation, but the result of an operation that failed properly. For example, if you try to decrypt a tempered message, the decryption will fail. Another error value actually means that the end of a data buffer or list has been reached. The following descriptions explain for many error codes what they mean usually. Some error values have specific meanings if returned by a certain functions. Such cases are described in the documentation of those functions.

GPGME uses the libpgg-error library. This allows to share the error codes with other components of the GnuPG system, and thus pass error values transparently from the crypto engine, or some helper application of the crypto engine, to the user. This way no information is lost. As a consequence, GPGME does not use its own identifiers for error codes, but uses those provided by libpgg-error. They usually start with GPG_ERR_.

However, GPGME does provide aliases for the functions defined in

libgpg-error, which might be preferred for name space consistency.

* Menu:

- * Error Values:: The error value and what it means.
- * Error Sources:: A list of important error sources.
- * Error Codes:: A list of important error codes.
- * Error Strings:: How to get a descriptive string from a value.

File: gpgme.info, Node: Error Values, Next: Error Sources, Up: Error Handling

5.1 Error Values

=====

-- Data type: gpgme_err_code_t

The gpgme_err_code_t type is an alias for the libgpg-error type gpg_err_code_t. The error code indicates the type of an error, or the reason why an operation failed.

A list of important error codes can be found in the next section.

-- Data type: gpgme_err_source_t

The gpgme_err_source_t type is an alias for the libgpg-error type gpg_err_source_t. The error source has not a precisely defined meaning. Sometimes it is the place where the error happened, sometimes it is the place where an error was encoded into an error value. Usually the error source will give an indication to where to look for the problem. This is not always true, but it is attempted to achieve this goal.

A list of important error sources can be found in the next section.

-- Data type: gpgme_error_t

The gpgme_error_t type is an alias for the libgpg-error type gpg_error_t. An error value like this has always two components, an error code and an error source. Both together form the error value.

Thus, the error value can not be directly compared against an error code, but the accessor functions described below must be used. However, it is guaranteed that only 0 is used to indicate success (GPG_ERR_NO_ERROR), and that in this case all other parts of the error value are set to 0, too.

Note that in GPGME, the error source is used purely for diagnostical purposes. Only the error code should be checked to test for a certain outcome of a function. The manual only

documents the error code part of an error value. The error source is left unspecified and might be anything.

-- Function: static inline `gpgme_err_code_t gpgme_err_code`
(`gpgme_error_t ERR`)
The static inline function `gpgme_err_code` returns the `gpgme_err_code_t` component of the error value `ERR`. This function must be used to extract the error code from an error value in order to compare it with the `GPG_ERR_*` error code macros.

-- Function: static inline `gpgme_err_source_t gpgme_err_source`
(`gpgme_error_t ERR`)
The static inline function `gpgme_err_source` returns the `gpgme_err_source_t` component of the error value `ERR`. This function must be used to extract the error source from an error value in order to compare it with the `GPG_ERR_SOURCE_*` error source macros.

-- Function: static inline `gpgme_error_t gpgme_err_make`
(`gpgme_err_source_t SOURCE`, `gpgme_err_code_t CODE`)
The static inline function `gpgme_err_make` returns the error value consisting of the error source `SOURCE` and the error code `CODE`.

This function can be used in callback functions to construct an error value to return it to the library.

-- Function: static inline `gpgme_error_t gpgme_error`
(`gpgme_err_code_t CODE`)
The static inline function `gpgme_error` returns the error value consisting of the default error source and the error code `CODE`.

For GPGME applications, the default error source is `GPG_ERR_SOURCE_USER_1`. You can define `GPGME_ERR_SOURCE_DEFAULT` before including `gpgme.h` to change this default.

This function can be used in callback functions to construct an error value to return it to the library.

The `libgpg-error` library provides error codes for all system error numbers it knows about. If `ERR` is an unknown error number, the error code `GPG_ERR_UNKNOWN_ERRNO` is used. The following functions can be used to construct error values from system `errno` numbers.

-- Function: `gpgme_error_t gpgme_err_make_from_errno`
(`gpgme_err_source_t SOURCE`, `int ERR`)
The function `gpgme_err_make_from_errno` is like `gpgme_err_make`, but it takes a system error like `errno` instead of a `gpgme_err_code_t` error code.

-- Function: `gpgme_error_t gpgme_error_from_errno (int ERR)`
The function `gpgme_error_from_errno` is like `gpgme_error`, but it takes a system error like `errno` instead of a `gpgme_err_code_t` error code.

Sometimes you might want to map system error numbers to error codes directly, or map an error code representing a system error back to the system error number. The following functions can be used to do that.

-- Function: `gpgme_err_code_t gpgme_err_code_from_errno (int ERR)`
The function `gpgme_err_code_from_errno` returns the error code for the system error `ERR`. If `ERR` is not a known system error, the function returns `GPG_ERR_UNKNOWN_ERRNO`.

-- Function: `int gpgme_err_code_to_errno (gpgme_err_code_t ERR)`
The function `gpgme_err_code_to_errno` returns the system error for the error code `ERR`. If `ERR` is not an error code representing a system error, or if this system error is not defined on this system, the function returns 0.

File: `gpgme.info`, Node: Error Sources, Next: Error Codes, Prev: Error Values, Up: Error Handling

5.2 Error Sources

=====

The library `libgpg-error` defines an error source for every component of the GnuPG system. The error source part of an error value is not well defined. As such it is mainly useful to improve the diagnostic error message for the user.

If the error code part of an error value is 0, the whole error value will be 0. In this case the error source part is of course `GPG_ERR_SOURCE_UNKNOWN`.

The list of error sources that might occur in applications using GPGME is:

`GPG_ERR_SOURCE_UNKNOWN`

The error source is not known. The value of this error source is 0.

`GPG_ERR_SOURCE_GPGME`

The error source is GPGME itself. This is the default for errors that occur in the GPGME library.

`GPG_ERR_SOURCE_GPG`

The error source is GnuPG, which is the crypto engine used for the OpenPGP protocol.

GPG_ERR_SOURCE_GPGSM

The error source is GPGSM, which is the crypto engine used for the CMS protocol.

GPG_ERR_SOURCE_GCRYPT

The error source is libgcrypt, which is used by crypto engines to perform cryptographic operations.

GPG_ERR_SOURCE_GPGAGENT

The error source is gpg-agent, which is used by crypto engines to perform operations with the secret key.

GPG_ERR_SOURCE_PINENTRY

The error source is pinentry, which is used by gpg-agent to query the passphrase to unlock a secret key.

GPG_ERR_SOURCE_SCD

The error source is the SmartCard Daemon, which is used by gpg-agent to delegate operations with the secret key to a SmartCard.

GPG_ERR_SOURCE_KEYBOX

The error source is libkbox, a library used by the crypto engines to manage local keyrings.

GPG_ERR_SOURCE_USER_1

GPG_ERR_SOURCE_USER_2

GPG_ERR_SOURCE_USER_3

GPG_ERR_SOURCE_USER_4

These error sources are not used by any GnuPG component and can be used by other software. For example, applications using GPGME can use them to mark error values coming from callback handlers. Thus GPG_ERR_SOURCE_USER_1 is the default for errors created with gpgme_error and gpgme_error_from_errno, unless you define GPGME_ERR_SOURCE_DEFAULT before including gpgme.h.

File: gpgme.info, Node: Error Codes, Next: Error Strings, Prev: Error Sources, Up: Error Handling

5.3 Error Codes

=====

The library libgpg-error defines many error values. Most of them are not used by GPGME directly, but might be returned by GPGME because it received them from the crypto engine. The below list only includes such

error codes that have a specific meaning in GPGME, or which are so common that you should know about them.

GPG_ERR_EOF

This value indicates the end of a list, buffer or file.

GPG_ERR_NO_ERROR

This value indicates success. The value of this error code is 0.

Also, it is guaranteed that an error value made from the error code 0 will be 0 itself (as a whole). This means that the error source information is lost for this error code, however, as this error code indicates that no error occurred, this is generally not a problem.

GPG_ERR_GENERAL

This value means that something went wrong, but either there is not enough information about the problem to return a more useful error value, or there is no separate error value for this type of problem.

GPG_ERR_ENOMEM

This value means that an out-of-memory condition occurred.

GPG_ERR_E...

System errors are mapped to GPG_ERR_FOO where FOO is the symbol for the system error.

GPG_ERR_INV_VALUE

This value means that some user provided data was out of range.

This can also refer to objects. For example, if an empty `gpgme_data_t` object was expected, but one containing data was provided, this error value is returned.

GPG_ERR_UNUSABLE_PUBKEY

This value means that some recipients for a message were invalid.

GPG_ERR_UNUSABLE_SECKEY

This value means that some signers were invalid.

GPG_ERR_NO_DATA

This value means that a `gpgme_data_t` object which was expected to have content was found empty.

GPG_ERR_CONFLICT

This value means that a conflict of some sort occurred.

GPG_ERR_NOT_IMPLEMENTED

This value indicates that the specific function (or operation) is

not implemented. This error should never happen. It can only occur if you use certain values or configuration options which do not work, but for which we think that they should work at some later time.

GPG_ERR_DECRYPT_FAILED

This value indicates that a decryption operation was unsuccessful.

GPG_ERR_BAD_PASSPHRASE

This value means that the user did not provide a correct passphrase when requested.

GPG_ERR_CANCELED

This value means that the operation was canceled.

GPG_ERR_INV_ENGINE

This value means that the engine that implements the desired protocol is currently not available. This can either be because the sources were configured to exclude support for this engine, or because the engine is not installed properly.

GPG_ERR_AMBIGUOUS_NAME

This value indicates that a user ID or other specifier did not specify a unique key.

GPG_ERR_WRONG_KEY_USAGE

This value indicates that a key is not used appropriately.

GPG_ERR_CERT_REVOKED

This value indicates that a key signature was revoked.

GPG_ERR_CERT_EXPIRED

This value indicates that a key signature expired.

GPG_ERR_NO_CRL_KNOWN

This value indicates that no certificate revocation list is known for the certificate.

GPG_ERR_NO_POLICY_MATCH

This value indicates that a policy issue occurred.

GPG_ERR_NO_SECKEY

This value indicates that no secret key for the user ID is available.

GPG_ERR_MISSING_CERT

This value indicates that a key could not be imported because the issuer certificate is missing.

GPG_ERR_BAD_CERT_CHAIN

This value indicates that a key could not be imported because its certificate chain is not good, for example it could be too long.

GPG_ERR_UNSUPPORTED_ALGORITHM

This value means a verification failed because the cryptographic algorithm is not supported by the crypto backend.

GPG_ERR_BAD_SIGNATURE

This value means a verification failed because the signature is bad.

GPG_ERR_NO_PUBKEY

This value means a verification failed because the public key is not available.

GPG_ERR_USER_1

GPG_ERR_USER_2

...

GPG_ERR_USER_16

These error codes are not used by any GnuPG component and can be freely used by other software. Applications using GPGME might use them to mark specific errors returned by callback handlers if no suitable error codes (including the system errors) for these errors exist already.

File: gpgme.info, Node: Error Strings, Prev: Error Codes, Up: Error Handling

5.4 Error Strings

=====

-- Function: `const char * gpgme_strerror (gpgme_error_t ERR)`

The function `gpgme_strerror` returns a pointer to a statically allocated string containing a description of the error code contained in the error value `ERR`. This string can be used to output a diagnostic message to the user.

This function is not thread safe. Use `gpgme_strerror_r` in multi-threaded programs.

-- Function: `int gpgme_strerror_r (gpgme_error_t ERR, char *BUF, size_t BUFLen)`

The function `gpgme_strerror_r` returns the error string for `ERR` in the user-supplied buffer `BUF` of size `BUFLen`. This function is, in contrast to `gpgme_strerror`, thread-safe if a thread-safe `strerror_r` function is provided by the system. If the function

succeeds, 0 is returned and BUF contains the string describing the error. If the buffer was not large enough, ERANGE is returned and BUF contains as much of the beginning of the error string as fits into the buffer.

-- Function: `const char * gpgme_strerror (gpgme_error_t ERR)`

The function `gpgme_strerror` returns a pointer to a statically allocated string containing a description of the error source contained in the error value `ERR`. This string can be used to output a diagnostic message to the user.

The following example illustrates the use of `gpgme_strerror`:

```
gpgme_ctx_t ctx;
gpgme_error_t err = gpgme_new (&ctx);
if (err)
{
    fprintf (stderr, "%s: creating GpgME context failed: %s: %s\n",
            argv[0], gpgme_strerror (err), gpgme_strerror (err));
    exit (1);
}
```

File: `gpgme.info`, Node: `Exchanging Data`, Next: `Contexts`, Prev: `Error Handling`, Up: `Top`

6 Exchanging Data

A lot of data has to be exchanged between the user and the crypto engine, like plaintext messages, ciphertext, signatures and information about the keys. The technical details about exchanging the data information are completely abstracted by GPGME. The user provides and receives the data via `gpgme_data_t` objects, regardless of the communication protocol between GPGME and the crypto engine in use.

-- Data type: `gpgme_data_t`

The `gpgme_data_t` type is a handle for a container for generic data, which is used by GPGME to exchange data with the user.

`gpgme_data_t` objects do not provide notifications on events. It is assumed that read and write operations are blocking until data is available. If this is undesirable, the application must ensure that all GPGME data operations always have data available, for example by using memory buffers or files rather than pipes or sockets. This might be relevant, for example, if the external event loop mechanism is used.

-- Data type: `gpgme_off_t`

SINCE: 1.4.1

On POSIX platforms the `gpgme_off_t` type is an alias for `off_t`; it may be used interchangeably. On Windows platforms `gpgme_off_t` is defined as a long (i.e. 32 bit) for 32 bit Windows and as a 64 bit signed integer for 64 bit Windows.

-- Data type: `gpgme_ssize_t`

The `gpgme_ssize_t` type is an alias for `ssize_t`. It has only been introduced to overcome portability problems pertaining to the declaration of `ssize_t` by different toolchains.

* Menu:

- * Creating Data Buffers:: Creating new data buffers.
- * Destroying Data Buffers:: Releasing data buffers.
- * Manipulating Data Buffers:: Operations on data buffers.

File: `gpgme.info`, Node: Creating Data Buffers, Next: Destroying Data Buffers, Up: Exchanging Data

6.1 Creating Data Buffers

=====

Data objects can be based on memory, files, or callback functions provided by the user. Not all operations are supported by all objects.

* Menu:

- * Memory Based Data Buffers:: Creating memory based data buffers.
- * File Based Data Buffers:: Creating file based data buffers.
- * Callback Based Data Buffers:: Creating callback based data buffers.

File: `gpgme.info`, Node: Memory Based Data Buffers, Next: File Based Data Buffers, Up: Creating Data Buffers

6.1.1 Memory Based Data Buffers

Memory based data objects store all data in allocated memory. This is convenient, but only practical for an amount of data that is a fraction of the available physical memory. The data has to be copied from its source and to its destination, which can often be avoided by using one of the other data object

-- Function: `gpgme_error_t gpgme_data_new (gpgme_data_t *DH)`

The function `gpgme_data_new` creates a new `gpgme_data_t` object and returns a handle for it in `DH`. The data object is memory based and initially empty.

The function returns the error code `GPG_ERR_NO_ERROR` if the data object was successfully created, `GPG_ERR_INV_VALUE` if `DH` is not a valid pointer, and `GPG_ERR_ENOMEM` if not enough memory is available.

-- Function: `gpgme_error_t gpgme_data_new_from_mem (gpgme_data_t *DH, const char *BUFFER, size_t SIZE, int COPY)`

The function `gpgme_data_new_from_mem` creates a new `gpgme_data_t` object and fills it with `SIZE` bytes starting from `BUFFER`.

If `COPY` is not zero, a private copy of the data is made. If `COPY` is zero, the data is taken from the specified buffer as needed, and the user has to ensure that the buffer remains valid for the whole life span of the data object.

The function returns the error code `GPG_ERR_NO_ERROR` if the data object was successfully created, `GPG_ERR_INV_VALUE` if `DH` or `BUFFER` is not a valid pointer, and `GPG_ERR_ENOMEM` if not enough memory is available.

-- Function: `gpgme_error_t gpgme_data_new_from_file (gpgme_data_t *DH, const char *FILENAME, int COPY)`

The function `gpgme_data_new_from_file` creates a new `gpgme_data_t` object and fills it with the content of the file `FILENAME`.

If `COPY` is not zero, the whole file is read in at initialization time and the file is not used anymore after that. This is the only mode supported currently. Later, a value of zero for `COPY` might cause all reads to be delayed until the data is needed, but this is not yet implemented.

The function returns the error code `GPG_ERR_NO_ERROR` if the data object was successfully created, `GPG_ERR_INV_VALUE` if `DH` or `FILENAME` is not a valid pointer, `GPG_ERR_NOT_IMPLEMENTED` if `CODE` is zero, and `GPG_ERR_ENOMEM` if not enough memory is available.

-- Function: `gpgme_error_t gpgme_data_new_from_filepart (gpgme_data_t *DH, const char *FILENAME, FILE *FP, off_t OFFSET, size_t LENGTH)`

The function `gpgme_data_new_from_filepart` creates a new `gpgme_data_t` object and fills it with a part of the file specified by `FILENAME` or `FP`.

Exactly one of `FILENAME` and `FP` must be non-zero, the other must be zero. The argument that is not zero specifies the file from which `LENGTH` bytes are read into the data object, starting from `OFFSET`.

The function returns the error code `GPG_ERR_NO_ERROR` if the data object was successfully created, `GPG_ERR_INV_VALUE` if `DH` and exactly one of `FILENAME` and `FP` is not a valid pointer, and `GPG_ERR_ENOMEM` if not enough memory is available.

File: `gpgme.info`, Node: File Based Data Buffers, Next: Callback Based Data Buffers, Prev: Memory Based Data Buffers, Up: Creating Data Buffers

6.1.2 File Based Data Buffers

File based data objects operate directly on file descriptors or streams. Only a small amount of data is stored in core at any time, so the size of the data objects is not limited by GPGME.

-- Function: `gpgme_error_t gpgme_data_new_from_fd (gpgme_data_t *DH, int FD)`

The function `gpgme_data_new_from_fd` creates a new `gpgme_data_t` object and uses the file descriptor `FD` to read from (if used as an input data object) and write to (if used as an output data object).

When using the data object as an input buffer, the function might read a bit more from the file descriptor than is actually needed by the crypto engine in the desired operation because of internal buffering.

Note that GPGME assumes that the file descriptor is set to blocking mode. Errors during I/O operations, except for `EINTR`, are usually fatal for crypto operations.

The function returns the error code `GPG_ERR_NO_ERROR` if the data object was successfully created, and `GPG_ERR_ENOMEM` if not enough memory is available.

-- Function: `gpgme_error_t gpgme_data_new_from_stream (gpgme_data_t *DH, FILE *STREAM)`

The function `gpgme_data_new_from_stream` creates a new `gpgme_data_t` object and uses the I/O stream `STREAM` to read from (if used as an input data object) and write to (if used as an output data object).

When using the data object as an input buffer, the function might read a bit more from the stream than is actually needed by the crypto engine in the desired operation because of internal buffering.

Note that GPGME assumes that the stream is in blocking mode. Errors during I/O operations, except for EINTR, are usually fatal for crypto operations.

The function returns the error code GPG_ERR_NO_ERROR if the data object was successfully created, and GPG_ERR_ENOMEM if not enough memory is available.

-- Function: `gpgme_error_t gpgme_data_new_from_estream`
(`gpgme_data_t *DH`, `gpgmt_stream_t STREAM`)

The function `gpgme_data_new_from_estream` creates a new `gpgme_data_t` object and uses the `gpgmt` stream `STREAM` to read from (if used as an input data object) and write to (if used as an output data object).

When using the data object as an input buffer, the function might read a bit more from the stream than is actually needed by the crypto engine in the desired operation because of internal buffering.

Note that GPGME assumes that the stream is in blocking mode. Errors during I/O operations, except for EINTR, are usually fatal for crypto operations.

The function returns the error code GPG_ERR_NO_ERROR if the data object was successfully created, and GPG_ERR_ENOMEM if not enough memory is available.

File: `gpgme.info`, Node: `Callback Based Data Buffers`, Prev: `File Based Data Buffers`, Up: `Creating Data Buffers`

6.1.3 Callback Based Data Buffers

If neither memory nor file based data objects are a good fit for your application, you can implement the functions a data object provides yourself and create a data object from these callback functions.

-- Data type: `ssize_t (*gpgme_data_read_cb_t)` (`void *HANDLE`,
`void *BUFFER`, `size_t SIZE`)

The `gpgme_data_read_cb_t` type is the type of functions which GPGME calls if it wants to read data from a user-implemented data object. The function should read up to `SIZE` bytes from the current read position into the space starting at `BUFFER`. The `HANDLE` is provided by the user at data object creation time.

Note that GPGME assumes that the read blocks until data is available. Errors during I/O operations, except for EINTR, are

usually fatal for crypto operations.

The function should return the number of bytes read, 0 on EOF, and -1 on error. If an error occurs, `ERRNO` should be set to describe the type of the error.

-- Data type: `ssize_t (*gpgme_data_write_cb_t) (void *HANDLE, const void *BUFFER, size_t SIZE)`

The `gpgme_data_write_cb_t` type is the type of functions which GPGME calls if it wants to write data to a user-implemented data object. The function should write up to `SIZE` bytes to the current write position from the space starting at `BUFFER`. The `HANDLE` is provided by the user at data object creation time.

Note that GPGME assumes that the write blocks until data is available. Errors during I/O operations, except for `EINTR`, are usually fatal for crypto operations.

The function should return the number of bytes written, and -1 on error. If an error occurs, `ERRNO` should be set to describe the type of the error.

-- Data type: `off_t (*gpgme_data_seek_cb_t) (void *HANDLE, off_t OFFSET, int WHENCE)`

The `gpgme_data_seek_cb_t` type is the type of functions which GPGME calls if it wants to change the current read/write position in a user-implemented data object, just like the `lseek` function.

The function should return the new read/write position, and -1 on error. If an error occurs, `ERRNO` should be set to describe the type of the error.

-- Data type: `void (*gpgme_data_release_cb_t) (void *HANDLE)`

The `gpgme_data_release_cb_t` type is the type of functions which GPGME calls if it wants to destroy a user-implemented data object. The `HANDLE` is provided by the user at data object creation time.

-- Data type: `struct gpgme_data_cbs`

This structure is used to store the data callback interface functions described above. It has the following members:

`gpgme_data_read_cb_t read`

This is the function called by GPGME to read data from the data object. It is only required for input data object.

`gpgme_data_write_cb_t write`

This is the function called by GPGME to write data to the data object. It is only required for output data object.

`gpgme_data_seek_cb_t` seek

This is the function called by GPGME to change the current read/write pointer in the data object (if available). It is optional.

`gpgme_data_release_cb_t` release

This is the function called by GPGME to release a data object. It is optional.

-- Function: `gpgme_error_t gpgme_data_new_from_cbs (gpgme_data_t *DH, gpgme_data_cbs_t CBS, void *HANDLE)`

The function `gpgme_data_new_from_cbs` creates a new `gpgme_data_t` object and uses the user-provided callback functions to operate on the data object.

The handle `HANDLE` is passed as first argument to the callback functions. This can be used to identify this data object.

The function returns the error code `GPG_ERR_NO_ERROR` if the data object was successfully created, and `GPG_ERR_ENOMEM` if not enough memory is available.

File: `gpgme.info`, Node: Destroying Data Buffers, Next: Manipulating Data Buffers, Prev: Creating Data Buffers, Up: Exchanging Data

6.2 Destroying Data Buffers

=====

-- Function: `void gpgme_data_release (gpgme_data_t DH)`

The function `gpgme_data_release` destroys the data object with the handle `DH`. It releases all associated resources that were not provided by the user in the first place.

-- Function: `char * gpgme_data_release_and_get_mem (gpgme_data_t DH, size_t *LENGTH)`

The function `gpgme_data_release_and_get_mem` is like `gpgme_data_release`, except that it returns the data buffer and its length that was provided by the object.

The user has to release the buffer with `gpgme_free`. In case the user provided the data buffer in non-copy mode, a copy will be made for this purpose.

In case an error returns, or there is no suitable data buffer that can be returned to the user, the function will return `NULL`. In any case, the data object `DH` is destroyed.

-- Function: void gpgme_free (void *BUFFER)

SINCE: 1.1.1

The function gpgme_free releases the memory returned by gpgme_data_release_and_get_mem and gpgme_pubkey_algo_string. It should be used instead of the system libraries free function in case different allocators are used by a program. This is often the case if gpgme is used under Windows as a DLL.

File: gpgme.info, Node: Manipulating Data Buffers, Prev: Destroying Data Buffers, Up: Exchanging Data

6.3 Manipulating Data Buffers

=====

Data buffers contain data and meta-data. The following operations can be used to manipulate both.

* Menu:

- * Data Buffer I/O Operations:: I/O operations on data buffers.
- * Data Buffer Meta-Data:: Meta-data manipulation of data buffers.
- * Data Buffer Convenience:: Convenience function for data buffers.

File: gpgme.info, Node: Data Buffer I/O Operations, Next: Data Buffer Meta-Data, Up: Manipulating Data Buffers

6.3.1 Data Buffer I/O Operations

-- Function: ssize_t gpgme_data_read (gpgme_data_t DH, void *BUFFER, size_t LENGTH)

The function gpgme_data_read reads up to LENGTH bytes from the data object with the handle DH into the space starting at BUFFER.

If no error occurs, the actual amount read is returned. If the end of the data object is reached, the function returns 0.

In all other cases, the function returns -1 and sets ERRNO.

-- Function: ssize_t gpgme_data_write (gpgme_data_t DH, const void *BUFFER, size_t SIZE)

The function gpgme_data_write writes up to SIZE bytes starting from BUFFER into the data object with the handle DH at the current write position.

The function returns the number of bytes actually written, or -1 if an error occurs. If an error occurs, ERRNO is set.

-- Function: `off_t gpgme_data_seek (gpgme_data_t DH, off_t OFFSET, int WHENCE)`

The function `gpgme_data_seek` changes the current read/write position.

The `WHENCE` argument specifies how the `OFFSET` should be interpreted. It must be one of the following symbolic constants:

SEEK_SET

Specifies that `OFFSET` is a count of characters from the beginning of the data object.

SEEK_CUR

Specifies that `OFFSET` is a count of characters from the current file position. This count may be positive or negative.

SEEK_END

Specifies that `OFFSET` is a count of characters from the end of the data object. A negative count specifies a position within the current extent of the data object; a positive count specifies a position past the current end. If you set the position past the current end, and actually write data, you will extend the data object with zeros up to that position.

If successful, the function returns the resulting file position, measured in bytes from the beginning of the data object. You can use this feature together with `SEEK_CUR` to read the current read/write position.

If the function fails, -1 is returned and `ERRNO` is set.

File: `gpgme.info`, Node: Data Buffer Meta-Data, Next: Data Buffer Convenience, Prev: Data Buffer I/O Operations, Up: Manipulating Data Buffers

6.3.2 Data Buffer Meta-Data

-- Function: `char * gpgme_data_get_file_name (gpgme_data_t DH)`
SINCE: 1.1.0

The function `gpgme_data_get_file_name` returns a pointer to a string containing the file name associated with the data object.

The file name will be stored in the output when encrypting or

signing the data and will be returned to the user when decrypting or verifying the output data.

If no error occurs, the string containing the file name is returned. Otherwise, NULL will be returned.

-- Function: `gpgme_error_t gpgme_data_set_file_name (gpgme_data_t DH, const char *FILE_NAME)`

SINCE: 1.1.0

The function `gpgme_data_set_file_name` sets the file name associated with the data object. The file name will be stored in the output when encrypting or signing the data and will be returned to the user when decrypting or verifying the output data.

The function returns the error code `GPG_ERR_INV_VALUE` if `DH` is not a valid pointer and `GPG_ERR_ENOMEM` if not enough memory is available.

-- Data type: enum `gpgme_data_encoding_t`

The `gpgme_data_encoding_t` type specifies the encoding of a `gpgme_data_t` object. For input data objects, the encoding is useful to give the backend a hint on the type of data. For output data objects, the encoding can specify the output data format on certain operations. Please note that not all backends support all encodings on all operations. The following data types are available:

`GPGME_DATA_ENCODING_NONE`

This specifies that the encoding is not known. This is the default for a new data object. The backend will try its best to detect the encoding automatically.

`GPGME_DATA_ENCODING_BINARY`

This specifies that the data is encoding in binary form; i.e. there is no special encoding.

`GPGME_DATA_ENCODING_BASE64`

This specifies that the data is encoded using the Base-64 encoding scheme as used by MIME and other protocols.

`GPGME_DATA_ENCODING_ARMOR`

This specifies that the data is encoded in an armored form as used by OpenPGP and PEM.

`GPGME_DATA_ENCODING_MIME`

SINCE: 1.7.0

This specifies that the data is encoded as a MIME part.

GPGME_DATA_ENCODING_URL

SINCE: 1.2.0

The data is a list of linefeed delimited URLs. This is only useful with `gpgme_op_import`.

GPGME_DATA_ENCODING_URL0

SINCE: 1.2.0

The data is a list of binary zero delimited URLs. This is only useful with `gpgme_op_import`.

GPGME_DATA_ENCODING_URLESC

SINCE: 1.2.0

The data is a list of linefeed delimited URLs with all control and space characters percent escaped. This mode is not yet implemented.

-- Function: `gpgme_data_encoding_t gpgme_data_get_encoding(gpgme_data_t DH)`

The function `gpgme_data_get_encoding` returns the encoding of the data object with the handle `DH`. If `DH` is not a valid pointer (e.g. `NULL`) `GPGME_DATA_ENCODING_NONE` is returned.

-- Function: `gpgme_error_t gpgme_data_set_encoding(gpgme_data_t DH, gpgme_data_encoding_t ENC)`

The function `gpgme_data_set_encoding` changes the encoding of the data object with the handle `DH` to `ENC`.

-- Function: `gpgme_error_t gpgme_data_set_flag(gpgme_data_t DH, const char *NAME, const char *VALUE)`

SINCE: 1.7.0

Some minor properties of the data object can be controlled with flags set by this function. The properties are identified by the following values for `NAME`:

size-hint

The value is a decimal number with the length `gpgme` shall assume for this data object. This is useful if the data is provided by callbacks or via file descriptors but the applications knows the total size of the data. If this is set the OpenPGP engine may use this to decide on buffer allocation strategies and to provide a total value for its progress

information.

This function returns 0 on success.

File: gpgme.info, Node: Data Buffer Convenience, Prev: Data Buffer Meta-Data, Up: Manipulating Data Buffers

6.3.3 Data Buffer Convenience Functions

-- Data type: enum gpgme_data_type_t
SINCE: 1.4.3

The gpgme_data_type_t type is used to return the detected type of the content of a data buffer.

GPGME_DATA_TYPE_INVALID

This is returned by gpgme_data_identify if it was not possible to identify the data. Reasons for this might be a non-seekable stream or a memory problem. The value is 0.

GPGME_DATA_TYPE_UNKNOWN

The type of the data is not known.

GPGME_DATA_TYPE_PGP_SIGNED

The data is an OpenPGP signed message. This may be a binary signature, a detached one or a cleartext signature.

GPGME_DATA_TYPE_PGP_ENCRYPTED

SINCE: 1.7.0

The data is an OpenPGP encrypted message.

GPGME_DATA_TYPE_PGP_SIGNATURE

SINCE: 1.7.0

The data is an OpenPGP detached signature.

GPGME_DATA_TYPE_PGP_OTHER

This is a generic OpenPGP message. In most cases this will be encrypted data.

GPGME_DATA_TYPE_PGP_KEY

This is an OpenPGP key (private or public).

GPGME_DATA_TYPE_CMS_SIGNED

This is a CMS signed message.

GPGME_DATA_TYPE_CMS_ENCRYPTED

This is a CMS encrypted (enveloped data) message.

GPGME_DATA_TYPE_CMS_OTHER

This is used for other CMS message types.

GPGME_DATA_TYPE_X509_CERT

The data is a X.509 certificate

GPGME_DATA_TYPE_PKCS12

The data is a PKCS#12 message. This is commonly used to exchange

private keys for X.509.

-- Function: `gpgme_data_type_t gpgme_data_identify (gpgme_data_t DH)`
SINCE: 1.4.3

The function `gpgme_data_identify` returns the type of the data with the handle `DH`. If it is not possible to perform the identification, the function returns zero (`GPGME_DATA_TYPE_INVALID`). Note that depending on how the data object has been created the identification may not be possible or the data object may change its internal state (file pointer moved). For file or memory based data object, the state should not change.

File: `gpgme.info`, Node: Contexts, Next: UI Server Protocol, Prev: Exchanging Data, Up: Top

7 Contexts

All cryptographic operations in GPGME are performed within a context, which contains the internal state of the operation as well as configuration parameters. By using several contexts you can run several cryptographic operations in parallel, with different configuration.

-- Data type: `gpgme_ctx_t`

The `gpgme_ctx_t` type is a handle for a GPGME context, which is used to hold the configuration, status and result of cryptographic operations.

* Menu:

- * Creating Contexts:: Creating new GPGME contexts.
- * Destroying Contexts:: Releasing GPGME contexts.
- * Result Management:: Managing the result of crypto operations.
- * Context Attributes:: Setting properties of a context.
- * Key Management:: Managing keys with GPGME.
- * Trust Item Management:: Managing trust items with GPGME.
- * Crypto Operations:: Using a context for cryptography.
- * Miscellaneous:: Miscellaneous operations
- * Run Control:: Controlling how operations are run.

File: `gpgme.info`, Node: Creating Contexts, Next: Destroying Contexts, Up: Contexts

7.1 Creating Contexts

=====

-- Function: `gpgme_error_t gpgme_new (gpgme_ctx_t *CTX)`

The function `gpgme_new` creates a new `gpgme_ctx_t` object and returns a handle for it in CTX.

The function returns the error code `GPG_ERR_NO_ERROR` if the context was successfully created, `GPG_ERR_INV_VALUE` if CTX is not a valid pointer, and `GPG_ERR_ENOMEM` if not enough memory is available. Also, it returns `GPG_ERR_NOT_OPERATIONAL` if `gpgme_check_version` was not called to initialize GPGME, and `GPG_ERR_SELFTEST_FAILED` if a selftest failed. Currently, the only selftest is for Windows MingW32 targets to see if `-mms-bitfields` was used (as required).

File: `gpgme.info`, Node: Destroying Contexts, Next: Result Management, Prev: Creating Contexts, Up: Contexts

7.2 Destroying Contexts

=====

-- Function: `void gpgme_release (gpgme_ctx_t CTX)`

The function `gpgme_release` destroys the context with the handle CTX and releases all associated resources.

File: `gpgme.info`, Node: Result Management, Next: Context Attributes, Prev: Destroying Contexts, Up: Contexts

7.3 Result Management

=====

The detailed result of an operation is returned in operation-specific structures such as `gpgme_decrypt_result_t`. The corresponding retrieval functions such as `gpgme_op_decrypt_result` provide static access to the results after an operation completes. Those structures shall be considered read-only and an application must not allocate such a structure on its own. The following interfaces make it possible to detach a result structure from its associated context and give it a lifetime beyond that of the current operation or context.

-- Function: `void gpgme_result_ref (void *RESULT)`

SINCE: 1.2.0

The function `gpgme_result_ref` acquires an additional reference for the result RESULT, which may be of any type `gpgme_*_result_t`. As long as the user holds a reference, the result structure is guaranteed to be valid and unmodified.

-- Function: `void gpgme_result_unref (void *RESULT)`

SINCE: 1.2.0

The function `gpgme_result_unref` releases a reference for the result `RESULT`. If this was the last reference, the result structure will be destroyed and all resources associated to it will be released.

Note that a context may hold its own references to result structures, typically until the context is destroyed or the next operation is started. In fact, these references are accessed through the `gpgme_op_*_result` functions.

File: `gpgme.info`, Node: Context Attributes, Next: Key Management, Prev: Result Management, Up: Contexts

7.4 Context Attributes

=====

* Menu:

- * Protocol Selection:: Selecting the protocol used by a context.
- * Crypto Engine:: Configuring the crypto engine.
- * Setting the Sender:: How to tell the engine the sender.
- * ASCII Armor:: Requesting ASCII armored output.
- * Text Mode:: Choosing canonical text mode.
- * Offline Mode:: Choosing offline mode.
- * Pinentry Mode:: Choosing the pinentry mode.
- * Included Certificates:: Including a number of certificates.
- * Key Listing Mode:: Selecting key listing mode.
- * Passphrase Callback:: Getting the passphrase from the user.
- * Progress Meter Callback:: Being informed about the progress.
- * Status Message Callback:: Status messages received from `gpg`.
- * Context Flags:: Additional flags for a context.
- * Locale:: Setting the locale of a context.
- * Additional Logs:: Additional logs of a context.

File: `gpgme.info`, Node: Protocol Selection, Next: Crypto Engine, Up: Context Attributes

7.4.1 Protocol Selection

-- Function: `gpgme_error_t gpgme_set_protocol (gpgme_ctx_t CTX, gpgme_protocol_t PROTO)`

The function `gpgme_set_protocol` sets the protocol used within the context `CTX` to `PROTO`. All crypto operations will be performed by the crypto engine configured for that protocol. *Note Protocols and Engines::.

Setting the protocol with `gpgme_set_protocol` does intentionally

not check if the crypto engine for that protocol is available and installed correctly. *Note Engine Version Check::.

The function returns the error code GPG_ERR_NO_ERROR if the protocol could be set successfully, and GPG_ERR_INV_VALUE if PROTOCOL is not a valid protocol.

-- Function: gpgme_protocol_t gpgme_get_protocol (gpgme_ctx_t CTX)
The function gpgme_get_protocol retrieves the protocol currently use with the context CTX.

File: gpgme.info, Node: Crypto Engine, Next: Setting the Sender, Prev: Protocol Selection, Up: Context Attributes

7.4.2 Crypto Engine

The following functions can be used to set and retrieve the configuration of the crypto engines of a specific context. The default can also be retrieved without any particular context. *Note Engine Information::. The default can also be changed globally. *Note Engine Configuration::.

-- Function: gpgme_engine_info_t gpgme_ctx_get_engine_info
(gpgme_ctx_t CTX)
SINCE: 1.1.0

The function gpgme_ctx_get_engine_info returns a linked list of engine info structures. Each info structure describes the configuration of one configured backend, as used by the context CTX.

The result is valid until the next invocation of gpgme_ctx_set_engine_info for this particular context.

This function can not fail.

-- Function: gpgme_error_t gpgme_ctx_set_engine_info (gpgme_ctx_t CTX,
gpgme_protocol_t PROTO, const char *FILE_NAME,
const char *HOME_DIR)
SINCE: 1.1.0

The function gpgme_ctx_set_engine_info changes the configuration of the crypto engine implementing the protocol PROTO for the context CTX.

FILE_NAME is the file name of the executable program implementing

this protocol, and HOME_DIR is the directory name of the configuration directory for this crypto engine. If HOME_DIR is NULL, the engines default will be used.

Currently this function must be used before starting the first crypto operation. It is unspecified if and when the changes will take effect if the function is called after starting the first operation on the context CTX.

This function returns the error code GPG_ERR_NO_ERROR if successful, or an error code on failure.

File: gpgme.info, Node: Setting the Sender, Next: ASCII Armor, Prev: Crypto Engine, Up: Context Attributes

7.4.3 How to tell the engine the sender.

Some engines can make use of the senders address, for example to figure out the best user id in certain trust models. For verification and signing of mails, it is thus suggested to let the engine know the sender ("From:") address. GPGME provides two functions to accomplish that. Note that the esoteric use of multiple "From:" addresses is not supported.

-- Function: gpgme_error_t gpgme_set_sender (gpgme_ctx_t CTX,
int ADDRESS)

SINCE: 1.8.0

The function gpgme_set_sender specifies the sender address for use in sign and verify operations. ADDRESS is expected to be the addr-spec part of an address but may also be a complete mailbox address, in which case this function extracts the addr-spec from it. Using NULL for ADDRESS clears the sender address.

The function returns 0 on success or an error code on failure. The most likely failure is that no valid addr-spec was found in ADDRESS.

-- Function: const char * gpgme_get_sender (gpgme_ctx_t CTX)

SINCE: 1.8.0

The function gpgme_get_sender returns the current sender address from the context, or NULL if none was set. The returned value is valid as long as the CTX is valid and gpgme_set_sender has not been called again.

File: gpgme.info, Node: ASCII Armor, Next: Text Mode, Prev: Setting the Sender, Up: Context Attributes

7.4.4 ASCII Armor

-- Function: void gpgme_set_armor (gpgme_ctx_t CTX, int YES)
The function gpgme_set_armor specifies if the output should be ASCII armored. By default, output is not ASCII armored.

ASCII armored output is disabled if YES is zero, and enabled otherwise.

-- Function: int gpgme_get_armor (gpgme_ctx_t CTX)
The function gpgme_get_armor returns 1 if the output is ASCII armored, and 0 if it is not, or if CTX is not a valid pointer.

File: gpgme.info, Node: Text Mode, Next: Offline Mode, Prev: ASCII Armor, Up: Context Attributes

7.4.5 Text Mode

-- Function: void gpgme_set_textmode (gpgme_ctx_t CTX, int YES)
The function gpgme_set_textmode specifies if canonical text mode should be used. By default, text mode is not used.

Text mode is for example used for the RFC2015 signatures; note that the updated RFC 3156 mandates that the mail user agent does some preparations so that text mode is not needed anymore.

This option is only relevant to the OpenPGP crypto engine, and ignored by all other engines.

Canonical text mode is disabled if YES is zero, and enabled otherwise.

-- Function: int gpgme_get_textmode (gpgme_ctx_t CTX)
The function gpgme_get_textmode returns 1 if canonical text mode is enabled, and 0 if it is not, or if CTX is not a valid pointer.

File: gpgme.info, Node: Offline Mode, Next: Pinentry Mode, Prev: Text Mode, Up: Context Attributes

7.4.6 Offline Mode

-- Function: void gpgme_set_offline (gpgme_ctx_t CTX, int YES)
SINCE: 1.6.0

The function gpgme_set_offline specifies if offline mode should be used. Offline mode is disabled if YES is zero, and enabled otherwise. By default, offline mode is disabled.

The details of the offline mode depend on the used protocol and its backend engine. It may eventually be extended to be more stricter and for example completely disable the use of Dirmngr for any engine.

For the CMS protocol the offline mode specifies whether Dirmngr shall be used to do additional validation that might require connecting external services (e.g. CRL / OCSP checks). Here the offline mode only affects the keylist mode GPGME_KEYLIST_MODE_VALIDATE.

For the OpenPGP protocol offline mode entirely disables the use of the Dirmngr and will thus guarantee that no network connections are done as part of an operation on this context. It has only an effect with GnuPG versions 2.1.23 or later.

For all other protocols the offline mode is currently ignored.

-- Function: int gpgme_get_offline (gpgme_ctx_t CTX)
SINCE: 1.6.0

The function gpgme_get_offline returns 1 if offline mode is enabled, and 0 if it is not, or if CTX is not a valid pointer.

File: gpgme.info, Node: Pinentry Mode, Next: Included Certificates, Prev: Offline Mode, Up: Context Attributes

7.4.7 Pinentry Mode

-- Function: gpgme_error_t gpgme_set_pinentry_mode (gpgme_ctx_t CTX,
gpgme_pinentry_mode_t MODE)

SINCE: 1.4.0

The function gpgme_set_pinentry_mode specifies the pinentry mode to be used.

For GnuPG >= 2.1 this option is required to be set to GPGME_PINENTRY_MODE_LOOPBACK to enable the passphrase callback mechanism in GPGME through gpgme_set_passphrase_cb.

-- Function: `gpgme_pinentry_mode_t gpgme_get_pinentry_mode`
(`gpgme_ctx_t` CTX)
SINCE: 1.4.0

The function `gpgme_get_pinentry_mode` returns the mode set for the context.

-- Data type: `enum gpgme_pinentry_mode_t`
SINCE: 1.4.0

The `gpgme_pinentry_mode_t` type specifies the set of possible pinentry modes that are supported by GPGME if GnuPG ≥ 2.1 is used. The following modes are supported:

`GPGME_PINENTRY_MODE_DEFAULT`
SINCE: 1.4.0

Use the default of the agent, which is `ask`.

`GPGME_PINENTRY_MODE_ASK`
SINCE: 1.4.0

Force the use of the Pinentry.

`GPGME_PINENTRY_MODE_CANCEL`
SINCE: 1.4.0

Emulate use of Pinentry's cancel button.

`GPGME_PINENTRY_MODE_ERROR`
SINCE: 1.4.0

Return a Pinentry error `No Pinentry`.

`GPGME_PINENTRY_MODE_LOOPBACK`
SINCE: 1.4.0

Redirect Pinentry queries to the caller. This enables the use of `gpgme_set_passphrase_cb` because pinentry queries are redirected to `gpgme`.

Note: For 2.1.0 - 2.1.12 this mode requires `allow-loopback-pinentry` to be enabled in the `gpg-agent.conf` or an agent started with that option.

File: `gpgme.info`, Node: Included Certificates, Next: Key Listing Mode, Prev: Pinentry Mode, Up: Context

Attributes

7.4.8 Included Certificates

-- Function: void gpgme_set_include_certs (gpgme_ctx_t CTX,
int NR_OF_CERTS)

The function gpgme_set_include_certs specifies how many certificates should be included in an S/MIME signed message. By default, only the senders certificate is included. The possible values of NR_OF_CERTS are:

GPGME_INCLUDE_CERTS_DEFAULT

SINCE: 1.0.3

Fall back to the default of the crypto backend. This is the default for GPGME.

-2

Include all certificates except the root certificate.

-1

Include all certificates.

0

Include no certificates.

1

Include the senders certificate only.

n

Include the first n certificates of the certificates path, starting from the senders certificate. The number n must be positive.

Values of NR_OF_CERTS smaller than -2 are undefined.

This option is only relevant to the CMS crypto engine, and ignored by all other engines.

-- Function: int gpgme_get_include_certs (gpgme_ctx_t CTX)

The function gpgme_get_include_certs returns the number of certificates to include into an S/MIME signed message.

File: gpgme.info, Node: Key Listing Mode, Next: Passphrase Callback, Prev: Included Certificates, Up: Context Attributes

7.4.9 Key Listing Mode

-- Function: gpgme_error_t gpgme_set_keylist_mode (gpgme_ctx_t CTX,
gpgme_keylist_mode_t MODE)

The function `gpgme_set_keylist_mode` changes the default behaviour of the key listing functions. The value in `MODE` is a bitwise-or combination of one or multiple of the following bit values:

`GPGME_KEYLIST_MODE_LOCAL`

The `GPGME_KEYLIST_MODE_LOCAL` symbol specifies that the local keyring should be searched for keys in the keylisting operation. This is the default.

Using only this option results in a `--list-keys`.

`GPGME_KEYLIST_MODE_EXTERN`

The `GPGME_KEYLIST_MODE_EXTERN` symbol specifies that an external source should be searched for keys in the keylisting operation. The type of external source is dependent on the crypto engine used and whether it is combined with `GPGME_KEYLIST_MODE_LOCAL`. For example, it can be a remote keyserver or LDAP certificate server.

Using only this option results in a `--search-keys` for `GPGME_PROTOCOL_OpenPGP` and something similar to `--list-external-keys` for `GPGME_PROTOCOL_CMS`.

`GPGME_KEYLIST_MODE_LOCATE`

This is a shortcut for the combination of `GPGME_KEYLIST_MODE_LOCAL` and `GPGME_KEYLIST_MODE_EXTERN`, which results in a `--locate-keys` for `GPGME_PROTOCOL_OpenPGP`.

`GPGME_KEYLIST_MODE_SIGS`

The `GPGME_KEYLIST_MODE_SIGS` symbol specifies that the key signatures should be included in the listed keys.

`GPGME_KEYLIST_MODE_SIG_NOTATIONS`

SINCE: 1.1.1

The `GPGME_KEYLIST_MODE_SIG_NOTATIONS` symbol specifies that the signature notations on key signatures should be included in the listed keys. This only works if `GPGME_KEYLIST_MODE_SIGS` is also enabled.

`GPGME_KEYLIST_MODE_WITH_TOFU`

SINCE: 1.7.0

The `GPGME_KEYLIST_MODE_WITH_TOFU` symbol specifies that information pertaining to the TOFU trust model should be included in the listed keys.

GPGME_KEYLIST_MODE_WITH_SECRET

SINCE: 1.5.1

The `GPGME_KEYLIST_MODE_WITH_SECRET` returns information about the presence of a corresponding secret key in a public key listing. A public key listing with this mode is slower than a standard listing but can be used instead of a second run to list the secret keys. This is only supported for GnuPG versions ≥ 2.1 .

GPGME_KEYLIST_MODE_EPHEMERAL

SINCE: 1.2.0

The `GPGME_KEYLIST_MODE_EPHEMERAL` symbol specifies that keys flagged as ephemeral are included in the listing.

GPGME_KEYLIST_MODE_VALIDATE

SINCE: 0.4.5

The `GPGME_KEYLIST_MODE_VALIDATE` symbol specifies that the backend should do key or certificate validation and not just get the validity information from an internal cache. This might be an expensive operation and is in general not useful. Currently only implemented for the S/MIME backend and ignored for other backends.

At least one of `GPGME_KEYLIST_MODE_LOCAL` and `GPGME_KEYLIST_MODE_EXTERN` must be specified. For future binary compatibility, you should get the current mode with `gpgme_get_keylist_mode` and modify it by setting or clearing the appropriate bits, and then using that calculated value in the `gpgme_set_keylisting_mode` operation. This will leave all other bits in the mode value intact (in particular those that are not used in the current version of the library).

The function returns the error code `GPG_ERR_NO_ERROR` if the mode could be set correctly, and `GPG_ERR_INV_VALUE` if `CTX` is not a valid pointer or `MODE` is not a valid mode.

-- Function: `gpgme_keylist_mode_t gpgme_get_keylist_mode`
(`gpgme_ctx_t CTX`)

The function `gpgme_get_keylist_mode` returns the current key listing mode of the context `CTX`. This value can then be modified and used in a subsequent `gpgme_set_keylist_mode` operation to only affect the desired bits (and leave all others intact).

The function returns 0 if `CTX` is not a valid pointer, and the current mode otherwise. Note that 0 is not a valid mode value.

7.4.10 Passphrase Callback

-- Data type: `gpgme_error_t (*gpgme_passphrase_cb_t)(void *HOOK, const char *UID_HINT, const char *PASSPHRASE_INFO, int PREV_WAS_BAD, int FD)`

The `gpgme_passphrase_cb_t` type is the type of functions usable as passphrase callback function.

The argument `UID_HINT` might contain a string that gives an indication for which user ID the passphrase is required. If this is not available, or not applicable (in the case of symmetric encryption, for example), `UID_HINT` will be `NULL`.

The argument `PASSPHRASE_INFO`, if not `NULL`, will give further information about the context in which the passphrase is required. This information is engine and operation specific.

If this is the repeated attempt to get the passphrase, because previous attempts failed, then `PREV_WAS_BAD` is 1, otherwise it will be 0.

The user must write the passphrase, followed by a newline character, to the file descriptor `FD`. The function `gpgme_io_writen` should be used for the write operation. Note that if the user returns 0 to indicate success, the user must at least write a newline character before returning from the callback.

If an error occurs, return the corresponding `gpgme_error_t` value. You can use the error code `GPG_ERR_CANCELED` to abort the operation. Otherwise, return 0.

Note: The `passphrase_cb` only works with GnuPG 1.x and 2.1.x and not with the 2.0.x series. See `gpgme_set_pinentry_mode` for more details on 2.1.x usage.

-- Function: `void gpgme_set_passphrase_cb (gpgme_ctx_t CTX, gpgme_passphrase_cb_t PASSFUNC, void *HOOK_VALUE)`

The function `gpgme_set_passphrase_cb` sets the function that is used when a passphrase needs to be provided by the user to `PASSFUNC`. The function `PASSFUNC` needs to be implemented by the user, and whenever it is called, it is called with its first argument being `HOOK_VALUE`. By default, no passphrase callback function is

set.

Not all crypto engines require this callback to retrieve the passphrase. It is better if the engine retrieves the passphrase from a trusted agent (a daemon process), rather than having each user to implement their own passphrase query. Some engines do not even support an external passphrase callback at all, in this case the error code `GPG_ERR_NOT_SUPPORTED` is returned.

For GnuPG ≥ 2.1 the `pinentry` mode has to be set to `GPGME_PINENTRY_MODE_LOOPBACK` to enable the passphrase callback. See `gpgme_set_pinentry_mode`.

The user can disable the use of a passphrase callback function by calling `gpgme_set_passphrase_cb` with `PASSFUNC` being `NULL`.

```
-- Function: void gpgme_get_passphrase_cb (gpgme_ctx_t CTX,  
      gpgme_passphrase_cb_t *PASSFUNC, void **HOOK_VALUE)
```

The function `gpgme_get_passphrase_cb` returns the function that is used when a passphrase needs to be provided by the user in `*PASSFUNC`, and the first argument for this function in `*HOOK_VALUE`. If no passphrase callback is set, or `CTX` is not a valid pointer, `NULL` is returned in both variables.

`PASSFUNC` or `HOOK_VALUE` can be `NULL`. In this case, the corresponding value will not be returned.

File: `gpgme.info`, Node: Progress Meter Callback, Next: Status Message Callback, Prev: Passphrase Callback, Up: Context Attributes

7.4.11 Progress Meter Callback

```
-- Data type: void (*gpgme_progress_cb_t)(void *HOOK, const char *WHAT,  
      int TYPE, int CURRENT, int TOTAL)
```

The `gpgme_progress_cb_t` type is the type of functions usable as progress callback function.

The arguments are specific to the crypto engine. More information about the progress information returned from the GnuPG engine can be found in the GnuPG source code in the file `doc/DETAILS` in the section `PROGRESS`.

```
-- Function: void gpgme_set_progress_cb (gpgme_ctx_t CTX,  
      gpgme_progress_cb_t PROGFUNC, void **HOOK_VALUE)
```

The function `gpgme_set_progress_cb` sets the function that is used when progress information about a cryptographic operation is

available. The function `PROG_FUNC` needs to be implemented by the user, and whenever it is called, it is called with its first argument being `HOOK_VALUE`. By default, no progress callback function is set.

Setting a callback function allows an interactive program to display progress information about a long operation to the user.

The user can disable the use of a progress callback function by calling `gpgme_set_progress_cb` with `PROG_FUNC` being `NULL`.

-- Function: `void gpgme_get_progress_cb (gpgme_ctx_t CTX, gpgme_progress_cb_t *PROG_FUNC, void **HOOK_VALUE)`
The function `gpgme_get_progress_cb` returns the function that is used to inform the user about the progress made in `*PROG_FUNC`, and the first argument for this function in `*HOOK_VALUE`. If no progress callback is set, or `CTX` is not a valid pointer, `NULL` is returned in both variables.

`PROG_FUNC` or `HOOK_VALUE` can be `NULL`. In this case, the corresponding value will not be returned.

File: `gpgme.info`, Node: Status Message Callback, Next: Context Flags, Prev: Progress Meter Callback, Up: Context Attributes

7.4.12 Status Message Callback

-- Data type: `gpgme_error_t (*gpgme_status_cb_t)(void *HOOK, const char *KEYWORD, const char *ARGS)`

The `gpgme_status_cb_t` type is the type of function usable as a status message callback function.

The argument `KEYWORD` is the name of the status message while the `ARGS` argument contains any arguments for the status message.

If an error occurs, return the corresponding `gpgme_error_t` value. Otherwise, return 0.

-- Function: `void gpgme_set_status_cb (gpgme_ctx_t CTX, gpgme_status_cb_t STATUSFUNC, void *HOOK_VALUE)`
SINCE: 1.6.0

The function `gpgme_set_status_cb` sets the function that is used when a status message is received from `gpg` to `STATUSFUNC`. The function `STATUSFUNC` needs to be implemented by the user, and whenever it is called, it is called with its first argument being

HOOK_VALUE. By default, no status message callback function is set.

The user can disable the use of a status message callback function by calling `gpgme_set_status_cb` with `STATUSFUNC` being `NULL`.

```
-- Function: void gpgme_get_status_cb (gpgme_ctx_t CTX,  
    gpgme_status_cb_t *STATUSFUNC, void **HOOK_VALUE)  
SINCE: 1.6.0
```

The function `gpgme_get_status_cb` returns the function that is used to process status messages from `gpg` in `*STATUSFUNC`, and the first argument for this function in `*HOOK_VALUE`. If no status message callback is set, or `CTX` is not a valid pointer, `NULL` is returned in both variables.

File: `gpgme.info`, Node: Context Flags, Next: Locale, Prev: Status Message Callback, Up: Context Attributes

7.4.13 Context Flags

```
-- Function: gpgme_error_t gpgme_set_ctx_flag (gpgme_ctx_t CTX,  
    const char *NAME, const char *VALUE)
```

SINCE: 1.7.0

Some minor properties of the context can be controlled with flags set by this function. The properties are identified by the following values for `NAME`:

"redraw"

This flag is normally not changed by the caller because `GPGME` sets and clears it automatically: The flag is cleared before an operation and set if an operation noticed that the engine has launched a `Pinentry`. A `Curses` based application may use this information to redraw the screen; for example:

```
err = gpgme_op_keylist_start (ctx, "foo@example.org", 0);  
while (!err)  
{  
    err = gpgme_op_keylist_next (ctx, &key);  
    if (err)  
        break;  
    show_key (key);  
    gpgme_key_release (key);  
}  
if ((s = gpgme_get_ctx_flag (ctx, "redraw")) && *s)
```

```
redraw_screen ();  
gpgme_release (ctx);
```

"full-status"

Using a VALUE of "1" the status callback set by `gpgme_set_status_cb` returns all status lines with the exception of PROGRESS lines. With the default of "0" the status callback is only called in certain situations.

"raw-description"

Setting the VALUE to "1" returns human readable strings in a raw format. For example the non breaking space characters ("~") will not be removed from the description field of the `gpgme_tofu_info_t` object.

"export-session-key"

Using a VALUE of "1" specifies that the context should try to export the symmetric session key when decrypting data. By default, or when using an empty string or "0" for VALUE, session keys are not exported.

"override-session-key"

The string given in VALUE is passed to the GnuPG engine to override the session key for decryption. The format of that session key is specific to GnuPG and can be retrieved during a decrypt operation when the context flag "export-session-key" is enabled. Please be aware that using this feature with GnuPG < 2.1.16 will leak the session key on many platforms via `ps(1)`.

"auto-key-retrieve"

Setting the VALUE to "1" asks the backend to automatically retrieve a key for signature verification if possible. Note that this option makes a "web bug" like behavior possible. Keyserver or Web Key Directory operators can see which keys you request, so by sending you a message signed by a brand new key (which you naturally will not have on your local keyring), the operator can tell both your IP address and the time when you verified the signature.

"request-origin"

The string given in VALUE is passed to the GnuPG engines to request restrictions based on the origin of the request. Valid values are documented in the GnuPG manual and the `gpg` man page under the option `--request-origin`. Requires at least GnuPG 2.2.6 to have an effect.

"no-symkey-cache"

For OpenPGP disable the passphrase cache used for symmetrical en- and decryption. This cache is based on the message specific salt value. Requires at least GnuPG 2.2.7 to have an effect.

"ignore-mdc-error"

This flag passes the option `--ignore-mdc-error` to `gpg`. This can be used to force decryption of a message which failed due to a missing integrity check. This flag must be used with great caution and only if it is a known non-corrupted old message and the decryption result of the former try had the decryption result flag `legacy_cipher_nomdc` set. For failsafe reasons this flag is reset after each operation.

"auto-key-locate"

The string given in `VALUE` is passed to `gpg`. This can be used to change the behavior of a `GPGME_KEYLIST_MODE_LOCATE` keylisting. Valid values are documented in the GnuPG manual and the `gpg` man page under the option `--auto-key-locate`. Requires at least GnuPG 2.1.18.

Note: Keys retrieved through `auto-key-locate` are automatically imported in the keyring.

`trust-model`

SINCE: 1.11.2

Change the `trust-model` for all GnuPG engine operations. An empty string sets the `trust-model` back to the users default. If the `trust-model` is not supported by GnuPG the behavior is undefined and will likely cause all operations to fail. Example: `"tofu+pgp"`.

This options should be used carefully with a strict version requirement. In some versions of GnuPG setting the `trust-model` changes the default `trust-model` for future operations. A change in the `trust-model` also can have unintended side effects, like rebuilding the `trust-db`.

This function returns 0 on success.

```
-- Function: const char * gpgme_get_ctx_flag (gpgme_ctx_t CTX,  
const char *NAME)
```

SINCE: 1.8.0

The value of flags settable by `gpgme_set_ctx_flag` can be retrieved by this function. If `NAME` is unknown the function

returns NULL. For boolean flags an empty string is returned for False and the string "1" is returned for True; either atoi(3) or a test for an empty string can be used to get the boolean value.

File: gpgme.info, Node: Locale, Next: Additional Logs, Prev: Context Flags, Up: Context Attributes

7.4.14 Locale

A locale setting can be associated with a context. This locale is passed to the crypto engine, and used for applications like the PIN entry, which is displayed to the user when entering a passphrase is required.

The default locale is used to initialize the locale setting of all contexts created afterwards.

```
-- Function: gpgme_error_t gpgme_set_locale (gpgme_ctx_t CTX,  
      int CATEGORY, const char *VALUE)  
SINCE: 0.4.3
```

The function `gpgme_set_locale` sets the locale of the context `CTX`, or the default locale if `CTX` is a null pointer.

The locale settings that should be changed are specified by `CATEGORY`. Supported categories are `LC_CTYPE`, `LC_MESSAGES`, and `LC_ALL`, which is a wildcard you can use if you want to change all the categories at once.

The value to be used for the locale setting is `VALUE`, which will be copied to GPGMEs internal data structures. `VALUE` can be a null pointer, which disables setting the locale, and will make PIN entry and other applications use their default setting, which is usually not what you want.

Note that the settings are only used if the application runs on a text terminal, and that the settings should fit the configuration of the output terminal. Normally, it is sufficient to initialize the default value at startup.

The function returns an error if not enough memory is available.

File: gpgme.info, Node: Additional Logs, Prev: Locale, Up: Context Attributes

7.4.15 Additional Logs

Additional logs can be associated with a context. These logs are engine specific and can be obtained with `gpgme_op_getauditlog`.

-- Function: `gpgme_error_t gpgme_op_getauditlog (gpgme_ctx_t CTX, gpgme_data_t OUTPUT, unsigned int FLAGS)`

SINCE: 1.1.1

The function `gpgme_op_getauditlog` is used to obtain additional logs as specified by `FLAGS` into the `OUTPUT` data. If

The function returns the error code `GPG_ERR_NO_ERROR` if a log could be queried from the engine, and `GPG_ERR_NOT_IMPLEMENTED` if the log specified in `FLAGS` is not available for this engine. If no log is available `GPG_ERR_NO_DATA` is returned.

The value in `FLAGS` is a bitwise-or combination of one or multiple of the following bit values:

`GPGME_AUDITLOG_DIAG`

SINCE: 1.11.2

Obtain diagnostic output which would be written to `stderr` in interactive use of the engine. This can be used to provide additional diagnostic information in case of errors in other operations.

Note: If log-file has been set in the configuration the log will be empty and `GPG_ERR_NO_DATA` will be returned.

Implemented for: `GPGME_PROTOCOL_OpenPGP`

`GPGME_AUDITLOG_DEFAULT`

SINCE: 1.11.2

This flag has the value 0 for compatibility reasons. Obtains additional information from the engine by issuing the `GETAUDITLOG` command. For `GPGME_PROTOCOL_CMS` this provides additional information about the X509 certificate chain.

Implemented for: `GPGME_PROTOCOL_CMS`

`GPGME_AUDITLOG_HTML`

SINCE: 1.1.1

Same as `GPGME_AUDITLOG_DEFAULT` but in HTML.

Implemented for: `GPGME_PROTOCOL_CMS`

-- Function: `gpgme_error_t gpgme_op_getauditlog_start (gpgme_ctx_t CTX,
gpgme_data_t OUTPUT, unsigned int FLAGS)`
SINCE: 1.1.1

This is the asynchronous variant of `gpgme_op_getauditlog`.

File: `gpgme.info`, Node: Key Management, Next: Trust Item Management, Prev: Context Attributes, Up: Contexts

7.5 Key Management

=====

Some of the cryptographic operations require that recipients or signers are specified. This is always done by specifying the respective keys that should be used for the operation. The following section describes how such keys can be selected and manipulated.

* Menu:

- * Key objects:: Description of the key structures.
- * Listing Keys:: Browsing the list of available keys.
- * Information About Keys:: Requesting detailed information about keys.
- * Manipulating Keys:: Operations on keys.
- * Generating Keys:: Creating new key pairs.
- * Signing Keys:: Adding key signatures to public keys.
- * Exporting Keys:: Retrieving key data from the key ring.
- * Importing Keys:: Adding keys to the key ring.
- * Deleting Keys:: Removing keys from the key ring.
- * Changing Passphrases:: Change the passphrase of a key.
- * Changing TOFU Data:: Changing data pertaining to TOFU.
- * Advanced Key Editing:: Advanced key edit operation.

File: `gpgme.info`, Node: Key objects, Next: Listing Keys, Up: Key Management

7.5.1 Key objects

The keys are represented in GPGME by structures which may only be read by the application but never be allocated or changed. They are valid as long as the key object itself is valid.

-- Data type: `gpgme_key_t`

The `gpgme_key_t` type is a pointer to a key object. It has the following members:

gpgme_keylist_mode_t keylist_mode

SINCE: 0.9.0

The keylist mode that was active when the key was retrieved.

unsigned int revoked : 1

This is true if the key is revoked.

unsigned int expired : 1

This is true if the key is expired.

unsigned int disabled : 1

This is true if the key is disabled.

unsigned int invalid : 1

This is true if the key is invalid. This might have several reasons, for a example for the S/MIME backend, it will be set during key listings if the key could not be validated due to missing certificates or unmatched policies.

unsigned int can_encrypt : 1

This is true if the key (ie one of its subkeys) can be used for encryption.

unsigned int can_sign : 1

This is true if the key (ie one of its subkeys) can be used to create data signatures.

unsigned int can_certify : 1

This is true if the key (ie one of its subkeys) can be used to create key certificates.

unsigned int can_authenticate : 1

SINCE: 0.4.5

This is true if the key (ie one of its subkeys) can be used for authentication.

unsigned int is_qualified : 1

SINCE: 1.1.0

This is true if the key can be used for qualified signatures according to local government regulations.

unsigned int secret : 1

This is true if the key is a secret key. Note, that this will always be true even if the corresponding subkey flag may be false (offline/stub keys). This is only set if a listing of

secret keys has been requested or if
GPGME_KEYLIST_MODE_WITH_SECRET is active.

unsigned int origin : 5
SINCE: 1.8.0

Reserved for the origin of this key.

gpgme_protocol_t protocol
This is the protocol supported by this key.

char *issuer_serial
If protocol is GPGME_PROTOCOL_CMS, then this is the issuer
serial.

char *issuer_name
If protocol is GPGME_PROTOCOL_CMS, then this is the issuer
name.

char *chain_id
If protocol is GPGME_PROTOCOL_CMS, then this is the chain
ID, which can be used to built the certificate chain.

gpgme_validity_t owner_trust
If protocol is GPGME_PROTOCOL_OpenPGP, then this is the
owner trust.

gpgme_subkey_t subkeys
This is a linked list with the subkeys of the key. The first
subkey in the list is the primary key and usually available.

gpgme_user_id_t uids
This is a linked list with the user IDs of the key. The first
user ID in the list is the main (or primary) user ID.

char *fpr
SINCE: 1.7.0

This field gives the fingerprint of the primary key. Note
that this is a copy of the fingerprint of the first subkey.
For an incomplete key (for example from a verification result)
a subkey may be missing but this field may be set
nevertheless.

unsigned long last_update
SINCE: 1.8.0

Reserved for the time of the last update of this key.

-- Data type: gpgme_subkey_t
SINCE: 1.5.0

The gpgme_subkey_t type is a pointer to a subkey structure. Subkeys are one component of a gpgme_key_t object. In fact, subkeys are those parts that contains the real information about the individual cryptographic keys that belong to the same key object. One gpgme_key_t can contain several subkeys. The first subkey in the linked list is also called the primary key.

The subkey structure has the following members:

gpgme_subkey_t next

This is a pointer to the next subkey structure in the linked list, or NULL if this is the last element.

unsigned int revoked : 1

This is true if the subkey is revoked.

unsigned int expired : 1

This is true if the subkey is expired.

unsigned int disabled : 1

This is true if the subkey is disabled.

unsigned int invalid : 1

This is true if the subkey is invalid.

unsigned int can_encrypt : 1

This is true if the subkey can be used for encryption.

unsigned int can_sign : 1

This is true if the subkey can be used to create data signatures.

unsigned int can_certify : 1

This is true if the subkey can be used to create key certificates.

unsigned int can_authenticate : 1

SINCE: 0.4.5

This is true if the subkey can be used for authentication.

unsigned int is_qualified : 1

SINCE: 1.1.0

This is true if the subkey can be used for qualified signatures according to local government regulations.

unsigned int is_de_vs : 1
SINCE: 1.8.0

This is true if the subkey complies with the rules for classified information in Germany at the restricted level (VS-NfD). This are currently RSA keys of at least 2048 bits or ECDH/ECDSA keys using a Brainpool curve.

unsigned int secret : 1

This is true if the subkey is a secret key. Note that it will be false if the key is actually a stub key; i.e. a secret key operation is currently not possible (offline-key). This is only set if a listing of secret keys has been requested or if GPGME_KEYLIST_MODE_WITH_SECRET is active.

gpgme_pubkey_algo_t pubkey_algo

This is the public key algorithm supported by this subkey.

unsigned int length

This is the length of the subkey (in bits).

char *keyid

This is the key ID of the subkey in hexadecimal digits.

char *fpr

This is the fingerprint of the subkey in hexadecimal digits, if available.

char *keygrip

SINCE: 1.7.0

The keygrip of the subkey in hex digit form or NULL if not available.

long int timestamp

This is the creation timestamp of the subkey. This is -1 if the timestamp is invalid, and 0 if it is not available.

long int expires

This is the expiration timestamp of the subkey, or 0 if the subkey does not expire.

unsigned int is_cardkey : 1

SINCE: 1.2.0

True if the secret key is stored on a smart card.

char *card_number
SINCE: 1.2.0

The serial number of a smart card holding this key or NULL.

char *curve
For ECC algorithms the name of the curve.

-- Data type: gpgme_user_id_t

A user ID is a component of a gpgme_key_t object. One key can have many user IDs. The first one in the list is the main (or primary) user ID.

The user ID structure has the following members.

gpgme_user_id_t next
This is a pointer to the next user ID structure in the linked list, or NULL if this is the last element.

unsigned int revoked : 1
This is true if the user ID is revoked.

unsigned int invalid : 1
This is true if the user ID is invalid.

gpgme_validity_t validity
This specifies the validity of the user ID.

char *uid
This is the user ID string.

char *name
This is the name component of uid, if available.

char *comment
This is the comment component of uid, if available.

char *email
This is the email component of uid, if available.

char *address;
The mail address (addr-spec from RFC-5322) of the user ID string. This is general the same as the email part of this structure but might be slightly different. If no mail address is available NULL is stored.

gpgme_tofu_info_t tofu

SINCE: 1.7.0

If not NULL information from the TOFU database pertaining to this user id.

gpgme_key_sig_t signatures

This is a linked list with the signatures on this user ID.

unsigned int origin : 5

SINCE: 1.8.0

Reserved for the origin of this user ID.

unsigned long last_update

SINCE: 1.8.0

Reserved for the time of the last update of this user ID.

-- Data type: gpgme_tofu_info_t

SINCE: 1.7.0

The gpgme_tofu_info_t type is a pointer to a tofu info structure. Tofu info structures are one component of a gpgme_user_id_t object, and provide information from the TOFU database pertaining to the user ID.

The tofu info structure has the following members:

gpgme_key_sig_t next

This is a pointer to the next tofu info structure in the linked list, or NULL if this is the last element.

unsigned int validity : 3

This is the TOFU validity. It can have the following values:

0

The value 0 indicates a conflict.

1

The value 1 indicates a key without history.

2

The value 2 indicates a key with too little history.

3

The value 3 indicates a key with enough history for basic trust.

4

The value 4 indicates a key with a lot of history.

unsigned int policy : 4

This is the TOFU policy, see `gpgme_tofu_policy_t`.

unsigned short signcount

This is the number of signatures seen for this binding (or `USHRT_MAX` if there are more than that).

unsigned short encrcount

This is the number of encryptions done with this binding (or `USHRT_MAX` if there are more than that).

unsigned long signfirst

Number of seconds since Epoch when the first signature was seen with this binding.

unsigned long signlast

Number of seconds since Epoch when the last signature was seen with this binding.

unsigned long encrfirst

Number of seconds since Epoch when the first encryption was done with this binding.

unsigned long enclast

Number of seconds since Epoch when the last encryption was done with this binding.

char *description

A human-readable string summarizing the TOFU data (or NULL).

-- Data type: `gpgme_key_sig_t`

The `gpgme_key_sig_t` type is a pointer to a key signature structure. Key signatures are one component of a `gpgme_key_t` object, and validate user IDs on the key in the OpenPGP protocol.

The signatures on a key are only available if the key was retrieved via a listing operation with the `GPGME_KEYLIST_MODE_SIGS` mode enabled, because it can be expensive to retrieve all signatures of a key.

The signature notations on a key signature are only available if

the key was retrieved via a listing operation with the GPGME_KEYLIST_MODE_SIG_NOTATIONS mode enabled, because it can be expensive to retrieve all signature notations.

The key signature structure has the following members:

`gpgme_key_sig_t next`

This is a pointer to the next key signature structure in the linked list, or NULL if this is the last element.

`unsigned int revoked : 1`

This is true if the key signature is a revocation signature.

`unsigned int expired : 1`

This is true if the key signature is expired.

`unsigned int invalid : 1`

This is true if the key signature is invalid.

`unsigned int exportable : 1`

This is true if the key signature is exportable.

`gpgme_pubkey_algo_t pubkey_algo`

This is the public key algorithm used to create the signature.

`char *keyid`

This is the key ID of the key (in hexadecimal digits) used to create the signature.

`long int timestamp`

This is the creation timestamp of the key signature. This is -1 if the timestamp is invalid, and 0 if it is not available.

`long int expires`

This is the expiration timestamp of the key signature, or 0 if the key signature does not expire.

`gpgme_error_t status`

This is the status of the signature and has the same meaning as the member of the same name in a `gpgme_signature_t` object.

`unsigned int sig_class`

This specifies the signature class of the key signature. The meaning is specific to the crypto engine.

`char *uid`

This is the main user ID of the key used to create the

signature.

char *name

This is the name component of uid, if available.

char *comment

This is the comment component of uid, if available.

char *email

This is the email component of uid, if available.

gpgme_sig_notation_t notations

This is a linked list with the notation data and policy URLs.

File: gpgme.info, Node: Listing Keys, Next: Information About Keys, Prev: Key objects, Up: Key Management

7.5.2 Listing Keys

-- Function: gpgme_error_t gpgme_op_keylist_start (gpgme_ctx_t CTX,
const char *PATTERN, int SECRET_ONLY)

The function gpgme_op_keylist_start initiates a key listing operation inside the context CTX. It sets everything up so that subsequent invocations of gpgme_op_keylist_next return the keys in the list.

If PATTERN is NULL, all available keys are returned. Otherwise, PATTERN contains an engine specific expression that is used to limit the list to all keys matching the pattern. Note that the total length of the pattern is restricted to an engine-specific maximum (a couple of hundred characters are usually accepted). The pattern should be used to restrict the search to a certain common name or user, not to list many specific keys at once by listing their fingerprints or key IDs.

If SECRET_ONLY is not 0, the list is restricted to secret keys only.

The context will be busy until either all keys are received (and gpgme_op_keylist_next returns GPG_ERR_EOF), or gpgme_op_keylist_end is called to finish the operation.

The function returns the error code GPG_ERR_INV_VALUE if CTX is not a valid pointer, and passes through any errors that are reported by the crypto engine support routines.

-- Function: `gpgme_error_t gpgme_op_keylist_ext_start (gpgme_ctx_t CTX,
const char *PATTERN[], int SECRET_ONLY, int RESERVED)`

The function `gpgme_op_keylist_ext_start` initiates an extended key listing operation inside the context `CTX`. It sets everything up so that subsequent invocations of `gpgme_op_keylist_next` return the keys in the list.

If `PATTERN` or `*PATTERN` is `NULL`, all available keys are returned. Otherwise, `PATTERN` is a `NULL` terminated array of strings that are used to limit the list to all keys matching at least one of the patterns verbatim. Note that the total length of all patterns is restricted to an engine-specific maximum (the exact limit also depends on the number of patterns and amount of quoting required, but a couple of hundred characters are usually accepted). Patterns should be used to restrict the search to a certain common name or user, not to list many specific keys at once by listing their fingerprints or key IDs.

If `SECRET_ONLY` is not 0, the list is restricted to secret keys only.

The value of `RESERVED` must be 0.

The context will be busy until either all keys are received (and `gpgme_op_keylist_next` returns `GPG_ERR_EOF`), or `gpgme_op_keylist_end` is called to finish the operation.

The function returns the error code `GPG_ERR_INV_VALUE` if `CTX` is not a valid pointer, and passes through any errors that are reported by the crypto engine support routines.

-- Function: `gpgme_error_t gpgme_op_keylist_from_data_start
(gpgme_ctx_t CTX, gpgme_data_t DATA, int RESERVED)`

SINCE: 1.8.0

The function `gpgme_op_keylist_from_data_start` initiates a key listing operation inside the context `CTX`. In contrast to the other key listing operation the keys are read from the supplied `DATA` and not from the local key database. The keys are also not imported into the local key database. The function sets everything up so that subsequent invocations of `gpgme_op_keylist_next` return the keys from `DATA`.

The value of `RESERVED` must be 0.

This function requires at least GnuPG version 2.1.14 and currently

works only with OpenPGP keys.

The context will be busy until either all keys are received (and `gpgme_op_keylist_next` returns `GPG_ERR_EOF`), or `gpgme_op_keylist_end` is called to finish the operation. While the context is busy DATA may not be released.

The function returns the error code `GPG_ERR_INV_VALUE` if `CTX` is not a valid pointer, and passes through any errors that are reported by the crypto engine support routines.

```
-- Function: gpgme_error_t gpgme_op_keylist_next (gpgme_ctx_t CTX,  
          gpgme_key_t *R_KEY)
```

The function `gpgme_op_keylist_next` returns the next key in the list created by a previous `gpgme_op_keylist_start` operation in the context `CTX`. The key will have one reference for the user.
**Note Manipulating Keys::.*

This is the only way to get at `gpgme_key_t` objects in GPGME.

If the last key in the list has already been returned, `gpgme_op_keylist_next` returns `GPG_ERR_EOF`.

The function returns the error code `GPG_ERR_INV_VALUE` if `CTX` or `R_KEY` is not a valid pointer, and `GPG_ERR_ENOMEM` if there is not enough memory for the operation.

```
-- Function: gpgme_error_t gpgme_op_keylist_end (gpgme_ctx_t CTX)
```

The function `gpgme_op_keylist_end` ends a pending key list operation in the context `CTX`.

After the operation completed successfully, the result of the key listing operation can be retrieved with `gpgme_op_keylist_result`.

The function returns the error code `GPG_ERR_INV_VALUE` if `CTX` is not a valid pointer, and `GPG_ERR_ENOMEM` if at some time during the operation there was not enough memory available.

The following example illustrates how all keys containing a certain string (`g10code`) can be listed with their key ID and the name and email address of the main user ID:

```
gpgme_ctx_t ctx;  
gpgme_key_t key;  
gpgme_error_t err = gpgme_new (&ctx);
```

```

if (!err)
{
err = gpgme_op_keylist_start (ctx, "g10code", 0);
while (!err)
{
err = gpgme_op_keylist_next (ctx, &key);
if (err)
break;
printf ("%s:", key->subkeys->keyid);
if (key->uids && key->uids->name)
printf (" %s", key->uids->name);
if (key->uids && key->uids->email)
printf (" <%s>", key->uids->email);
putchar ('\n');
gpgme_key_release (key);
}
gpgme_release (ctx);
}
if (gpg_err_code (err) != GPG_ERR_EOF)
{
fprintf (stderr, "can not list keys: %s\n", gpgme_strerror (err));
exit (1);
}

```

-- Data type: `gpgme_keylist_result_t`

This is a pointer to a structure used to store the result of a `gpgme_op_keylist_*` operation. After successfully ending a key listing operation, you can retrieve the pointer to the result with `gpgme_op_keylist_result`. The structure contains the following member:

`unsigned int truncated : 1`

This is true if the crypto backend had to truncate the result, and less than the desired keys could be listed.

-- Function: `gpgme_keylist_result_t gpgme_op_keylist_result (gpgme_ctx_t CTX)`

The function `gpgme_op_keylist_result` returns a `gpgme_keylist_result_t` pointer to a structure holding the result of a `gpgme_op_keylist_*` operation. The pointer is only valid if the last operation on the context was a key listing operation, and if this operation finished successfully. The returned pointer is only valid until the next operation is started on the context.

In a simple program, for which a blocking operation is acceptable, the following function can be used to retrieve a single key.

-- Function: `gpgme_error_t gpgme_get_key (gpgme_ctx_t CTX,`

```
const char *FPR, gpgme_key_t *R_KEY, int SECRET)
```

The function `gpgme_get_key` gets the key with the fingerprint (or key ID) `FPR` from the crypto backend and return it in `R_KEY`. If `SECRET` is true, get the secret key. The currently active keylist mode is used to retrieve the key. The key will have one reference for the user.

If the key is not found in the keyring, `gpgme_get_key` returns the error code `GPG_ERR_EOF` and `*R_KEY` will be set to `NULL`.

The function returns the error code `GPG_ERR_INV_VALUE` if `CTX` or `R_KEY` is not a valid pointer or `FPR` is not a fingerprint or key ID, `GPG_ERR_AMBIGUOUS_NAME` if the key ID was not a unique specifier for a key, and `GPG_ERR_ENOMEM` if at some time during the operation there was not enough memory available.

File: `gpgme.info`, Node: Information About Keys, Next: Manipulating Keys, Prev: Listing Keys, Up: Key Management

7.5.3 Information About Keys

Please see the beginning of this section for more information about `gpgme_key_t` objects.

-- Data type: `gpgme_validity_t`

The `gpgme_validity_t` type is used to specify the validity of a user ID in a key. The following validities are defined:

`GPGME_VALIDITY_UNKNOWN`

The user ID is of unknown validity. The string representation of this validity is `?`.

`GPGME_VALIDITY_UNDEFINED`

The validity of the user ID is undefined. The string representation of this validity is `q`.

`GPGME_VALIDITY_NEVER`

The user ID is never valid. The string representation of this validity is `n`.

`GPGME_VALIDITY_MARGINAL`

The user ID is marginally valid. The string representation of this validity is `m`.

`GPGME_VALIDITY_FULL`

The user ID is fully valid. The string representation of this

validity is f.

GPGME_VALIDITY_ULTIMATE

The user ID is ultimately valid. The string representation of this validity is u.

File: gpgme.info, Node: Manipulating Keys, Next: Generating Keys, Prev: Information About Keys, Up: Key Management

7.5.4 Manipulating Keys

-- Function: void gpgme_key_ref (gpgme_key_t KEY)

The function gpgme_key_ref acquires an additional reference for the key KEY.

-- Function: void gpgme_key_unref (gpgme_key_t KEY)

The function gpgme_key_unref releases a reference for the key KEY. If this was the last reference, the key will be destroyed and all resources associated to it will be released.

File: gpgme.info, Node: Generating Keys, Next: Signing Keys, Prev: Manipulating Keys, Up: Key Management

7.5.5 Generating Keys

GPGME provides a set of functions to create public key pairs. Most of these functions require the use of GnuPG 2.1 and later; for older GnuPG versions the gpgme_op_genkey function can be used. Existing code which wants to update to the new functions or new code which shall supports older GnuPG versions may try the new functions first and provide a fallback to the old function if the error code GPG_ERR_NOT_SUPPORTED is received.

-- Function: gpgme_error_t gpgme_op_createkey (gpgme_ctx_t CTX, const char *USERID, const char *ALGO, unsigned long RESERVED, unsigned long EXPIRES, gpgme_key_t EXTRAKEY, unsigned int FLAGS);

SINCE: 1.7.0

The function gpgme_op_createkey generates a new key for the protocol active in the context CTX. As of now this function does only work for OpenPGP and requires at least version 2.1.13 of GnuPG.

USERID is commonly the mail address associated with the key. GPGME does not require a specific syntax but if more than a mail address is given, RFC-822 style format is suggested. The value is expected to be in UTF-8 encoding (i.e. no IDN encoding for mail addresses). This is a required parameter.

ALGO specifies the algorithm for the new key (actually a keypair of public and private key). For a list of supported algorithms, see the GnuPG manual. If ALGO is NULL or the string "default", the key is generated using the default algorithm of the engine. If the string "future-default" is used the engine may use an algorithm which is planned to be the default in a future release of the engine; however existing implementation of the protocol may not be able to already handle such future algorithms. For the OpenPGP protocol, the specification of a default algorithm, without requesting a non-default usage via FLAGS, triggers the creation of a primary key plus a secondary key (subkey).

RESERVED must be set to zero.

EXPIRES specifies the expiration time in seconds. If you supply 0, a reasonable expiration time is chosen. Use the flag GPGME_CREATE_NOEXPIRE to create keys that do not expire. Note that this parameter takes an unsigned long value and not a time_t to avoid problems on systems which use a signed 32 bit time_t. Note further that the OpenPGP protocol uses 32 bit values for timestamps and thus can only encode dates up to the year 2106.

EXTRAKEY is currently not used and must be set to NULL. A future version of GPGME may use this parameter to create X.509 keys.

FLAGS can be set to the bit-wise OR of the following flags:

GPGME_CREATE_SIGN
GPGME_CREATE_ENCR
GPGME_CREATE_CERT
GPGME_CREATE_AUTH
SINCE: 1.7.0

Do not create the key with the default capabilities (key usage) of the requested algorithm but use those explicitly given by these flags: signing, encryption, certification, or authentication. The allowed combinations depend on the algorithm.

If any of these flags are set and a default algorithm has been selected only one key is created in the case of the OpenPGP protocol.

GPGME_CREATE_NOPASSWD

SINCE: 1.7.0

Request generation of the key without password protection.

GPGME_CREATE_SELFSIGNED

SINCE: 1.7.0

For an X.509 key do not create a CSR but a self-signed certificate. This has not yet been implemented.

GPGME_CREATE_NOSTORE

SINCE: 1.7.0

Do not store the created key in the local key database. This has not yet been implemented.

GPGME_CREATE_WANTPUB

GPGME_CREATE_WANTSEC

SINCE: 1.7.0

Return the public or secret key as part of the result structure. This has not yet been implemented.

GPGME_CREATE_FORCE

SINCE: 1.7.0

The engine does not allow the creation of a key with a user ID already existing in the local key database. This flag can be used to override this check.

GPGME_CREATE_NOEXPIRE

SINCE: 1.8.0

Request generation of keys that do not expire.

After the operation completed successfully, information about the created key can be retrieved with `gpgme_op_genkey_result`.

The function returns zero on success, `GPG_ERR_NOT_SUPPORTED` if the engine does not support the command, or a bunch of other error codes.

```
-- Function: gpgme_error_t gpgme_op_createkey_start (gpgme_ctx_t CTX,  
    const char *USERID, const char *ALGO, unsigned long RESERVED,  
    unsigned long EXPIRES, gpgme_key_t EXTRAKEY,  
    unsigned int FLAGS);
```


SINCE: 1.7.0

The function `gpgme_op_createkey_start` initiates a `gpgme_op_createkey` operation; see there for details. It must be completed by calling `gpgme_wait` on the context. *Note Waiting For Completion::.

-- Function: `gpgme_error_t gpgme_op_createsubkey (gpgme_ctx_t CTX, gpgme_key_t KEY, const char *ALGO, unsigned long RESERVED, unsigned long EXPIRES, unsigned int FLAGS);`

SINCE: 1.7.0

The function `gpgme_op_createsubkey` creates and adds a new subkey to the primary OpenPGP key given by `KEY`. The only allowed protocol in `CTX` is `GPGME_PROTOCOL_OPENPGP`. Subkeys (aka secondary keys) are a concept in the OpenPGP protocol to bind several keys to a primary key. As of now this function requires at least version 2.1.13 of GnuPG.

`KEY` specifies the key to operate on.

`ALGO` specifies the algorithm for the new subkey. For a list of supported algorithms, see the GnuPG manual. If `ALGO` is `NULL` or the string "default", the subkey is generated using the default algorithm for an encryption subkey of the engine. If the string "future-default" is used the engine may use an encryption algorithm which is planned to be the default in a future release of the engine; however existing implementation of the protocol may not be able to already handle such future algorithms.

`RESERVED` must be set to zero.

`EXPIRES` specifies the expiration time in seconds. If you supply 0, a reasonable expiration time is chosen. Use the flag `GPGME_CREATE_NOEXPIRE` to create keys that do not expire. Note that this parameter takes an unsigned long value and not a `time_t` to avoid problems on systems which use a signed 32 bit `time_t`. Note further that the OpenPGP protocol uses 32 bit values for timestamps and thus can only encode dates up to the year 2106.

`FLAGS` takes the same values as described above for `gpgme_op_createkey`.

After the operation completed successfully, information about the created key can be retrieved with `gpgme_op_genkey_result`.

The function returns zero on success, GPG_ERR_NOT_SUPPORTED if the engine does not support the command, or a bunch of other error codes.

```
-- Function: gpgme_error_t gpgme_op_createsubkey_start
(gpgme_ctx_t CTX, gpgme_key_t KEY, const char *ALGO,
 unsigned long RESERVED, unsigned long EXPIRES,
 unsigned int FLAGS);
```

SINCE: 1.7.0

The function `gpgme_op_createsubkey_start` initiates a `gpgme_op_createsubkey` operation; see there for details. It must be completed by calling `gpgme_wait` on the context. *Note Waiting For Completion::.

```
-- Function: gpgme_error_t gpgme_op_adduid (gpgme_ctx_t CTX,
 gpgme_key_t KEY, const char *USERID, unsigned int FLAGS);
```

SINCE: 1.7.0

The function `gpgme_op_adduid` adds a new user ID to the OpenPGP key given by `KEY`. Adding additional user IDs after key creation is a feature of the OpenPGP protocol and thus the protocol for the context `CTX` must be set to OpenPGP. As of now this function requires at least version 2.1.13 of GnuPG.

`KEY` specifies the key to operate on.

`USERID` is the user ID to add to the key. A user ID is commonly the mail address to be associated with the key. GPGME does not require a specific syntax but if more than a mail address is given, RFC-822 style format is suggested. The value is expected to be in UTF-8 encoding (i.e. no IDN encoding for mail addresses). This is a required parameter.

`FLAGS` are currently not used and must be set to zero.

The function returns zero on success, GPG_ERR_NOT_SUPPORTED if the engine does not support the command, or a bunch of other error codes.

```
-- Function: gpgme_error_t gpgme_op_adduid_start (gpgme_ctx_t CTX,
 gpgme_key_t KEY, const char *USERID, unsigned int FLAGS);
```

SINCE: 1.7.0

The function `gpgme_op_adduid_start` initiates a `gpgme_op_adduid`

operation; see there for details. It must be completed by calling `gpgme_wait` on the context. *Note Waiting For Completion::.

```
-- Function: gpgme_error_t gpgme_op_revuid (gpgme_ctx_t CTX,  
      gpgme_key_t KEY, const char *USERID, unsigned int FLAGS);
```

SINCE: 1.7.0

The function `gpgme_op_revuid` revokes a user ID from the OpenPGP key given by `KEY`. Revoking user IDs after key creation is a feature of the OpenPGP protocol and thus the protocol for the context `CTX` must be set to OpenPGP. As of now this function requires at least version 2.1.13 of GnuPG.

`KEY` specifies the key to operate on.

`USERID` is the user ID to be revoked from the key. The user ID must be given verbatim because the engine does an exact and case sensitive match. Thus the `uid` field from the user ID object (`gpgme_user_id_t`) is to be used. This is a required parameter.

`FLAGS` are currently not used and must be set to zero.

Note that the engine wont allow to revoke the last valid user ID. To change a user ID is better to first add the new user ID, then revoke the old one, and finally publish the key.

The function returns zero on success, `GPG_ERR_NOT_SUPPORTED` if the engine does not support the command, or a bunch of other error codes.

```
-- Function: gpgme_error_t gpgme_op_revuid_start (gpgme_ctx_t CTX,  
      gpgme_key_t KEY, const char *USERID, unsigned int FLAGS);
```

SINCE: 1.7.0

The function `gpgme_op_revuid_start` initiates a `gpgme_op_revuid` operation; see there for details. It must be completed by calling `gpgme_wait` on the context. *Note Waiting For Completion::.

```
-- Function: gpgme_error_t gpgme_op_set_uid_flag (gpgme_ctx_t CTX,  
      gpgme_key_t KEY, const char *USERID, const char * NAME,  
      const char * VALUE);
```

SINCE: 1.8.0

The function `gpgme_op_set_uid_flag` is used to set flags on a user ID from the OpenPGP key given by `KEY`. Setting flags on user IDs

after key creation is a feature of the OpenPGP protocol and thus the protocol for the context CTX must be set to OpenPGP.

KEY specifies the key to operate on. This parameters is required.

USERID is the user ID of the key to be manipulated. This user ID must be given verbatim because the engine does an exact and case sensitive match. Thus the uid field from the user ID object (gpgme_user_id_t) is to be used. This is a required parameter.

NAME names the flag which is to be changed. The only currently supported flag is:

primary

This sets the primary key flag on the given user ID. All other primary key flag on other user IDs are removed. VALUE must be given as NULL. For technical reasons this functions bumps the creation timestamp of all affected self-signatures up by one second. At least GnuPG version 2.1.20 is required.

The function returns zero on success, GPG_ERR_NOT_SUPPORTED if the engine does not support the command, or a bunch of other error codes.

```
-- Function: gpgme_error_t gpgme_op_set_uid_flag_start
(gpgme_ctx_t CTX, gpgme_key_t KEY, const char *USERID,
 cons char * NAME, cons char * VALUE);
```

SINCE: 1.8.0

The function gpgme_op_set_uid_flag_start initiates a gpgme_op_set_uid_flag operation; see there for details. It must be completed by calling gpgme_wait on the context. *Note Waiting For Completion:.

```
-- Function: gpgme_error_t gpgme_op_genkey (gpgme_ctx_t CTX,
const char *PARMS, gpgme_data_t PUBLIC, gpgme_data_t SECRET)
```

The function gpgme_op_genkey generates a new key pair in the context CTX. The meaning of PUBLIC and SECRET depends on the crypto backend.

GPG does not support PUBLIC and SECRET, they should be NULL. GnuPG will generate a key pair and add it to the standard key ring. The fingerprint of the generated key is available with gpgme_op_genkey_result.

GpgSM requires PUBLIC to be a writable data object. GpgSM will

generate a secret key (which will be stored by gpg-agent, and return a certificate request in PUBLIC, which then needs to be signed by the certification authority and imported before it can be used. GpgSM does not make the fingerprint available.

The argument PARMS specifies parameters for the key in an string that looks something like XML. The details about the format of PARMS are specific to the crypto engine used by CTX. The first line of the parameters must be `<GnupgKeyParams format="internal">` and the last line must be `</GnupgKeyParams>`. Every line in between the first and last lines is treated as a Header: Value pair. In particular, no XML escaping is necessary if you need to include the characters `<`, `>`, or `&`.

Here is an example for GnuPG as the crypto engine (all parameters of OpenPGP key generation are documented in the GPG manual):

```
<GnupgKeyParams format="internal">
Key-Type: default
Subkey-Type: default
Name-Real: Joe Tester
Name-Comment: with stupid passphrase
Name-Email: joe@foo.bar
Expire-Date: 0
Passphrase: abc
</GnupgKeyParams>
```

Here is an example for GpgSM as the crypto engine (all parameters of OpenPGP key generation are documented in the GPGSM manual):

```
<GnupgKeyParams format="internal">
Key-Type: RSA
Key-Length: 1024
Name-DN: C=de,O=g10 code,OU=Testlab,CN=Joe 2 Tester
Name-Email: joe@foo.bar
</GnupgKeyParams>
```

Strings should be given in UTF-8 encoding. The only format supported for now is internal. The content of the GnupgKeyParams container is passed verbatim to the crypto backend. Control statements are not allowed.

After the operation completed successfully, the result can be retrieved with `gpgme_op_genkey_result`.

The function returns the error code `GPG_ERR_NO_ERROR` if the operation could be started successfully, `GPG_ERR_INV_VALUE` if PARMS is not a well-formed string (e.g. does not have the expected

tag-like headers and footers), GPG_ERR_NOT_SUPPORTED if PUBLIC or SECRET is not valid, and GPG_ERR_GENERAL if no key was created by the backend.

-- Function: gpgme_error_t gpgme_op_genkey_start (gpgme_ctx_t CTX,
const char *PARMS, gpgme_data_t PUBLIC, gpgme_data_t SECRET)

The function gpgme_op_genkey_start initiates a gpgme_op_genkey operation. It can be completed by calling gpgme_wait on the context. *Note Waiting For Completion::.

The function returns the error code GPG_ERR_NO_ERROR if the operation could be started successfully, GPG_ERR_INV_VALUE if PARMS is not a valid XML string, and GPG_ERR_NOT_SUPPORTED if PUBLIC or SECRET is not NULL.

-- Data type: gpgme_genkey_result_t

This is a pointer to a structure used to store the result of a gpgme_op_genkey operation. After successfully generating a key, you can retrieve the pointer to the result with gpgme_op_genkey_result. The structure contains the following members:

unsigned int primary : 1

This flag is set to 1 if a primary key was created and to 0 if not.

unsigned int sub : 1

This flag is set to 1 if a subkey was created and to 0 if not.

unsigned int uid : 1

This flag is set to 1 if a user ID was created and to 0 if not.

char *fpr

This is the fingerprint of the key that was created. If both a primary and a subkey were generated, the fingerprint of the primary key will be returned. If the crypto engine does not provide the fingerprint, fpr will be a null pointer.

gpgme_data_t pubkey

SINCE: 1.7.0

This will eventually be used to return the public key. It is currently not used.

gpgme_data_t seckey

SINCE: 1.7.0

This will eventually be used to return the secret key. It is currently not used.

-- Function: `gpgme_genkey_result_t gpgme_op_genkey_result (gpgme_ctx_t CTX)`

The function `gpgme_op_genkey_result` returns a `gpgme_genkey_result_t` pointer to a structure holding the result of a `gpgme_op_genkey` operation. The pointer is only valid if the last operation on the context was a `gpgme_op_genkey` or `gpgme_op_genkey_start` operation, and if this operation finished successfully. The returned pointer is only valid until the next operation is started on the context.

File: `gpgme.info`, Node: Signing Keys, Next: Exporting Keys, Prev: Generating Keys, Up: Key Management

7.5.6 Signing Keys

Key signatures are a unique concept of the OpenPGP protocol. They can be used to certify the validity of a key and are used to create the Web-of-Trust (WoT). Instead of using the `gpgme_op_interact` function along with a finite state machine, GPGME provides a convenient function to create key signatures when using modern GnuPG versions.

-- Function: `gpgme_error_t gpgme_op_keysign (gpgme_ctx_t CTX, gpgme_key_t KEY, const char *USERID, unsigned long EXPIRES, unsigned int FLAGS);`

SINCE: 1.7.0

The function `gpgme_op_keysign` adds a new key signature to the public key `KEY`. This function requires at least version 2.1.12 of GnuPG.

`CTX` is the usual context which describes the protocol to use (which must be OpenPGP) and has also the list of signer keys to be used for the signature. The common case is to use the default key for signing other keys. If another key or more than one key shall be used for a key signature, `gpgme_signers_add` can be used. *Note Selecting Signers::.

`KEY` specifies the key to operate on.

`USERID` selects the user ID or user IDs to be signed. If `USERID` is

set to NULL all valid user IDs are signed. The user ID must be given verbatim because the engine does an exact and case sensitive match. Thus the uid field from the user ID object (`gpgme_user_id_t`) is to be used. To select more than one user ID put them all into one string separated by linefeeds characters (`\n`) and set the flag `GPGME_KEYSIGN_LFSEP`.

`EXPIRES` specifies the expiration time of the new signature in seconds. The common case is to use 0 to not set an expiration date. However, if the configuration of the engine defines a default expiration for key signatures, that is still used unless the flag `GPGME_KEYSIGN_NOEXPIRE` is used. Note that this parameter takes an unsigned long value and not a `time_t` to avoid problems on systems which use a signed 32 bit `time_t`. Note further that the OpenPGP protocol uses 32 bit values for timestamps and thus can only encode dates up to the year 2106.

`FLAGS` can be set to the bit-wise OR of the following flags:

`GPGME_KEYSIGN_LOCAL`

SINCE: 1.7.0

Instead of creating an exportable key signature, create a key signature which is marked as non-exportable.

`GPGME_KEYSIGN_LFSEP`

SINCE: 1.7.0

Although linefeeds are uncommon in user IDs this flag is required to explicitly declare that `USERID` may contain several linefeed separated user IDs.

`GPGME_KEYSIGN_NOEXPIRE`

Force the creation of a key signature without an expiration date. This overrides `EXPIRE` and any local configuration of the engine.

The function returns zero on success, `GPG_ERR_NOT_SUPPORTED` if the engine does not support the command, or a bunch of other error codes.

```
-- Function: gpgme_error_t gpgme_op_keysign_start (gpgme_ctx_t CTX,  
gpgme_key_t KEY, const char *USERID, unsigned long EXPIRES,  
unsigned int FLAGS);
```

SINCE: 1.7.0

The function `gpgme_op_keysign_start` initiates a

gpgme_op_keysign operation; see there for details. It must be completed by calling gpgme_wait on the context. *Note Waiting For Completion::.

File: gpgme.info, Node: Exporting Keys, Next: Importing Keys, Prev: Signing Keys, Up: Key Management

7.5.7 Exporting Keys

Exporting keys means the same as running gpg with the command --export. However, a mode flag can be used to change the way the export works. The available mode flags are described below, they may be or-ed together.

GPGME_EXPORT_MODE_EXTERN

If this bit is set, the output is send directly to the default keyserver. This is currently only allowed for OpenPGP keys. It is good practise to not send more than a few dozens key to a keyserver at one time. Using this flag requires that the KEYDATA argument of the export function is set to NULL.

GPGME_EXPORT_MODE_MINIMAL

SINCE: 1.3.1

If this bit is set, the smallest possible key is exported. For OpenPGP keys it removes all signatures except for the latest self-signatures. For X.509 keys it has no effect.

GPGME_EXPORT_MODE_SECRET

SINCE: 1.6.0

Instead of exporting the public key, the secret key is exported. This may not be combined with GPGME_EXPORT_MODE_EXTERN. For X.509 the export format is PKCS#8.

GPGME_EXPORT_MODE_RAW

SINCE: 1.6.0

If this flag is used with GPGME_EXPORT_MODE_SECRET for an X.509 key the export format will be changed to PKCS#1. This flag may not be used with OpenPGP.

GPGME_EXPORT_MODE_PKCS12

SINCE: 1.6.0

If this flag is used with GPGME_EXPORT_MODE_SECRET for an X.509 key the export format will be changed to PKCS#12 which also

includes the certificate. This flag may not be used with OpenPGP.

GPGME_EXPORT_MODE_NOUID

SINCE: 1.12.0 - experimental Do not export user ids. Works only with certain gpg version.

-- Function: `gpgme_error_t gpgme_op_export (gpgme_ctx_t CTX, const char *PATTERN, gpgme_export_mode_t MODE, gpgme_data_t KEYDATA)`

The function `gpgme_op_export` extracts public keys and returns them in the data buffer `KEYDATA`. The output format of the key data returned is determined by the ASCII armor attribute set for the context `CTX`, or, if that is not set, by the encoding specified for `KEYDATA`.

If `PATTERN` is `NULL`, all available keys are returned. Otherwise, `PATTERN` contains an engine specific expression that is used to limit the list to all keys matching the pattern.

`MODE` is usually 0; other values are described above.

The function returns the error code `GPG_ERR_NO_ERROR` if the operation completed successfully, `GPG_ERR_INV_VALUE` if `KEYDATA` is not a valid empty data buffer, and passes through any errors that are reported by the crypto engine support routines.

-- Function: `gpgme_error_t gpgme_op_export_start (gpgme_ctx_t CTX, const char *PATTERN, gpgme_export_mode_t MODE, gpgme_data_t KEYDATA)`

The function `gpgme_op_export_start` initiates a `gpgme_op_export` operation. It can be completed by calling `gpgme_wait` on the context. *Note Waiting For Completion::.

The function returns the error code `GPG_ERR_NO_ERROR` if the operation could be started successfully, and `GPG_ERR_INV_VALUE` if `KEYDATA` is not a valid empty data buffer.

-- Function: `gpgme_error_t gpgme_op_export_ext (gpgme_ctx_t CTX, const char *PATTERN[], gpgme_export_mode_t MODE, gpgme_data_t KEYDATA)`

The function `gpgme_op_export_ext` extracts public keys and returns them in the data buffer `KEYDATA`. The output format of the key data returned is determined by the ASCII armor attribute set for the context `CTX`, or, if that is not set, by the encoding specified for `KEYDATA`.

If `PATTERN` or `*PATTERN` is `NULL`, all available keys are returned. Otherwise, `PATTERN` is a `NULL` terminated array of strings that are

used to limit the list to all keys matching at least one of the patterns verbatim.

MODE is usually 0; other values are described above.

The function returns the error code GPG_ERR_NO_ERROR if the operation completed successfully, GPG_ERR_INV_VALUE if KEYDATA is not a valid empty data buffer, and passes through any errors that are reported by the crypto engine support routines.

```
-- Function: gpgme_error_t gpgme_op_export_ext_start (gpgme_ctx_t CTX,  
    const char *PATTERN[], gpgme_export_mode_t MODE,  
    gpgme_data_t KEYDATA)
```

The function gpgme_op_export_ext_start initiates a gpgme_op_export_ext operation. It can be completed by calling gpgme_wait on the context. *Note Waiting For Completion::.

The function returns the error code GPG_ERR_NO_ERROR if the operation could be started successfully, and GPG_ERR_INV_VALUE if KEYDATA is not a valid empty data buffer.

```
-- Function: gpgme_error_t gpgme_op_export_keys (gpgme_ctx_t CTX,  
    gpgme_key_t keys[], gpgme_export_mode_t MODE,  
    gpgme_data_t KEYDATA)
```

SINCE: 1.2.0

The function gpgme_op_export_keys extracts public keys and returns them in the data buffer KEYDATA. The output format of the key data returned is determined by the ASCII armor attribute set for the context CTX, or, if that is not set, by the encoding specified for KEYDATA.

The keys to export are taken from the NULL terminated array KEYS. Only keys of the currently selected protocol of CTX which do have a fingerprint set are considered for export. Other keys specified by the KEYS are ignored. In particular OpenPGP keys retrieved via an external key listing are not included.

MODE is usually 0; other values are described above.

The function returns the error code GPG_ERR_NO_ERROR if the operation completed successfully, GPG_ERR_INV_VALUE if KEYDATA is not a valid empty data buffer, GPG_ERR_NO_DATA if no useful keys are in KEYS and passes through any errors that are reported by the crypto engine support routines.

```
-- Function: gpgme_error_t gpgme_op_export_keys_start (gpgme_ctx_t CTX,  
    gpgme_key_t KEYS[], gpgme_export_mode_t MODE,
```

gpgme_data_t KEYDATA)

SINCE: 1.2.0

The function `gpgme_op_export_keys_start` initiates a `gpgme_op_export_ext` operation. It can be completed by calling `gpgme_wait` on the context. *Note Waiting For Completion::.

The function returns the error code `GPG_ERR_NO_ERROR` if the operation could be started successfully, and `GPG_ERR_INV_VALUE` if `KEYDATA` is not a valid empty data buffer, `GPG_ERR_NO_DATA` if no useful keys are in `KEYS` and passes through any errors that are reported by the crypto engine support routines.

File: `gpgme.info`, Node: Importing Keys, Next: Deleting Keys, Prev: Exporting Keys, Up: Key Management

7.5.8 Importing Keys

Importing keys means the same as running `gpg` with the command `--import`.

-- Function: `gpgme_error_t gpgme_op_import (gpgme_ctx_t CTX, gpgme_data_t KEYDATA)`

The function `gpgme_op_import` adds the keys in the data buffer `KEYDATA` to the key ring of the crypto engine used by `CTX`. The format of `KEYDATA` can be ASCII armored, for example, but the details are specific to the crypto engine.

After the operation completed successfully, the result can be retrieved with `gpgme_op_import_result`.

The function returns the error code `GPG_ERR_NO_ERROR` if the import was completed successfully, `GPG_ERR_INV_VALUE` if `KEYDATA` if `CTX` or `KEYDATA` is not a valid pointer, and `GPG_ERR_NO_DATA` if `KEYDATA` is an empty data buffer.

-- Function: `gpgme_error_t gpgme_op_import_start (gpgme_ctx_t CTX, gpgme_data_t KEYDATA)`

The function `gpgme_op_import_start` initiates a `gpgme_op_import` operation. It can be completed by calling `gpgme_wait` on the context. *Note Waiting For Completion::.

The function returns the error code `GPG_ERR_NO_ERROR` if the import could be started successfully, `GPG_ERR_INV_VALUE` if `CTX` or `KEYDATA` is not a valid pointer, and `GPG_ERR_NO_DATA` if `KEYDATA` is an empty data buffer.

-- Function: `gpgme_error_t gpgme_op_import_keys (gpgme_ctx_t CTX, gpgme_key_t *KEYS)`
SINCE: 1.2.0

The function `gpgme_op_import_keys` adds the keys described by the NULL terminated array `KEYS` to the key ring of the crypto engine used by `CTX`. It is used to actually import and make keys permanent which have been retrieved from an external source (i.e. using `GPGME_KEYLIST_MODE_EXTERN`) earlier. The external keylisting must have been made with the same context configuration (in particular the same home directory). (1) Note that for OpenPGP this may require another access to the keyserver over the network.

Only keys of the currently selected protocol of `CTX` are considered for import. Other keys specified by the `KEYS` are ignored. As of now all considered keys must have been retrieved using the same method, i.e. the used key listing mode must be identical.

After the operation completed successfully, the result can be retrieved with `gpgme_op_import_result`.

To move keys from one home directory to another, export and import the keydata using `gpgme_op_export` and `gpgme_op_import`.

The function returns the error code `GPG_ERR_NO_ERROR` if the import was completed successfully, `GPG_ERR_INV_VALUE` if `CTX` is not a valid pointer, `GPG_ERR_CONFLICT` if the key listing mode does not match, and `GPG_ERR_NO_DATA` if no keys are considered for export.

-- Function: `gpgme_error_t gpgme_op_import_keys_start (gpgme_ctx_t CTX, gpgme_key_t *KEYS)`
SINCE: 1.2.0

The function `gpgme_op_import_keys_start` initiates a `gpgme_op_import_keys` operation. It can be completed by calling `gpgme_wait` on the context. *Note Waiting For Completion::.

The function returns the error code `GPG_ERR_NO_ERROR` if the import was completed successfully, `GPG_ERR_INV_VALUE` if `KEYDATA` if `CTX` or `KEYDATA` is not a valid pointer, `GPG_ERR_CONFLICT` if the key listing mode does not match, and `GPG_ERR_NO_DATA` if no keys are considered for export.

-- Data type: `gpgme_import_status_t`

This is a pointer to a structure used to store a part of the result of a `gpgme_op_import` operation. For each considered key one status is added that contains information about the result of the

import. The structure contains the following members:

`gpgme_import_status_t next`

This is a pointer to the next status structure in the linked list, or NULL if this is the last element.

`char *fpr`

This is the fingerprint of the key that was considered.

`gpgme_error_t result`

If the import was not successful, this is the error value that caused the import to fail. Otherwise the error code is `GPG_ERR_NO_ERROR`.

`unsigned int status`

This is a bit-wise OR of the following flags that give more information about what part of the key was imported. If the key was already known, this might be 0.

`GPGME_IMPORT_NEW`

The key was new.

`GPGME_IMPORT_UID`

The key contained new user IDs.

`GPGME_IMPORT_SIG`

The key contained new signatures.

`GPGME_IMPORT_SUBKEY`

The key contained new sub keys.

`GPGME_IMPORT_SECRET`

The key contained a secret key.

-- Data type: `gpgme_import_result_t`

This is a pointer to a structure used to store the result of a `gpgme_op_import` operation. After a successful import operation, you can retrieve the pointer to the result with `gpgme_op_import_result`. The structure contains the following members:

`int considered`

The total number of considered keys.

`int no_user_id`

The number of keys without user ID.

`int imported`

The total number of imported keys.

int imported_rsa

The number of imported RSA keys.

int unchanged

The number of unchanged keys.

int new_user_ids

The number of new user IDs.

int new_sub_keys

The number of new sub keys.

int new_signatures

The number of new signatures.

int new_revocations

The number of new revocations.

int secret_read

The total number of secret keys read.

int secret_imported

The number of imported secret keys.

int secret_unchanged

The number of unchanged secret keys.

int not_imported

The number of keys not imported.

gpgme_import_status_t imports

A list of gpgme_import_status_t objects which contain more information about the keys for which an import was attempted.

int skipped_v3_keys

For security reasons modern versions of GnuPG do not anymore support v3 keys (created with PGP 2.x) and ignores them on import. This counter provides the number of such skipped v3 keys.

-- Function: gpgme_import_result_t gpgme_op_import_result
(gpgme_ctx_t CTX)

The function gpgme_op_import_result returns a gpgme_import_result_t pointer to a structure holding the result of a gpgme_op_import operation. The pointer is only valid if the last operation on the context was a gpgme_op_import or

gpgme_op_import_start operation, and if this operation finished successfully. The returned pointer is only valid until the next operation is started on the context.

----- Footnotes -----

(1) Thus it is a replacement for the usual workaround of exporting and then importing a key to make an X.509 key permanent.

File: gpgme.info, Node: Deleting Keys, Next: Changing Passphrases, Prev: Importing Keys, Up: Key Management

7.5.9 Deleting Keys

-- Function: gpgme_error_t gpgme_op_delete_ext (gpgme_ctx_t CTX,
const gpgme_key_t KEY, unsigned int FLAGS)
SINCE: 1.9.1

The function gpgme_op_delete_ext deletes the key KEY from the key ring of the crypto engine used by CTX.

FLAGS can be set to the bit-wise OR of the following flags:

GPGME_DELETE_ALLOW_SECRET
SINCE: 1.9.1

If not set, only public keys are deleted. If set, secret keys are deleted as well, if that is supported.

GPGME_DELETE_FORCE
SINCE: 1.9.1

If set, the user is not asked to confirm the deletion.

The function returns the error code GPG_ERR_NO_ERROR if the key was deleted successfully, GPG_ERR_INV_VALUE if CTX or KEY is not a valid pointer, GPG_ERR_NO_PUBKEY if KEY could not be found in the keyring, GPG_ERR_AMBIGUOUS_NAME if the key was not specified unambiguously, and GPG_ERR_CONFLICT if the secret key for KEY is available, but ALLOW_SECRET is zero.

-- Function: gpgme_error_t gpgme_op_delete_ext_start (gpgme_ctx_t CTX,
const gpgme_key_t KEY, unsigned int FLAGS)
SINCE: 1.9.1

The function gpgme_op_delete_ext_start initiates a

gpgme_op_delete operation. It can be completed by calling gpgme_wait on the context. *Note Waiting For Completion::.

The function returns the error code GPG_ERR_NO_ERROR if the operation was started successfully, and GPG_ERR_INV_VALUE if CTX or KEY is not a valid pointer.

The following functions allow only to use one particular flag.

-- Function: gpgme_error_t gpgme_op_delete (gpgme_ctx_t CTX,
const gpgme_key_t KEY, int ALLOW_SECRET)
Similar to gpgme_op_delete_ext, but only the flag
GPGME_DELETE_ALLOW_SECRET can be provided.

-- Function: gpgme_error_t gpgme_op_delete_start (gpgme_ctx_t CTX,
const gpgme_key_t KEY, int ALLOW_SECRET)
Similar to gpgme_op_delete_ext_start, but only the flag
GPGME_DELETE_ALLOW_SECRET can be provided.

File: gpgme.info, Node: Changing Passphrases, Next: Changing TOFU Data, Prev: Deleting Keys, Up: Key Management

7.5.10 Changing Passphrases

-- Function: gpgme_error_t gpgme_op_passwd (gpgme_ctx_t CTX,
const gpgme_key_t KEY, unsigned int FLAGS)

SINCE: 1.3.0

The function gpgme_op_passwd changes the passphrase of the private key associated with KEY. The only allowed value for FLAGS is 0. The backend engine will usually popup a window to ask for the old and the new passphrase. Thus this function is not useful in a server application (where passphrases are not required anyway).

Note that old gpg engines (before version 2.0.15) do not support this command and will silently ignore it.

-- Function: gpgme_error_t gpgme_op_passwd_start (gpgme_ctx_t CTX,
const gpgme_key_t KEY, unsigned int FLAGS)

SINCE: 1.3.0

The function gpgme_op_passwd_start initiates a gpgme_op_passwd operation. It can be completed by calling gpgme_wait on the

context. *Note Waiting For Completion::.

The function returns 0 if the operation was started successfully, and an error code if one of the arguments is not valid or the operation could not be started.

File: gpgme.info, Node: Changing TOFU Data, Next: Advanced Key Editing, Prev: Changing Passphrases, Up: Key Management

7.5.11 Changing TOFU Data

The OpenPGP engine features a Trust-On-First-Use (TOFU) key validation model. For resolving conflicts it is necessary to declare the policy for a key. See the GnuPG manual for details on the TOFU implementation.

-- Data type: enum gpgme_tofu_policy_t
SINCE: 1.7.0

The gpgme_tofu_policy_t type specifies the set of possible policy values that are supported by GPGME:

GPGME_TOFU_POLICY_AUTO

Set the policy to auto.

GPGME_TOFU_POLICY_GOOD

Set the policy to good.

GPGME_TOFU_POLICY_BAD

Set the policy to bad.

GPGME_TOFU_POLICY_ASK

Set the policy to ask.

GPGME_TOFU_POLICY_UNKNOWN

Set the policy to unknown.

To change the policy for a key the following functions can be used:

-- Function: gpgme_error_t gpgme_op_tofu_policy (gpgme_ctx_t CTX,
const gpgme_key_t KEY, gpgme_tofu_policy_t POLICY)

SINCE: 1.7.0

The function gpgme_op_tofu_policy changes the TOFU policy of KEY. The valid values for POLICY are listed above. As of now this function does only work for OpenPGP and requires at least version 2.1.10 of GnuPG.

The function returns zero on success, GPG_ERR_NOT_SUPPORTED if the engine does not support the command, or a bunch of other error

codes.

```
-- Function: gpgme_error_t gpgme_op_tofu_policy_start (gpgme_ctx_t CTX,  
    const gpgme_key_t KEY, gpgme_tofu_policy_t POLICY)
```

SINCE: 1.7.0

The function `gpgme_op_tofu_policy_start` initiates a `gpgme_op_tofu_policy` operation. It can be completed by calling `gpgme_wait` on the context. *Note Waiting For Completion::.

The function returns 0 if the operation was started successfully, and an error code if one of the arguments is not valid or the operation could not be started.

File: `gpgme.info`, Node: Advanced Key Editing, Prev: Changing TOFU Data, Up: Key Management

7.5.12 Advanced Key Editing

```
-- Data type: gpgme_error_t (*gpgme_interact_cb_t) (void *HANDLE,  
    const char *STATUS, const char *ARGS, int FD)
```

SINCE: 1.7.0

The `gpgme_interact_cb_t` type is the type of functions which GPGME calls if it a key interact operation is on-going. The status keyword `STATUS` and the argument line `ARGS` are passed through by GPGME from the crypto engine. An empty string represents EOF. The file descriptor `FD` is -1 for normal status messages. If `STATUS` indicates a command rather than a status message, the response to the command should be written to `FD`. The `HANDLE` is provided by the user at start of operation.

The function should return `GPG_ERR_FALSE` if it did not handle the status code, 0 for success, or any other error value.

```
-- Function: gpgme_error_t gpgme_op_interact (gpgme_ctx_t CTX,  
    gpgme_key_t KEY, unsigned int FLAGS, gpgme_interact_cb_t FNC,  
    void *HANDLE, gpgme_data_t OUT)
```

SINCE: 1.7.0

The function `gpgme_op_interact` processes the key `KEY` interactively, using the interact callback function `FNC` with the handle `HANDLE`. The callback is invoked for every status and command request from the crypto engine. The output of the crypto

engine is written to the data object OUT.

Note that the protocol between the callback function and the crypto engine is specific to the crypto engine and no further support in implementing this protocol correctly is provided by GPGME.

FLAGS modifies the behaviour of the function; the only defined bit value is:

GPGME_INTERACT_CARD

SINCE: 1.7.0

This is used for smartcard based keys and uses `gpgs --card-edit` command.

The function returns 0 if the edit operation completes successfully, `GPG_ERR_INV_VALUE` if `CTX` or `KEY` is not a valid pointer, and any error returned by the crypto engine or the edit callback handler.

-- Function: `gpgme_error_t gpgme_op_interact_start (gpgme_ctx_t CTX, gpgme_key_t KEY, unsigned int FLAGS, gpgme_interact_cb_t FNC, void *HANDLE, gpgme_data_t OUT)`

SINCE: 1.7.0

The function `gpgme_op_interact_start` initiates a `gpgme_op_interact` operation. It can be completed by calling `gpgme_wait` on the context. *Note Waiting For Completion::.

The function returns 0 if the operation was started successfully, and `GPG_ERR_INV_VALUE` if `CTX` or `KEY` is not a valid pointer.

File: `gpgme.info`, Node: Trust Item Management, Next: Crypto Operations, Prev: Key Management, Up: Contexts

7.6 Trust Item Management

=====

Caution: The trust items interface is experimental.

-- Data type: `gpgme_trust_item_t`

The `gpgme_trust_item_t` type is a pointer to a trust item object.

It has the following members:

`char *keyid`

This is a string describing the key to which this trust items belongs.

int type

This is the type of the trust item. A value of 1 refers to a key, a value of 2 refers to a user ID.

int level

This is the trust level.

char *owner_trust

The owner trust if type is 1.

char *validity

The calculated validity.

char *name

The user name if type is 2.

* Menu:

* Listing Trust Items:: Browsing the list of available trust items.

* Manipulating Trust Items:: Operations on trust items.

File: gpgme.info, Node: Listing Trust Items, Next: Manipulating Trust Items, Up: Trust Item Management

7.6.1 Listing Trust Items

-- Function: gpgme_error_t gpgme_op_trustlist_start (gpgme_ctx_t CTX,
 const char *PATTERN, int MAX_LEVEL)

The function gpgme_op_trustlist_start initiates a trust item listing operation inside the context CTX. It sets everything up so that subsequent invocations of gpgme_op_trustlist_next return the trust items in the list.

The string PATTERN contains an engine specific expression that is used to limit the list to all trust items matching the pattern. It can not be the empty string.

The argument MAX_LEVEL is currently ignored.

The context will be busy until either all trust items are received (and gpgme_op_trustlist_next returns GPG_ERR_EOF), or gpgme_op_trustlist_end is called to finish the operation.

The function returns the error code GPG_ERR_INV_VALUE if CTX is not a valid pointer, and passes through any errors that are reported by the crypto engine support routines.

-- Function: `gpgme_error_t gpgme_op_trustlist_next (gpgme_ctx_t CTX, gpgme_trust_item_t *R_ITEM)`

The function `gpgme_op_trustlist_next` returns the next trust item in the list created by a previous `gpgme_op_trustlist_start` operation in the context `CTX`. The trust item can be destroyed with `gpgme_trust_item_release`. *Note Manipulating Trust Items::.

This is the only way to get at `gpgme_trust_item_t` objects in GPGME.

If the last trust item in the list has already been returned, `gpgme_op_trustlist_next` returns `GPG_ERR_EOF`.

The function returns the error code `GPG_ERR_INV_VALUE` if `CTX` or `R_ITEM` is not a valid pointer, and `GPG_ERR_ENOMEM` if there is not enough memory for the operation.

-- Function: `gpgme_error_t gpgme_op_trustlist_end (gpgme_ctx_t CTX)`

The function `gpgme_op_trustlist_end` ends a pending trust list operation in the context `CTX`.

The function returns the error code `GPG_ERR_INV_VALUE` if `CTX` is not a valid pointer, and `GPG_ERR_ENOMEM` if at some time during the operation there was not enough memory available.

File: `gpgme.info`, Node: Manipulating Trust Items, Prev: Listing Trust Items, Up: Trust Item Management

7.6.2 Manipulating Trust Items

-- Function: `void gpgme_trust_item_ref (gpgme_trust_item_t ITEM)`

The function `gpgme_trust_item_ref` acquires an additional reference for the trust item `ITEM`.

-- Function: `void gpgme_trust_item_unref (gpgme_trust_item_t ITEM)`

The function `gpgme_trust_item_unref` releases a reference for the trust item `ITEM`. If this was the last reference, the trust item will be destroyed and all resources associated to it will be released.

File: `gpgme.info`, Node: Crypto Operations, Next: Miscellaneous, Prev: Trust Item Management, Up: Contexts

7.7 Crypto Operations

=====

Sometimes, the result of a crypto operation returns a list of invalid keys encountered in processing the request. The following structure is used to hold information about such a key.

-- Data type: `gpgme_invalid_key_t`

This is a pointer to a structure used to store a part of the result of a crypto operation which takes user IDs as one input parameter. The structure contains the following members:

`gpgme_invalid_key_t next`

This is a pointer to the next invalid key structure in the linked list, or NULL if this is the last element.

`char *fpr`

The fingerprint or key ID of the invalid key encountered.

`gpgme_error_t reason`

An error code describing the reason why the key was found invalid.

* Menu:

- * Decrypt:: Decrypting a ciphertext.
- * Verify:: Verifying a signature.
- * Decrypt and Verify:: Decrypting a signed ciphertext.
- * Sign:: Creating a signature.
- * Encrypt:: Encrypting a plaintext.

File: `gpgme.info`, Node: Decrypt, Next: Verify, Up: Crypto Operations

7.7.1 Decrypt

-- Function: `gpgme_error_t gpgme_op_decrypt (gpgme_ctx_t CTX, gpgme_data_t CIPHER, gpgme_data_t PLAIN)`

The function `gpgme_op_decrypt` decrypts the ciphertext in the data object CIPHER and stores it into the data object PLAIN.

The function returns the error code `GPG_ERR_NO_ERROR` if the ciphertext could be decrypted successfully, `GPG_ERR_INV_VALUE` if CTX, CIPHER or PLAIN is not a valid pointer, `GPG_ERR_NO_DATA` if CIPHER does not contain any data to decrypt, `GPG_ERR_DECRYPT_FAILED` if CIPHER is not a valid cipher text, `GPG_ERR_BAD_PASSPHRASE` if the passphrase for the secret key could not be retrieved, and passes through some errors that are reported by the crypto engine support routines.

-- Function: `gpgme_error_t gpgme_op_decrypt_start (gpgme_ctx_t CTX,
gpgme_data_t CIPHER, gpgme_data_t PLAIN)`

The function `gpgme_op_decrypt_start` initiates a `gpgme_op_decrypt` operation. It can be completed by calling `gpgme_wait` on the context. *Note Waiting For Completion::.

The function returns the error code `GPG_ERR_NO_ERROR` if the operation could be started successfully, and `GPG_ERR_INV_VALUE` if `CIPHER` or `PLAIN` is not a valid pointer.

-- Function: `gpgme_error_t gpgme_op_decrypt_ext (gpgme_ctx_t CTX,
gpgme_decrypt_flags_t FLAGS, gpgme_data_t CIPHER,
gpgme_data_t PLAIN)`

SINCE: 1.8.0

The function `gpgme_op_decrypt_ext` is the same as `gpgme_op_decrypt` but has an additional argument `FLAGS`. If `FLAGS` is 0 both function behave identically.

The value in `FLAGS` is a bitwise-or combination of one or multiple of the following bit values:

`GPGME_DECRYPT_VERIFY`

SINCE: 1.8.0

The `GPGME_DECRYPT_VERIFY` symbol specifies that this function shall exactly act as `gpgme_op_decrypt_verify`.

`GPGME_DECRYPT_UNWRAP`

SINCE: 1.8.0

The `GPGME_DECRYPT_UNWRAP` symbol specifies that the output shall be an OpenPGP message with only the encryption layer removed. This requires GnuPG 2.1.12 and works only for OpenPGP. This is the counterpart to `GPGME_ENCRYPT_WRAP`.

The function returns the error codes as described for `gpgme_op_decrypt` respective `gpgme_op_encrypt`.

-- Function: `gpgme_error_t gpgme_op_decrypt_ext_start (
gpgme_ctx_t CTX, gpgme_decrypt_flags_t FLAGS,
gpgme_data_t CIPHER, gpgme_data_t PLAIN)`

SINCE: 1.8.0

The function `gpgme_op_decrypt_ext_start` initiates a `gpgme_op_decrypt_ext` operation. It can be completed by calling

gpgme_wait on the context. *Note Waiting For Completion::.

The function returns the error code GPG_ERR_NO_ERROR if the operation could be started successfully, and GPG_ERR_INV_VALUE if CIPHER or PLAIN is not a valid pointer.

-- Data type: gpgme_recipient_t
SINCE: 1.1.0

This is a pointer to a structure used to store information about the recipient of an encrypted text which is decrypted in a gpgme_op_decrypt operation. This information (except for the status field) is even available before the operation finished successfully, for example in a passphrase callback. The structure contains the following members:

gpgme_recipient_t next

This is a pointer to the next recipient structure in the linked list, or NULL if this is the last element.

gpgme_pubkey_algo_t

The public key algorithm used in the encryption.

char *keyid

This is the key ID of the key (in hexadecimal digits) used as recipient.

gpgme_error_t status

This is an error number with the error code GPG_ERR_NO_SECKEY if the secret key for this recipient is not available, and 0 otherwise.

-- Data type: gpgme_decrypt_result_t

This is a pointer to a structure used to store the result of a gpgme_op_decrypt operation. After successfully decrypting data, you can retrieve the pointer to the result with gpgme_op_decrypt_result. As with all result structures, it this structure shall be considered read-only and an application must not allocate such a structure on its own. The structure contains the following members:

char *unsupported_algorithm

If an unsupported algorithm was encountered, this string describes the algorithm that is not supported.

unsigned int wrong_key_usage : 1

SINCE: 0.9.0 This is true if the key was not used according to its policy.

unsigned int legacy_cipher_nomdc : 1

SINCE: 1.11.2 The message was made by a legacy algorithm without any integrity protection. This might be an old but legitimate message.

unsigned int is_mime : 1;

SINCE: 1.11.0 The message claims that the content is a MIME object.

unsigned int is_de_vs : 1;

SINCE: 1.10.0 The message was encrypted in a VS-NfD compliant way. This is a specification in Germany for a restricted communication level.

gpgme_recipient_t recipients

SINCE: 1.1.0

This is a linked list of recipients to which this message was encrypted.

char *file_name

This is the filename of the original plaintext message file if it is known, otherwise this is a null pointer.

char *session_key

SINCE: 1.8.0

A textual representation (nul-terminated string) of the session key used in symmetric encryption of the message, if the context has been set to export session keys (see `gpgme_set_ctx_flag`, "export-session-key"), and a session key was available for the most recent decryption operation. Otherwise, this is a null pointer.

You must not try to access this member of the struct unless `gpgme_set_ctx_flag` (ctx, "export-session-key") returns success or `gpgme_get_ctx_flag` (ctx, "export-session-key") returns true (non-empty string).

char *symkey_algo

SINCE: 1.11.0

A string with the symmetric encryption algorithm and mode using the format "<algo>.<mode>". Note that the deprecated non-MDC encryption mode of OpenPGP is given as "PGPCFB".

-- Function: `gpgme_decrypt_result_t gpgme_op_decrypt_result`

(gpgme_ctx_t CTX)

The function `gpgme_op_decrypt_result` returns a `gpgme_decrypt_result_t` pointer to a structure holding the result of a `gpgme_op_decrypt` operation. The pointer is only valid if the last operation on the context was a `gpgme_op_decrypt` or `gpgme_op_decrypt_start` operation. If the operation failed this might be a NULL pointer. The returned pointer is only valid until the next operation is started on the context.

File: `gpgme.info`, Node: Verify, Next: Decrypt and Verify, Prev: Decrypt, Up: Crypto Operations

7.7.2 Verify

-- Function: `gpgme_error_t gpgme_op_verify (gpgme_ctx_t CTX, gpgme_data_t SIG, gpgme_data_t SIGNED_TEXT, gpgme_data_t PLAIN)`

The function `gpgme_op_verify` verifies that the signature in the data object `SIG` is a valid signature. If `SIG` is a detached signature, then the signed text should be provided in `SIGNED_TEXT` and `PLAIN` should be a null pointer. Otherwise, if `SIG` is a normal (or cleartext) signature, `SIGNED_TEXT` should be a null pointer and `PLAIN` should be a writable data object that will contain the plaintext after successful verification.

The results of the individual signature verifications can be retrieved with `gpgme_op_verify_result`.

The function returns the error code `GPG_ERR_NO_ERROR` if the operation could be completed successfully, `GPG_ERR_INV_VALUE` if `CTX`, `SIG` or `PLAIN` is not a valid pointer, `GPG_ERR_NO_DATA` if `SIG` does not contain any data to verify, and passes through any errors that are reported by the crypto engine support routines.

-- Function: `gpgme_error_t gpgme_op_verify_start (gpgme_ctx_t CTX, gpgme_data_t SIG, gpgme_data_t SIGNED_TEXT, gpgme_data_t PLAIN)`

The function `gpgme_op_verify_start` initiates a `gpgme_op_verify` operation. It can be completed by calling `gpgme_wait` on the context. *Note Waiting For Completion::.

The function returns the error code `GPG_ERR_NO_ERROR` if the operation could be started successfully, `GPG_ERR_INV_VALUE` if `CTX`, `SIG` or `PLAIN` is not a valid pointer, and `GPG_ERR_NO_DATA` if `SIG` or `PLAIN` does not contain any data to verify.

-- Data type: `gpgme_sig_notation_t`

This is a pointer to a structure used to store a part of the result of a `gpgme_op_verify` operation. The structure contains the following members:

`gpgme_sig_notation_t next`

This is a pointer to the next new signature notation structure in the linked list, or `NULL` if this is the last element.

`char *name`

The name of the notation field. If this is `NULL`, then the member value will contain a policy URL.

`int name_len`

The length of the name field. For strings the length is counted without the trailing binary zero.

`char *value`

The value of the notation field. If `name` is `NULL`, then this is a policy URL.

`int value_len`

The length of the value field. For strings the length is counted without the trailing binary zero.

`gpgme_sig_notation_flags_t flags`

The accumulated flags field. This field contains the flags associated with the notation data in an accumulated form which can be used as an argument to the function `gpgme_sig_notation_add`. The value `flags` is a bitwise-or combination of one or multiple of the following bit values:

`GPGME_SIG_NOTATION_HUMAN_READABLE`

SINCE: 1.1.0

The `GPGME_SIG_NOTATION_HUMAN_READABLE` symbol specifies that the notation data is in human readable form

`GPGME_SIG_NOTATION_CRITICAL`

SINCE: 1.1.0

The `GPGME_SIG_NOTATION_CRITICAL` symbol specifies that the notation data is critical.

`unsigned int human_readable : 1`

This is true if the `GPGME_SIG_NOTATION_HUMAN_READABLE` flag is set and false otherwise. This flag is only valid for notation data, not for policy URLs.

unsigned int critical : 1

This is true if the GPGME_SIG_NOTATION_CRITICAL flag is set and false otherwise. This flag is valid for notation data and policy URLs.

-- Data type: gpgme_signature_t

This is a pointer to a structure used to store a part of the result of a gpgme_op_verify operation. The structure contains the following members:

gpgme_signature_t next

This is a pointer to the next new signature structure in the linked list, or NULL if this is the last element.

gpgme_sigsum_t summary

This is a bit vector giving a summary of the signature status. It provides an easy interface to a defined semantic of the signature status. Checking just one bit is sufficient to see whether a signature is valid without any restrictions. This means that you can check for GPGME_SIGSUM_VALID like this:

```
if ((sig.summary & GPGME_SIGSUM_VALID))
{
    ..do stuff if valid..
}
else
{
    ..do stuff if not fully valid..
}
```

The defined bits are:

GPGME_SIGSUM_VALID

The signature is fully valid.

GPGME_SIGSUM_GREEN

The signature is good but one might want to display some extra information. Check the other bits.

GPGME_SIGSUM_RED

The signature is bad. It might be useful to check other bits and display more information, i.e. a revoked certificate might not render a signature invalid when the message was received prior to the cause for the revocation.

GPGME_SIGSUM_KEY_REVOKED

The key or at least one certificate has been revoked.

GPGME_SIGSUM_KEY_EXPIRED

The key or one of the certificates has expired. It is probably a good idea to display the date of the expiration.

GPGME_SIGSUM_SIG_EXPIRED

The signature has expired.

GPGME_SIGSUM_KEY_MISSING

Cant verify due to a missing key or certificate.

GPGME_SIGSUM_CRL_MISSING

The CRL (or an equivalent mechanism) is not available.

GPGME_SIGSUM_CRL_TOO_OLD

Available CRL is too old.

GPGME_SIGSUM_BAD_POLICY

A policy requirement was not met.

GPGME_SIGSUM_SYS_ERROR

A system error occurred.

GPGME_SIGSUM_TOFU_CONFLICT

A TOFU conflict was detected.

char *fpr

This is the fingerprint or key ID of the signature.

gpgme_error_t status

This is the status of the signature. In particular, the following status codes are of interest:

GPG_ERR_NO_ERROR

This status indicates that the signature is valid. For the combined result this status means that all signatures are valid.

GPG_ERR_SIG_EXPIRED

This status indicates that the signature is valid but expired. For the combined result this status means that all signatures are valid and expired.

GPG_ERR_KEY_EXPIRED

This status indicates that the signature is valid but the key used to verify the signature has expired. For the combined result this status means that all signatures are valid and all keys are expired.

GPG_ERR_CERT_REVOKED

This status indicates that the signature is valid but the key used to verify the signature has been revoked. For the combined result this status means that all signatures are valid and all keys are revoked.

GPG_ERR_BAD_SIGNATURE

This status indicates that the signature is invalid. For the combined result this status means that all signatures are invalid.

GPG_ERR_NO_PUBKEY

This status indicates that the signature could not be verified due to a missing key. For the combined result this status means that all signatures could not be checked due to missing keys.

GPG_ERR_GENERAL

This status indicates that there was some other error which prevented the signature verification.

gpgme_sig_notation_t notations

This is a linked list with the notation data and policy URLs.

unsigned long timestamp

The creation timestamp of this signature.

unsigned long exp_timestamp

The expiration timestamp of this signature, or 0 if the signature does not expire.

unsigned int wrong_key_usage : 1

This is true if the key was not used according to its policy.

unsigned int pka_trust : 2

This is set to the trust information gained by means of the PKA system. Values are:

0

No PKA information available or verification not possible.

1

PKA verification failed.

2

PKA verification succeeded.

3

Reserved for future use.

Depending on the configuration of the engine, this metric may

also be reflected by the validity of the signature.

unsigned int chain_model : 1

SINCE: 1.1.6

This is true if the validity of the signature has been checked using the chain model. In the chain model the time the signature has been created must be within the validity period of the certificate and the time the certificate itself has been created must be within the validity period of the issuing certificate. In contrast the default validation model checks the validity of signature as well at the entire certificate chain at the current time.

gpgme_validity_t validity

The validity of the signature.

gpgme_error_t validity_reason

If a signature is not valid, this provides a reason why.

gpgme_pubkey_algo_t

The public key algorithm used to create this signature.

gpgme_hash_algo_t

The hash algorithm used to create this signature.

char *pka_address

The mailbox from the PKA information or NULL.

gpgme_key_t key

SINCE: 1.7.0

An object describing the key used to create the signature.

This key object may be incomplete in that it only conveys information available directly with a signature. It may also be NULL if such information is not readily available.

-- Data type: gpgme_verify_result_t

This is a pointer to a structure used to store the result of a gpgme_op_verify operation. After verifying a signature, you can retrieve the pointer to the result with gpgme_op_verify_result. If the operation failed this might be a NULL pointer. The structure contains the following member:

gpgme_signature_t signatures

A linked list with information about all signatures for which a verification was attempted.

char *file_name

This is the filename of the original plaintext message file if it is known, otherwise this is a null pointer. Warning: The filename is not covered by the signature.

unsigned int is_mime : 1;

SINCE: 1.11.0

The message claims that the content is a MIME object.

Warning: This flag is not covered by the signature.

-- Function: gpgme_verify_result_t gpgme_op_verify_result
(gpgme_ctx_t CTX)

The function gpgme_op_verify_result returns a gpgme_verify_result_t pointer to a structure holding the result of a gpgme_op_verify operation. The pointer is only valid if the last operation on the context was a gpgme_op_verify, gpgme_op_verify_start, gpgme_op_decrypt_verify or gpgme_op_decrypt_verify_start operation, and if this operation finished successfully (for gpgme_op_decrypt_verify and gpgme_op_decrypt_verify_start, the error code GPG_ERR_NO_DATA counts as successful in this context). The returned pointer is only valid until the next operation is started on the context.

File: gpgme.info, Node: Decrypt and Verify, Next: Sign, Prev: Verify, Up: Crypto Operations

7.7.3 Decrypt and Verify

-- Function: gpgme_error_t gpgme_op_decrypt_verify (gpgme_ctx_t CTX,
gpgme_data_t CIPHER, gpgme_data_t PLAIN)

The function gpgme_op_decrypt_verify decrypts the ciphertext in the data object CIPHER and stores it into the data object PLAIN. If CIPHER contains signatures, they will be verified.

After the operation completed, gpgme_op_decrypt_result and gpgme_op_verify_result can be used to retrieve more information about the signatures.

If the error code GPG_ERR_NO_DATA is returned, CIPHER does not contain any data to decrypt. However, it might still be signed. The information about detected signatures is available with gpgme_op_verify_result in this case.

The function returns the error code GPG_ERR_NO_ERROR if the ciphertext could be decrypted successfully, GPG_ERR_INV_VALUE if CTX, CIPHER or PLAIN is not a valid pointer, GPG_ERR_NO_DATA if

CIPHER does not contain any data to decrypt,
GPG_ERR_DECRYPT_FAILED if CIPHER is not a valid cipher text,
GPG_ERR_BAD_PASSPHRASE if the passphrase for the secret key could
not be retrieved, and passes through any errors that are reported
by the crypto engine support routines.

-- Function: `gpgme_error_t gpgme_op_decrypt_verify_start`
(`gpgme_ctx_t CTX`, `gpgme_data_t CIPHER`, `gpgme_data_t PLAIN`)
The function `gpgme_op_decrypt_verify_start` initiates a
`gpgme_op_decrypt_verify` operation. It can be completed by
calling `gpgme_wait` on the context. *Note Waiting For
Completion::.

The function returns the error code `GPG_ERR_NO_ERROR` if the
operation could be started successfully, `GPG_ERR_INV_VALUE` if
`CTX`, `CIPHER`, `PLAIN` or `R_STAT` is not a valid pointer, and
`GPG_ERR_NO_DATA` if CIPHER does not contain any data to decrypt.

When processing mails it is sometimes useful to extract the actual
mail address (the `addr-spec`) from a string. GPGME provides this
helper function which uses the same semantics as the internal functions
in GPGME and GnuPG:

-- Function: `char * gpgme_addrspec_from_uid (const char *UID)`

SINCE: 1.7.1

Return the mail address (called `addr-spec` in RFC-5322) from the
string `UID` which is assumed to be a user id (called `address` in
RFC-5322). All plain ASCII characters (i.e. those with bit 7
cleared) in the result are converted to lowercase. Caller must
free the result using `gpgme_free`. Returns `NULL` if no valid
address was found (in which case `ERRNO` is set to `EINVAL`) or for
other errors.

File: `gpgme.info`, Node: Sign, Next: Encrypt, Prev: Decrypt and Verify, Up: Crypto Operations

7.7.4 Sign

A signature can contain signatures by one or more keys. The set of keys
used to create a signatures is contained in a context, and is applied to
all following signing operations in this context (until the set is
changed).

* Menu:

- * **Selecting Signers::** How to choose the keys to sign with.
- * **Creating a Signature::** How to create a signature.
- * **Signature Notation Data::** How to add notation data to a signature.

File: gpgme.info, Node: Selecting Signers, Next: Creating a Signature, Up: Sign

7.7.4.1 Selecting Signers

.....

The key or the keys used to create a signature are stored in the context. The following functions can be used to manipulate this list. If no signer has been set into the context a default key is used for signing.

-- Function: void gpgme_signers_clear (gpgme_ctx_t CTX)
 The function gpgme_signers_clear releases a reference for each key on the signers list and removes the list of signers from the context CTX.

Every context starts with an empty list.

-- Function: gpgme_error_t gpgme_signers_add (gpgme_ctx_t CTX, const gpgme_key_t KEY)
 The function gpgme_signers_add adds the key KEY to the list of signers in the context CTX.

Calling this function acquires an additional reference for the key.

-- Function: unsigned int gpgme_signers_count (const gpgme_ctx_t CTX)
 SINCE: 1.4.3

The function gpgme_signers_count returns the number of signer keys in the context CTX.

-- Function: gpgme_key_t gpgme_signers_enum (const gpgme_ctx_t CTX, int SEQ)
 The function gpgme_signers_enum returns the SEQth key in the list of signers in the context CTX. An additional reference is acquired for the user.

If SEQ is out of range, NULL is returned.

File: gpgme.info, Node: Creating a Signature, Next: Signature Notation Data, Prev: Selecting Signers, Up: Sign

7.7.4.2 Creating a Signature

.....

-- Data type: enum `gpgme_sig_mode_t`

The `gpgme_sig_mode_t` type is used to specify the desired type of a signature. The following modes are available:

`GPGME_SIG_MODE_NORMAL`

A normal signature is made, the output includes the plaintext and the signature.

`GPGME_SIG_MODE_DETACH`

A detached signature is made.

`GPGME_SIG_MODE_CLEAR`

A clear text signature is made. The ASCII armor and text mode settings of the context are ignored.

-- Function: `gpgme_error_t gpgme_op_sign (gpgme_ctx_t CTX, gpgme_data_t PLAIN, gpgme_data_t SIG, gpgme_sig_mode_t MODE)`

The function `gpgme_op_sign` creates a signature for the text in the data object `PLAIN` and returns it in the data object `SIG`. The type of the signature created is determined by the ASCII armor (or, if that is not set, by the encoding specified for `SIG`), the text mode attributes set for the context `CTX` and the requested signature mode `MODE`.

After the operation completed successfully, the result can be retrieved with `gpgme_op_sign_result`.

If an S/MIME signed message is created using the CMS crypto engine, the number of certificates to include in the message can be specified with `gpgme_set_include_certs`. *Note Included Certificates::.

The function returns the error code `GPG_ERR_NO_ERROR` if the signature could be created successfully, `GPG_ERR_INV_VALUE` if `CTX`, `PLAIN` or `SIG` is not a valid pointer, `GPG_ERR_NO_DATA` if the signature could not be created, `GPG_ERR_BAD_PASSPHRASE` if the passphrase for the secret key could not be retrieved, `GPG_ERR_UNUSABLE_SECKEY` if there are invalid signers, and passes through any errors that are reported by the crypto engine support routines.

-- Function: `gpgme_error_t gpgme_op_sign_start (gpgme_ctx_t CTX, gpgme_data_t PLAIN, gpgme_data_t SIG, gpgme_sig_mode_t MODE)`

The function `gpgme_op_sign_start` initiates a `gpgme_op_sign` operation. It can be completed by calling `gpgme_wait` on the context. *Note Waiting For Completion::.

The function returns the error code `GPG_ERR_NO_ERROR` if the operation could be started successfully, and `GPG_ERR_INV_VALUE` if `CTX`, `PLAIN` or `SIG` is not a valid pointer.

-- Data type: `gpgme_new_signature_t`

This is a pointer to a structure used to store a part of the result of a `gpgme_op_sign` operation. The structure contains the following members:

`gpgme_new_signature_t next`

This is a pointer to the next new signature structure in the linked list, or `NULL` if this is the last element.

`gpgme_sig_mode_t type`

The type of this signature.

`gpgme_pubkey_algo_t pubkey_algo`

The public key algorithm used to create this signature.

`gpgme_hash_algo_t hash_algo`

The hash algorithm used to create this signature.

`unsigned int sig_class`

The signature class of this signature.

`long int timestamp`

The creation timestamp of this signature.

`char *fpr`

The fingerprint of the key which was used to create this signature.

-- Data type: `gpgme_sign_result_t`

This is a pointer to a structure used to store the result of a `gpgme_op_sign` operation. After successfully generating a signature, you can retrieve the pointer to the result with `gpgme_op_sign_result`. The structure contains the following members:

`gpgme_invalid_key_t invalid_signers`

A linked list with information about all invalid keys for which a signature could not be created.

`gpgme_new_signature_t signatures`

A linked list with information about all signatures created.

-- Function: `gpgme_sign_result_t gpgme_op_sign_result (gpgme_ctx_t CTX)`

The function `gpgme_op_sign_result` returns a `gpgme_sign_result_t`

pointer to a structure holding the result of a `gpgme_op_sign` operation. The pointer is only valid if the last operation on the context was a `gpgme_op_sign`, `gpgme_op_sign_start`, `gpgme_op_encrypt_sign` or `gpgme_op_encrypt_sign_start` operation. If that operation failed, the function might return a `NULL` pointer. The returned pointer is only valid until the next operation is started on the context.

File: `gpgme.info`, Node: Signature Notation Data, Prev: Creating a Signature, Up: Sign

7.7.4.3 Signature Notation Data

.....

Using the following functions, you can attach arbitrary notation data to a signature. This information is then available to the user when the signature is verified.

-- Function: `void gpgme_sig_notation_clear (gpgme_ctx_t CTX)`

SINCE: 1.1.0

The function `gpgme_sig_notation_clear` removes the notation data from the context `CTX`. Subsequent signing operations from this context will not include any notation data.

Every context starts with an empty notation data list.

-- Function: `gpgme_error_t gpgme_sig_notation_add (gpgme_ctx_t CTX,`

`const char *NAME, const char *VALUE,`

`gpgme_sig_notation_flags_t FLAGS)`

SINCE: 1.1.0

The function `gpgme_sig_notation_add` adds the notation data with the name `NAME` and the value `VALUE` to the context `CTX`.

Subsequent signing operations will include this notation data, as well as any other notation data that was added since the creation of the context or the last `gpgme_sig_notation_clear` operation.

The arguments `NAME` and `VALUE` must be NUL-terminated strings in human-readable form. The flag `GPGME_SIG_NOTATION_HUMAN_READABLE` is implied (non-human-readable notation data is currently not supported). The strings must be in UTF-8 encoding.

If `NAME` is `NULL`, then `VALUE` should be a policy URL.

The function `gpgme_sig_notation_add` returns the error code `GPG_ERR_NO_ERROR` if the notation data could be added

successfully, GPG_ERR_INV_VALUE if CTX is not a valid pointer, or if NAME, VALUE and FLAGS are an invalid combination. The function also passes through any errors that are reported by the crypto engine support routines.

-- Function: `gpgme_sig_notation_t gpgme_sig_notation_get`
 (const `gpgme_ctx_t` CTX)
SINCE: 1.1.0

The function `gpgme_sig_notation_get` returns the linked list of notation data structures that are contained in the context CTX.

If CTX is not a valid pointer, or there is no notation data added for this context, NULL is returned.

File: `gpgme.info`, Node: Encrypt, Prev: Sign, Up: Crypto Operations

7.7.5 Encrypt

One plaintext can be encrypted for several recipients at the same time. The list of recipients is created independently of any context, and then passed to the encryption operation.

* Menu:

* Encrypting a Plaintext:: How to encrypt a plaintext.

File: `gpgme.info`, Node: Encrypting a Plaintext, Up: Encrypt

7.7.5.1 Encrypting a Plaintext

.....

-- Function: `gpgme_error_t gpgme_op_encrypt` (`gpgme_ctx_t` CTX,
 `gpgme_key_t` RECP[], `gpgme_encrypt_flags_t` FLAGS,
 `gpgme_data_t` PLAIN, `gpgme_data_t` CIPHER)

The function `gpgme_op_encrypt` encrypts the plaintext in the data object PLAIN for the recipients RECP and stores the ciphertext in the data object CIPHER. The type of the ciphertext created is determined by the ASCII armor (or, if that is not set, by the encoding specified for CIPHER) and the text mode attributes set for the context CTX.

RECP must be a NULL-terminated array of keys. The user must keep references for all keys during the whole duration of the call (but see `gpgme_op_encrypt_start` for the requirements with the

asynchronous variant).

The value in `FLAGS` is a bitwise-or combination of one or multiple of the following bit values:

`GPGME_ENCRYPT_ALWAYS_TRUST`

The `GPGME_ENCRYPT_ALWAYS_TRUST` symbol specifies that all the recipients in `RECP` should be trusted, even if the keys do not have a high enough validity in the keyring. This flag should be used with care; in general it is not a good idea to use any untrusted keys.

`GPGME_ENCRYPT_NO_ENCRYPT_TO`

SINCE: 1.2.0

The `GPGME_ENCRYPT_NO_ENCRYPT_TO` symbol specifies that no default or hidden default recipients as configured in the crypto backend should be included. This can be useful for managing different user profiles.

`GPGME_ENCRYPT_NO_COMPRESS`

SINCE: 1.5.0

The `GPGME_ENCRYPT_NO_COMPRESS` symbol specifies that the plaintext shall not be compressed before it is encrypted. This is in some cases useful if the length of the encrypted message may reveal information about the plaintext.

`GPGME_ENCRYPT_PREPARE`

`GPGME_ENCRYPT_EXPECT_SIGN`

The `GPGME_ENCRYPT_PREPARE` symbol is used with the UI Server protocol to prepare an encryption (i.e. sending the `PREP_ENCRYPT` command). With the `GPGME_ENCRYPT_EXPECT_SIGN` symbol the UI Server is advised to also expect a sign command.

`GPGME_ENCRYPT_SYMMETRIC`

SINCE: 1.7.0

The `GPGME_ENCRYPT_SYMMETRIC` symbol specifies that the output should be additionally encrypted symmetrically even if recipients are provided. This feature is only supported for the OpenPGP crypto engine.

`GPGME_ENCRYPT_THROW_KEYIDS`

SINCE: 1.8.0

The `GPGME_ENCRYPT_THROW_KEYIDS` symbols requests that the identifiers for the decryption keys are not included in the

ciphertext. On the receiving side, the use of this flag may slow down the decryption process because all available secret keys must be tried. This flag is only honored for OpenPGP encryption.

GPGME_ENCRYPT_WRAP

SINCE: 1.8.0

The GPGME_ENCRYPT_WRAP symbol specifies that the input is an OpenPGP message and not a plain data. This is the counterpart to GPGME_DECRYPT_UNWRAP.

GPGME_ENCRYPT_WANT_ADDRESS

SINCE: 1.11.0

The GPGME_ENCRYPT_WANT_ADDRESS symbol requests that all supplied keys or key specifications include a syntactically valid mail address. If this is not the case the operation is not even tried and the error code GPG_ERR_INV_USER_ID is returned. Only the address part of the key specification is conveyed to the backend. As of now the key must be specified using the RECPSTRING argument of the extended encrypt functions. This feature is currently only supported for the OpenPGP crypto engine.

If GPG_ERR_UNUSABLE_PUBKEY is returned, some recipients in RECP are invalid, but not all. In this case the plaintext might be encrypted for all valid recipients and returned in CIPHER (if this happens depends on the crypto engine). More information about the invalid recipients is available with gpgme_op_encrypt_result.

If RECP is NULL, symmetric rather than public key encryption is performed. Symmetrically encrypted cipher text can be deciphered with gpgme_op_decrypt. Note that in this case the crypto backend needs to retrieve a passphrase from the user. Symmetric encryption is currently only supported for the OpenPGP crypto backend.

The function returns the error code GPG_ERR_NO_ERROR if the ciphertext could be created successfully, GPG_ERR_INV_VALUE if CTX, RECP, PLAIN or CIPHER is not a valid pointer, GPG_ERR_UNUSABLE_PUBKEY if RECP contains some invalid recipients, GPG_ERR_BAD_PASSPHRASE if the passphrase for the symmetric key could not be retrieved, and passes through any errors that are reported by the crypto engine support routines.

-- Function: gpgme_error_t gpgme_op_encrypt_start (gpgme_ctx_t CTX,
gpgme_key_t RECP[], gpgme_encrypt_flags_t FLAGS,
gpgme_data_t PLAIN, gpgme_data_t CIPHER)

The function `gpgme_op_encrypt_start` initiates a `gpgme_op_encrypt` operation. It can be completed by calling `gpgme_wait` on the context. *Note Waiting For Completion::.

References to the keys only need to be held for the duration of this call. The user can release its references to the keys after this function returns, even if the operation is not yet finished.

The function returns the error code `GPG_ERR_NO_ERROR` if the operation could be started successfully, `GPG_ERR_INV_VALUE` if `CTX`, `RSET`, `PLAIN` or `CIPHER` is not a valid pointer, and `GPG_ERR_UNUSABLE_PUBKEY` if `RSET` does not contain any valid recipients.

```
-- Function: gpgme_error_t gpgme_op_encrypt_ext (gpgme_ctx_t CTX,  
        gpgme_key_t RECP[], const char *RECPSTRING,  
        gpgme_encrypt_flags_t FLAGS, gpgme_data_t PLAIN,  
        gpgme_data_t CIPHER)
```

SINCE: 1.11.0

This is an extended version of `gpgme_op_encrypt` with `RECPSTRING` as additional parameter. If `RECP` is `NULL` and `RECPSTRING` is not `NULL`, the latter is expected to be a linefeed delimited string with the set of key specifications. In contrast to `RECP` the keys are given directly as strings and there is no need to first create key objects. Leading and trailing white space is removed from each line in `RECPSTRING`. The keys are then passed verbatim to the backend engine.

For the OpenPGP backend several special keywords are supported to modify the operation. These keywords are given instead of a key specification. The currently supported keywords are:

--hidden

--no-hidden

These keywords toggle between normal and hidden recipients for all following key specifications. When a hidden recipient is requested the `gpg` option `-R` (or `-F` in file mode) is used instead of `-r` (`-f` in file mode).

--file

--no-file

These keywords toggle between regular and file mode for all following key specification. In file mode the option `-f` or `-F` is passed to `gpg`. At least GnuPG version 2.1.14 is required to handle these options. The `GPGME_ENCRYPT_WANT_ADDRESS` flag is ignored in file mode.

--

This keyword disables all keyword detection up to the end of the string. All keywords are treated as verbatim arguments.

To create a RECPSTRING it is often useful to employ a `strconcat` style function. For example this function creates a string to encrypt to two keys:

```
char *
xbuild_recpsring (const char *key1, const char *key2)
{
    char *result = gpgrt_strconcat ("--\n", key1, "\n", key2, NULL);
    if (!result)
        { perror ("strconcat failed"); exit (2); }
    return result;
}
```

Note the use of the double dash here; unless you want to specify a keyword, it is a good idea to avoid any possible trouble with key specifications starting with a double dash. The used `strconcat` function is available in Libgpg-error 1.28 and later; Libgpg-error (aka Gpgrt) is a dependency of GPGME. The number of arguments to `gpgrt_strconcat` is limited to 47 but that should always be sufficient. In case a larger and non-fixed number of keys are to be supplied the following code can be used:

```
char *
xbuild_long_recpsring (void)
{
    gpgrt_stream_t memfp;
    const char *s;
    void *result;

    memfp = gpgrt_fopenmem (0, "w+b");
    if (!memfp)
        { perror ("fopenmem failed"); exit (2); }
    gpgrt_fputs ("--", memfp);
    while ((s = get_next_keyspec ()))
        {
            gpgrt_fputc ('\n', memfp);
            gpgrt_fputs (s, memfp);
        }
    gpgrt_fputc (0, memfp);
    if (gpgrt_ferror (memfp))
        { perror ("writing to memstream failed"); exit (2); }
    if (gpgrt_fclose_snatch (memfp, &result, NULL))
        { perror ("fclose_snatch failed"); exit (2); }
```

```
    return result;
}
```

In this example `get_next_keyspec` is expected to return the next key to be added to the string. Please take care: Encrypting to a large number of recipients is often questionable due to security reasons and also for the technicality that all keys are currently passed on the command line to `gpg` which has as a platform specific length limitation.

```
-- Function: gpgme_error_t gpgme_op_encrypt_ext_start (gpgme_ctx_t CTX,
    gpgme_key_t RECP[], const char *RECPSTRING,
    gpgme_encrypt_flags_t FLAGS, gpgme_data_t PLAIN,
    gpgme_data_t CIPHER)
```

SINCE: 1.11.0

This is an extended version of `gpgme_op_encrypt_start` with `RECPSTRING` as additional parameter. If `RECP` is `NULL` and `RECPSTRING` is not `NULL`, the latter is expected to be a linefeed delimited string with the set of key specifications. In contrast to `RECP` the keys are given directly as strings and there is no need to first create key objects. The keys are passed verbatim to the backend engine.

```
-- Data type: gpgme_encrypt_result_t
This is a pointer to a structure used to store the result of a
gpgme_op_encrypt operation. After successfully encrypting data,
you can retrieve the pointer to the result with
gpgme_op_encrypt_result. The structure contains the following
members:
```

```
gpgme_invalid_key_t invalid_recipients
    A linked list with information about all invalid keys for
    which the data could not be encrypted.
```

```
-- Function: gpgme_encrypt_result_t gpgme_op_encrypt_result
    (gpgme_ctx_t CTX)
The function gpgme_op_encrypt_result returns a
gpgme_encrypt_result_t pointer to a structure holding the result
of a gpgme_op_encrypt operation. The pointer is only valid if
the last operation on the context was a gpgme_op_encrypt,
gpgme_op_encrypt_start, gpgme_op_sign or gpgme_op_sign_start
operation. If this operation failed, this might be a NULL
pointer. The returned pointer is only valid until the next
operation is started on the context.
```

```
-- Function: gpgme_error_t gpgme_op_encrypt_sign (gpgme_ctx_t CTX,
```

gpgme_key_t RECP[], gpgme_encrypt_flags_t FLAGS,
gpgme_data_t PLAIN, gpgme_data_t CIPHER)

The function `gpgme_op_encrypt_sign` does a combined encrypt and sign operation. It is used like `gpgme_op_encrypt`, but the ciphertext also contains signatures for the signers listed in `CTX`.

The combined encrypt and sign operation is currently only available for the OpenPGP crypto engine.

-- Function: `gpgme_error_t gpgme_op_encrypt_sign_start`
(`gpgme_ctx_t CTX`, `gpgme_key_t RECP[]`,
`gpgme_encrypt_flags_t FLAGS`, `gpgme_data_t PLAIN`,
`gpgme_data_t CIPHER`)

The function `gpgme_op_encrypt_sign_start` initiates a `gpgme_op_encrypt_sign` operation. It can be completed by calling `gpgme_wait` on the context. *Note Waiting For Completion::.

The function returns the error code `GPG_ERR_NO_ERROR` if the operation could be started successfully, and `GPG_ERR_INV_VALUE` if `CTX`, `RSET`, `PLAIN` or `CIPHER` is not a valid pointer.

-- Function: `gpgme_error_t gpgme_op_encrypt_sign_ext` (`gpgme_ctx_t CTX`,
`gpgme_key_t RECP[]`, `const char *RECPSTRING`,
`gpgme_encrypt_flags_t FLAGS`, `gpgme_data_t PLAIN`,
`gpgme_data_t CIPHER`)

SINCE: 1.11.0

This is an extended version of `gpgme_op_encrypt_sign` with `RECPSTRING` as additional parameter. If `RECP` is `NULL` and `RECPSTRING` is not `NULL`, the latter is expected to be a linefeed delimited string with the set of key specifications. In contrast to `RECP` the keys are given directly as strings and there is no need to first create the key objects. The keys are passed verbatim to the backend engine.

-- Function: `gpgme_error_t gpgme_op_encrypt_sign_ext_start`
(`gpgme_ctx_t CTX`, `gpgme_key_t RECP[]`, `const char *RECPSTRING`,
`gpgme_encrypt_flags_t FLAGS`, `gpgme_data_t PLAIN`,
`gpgme_data_t CIPHER`)

SINCE: 1.11.0

This is an extended version of `gpgme_op_encrypt_sign_start` with `RECPSTRING` as additional parameter. If `RECP` is `NULL` and `RECPSTRING` is not `NULL`, the latter is expected to be a linefeed delimited string with the set of key specifications. In contrast to `RECP` the keys are given directly as strings and there is no need to first

create the key objects. The keys are passed verbatim to the backend engine.

File: gpgme.info, Node: Miscellaneous, Next: Run Control, Prev: Crypto Operations, Up: Contexts

7.8 Miscellaneous operations

=====

Here are some support functions which are sometimes useful.

* Menu:

- * Running other Programs:: Running other Programs
- * Using the Assuan protocol:: Using the Assuan protocol
- * Checking for updates:: How to check for software updates

File: gpgme.info, Node: Running other Programs, Next: Using the Assuan protocol, Up: Miscellaneous

7.8.1 Running other Programs

GPGME features an internal subsystem to run the actual backend engines. Along with data abstraction object this subsystem can be used to run arbitrary simple programs which even need not be related to cryptographic features. It may for example be used to run tools which are part of the GnuPG system but are not directly accessible with the GPGME API.

```
-- Function: gpgme_error_t gpgme_op_spawn (gpgme_ctx_t CTX,  
      const char *FILE, const char *ARGV[], gpgme_data_t DATAIN,  
      gpgme_data_t DATAOUT, gpgme_data_t DATAERR,  
      unsigned int FLAGS)
```

SINCE: 1.5.0

The function `gpgme_op_spawn` runs the program `FILE` with the arguments taken from the `NULL` terminated array `ARGV`. If no arguments are required `ARGV` may be given as `NULL`. In the latter case or if `argv[0]` is the empty string, GPGME uses the basename of `FILE` for `argv[0]`. The file descriptors `stdin`, `stdout`, and `stderr` are connected to the data objects `DATAIN`, `DATAOUT`, and `DATAERR`. If `NULL` is passed for one of these data objects the corresponding file descriptor is connected to `/dev/null`.

The value in `FLAGS` is a bitwise-or combination of one or multiple of the following bit values:

GPGME_SPAWN_DETACHED

SINCE: 1.5.0

Under Windows this flag inhibits the allocation of a new console for the program. This is useful for a GUI application which needs to call a command line helper tool.

GPGME_SPAWN_ALLOW_SET_FG

SINCE: 1.5.0

Under Windows this flag allows the called program to put itself into the foreground.

```
-- Function: gpgme_error_t gpgme_op_spawn_start (gpgme_ctx_t CTX,  
const char *FILE, const char *ARGV[], gpgme_data_t DATAIN,  
gpgme_data_t DATAOUT, gpgme_data_t DATAERR,  
unsigned int FLAGS)
```

SINCE: 1.5.0

This is the asynchronous variant of `gpgme_op_spawn`.

File: `gpgme.info`, Node: Using the Assuan protocol, Next: Checking for updates, Prev: Running other Programs, Up: Miscellaneous

7.8.2 Using the Assuan protocol

The Assuan protocol can be used to talk to arbitrary Assuan servers. By default it is connected to the GnuPG agent, but it may be connected to arbitrary servers by using `gpgme_ctx_set_engine_info`, passing the location of the servers socket as `FILE_NAME` argument, and an empty string as `HOME_DIR` argument.

The Assuan protocol functions use three kinds of callbacks to transfer data:

```
-- Data type: gpgme_error_t (*gpgme_assuan_data_cb_t) (void *OPAQUE,  
const void *DATA, size_t DATALEN)
```

SINCE: 1.2.0

This callback receives any data sent by the server. `OPAQUE` is the pointer passed to `gpgme_op_assuan_transact_start`, `DATA` of length `DATALEN` refers to the data sent.

-- Data type: `gpgme_error_t (*gpgme_assuan_inquire_cb_t) (void *OPAQUE, const char *NAME, const char *ARGS, gpgme_data_t *R_DATA)`

SINCE: 1.2.0

This callback is used to provide additional data to the Assuan server. `OPAQUE` is the pointer passed to `gpgme_op_assuan_transact_start`, `NAME` and `ARGS` specify what kind of data the server requested, and `R_DATA` is used to return the actual data.

Note: Returning data is currently not implemented in GPGME.

-- Data type: `gpgme_error_t (*gpgme_assuan_status_cb_t) (void *OPAQUE, const char *STATUS, const char *ARGS)`

SINCE: 1.2.0

This callback receives any status lines sent by the server. `OPAQUE` is the pointer passed to `gpgme_op_assuan_transact_start`, `STATUS` and `ARGS` denote the status update sent.

-- Function: `gpgme_error_t gpgme_op_assuan_transact_start (gpgme_ctx_t CTX, const char *COMMAND, gpgme_assuan_data_cb_t DATA_CB, void * DATA_CB_VALUE, gpgme_assuan_inquire_cb_t INQUIRE_CB, void * INQUIRE_CB_VALUE, gpgme_assuan_status_cb_t STATUS_CB, void * STATUS_CB_VALUE)`

SINCE: 1.2.0

Send the Assuan `COMMAND` and return results via the callbacks. Any callback may be `NULL`. The result of the operation may be retrieved using `gpgme_wait_ext`.

Asynchronous variant.

-- Function: `gpgme_error_t gpgme_op_assuan_transact_ext (gpgme_ctx_t CTX, const char *COMMAND, gpgme_assuan_data_cb_t DATA_CB, void * DATA_CB_VALUE, gpgme_assuan_inquire_cb_t INQUIRE_CB, void * INQUIRE_CB_VALUE, gpgme_assuan_status_cb_t STATUS_CB, void * STATUS_CB_VALUE, gpgme_error_t *OP_ERR)`

Send the Assuan `COMMAND` and return results via the callbacks. The result of the operation is returned in `OP_ERR`.

Synchronous variant.

7.8.3 How to check for software updates

The GnuPG Project operates a server to query the current versions of software packages related to GnuPG. GPGME can be used to access this online database and check whether a new version of a software package is available.

-- Data type: `gpgme_query_swdb_result_t`
SINCE: 1.8.0

This is a pointer to a structure used to store the result of a `gpgme_op_query_swdb` operation. After success full call to that function, you can retrieve the pointer to the result with `gpgme_op_query_swdb_result`. The structure contains the following member:

`name`

This is the name of the package.

`iversion`

The currently installed version or an empty string. This value is either a copy of the argument given to `gpgme_op_query_swdb` or the version of the installed software as figured out by GPGME or GnuPG.

`created`

This gives the date the file with the list of version numbers has originally be created by the GnuPG project.

`retrieved`

This gives the date the file was downloaded.

`warning`

If this flag is set either an error has occurred or some of the information in this structure are not properly set. For example if the version number of the installed software could not be figured out, the update flag may not reflect a required update status.

`update`

If this flag is set an update of the software is available.

`urgent`

If this flag is set an available update is important.

noinfo

If this flag is set, no valid information could be retrieved.

unknown

If this flag is set the given name is not known.

toold

If this flag is set the available information is not fresh enough.

error

If this flag is set some other error has occurred.

version

The version string of the latest released version.

reldate

The release date of the latest released version.

-- Function: `gpgme_error_t gpgme_op_query_swdb (gpgme_ctx_t CTX, const char *NAME, const char *IVERSION, gpgme_data_t RESERVED)`

SINCE: 1.8.0

Query the software version database for software package NAME and check against the installed version given by IVERSION. If IVERSION is given as NULL a check is only done if GPGME can figure out the version by itself (for example when using "gpgme" or "gnupg"). If NULL is used for NAME the current gpgme version is checked. RESERVED must be set to 0.

-- Function: `gpgme_query_swdb_result_t gpgme_op_query_swdb_result (gpgme_ctx_t CTX)`

SINCE: 1.8.0

The function `gpgme_op_query_swdb_result` returns a `gpgme_query_swdb_result_t` pointer to a structure holding the result of a `gpgme_op_query_swdb` operation. The pointer is only valid if the last operation on the context was a successful call to `gpgme_op_query_swdb`. If that call failed, the result might be a NULL pointer. The returned pointer is only valid until the next operation is started on the context CTX.

Here is an example on how to check whether GnuPG is current:

```
#include <gpgme.h>
```

```

int
main (void)
{
    gpg_error_t err;
    gpgme_ctx_t ctx;
    gpgme_query_swdb_result_t result;

    gpgme_check_version (NULL);
    err = gpgme_new (&ctx);
    if (err)
        fprintf (stderr, "error creating context: %s\n", gpg_strerror (err));
    else
    {
        gpgme_set_protocol (ctx, GPGME_PROTOCOL_GPGCONF);

        err = gpgme_op_query_swdb (ctx, "gnupg", NULL, 0);
        if (err)
            fprintf (stderr, "error querying swdb: %s\n", gpg_strerror (err));
        else
        {
            result = gpgme_op_query_swdb_result (ctx);
            if (!result)
                fprintf (stderr, "error querying swdb\n");
            if (!result->warning && !result->update)
                printf ("GnuPG version %s is current\n",
                    result->iversion);
            else if (!result->warning && result->update)
                printf ("GnuPG version %s can be updated to %s\n",
                    result->iversion, result->version);
            else
                fprintf (stderr, "error finding the update status\n");
        }
        gpgme_release (ctx);
    }
    return 0;
}

```

File: gpgme.info, Node: Run Control, Prev: Miscellaneous, Up: Contexts

7.9 Run Control

=====

GPGME supports running operations synchronously and asynchronously. You can use asynchronous operation to set up a context up to initiating the desired operation, but delay performing it to a later point.

Furthermore, you can use an external event loop to control exactly when GPGME runs. This ensures that GPGME only runs when necessary and also prevents it from blocking for a long time.

* Menu:

* Waiting For Completion:: Waiting until an operation is completed.

* Using External Event Loops:: Advanced control over what happens when.

* Cancellation:: How to end pending operations prematurely.

File: gpgme.info, Node: Waiting For Completion, Next: Using External Event Loops, Up: Run Control

7.9.1 Waiting For Completion

-- Function: `gpgme_ctx_t gpgme_wait (gpgme_ctx_t CTX,
 gpgme_error_t *STATUS, int HANG)`

The function `gpgme_wait` continues the pending operation within the context `CTX`. In particular, it ensures the data exchange between GPGME and the crypto backend and watches over the run time status of the backend process.

If `HANG` is true, the function does not return until the operation is completed or cancelled. Otherwise the function will not block for a long time.

The error status of the finished operation is returned in `STATUS` if `gpgme_wait` does not return `NULL`.

The `CTX` argument can be `NULL`. In that case, `gpgme_wait` waits for any context to complete its operation.

`gpgme_wait` can be used only in conjunction with any context that has a pending operation initiated with one of the `gpgme_op_*_start` functions except `gpgme_op_keylist_start` and `gpgme_op_trustlist_start` (for which you should use the corresponding `gpgme_op_*_next` functions). If `CTX` is `NULL`, all of such contexts are waited upon and possibly returned. Synchronous operations running in parallel, as well as key and trust item list operations, do not affect `gpgme_wait`.

In a multi-threaded environment, only one thread should ever call `gpgme_wait` at any time, regardless of whether `CTX` is specified or not. This means that all calls to this function should be fully synchronized by locking primitives. It is safe to start asynchronous operations while a thread is running in `gpgme_wait`.

The function returns the CTX of the context which has finished the operation. If HANG is false, and the timeout expires, NULL is returned and *status will be set to 0. If an error occurs, NULL is returned and the error is returned in *status.

File: gpgme.info, Node: Using External Event Loops, Next: Cancellation, Prev: Waiting For Completion, Up: Run Control

7.9.2 Using External Event Loops

GPGME hides the complexity of the communication between the library and the crypto engine. The price of this convenience is that the calling thread can block arbitrary long waiting for the data returned by the crypto engine. In single-threaded programs, in particular if they are interactive, this is an unwanted side-effect. OTOH, if gpgme_wait is used without the HANG option being enabled, it might be called unnecessarily often, wasting CPU time that could be used otherwise.

The I/O callback interface described in this section lets the user take control over what happens when. GPGME will provide the user with the file descriptors that should be monitored, and the callback functions that should be invoked when a file descriptor is ready for reading or writing. It is then the users responsibility to decide when to check the file descriptors and when to invoke the callback functions. Usually this is done in an event loop, that also checks for events in other parts of the program. If the callback functions are only called when the file descriptors are ready, GPGME will never block. This gives the user more control over the program flow, and allows to perform other tasks when GPGME would block otherwise.

By using this advanced mechanism, GPGME can be integrated smoothly into GUI toolkits like GTK+ even for single-threaded programs.

* Menu:

- * I/O Callback Interface:: How I/O callbacks are registered.
- * Registering I/O Callbacks:: How to use I/O callbacks for a context.
- * I/O Callback Example:: An example how to use I/O callbacks.
- * I/O Callback Example GTK+:: How to use GPGME with GTK+.
- * I/O Callback Example GDK:: How to use GPGME with GDK.
- * I/O Callback Example Qt:: How to use GPGME with Qt.

File: gpgme.info, Node: I/O Callback Interface, Next: Registering I/O Callbacks, Up: Using External Event Loops

7.9.2.1 I/O Callback Interface

.....
-- Data type: `gpgme_error_t (*gpgme_io_cb_t) (void *DATA, int FD)`

The `gpgme_io_cb_t` type is the type of functions which GPGME wants to register as I/O callback handlers using the `gpgme_register_io_cb_t` functions provided by the user.

DATA and FD are provided by GPGME when the I/O callback handler is registered, and should be passed through to the handler when it is invoked by the user because it noticed activity on the file descriptor FD.

The callback handler always returns 0, but you should consider the return value to be reserved for later use.

-- Data type: `gpgme_error_t (*gpgme_register_io_cb_t) (void *DATA, int FD, int DIR, gpgme_io_cb_t FNC, void *FNC_DATA, void **TAG)`

The `gpgme_register_io_cb_t` type is the type of functions which can be called by GPGME to register an I/O callback function FNC for the file descriptor FD with the user. FNC_DATA should be passed as the first argument to FNC when the handler is invoked (the second argument should be FD). If DIR is 0, FNC should be called by the user when FD is ready for writing. If DIR is 1, FNC should be called when FD is ready for reading.

DATA was provided by the user when registering the `gpgme_register_io_cb_t` function with GPGME and will always be passed as the first argument when registering a callback function. For example, the user can use this to determine the event loop to which the file descriptor should be added.

GPGME will call this function when a crypto operation is initiated in a context for which the user has registered I/O callback handler functions with `gpgme_set_io_cbs`. It can also call this function when it is in an I/O callback handler for a file descriptor associated to this context.

The user should return a unique handle in TAG identifying this I/O callback registration, which will be passed to the `gpgme_register_io_cb_t` function without interpretation when the file descriptor should not be monitored anymore.

-- Data type: `void (*gpgme_remove_io_cb_t) (void *TAG)`

The `gpgme_remove_io_cb_t` type is the type of functions which can be called by GPGME to remove an I/O callback handler that was registered before. TAG is the handle that was returned by the `gpgme_register_io_cb_t` for this I/O callback.

GPGME can call this function when a crypto operation is in an I/O callback. It will also call this function when the context is destroyed while an operation is pending.

-- Data type: enum `gpgme_event_io_t`

The `gpgme_event_io_t` type specifies the type of an event that is reported to the user by GPGME as a consequence of an I/O operation.

The following events are defined:

GPGME_EVENT_START

The operation is fully initialized now, and you can start to run the registered I/O callback handlers now. Note that registered I/O callback handlers must not be run before this event is signalled. `TYPE_DATA` is NULL and reserved for later use.

GPGME_EVENT_DONE

The operation is finished, the last I/O callback for this operation was removed. The accompanying `TYPE_DATA` points to a struct `gpgme_io_event_done_data` variable that contains the status of the operation that finished. This event is signalled after the last I/O callback has been removed.

GPGME_EVENT_NEXT_KEY

In a `gpgme_op_keylist_start` operation, the next key was received from the crypto engine. The accompanying `TYPE_DATA` is a `gpgme_key_t` variable that contains the key with one reference for the user.

GPGME_EVENT_NEXT_TRUSTITEM

In a `gpgme_op_trustlist_start` operation, the next trust item was received from the crypto engine. The accompanying `TYPE_DATA` is a `gpgme_trust_item_t` variable that contains the trust item with one reference for the user.

-- Data type: void (`*gpgme_event_io_cb_t`) (void *`DATA`, `gpgme_event_io_t` `TYPE`, void *`TYPE_DATA`)

The `gpgme_event_io_cb_t` type is the type of functions which can be called by GPGME to signal an event for an operation running in a context which has I/O callback functions registered by the user.

`DATA` was provided by the user when registering the `gpgme_event_io_cb_t` function with GPGME and will always be passed as the first argument when registering a callback function. For example, the user can use this to determine the context in which this event has occurred.

TYPE will specify the type of event that has occurred. TYPE_DATA specifies the event further, as described in the above list of possible gpgme_event_io_t types.

GPGME can call this function in an I/O callback handler.

File: gpgme.info, Node: Registering I/O Callbacks, Next: I/O Callback Example, Prev: I/O Callback Interface, Up: Using External Event Loops

7.9.2.2 Registering I/O Callbacks

.....

-- Data type: struct gpgme_io_cbs

This structure is used to store the I/O callback interface functions described in the previous section. It has the following members:

`gpgme_register_io_cb_t add`

This is the function called by GPGME to register an I/O callback handler. It must be specified.

`void *add_priv`

This is passed as the first argument to the add function when it is called by GPGME. For example, it can be used to determine the event loop to which the file descriptor should be added.

`gpgme_remove_io_cb_t remove`

This is the function called by GPGME to remove an I/O callback handler. It must be specified.

`gpgme_event_io_cb_t event`

This is the function called by GPGME to signal an event for an operation. It must be specified, because at least the start event must be processed.

`void *event_priv`

This is passed as the first argument to the event function when it is called by GPGME. For example, it can be used to determine the context in which the event has occurred.

-- Function: void gpgme_set_io_cbs (gpgme_ctx_t CTX, struct gpgme_io_cbs *IO_CBS)

The function gpgme_set_io_cbs enables the I/O callback interface for the context CTX. The I/O callback functions are specified by IO_CBS.

If `IO_CBS->add` is `NULL`, the I/O callback interface is disabled for the context, and normal operation is restored.

```
-- Function: void gpgme_get_io_cbs (gpgme_ctx_t CTX,  
    struct gpgme_io_cbs *IO_CBS)  
The function gpgme_get_io_cbs returns the I/O callback functions  
set with gpgme_set_io_cbs in IO_CBS.
```

File: `gpgme.info`, Node: I/O Callback Example, Next: I/O Callback Example GTK+, Prev: Registering I/O Callbacks, Up: Using External Event Loops

7.9.2.3 I/O Callback Example

.....

To actually use an external event loop, you have to implement the I/O callback functions that are used by GPGME to register and unregister file descriptors. Furthermore, you have to actually monitor these file descriptors for activity and call the appropriate I/O callbacks.

The following example illustrates how to do that. The example uses locking to show in which way the callbacks and the event loop can run concurrently. For the event loop, we use a fixed array. For a real-world implementation, you should use a dynamically sized structure because the number of file descriptors needed for a crypto operation in GPGME is not predictable.

```
#include <assert.h>  
#include <errno.h>  
#include <stdlib.h>  
#include <pthread.h>  
#include <sys/types.h>  
#include <gpgme.h>  
  
/* The following structure holds the result of a crypto operation. */  
struct op_result  
{  
    int done;  
    gpgme_error_t err;  
};  
  
/* The following structure holds the data associated with one I/O  
callback. */  
struct one_fd  
{  
    int fd;  
    int dir;  
    gpgme_io_cb_t fnc;
```

```

void *fnc_data;
void *loop;
};

struct event_loop
{
    pthread_mutex_t lock;
#define MAX_FDS 32
    /* Unused slots are marked with FD being -1. */
    struct one_fd fds[MAX_FDS];
};

```

The following functions implement the I/O callback interface.

```

gpgme_error_t
add_io_cb (void *data, int fd, int dir, gpgme_io_cb_t fnc, void *fnc_data,
          void **r_tag)
{
    struct event_loop *loop = data;
    struct one_fd *fds = loop->fds;
    int i;

    pthread_mutex_lock (&loop->lock);
    for (i = 0; i < MAX_FDS; i++)
        {
            if (fds[i].fd == -1)
                {
                    fds[i].fd = fd;
                    fds[i].dir = dir;
                    fds[i].fnc = fnc;
                    fds[i].fnc_data = fnc_data;
                    fds[i].loop = loop;
                    break;
                }
        }
    pthread_mutex_unlock (&loop->lock);
    if (i == MAX_FDS)
        return gpg_error (GPG_ERR_GENERAL);
    *r_tag = &fds[i];
    return 0;
}

void
remove_io_cb (void *tag)
{
    struct one_fd *fd = tag;
    struct event_loop *loop = fd->loop;

```

```

pthread_mutex_lock (&loop->lock);
fd->fd = -1;
pthread_mutex_unlock (&loop->lock);
}

void
event_io_cb (void *data, gpgme_event_io_t type, void *type_data)
{
    struct op_result *result = data;

    /* We don't support list operations here. */
    if (type == GPGME_EVENT_DONE)
    {
        result->done = 1;
        result->err = *type_data;
    }
}

```

The final missing piece is the event loop, which will be presented next. We only support waiting for the success of a single operation.

```

int
do_select (struct event_loop *loop)
{
    fd_set rfd;
    fd_set wfd;
    int i, n;
    int any = 0;
    struct timeval tv;
    struct one_fd *fdlist = loop->fds;

    pthread_mutex_lock (&loop->lock);
    FD_ZERO (&rfd);
    FD_ZERO (&wfd);
    for (i = 0; i < MAX_FDS; i++)
        if (fdlist[i].fd != -1)
            FD_SET (fdlist[i].fd, fdlist[i].dir ? &rfd : &wfd);
    pthread_mutex_unlock (&loop->lock);

    tv.tv_sec = 0;
    tv.tv_usec = 1000;

    do
    {
        n = select (FD_SETSIZE, &rfd, &wfd, NULL, &tv);
    }
    while (n < 0 && errno == EINTR);
}

```

```

if (n < 0)
    return n; /* Error or timeout. */

pthread_mutex_lock (&loop->lock);
for (i = 0; i < MAX_FDS && n; i++)
{
    if (fdlist[i].fd != -1)
    {
        if (FD_ISSET (fdlist[i].fd, fdlist[i].dir ? &rfd : &wfd))
        {
            assert (n);
            n--;
            any = 1;
            /* The I/O callback handler can register/remove callbacks,
            so we have to unlock the file descriptor list. */
            pthread_mutex_unlock (&loop->lock);
            (*fdlist[i].fnc) (fdlist[i].fnc_data, fdlist[i].fd);
            pthread_mutex_lock (&loop->lock);
        }
    }
}
pthread_mutex_unlock (&loop->lock);
return any;
}

void
wait_for_op (struct event_loop *loop, struct op_result *result)
{
    int ret;

    do
    {
        ret = do_select (loop);
    }
    while (ret >= 0 && !result->done);
}

```

The main function shows how to put it all together.

```

int
main (int argc, char *argv[])
{
    struct event_loop loop;
    struct op_result result;
    gpgme_ctx_t ctx;
    gpgme_error_t err;
    gpgme_data_t sig, text;
    int i;
}

```

```

pthread_mutexattr_t attr;
struct gpgme_io_cbs io_cbs =
{
    add_io_cb,
    &loop,
    remove_io_cb,
    event_io_cb,
    &result
};

init_gpgme ();

/* Initialize the loop structure. */

/* The mutex must be recursive, since remove_io_cb (which acquires a
   lock) can be called while holding a lock acquired in do_select. */
pthread_mutexattr_init (&attr);
pthread_mutexattr_settype (&attr, PTHREAD_MUTEX_RECURSIVE);
pthread_mutex_init (&loop.lock, &attr);
pthread_mutexattr_destroy (&attr);

for (i = 0; i < MAX_FDS; i++)
    loop.fds[i].fd = -1;

/* Initialize the result structure. */
result.done = 0;

err = gpgme_data_new_from_file (&sig, "signature", 1);
if (!err)
    err = gpgme_data_new_from_file (&text, "text", 1);
if (!err)
    err = gpgme_new (&ctx);
if (!err)
    {
        gpgme_set_io_cbs (ctx, &io_cbs);
        err = gpgme_op_verify_start (ctx, sig, text, NULL);
    }
if (err)
    {
        fprintf (stderr, "gpgme error: %s: %s\n",
                gpgme_strerror (err), gpgme_strerror (err));
        exit (1);
    }

wait_for_op (&loop, &result);
if (!result.done)
    {
        fprintf (stderr, "select error\n");
    }

```

```

    exit (1);
}
if (!result.err)
{
    fprintf (stderr, "verification failed: %s: %s\n",
            gpgme_strerror (result.err), gpgme_strerror (result.err));
    exit (1);
}
/* Evaluate verify result. */
...
return 0;
}

```

File: gpgme.info, Node: I/O Callback Example GTK+, Next: I/O Callback Example GDK, Prev: I/O Callback Example, Up: Using External Event Loops

7.9.2.4 I/O Callback Example GTK+

.....

The I/O callback interface can be used to integrate GPGME with the GTK+ event loop. The following code snippets shows how this can be done using the appropriate register and remove I/O callback functions. In this example, the private data of the register I/O callback function is unused. The event notifications is missing because it does not require any GTK+ specific setup.

```

#include <gtk/gtk.h>

struct my_gpgme_io_cb
{
    gpgme_io_cb_t fnc;
    void *fnc_data;
    guint input_handler_id
};

void
my_gpgme_io_cb (gpointer data, gint source, GdkInputCondition condition)
{
    struct my_gpgme_io_cb *iocb = data;
    (*(iocb->fnc)) (iocb->data, source);
}

void
my_gpgme_remove_io_cb (void *data)
{
    struct my_gpgme_io_cb *iocb = data;
    gtk_input_remove (data->input_handler_id);
}

```

```

}

void
my_gpgme_register_io_callback (void *data, int fd, int dir, gpgme_io_cb_t fnc,
                               void *fnc_data, void **tag)
{
    struct my_gpgme_io_cb *iocb = g_malloc (sizeof (struct my_gpgme_io_cb));
    iocb->fnc = fnc;
    iocb->data = fnc_data;
    iocb->input_handler_id = gtk_input_add_full (fd, dir
                                                ? GDK_INPUT_READ
                                                : GDK_INPUT_WRITE,
                                                my_gpgme_io_callback,
                                                0, iocb, NULL);

    *tag = iocb;
    return 0;
}

```

File: gpgme.info, Node: I/O Callback Example GDK, Next: I/O Callback Example Qt, Prev: I/O Callback Example GTK+, Up: Using External Event Loops

7.9.2.5 I/O Callback Example GDK

.....

The I/O callback interface can also be used to integrate GPGME with the GDK event loop. The following code snippets shows how this can be done using the appropriate register and remove I/O callback functions. In this example, the private data of the register I/O callback function is unused. The event notifications is missing because it does not require any GDK specific setup.

It is very similar to the GTK+ example in the previous section.

```

#include <gdk/gdk.h>

struct my_gpgme_io_cb
{
    gpgme_io_cb_t fnc;
    void *fnc_data;
    gint tag;
};

void
my_gpgme_io_cb (gpointer data, gint source, GdkInputCondition condition)
{
    struct my_gpgme_io_cb *iocb = data;
    (*(iocb->fnc)) (iocb->data, source);
}

```

```

}

void
my_gpgme_remove_io_cb (void *data)
{
    struct my_gpgme_io_cb *iocb = data;
    gdk_input_remove (data->tag);
}

void
my_gpgme_register_io_callback (void *data, int fd, int dir, gpgme_io_cb_t fnc,
                               void *fnc_data, void **tag)
{
    struct my_gpgme_io_cb *iocb = g_malloc (sizeof (struct my_gpgme_io_cb));
    iocb->fnc = fnc;
    iocb->data = fnc_data;
    iocb->tag = gtk_input_add_full (fd, dir ? GDK_INPUT_READ : GDK_INPUT_WRITE,
                                   my_gpgme_io_callback, iocb, NULL);
    *tag = iocb;
    return 0;
}

```

File: gpgme.info, Node: I/O Callback Example Qt, Prev: I/O Callback Example GDK, Up: Using External Event Loops

7.9.2.6 I/O Callback Example Qt

.....

The I/O callback interface can also be used to integrate GPGME with the Qt event loop. The following code snippets show how this can be done using the appropriate register and remove I/O callback functions. In this example, the private data of the register I/O callback function is unused. The event notifications is missing because it does not require any Qt specific setup.

```

#include <qsocketnotifier.h>
#include <qapplication.h>

struct IOCB {
    IOCB( GpgmeIOCb f, void * d, QSocketNotifier * n )
        : func( f ), data( d ), notifier( n ) {}
    GpgmeIOCb func;
    void * data;
    QSocketNotifier * notifier;
}

class MyApp : public QApplication {

```



```

// ...

static void registerGpgmeIOCallback( void * data, int fd, int dir,
                                     GpgmeIOCb func, void * func_data,
                                     void ** tag ) {
    QSocketNotifier * n =
        new QSocketNotifier( fd, dir ? QSocketNotifier::Read
                             : QSocketNotifier::Write );
    connect( n, SIGNAL(activated(int)),
            qApp, SLOT(slotGpgmeIOCallback(int)) );
    qApp->mIOCBs.push_back( IOCB( func, func_data, n ) );
    *tag = (void*)n;
}

static void removeGpgmeIOCallback( void * tag ) {
    if ( !tag ) return;
    QSocketNotifier * n = static_cast<QSocketNotifier*>( tag );
    for ( QValueList<IOCB>::iterator it = qApp->mIOCBs.begin() ;
          it != qApp->mIOCBs.end() ; ++it )
        if ( it->notifier == n ) {
            delete it->notifier;
            qApp->mIOCBs.erase( it );
            return;
        }
}

public slots:
void slotGpgmeIOCallback( int fd ) {
    for ( QValueList<IOCB>::const_iterator it = mIOCBs.begin() ;
          it != mIOCBs.end() ; ++it )
        if ( it->notifier && it->notifier->socket() == fd )
            (*(it->func))( it->func_data, fd );
}

// ...

private:
    QValueList<IOCB> mIOCBs;
    // ...
};

```

File: gpgme.info, Node: Cancellation, Prev: Using External Event Loops, Up: Run Control

7.9.3 Cancellation

Sometimes you do not want to wait for an operation to finish. GPGME provides two different functions to achieve that. The function `gpgme_cancel` takes effect immediately. When it returns, the operation is effectively canceled. However, it has some limitations and can not be used with synchronous operations. In contrast, the function `gpgme_cancel_async` can be used with any context and from any thread, but it is not guaranteed to take effect immediately. Instead, cancellation occurs at the next possible time (typically the next time I/O occurs in the target context).

-- Function: `gpgme_ctx_t gpgme_cancel (gpgme_ctx_t CTX)`
SINCE: 0.4.5

The function `gpgme_cancel` attempts to cancel a pending operation in the context `CTX`. This only works if you use the global event loop or your own event loop.

If you use the global event loop, you must not call `gpgme_wait` during cancellation. After successful cancellation, you can call `gpgme_wait` (optionally waiting on `CTX`), and the context `CTX` will appear as if it had finished with the error code `GPG_ERR_CANCEL`.

If you use an external event loop, you must ensure that no I/O callbacks are invoked for this context (for example by halting the event loop). On successful cancellation, all registered I/O callbacks for this context will be unregistered, and a `GPGME_EVENT_DONE` event with the error code `GPG_ERR_CANCEL` will be signalled.

The function returns an error code if the cancellation failed (in this case the state of `CTX` is not modified).

-- Function: `gpgme_ctx_t gpgme_cancel_async (gpgme_ctx_t CTX)`
SINCE: 1.1.7

The function `gpgme_cancel_async` attempts to cancel a pending operation in the context `CTX`. This can be called by any thread at any time after starting an operation on the context, but will not take effect immediately. The actual cancellation happens at the next time GPGME processes I/O in that context.

The function returns an error code if the cancellation failed (in this case the state of `CTX` is not modified).

File: `gpgme.info`, Node: UI Server Protocol, Next: Debugging, Prev: Contexts, Up: Top

Appendix A The GnuPG UI Server Protocol

This section specifies the protocol used between clients and a User Interface Server (UI server). This protocol helps to build a system where all cryptographic operations are done by a server and the server is responsible for all dialogs. Although GPGME has no direct support for this protocol it is believed that servers will utilize the GPGME library; thus having the specification included in this manual is an appropriate choice. This protocol should be referenced as The GnuPG UI Server Protocol.

A server needs to implement these commands:(1)

* Menu:

- * UI Server Encrypt:: Encrypt a message.
- * UI Server Sign:: Sign a message.
- * UI Server Decrypt:: Decrypt a message.
- * UI Server Verify:: Verify a message.
- * UI Server Set Input Files:: Specifying the input files to operate on.
- * UI Server Sign/Encrypt Files:: Encrypting and signing files.
- * UI Server Verify/Decrypt Files:: Decrypting and verifying files.
- * UI Server Import/Export Keys:: Managing certificates.
- * UI Server Checksum Files:: Create and verify checksums for files.
- * Miscellaneous UI Server Commands:: Commands not related to a specific operation.

----- Footnotes -----

(1) In all examples we assume that the connection has already been established; see the Assuan manual for details.

File: gpgme.info, Node: UI Server Encrypt, Next: UI Server Sign, Up: UI Server Protocol

A.1 UI Server: Encrypt a Message

=====

Before encryption can be done the recipients must be set using the command:

-- Command: RECIPIENT STRING

Set the recipient for the encryption. STRING is an RFC-2822 recipient name ("mailbox" as per section 3.4). This command may or may not check the recipient for validity right away; if it does not all recipients are expected to be checked at the time of the ENCRYPT command. All RECIPIENT commands are cumulative until a successful ENCRYPT command or until a RESET command. Linefeeds

are obviously not allowed in `STRING` and should be folded into spaces (which are equivalent).

To tell the server the source and destination of the data, the next two commands are to be used:

-- Command: `INPUT FD=N`

Set the file descriptor for the message to be encrypted to `N`. The message send to the server is binary encoded.

GpgOL is a Windows only program, thus `N` is not a libc file descriptor but a regular system handle. Given that the Assuan connection works over a socket, it is not possible to use regular inheritance to make the file descriptor available to the server. Thus `DuplicateHandle` needs to be used to duplicate a handle to the server process. This is the reason that the server needs to implement the `GETINFO pid` command. Sending this command a second time replaces the file descriptor set by the last one.

-- Command: `OUTPUT FD=N [--binary]`

Set the file descriptor to be used for the output (i.e. the encrypted message) to `N`. If the option `--binary` is given the output shall be in binary format; if not given, the output for OpenPGP needs to be ASCII armored and for CMS Base-64 encoded. For details on the file descriptor, see the `INPUT` command.

The setting of the recipients, the data source and destination may happen in any order, even intermixed. If this has been done the actual encryption operation is called using:

-- Command: `ENCRYPT --protocol=NAME`

This command reads the plaintext from the file descriptor set by the `INPUT` command, encrypts it and writes the ciphertext to the file descriptor set by the `OUTPUT` command. The server may (and should) overlap reading and writing. The recipients used for the encryption are all the recipients set so far. If any recipient is not usable the server should take appropriate measures to notify the user about the problem and may cancel the operation by returning an error code. The used file descriptors are void after this command; the recipient list is only cleared if the server returns success.

Because GpgOL uses a streaming mode of operation the server is not allowed to auto select the protocol and must obey to the mandatory `PROTOCOL` parameter:

OpenPGP

Use the OpenPGP protocol (RFC-2440).

CMS

Use the CMS (PKCS#7) protocol (RFC-3852).

To support automatically selection of the protocol depending on the selected keys, the server MAY implement the command:

-- Command: PREP_ENCRYPT [--protocol=NAME] [--expect-sign]

This command considers all recipients set so far and decides whether it is able to take input and start the actual encryption. This is kind of a dry-run ENCRYPT without requiring or using the input and output file descriptors. The server shall cache the result of any user selection to avoid asking this again when the actual ENCRYPT command is sent. The --protocol option is optional; if it is not given, the server should allow the user to select the protocol to be used based on the recipients given or by any other means.

If --expect-sign is given the server should expect that the message will also be signed and use this hint to present a unified recipient and signer selection dialog if possible and desired. A selected signer should then be cached for the expected SIGN command (which is expected in the same session but possible on another connection).

If this command is given again before a successful ENCRYPT command, the second one takes effect.

Before sending the OK response the server shall tell the client the protocol to be used (either the one given by the argument or the one selected by the user) by means of a status line:

-- Status line: PROTOCOL NAME

Advise the client to use the protocol NAME for the ENCRYPT command. The valid protocol names are listed under the description of the ENCRYPT command. The server shall emit exactly one PROTOCOL status line.

Here is an example of a complete encryption sequence; client lines are indicated by a C:, server responses by C::

```
C: RESET
C: OK
C: RECIPIENT foo@example.net
C: OK
C: RECIPIENT bar@example.com
C: OK
```

```
C: PREP_ENCRYPT
S: S PROTOCOL OpenPGP
S: OK
C: INPUT FD=17
S: OK
C: OUTPUT FD=18
S: OK
C: ENCRYPT
S: OK
```

File: gpgme.info, Node: UI Server Sign, Next: UI Server Decrypt, Prev: UI Server Encrypt, Up: UI Server Protocol

A.2 UI Server: Sign a Message

=====

The server needs to implement opaque signing as well as detached signing. Due to the nature of OpenPGP messages it is always required to send the entire message to the server; sending just the hash is not possible. The following two commands are required to set the input and output file descriptors:

-- Command: INPUT FD=N

Set the file descriptor for the message to be signed to N. The message send to the server is binary encoded. For details on the file descriptor, see the description of INPUT in the ENCRYPT section.

-- Command: OUTPUT FD=N [--binary]

Set the file descriptor to be used for the output. The output is either the complete signed message or in case of a detached signature just that detached signature. If the option --binary is given the output shall be in binary format; if not given, the output for OpenPGP needs to be ASCII armored and for CMS Base-64 encoded. For details on the file descriptor, see the INPUT command.

To allow the server the selection of a non-default signing key the client may optionally use the SENDER command, see *note command SENDER::.

The signing operation is then initiated by:

-- Command: SIGN --protocol=NAME [--detached]

Sign the data set with the INPUT command and write it to the sink set by OUTPUT. NAME is the signing protocol used for the message. For a description of the allowed protocols see the ENCRYPT

command. With option `--detached` given, a detached signature is created; this is actually the usual way the command is used.

The client expects the server to send at least this status information before the final OK response:

-- Status line: MICALG STRING

The STRING represents the hash algorithm used to create the signature. It is used with RFC-1847 style signature messages and defined by PGP/MIME (RFC-3156) and S/MIME (RFC-3851). The GPGME library has a supporting function `gpgme_hash_algo_name` to return the algorithm name as a string. This string needs to be lowercased and for OpenPGP prefixed with "pgp-".

File: `gpgme.info`, Node: UI Server Decrypt, Next: UI Server Verify, Prev: UI Server Sign, Up: UI Server Protocol

A.3 UI Server: Decrypt a Message

=====

Decryption may include the verification of OpenPGP messages. This is due to the often used combined signing/encryption modus of OpenPGP. The client may pass an option to the server to inhibit the signature verification. The following two commands are required to set the input and output file descriptors:

-- Command: INPUT FD=N

Set the file descriptor for the message to be decrypted to N. The message send to the server is either binary encoded or in the case of OpenPGP ASCII armored. For details on the file descriptor, see the description of INPUT in the ENCRYPT section.

-- Command: OUTPUT FD=N

Set the file descriptor to be used for the output. The output is binary encoded. For details on the file descriptor, see the description of INPUT in the ENCRYPT section.

The decryption is started with the command:

-- Command: DECRYPT --protocol=NAME [--no-verify]
 [--export-session-key]

NAME is the encryption protocol used for the message. For a description of the allowed protocols see the ENCRYPT command. This argument is mandatory. If the option `--no-verify` is given, the server should not try to verify a signature, in case the input data is an OpenPGP combined message. If the option `--export-session-key` is given and the underlying engine knows how

to export the session key, it will appear on a status line
Additional license notices for GPGME. -*-* org -*-

This file contains the copying permission notices for various files in
the GPGME distribution which are not covered by the GNU Lesser
General Public License (LGPL) or the GNU General Public License (GPL).

These notices all require that a copy of the notice be included
in the accompanying documentation and be distributed with binary
distributions of the code, so be sure to include this file along
with any binary distributions derived from the GNU C Library.

* MIT License

For files:
- cJSON.c, cJSON.h

#+begin_quote
Copyright (c) 2009 Dave Gamble

Permission is hereby granted, free of charge, to any person obtaining
a copy of this software and associated documentation files (the
"Software"), to deal in the Software without restriction, including
without limitation the rights to use, copy, modify, merge, publish,
distribute, sublicense, and/or sell copies of the Software, and to
permit persons to whom the Software is furnished to do so, subject to
the following conditions:

The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE
LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION
OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION
WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

#+end_quote
Just GNU it!
2011-12-02 Werner Koch <wk@g10code.com>

NB: ChangeLog files are no longer manually maintained. Starting
on December 1st, 2011 we put change information only in the GIT
commit log, and generate a top-level ChangeLog file from logs at
"make dist". See doc/HACKING for details.

2011-10-25 Marcus Brinkmann <marcus@g10code.com>

- * m4/pth.m4: Removed.
- * configure.ac: Remove check for pth and automake conditional HAVE_PTH.

2011-06-16 Marcus Brinkmann <marcus@g10code.com>

Release 1.3.1

- * configure.ac: Set LT version to C19/A8/R0.

2011-05-06 Marcus Brinkmann <marcus@g10code.com>

- * Makefile.am (SUBDIRS): Remove complus.
- * configure.ac (AC_CONFIG_FILES): Remove complus/Makefile. (BUILD_COMPLUS): Remove AM_CONDITIONAL.
- * complus/: Remove very old and stale component.
- * acinclude.m4 (GNUPG_FIX_HDR_VERSION): Remove.

2011-04-14 Werner Koch <wk@g10code.com>

- * configure.ac: Require automake 1.11.

2011-04-06 Werner Koch <wk@g10code.com>

- * autogen.sh (--build-w32): Support option --build-w64.
- * configure.ac (HAVE_W64_SYSTEM): Define. (INSERT__TYPEDEFS_FOR_GPGME_H): New. (GPGME_CONFIG_HOST): New.

2011-02-02 Marcus Brinkmann <mb@g10code.com>

- * configure.ac (NEED_LIBASSUAN_VERSION): Bump to 2.0.2 for system hooks.

2010-12-30 Werner Koch <wk@g10code.com>

- * configure.ac: Support a git revision.

2010-11-03 Werner Koch <wk@g10code.com>

- * configure.ac (AC_CHECK_HEADERS): Check for sys/types.h and sys.stat.h.

2010-11-02 Werner Koch <wk@g10code.com>

- * configure.ac (AC_CHECK_HEADERS): Check for sys.time.h.

2010-08-19 Werner Koch <wk@g10code.com>

* configure.ac (AH_BOTTOM): Define GPG_ERR_ENABLE_ERRNO_MACROS.

2010-05-12 Marcus Brinkmann <marcus@g10code.de>

* configure.ac: Check for setlocale.

2010-05-07 Werner Koch <wk@g10code.com>

* configure.ac: Change checks to always require libassuan.

2010-05-07 Marcus Brinkmann <marcus@g10code.de>

* autogen.sh: Update the thing.

* configure.ac: Check for locale.h.

2010-05-06 Marcus Brinkmann <marcus@g10code.de>

* configure.ac: Detect Windows CE.

(HAVE_W32CE_SYSTEM): New symbol and automake conditional.

* ltmain.sh, m4/libtool.m4: Patch so that it works for Windows CE.

* configure.ac: Require libgpg-error 1.8.

2010-03-15 Werner Koch <wk@g10code.com>

* configure.ac (emacs_local_vars_begin)

(emacs_local_vars_read_only, emacs_local_vars_end): New.

2010-01-22 Werner Koch <wk@g10code.com>

* autogen.sh (--build-w32): Add --with-libassuan-prefix.

2010-01-11 Marcus Brinkmann <marcus@g10code.de>

Release 1.3.0.

2009-12-22 Marcus Brinkmann <marcus@g10code.de>

* configure.ac: Do not use echo -n. Test for __thread.

2009-12-17 Marcus Brinkmann <marcus@g10code.de>

* configure.ac: Make largefile check more robust.

2009-12-10 Werner Koch <wk@g10code.com>

* configure.ac: Check for getgid and getegid.

2009-12-08 Marcus Brinkmann <marcus@g10code.de>

Update to libtool 2.2.6a.

* configure.ac: Invoke AC_CONFIG_MACRO_DIR.

(AC_LIBTOOL_WIN32_DLL, AC_LIBTOOL_RC): Replace by ...

(LT_PREREQ, LT_INIT, LT_LANG): ... these.

* config.guess, config.sub, install-sh, ltmain.sh, m4/libtool.m4:

Updated to libtool 2.2.6a.

* m4/ltoptions.m4, m4/ltsugar.m4, m4/ltversion.m4,

m4/lt~obsolete.m4: New files from libtool 2.2.6a.

2009-11-10 Marcus Brinkmann <marcus@g10code.de>

* configure.ac: Activate UIServer if FD passing is enabled and Assuan is available.

2009-10-30 Marcus Brinkmann <marcus@g10code.de>

* configure.ac: Check for argp.h and error_t.

2009-10-26 Marcus Brinkmann <marcus@g10code.de>

* configure.ac (NEED_GPG_VERSION_DEFAULT): Bump to 1.4.0 as 1.3.0 was development versions only.

2009-10-22 Marcus Brinkmann <marcus@g10code.de>

* configure.ac: Add support for G13.

2009-10-20 Marcus Brinkmann <marcus@g10code.de>

* configure.ac (AC_CONFIG_FILES): Remove assuan/Makefile.

2009-10-20 Marcus Brinkmann <marcus@g10code.de>

* configure.ac: Replace internal libassuan by external libassuan.

* m4/libassuan.m4: New file.

* Makefile.am (assuan): Remove variable.

(SUBDIRS): Remove \${assuan}.

* assuan/: Removed.

2009-06-22 Marcus Brinkmann <marcus@g10code.de>

* configure.ac: Add AC_TYPE_UINTPTR_T.

* assuan/assuan.h [_ASSUAN_IN_GPGME_BUILD_ASSUAN]: Declare
_gpgme_io_connect.

2009-06-18 Marcus Brinkmann <marcus@g10code.de>

Released GPGME 1.2.0.

* configure.ac (my_version): Set to 1.2.0.
(LIBGPGME_LT_CURRENT, LIBGPGME_LT_AGE): Bump.
(LIBGPGME_LT_REVISION): Reset.

2009-05-05 Marcus Brinkmann <marcus@g10code.de>

* configure.ac: Add infrastructure for compile time check of
_FILE_OFFSET_BITS.

2009-04-19 Moritz <moritz@gnu.org>

* Makefile.am (DISTCHECK_CONFIGURE_FLAGS): Specify --with-gpg.

2009-03-06 Marcus Brinkmann <marcus@g10code.de>

* assuan/: Update to libassuan SVN 2009-03-06.

2009-01-26 Werner Koch <wk@g10code.com>

* configure.ac (AC_CONFIG_FILES): Add tests/opassuan/Makefile.

2008-12-08 Marcus Brinkmann <marcus@g10code.de>

Release GPGME 1.1.8.

* configure.ac: Bump API revision.

2008-11-03 Marcus Brinkmann <marcus@g10code.com>

* configure.ac: Replace gpgme paths with src.
* gpgme: Move to ...
* src: ... this new directory.

2008-10-20 Werner Koch <wk@g10code.com>

* configure.ac (AC_CONFIG_FILES): Add gpgme.h.
(GNUPG_FIX_HDR_VERSION): Remove.

2008-10-17 Marcus Brinkmann <marcus@g10code.com>

Release GPGME 1.1.7.

* configure.ac (LIBGPGME_LT_REVISION): Bump for release.

2008-09-19 Moritz <moritz@gnu.org>

* configure.ac: Remove bogus "esac".

2008-09-16 Marcus Brinkmann <marcus@g10code.com>

* configure.ac (_XOPEN_SOURCE) [apple-darwin]: Define it.

2008-07-04 Werner Koch <wk@g10code.com>

* config.guess, config.sub: Update to 2007-11-19. Also update missing et al scripts.

2008-04-01 Werner Koch <wk@g10code.com>

* configure.ac (AC_INIT): Fix quoting.

2008-01-30 Marcus Brinkmann <marcus@g10code.de>

* configure.ac: Bump required version of automake up to 1.10.

* autogen.sh: Fix aclocal check.

2008-01-04 Marcus Brinkmann <marcus@g10code.de>

Release GPGME 1.1.6.

* configure.ac: Support gpgconf.

2007-09-27 Marcus Brinkmann <marcus@g10code.de>

* assuan-pipe-connect.c (pipe_connect_gpgme): Do not close process handle here. Use this function also on Unix systems.

* assuan-pipe-connect.c (pipe_connect_gpgme): Fix last change.

* assuan-pipe-connect.c (pipe_connect_gpgme): New function, use it if _ASSUAN_IN_GPGME_BUILD_ASSUAN.

2007-09-17 Werner Koch <wk@g10code.com>

* configure.ac: Use the svn version magic.

2007-09-07 Marcus Brinkmann <marcus@g10code.de>

* configure.ac: Check for C++, Qt and support --enable-w32-qt.
* m4/pkg.m4: New file.

2007-08-21 Marcus Brinkmann <marcus@g10code.de>

* configure.ac (--enable-w32-glib): Use --enableval, not --withval.

2007-07-16 Marcus Brinkmann <marcus@g10code.de>

* assuan/assuan-socket.c (_assuan_close): Always use close().
* assuan/assuan.h (_gpgme_io_close): New prototype.
(close): New macro, define as _gpgme_io_close.

2007-07-13 Marcus Brinkmann <marcus@g10code.de>

* assuan/assuan-io.c (_assuan_simple_read, _assuan_simple_write):
Always use read/write (which means _gpgme_io_read and
_gpgme_io_write).

2007-07-09 Marcus Brinkmann <marcus@g10code.de>

Released 1.1.5.

* configure.ac (LIBGPGME_LT_REVISION): Bump for release.

2007-07-08 Marcus Brinkmann <marcus@g10code.de>

* configure.ac (GPGSM_DEFAULT) [*-mingw32*]: Initialize it.
(HAVE_ASSUAN_H): Set to 1 if we have it.
(funopen): Use AC_REPLACE_FUNCS.
(USE_DESCRIPTOR_PASSING): Define to 1 if we have it. Do not
define it at all if we don't.
(NETLIBS) [have_w32_system]: Add -lws2_32.
(DIRSEP_C, DIRSEP_S, EXPSEP_C, EXPSEP_S, PATHSEP_S)
[HAVE_DOSISH_SYSTEM]: Remove definitions.

* assuan/assuan.h (_assuan_funopen): Define to _gpgme_funopen.
* assuan/funopen.c: Move to ../gpgme/funopen.c.
* assuan/Makefile.am (libassuan_la_SOURCES): Remove funopen.c.

2007-07-04 Marcus Brinkmann <marcus@g10code.de>

* assuan/Makefile.am (INCLUDES): Include \$(top_srcdir)/gpgme.
* assuan/assuan.h: Include <ath.h> instead of trying to duplicate
the definitions.

* assuan/: Update files to 2007-07-04 version of assuan.

* autogen.sh: Use = not == in test.

2007-03-05 Werner Koch <wk@g10code.com>

Released 1.1.4.

* configure.ac (LIBGPGME_LT_REVISION): Bump for release.

* autogen.sh: New option --force.

2007-01-29 Marcus Brinkmann <marcus@g10code.de>

Released 1.1.3.

* configure.ac (LIBGPGME_LT_REVISION): Bump for release.

2007-01-26 Werner Koch <wk@g10code.com>

* configure.ac: Changed gpg and gpgsm version checks to work with arbitrary names of the gpg binary. New option --disable-gpg-test and --disable-gpgsm-test.

2007-01-09 Werner Koch <wk@g10code.com>

* configure.ac (NEED_GPG_VERSION, NEED_GPGSM_VERSION): Must define after it may have been changed by an option.

2007-01-08 Werner Koch <wk@g10code.com>

* configure.ac: Require gpg-error 1.4 due to the use of gpg_error_from_syserror. (HAVE_ASSUAN_H): New.

2007-01-05 Marcus Brinkmann <marcus@g10code.de>

* configure.ac: Add options --with-gpg-version and --with-gpgsm-version to allow overriding the minimum version requirements.

2006-12-17 Marcus Brinkmann <marcus@g10code.de>

* configure.ac: Fix two typos in last change.

2006-12-03 Marcus Brinkmann <marcus@g10code.de>

* configure.ac: Use descriptor passing only if --enable-fd-passing is provided.

* configure.ac: Add check for use of descriptor passing.

2006-11-29 Marcus Brinkmann <marcus@g10code.de>

* configure.ac (NEED_GPG_VERSION): Bump to 1.3.0.

2006-09-19 Marcus Brinkmann <marcus@g10code.de>

* configure.ac: Turn stpcpy into a replacement function.
Check for unistd.h and add setenv as replacement function.

2006-07-29 Marcus Brinkmann <marcus@g10code.de>

* configure.ac: Check for network libraries and set NETLIBS.

2006-07-06 Marcus Brinkmann <marcus@g10code.de>

* lang, lang/cl: New subdirectories.
* lang/Makefile.am, lang/README: New files.
* configure.ac (AC_CONFIG_FILES): Add lang/Makefile,
lang/cl/Makefile and lang/cl/gpgme.asd.
* Makefile.am (SUBDIRS): Add lang.

2006-03-02 Marcus Brinkmann <marcus@g10code.de>

* configure.ac (LIBGPGME_LT_REVISION): Bump for release.

2006-02-22 Marcus Brinkmann <marcus@g10code.de>

Released 1.1.1.

* configure.ac (LIBGPGME_LT_CURRENT, LIBGPGME_LT_AGE): Bump for
release.
(LIBGPGME_LT_REVISION): Reset to 0 for release.

2006-01-05 Werner Koch <wk@g10code.com>

* configure.ac: Test for inline feature.
(AH_BOTTOM): New to define the pure attribute.

2006-01-03 Werner Koch <wk@g10code.com>

* configure.ac: Append SVN revision to the version.

2005-11-18 Werner Koch <wk@g10code.com>

* configure.ac (BUILD_REVISION): New.

2005-11-17 Marcus Brinkmann <marcus@g10code.de>

* configure.ac: Add support for --enable-w32-glib (disabled by default). Invoke AM_PATH_GLIB_2_0.

2005-11-16 Werner Koch <wk@g10code.com>

* configure.ac (CFLAGS) [W32]: Make sure that -mms-bitfields are used.

2005-11-15 Werner Koch <wk@g10code.com>

* configure.ac: Create BUILD_FILEVERSION from SVN Revision.

* autogen.sh [W32]: Build shared and static versions of the library.

2005-10-20 Marcus Brinkmann <marcus@g10code.de>

* w32-dll/ChangeLog, w32-dll/build-dll, w32-dll/gpgme.def: Remove files.

* configure.ac: Instead checking for windres and dlltool, invoke AC_LIBTOOL_WIN32_DLL and AC_LIBTOOL_RC.

* src/Makefile.am [HAVE_W32_SYSTEM]: Use libtool, which simplifies the rules.

2005-10-01 Marcus Brinkmann <marcus@g10code.de>

Released 1.1.0.

* configure.ac (LIBGPGME_LT_CURRENT, LIBGPGME_LT_AGE): Bump for release.

(LIBGPGME_LT_REVISION): Reset to 0 for release.

2005-09-12 Marcus Brinkmann <marcus@g10code.de>

* configure.ac (HAVE_PTH): Don't add \$PTH_CFLAGS to \$CFLAGS here.

2005-08-26 Werner Koch <wk@g10code.com>

* configure.ac (SEPCONSTANTS): New to define DIRSEP_C et al.

2005-08-19 Werner Koch <wk@g10code.com>

* configure.ac [W32]: Create values for versioninfo.rc and list substitute versioninfo.rc.

* configure.ac: Define ENABLE_GPGSM.

2005-08-08 Werner Koch <wk@g10code.com>

* configure.ac (stpcpy): Changed from replace to test.

2005-03-24 Marcus Brinkmann <marcus@g10code.de>

* configure.ac (AH_BOTTOM): Removed.

2005-03-09 Werner Koch <wk@g10code.com>

* acinclude.m4 (GNUPG_CHECK_VA_COPY): Assume no when cross-compiling.

* Makefile.am (EXTRA_DIST): Include autogen.sh

* autogen.sh: Added the usual code to build for W32 (--build-w32).

* configure.ac: Fixed the mingw32 host string, removed OS/2 stuff.

(HAVE_DRIVE_LETTERS): Removed.

(HAVE_W32_SYSTEM): Added.

(AC_GNU_SOURCE): New to replace the identical AH_VERBATIM.

(AH_BOTTOM): Added.

2004-12-28 Werner Koch <wk@g10code.com>

Released 1.0.2.

* Makefile.am (AUTOMAKE_OPTIONS): Build bzip 2 version.

(ACLOCAL_AMFLAGS): Add -I m4.

* configure.ac: Require automake 1.9.3 and autoconf 2.59.

* acinclude.m4: Changed quoting for automake 1.9.

* README: Use SHA1 instead of MD5.

2004-12-11 Marcus Brinkmann <marcus@g10code.de>

* configure.ac: Replace ttypename_r if it doesn't exist (and warn in that case).

2004-12-07 Marcus Brinkmann <marcus@g10code.de>

* README: Refer to COPYING.LESSER and "each file" instead of COPYING.

* COPYING.LESSER: New file.

* gpgme.spec.in (%doc): Add COPYING.LESSER.

* acinclude.m4, configure.ac, Makefile.am: Change license to LGPL 2.1 or later.

* TODO: Add copyright notice.

* README.CVS: Likewise.

* configure.ac (GPGSM_VERSION): Fix filter to get it.

2004-10-22 Marcus Brinkmann <marcus@g10code.de>

Released 1.0.1.

* configure.ac (LIBGPGME_LT_REVISION): Bump up to 2.
(AC_INIT): Set version to 1.0.1.

* configure.ac: Set HAVE_GPGSM to true only if \$GPGSM is not "no".

2004-09-30 Marcus Brinkmann <marcus@g10code.de>

Released 1.0.0.

* configure.ac (LIBGPGME_LT_REVISION): Bump up to 1.
(AC_INIT): Set version to 1.0.0.

* Makefile.am (EXTRA_DIST): Remove README-alpha.
* README-alpha: Remove file.

2004-09-17 Marcus Brinkmann <marcus@g10code.de>

* configure.ac: Disable AC_CONFIG_MACRO_DIR for now.

2004-09-14 Marcus Brinkmann <marcus@g10code.de>

* configure.ac: Improve diagnostics with version check.

* configure.ac: Print diagnostics about found thread libraries at
the end. Check for the versions of GPG and GPGSM and print the
found versions at the end.

(HAVE_GPGSM): Do not require GPGSM to exist and be readable.

(AC_CONFIG_MACRO_DIR): Invoke with argument m4.

* acinclude.m4: Add copyright notice.

(jm_GLIBC21, AM_PATH_GPG_ERROR, _AC_PTH_ERROR, _AC_PTH_VERBOSE,
AC_CHECK_PTH): Removed.

2004-06-23 Marcus Brinkmann <marcus@g10code.de>

* configure.ac: Check for <sys/uiio.h>.

2004-06-08 Marcus Brinkmann <marcus@g10code.de>

Released 0.9.0.

* configure.ac (AC_INIT): Set version number to 0.9.0.

(LIBGPGME_LT_CURRENT, LIBGPGME_LT_AGE): Bump up by one.
(LIBGPGME_LT_REVISION): Reset to zero.

2004-05-21 Marcus Brinkmann <marcus@g10code.de>

* configure.ac (GPGME_CONFIG_API_VERSION): New variable,
substitute it.

2004-04-29 Marcus Brinkmann <marcus@g10code.de>

Released 0.4.7.

* configure.ac (LIBGPGME_LT_REVISION): Bump it up.

2004-04-02 Thomas Schwinge <schwinge@nic-nac-project.de>

* autogen.sh: Added ACLOCAL_FLAGS.

2004-04-06 Werner Koch <wk@gnupg.org>

Released 0.4.6.

* config.guess, config.sub, ltmain.sh: Updated to those from
libtools 1.5.4.

2004-03-07 Marcus Brinkmann <marcus@g10code.de>

Released 0.4.5.

* configure.ac (NEED_GPGSM_VERSION): Bump up to 1.9.6.

* Makefile.am (EXTRA_DIST): Remove autogen.sh and README.CVS.

2004-02-18 Werner Koch <wk@gnupg.org>

* configure.ac: Make the check for funopen fail with just a
warning.

2004-02-11 Werner Koch <wk@gnupg.org>

* autogen.sh (check_version): Removed bashism and simplified.

2004-02-10 Werner Koch <wk@gnupg.org>

* configure.ac: Fixed funopen test change.

2004-02-06 Moritz Schulte <mo@g10code.com>

* configure.ac: Fix funopen replacement mechanism.

2004-01-31 Marcus Brinkmann <marcus@g10code.de>

* configure.ac: Add invocation of AC_SYS_LARGEFILE, AC_TYPE_OFF_T and AC_FUNC_FSEEKO.

2004-01-12 Werner Koch <wk@gnupg.org>

Released 0.4.4.

* configure.ac: Bumbed LT_Revision; now at C12/A1/R1.

(NEED_GPGSM_VERSION): Set to 1.9.3.

(min_automake_version): Added.

* README.CVS: New.

* Makefile.am (EXTRA_DIST): Added README.CVS.

* autogen.sh: Updated.

2003-11-19 Werner Koch <wk@gnupg.org>

* acinclude.m4: Add AM_PATH_GPG_ERROR.

* configure.ac: Check for timegm. Made warning messages more prominent.

2003-10-06 Marcus Brinkmann <marcus@g10code.de>

Released 0.4.3.

* configure.ac (LIBGPGME_LT_CURRENT, LIBGPGME_LT_AGE): Bump up by 1.

(LIBGPGME_LT_REVISION): Set to 0.

2003-09-13 Marcus Brinkmann <marcus@g10code.de>

* configure.ac: Require libpgp-error 0.5.

* acinclude.m4: Remove libtool cruft, add jm_GLIBC21.

* configure.ac: Add check for getenv_r, and call jm_GLIBC21.

Define HAVE_THREAD_SAFE_GETENV if appropriate.

2003-09-03 Marcus Brinkmann <marcus@g10code.de>

* configure.ac: Remove GPGME_CONFIG_LIBS and GPGME_CONFIG_CFLAGS.

2003-09-02 Marcus Brinkmann <marcus@g10code.de>

* configure.ac: Move invocation of AC_CANONICAL_HOST up to suppress warning by autoconf.

2003-08-30 Robert Schiele <rschiele@uni-mannheim.de>

* gpgme.spec.in: % {_infodir}/dir is not packaged,
remove to prevent checking failure.

2003-08-18 Marcus Brinkmann <marcus@g10code.de>

* configure.ac: If building Assuan, check for funopen and
fopencookie, and make isascii, putc_unlocked and memchr
replacement functions.
(AM_PATH_GPG_ERROR): Require 0.3.

2003-07-31 Marcus Brinkmann <marcus@g10code.de>

* configure.ac (AC_INIT): Bump version to 0.4.3.

2003-07-30 Marcus Brinkmann <marcus@g10code.de>

* configure.ac (LIBGPGME_LT_REVISION): Bump up to 1.

Released 0.4.2.

2003-07-08 Marcus Brinkmann <marcus@g10code.de>

* configure.ac: Complain if libgpg-error is not found.

2003-06-22 Marcus Brinkmann <marcus@g10code.de>

* configure.ac (AC_INIT): Bump version to 0.4.2.

2003-06-06 Marcus Brinkmann <marcus@g10code.de>

* configure.ac (LIBGPGME_LT_CURRENT): Bump up to 11.

* configure.ac: Use AM_PATH_GPG_ERROR.

* configure.ac: Check for libgpg-error. Define
GPG_ERR_SOURCE_DEFAULT.

2003-05-26 Marcus Brinkmann <marcus@g10code.de>

* configure.ac (NEED_GPG_VERSION): Bump up to 1.2.2.

2003-05-18 Marcus Brinkmann <marcus@g10code.de>

In all files, replace the Gpgme* type names with the new gpgme_*
type names.

2003-02-01 Marcus Brinkmann <marcus@g10code.de>

* assuan/: Update files to 2002-11-10 version of assuan.

2003-01-29 Marcus Brinkmann <marcus@g10code.de>

* bonobo/gpgme.c, bonobo/main.c, bonobo/main.h, bonobo/Makefile, bonobo/Makefile.am, bonobo/Makefile.in: Dead files removed.

* configure.ac: Remove automake conditional BUILD_BONOBO (AC_CONFIG_FILES): Remove bonobo/Makefile.

* Makefile.am (bonobo): Remove variable.

(SUBDIRS): Remove \${bonobo}.

* configure.ac: Remove all uses of GNUPG_CHECK_TYPEDEF, for byte, ushort, ulong, u16 and u32.

* acinclude.m4 (GNUPG_CHECK_TYPEDEF): Remove macro.

2002-12-24 Marcus Brinkmann <marcus@g10code.de>

* configure.ac: New conditional HAVE_LD_VERSION_SCRIPT.

Call AC_CANONICAL_HOST, use host instead target.

2002-12-23 Marcus Brinkmann <marcus@g10code.de>

* configure.ac: Bump up to 0.4.1.

Released 0.4.0.

2002-12-23 Marcus Brinkmann <marcus@g10code.de>

* autogen.sh (automake_vers): Require 1.7 (really 1.7.1) for the conditional source distribution bug fix.

2002-12-08 Marcus Brinkmann <marcus@g10code.de>

* configure.ac (LIBGPGME_LT_CURRENT): Increase by one.

(LIBGPGME_LT_AGE, LIBGPGME_LT_REVISION): Set to 0.

2002-11-28 Marcus Brinkmann <marcus@g10code.de>

* NEWS: Add note about moving "gpgmeplug" to the "cryptplug" package.

* README: Remove instructions related to "gpgmeplug".

* configure.ac: Remove enable option "gpgmeplug" and automake conditional BUILD_GPGMEPLUG, as well as the status info about it.

(GPGMEPLUG): Remove variable.

* Makefile.am (gpgmeplug): Remove variable.

(SUBDIRS): Remove \${gpgmeplug}.

* cryptplug.h, gpgme-openpgp.c, gpgmeplug.dox, gpgme-smime.c,
Makefile.am, gpgmeplug.c, ChangeLog: Files removed.

2002-11-22 Marcus Brinkmann <marcus@g10code.de>

* configure.ac: Disable GPGSM for all dosish systems.

2002-10-12 Marcus Brinkmann <marcus@g10code.de>

* configure.ac: Add automake conditional HAVE_GPGSM.

2002-10-08 Marcus Brinkmann <marcus@g10code.de>

* configure.ac (AC_INIT): Bump version up to 0.4.0.

(NEED_GPG_VERSION): Bump up to 1.2.0.

(NEED_GPGSM_VERSION): Bump up to 0.9.0.

* README: Update version numbers.

* NEWS: Start entry for 0.4.0.

2002-09-20 Werner Koch <wk@gnupg.org>

Released 0.3.11.

* configure.ac: Bump up LIBGPGME_LT_REVISION.

* configure.ac (AC_CHECK_HEADERS): Check for sys/select.h.

2002-09-04 Marcus Brinkmann <marcus@g10code.de>

* autogen.sh (autoconf_vers): Bump up to 2.53 to get the @&t@
quadrigraph. Always cutting the edge!

2002-09-02 Marcus Brinkmann <marcus@g10code.de>

* configure.ac: Create and substitute LTLIBOBS.

2002-09-02 Marcus Brinkmann <marcus@g10code.de>

Released 0.3.10.

* NEWS: Update for 0.3.9 release.

* configure.ac: Bump up LIBGPGME_LT_REVISION.

2002-08-29 Marcus Brinkmann <marcus@g10code.de>

* gpgme.spec.in: Changed user name in Wojciech Polak's email
address from ghostface to polak per request by himself.

2002-08-28 Werner Koch <wk@gnupg.org>

- * acinclude.m4 (GNUPG_CHECK_VA_COPY): New.
- * configure.ac: Use it.

2002-08-23 Werner Koch <wk@gnupg.org>

- * configure.ac (GPGME_CONFIG_CFLAGS): Renamed from GPGME_CFLAGS and removed the libpath because it is set by the config script.

2002-08-21 Marcus Brinkmann <marcus@g10code.de>

- * configure.ac: Bump version number to 0.3.10.
- * NEWS: Add template for development version.

2002-08-21 Marcus Brinkmann <marcus@g10code.de>

Released 0.3.9.

- * NEWS: Update for 0.3.9 release.
- * Makefile.am (EXTRA_DIST): Add gpgme.spec.in.

2002-08-21 Marcus Brinkmann <marcus@g10code.de>

- * jnlib/argparse.c, jnlib/argparse.h, jnlib/ChangeLog, jnlib/dotlock.c, jnlib/dotlock.h, jnlib/libjnlib-config.h, jnlib/logging.c, jnlib/logging.h, jnlib/Makefile.am, jnlib/mischelp.h, jnlib/README, jnlib/stringhelp.c, jnlib/stringhelp.h, jnlib/strlist.c, jnlib/strlist.h, jnlib/types.h, jnlib/xmalloc.c, jnlib/xmalloc.h: Remove files.

2002-08-21 Marcus Brinkmann <marcus@g10code.de>

- * Makefile.am (SUBDIRS): Remove jnlib.
- * configure.ac: Don't check for unsigned short or unsigned long. Don't check for memicmp, strtwr, strtoul, memmove, stricmp. Make stpcpy a replaced function. Don't define HAVE_JNLIB_LOGGING. Don't generate jnlib/Makefile.

2002-07-02 Werner Koch <wk@gnupg.org>

- * configure.ac: Bumped version number to 0.3.9; add a comment on when to change it.
- * gpgme.spec.in: New. Contributed by Wojciech Polak.
- * Makefile.am (dist-hook): New.

* AUTHORS: Added Wojciech and bug reporting addresses.

2002-06-25 Werner Koch <wk@gnupg.org>

Released 0.3.8.

* configure.ac: Bumbed LT version to 9/3/0.

(NEED_GPGSM_VERSION): Need 0.3.8 due to fixed export command.

2002-06-04 Marcus Brinkmann <marcus@g10code.de>

Released 0.3.7.

* configure.ac (AC_INIT): Set version to 0.3.7.

(LIBGPGME_LT_REVISION): Add one.

* README: Document version requirement correctly.

2002-06-02 Marcus Brinkmann <marcus@g10code.de>

* acinclude.m4: Fix Pth check so that it doesn't error out if pth is not found.

2002-06-02 Marcus Brinkmann <marcus@g10code.de>

* configure.ac: Add checks for Pth and pthreads.

* acinclude.m4: Add slightly hacked check for pth (seems to be an autoconf version problem).

2002-05-21 Werner Koch <wk@gnupg.org>

* configure.ac (NEED_GPGSM_VERSION): We need gpgsm 0.3.7.

2002-05-03 Werner Koch <wk@gnupg.org>

Released 0.3.6.

2002-04-05 Marcus Brinkmann <marcus@g10code.de>

* acconfig.h: File removed.

* configure.ac (NEED_GPG_VERSION): Add description.

(NEED_GPGSM_VERSION): Likewise.

(HAVE_DOSISH_SYSTEM): Likewise.

(HAVE_DRIVE_LETTERS): Likewise.

(GPG_PATH): Likewise.

(GPGSM_PATH): Likewise.

* acinclude.m4 (GNUPG_CHECK_TYPEDEF): Likewise.

2002-04-01 Werner Koch <wk@gnupg.org>

Released 0.3.5.

2002-03-17 Marcus Brinkmann <marcus@g10code.de>

* configure.ac: Add automake conditional HAVE_DOSISH_SYSTEM.

2002-03-04 Werner Koch <wk@gnupg.org>

* configure.ac: Bumbed version to 0.3.4-cvs to continue development.

Released 0.3.4.

* configure.ac: Bumbed LT version numbers to (7,1,0), requires
gpgsm 0.3.1.

2002-03-03 Marcus Brinkmann <marcus@g10code.de>

* configure.ac (AC_INIT): Change version number to snapshot CVS
version.

2002-02-13 Werner Koch <wk@gnupg.org>

* configure.ac (vasprintf,fopencookie): Add checks.

2002-02-12 Marcus Brinkmann <marcus@g10code.de>

* configure.ac (AC_INIT): Bump version to 0.3.3.
* jnlib/Makefile.am: Revert to older version that includes xmalloc
but not dotlock and some other files. Reported by Stphane
Corthsy.

2002-02-10 Marcus Brinkmann <marcus@g10code.de>

* Released 0.3.2.

* configure.ac (AC_INIT): Bump version to 0.3.2.
* jnlib/libjnlibconfig.h: Revert to older version that doesn't
expect libcrypt. Reported by Jose Carlos Garcia Sogo
<jsogo@debian.org>.

2002-02-09 Marcus Brinkmann <marcus@g10code.de>

* Released 0.3.1.

* configure.ac (LIBGPGME_LT_CURRENT): Bump it up to 6!

(NEED_GPGSM_VERSION): Bump it up to 0.3.0!

(AC_INIT): Bump version to 0.3.1

2002-01-22 Marcus Brinkmann <marcus@g10code.de>

* configure.ac (HAVE_JNLIB_LOGGING): Define always for assuan.

2001-12-19 Werner Koch <wk@gnupg.org>

* configure.ac (VERSION,PACKAGE): Defined and subst. Used for AM_INIT_AUTOMAKE and moved all version number more to the top.

2001-12-18 Marcus Brinkmann <marcus@g10code.de>

* autogen.sh (libtool_vers): Bump to 1.4.

* configure.ac (LIBGPGME_LT_CURRENT): Increment.

(LIBGPGME_LT_AGE): Reset.

Improve comment.

Fix wrong comment character.

2001-12-18 Werner Koch <wk@gnupg.org>

* acinclude.m4 (GNUPG_FIX_HDR_VERSION): Fixed for new automake.

2001-12-14 Marcus Brinkmann <marcus@g10code.de>

* configure.ac (GPG): Substitute this variable.

(GPGSM): Likewise.

2001-11-22 Marcus Brinkmann <marcus@g10code.de>

* configure.ac (AC_CONFIG_FILES): Add tests/gpg/Makefile and tests/gpgsm/Makefile.

2001-11-21 Marcus Brinkmann <marcus@g10code.de>

* Makefile.am (gpgmeplug): New variable, set to gpgmeplug if [BUILD_GPGMEPLUG].

* configure.ac (AC_CONFIG_FILES): Add gpgmeplug/Makefile.

Support --enable-gpgmeplug.

2001-11-21 Marcus Brinkmann <marcus@g10code.de>

* autogen.sh: Tighten version dependencies.

2001-11-20 Marcus Brinkmann <marcus@g10code.de>

- * Makefile.am (SUBDIRS): Support building the assuan library (currently if GPGSM_PATH is set)..
- * configure.ac: Support building the assuan library.
- * assuan: New directory, populated with the Assuan library (copied from the newpg repository).

2001-11-20 Marcus Brinkmann <marcus@g10code.de>

- * configure.ac (NEED_GPGSM_VERSION): New variable. Treat it similarly to NEED_GPG_VERSION.
- * acconfig.h: Likewise.

2001-11-18 Marcus Brinkmann <marcus@g10code.de>

- * configure.in: Renamed to ...
- * configure.ac: ... this. Update to autoconf 2.52. Lots of small changes in the transition. Support --with-gpg=PATH and --with-gpgsm=PATH options. Check if test suites can be run.
- * acconfig.h: Add GPGSM_PATH.
- * Makefile.am: New variable `tests', set to `tests' if RUN_GPG_TESTS.
- (SUBDIRS): Replace string `tests' with variable `tests'.

2001-10-22 Marcus Brinkmann <marcus@g10code.de>

- * autogen.sh: Invoke automake with `-a' (add missing files). Do not invoke configure.

2001-09-17 Werner Koch <wk@gnupg.org>

Released 0.2.3.

- * configure.in (NEED_GPG_VERSION): Set to 1.0.6. Incremented LT current and age.

- * Makefile.am (SUBDIRS): Add doc

2001-06-12 Werner Koch <wk@gnupg.org>

Released 0.2.2.

2001-04-05 Werner Koch <wk@gnupg.org>

- * configure.in (NEED_GPG_VERSION): Set to 1.0.4g

2001-04-02 Werner Koch <wk@gnupg.org>

Released 0.2.1.

Changed the copyright notices all over the place.

2001-02-28 Werner Koch <wk@gnupg.org>

Released 0.2.0.

2001-01-18 Werner Koch <wk@gnupg.org>

* autogen.sh: Added option --build-w32.

Copyright (C) 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2010,
2011 g10 Code GmbH

This file is free software; as a special exception the author gives unlimited permission to copy and/or distribute it, with or without modifications, as long as this notice is preserved.

This file is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY, to the extent permitted by law; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. This is gpgme.info, produced by makeinfo version 6.3 from gpgme.texi.

Copyright 20022008, 2010, 20122018 g10 Code GmbH.

Permission is granted to copy, distribute and/or modify this document under the terms of the GNU General Public License as published by the Free Software Foundation; either version 3 of the License, or (at your option) any later version. The text of the license can be found in the section entitled Copying.

This document is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

INFO-DIR-SECTION GNU Libraries

START-INFO-DIR-ENTRY

* GPGME: (gpgme). Adding support for cryptography to your program.

END-INFO-DIR-ENTRY

This file documents the GPGME library.

This is Edition 1.12.1-beta100, last updated 3 December 2018, of The GnuPG Made Easy Reference Manual, for Version 1.12.1-beta100.

Copyright 20022008, 2010, 20122018 g10 Code GmbH.

Permission is granted to copy, distribute and/or modify this document under the terms of the GNU General Public License as published by the Free Software Foundation; either version 3 of the License, or (at your option) any later version. The text of the license can be found in the section entitled Copying.

This document is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

File: gpgme.info, Node: UI Server Verify, Next: UI Server Set Input Files, Prev: UI Server Decrypt, Up: UI Server Protocol

A.4 UI Server: Verify a Message

=====

The server needs to support the verification of opaque signatures as well as detached signatures. The kind of input sources controls what kind message is to be verified.

-- Command: MESSAGE FD=N

This command is used with detached signatures to set the file descriptor for the signed data to N. The data is binary encoded (used verbatim). For details on the file descriptor, see the description of INPUT in the ENCRYPT section.

-- Command: INPUT FD=N

Set the file descriptor for the opaque message or the signature part of a detached signature to N. The message send to the server is either binary encoded or in the case of OpenPGP ASCII armored. For details on the file descriptor, see the description of INPUT in the ENCRYPT section.

-- Command: OUTPUT FD=N

Set the file descriptor to be used for the output. The output is binary encoded and only used for opaque signatures. For details on the file descriptor, see the description of INPUT in the ENCRYPT section.

The verification is then started using:

-- Command: VERIFY --protocol=NAME [--silent]

NAME is the signing protocol used for the message. For a description of the allowed protocols see the ENCRYPT command. This argument is mandatory. Depending on the combination of MESSAGE INPUT and OUTPUT commands, the server needs to select

the appropriate verification mode:

MESSAGE and INPUT

This indicates a detached signature. Output data is not applicable.

INPUT

This indicates an opaque signature. As no output command has been given, the server is only required to check the signature.

INPUT and OUTPUT

This indicates an opaque signature. The server shall write the signed data to the file descriptor set by the output command. This data shall even be written if the signatures cant be verified.

With `--silent` the server shall not display any dialog; this is for example used by the client to get the content of opaque signed messages. The client expects the server to send at least this status information before the final OK response:

`-- Status line: SIGSTATUS FLAG DISPLAYSTRING`

Returns the status for the signature and a short string explaining the status. Valid values for FLAG are:

none

The message has a signature but it could not not be verified due to a missing key.

green

The signature is fully valid.

yellow

The signature is valid but additional information was shown regarding the validity of the key.

red

The signature is not valid.

DISPLAYSTRING is a percent-and-plus-encoded string with a short human readable description of the status. For example

```
S SIGSTATUS green Good+signature+from+Keith+Moon+<keith@example.net>
```

Note that this string needs to fit into an Assuan line and should be short enough to be displayed as short one-liner on the clients window. As usual the encoding of this string is UTF-8 and it should be send in its translated form.

The server shall send one status line for every signature found on the message.

File: gpgme.info, Node: UI Server Set Input Files, Next: UI Server Sign/Encrypt Files, Prev: UI Server Verify, Up: UI Server Protocol

A.5 UI Server: Specifying the input files to operate on.

=====

All file related UI server commands operate on a number of input files or directories, specified by one or more FILE commands:

-- Command: FILE [--clear] NAME

Add the file or directory NAME to the list of pathnames to be processed by the server. The parameter NAME must be an absolute path name (including the drive letter) and is percent escaped (in particular, the characters %, = and white space characters are always escaped). If the option --clear is given, the list of files is cleared before adding NAME.

Historical note: The original spec did not define --clear but the keyword --continued after the file name to indicate that more files are to be expected. However, this has never been used and thus removed from the specs.

File: gpgme.info, Node: UI Server Sign/Encrypt Files, Next: UI Server Verify/Decrypt Files, Prev: UI Server Set Input Files, Up: UI Server Protocol

A.6 UI Server: Encrypting and signing files.

=====

First, the input files need to be specified by one or more FILE commands. Afterwards, the actual operation is requested:

-- Command: ENCRYPT_FILES --nohup

-- Command: SIGN_FILES --nohup

-- Command: ENCRYPT_SIGN_FILES --nohup

Request that the files specified by FILE are encrypted and/or signed. The command selects the default action. The UI server may allow the user to change this default afterwards interactively, and even abort the operation or complete it only on some of the selected files and directories.

What it means to encrypt or sign a file or directory is specific to the preferences of the user, the functionality the UI server provides, and the selected protocol. Typically, for each input file a new file is created under the original filename plus a protocol specific extension (like .gpg or .sig), which contain the encrypted/signed file or a detached signature. For

directories, the server may offer multiple options to the user (for example ignore or process recursively).

The ENCRYPT_SIGN_FILES command requests a combined sign and encrypt operation. It may not be available for all protocols (for example, it is available for OpenPGP but not for CMS).

The option --nohup is mandatory. It is currently unspecified what should happen if --nohup is not present. Because --nohup is present, the server always returns OK promptly, and completes the operation asynchronously.

File: gpgme.info, Node: UI Server Verify/Decrypt Files, Next: UI Server Import/Export Keys, Prev: UI Server Sign/Encrypt Files, Up: UI Server Protocol

A.7 UI Server: Decrypting and verifying files.

=====

First, the input files need to be specified by one or more FILE commands. Afterwards, the actual operation is requested:

-- Command: DECRYPT_FILES --nohup

-- Command: VERIFY_FILES --nohup

-- Command: DECRYPT_VERIFY_FILES --nohup

Request that the files specified by FILE are decrypted and/or verified. The command selects the default action. The UI server may allow the user to change this default afterwards interactively, and even abort the operation or complete it only on some of the selected files and directories.

What it means to decrypt or verify a file or directory is specific to the preferences of the user, the functionality the UI server provides, and the selected protocol. Typically, for decryption, a new file is created for each input file under the original filename minus a protocol specific extension (like .gpg) which contains the original plaintext. For verification a status is displayed for each signed input file, indicating if it is signed, and if yes, if the signature is valid. For files that are signed and encrypted, the VERIFY command transiently decrypts the file to verify the enclosed signature. For directories, the server may offer multiple options to the user (for example ignore or process recursively).

The option --nohup is mandatory. It is currently unspecified what should happen if --nohup is not present. Because --nohup is present, the server always returns OK promptly, and completes the operation asynchronously.

A.8 UI Server: Managing certificates.

=====

First, the input files need to be specified by one or more FILE commands. Afterwards, the actual operation is requested:

-- Command: IMPORT_FILES --nohup
Request that the certificates contained in the files specified by FILE are imported into the local certificate databases.

For directories, the server may offer multiple options to the user (for example ignore or process recursively).

The option --nohup is mandatory. It is currently unspecified what should happen if --nohup is not present. Because --nohup is present, the server always returns OK promptly, and completes the operation asynchronously.

FIXME: It may be nice to support an EXPORT command as well, which is enabled by the context menu of the background of a directory.

A.9 UI Server: Create and verify checksums for files.

=====

First, the input files need to be specified by one or more FILE commands. Afterwards, the actual operation is requested:

-- Command: CHECKSUM_CREATE_FILES --nohup
Request that checksums are created for the files specified by FILE. The choice of checksum algorithm and the destination storage and format for the created checksums depend on the preferences of the user and the functionality provided by the UI server. For directories, the server may offer multiple options to the user (for example ignore or process recursively).

The option --nohup is mandatory. It is currently unspecified what should happen if --nohup is not present. Because --nohup is present, the server always returns OK promptly, and completes the operation asynchronously.

-- Command: CHECKSUM_VERIFY_FILES --nohup
Request that checksums are created for the files specified by FILE and verified against previously created and stored checksums. The choice of checksum algorithm and the source storage and format for previously created checksums depend on the preferences of the user and the functionality provided by the UI server. For directories, the server may offer multiple options to the user (for example ignore or process recursively).

If the source storage of previously created checksums is available to the user through the Windows shell, this command may also accept such checksum files as FILE arguments. In this case, the UI server should instead verify the checksum of the referenced files as if they were given as INPUT files.

The option --nohup is mandatory. It is currently unspecified what should happen if --nohup is not present. Because --nohup is present, the server always returns OK promptly, and completes the operation asynchronously.

File: gpgme.info, Node: Miscellaneous UI Server Commands, Prev: UI Server Checksum Files, Up: UI Server Protocol

A.10 Miscellaneous UI Server Commands

=====

The server needs to implement the following commands which are not related to a specific command:

-- Command: GETINFO WHAT

This is a multi purpose command, commonly used to return a variety of information. The required subcommands as described by the WHAT parameter are:

pid

Return the process id of the server in decimal notation using an Assuan data line.

To allow the server to pop up the windows in the correct relation to the client, the client is advised to tell the server by sending the option:

-- Command option: window-id NUMBER

The NUMBER represents the native window ID of the clients current window. On Windows systems this is a windows handle (HWND) and on X11 systems it is the X Window ID. The number needs to be given as a hexadecimal value so that it is easier to convey pointer values (e.g. HWND).

A client may want to fire up the certificate manager of the server. To do this it uses the Assuan command:

-- Command: START_KEYMANAGER

The server shall pop up the main window of the key manager (aka certificate manager). The client expects that the key manager is brought into the foreground and that this command immediately returns (does not wait until the key manager has been fully brought up).

A client may want to fire up the configuration dialog of the server. To do this it uses the Assuan command:

-- Command: START_CONFDIALOG

The server shall pop up its configuration dialog. The client expects that this dialog is brought into the foreground and that this command immediately returns (i.e. it does not wait until the dialog has been fully brought up).

When doing an operation on a mail, it is useful to let the server know the address of the sender:

-- Command: SENDER [--info] [--protocol=NAME] EMAIL

EMAIL is the plain ASCII encoded address ("addr-spec" as per RFC-2822) enclosed in angle brackets. The address set with this command is valid until a successful completion of the operation or until a RESET command. A second command overrides the effect of the first one; if EMAIL is not given and --info is not used, the server shall use the default signing key.

If option --info is not given, the server shall also suggest a protocol to use for signing. The client may use this suggested protocol on its own discretion. The same status line as with PREP_ENCRYPT is used for this.

The option --protocol may be used to give the server a hint on which signing protocol should be preferred.

To allow the UI-server to visually identify a running operation or to associate operations the server MAY support the command:

-- Command: SESSION NUMBER [STRING]

The NUMBER is an arbitrary value, a server may use to associate simultaneous running sessions. It is a 32 bit unsigned integer with 0 as a special value indicating that no session association shall be done.

If STRING is given, the server may use this as the title of a window or, in the case of an email operation, to extract the senders address. The string may contain spaces; thus no plus-escaping is used.

This command may be used at any time and overrides the effect of the last command. A RESET undoes the effect of this command.

File: gpgme.info, Node: Debugging, Next: Deprecated Functions, Prev: UI Server Protocol, Up: Top

Appendix B How to solve problems

Everyone knows that software often does not do what it should do and thus there is a need to track down problems. This is in particular true for applications using a complex library like GPGME and of course also for the library itself. Here we give a few hints on how to solve such problems.

First of all you should make sure that the keys you want to use are installed in the GnuPG engine and are usable. Thus the first test is to run the desired operation using gpg or gpgsm on the command line. If you cant figure out why things dont work, you may use GPGMEs built in trace feature. This feature is either enabled using the environment variable GPGME_DEBUG or, if this is not possible, by calling the function gpgme_set_global_flag. The value is the trace level and an optional file name. If no file name is given the trace output is printed to stderr.

For example

```
GPGME_DEBUG=9:/home/user/mygpgme.log
```

(Note that under Windows you use a semicolon in place of the colon to separate the fields.)

A trace level of 9 is pretty verbose and thus you may want to start off with a lower level. The exact definition of the trace levels and the output format may change with any release; you need to check the source code for details. In any case the trace log should be helpful to understand what is going on. Warning: The trace log may reveal sensitive details like passphrases or other data you use in your application. If you are asked to send a log file, make sure that you run your tests only with play data.

File: gpgme.info, Node: Deprecated Functions, Next: Library Copying, Prev: Debugging, Up: Top

Appendix C Deprecated Functions

For backward compatibility GPGME has a number of functions, data types and constants which are deprecated and should not be used anymore. We document here those which are really old to help understanding old code and to allow migration to their modern counterparts.

**Warning:* These interfaces will be removed in a future version of GPGME.

-- Function: void gpgme_key_release (gpgme_key_t KEY)
The function gpgme_key_release is equivalent to gpgme_key_unref.

-- Function: void gpgme_trust_item_release (gpgme_trust_item_t ITEM)
The function gpgme_trust_item_release is an alias for gpgme_trust_item_unref.

-- Function: gpgme_error_t gpgme_op_import_ext (gpgme_ctx_t CTX,
gpgme_data_t KEYDATA, int *NR)
SINCE: 0.3.9

The function gpgme_op_import_ext is equivalent to:

```
gpgme_error_t err = gpgme_op_import (ctx, keydata);
if (!err)
{
    gpgme_import_result_t result = gpgme_op_import_result (ctx);
    *nr = result->considered;
}
```

-- Data type: gpgme_error_t (*gpgme_edit_cb_t) (void *HANDLE,
gpgme_status_code_t STATUS, const char *ARGS, int FD)
The gpgme_edit_cb_t type is the type of functions which GPGME calls if it a key edit operation is on-going. The status code STATUS and the argument line ARGS are passed through by GPGME from the crypto engine. The file descriptor FD is -1 for normal status messages. If STATUS indicates a command rather than a status message, the response to the command should be written to FD. The HANDLE is provided by the user at start of operation.

The function should return GPG_ERR_FALSE if it did not handle the status code, 0 for success, or any other error value.

-- Function: gpgme_error_t gpgme_op_edit (gpgme_ctx_t CTX,
gpgme_key_t KEY, gpgme_edit_cb_t FNC, void *HANDLE,
gpgme_data_t OUT)
SINCE: 0.3.9

Note: This function is deprecated, please use `gpgme_op_interact` instead.

The function `gpgme_op_edit` processes the key `KEY` interactively, using the edit callback function `FNC` with the handle `HANDLE`. The callback is invoked for every status and command request from the crypto engine. The output of the crypto engine is written to the data object `OUT`.

Note that the protocol between the callback function and the crypto engine is specific to the crypto engine and no further support in implementing this protocol correctly is provided by GPGME.

The function returns the error code `GPG_ERR_NO_ERROR` if the edit operation completes successfully, `GPG_ERR_INV_VALUE` if `CTX` or `KEY` is not a valid pointer, and any error returned by the crypto engine or the edit callback handler.

```
-- Function: gpgme_error_t gpgme_op_edit_start (gpgme_ctx_t CTX,  
        gpgme_key_t KEY, gpgme_edit_cb_t FNC, void *HANDLE,  
        gpgme_data_t OUT)
```

SINCE: 0.3.9

Note: This function is deprecated, please use `gpgme_op_interact_start` instead.

The function `gpgme_op_edit_start` initiates a `gpgme_op_edit` operation. It can be completed by calling `gpgme_wait` on the context. *Note Waiting For Completion::.

The function returns the error code `GPG_ERR_NO_ERROR` if the operation was started successfully, and `GPG_ERR_INV_VALUE` if `CTX` or `KEY` is not a valid pointer.

```
-- Function: gpgme_error_t gpgme_op_card_edit (gpgme_ctx_t CTX,  
        gpgme_key_t KEY, gpgme_edit_cb_t FNC, void *HANDLE,  
        gpgme_data_t OUT)
```

Note: This function is deprecated, please use `gpgme_op_interact` with the flag `GPGME_INTERACT_CARD` instead.

The function `gpgme_op_card_edit` is analogous to `gpgme_op_edit`, but should be used to process the smart card corresponding to the key `KEY`.

```
-- Function: gpgme_error_t gpgme_op_card_edit_start (gpgme_ctx_t CTX,  
        gpgme_key_t KEY, gpgme_edit_cb_t FNC, void *HANDLE,
```


gpgme_data_t OUT)

Note: This function is deprecated, please use

gpgme_op_interact_start with the flag GPGME_INTERACT_CARD instead.

The function gpgme_op_card_edit_start initiates a gpgme_op_card_edit operation. It can be completed by calling gpgme_wait on the context. *Note Waiting For Completion::.

The function returns the error code GPG_ERR_NO_ERROR if the operation was started successfully, and GPG_ERR_INV_VALUE if CTX or KEY is not a valid pointer.

-- Function: gpgme_error_t gpgme_data_new_with_read_cb (gpgme_data_t *DH, int (*READFUNC) (void *HOOK, char *BUFFER, size_t COUNT, size_t *NREAD), void *HOOK_VALUE)

The function gpgme_data_new_with_read_cb creates a new gpgme_data_t object and uses the callback function READFUNC to retrieve the data on demand. As the callback function can supply the data in any way it wants, this is the most flexible data type GPGME provides. However, it can not be used to write data.

The callback function receives HOOK_VALUE as its first argument whenever it is invoked. It should return up to COUNT bytes in BUFFER, and return the number of bytes actually read in NREAD. It may return 0 in NREAD if no data is currently available. To indicate EOF the function should return with an error code of -1 and set NREAD to 0. The callback function may support to reset its internal read pointer if it is invoked with BUFFER and NREAD being NULL and COUNT being 0.

The function returns the error code GPG_ERR_NO_ERROR if the data object was successfully created, GPG_ERR_INV_VALUE if DH or READFUNC is not a valid pointer, and GPG_ERR_ENOMEM if not enough memory is available.

-- Function: gpgme_error_t gpgme_data_rewind (gpgme_data_t DH)

The function gpgme_data_rewind is equivalent to:

```
return (gpgme_data_seek (dh, 0, SEEK_SET) == -1)
? gpgme_error_from_errno (errno) : 0;
```

-- Data type: gpgme_attr_t

The gpgme_attr_t type is used to specify a key or trust item attribute. The following attributes are defined:

GPGME_ATTR_KEYID

This is the key ID of a sub key. It is representable as a

string.

For trust items, the trust item refers to the key with this ID.

GPGME_ATTR_FPR

This is the fingerprint of a sub key. It is representable as a string.

GPGME_ATTR_ALGO

This is the crypto algorithm for which the sub key can be used. It is representable as a string and as a number. The numbers correspond to the enum gcry_pk_algos values in the gcrypt library.

GPGME_ATTR_LEN

This is the key length of a sub key. It is representable as a number.

GPGME_ATTR_CREATED

This is the timestamp at creation time of a sub key. It is representable as a number.

GPGME_ATTR_EXPIRE

This is the expiration time of a sub key. It is representable as a number.

GPGME_ATTR_OTRUST

XXX FIXME (also for trust items)

GPGME_ATTR_USERID

This is a user ID. There can be more than one user IDs in a GPGME_KEY_T object. The first one (with index 0) is the primary user ID. The user ID is representable as a number.

For trust items, this is the user ID associated with this trust item.

GPGME_ATTR_NAME

This is the name belonging to a user ID. It is representable as a string.

GPGME_ATTR_EMAIL

This is the email address belonging to a user ID. It is representable as a string.

GPGME_ATTR_COMMENT

This is the comment belonging to a user ID. It is

representable as a string.

GPGME_ATTR_VALIDITY

This is the validity belonging to a user ID. It is representable as a string and as a number. See below for a list of available validities.

For trust items, this is the validity that is associated with this trust item.

GPGME_ATTR_UID_REVOKED

This specifies if a user ID is revoked. It is representable as a number, and is 1 if the user ID is revoked, and 0 otherwise.

GPGME_ATTR_UID_INVALID

This specifies if a user ID is invalid. It is representable as a number, and is 1 if the user ID is invalid, and 0 otherwise.

GPGME_ATTR_LEVEL

This is the trust level of a trust item.

GPGME_ATTR_TYPE

This returns information about the type of key. For the string function this will either be "PGP" or "X.509". The integer function returns 0 for PGP and 1 for X.509. It is also used for the type of a trust item.

GPGME_ATTR_IS_SECRET

This specifies if the key is a secret key. It is representable as a number, and is 1 if the key is revoked, and 0 otherwise.

GPGME_ATTR_KEY_REVOKED

This specifies if a sub key is revoked. It is representable as a number, and is 1 if the key is revoked, and 0 otherwise.

GPGME_ATTR_KEY_INVALID

This specifies if a sub key is invalid. It is representable as a number, and is 1 if the key is invalid, and 0 otherwise.

GPGME_ATTR_KEY_EXPIRED

This specifies if a sub key is expired. It is representable as a number, and is 1 if the key is expired, and 0 otherwise.

GPGME_ATTR_KEY_DISABLED

This specifies if a sub key is disabled. It is representable as a number, and is 1 if the key is disabled, and 0 otherwise.

GPGME_ATTR_KEY_CAPS

This is a description of the capabilities of a sub key. It is representable as a string. The string contains the letter e if the key can be used for encryption, s if the key can be used for signatures, and c if the key can be used for certifications.

GPGME_ATTR_CAN_ENCRYPT

This specifies if a sub key can be used for encryption. It is representable as a number, and is 1 if the sub key can be used for encryption, and 0 otherwise.

GPGME_ATTR_CAN_SIGN

This specifies if a sub key can be used to create data signatures. It is representable as a number, and is 1 if the sub key can be used for signatures, and 0 otherwise.

GPGME_ATTR_CAN_CERTIFY

This specifies if a sub key can be used to create key certificates. It is representable as a number, and is 1 if the sub key can be used for certifications, and 0 otherwise.

GPGME_ATTR_SERIAL

The X.509 issuer serial attribute of the key. It is representable as a string.

GPGME_ATTR_ISSUE

The X.509 issuer name attribute of the key. It is representable as a string.

GPGME_ATTR_CHAINID

The X.509 chain ID can be used to build the certification chain. It is representable as a string.

```
-- Function: const char * gpgme_key_get_string_attr (gpgme_key_t KEY,  
gpgme_attr_t WHAT, const void *RESERVED, int IDX)
```

The function `gpgme_key_get_string_attr` returns the value of the string-representable attribute `WHAT` of key `KEY`. If the attribute is an attribute of a sub key or an user ID, `IDX` specifies the sub key or user ID of which the attribute value is returned. The argument `RESERVED` is reserved for later use and should be `NULL`.

The string returned is only valid as long as the key is valid.

The function returns 0 if an attribute can't be returned as a string, KEY is not a valid pointer, IDX out of range, or RESERVED not NULL.

-- Function: unsigned long gpgme_key_get_ulong_attr (gpgme_key_t KEY, gpgme_attr_t WHAT, const void *RESERVED, int IDX)

The function gpgme_key_get_ulong_attr returns the value of the number-representable attribute WHAT of key KEY. If the attribute is an attribute of a sub key or an user ID, IDX specifies the sub key or user ID of which the attribute value is returned. The argument RESERVED is reserved for later use and should be NULL.

The function returns 0 if the attribute can't be returned as a number, KEY is not a valid pointer, IDX out of range, or RESERVED not NULL.

The signatures on a key are only available if the key was retrieved via a listing operation with the GPGME_KEYLIST_MODE_SIGS mode enabled, because it is expensive to retrieve all signatures of a key.

So, before using the below interfaces to retrieve the signatures on a key, you have to make sure that the key was listed with signatures enabled. One convenient, but blocking, way to do this is to use the function gpgme_get_key.

-- Data type: gpgme_attr_t

The gpgme_attr_t type is used to specify a key signature attribute. The following attributes are defined:

GPGME_ATTR_KEYID

This is the key ID of the key which was used for the signature. It is representable as a string.

GPGME_ATTR_ALGO

This is the crypto algorithm used to create the signature. It is representable as a string and as a number. The numbers correspond to the enum gcry_pk_algos values in the gcrypt library.

GPGME_ATTR_CREATED

This is the timestamp at creation time of the signature. It is representable as a number.

GPGME_ATTR_EXPIRE

This is the expiration time of the signature. It is representable as a number.

GPGME_ATTR_USERID

This is the user ID associated with the signing key. The user ID is representable as a number.

GPGME_ATTR_NAME

This is the name belonging to a user ID. It is representable as a string.

GPGME_ATTR_EMAIL

This is the email address belonging to a user ID. It is representable as a string.

GPGME_ATTR_COMMENT

This is the comment belonging to a user ID. It is representable as a string.

GPGME_ATTR_KEY_REVOKED

This specifies if a key signature is a revocation signature. It is representable as a number, and is 1 if the key is revoked, and 0 otherwise.

GPGME_ATTR_SIG_CLASS

This specifies the signature class of a key signature. It is representable as a number. The meaning is specific to the crypto engine.

GPGME_ATTR_SIG_CLASS

This specifies the signature class of a key signature. It is representable as a number. The meaning is specific to the crypto engine.

GPGME_ATTR_SIG_STATUS

This is the same value as returned by `gpgme_get_sig_status`.

-- Function: `const char * gpgme_key_sig_get_string_attr`
(`gpgme_key_t KEY`, `int UID_IDX`, `gpgme_attr_t WHAT`,
`const void *RESERVED`, `int IDX`)

The function `gpgme_key_sig_get_string_attr` returns the value of the string-representable attribute `WHAT` of the signature `IDX` on the user ID `UID_IDX` in the key `KEY`. The argument `RESERVED` is reserved for later use and should be `NULL`.

The string returned is only valid as long as the key is valid.

The function returns 0 if an attribute can't be returned as a string, `KEY` is not a valid pointer, `UID_IDX` or `IDX` out of range, or `RESERVED` not `NULL`.

-- Function: unsigned long gpgme_key_sig_get_ulong_attr
(gpgme_key_t KEY, int UID_IDX, gpgme_attr_t WHAT,
const void *RESERVED, int IDX)

The function gpgme_key_sig_get_ulong_attr returns the value of the number-representable attribute WHAT of the signature IDX on the user ID UID_IDX in the key KEY. The argument RESERVED is reserved for later use and should be NULL.

The function returns 0 if an attribute cant be returned as a string, KEY is not a valid pointer, UID_IDX or IDX out of range, or RESERVED not NULL.

Trust items have attributes which can be queried using the interfaces below. The attribute identifiers are shared with those for key attributes. *Note Information About Keys::.

-- Function: const char * gpgme_trust_item_get_string_attr
(gpgme_trust_item_t ITEM, gpgme_attr_t WHAT,
const void *RESERVED, int IDX)

The function gpgme_trust_item_get_string_attr returns the value of the string-representable attribute WHAT of trust item ITEM. The arguments IDX and RESERVED are reserved for later use and should be 0 and NULL respectively.

The string returned is only valid as long as the key is valid.

The function returns 0 if an attribute cant be returned as a string, KEY is not a valid pointer, IDX out of range, or RESERVED not NULL.

-- Function: int gpgme_trust_item_get_int_attr
(gpgme_trust_item_t ITEM, gpgme_attr_t WHAT,
const void *RESERVED, int IDX)

The function gpgme_trust_item_get_int_attr returns the value of the number-representable attribute WHAT of trust item ITEM. If the attribute occurs more than once in the trust item, the index is specified by IDX. However, currently no such attribute exists, so IDX should be 0. The argument RESERVED is reserved for later use and should be NULL.

The function returns 0 if the attribute cant be returned as a number, KEY is not a valid pointer, IDX out of range, or RESERVED not NULL.

-- Data type: enum gpgme_sig_stat_t

The gpgme_sig_stat_t type holds the result of a signature check, or the combined result of all signatures. The following results

are possible:

GPGME_SIG_STAT_NONE

This status should not occur in normal operation.

GPGME_SIG_STAT_GOOD

This status indicates that the signature is valid. For the combined result this status means that all signatures are valid.

GPGME_SIG_STAT_GOOD_EXP

This status indicates that the signature is valid but expired. For the combined result this status means that all signatures are valid and expired.

GPGME_SIG_STAT_GOOD_EXPKEY

This status indicates that the signature is valid but the key used to verify the signature has expired. For the combined result this status means that all signatures are valid and all keys are expired.

GPGME_SIG_STAT_BAD

This status indicates that the signature is invalid. For the combined result this status means that all signatures are invalid.

GPGME_SIG_STAT_NOKEY

This status indicates that the signature could not be verified due to a missing key. For the combined result this status means that all signatures could not be checked due to missing keys.

GPGME_SIG_STAT_NOSIG

This status indicates that the signature data provided was not a real signature.

GPGME_SIG_STAT_ERROR

This status indicates that there was some other error which prevented the signature verification.

GPGME_SIG_STAT_DIFF

For the combined result this status means that at least two signatures have a different status. You can get each keys status with `gpgme_get_sig_status`.

-- Function: `const char * gpgme_get_sig_status (gpgme_ctx_t CTX, int IDX, gpgme_sig_stat_t *R_STAT, time_t *R_CREATED)`

The function `gpgme_get_sig_status` is equivalent to:


```

gpgme_verify_result_t result;
gpgme_signature_t sig;

result = gpgme_op_verify_result (ctx);
sig = result->signatures;

while (sig && idx)
{
    sig = sig->next;
    idx--;
}
if (!sig || idx)
    return NULL;

if (r_stat)
{
    switch (gpg_err_code (sig->status))
    {
case GPG_ERR_NO_ERROR:
*r_stat = GPGME_SIG_STAT_GOOD;
break;

case GPG_ERR_BAD_SIGNATURE:
*r_stat = GPGME_SIG_STAT_BAD;
break;

case GPG_ERR_NO_PUBKEY:
*r_stat = GPGME_SIG_STAT_NOKEY;
break;

case GPG_ERR_NO_DATA:
*r_stat = GPGME_SIG_STAT_NOSIG;
break;

case GPG_ERR_SIG_EXPIRED:
*r_stat = GPGME_SIG_STAT_GOOD_EXP;
break;

case GPG_ERR_KEY_EXPIRED:
*r_stat = GPGME_SIG_STAT_GOOD_EXPKEY;
break;

default:
*r_stat = GPGME_SIG_STAT_ERROR;
break;
}
}

```

```

if (r_created)
    *r_created = sig->timestamp;
return sig->fpr;

```

-- Function: const char * gpgme_get_sig_string_attr (gpgme_ctx_t CTX,
int IDX, gpgme_attr_t WHAT, int WHATIDX)

The function gpgme_get_sig_string_attr is equivalent to:

```

gpgme_verify_result_t result;
gpgme_signature_t sig;

result = gpgme_op_verify_result (ctx);
sig = result->signatures;

while (sig && idx)
{
    sig = sig->next;
    idx--;
}
if (!sig || idx)
    return NULL;

switch (what)
{
case GPGME_ATTR_FPR:
    return sig->fpr;

case GPGME_ATTR_ERRTOK:
    if (whatidx == 1)
        return sig->wrong_key_usage ? "Wrong_Key_Usage" : "";
    else
        return "";
default:
    break;
}

return NULL;

```

-- Function: const char * gpgme_get_sig_ulong_attr (gpgme_ctx_t CTX,
int IDX, gpgme_attr_t WHAT, int WHATIDX)

The function gpgme_get_sig_ulong_attr is equivalent to:

```

gpgme_verify_result_t result;
gpgme_signature_t sig;

result = gpgme_op_verify_result (ctx);
sig = result->signatures;

```

```

while (sig && idx)
{
    sig = sig->next;
    idx--;
}
if (!sig || !idx)
    return 0;

switch (what)
{
case GPGME_ATTR_CREATED:
    return sig->timestamp;

case GPGME_ATTR_EXPIRE:
    return sig->exp_timestamp;

case GPGME_ATTR_VALIDITY:
    return (unsigned long) sig->validity;

case GPGME_ATTR_SIG_STATUS:
    switch (sig->status)
    {
case GPG_ERR_NO_ERROR:
    return GPGME_SIG_STAT_GOOD;

case GPG_ERR_BAD_SIGNATURE:
    return GPGME_SIG_STAT_BAD;

case GPG_ERR_NO_PUBKEY:
    return GPGME_SIG_STAT_NOKEY;

case GPG_ERR_NO_DATA:
    return GPGME_SIG_STAT_NOSIG;

case GPG_ERR_SIG_EXPIRED:
    return GPGME_SIG_STAT_GOOD_EXP;

case GPG_ERR_KEY_EXPIRED:
    return GPGME_SIG_STAT_GOOD_EXPKEY;

default:
    return GPGME_SIG_STAT_ERROR;
}

case GPGME_ATTR_SIG_SUMMARY:
    return sig->summary;

default:

```

```
    break;
  }
  return 0;
```

-- Function: const char * gpgme_get_sig_key (gpgme_ctx_t CTX, int IDX, gpgme_key_t *R_KEY)

The function gpgme_get_sig_key is equivalent to:

```
gpgme_verify_result_t result;
gpgme_signature_t sig;

result = gpgme_op_verify_result (ctx);
sig = result->signatures;

while (sig && idx)
  {
    sig = sig->next;
    idx--;
  }
if (!sig || idx)
  return gpg_error (GPG_ERR_EOF);

return gpgme_get_key (ctx, sig->fpr, r_key, 0);
```

File: gpgme.info, Node: Library Copying, Next: Copying, Prev: Deprecated Functions, Up: Top

GNU Lesser General Public License

Version 2.1, February 1999

Copyright 1991, 1999 Free Software Foundation, Inc.
59 Temple Place Suite 330, Boston, MA 02111-1307, USA

Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts
as the successor of the GNU Library Public License, version 2, hence the
version number 2.1.]

Preamble

=====

The licenses for most software are designed to take away your freedom to
share and change it. By contrast, the GNU General Public Licenses are
intended to guarantee your freedom to share and change free software to

make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software typically libraries of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original authors' reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the Lesser General Public License because it does *Less* to protect the users freedom than the ordinary General Public License. It also provides other free software developers *Less* of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is *Less* protective of the users freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a work based on the library and a work that uses the library. The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called this License). Each licensee is addressed as you.

A library means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The Library, below, refers to any such software library or work which has been distributed under these terms. A work based on the Library means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term modification.)

Source code for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a. The modified work must itself be a software library.
- b. You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c. You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d. If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other

work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a work that uses the Library. Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a work that uses the Library with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a work that uses the library. The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a work that uses the Library uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a

library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a work that uses the Library with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customers own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- a. Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable work that uses the Library, as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)
- b. Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the users computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified

version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

- c. Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.
- d. If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.
- e. Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the work that uses the Library must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

- 7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:
 - a. Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
 - b. Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting

the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and any later version, you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY AS IS WITHOUT WARRANTY

OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

=====

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the copyright line and a pointer to where the full notice is found.

ONE LINE TO GIVE THE LIBRARY'S NAME AND AN IDEA OF WHAT IT DOES.

Copyright (C) YEAR NAME OF AUTHOR

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307, USA.

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a copyright disclaimer for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

SIGNATURE OF TY COON, 1 April 1990
Ty Coon, President of Vice

Thats all there is to it!

File: gpgme.info, Node: Copying, Next: Concept Index, Prev: Library Copying, Up: Top

GNU General Public License

Version 3, 29 June 2007

Copyright 2007 Free Software Foundation, Inc. <<https://fsf.org/>>

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

=====

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers and authors protection, the GPL clearly explains that there is no warranty for this free software. For both users and authors sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS

0. Definitions.

This License refers to version 3 of the GNU General Public License.

Copyright also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

The Program refers to any copyrightable work licensed under this License. Each licensee is addressed as you. Licensees and recipients may be individuals or organizations.

To modify a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a modified version of the earlier work or a work based on the earlier work.

A covered work means either the unmodified Program or a work based on the Program.

To propagate a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To convey a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays Appropriate Legal Notices to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

1. Source Code.

The source code for a work means the preferred form of the work for making modifications to it. Object code means any non-source form of a work.

A Standard Interface means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The System Libraries of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A Major Component, in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The Corresponding Source for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the works System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited

permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

3. Protecting Users Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the works users, your or third parties legal rights to forbid circumvention of technological measures.

4. Conveying Verbatim Copies.

You may convey verbatim copies of the Programs source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a. The work must carry prominent notices stating that you modified it, and giving a relevant date.
- b. The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to keep intact all notices.
- c. You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.
- d. If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an aggregate if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

- a. Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.
- b. Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.
- c. Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.
- d. Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.
- e. Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A User Product is either (1) a consumer product, which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, normally used refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

Installation Information for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

Additional permissions are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a. Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b. Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c. Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d. Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e. Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f. Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered further

restrictions within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An entity transaction is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

11. Patents.

A contributor is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's contributor version.

A contributor's essential patent claims are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner,

permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, control includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributors essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a patent license is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To grant such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. Knowingly relying means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipients use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is discriminatory if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third

party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

12. No Surrender of Others Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU

General Public License or any later version applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM AS IS WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in

connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

=====

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the copyright line and a pointer to where the full notice is found.

ONE LINE TO GIVE THE PROGRAM'S NAME AND A BRIEF IDEA OF WHAT IT DOES.
Copyright (C) YEAR NAME OF AUTHOR

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see <<https://www.gnu.org/licenses/>>.

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
PROGRAM Copyright (C) YEAR NAME OF AUTHOR
This program comes with ABSOLUTELY NO WARRANTY; for details
type show w. This is free software, and you are
welcome to redistribute it under certain conditions;
type show c for details.
```

The hypothetical commands show w and show c should show the appropriate parts of the General Public License. Of course, your programs commands might be different; for a GUI interface, you would

use an about box.

You should also get your employer (if you work as a programmer) or school, if any, to sign a copyright disclaimer for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <<https://www.gnu.org/licenses/>>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <<https://www.gnu.org/philosophy/why-not-lgpl.html>>.

File: gpgme.info, Node: Concept Index, Next: Function and Data Index, Prev: Copying, Up: Top

Concept Index

[index]

* Menu:

- * aborting operations: Cancellation. (line 6)
- * algorithms: Algorithms. (line 6)
- * algorithms, hash: Hash Algorithms. (line 6)
- * algorithms, message digest: Hash Algorithms. (line 6)
- * algorithms, public key: Public Key Algorithms. (line 6)
- * armor mode: ASCII Armor. (line 6)
- * ASCII armor: ASCII Armor. (line 6)
- * ASSUAN: Assuan. (line 6)
- * attributes, of a key: Information About Keys.
(line 6)
- * auditlog: Additional Logs. (line 6)
- * auditlog, of the engine: Additional Logs. (line 6)
- * autoconf: Using Automake. (line 6)
- * automake: Using Automake. (line 6)
- * backend: Protocols and Engines. (line 6)
- * callback, passphrase: Passphrase Callback. (line 6)
- * callback, progress meter: Progress Meter Callback.
(line 6)
- * callback, status message: Status Message Callback.
(line 6)
- * cancelling operations: Cancellation. (line 6)
- * canonical text mode: Text Mode. (line 6)
- * certificates, included: Included Certificates. (line 6)
- * CMS: Cryptographic Message Syntax.
(line 6)

- * compiler flags: Building the Source. (line 6)
- * compiler options: Building the Source. (line 6)
- * configuration of crypto backend: Engine Configuration. (line 6)
- * context: Contexts. (line 6)
- * context, armor mode: ASCII Armor. (line 6)
- * context, attributes: Context Attributes. (line 6)
- * context, configuring engine: Crypto Engine. (line 6)
- * context, creation: Creating Contexts. (line 6)
- * context, destruction: Destroying Contexts. (line 6)
- * context, offline mode: Offline Mode. (line 6)
- * context, pinentry mode: Pinentry Mode. (line 6)
- * context, result of operation: Result Management. (line 6)
- * context, selecting protocol: Protocol Selection. (line 6)
- * context, sender: Setting the Sender. (line 6)
- * context, text mode: Text Mode. (line 6)
- * crypto backend: Protocols and Engines. (line 6)
- * crypto engine: Protocols and Engines. (line 6)
- * cryptographic message syntax: Cryptographic Message Syntax.
(line 6)
- * cryptographic operation: Crypto Operations. (line 6)
- * cryptographic operation, aborting: Cancellation. (line 6)
- * cryptographic operation, cancelling: Cancellation. (line 6)
- * cryptographic operation, decryption: Decrypt. (line 6)
- * cryptographic operation, decryption and verification: Decrypt and Verify.
(line 6)
- * cryptographic operation, encryption: Encrypt. (line 6)
- * cryptographic operation, running: Run Control. (line 6)
- * cryptographic operation, signature check: Verify. (line 6)
- * cryptographic operation, signing: Sign. (line 6)
- * cryptographic operation, verification: Verify. (line 6)
- * cryptographic operation, wait for: Waiting For Completion.
(line 6)
- * data buffer, convenience: Data Buffer Convenience.
(line 6)
- * data buffer, creation: Creating Data Buffers. (line 6)
- * data buffer, destruction: Destroying Data Buffers.
(line 6)
- * data buffer, encoding: Data Buffer Meta-Data. (line 6)
- * data buffer, file name: Data Buffer Meta-Data. (line 6)
- * data buffer, I/O operations: Data Buffer I/O Operations.
(line 6)
- * data buffer, manipulation: Manipulating Data Buffers.
(line 6)
- * data buffer, meta-data: Data Buffer Meta-Data. (line 6)
- * data buffer, read: Data Buffer I/O Operations.
(line 6)
- * data buffer, seek: Data Buffer I/O Operations.
(line 6)

- * data buffer, write: Data Buffer I/O Operations.
 (line 6)
- * data, exchanging: Exchanging Data. (line 6)
- * debug: Debugging. (line 6)
- * decryption: Decrypt. (line 6)
- * decryption and verification: Decrypt and Verify. (line 6)
- * deprecated: Deprecated Functions. (line 6)
- * encryption: Encrypt. (line 6)
- * engine: Protocols and Engines. (line 6)
- * engine, ASSUAN: Assuan. (line 6)
- * engine, configuration of: Engine Configuration. (line 6)
- * engine, configuration per context: Crypto Engine. (line 6)
- * engine, GnuPG: OpenPGP. (line 6)
- * engine, GpgSM: Cryptographic Message Syntax.
 (line 6)
- * engine, information about: Engine Information. (line 6)
- * error codes: Error Values. (line 6)
- * error codes, list of: Error Sources. (line 6)
- * error codes, list of <1>: Error Codes. (line 6)
- * error codes, printing of: Error Strings. (line 6)
- * error handling: Error Handling. (line 6)
- * error sources: Error Values. (line 6)
- * error sources, printing of: Error Strings. (line 6)
- * error strings: Error Strings. (line 6)
- * error values: Error Values. (line 6)
- * error values, printing of: Error Strings. (line 6)
- * event loop, external: Using External Event Loops.
 (line 6)
- * flags, of a context: Context Flags. (line 6)
- * From:: Setting the Sender. (line 6)
- * GDK, using GPGME with: I/O Callback Example GDK.
 (line 6)
- * GnuPG: OpenPGP. (line 6)
- * GPGME_DEBUG: Debugging. (line 6)
- * GpgSM: Cryptographic Message Syntax.
 (line 6)
- * GTK+, using GPGME with: I/O Callback Example GTK+.
 (line 6)
- * hash algorithms: Hash Algorithms. (line 6)
- * header file: Header. (line 6)
- * identify: Data Buffer Convenience.
 (line 6)
- * include file: Header. (line 6)
- * key listing: Listing Keys. (line 6)
- * key listing mode: Key Listing Mode. (line 6)
- * key listing, mode of: Key Listing Mode. (line 6)
- * key listing, start: Listing Keys. (line 6)
- * key management: Key Management. (line 6)

| | | |
|---|-------------------------------|----------|
| * key ring, add: | Generating Keys. | (line 6) |
| * key ring, delete from: | Deleting Keys. | (line 6) |
| * key ring, export from: | Exporting Keys. | (line 6) |
| * key ring, import to: | Importing Keys. | (line 6) |
| * key ring, list: | Listing Keys. | (line 6) |
| * key ring, search: | Listing Keys. | (line 6) |
| * key, attributes: | Information About Keys. | (line 6) |
| * key, creation: | Generating Keys. | (line 6) |
| * key, delete: | Deleting Keys. | (line 6) |
| * key, edit: | Advanced Key Editing. | (line 6) |
| * key, export: | Exporting Keys. | (line 6) |
| * key, import: | Importing Keys. | (line 6) |
| * key, information about: | Information About Keys. | (line 6) |
| * key, manipulation: | Manipulating Keys. | (line 6) |
| * key, signing: | Signing Keys. | (line 6) |
| * largefile support: | Largefile Support (LFS). | (line 6) |
| * LFS: | Largefile Support (LFS). | (line 6) |
| * LGPL, GNU Lesser General Public License: Library Copying. | | (line 6) |
| * libtool: | Using Libtool. | (line 6) |
| * listing keys: | Listing Keys. | (line 6) |
| * locale, default: | Locale. | (line 6) |
| * locale, of a context: | Locale. | (line 6) |
| * message digest algorithms: | Hash Algorithms. | (line 6) |
| * multi-threading: | Multi-Threading. | (line 6) |
| * notation data: | Verify. | (line 6) |
| * notation data <1>: | Signature Notation Data. | (line 6) |
| * offline mode: | Offline Mode. | (line 6) |
| * OpenPGP: | OpenPGP. | (line 6) |
| * passphrase callback: | Passphrase Callback. | (line 6) |
| * passphrase, change: | Changing Passphrases. | (line 6) |
| * pinentry mode: | Pinentry Mode. | (line 6) |
| * policy URL: | Signature Notation Data. | (line 6) |
| * progress meter callback: | Progress Meter Callback. | (line 6) |
| * protocol: | Protocols and Engines. | (line 6) |
| * protocol, ASSUAN: | Assuan. | (line 6) |
| * protocol, CMS: | Cryptographic Message Syntax. | (line 6) |
| * protocol, GnuPG: | OpenPGP. | (line 6) |
| * protocol, S/MIME: | Cryptographic Message Syntax. | (line 6) |
| * protocol, selecting: | Protocol Selection. | (line 6) |

* AM_PATH_GPGME_PTH: Using Automake. (line 13)

* AM_PATH_GPGME_PTHREAD: Using Automake. (line 15)

* CHECKSUM_CREATE_FILES: UI Server Checksum Files.
(line 9)

* CHECKSUM_VERIFY_FILES: UI Server Checksum Files.
(line 22)

* DECRYPT: UI Server Decrypt. (line 26)

* DECRYPT_FILES: UI Server Verify/Decrypt Files.
(line 9)

* DECRYPT_VERIFY_FILES: UI Server Verify/Decrypt Files.
(line 11)

* ENCRYPT: UI Server Encrypt. (line 47)

* ENCRYPT_FILES: UI Server Sign/Encrypt Files.
(line 9)

* ENCRYPT_SIGN_FILES: UI Server Sign/Encrypt Files.
(line 11)

* enum gpgme_data_encoding_t: Data Buffer Meta-Data.
(line 31)

* enum gpgme_data_type_t: Data Buffer Convenience.
(line 6)

* enum gpgme_event_io_t: I/O Callback Interface.
(line 58)

* enum gpgme_hash_algo_t: Hash Algorithms. (line 9)

* enum gpgme_pinentry_mode_t: Pinentry Mode. (line 25)

* enum gpgme_protocol_t: Protocols and Engines.
(line 16)

* enum gpgme_pubkey_algo_t: Public Key Algorithms.
(line 9)

* enum gpgme_sig_mode_t: Creating a Signature.
(line 6)

* enum gpgme_sig_stat_t: Deprecated Functions.
(line 441)

* enum gpgme_tofu_policy_t: Changing TOFU Data. (line 10)

* FILE: UI Server Set Input Files.
(line 9)

* GETINFO: Miscellaneous UI Server Commands.
(line 9)

* gpgme_addrspec_from_uid: Decrypt and Verify. (line 48)

* gpgme_attr_t: Deprecated Functions.
(line 144)

* gpgme_attr_t <1>: Deprecated Functions.
(line 321)

* gpgme_cancel: Cancellation. (line 16)

* gpgme_cancel_async: Cancellation. (line 38)

* gpgme_check_version: Library Version Check.
(line 6)

* gpgme_ctx_get_engine_info: Crypto Engine. (line 12)

* gpgme_ctx_set_engine_info: Crypto Engine. (line 26)

| | | |
|-----------------------------------|------------------------------|------------|
| * gpgme_ctx_t: | Contexts. | (line 11) |
| * gpgme_data_encoding_t: | Data Buffer Meta-Data. | (line 32) |
| * gpgme_data_get_encoding: | Data Buffer Meta-Data. | (line 81) |
| * gpgme_data_get_file_name: | Data Buffer Meta-Data. | (line 6) |
| * gpgme_data_identify: | Data Buffer Convenience. | (line 46) |
| * gpgme_data_new: | Memory Based Data Buffers. | (line 12) |
| * gpgme_data_new_from_cbs: | Callback Based Data Buffers. | (line 80) |
| * gpgme_data_new_from_estream: | File Based Data Buffers. | (line 49) |
| * gpgme_data_new_from_fd: | File Based Data Buffers. | (line 10) |
| * gpgme_data_new_from_file: | Memory Based Data Buffers. | (line 37) |
| * gpgme_data_new_from_filepart: | Memory Based Data Buffers. | (line 54) |
| * gpgme_data_new_from_mem: | Memory Based Data Buffers. | (line 22) |
| * gpgme_data_new_from_stream: | File Based Data Buffers. | (line 29) |
| * gpgme_data_new_with_read_cb: | Deprecated Functions. | (line 114) |
| * gpgme_data_read: | Data Buffer I/O Operations. | (line 6) |
| * gpgme_data_read_cb_t: | Callback Based Data Buffers. | (line 13) |
| * gpgme_data_release: | Destroying Data Buffers. | (line 6) |
| * gpgme_data_release_and_get_mem: | Destroying Data Buffers. | (line 11) |
| * gpgme_data_release_cb_t: | Callback Based Data Buffers. | (line 55) |
| * gpgme_data_rewind: | Deprecated Functions. | (line 138) |
| * gpgme_data_seek: | Data Buffer I/O Operations. | (line 26) |
| * gpgme_data_seek_cb_t: | Callback Based Data Buffers. | (line 46) |
| * gpgme_data_set_encoding: | Data Buffer Meta-Data. | (line 87) |
| * gpgme_data_set_file_name: | Data Buffer Meta-Data. | (line 18) |
| * gpgme_data_set_flag: | Data Buffer Meta-Data. | |

(line 92)

* `gpgme_data_t`: Exchanging Data. (line 13)

* `gpgme_data_type_t`: Data Buffer Convenience.
(line 7)

* `gpgme_data_write`: Data Buffer I/O Operations.
(line 16)

* `gpgme_data_write_cb_t`: Callback Based Data Buffers.
(line 29)

* `gpgme_decrypt_result_t`: Decrypt. (line 101)

* `gpgme_edit_cb_t`: Deprecated Functions.
(line 37)

* `gpgme_encrypt_result_t`: Encrypting a Plaintext.
(line 241)

* `gpgme_engine_check_version`: Engine Version Check.
(line 67)

* `gpgme_engine_info_t`: Engine Information. (line 6)

* `gpgme_error`: Error Values. (line 65)

* `gpgme_error_from_errno`: Error Values. (line 89)

* `gpgme_error_t`: Error Values. (line 24)

* `gpgme_error_t (*gpgme_assuan_data_cb_t) (void *OPAQUE, const void *DATA, size_t DATALEN)`: Using the Assuan protocol.
(line 15)

* `gpgme_error_t (*gpgme_assuan_inquire_cb_t) (void *OPAQUE, const char *NAME, const char *ARGS, gpgme_data_t *R_DATA)`: Using the Assuan protocol.
(line 24)

* `gpgme_error_t (*gpgme_assuan_status_cb_t) (void *OPAQUE, const char *STATUS, const char *ARGS)`: Using the Assuan protocol.
(line 38)

* `gpgme_error_t (*gpgme_edit_cb_t) (void *HANDLE, gpgme_status_code_t STATUS, const char *ARGS, int FD)`: Deprecated Functions.
(line 35)

* `gpgme_error_t (*gpgme_interact_cb_t) (void *HANDLE, const char *STATUS, const char *ARGS, int FD)`: Advanced Key Editing.
(line 6)

* `gpgme_error_t (*gpgme_io_cb_t) (void *DATA, int FD)`: I/O Callback Interface.
(line 6)

* `gpgme_error_t (*gpgme_passphrase_cb_t) (void *HOOK, const char *UID_HINT, const char *PASSPHRASE_INFO, int PREV_WAS_BAD, int FD)`: Passphrase Callback.
(line 6)

* `gpgme_error_t (*gpgme_register_io_cb_t) (void *DATA, int FD, int DIR, gpgme_io_cb_t FNC, void *FNC_DATA, void **TAG)`: I/O Callback Interface.
(line 19)

* `gpgme_error_t (*gpgme_status_cb_t) (void *HOOK, const char *KEYWORD, const char *ARGS)`: Status Message Callback.
(line 6)

* `gpgme_err_code`: Error Values. (line 42)

* `gpgme_err_code_from_errno`: Error Values. (line 98)

* `gpgme_err_code_t`: Error Values. (line 6)

* `gpgme_err_code_to_errno`: Error Values. (line 103)

* `gpgme_err_make`: Error Values. (line 57)

* `gpgme_err_make_from_errno`: Error Values. (line 83)

* `gpgme_err_source`: Error Values. (line 49)

* `gpgme_err_source_t`: Error Values. (line 13)

* `gpgme_event_io_t`: I/O Callback Interface.
(line 59)

* `gpgme_event_io_t <1>`: Registering I/O Callbacks.
(line 7)

* `gpgme_free`: Destroying Data Buffers.
(line 25)

* `gpgme_genkey_result_t`: Generating Keys. (line 381)

* `gpgme_get_armor`: ASCII Armor. (line 13)

* `gpgme_get_ctx_flag`: Context Flags. (line 121)

* `gpgme_get_dirinfo`: Engine Version Check.
(line 6)

* `gpgme_get_engine_info`: Engine Information. (line 46)

* `gpgme_get_include_certs`: Included Certificates.
(line 37)

* `gpgme_get_io_cbs`: Registering I/O Callbacks.
(line 44)

* `gpgme_get_key`: Listing Keys. (line 178)

* `gpgme_get_keylist_mode`: Key Listing Mode. (line 95)

* `gpgme_get_offline`: Offline Mode. (line 31)

* `gpgme_get_passphrase_cb`: Passphrase Callback. (line 63)

* `gpgme_get_pinentry_mode`: Pinentry Mode. (line 18)

* `gpgme_get_progress_cb`: Progress Meter Callback.
(line 31)

* `gpgme_get_protocol`: Protocol Selection. (line 21)

* `gpgme_get_protocol_name`: Protocols and Engines.
(line 58)

* `gpgme_get_sender`: Setting the Sender. (line 29)

* `gpgme_get_sig_key`: Deprecated Functions.
(line 641)

* `gpgme_get_sig_status`: Deprecated Functions.
(line 489)

* `gpgme_get_sig_string_attr`: Deprecated Functions.
(line 545)

* `gpgme_get_sig_ulong_attr`: Deprecated Functions.
(line 579)

* `gpgme_get_status_cb`: Status Message Callback.
(line 31)

* `gpgme_get_textmode`: Text Mode. (line 20)

* `gpgme_hash_algo_name`: Hash Algorithms. (line 30)

* `gpgme_hash_algo_t`: Hash Algorithms. (line 10)

* `gpgme_import_result_t`: Importing Keys. (line 118)

* `gpgme_import_status_t`: Importing Keys. (line 80)

* `gpgme_interact_cb_t`: Advanced Key Editing.

(line 11)

* gpgme_invalid_key_t: Crypto Operations. (line 10)

* gpgme_io_cb_t: I/O Callback Interface.
(line 7)

* gpgme_keylist_result_t: Listing Keys. (line 155)

* gpgme_key_get_string_attr: Deprecated Functions.
(line 286)

* gpgme_key_get_ulong_attr: Deprecated Functions.
(line 300)

* gpgme_key_ref: Manipulating Keys. (line 6)

* gpgme_key_release: Deprecated Functions.
(line 14)

* gpgme_key_sig_get_string_attr: Deprecated Functions.
(line 377)

* gpgme_key_sig_get_ulong_attr: Deprecated Functions.
(line 393)

* gpgme_key_sig_t: Key objects. (line 339)

* gpgme_key_t: Key objects. (line 10)

* gpgme_key_unref: Manipulating Keys. (line 10)

* gpgme_new: Creating Contexts. (line 6)

* gpgme_new_signature_t: Creating a Signature.
(line 57)

* gpgme_off_t: Exchanging Data. (line 24)

* gpgme_op_adduid: Generating Keys. (line 189)

* gpgme_op_adduid_start: Generating Keys. (line 215)

* gpgme_op_assuan_transact_ext: Using the Assuan protocol.
(line 64)

* gpgme_op_assuan_transact_start: Using the Assuan protocol.
(line 47)

* gpgme_op_card_edit: Deprecated Functions.
(line 89)

* gpgme_op_card_edit_start: Deprecated Functions.
(line 99)

* gpgme_op_createkey: Generating Keys. (line 14)

* gpgme_op_createkey_start: Generating Keys. (line 119)

* gpgme_op_createsubkey: Generating Keys. (line 132)

* gpgme_op_createsubkey_start: Generating Keys. (line 176)

* gpgme_op_decrypt: Decrypt. (line 6)

* gpgme_op_decrypt_ext: Decrypt. (line 30)

* gpgme_op_decrypt_ext_start: Decrypt. (line 60)

* gpgme_op_decrypt_result: Decrypt. (line 164)

* gpgme_op_decrypt_start: Decrypt. (line 20)

* gpgme_op_decrypt_verify: Decrypt and Verify. (line 6)

* gpgme_op_decrypt_verify_start: Decrypt and Verify. (line 30)

* gpgme_op_delete: Deleting Keys. (line 47)

* gpgme_op_delete_ext: Deleting Keys. (line 6)

* gpgme_op_delete_ext_start: Deleting Keys. (line 33)

* gpgme_op_delete_start: Deleting Keys. (line 52)

| | |
|-------------------------------------|---------------------------------------|
| * gpgme_op_edit: | Deprecated Functions. (line 48) |
| * gpgme_op_edit_start: | Deprecated Functions. (line 72) |
| * gpgme_op_encrypt: | Encrypting a Plaintext. (line 6) |
| * gpgme_op_encrypt_ext: | Encrypting a Plaintext. (line 131) |
| * gpgme_op_encrypt_ext_start: | Encrypting a Plaintext. (line 224) |
| * gpgme_op_encrypt_result: | Encrypting a Plaintext. (line 252) |
| * gpgme_op_encrypt_sign: | Encrypting a Plaintext. (line 263) |
| * gpgme_op_encrypt_sign_ext: | Encrypting a Plaintext. (line 288) |
| * gpgme_op_encrypt_sign_ext_start: | Encrypting a Plaintext. (line 304) |
| * gpgme_op_encrypt_sign_start: | Encrypting a Plaintext. (line 274) |
| * gpgme_op_encrypt_start: | Encrypting a Plaintext. (line 113) |
| * gpgme_op_export: | Exporting Keys. (line 50) |
| * gpgme_op_export_ext: | Exporting Keys. (line 83) |
| * gpgme_op_export_ext_start: | Exporting Keys. (line 105) |
| * gpgme_op_export_keys: | Exporting Keys. (line 117) |
| * gpgme_op_export_keys_start: | Exporting Keys. (line 144) |
| * gpgme_op_export_start: | Exporting Keys. (line 71) |
| * gpgme_op_genkey: | Generating Keys. (line 304) |
| * gpgme_op_genkey_result: | Generating Keys. (line 418) |
| * gpgme_op_genkey_start: | Generating Keys. (line 369) |
| * gpgme_op_getauditlog: | Additional Logs. (line 9) |
| * gpgme_op_getauditlog_start: | Additional Logs. (line 54) |
| * gpgme_op_import: | Importing Keys. (line 9) |
| * gpgme_op_import_ext: | Deprecated Functions. (line 22) |
| * gpgme_op_import_keys: | Importing Keys. (line 35) |
| * gpgme_op_import_keys_start: | Importing Keys. (line 65) |
| * gpgme_op_import_result: | Importing Keys. (line 174) |
| * gpgme_op_import_start: | Importing Keys. (line 24) |
| * gpgme_op_interact: | Advanced Key Editing. (line 23) |
| * gpgme_op_interact_start: | Advanced Key Editing. (line 53) |
| * gpgme_op_keylist_end: | Listing Keys. (line 111) |
| * gpgme_op_keylist_ext_start: | Listing Keys. (line 34) |
| * gpgme_op_keylist_from_data_start: | Listing Keys. (line 67) |
| * gpgme_op_keylist_next: | Listing Keys. (line 94) |

| | |
|--------------------------------|--------------------------------------|
| * gpgme_op_keylist_result: | Listing Keys. (line 166) |
| * gpgme_op_keylist_start: | Listing Keys. (line 6) |
| * gpgme_op_keysign: | Signing Keys. (line 12) |
| * gpgme_op_keysign_start: | Signing Keys. (line 73) |
| * gpgme_op_passwd: | Changing Passphrases. (line 6) |
| * gpgme_op_passwd_start: | Changing Passphrases. (line 21) |
| * gpgme_op_query_swdb: | Checking for updates. (line 68) |
| * gpgme_op_query_swdb_result: | Checking for updates. (line 80) |
| * gpgme_op_revuid: | Generating Keys. (line 224) |
| * gpgme_op_revuid_start: | Generating Keys. (line 252) |
| * gpgme_op_set_uid_flag_start: | Generating Keys. (line 293) |
| * gpgme_op_set_ui_flag: | Generating Keys. (line 261) |
| * gpgme_op_sign: | Creating a Signature. (line 21) |
| * gpgme_op_sign_result: | Creating a Signature. (line 99) |
| * gpgme_op_sign_start: | Creating a Signature. (line 47) |
| * gpgme_op_spawn: | Running other Programs. (line 13) |
| * gpgme_op_spawn_start: | Running other Programs. (line 45) |
| * gpgme_op_tofu_policy: | Changing TOFU Data. (line 29) |
| * gpgme_op_tofu_policy_start: | Changing TOFU Data. (line 43) |
| * gpgme_op_trustlist_end: | Listing Trust Items. (line 44) |
| * gpgme_op_trustlist_next: | Listing Trust Items. (line 27) |
| * gpgme_op_trustlist_start: | Listing Trust Items. (line 6) |
| * gpgme_op_verify: | Verify. (line 6) |
| * gpgme_op_verify_result: | Verify. (line 290) |
| * gpgme_op_verify_start: | Verify. (line 26) |
| * gpgme_passphrase_cb_t: | Passphrase Callback. (line 10) |
| * gpgme_pinentry_mode_t: | Pinentry Mode. (line 26) |
| * gpgme_progress_cb_t: | Progress Meter Callback. (line 8) |
| * gpgme_protocol_t: | Protocols and Engines. (line 17) |
| * gpgme_protocol_t <1>: | Engine Information. (line 7) |
| * gpgme_pubkey_algo_name: | Public Key Algorithms. (line 58) |
| * gpgme_pubkey_algo_string: | Public Key Algorithms. (line 68) |
| * gpgme_pubkey_algo_t: | Public Key Algorithms. (line 10) |
| * gpgme_query_swdb_result_t: | Checking for updates. |

| | |
|-----------------------------|---|
| | (line 11) |
| * gpgme_recipient_t: | Decrypt. (line 75) |
| * gpgme_register_io_cb_t: | I/O Callback Interface. (line 23) |
| * gpgme_release: | Destroying Contexts. (line 6) |
| * gpgme_result_ref: | Result Management. (line 15) |
| * gpgme_result_unref: | Result Management. (line 23) |
| * gpgme_set_armor: | ASCII Armor. (line 6) |
| * gpgme_set_ctx_flag: | Context Flags. (line 6) |
| * gpgme_set_engine_info: | Engine Configuration. (line 11) |
| * gpgme_set_global_flag: | Library Version Check. (line 44) |
| * gpgme_set_include_certs: | Included Certificates. (line 6) |
| * gpgme_set_io_cbs: | Registering I/O Callbacks. (line 35) |
| * gpgme_set_keylist_mode: | Key Listing Mode. (line 6) |
| * gpgme_set_locale: | Locale. (line 14) |
| * gpgme_set_offline: | Offline Mode. (line 6) |
| * gpgme_set_passphrase_cb: | Passphrase Callback. (line 40) |
| * gpgme_set_pinentry_mode: | Pinentry Mode. (line 6) |
| * gpgme_set_progress_cb: | Progress Meter Callback. (line 16) |
| * gpgme_set_protocol: | Protocol Selection. (line 6) |
| * gpgme_set_sender: | Setting the Sender. (line 13) |
| * gpgme_set_status_cb: | Status Message Callback. (line 17) |
| * gpgme_set_textmode: | Text Mode. (line 6) |
| * gpgme_signature_t: | Verify. (line 92) |
| * gpgme_signers_add: | Selecting Signers. (line 18) |
| * gpgme_signers_clear: | Selecting Signers. (line 11) |
| * gpgme_signers_count: | Selecting Signers. (line 25) |
| * gpgme_signers_enum: | Selecting Signers. (line 31) |
| * gpgme_sign_result_t: | Creating a Signature. (line 85) |
| * gpgme_sig_mode_t: | Creating a Signature. (line 7) |
| * gpgme_sig_notation_add: | Signature Notation Data. (line 19) |
| * gpgme_sig_notation_clear: | Signature Notation Data. (line 10) |
| * gpgme_sig_notation_get: | Signature Notation Data. (line 45) |
| * gpgme_sig_notation_t: | Verify. (line 38) |
| * gpgme_sig_stat_t: | Deprecated Functions. (line 442) |
| * gpgme_ssize_t: | Exchanging Data. (line 32) |

* `gpgme_status_cb_t`: Status Message Callback.
(line 8)

* `gpgme_strerror`: Error Strings. (line 6)

* `gpgme_strerror_r`: Error Strings. (line 15)

* `gpgme_strsource`: Error Strings. (line 26)

* `gpgme_subkey_t`: Key objects. (line 112)

* `gpgme_tofu_info_t`: Key objects. (line 275)

* `gpgme_tofu_policy_t`: Changing TOFU Data. (line 13)

* `gpgme_trust_item_get_int_attr`: Deprecated Functions.
(line 426)

* `gpgme_trust_item_get_string_attr`: Deprecated Functions.
(line 411)

* `gpgme_trust_item_ref`: Manipulating Trust Items.
(line 6)

* `gpgme_trust_item_release`: Deprecated Functions.
(line 18)

* `gpgme_trust_item_t`: Trust Item Management.
(line 8)

* `gpgme_trust_item_unref`: Manipulating Trust Items.
(line 10)

* `gpgme_user_id_t`: Key objects. (line 217)

* `gpgme_validity_t`: Information About Keys.
(line 9)

* `gpgme_verify_result_t`: Verify. (line 268)

* `gpgme_wait`: Waiting For Completion.
(line 6)

* `IMPORT_FILES`: UI Server Import/Export Keys.
(line 9)

* `INPUT`: UI Server Encrypt. (line 23)

* `INPUT <1>`: UI Server Sign. (line 12)

* `INPUT <2>`: UI Server Decrypt. (line 12)

* `INPUT <3>`: UI Server Verify. (line 16)

* `MESSAGE`: UI Server Verify. (line 10)

* `MICALG`: UI Server Sign. (line 43)

* `off_t (*gpgme_data_seek_cb_t) (void *HANDLE, off_t OFFSET, int WHENCE)`: Callback Based Data Buffers.
(line 43)

* `OUTPUT`: UI Server Encrypt. (line 36)

* `OUTPUT <1>`: UI Server Sign. (line 18)

* `OUTPUT <2>`: UI Server Decrypt. (line 19)

* `OUTPUT <3>`: UI Server Verify. (line 23)

* `PREP_ENCRYPT`: UI Server Encrypt. (line 72)

* `PROTOCOL`: UI Server Encrypt. (line 98)

* `RECIPIENT`: UI Server Encrypt. (line 9)

* `SENDER`: Miscellaneous UI Server Commands.
(line 50)

* `SESSION`: Miscellaneous UI Server Commands.
(line 69)

* `SIGN`: UI Server Sign. (line 33)

* SIGN_FILES: UI Server Sign/Encrypt Files.
(line 10)

* SIGSTATUS: UI Server Verify. (line 56)

* ssize_t (*pgpme_data_read_cb_t) (void *HANDLE, void *BUFFER, size_t SIZE): Callback Based Data Buffers.
(line 10)

* ssize_t (*pgpme_data_write_cb_t) (void *HANDLE, const void *BUFFER, size_t SIZE): Callback Based Data Buffers.
(line 27)

* START_CONFDIALOG: Miscellaneous UI Server Commands.
(line 41)

* START_KEYMANAGER: Miscellaneous UI Server Commands.
(line 31)

* struct pgpme_data_cbs: Callback Based Data Buffers.
(line 59)

* struct pgpme_io_cbs: Registering I/O Callbacks.
(line 6)

* VERIFY: UI Server Verify. (line 31)

* VERIFY_FILES: UI Server Verify/Decrypt Files.
(line 10)

* void (*pgpme_data_release_cb_t) (void *HANDLE): Callback Based Data Buffers.
(line 54)

* void (*pgpme_event_io_cb_t) (void *DATA, pgpme_event_io_t TYPE, void *TYPE_DATA): I/O Callback Interface.
(line 89)

* void (*pgpme_progress_cb_t)(void *HOOK, const char *WHAT, int TYPE, int CURRENT, int TOTAL): Progress Meter Callback.
(line 6)

* void (*pgpme_remove_io_cb_t) (void *TAG): I/O Callback Interface.
(line 48)

* window-id: Miscellaneous UI Server Commands.
(line 21)

-*- mode: org -*-
#+TITLE: Maintenance Mode
#+AUTHOR: Ben McGinnes
#+LATEX_COMPILER: xelatex
#+LATEX_CLASS: article
#+LATEX_CLASS_OPTIONS: [12pt]
#+LATEX_HEADER: \usepackage{xltextra}
#+LATEX_HEADER: \usepackage[margin=1in]{geometry}
#+LATEX_HEADER: \setmainfont[Ligatures={Common}]{Times New Roman}
#+LATEX_HEADER: \author{Ben McGinnes <ben@gnupg.org>}

* Maintenance Mode from 2019
:PROPERTIES:
:CUSTOM_ID: maintenance-mode
:END:

| Version: | 0.0.1 |
| GPGME Version: | 1.13.0 |
| Author: | Ben McGinnes <ben@gnupg.org> |
| Author GPG Key: | DB4724E6FA4286C92B4E55C4321E4E2373590E5D |
| Language: | Australian English, British English |
| xml:lang: | en-AU, en-GB, en |

From the beginning of 2019 the Python bindings to GPGME will enter maintenance mode, meaning that new features will not be added and only bug fixes and security fixes will be made. This also means that documentation beyond that existing at the end of 2018 will not be developed further except to correct errors.

Though use of these bindings appears to have been quite well received, there has been no indication of what demand there is, if any for either financial backing of the current Python bindings development or support contracts with g10code GmbH citing the necessity of including the bindings.

```
** Maintainer from 2019 onward  
:PROPERTIES:  
:CUSTOM_ID: maintenance-mode-bm  
:END:
```

How does this affect the position of GnuPG Python Bindings Maintainer?

Well, I will remain as maintainer of the bindings; but without funding for that position, the amount of time I will be able to dedicate solely to this task will be limited and reduced to volunteered time. As with all volunteered time and effort in free software projects, this will be subject to numerous external imperatives.

```
** Using the Python Bindings from 2019 and beyond  
:PROPERTIES:  
:CUSTOM_ID: maintenance-mode-blade-runner  
:END:
```

For most, if not all, Python developers using these bindings; they will continue to just work the same as they always have. Expansions of GPGME itself are usually handled by SWIG with the existing code and thus bindings are generated properly when the bindings are installed alongside GPGME and when the latter is built from source.

In the rare circumstances where that is not enough to address some new addition to GPGME, then that is a bug and thus subject to the maintenance mode provisions (i.e. it will be fixed following a bug

report being raised and your humble author will need to remember where the timesheet template was filed, depending on how many years off such an event is).

All the GPGME functionality will continue to be accessible via the lower level, dynamically generated methods which match the GPGME C documentation. While the more intuitively Pythonic higher level layer already covers the vast majority of functionality people require with key generation, signatures, certifications (key signing), encryption, decryption, verification, validation, trust levels and so on.

Any wanted features lacking in the Python bindings are usually lacking because they are missing from GPGME itself (e.g. revoking keys via the API) and in such cases they are usually deliberately excluded. More discussion of these issues can be found in the archives of the [\[\[https://lists.gnupg.org/mailman/listinfo/gnupg-devel\]\]](https://lists.gnupg.org/mailman/listinfo/gnupg-devel) [gnupg-devel mailing list].

Any features existing in the dynamically generated layer for which people want a specific, higher level function included to make it more Pythonic (e.g. to avoid needing to learn or memorise cryptographic mode values or GnuPG status code numbers), would be a feature request and /not/ a bug.

It is still worthwhile requesting it, but the addition of such a feature would not be guaranteed and provided on a purely volunteer basis. Expediting such a request would require funding that request.

Those with a commercial interest in expediting such a feature request already know how to [\[\[https://gnupg.org/cgi-bin/procdonate.cgi?mode=preset\]\]](https://gnupg.org/cgi-bin/procdonate.cgi?mode=preset) [expedite it] (use the message field to state what feature is being requested).

** Documentation formats

```
:PROPERTIES:  
:CUSTOM_ID: docs  
:END:
```

The documentation has been written in Org mode for GNU Emacs, with both Texinfo and reStructuredText formats generated from that. The Texinfo files are intended for use with the rest of the GnuPG documentation; while the reStructuredText files are intended for use with Docutils and Sphinx, as with other Python projects.

*** Cautionary Notes regarding Sphinx and EPUB

```
:PROPERTIES:  
:CUSTOM_ID: sphinx-made-epubs-suck
```

:END:

Though Python's Docutils in conjunction with Sphinx is capable of generating some very useful HTML sites, as proven by [\[https://readthedocs.org/\]](https://readthedocs.org/)[\[Read the Docs\]](#) and the [\[https://docs.python.org/\]](https://docs.python.org/)[\[Python documentation\]](#), there are a number of output formats it does not handle well. At the top of the list of things it manages to break so atrociously as to be embarrassing is the [\[http://idpf.org/epub/\]](http://idpf.org/epub/)[\[EPUB 3\]](#) format.

The automatically generated EPUB of the CPython documentation always contains hundreds of validation errors and even the modest amount of documentation here [\[https://files.au.adversary.org.s3.amazonaws.com/crypto/gpgme-python/rst/epub/GPGMEPythonBindings.epub\]](https://files.au.adversary.org.s3.amazonaws.com/crypto/gpgme-python/rst/epub/GPGMEPythonBindings.epub)[\[produced a file\]](#) with approximately thirty validation errors. As the volume of documentation content increases, so does the induced errors. Whereas Texinfo doesn't produce EPUB output at all, nor does Org-mode.

Should there ever be genuine demand for this format, lodge a [\[https://dev.gnupg.org/maniphest/task/edit/form/4/\]](https://dev.gnupg.org/maniphest/task/edit/form/4/)[\[feature request\]](#) case marked for [\[https://dev.gnupg.org/p/BenM/\]](https://dev.gnupg.org/p/BenM/)[\[my\]](#) attention. The means of generating such files flawlessly is already available, but is not yet part of the GnuPG build system. Nor is it integrated with a means of converting Org mode input files to the relevant base format automatically, as can already be done when converting Org to reStructuredText or Org to Texinfo. As a certain amount of work would be required to get it done, there would need to be clear demand for that work to be done.
2011-12-02 Werner Koch <wk@g10code.com>

NB: ChangeLog files are no longer manually maintained. Starting on December 1st, 2011 we put change information only in the GIT commit log, and generate a top-level ChangeLog file from logs at "make dist". See doc/HACKING for details.

2011-05-11 Marcus Brinkmann <marcus@g10code.com>

* gpgsm/Makefile.am (DISTCLEANFILES): Move to ...
(CLEANFILES): ... here.
(clean-local): New rule.
* gpg/Makefile.am (DISTCLEANFILES): Move to ...
(CLEANFILES): ... here.

2011-05-05 Marcus Brinkmann <marcus@g10code.com>

* gpg/Makefile.am: Unset GPG_AGENT_INFO when setting up local configuration.
(clean-local): Shut down local gpg-agent.

2011-05-04 Marcus Brinkmann <marcus@g10code.com>

* gpg/t-import.c (check_result): Complete secret key pair counting and disable status check, as GPG 2.1 currently emits two IMPORT_OK lines and we only look at the first.

2011-04-27 Marcus Brinkmann <marcus@g10code.com>

* gpg/Makefile.am (DISTCLEANFILES): Add S.gpg-agent.
(mkdemodirs, ./Alpha/Secret.gpg): Remove targets.
(GNUPGHOME): Export as absolute build directory (for gpg-agent).
(./pubring.gpg): Remove --homedir option, import secdemo.asc.
(clean-local): Rewrite.
* gpg/secdemo.asc: New file.
* gpg/pubkey-1.asc, gpg/seckey-1.asc: Change passphrase to "abc" (now needed as GnuPG 2.1 asks for secret key passphrase on import).
* gpg/t-keylist.c (keys): Update key info for Joe Random Hacker.
(main): Disable check for can_encrypt, as this is now in a different subkey.
* gpg/t-encrypt-sign.c (check_result): Allow RMD160 hash algorithm.
* gpg/t-import.c (check_result): One secret key pair now counts as two secret keys, allow that.

2009-11-03 Werner Koch <wk@g10code.com>

* run-support.h (fail_if_err): Include program name.
* run-sign.c (main): Add option --uiserver.

2009-10-26 Marcus Brinkmann <marcus@g10code.de>

* opassuan/t-command.c: Update to new interface.

2009-10-15 Werner Koch <wk@g10code.com>

* run-verify.c: New.

2009-08-06 Werner Koch <wk@g10code.com>

* run-sign.c: New.

2009-07-07 Werner Koch <wk@g10code.com>

* run-keylist.c (main): Add options --cms and --openpgp.

* gpg/pgp-keylist.c: Rename to ...

* run-keylist.c: ... this.

* gpg/pgp-import.c: Rename to ...

- * run-import.c: ... this.
- * gpg/pgp-export.c: Rename to ...
- * run-export.c: ... this.
- * run-support.h: New. Copied from gpg/t-support.h.
- * gpg/Makefile.am (noinst_PROGRAMS): Remove them.
- * Makefile.am (noinst_PROGRAMS): Add them.
- (noinst_HEADERS): New.

2009-06-22 Marcus Brinkmann <marcus@g10code.de>

- * gpg/t-support.h (passphrase_cb): Implement write() according to the book to silence compiler warning.
- * gpgsm/t-support.h (passphrase_cb): Likewise.

2009-06-16 Werner Koch <wk@g10code.com>

- * gpg/pgp-import.c: New.
- * gpg/t-support.h (print_import_result, nonnull): Factored out from other tools.
- * gpg/pgp-export.c, gpg/pgp-keylist.c: New.

2009-06-09 Werner Koch <wk@g10code.com>

- * gpg/Makefile.am (./pubring.gpg): Ignore errors in case of already imported keys. Add --no-permission-warning and remove obsolete --allow-secret-key-import.
- * gpg/mkdemodirs.in (GPG): Add --no-permission-warning.
- * gpg/t-edit.c (edit_fnc): Use gpgme_io_write.

2009-04-19 Moritz <moritz@gnu.org>

- * gpg/Makefile.am (EXTRA_DIST): Replaced mkdemodirs with mkdemodirs.in. (mkdemodirs): New target. (clean-local): Added command for removing mkdemodirs script. (./Alpha/Secret.gpg): Added dependency on mkdemodirs.
- * gpg/mkdemodirs: Renamed to ...
- * gpg/mkdemodirs.in: ... here.
- * gpg/mkdemodirs.in (GPG): Derive value from @GPG@ instead of hard-coding "gpg".

2009-02-24 Werner Koch <wk@g10code.com>

- * opassuan/t-command.c: Adjust for changed new op_assuan interface.

2009-02-03 Werner Koch <wk@g10code.com>

* gpg/t-keylist.c (main): Check that new fields is_cardkey and card_number are not set.

2009-01-26 Werner Koch <wk@g10code.com>

* opassuan/: New.
* opassuan/Makefile.am: New.
* opassuan/t-command.c: New.

2008-12-03 Marcus Brinkmann <marcus@g10code.de>

* Makefile.am (INCLUDES): Fix path to include file.
* gpg/Makefile.am (INCLUDES), gpgsm/Makefile.am (INCLUDES): Likewise.

2008-11-18 Werner Koch <wk@g10code.com>

* gpgsm/cms-decrypt.c: New.

2008-11-03 Marcus Brinkmann <marcus@g10code.com>

* gpgsm/Makefile.am (INCLUDES, LDADD): Replace gpgme path with src.
* gpg/Makefile.am (INCLUDES, LDADD, t_thread1_LDADD): Likewise.
* Makefile.am (LDADD): Likewise.

2008-10-30 Werner Koch <wk@g10code.com>

* gpgsm/cms-keylist.c: New.

2008-06-19 Werner Koch <wk@g10code.com>

* gpg/t-gpgconf.c (dump_arg): Add new types. Print strings in quotes.

2008-01-28 Marcus Brinkmann <marcus@g10code.de>

* gpg/Makefile.am (DISTCLEANFILES): Add pubring.kbx~.

2008-01-10 Marcus Brinkmann <marcus@g10code.de>

* gpg/t-gpgconf.c (main): Allow for dirmngr not to be available.

* gpg/Makefile.am (./gpg-agent.conf): Correct pinentry path.

* gpg/pinentry: New file.

* gpg/Makefile.am (DISTCLEANFILES, all-local): Add gpg-agent.conf (./gpg-agent.conf): New target.

(EXTRA_DIST): Add pinentry.

* gpg/t-gpgconf.c (main): Exit early if compiled without gpgconf.

2008-01-04 Marcus Brinkmann <marcus@g10code.de>

* gpg/Makefile.am (CLEANFILES): Add pubring.kbx and dirmngr.conf.

* Makefile.am (TESTS_ENVIRONMENT): Use absolute path for GNUPGHOME.

* gpg/Makefile.am (TESTS_ENVIRONMENT): Use absolute path for GNUPGHOME.

* gpgsm/Makefile.am (TESTS_ENVIRONMENT): Use absolute path for GNUPGHOME.

* gpg/Makefile.am (TESTS): Add t-gpgconf.

t-gpgconf.c: New file.

2007-11-23 Marcus Brinkmann <marcus@g10code.de>

* gpgsm/t-verify.c (show_auditlog): Check for GPG_ERR_ASS_UNKNOWN_CMD.

2007-11-23 Werner Koch <wk@g10code.com>

* gpgsm/t-verify.c (check_result): Don't exit on error but set a flag.

(main): Consult flag for return value.

(show_auditlog): New.

(main): Use it.

2007-09-27 Marcus Brinkmann <marcus@g10code.de>

* t-engine-info.c (check_engine_info): Fix debug output.

* gpg/Makefile.am (tests_unix): New variable.

(TESTS): Use it.

* gpg/t-support.h (passphrase_cb) [HAVE_W32_SYSTEM]: Use WriteFile instead of write.

* gpg/t-wait.c [HAVE_W32_SYSTEM]: Define sleep as _sleep.

2007-09-14 Marcus Brinkmann <marcus@g10code.de>

* gpgsm/t-verify.c (main): Release TEXT and SIG.

2007-07-12 Marcus Brinkmann <marcus@g10code.de>

* gpgsm/Makefile.am (key_id): Change := into =.

2007-07-12 Werner Koch <wk@g10code.com>

* gpgsm/t-support.h (init_gpgme) [W32]: Do not init the locales as the constants are not available.

2007-02-26 Werner Koch <wk@g10code.com>

* gpg/t-verify.c (double_plaintext_sig): New.
(main): Check it.

2006-12-02 Marcus Brinkmann <marcus@g10code.de>

* gpgsm/t-keylist.c (main): Skip unknown keys. Newer versions of
PGSM import more keys than older ones.

2005-12-06 Werner Koch <wk@g10code.com>

* gpg/t-keylist.c (main): Changed for that secondary keys now have
a fingerprint.
* gpg/t-keylist-sig.c (main): Ditto.
* gpgsm/t-keylist.c (main): Ditto. The test used to be wrong.

2005-10-18 Werner Koch <wk@g10code.com>

* gpg/pubdemo.asc, gpg/secdemo.asc: Add 2 expired subkeys to
Whisky.
* gpg/t-keylist.c: Reordered list to match new demo keyring. Add
arg for number of subkeys and for extra checking function.
(main): Enhanced a few error outputs. Changed subkey
counting. Call extra checking function.
(check_whisky): New.

2005-10-07 Marcus Brinkmann <marcus@g10code.de>

* gpgsm/t-keylist.c (main): Allow for an email address as a second
uid.

* gpg/t-sig-notation.c: Change critical notation to something
GnuPG understands.

2005-10-01 Marcus Brinkmann <marcus@g10code.de>

* gpg/Makefile.am (EXTRA_DIST): Remove gpg.conf.
(DISTCLEANFILES): Add gpg.conf.
(all-local): Add gpg.conf.
(./gpg.conf): New target.
* gpg/gpg.conf: Remove file.

* gpg/Makefile.am (EXTRA_DIST): Add gpg.conf.

* gpg/Makefile.am (TESTS): Add t-sig-notation.
* gpg/t-sig-notation.c (check_result): New file.
* gpg/t-verify.c (check_result): Also check the length of the

notation data.

* gpg/gpg.conf: New file.

2005-09-30 Marcus Brinkmann <marcus@g10code.de>

* gpg/Makefile.am (TESTS): Add t-filename.

* gpg/t-filename.c: New file.

2005-09-23 Werner Koch <wk@g10code.com>

* gpg/t-support.h (init_gpgme) [W32]: Don't use LC_MESSAGES.

* gpg/t-encrypt-large.c: New test.

* gpg/Makefile.am (TESTS): Add t-encrypt-large.

2005-06-03 Marcus Brinkmann <marcus@g10code.de>

* gpg/Makefile.am (TESTS): Add t-wait.

* gpg/t-wait.c (main): New test.

2004-12-07 Marcus Brinkmann <marcus@g10code.de>

* gpg/mkdemodirs: Add copyright notice.

* gpgsm/Makefile.am, gpgsm/t-support.h, gpgsm/t-decrypt.c,
gpgsm/t-encrypt.c, gpgsm/t-export.c, gpgsm/t-genkey.c,
gpgsm/t-import.c, gpgsm/t-keylist.c, gpgsm/t-sign.c,
gpgsm/t-verify.c, gpg/Makefile.am, gpg/t-decrypt.c,
gpg/t-decrypt-verify.c, gpg/t-edit.c, gpg/t-encrypt.c,
gpg/t-encrypt-sign.c, gpg/t-encrypt-sym.c, gpg/t-eventloop.c,
gpg/t-export.c, gpg/t-genkey.c, gpg/t-import.c, gpg/t-keylist.c,
gpg/t-keylist-sig.c, gpg/t-sign.c, gpg/t-signers.c,
gpg/t-support.h, gpg/t-thread1.c, gpg/t-trustlist.c,
gpg/t-verify.c, Makefile.am, t-data.c, t-engine-info.c,
t-version.c: Change license to LGPL.

2004-08-17 Marcus Brinkmann <marcus@g10code.de>

* gpgsm/t-keylist.c (struct): Add new fields VALIDITY and
KEY_LENGTH.

(main): Use them.

* gpgsm/t-import.c (check_result): New argument total_stat.

(main): Pass this argument. Reduce number of total considered
keys to 1 for the second test.

2004-04-05 Werner Koch <wk@gnupg.org>

* gpgsm/Makefile.am: Changed the faked system time to 20011213T12000.

2004-03-07 Marcus Brinkmann <marcus@g10code.de>

* gpgsm/t-keylist.c: Add chain IDs.

2004-03-03 Werner Koch <wk@gnupg.org>

* gpgsm/t-export.c (main): Also check exporting 2 certificates.

2004-02-17 Werner Koch <wk@gnupg.org>

* gpgsm/t-import.c (check_result): gpgsm does now return info in the result->imports; adjust for that.

* gpgsm/Makefile.am (TESTS_ENVIRONMENT): Reset the GPG_AGENT_INFO.

Include config.h at the top of each C source. This is required due to LFS support.

* gpg/t-keylist-sig.c (main): s/class/sig_class/.

* gpg/t-signers.c (check_result): Ditto.

* gpg/t-sign.c (check_result): Ditto.

* gpg/t-encrypt-sign.c (check_result): Ditto.

* gpgsm/t-sign.c (check_result): Ditto.

2004-01-12 Werner Koch <wk@gnupg.org>

* gpg/t-keylist-sig.c (main): Temporary disabled one test due top gpg 1.3.4 problems.

* gpg/t-import.c (check_result): Likewise.

2003-11-19 Werner Koch <wk@gnupg.org>

* gpg/t-support.h (DIM): Added.

* gpg/t-verify.c (check_result): Rewrote test for notations because the order of notations is not guaranteed.

* gpgsm/t-support.h (fail_if_err): Also print the numeric values.

2003-10-06 Marcus Brinkmann <marcus@g10code.de>

* gpg/t-eventloop.c: Include <sys/types.h> for old systems.

* gpgsm/Makefile.am (DISTCLEANFILES): Add random_seed.

* gpg/t-thread1.c (thread_one): Do not call initialize_gpgme.

Likewise.

2003-09-14 Marcus Brinkmann <marcus@g10code.de>

* gpg/t-thread1.c (main): Call init_gpgme here.
(initialize_gpgme): Function removed.

* gpg/t-thread1.c: New file.
* gpg/Makefile.am (TESTS): Add t-thread1.c.
(t_thread1_LDADD): New variable.
(LDADD): Remove GPG Error lib.
* gpgsm/Makefile.am (LDADD): Likewise.

* gpg/t-import.c (main): Likewise.
* gpg/t-keylist-sig.c (main): Likewise.
* gpg/t-keylist.c (main): Likewise.
* gpg/t-sign.c (main): Likewise.
* gpg/t-signers.c (main): Likewise.
* gpg/t-trustlist.c (main): Likewise.
* gpgsm/t-support.h: Include <stdlib.h> and <locale.h>.
(init_gpgme): New function.
* gpg/t-support.h: Likewise.
* gpgsm/t-verify.c (main): Call init_gpgme.
* gpgsm/t-decrypt.c (main): Likewise.
* gpgsm/t-encrypt.c (main): Likewise.
* gpgsm/t-export.c (main): Likewise.
* gpgsm/t-genkey.c (main): Likewise.
* gpgsm/t-import.c (main): Likewise.
* gpgsm/t-keylist.c (main): Likewise.
* gpgsm/t-sign.c (main): Likewise.
* gpg/t-verify.c (main): Call init_gpgme.
* gpg/t-decrypt-verify.c (main): Likewise.
* gpg/t-decrypt.c (main): Likewise.
* gpg/t-edit.c (main): Likewise.
* gpg/t-encrypt-sign.c (main): Likewise.
* gpg/t-encrypt-sym.c (main): Likewise.
* gpg/t-encrypt.c (main): Likewise.
* gpg/t-eventloop.c (main): Likewise.
* gpg/t-export.c (main): Likewise.
* gpg/t-genkey.c (main): Likewise.

2003-08-14 Marcus Brinkmann <marcus@g10code.de>

* gpg/t-sign.c (check_result): Change output format for signature
class to unsigned int.
* gpg/t-signers.c (check_result): Likewise.
* gpg/t-encrypt-sign.c (check_result): Likewise.
* gpgsm/t-sign.c (check_result): Likewise.

2003-07-31 Marcus Brinkmann <marcus@g10code.de>

- * gpg/t-verify.c (check_result): Change type of SUMMARY to unsigned int.
- * gpg/t-decrypt-verify.c (check_verify_result): Likewise.
- * gpg/t-keylist-sig.c (keys): Change type of member CLASS to unsigned int.
- * t-data.c (read_cb): Change type of AMOUNT to unsigned int.
- * t-version.c (version): Remove unused variable.

2003-07-22 Marcus Brinkmann <marcus@g10code.de>

- * Makefile.am (AM_CPPFLAGS): New variable.
(LDADD): Add @GPG_ERROR_LIBS@.
- * gpg/Makefile.am (AM_CPPFLAGS): New variable.
(LDADD): Add @GPG_ERROR_LIBS@.
- * gpgsm/Makefile.am (AM_CPPFLAGS): New variable.
(LDADD): Add @GPG_ERROR_LIBS@.

2003-06-06 Marcus Brinkmann <marcus@g10code.de>

Everywhere: Use libgpg-error error codes.

- * gpg/Makefile.am (noinst_HEADERS): New variable.
- * gpg/t-support.h: New file.
- * gpgsm/Makefile.am (noinst_HEADERS): New variable.
- * gpgsm/t-support.h: New file.

2003-05-29 Marcus Brinkmann <marcus@g10code.de>

- * gpg/t-encrypt-sym.c (main): Adapt to new syntax.
- * gpg/t-encrypt.c (main): Likewise.
- * gpg/t-eventloop.c (main): Likewise.
- * gpg/t-encrypt-sign.c (main): Likewise.
- * gpgsm/t-export.c (main): Likewise.
- * gpgsm/t-encrypt.c (main): Likewise.

2003-05-28 Marcus Brinkmann <marcus@g10code.de>

- * gpg/t-eventloop.c (main): Rewrite recipient management.
- * gpg/t-encrypt-sign.c (main): Likewise.
- * gpg/t-encrypt.c (main): Likewise.
- * gpg/t-export.c (main): Likewise.
- * gpgsm/t-encrypt.c (main): Likewise.
- * gpgsm/t-export.c (main): Likewise.

2003-05-27 Marcus Brinkmann <marcus@g10code.de>

- * gpg/Makefile.am (TESTS): Order t-keylist and t-keylist-sig after t-import.
- * gpg/t-edit.c (edit_fnc): Fix primary UID for keylisting tests.
- * gpg/t-keylist.c: Change order of user IDs.
- * gpg/t-keylist-sig.c: Likewise.
- * gpg/t-import.c: Add support for gpg in CVS.

2003-05-27 Marcus Brinkmann <marcus@g10code.de>

- * t-data.c: Remove TEST_OUT_CB.
- (main): Likewise.
- * gpg/t-trustlist.c (main): Access ITEM directly.

- * (t-decrypt-verify.c, t-decrypt.c, t-edit.c, t-encrypt-sign.c, t-encrypt-sym.c, t-sign.c, t-signers.c): Include <unistd.h>.
- (passphrase_cb): Rewritten.
- * t-edit.c (edit_fnc): Rewritten.

2003-05-04 Marcus Brinkmann <marcus@g10code.de>

- * gpg/t-keylist-sig.c (main): Remove timestamp check.

- * gpgsm/t-keylist.c: Add check for timestamp.

- * gpg/Makefile.am (TESTS): Add t-keylist-sig.
- * gpg/t-keylist-sig.c: New file.

2003-04-30 Marcus Brinkmann <marcus@g10code.de>

- * gpg/t-eventloop.c (main): Do not call print_op_info.
- (print_op_info): Function removed.

- * gpg/t-keylist.c: Rewritten.
- * gpgsm/t-keylist.c (main): Rewritten.
- * gpg/t-edit.c (main): Do not use gpgme_key_get_as_xml. Use gpgme_key_unref instead gpgme_key_release.
- * gpg/t-signers.c (main): Use gpgme_key_unref instead gpgme_key_release.

2003-04-29 Marcus Brinkmann <marcus@g10code.de>

- * gpg/t-trustlist.c: Rewritten.

- * gpg/t-verify.c (main): Rewritten.
- * gpg/t-decrypt-verify.c: Rewritten.
- * gpgsm/t-verify.c (main): Rewritten.

2003-04-28 Marcus Brinkmann <marcus@g10code.de>

* gpgsm/t-decrypt.c (main): Rewritten.

* gpg/t-decrypt.c: Rewritten.

* gpg/t-signers.c: Rewritten.

2003-04-27 Marcus Brinkmann <marcus@g10code.de>

* gpg/t-encrypt-sign.c (check_result): Rewritten.

* gpg/t-sign.c: Rewritten.

* gpgsm/t-sign.c: Rewritten.

* gpg/t-encrypt.c: Check for invalid recipients.

* gpgsm/t-encrypt.c: Likewise.

* gpg/t-import.c (check_result): Really use FPR.

* gpgsm/t-import.c (check_result): Rewritten.

2003-04-25 Marcus Brinkmann <marcus@g10code.de>

* gpg/t-import.c: Rewritten.

* gpgsm/t-genkey.c: Rewritten.

* gpgsm/Makefile.am (noinst_PROGRAMS): Add t-genkey.

* gpg/t-genkey.c: Include <stdlib.h>.

(main): Check result->fpr before checking its length.

2003-04-24 Marcus Brinkmann <marcus@g10code.de>

* gpg/t-genkey.c: Rewritten to match new semantics.

2003-02-06 Marcus Brinkmann <marcus@g10code.de>

* gpg/t-decrypt.c (passphrase_cb): Fix to new prototype.

* gpg/t-decrypt-verify.c (passphrase_cb): Likewise.

* gpg/t-edit.c (passphrase_cb): Likewise.

* gpg/t-encrypt-sign.c (passphrase_cb): Likewise.

* gpg/t-encrypt-sym.c (passphrase_cb): Likewise.

* gpg/t-sign.c (passphrase_cb): Likewise.

* gpg/t-signers.c (passphrase_cb): Likewise.

2003-01-30 Marcus Brinkmann <marcus@g10code.de>

* t-engine-info.c: Use file_name instead path throughout.

* Makefile.am (TESTS): Add t-engine-info.

* t-engine-info.c: New file.

- * gpg/t-encrypt.c (main): Don't print engine info.
- * gpg/t-eventloop.c (main): Likewise.
- * gpg/t-encrypt-sign.c (main): Likewise.
- * gpgsm/t-encrypt.c (main): Likewise.

2002-12-24 Marcus Brinkmann <marcus@g10code.de>

- * gpgsm/t-verify.c (main): Adjust caller of gpgme_op_verify.
- * gpg/t-verify.c (main): Likewise.
- * gpg/t-decrypt-verify.c (main): Likewise for gpgme_op_decrypt_verify.

2002-12-23 Marcus Brinkmann <marcus@g10code.de>

- * gpgsm/Makefile.am (./gpgsm.conf): Add a faked system time to avoid certification's expiry.
- * gpgsm/t-encrypt.c (main): Use the short certification name.

2002-11-19 Marcus Brinkmann <marcus@g10code.de>

- * gpg/t-genkey.c (main): Add missing argument to gpgme_op_genkey invocation.

2002-10-09 Marcus Brinkmann <marcus@g10code.de>

- * gpg/t-decrypt.c (print_data): Update to new gpgme_data_read interface, and use gpgme_engine_check_version instead gpgme_check_version.
- * gpg/t-decrypt-verify.c (print_data): Likewise.
- * gpg/t-edit.c (main): Likewise.
- * gpg/t-encrypt.c (print_data): Likewise.
- * gpg/t-encrypt-sign.c (print_data): Likewise.
- * gpg/t-encrypt-sym.c (print_data): Likewise.
- * gpg/t-eventloop.c (print_data): Likewise.
- * gpg/t-export.c (print_data): Likewise.
- * gpg/t-sign.c (print_data): Likewise.
- * gpg/t-signers.c (print_data): Likewise.
- * gpgsm/t-decrypt.c (print_data): Likewise.
- * gpgsm/t-encrypt.c (print_data): Likewise.
- * gpgsm/t-export.c (print_data): Likewise.
- * gpgsm/t-sign.c (print_data): Likewise.
- * gpg/t-verify.c (main): Likewise for gpgme_op_verify.
- * gpgsm/t-verify.c (main): Likewise for gpgme_op_verify.
- * t-data.c (read_once_test): Likewise.
- (write_test): Update for new behaviour of data objects.
- (main): Remove type test.

2002-09-30 Werner Koch <wk@gnupg.org>

* gpgsm/t-keylist.c (doit): Add arg SECRET.

(main): Add option --secret.

2002-09-28 Marcus Brinkmann <marcus@g10code.de>

* t-version.c: Include <string.h>. Reported by Stphane Corthsy.

2002-09-02 Marcus Brinkmann <marcus@g10code.de>

* gpg/t-keylist.c (main): Test PATTERN for NULL before printing.

Reported by Dr. Stefan Dalibor <Dr.Stefan.Dalibor@bfa.de>.

2002-08-01 Marcus Brinkmann <marcus@g10code.de>

* gpg/t-edit.c: Also add a test for the expire command (testing the passphrase callback).

2002-07-28 Marcus Brinkmann <marcus@g10code.de>

* gpg/t-edit.c: New file.

* gpg/Makefile (TESTS): Add t-edit.

2002-07-25 Marcus Brinkmann <marcus@g10code.de>

* gpg/t-encrypt-sym.c (main): Change type of I to size_t and rename to LEN.

* gpg/t-verify.c (main): Likewise. Submitted by Stphane Corthsy.

2002-07-03 Marcus Brinkmann <marcus@g10code.de>

* gpg/t-eventloop.c: New file.

* gpg/Makefile (TESTS): Add t-eventloop.

2002-06-26 Werner Koch <wk@gnupg.org>

* gpgsm/t-import.c (print_op_info): New.

(main): Print operation info.

2002-06-25 Werner Koch <wk@gnupg.org>

* gpgsm/Makefile.am (DISTCLEANFILES): new.

2002-06-25 Marcus Brinkmann <marcus@g10code.de>

* gpgsm/Makefile.am (TESTS): Add t-export.

gpgsm/t-export.c: New file.

2002-06-20 Werner Koch <wk@gnupg.org>

* gpgsm/t-sign.c (main): Also test a normal signature.

* gpg/Makefile (TESTS_ENVIRONMENT): Set GPG_AGENT_INFO empty.

* gpg/t-signers.c, gpg/t-sign.c, gpg/t-encrypt-sym.c

* gpg/t-encrypt-sign.c, gpg/t-decrypt.c

* gpg/t-decrypt-verify.c (main): Changed the GPG_AGENT_INFO check to match the one in ../../gpgme/rungpg.c.

2002-06-12 Werner Koch <wk@gnupg.org>

* gpgsm/t-keylist.c (doit): Print operation info if available.

2002-06-10 Werner Koch <wk@gnupg.org>

* gpgsm/t-verify.c (print_sig_stat): Print the error token.

2002-06-04 Werner Koch <wk@gnupg.org>

* gpgsm/t-encrypt.c (main): Add a simple option parser and allow to specify an encryption key.

2002-05-26 Marcus Brinkmann <marcus@g10code.de>

* gpg/Makefile.am (all-local): Remove dependency on ./secring.gpg.

(./secring.gpg): Remove target, and move all rules for this target to ...

(./pubring.gpg): ... here. This was necessary because GnuPG 1.0.7 does create an empty secring.gpg file when importing public keys.

2002-05-08 Marcus Brinkmann <marcus@g10code.de>

* gpgsm/t-verify.c (validity_string): New.

(print_sig_stat): Print expire time and validity.

(status_string): Add new expired stati.

2002-05-03 Werner Koch <wk@gnupg.org>

* gpg/t-verify.c (validity_string): New.

(print_sig_stat): Print expire time and validity.

(status_string): Add new expired stati.

2002-04-05 Marcus Brinkmann <marcus@g10code.de>

* gpgsm/Makefile.am (./trustlist.txt): Put more into this file to prevent use of gpg-agent.

(./gpg-agent.conf): Remove target.
(all-local): Remove ./gpg-agent.conf.

2002-04-05 Marcus Brinkmann <marcus@g10code.de>

* gpgsm/t-keylist.c (main): Use gpgme_engine_check_version instead
gpgme_check_engine.
* gpgsm/t-encrypt.c (main): Likewise.

2002-03-06 Marcus Brinkmann <marcus@g10code.de>

* gpg/t-encrypt-sym.c: New file.
* gpg/Makefile.am (TESTS): Add t-encrypt-sym.

2002-03-05 Marcus Brinkmann <marcus@g10code.de>

* gpg/Makefile.am (CLEANFILES): Remove random_seed, which is now
in DISTCLEANFILES.

2002-03-04 Werner Koch <wk@gnupg.org>

* gpg/Makefile.am (DISTCLEANFILES): Added.

2002-03-03 Marcus Brinkmann <marcus@g10code.de>

* gpg/t-verify.c (main): Add a few more sanity checks, and a check
for normal signatures.

2002-02-26 Marcus Brinkmann <marcus@g10code.de>

* gpg/t-encrypt-sign.c: New file.
* gpg/Makefile.am (TESTS): Add t-encrypt-sign.

2002-02-13 Werner Koch <wk@gnupg.org>

* gpgsm/Makefile.am (private-keys-v1.d): Don't
fail when the directory already exists.

2002-02-12 Marcus Brinkmann <marcus@g10code.de>

* gpg/Makefile.am (CLEANFILES): New target.
(distclean-local): Rename to ...
(clean-local): ... this.

2002-02-09 Marcus Brinkmann <marcus@g10code.de>

* gpgsm/Makefile.am (./private-keys-v1.d/\$(key_id).key): Fix rule.

2002-02-09 Marcus Brinkmann <marcus@g10code.de>

* gpgsm/t-genkey.c: New file (not added to Makefile.am because of gpg-agent bug).

2002-02-08 Marcus Brinkmann <marcus@g10code.de>

* gpgsm/Makefile.am (key_id): Update value.
(all-local): Add .key to keyid filename.
(./private-keys-v1.d/\${key_id}): Renamed to ...
(./private-keys-v1.d/\${key_id}.key): ... this.
(all-local): Add ./gpgsm.conf, ./trustlist.txt.
(./gpgsm.conf, ./trustlist.txt): New target.
* gpgsm/567064FE6D14A17B2D811ABB407728BC558AA455: Renamed to ...
* gpgsm/32100C27173EF6E9C4E9A25D3D69F86D37A4F939: ... this.

2002-01-30 Marcus Brinkmann <marcus@g10code.de>

* gpg/t-import.c (print_op_info): New function.
(main): Use it.

2002-01-22 Marcus Brinkmann <marcus@g10code.de>

* gpg/t-signers.c (passphrase_cb): Change type of r_hd to void**.
* gpg/t-sign.c (passphrase_cb): Likewise.
* gpg/t-decrypt-verify.c (passphrase_cb): Likewise.
* gpg/t-decrypt.c (passphrase_cb): Likewise.

2001-12-19 Marcus Brinkmann <marcus@g10code.de>

* gpg/t-decrypt-verify.c: Don't include `mcheck.h'. Reported by Stphane Corthisy.

2001-12-19 Marcus Brinkmann <marcus@g10code.de>

* gpg/Makefile.am (EXTRA_DIST): Add missing line continuation.

2001-12-19 Marcus Brinkmann <marcus@g10code.de>

* gpgsm/Makefile.am (EXTRA_DIST): Add \$(key_id).

2001-12-16 Marcus Brinkmann <marcus@g10code.de>

* gpgsm/Makefile: Rename `pubcerts.kbx' to `pubring.kbx'.

2001-12-15 Marcus Brinkmann <marcus@g10code.de>

* gpgsm/t-keylist.c (check_two_contexts): Set protocols.

2001-12-14 Marcus Brinkmann <marcus@g10code.de>

- * gpgsm/t-sign.c: New file.
- * gpgsm/Makefile.am (TESTS): Add t-sign.

2001-12-14 Marcus Brinkmann <marcus@g10code.de>

- * gpgsm/t-decrypt.c: New file.
- * gpgsm/567064FE6D14A17B2D811ABB407728BC558AA455: Likewise.
- * gpgsm/Makefile.am (TESTS): Add t-decrypt.
- (key_id): New variable.
- (all-local): New target ./private-keys-v1.d/\${key_id} added.
- (./private-keys-v1.d/\${key_id}): New target.

2001-12-14 Marcus Brinkmann <marcus@g10code.de>

- * gpgsm/t-verify.c: New file.
- * gpgsm/Makefile.am (TESTS): Add t-verify.

2001-12-14 Marcus Brinkmann <marcus@g10code.de>

- * gpg/Makefile.am (GPG): Set to @GPG_PATH@.
- (./pubring.gpg): Use \$(GPG) instead gpg.
- (./secring.gpg): Likewise.
- * gpgsm/t-import.c (main): Remove third test case.
- * gpgsm/Makefile.am (GPGSM): Set to @GPGSM@.
- (all-local): New target.
- (./pubcerts.kbx): Likewise.
- * gpgsm/t-encrypt.c: New file.
- * gpgsm/Makefile.am (TESTS): Add t-encrypt.

2001-12-14 Marcus Brinkmann <marcus@g10code.de>

- * gpgsm/t-keylist.c: New file.
- * gpgsm/Makefile.am (TESTS): Add t-keylist.

2001-12-13 Marcus Brinkmann <marcus@g10code.de>

- * gpgsm/cert_dfn_pca01.der: New file.
- * gpgsm/cert_dfn_pca15.der: Likewise.
- * gpgsm/cert_g10code_test1.der: Likewise.
- * gpgsm/t-import.c: Likewise.
- * gpgsm/Makefile.am (EXTRADIST): Add new files.
- (TESTS): Add t-import.

2001-11-22 Marcus Brinkmann <marcus@g10code.de>

* gpg/: New directory.
* Makefile.am, t-verify.c, t-encrypt.c, t-signers.c, t-trustlist.c, t-sign.c, t-keylist.c, t-import.c, t-genkey.c, t-export.c, t-decrypt-verify.c, t-decrypt.c, t-version.c, t-data.c, mkdemodirs. cipher-1.asc, cipher-2.asc, geheim.txt, pubdemo.asc, pubkey-1.asc, secdemo.asc, seckey-1.asc): Move to sub directory gpg/.

* gpg/Makefile.am (INCLUDES): Include gpgme/, not include/ and intl/.

(LDD): Correct relative path to gpgme library.

(TESTS): Remove t-version and t-data.

* gpg/t-verify.c, gpg/t-encrypt.c, gpg/t-signers.c, gpg/t-trustlist.c, gpg/t-sign.c, gpg/t-keylist.c, gpg/t-import.c, gpg/t-genkey.c, gpg/t-export.c, gpg/t-decrypt-verify.c, gpg/t-decrypt.c, t-version.c, t-data.c): Include gpgme.h, not "../gpgme/gpgme.h".

* Makefile.am: New file.

* gpgsm/: New directory.

* gpgsm/Makefile.am: New file.

2001-11-16 Marcus Brinkmann <marcus@g10code.de>

* Makefile.am (TESTS): Add t-decrypt-verify.

* t-decrypt-verify.c: New file.

* cipher-2.asc: Likewise.

2001-11-02 Marcus Brinkmann <marcus@g10code.de>

* t-data.c: Include stddef.h.

(read_once_test): Change type of READ to size_t.

(read_test): Likewise.

(write_test): Likewise.

2001-10-29 Marcus Brinkmann <marcus@g10code.de>

* t-signers.c: New file.

* Makefile.am (TESTS): Add t-signers.

2001-10-22 Marcus Brinkmann <marcus@g10code.de>

* Makefile.am (TEST_ENVIRONMENT): Revert last change.

2001-10-22 Marcus Brinkmann <marcus@g10code.de>

* Makefile.am (TEST_ENVIRONMENT): Set environment to \$(srcdir), not current directory.

2001-10-22 Marcus Brinkmann <marcus@g10code.de>

* t-data.c (write_test): New function.
(main): Invoke write_test for all rounds except TEST_OUT_CB.

2001-10-22 Marcus Brinkmann <marcus@g10code.de>

* Makefile.am (INCLUDES): Remove spurious duplicate to silence automake.

2001-10-16 Marcus Brinkmann <marcus@g10code.de>

* t-version.c: New file.
* t-data.c: Likewise.
* t-data-1.txt: Likewise.
* t-data-2.txt: Likewise.
* Makefile.am (TESTS): Add t-version, t-data.

2001-09-17 Werner Koch <wk@gnupg.org>

* t-keylist.c (check_two_contexts): New.

2001-09-03 Werner Koch <wk@gnupg.org>

* t-encrypt.c (print_op_info): New and use it after each operation.

2001-08-28 Werner Koch <wk@gnupg.org>

* t-sign.c (print_op_info): New and use it after each operation.

2001-03-15 Werner Koch <wk@gnupg.org>

* t-keylist.c (doit): List subkeys too, show caps.

2001-02-13 Werner Koch <wk@gnupg.org>

* t-verify.c (print_sig_stat): Repaled along by unsigned long because we don't use the config stuff here.

2001-02-12 Werner Koch <wk@gnupg.org>

* tests/t-verify.c (print_sig_stat): Print info about the keys.

Copyright (C) 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009,
2011 g10 Code GmbH

This file is free software; as a special exception the author gives

unlimited permission to copy and/or distribute it, with or without modifications, as long as this notice is preserved.

This file is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY, to the extent permitted by law; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.

59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis

or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

^L

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

^L

GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for

making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the

application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

^L

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

^L

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work

during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally

accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

^L

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

^L

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or

otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by

the Free Software Foundation.

^L

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

^L

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full

notice is found.

<one line to give the library's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990
Ty Coon, President of Vice

That's all there is to it!

000

*H

010 UDE1!0U

Deutsches Forschungsnetz10UDFN-PCA1.0,U%DFN Top Level Certification Authority1!0 *H
certify@pca.dfn.de0

001102164724Z

011230180000Z010 UDE1!0U

Deutsches Forschungsnetz10UDFN-PCA1+0)U"DFN Server Certification Authority1!0 *H
certify@pca.dfn.de0"0

*H

0

W`r;wXu)QYHm1t]4?]-.B(iw6G01N>[mQSwC'muw~E'l-M

+<[A|F)F%

ZiRaW=OC,,meKW@J-*<,L}:Bnm-kv

EYBmu tt[-%,R+n0j0U00U0U{upz*D\
v0Ux0v09753http://www.pca.dfn.de/dfnpca/certify/ssl/dfnpca.crx09753http://www.pca.dfn.de/dfnpca/certify/ssl/dfn
pca.crl0`HB0)`HBhttps://mystic.pca.dfn.de/0A`HB42http://www.pca.dfn.de/dfnpca/policy/wwwpolicy.html0`HB
This certificate was issued by the DFN-PCA, the Top
Level Certification Authority of the German Research
Network (Deutsches Forschungsnetz, DFN).

The key owner's identity was authenticated in
accordance with the DFN World Wide Web Policy, v1.00!`HBcgi/check-rev.cgi?0

*H

\C)2

+ZYG|UCA|PzYFnTj@SA)/<HU+4t?@g?pb5w'Z;dqLi9\((d=

,)h?c(MeM44=Qe/_^^JyYN/61&jPFXifP&#;/KZ

1 xOK?ps

*- mode: org *-

#+TITLE: What's New in the GPGME Python Bindings and Documentation

#+AUTHOR: Ben McGinnes

#+LATEX_COMPILER: xelatex

#+LATEX_CLASS: article

#+LATEX_CLASS_OPTIONS: [12pt]

#+LATEX_HEADER: \usepackage{xltextra}

#+LATEX_HEADER: \usepackage[margin=1in]{geometry}

#+LATEX_HEADER: \setmainfont[Ligatures={Common}]{Times New Roman}

#+LATEX_HEADER: \author{Ben McGinnes <ben@gnupg.org>}

* What's New

:PROPERTIES:

:CUSTOM_ID: new-stuff

:END:

| Version: | 0.0.1 |
| GPGME Version: | 1.13.0 |
| Author: | Ben McGinnes <ben@gnupg.org> |
| Author GPG Key: | DB4724E6FA4286C92B4E55C4321E4E2373590E5D |
| Language: | Australian English, British English |
| xml:lang: | en-AU, en-GB, en |

Last time the most obviously new thing was adding the /What's New/
section to the HOWTO. Now it's moving it out of the HOWTO.

** New in GPGME 1130

:PROPERTIES:

:CUSTOM_ID: new-stuff-1-13-0

:END:

Additions since GPGME 1.12.0 include:

- Moving the /What's New/ section out of the basic [\[\[file:gpgme-python-howto.org\]\]](http://file:gpgme-python-howto.org) document and into its own file so as to more readily include other documents beyond that HOWTO.
- Moving the preceding, archival, segments into [\[\[file:what-was-new.org\]\]](http://file:what-was-new.org) [another file].
- Added `=gpg.version.versionintlist=` to make it easier for Python developers to check for a specific version number, even with beta versions (it will drop the "-betaN" part).
- Added expanded detail on issues pertaining to installing for Windows users.
- Bindings enter [\[\[file:maintenance-mode\]\]](http://file:maintenance-mode) [maintenance mode] from January, 2019.
- Added documentation on maintenance mode and what changes can be made to the code when in that status. Essentially that boils down to bug fixes only and no feature requests.
- The `import-keys-hkp.py` example script, which uses the `=hkp4py=` module to search the SKS servers for a key, has been tightened up to search for both hexadecimal key IDs and user ID strings with reduced chance of unnecessary repetition. There may still be some repetition if a key includes a user ID matching the hexadecimal value of a key ID.

1543830060

##Sketch 1 2

document()

layout('A4',1)

fp((0,0,0))

ft(1)

Fn('Helvetica-Bold')

Fs(18)

dstyle('Text')

fp((0,1,0.498))

ft(1)

lp((0,0,0))

lw(0.283465)

lc(1)

lj(0)

ld(0)

la1()

la2()

dstyle('Application Box')

layer('Layer 1',1,1,0,0,(0,0,0))

lw(1)

r(0,0,0,0,688.145,44.1554)

lw(1)

r(0,0,0,0,682.363,85.0359)

lp((0.392,0.584,0.929))

lw(4.25197)

b()

bs(605.383,329.758,0)

bs(605.383,230.546,0)

lw(1)
 r(0,0,0,0,807.414,53.6148)
 lp((0.392,0.584,0.929))
 lw(4.25)
 b()
 bs(480.134,240.945,0)
 bs(480.358,325.277,0)
 lp((0.392,0.584,0.929))
 lw(3.25)
 ld((1, 1))
 la2(((-4.0, 3.0), (2.0, 0.0), (-4.0, -3.0), (-4.0, 3.0)), 1))
 b()
 bs(474.803,432.284,0)
 bs(475.334,360.243,0)
 lw(3.25)
 ld((1, 1))
 la2(((-4.0, 3.0), (2.0, 0.0), (-4.0, -3.0), (-4.0, 3.0)), 1))
 b()
 bs(354.331,432.284,0)
 bs(352.806,361.417,0)
 lp((0.392,0.584,0.929))
 lw(3.25)
 ld((1, 1))
 la2(((-4.0, 3.0), (2.0, 0.0), (-4.0, -3.0), (-4.0, 3.0)), 1))
 b()
 bs(212.598,432.284,0)
 bs(212.598,361.417,0)
 fp((0.999,1,0.4))
 lw(0.283465)
 r(70.5968,0,0,-56.6929,191.608,488.976,0.0603744,0.151107)
 lw(1)
 r(0,0,0,0,88.5492,390.805)
 lp((0.392,0.584,0.929))
 lw(4.25197)
 b()
 bs(226.772,524.409,0)
 bs(226.772,488.976,0)
 lp((0.392,0.584,0.929))
 lw(4.25)
 b()
 bs(403.937,528.718,0)
 bs(403.937,488.976,0)
 lp((0.392,0.584,0.929))
 lw(3.25)
 ld((1, 1))
 la2(((-4.0, 3.0), (2.0, 0.0), (-4.0, -3.0), (-4.0, 3.0)), 1))
 b()
 bs(240.945,432.284,0)

bs(240.574,394.994,0)
bs(595.276,396.85,0)
bs(595.276,361.417,0)
lp((0.392,0.584,0.929))
lw(3.25)
ld((1, 1))
la2(((-4.0, 3.0), (2.0, 0.0), (-4.0, -3.0), (-4.0, 3.0)], 1))
b()
bs(333.071,432.284,0)
bs(333.07,425.196,0)
bs(333.07,382.677,0)
bs(240.945,382.677,0)
bs(240.945,361.417,0)
G()
fp((0.999,1,0.4))
lw(0.283465)
r(70.5589,0,0,-28.347,318.897,354.331,0.0670228,0.151107)
fp((0,0,0))
le()
lw(1)
Fn('Helvetica-Bold')
Fs(10)
txt('GPG',(1,0,0,0.905764,344.004,335.686))
G_
G()
fp((0.999,1,0.4))
lw(0.283465)
r(70.5589,0,0,-28.3464,446.763,354.33,0.0670228,0.151107)
fp((0,0,0))
le()
lw(1)
Fn('Helvetica')
Fs(14)
style('Text')
txt('GpgConf',(0.552654,0,0,0.500564,481.802,340.184),1,1)
G_
G()
fp((0.999,1,0.4))
lw(0.283465)
r(70.5589,0,0,-28.347,191.338,354.331,0.0670228,0.151107)
fp((0,0,0))
le()
lw(1)
Fn('Helvetica')
Fs(14)
style('Text')
txt('GpgSM',(0.552654,0,0,0.500574,226.376,340.185),1,1)
G_()

lp((0.392,0.584,0.929))
 lw(4.25)
 b()
 bs(347.244,325.984,0)
 bs(347.244,325.984,0)
 bs(347.244,255.118,0)
 bs(304.724,255.118,0)
 bs(304.724,226.771,0)
 lp((0.392,0.584,0.929))
 lw(4.25)
 b()
 bs(233.858,325.984,0)
 bs(233.858,255.118,0)
 bs(276.378,255.118,0)
 bs(276.378,226.771,0)
 fp((0,0,0))
 le()
 lw(1)
 Fn('Palatino-Roman')
 txt('2008-07-17',(0.608301,0,0,0.608301,708.661,65.8308))
 lw(1)
 r(0,0,0,0,750.427,153.265)
 lp((0.392,0.584,0.929))
 lw(3.25)
 ld((1, 1))
 la2([((-4.0, 3.0), (2.0, 0.0), (-4.0, -3.0), (-4.0, 3.0)], 1))
 b()
 bs(219.685,325.984,0)
 bs(219.685,198.425,0)
 bs(219.685,162.992,0)
 G()
 fp((1,1,1))
 lw(0.283465)
 r(113.386,0,0,-42.5196,35.4333,162.992,0.0670228,0.151107)
 fp((0,0,0))
 lw(0.283465)
 Fn('Helvetica')
 Fs(14)
 style('Text')
 Fn('Helvetica-Bold')
 Fs(18)
 txt('LDAP Server',(0.552654,0,0,0.552654,92.1261,148.819),1,1)
 fp((0,0,0))
 lw(0.283465)
 Fn('Helvetica')
 Fs(14)
 style('Text')
 Fn('Helvetica-Bold')

Fs(18)
 txt('(CRLs, Certificates)',(0.552654,0,0,0.552654,92.1261,134.646),1,1)
 G_
 G()
 fp((1,1,1))
 lw(0.283465)
 r(113.386,0,0,-42.5196,35.4331,99.2125,0.0670228,0.151107)
 fp((0,0,0))
 lw(0.283465)
 Fn('Helvetica')
 Fs(14)
 style('Text')
 Fn('Helvetica-Bold')
 Fs(18)
 txt('HTTP Server', (0.552654,0,0,0.552654,92.1259,85.0394),1,1)
 fp((0,0,0))
 lw(0.283465)
 Fn('Helvetica')
 Fs(14)
 style('Text')
 Fn('Helvetica-Bold')
 Fs(18)
 txt('(CRLs)',(0.552654,0,0,0.552654,92.1259,70.8662),1,1)
 G_
 G()
 fp((0.999,1,0.4))
 lw(0.283465)
 r(70.866,0,0,-31.2962,191.338,158.855,0.0670228,0.151107)
 fp((0,0,0))
 le()
 lw(1)
 Fn('Helvetica')
 Fs(14)
 style('Text')
 txt('DirMgr', (0.552654,0,0,0.552654,224.02,142.978),1,1)
 G_
 lw(2)
 ld((1, 1))
 la2([((-4.0, 3.0), (2.0, 0.0), (-4.0, -3.0), (-4.0, 3.0)], 1))
 b()
 bs(219.15,126.18,0)
 bs(219.685,77.9528,0)
 bs(155.906,77.9528,0)
 lp((0.392,0.584,0.929))
 lw(3)
 b()
 bs(233.858,127.559,0)
 bs(233.858,99.2125,0)

bs(276.378,99.2125,0)
bs(276.378,85.0393,0)
lp((0.392,0.584,0.929))
lw(3)
b()
bs(248.031,127.559,0)
bs(248.031,113.386,0)
bs(375.59,113.386,0)
bs(375.59,85.0393,0)
G()
fp((1,0.647,0.31))
lw(0.283465)
r(99.2124,0,0,-28.3464,333.07,85.0393,0.0670228,0.151107)
fp((0,0,0))
le()
lw(1)
Fn('Helvetica')
Fs(14)
style('Text')
Fn('Helvetica-Bold')
Fs(18)
txt('Certificate Cache',(0.552654,0,0,0.552654,382.606,69.8548),1,1)
fp((1,0.647,0.31))
lw(0.283465)
r(70.5589,0,0,-28.3464,248.031,85.0393,0.0670228,0.151107)
fp((0,0,0))
le()
lw(1)
Fn('Helvetica')
Fs(14)
style('Text')
txt('CRL Cache',(0.552654,0,0,0.552654,284.147,70.6936),1,1)
G_
lw(1)
la2((((-4.0, 3.0), (2.0, 0.0), (-4.0, -3.0), (-4.0, 3.0)), 1))
b()
bs(503.149,240.945,0)
bs(503.149,283.464,0)
bs(588.189,283.465,0)
bs(588.189,325.984,0)
lw(1)
la2((((-4.0, 3.0), (2.0, 0.0), (-4.0, -3.0), (-4.0, 3.0)), 1))
b()
bs(503.149,283.464,0)
bs(503.149,283.464,0)
bs(361.417,283.464,0)
bs(361.417,325.984,0)
lw(1)

la2(((-4.0, 3.0), (2.0, 0.0), (-4.0, -3.0), (-4.0, 3.0)), 1))
b()
bs(361.417,283.464,0)
bs(205.512,283.465,0)
bs(205.512,325.984,0)
lw(1)
la2(((-4.0, 3.0), (2.0, 0.0), (-4.0, -3.0), (-4.0, 3.0)), 1))
b()
bs(574.015,85.0393,0)
bs(574.015,141.732,0)
bs(262.204,141.732,0)
lw(1)
la2(((-4.0, 3.0), (2.0, 0.0), (-4.0, -3.0), (-4.0, 3.0)), 1))
b()
bs(602.361,85.0393,0)
bs(602.361,170.079,0)
bs(439.37,170.079,0)
bs(439.37,311.811,0)
bs(460.629,311.811,0)
bs(460.629,325.984,0)
lw(1)
ld((5, 1))
la2(((-4.0, 3.0), (2.0, 0.0), (-4.0, -3.0), (-4.0, 3.0)), 1))
b()
bs(389.763,240.945,0)
bs(389.763,269.291,0)
bs(290.551,269.291,0)
bs(290.551,340.157,0)
bs(262.204,340.157,0)
lw(1)
ld((5, 1))
la2(((-4.0, 3.0), (2.0, 0.0), (-4.0, -3.0), (-4.0, 3.0)), 1))
b()
bs(389.763,269.291,0)
bs(559.843,269.291,0)
bs(559.843,333.071,0)
bs(574.016,333.071,0)
lw(1)
ld((5, 1))
la2(((-4.0, 3.0), (2.0, 0.0), (-4.0, -3.0), (-4.0, 3.0)), 1))
b()
bs(488.976,85.0393,0)
bs(488.976,127.559,0)
bs(389.763,127.559,0)
bs(389.763,212.598,0)
lw(2)
ld((1, 1))
la2(((-4.0, 3.0), (2.0, 0.0), (-4.0, -3.0), (-4.0, 3.0)), 1))

b()
bs(205.512,127.559,0)
bs(205.512,113.386,0)
bs(170.079,113.386,0)
bs(170.079,141.732,0)
bs(155.906,141.732,0)
lp((0.392,0.584,0.929))
lw(3.25)
ld((1, 1))
la2(((-4.0, 3.0), (2.0, 0.0), (-4.0, -3.0), (-4.0, 3.0)], 1))
b()
bs(622.961,356.76,0)
bs(622.961,518.503,0)
G()
fp((0.999,1,0.4))
lw(0.283465)
r(70.5589,0,0,-28.3459,573.199,354.33,0.0670228,0.151107)
fp((0,0,0))
le()
lw(1)
Fn('Helvetica')
Fs(14)
style('Text')
txt('GpgAgent',(0.552654,0,0,0.500554,608.238,340.185),1,1)
G_()
lp((0.392,0.584,0.929))
lw(4.25)
b()
bs(721.712,467.717,0)
bs(721.712,297.838,0)
G()
fp((0.999,1,0.4))
lw(0.283465)
r(70.5589,0,0,-28.3464,686.278,297.637,0.0670228,0.151107)
fp((0,0,0))
le()
lw(1)
Fn('Helvetica')
Fs(14)
style('Text')
txt('SCdaemon',(0.552654,0,0,0.500564,721.316,283.492),1,1)
G_()
fp((1,0.647,0.31))
lw(0.283465)
lj(1)
r(86.162,0,0,-117.493,679.192,566.929,0.181818,0.333333)
G()
fp((0,0,0))

```

le()
lw(1)
Fn('Helvetica-Bold')
Fs(18)
txt('Smartcard',(0.552654,0,0,0.552654,698.127,491.036))
fp((0.999,1,0.4))
lw(0.283465)
r(70.5589,0,0,-31.2962,686.279,557.593,0.0670228,0.151107)
fp((0,0,0))
le()
lw(1)
Fn('Helvetica')
Fs(14)
style('Text')
txt('Card Reader',(0.552654,0,0,0.552654,721.318,541.975),1,1)
G_()
G()
fp((0.999,1,0.4))
lw(0.283465)
r(73.6353,0,0,-41.2944,587.066,565.703,0.0670228,0.151107)
fp((0,0,0))
le()
lw(1)
Fn('Helvetica')
Fs(14)
style('Text')
txt('PIN Entry',(0.57675,0,0,0.729211,623.632,545.097),1,1)
G_()
lp((0.392,0.584,0.929))
lw(3.25)
ld((1, 1))
la2([( (-4.0, 3.0), (2.0, 0.0), (-4.0, -3.0), (-4.0, 3.0) ], 1))
b()
bs(643.758,340.157,0)
bs(643.758,340.157,0)
bs(707.539,340.158,0)
bs(707.539,304.724,0)
lw(1)
la2([( (-4.0, 3.0), (2.0, 0.0), (-4.0, -3.0), (-4.0, 3.0) ], 1))
b()
bs(574.016,283.465,0)
bs(587.066,283.464,0)
bs(686.278,283.464,0)
G()
lp((0.392,0.584,0.929))
lw(4.25197)
b()
bs(98.9053,325.985,0)

```

bs(98.9053,240.945,0)
G()
fp((0.999,1,0.4))
lw(0.283465)
r(70.5589,0,0,-28.3464,63.7795,354.331,0.0670228,0.151107)
fp((0,0,0))
le()
lw(1)
Fn('Helvetica')
Fs(14)
style('Text')
txt('WatchGnuPG',(0.552654,0,0,0.552654,98.8185,338.713),1,1)
G_()
G()
fp((1,0.647,0.31))
lw(0.283465)
r(70.5589,0,0,-28.1194,63.7795,240.718,0.0670228,0.168178)
fp((0,0,0))
le()
lw(1)
Fn('Helvetica')
Fs(14)
style('Text')
txt('Log Socket',(0.552654,0,0,0.552654,98.8175,225.1),1,1)
G_()
G_()
G()
fp((1,0.647,0.31))
lw(0.283465)
r(85.0392,0,0,-28.3464,446.457,240.945,0.0670228,0.151107)
fp((0,0,0))
le()
lw(1)
Fn('Helvetica')
Fs(14)
style('Text')
Fn('Helvetica-Bold')
Fs(18)
txt('Config Files',(0.552654,0,0,0.552654,485.621,226.772),1,1)
G_()
G()
fp((1,0.647,0.31))
lw(0.283465)
r(85.0392,0,0,-28.3464,545.669,85.0394,0.0670228,0.151107)
fp((0,0,0))
le()
lw(1)
Fn('Helvetica')

Fs(14)
style('Text')
Fn('Helvetica-Bold')
Fs(18)
txt('Config Files',(0.552654,0,0,0.552654,584.834,70.8662),1,1)
G_()
G()
fp((1,0.647,0.31))
lw(0.283465)
r(84.6546,0,0,-27.3609,347.245,239.959,0.0670228,0.151107)
fp((0,0,0))
le()
lw(1)
Fn('Helvetica')
Fs(14)
style('Text')
Fn('Helvetica-Bold')
Fs(18)
txt('Help Files',(0.552654,0,0,0.552654,388.252,224.705),1,1)
G_()
G()
fp((1,0.647,0.31))
lw(0.283465)
r(84.6546,0,0,-27.3609,446.457,85.0394,0.0670228,0.151107)
fp((0,0,0))
le()
lw(1)
Fn('Helvetica')
Fs(14)
style('Text')
Fn('Helvetica-Bold')
Fs(18)
txt('Help Files',(0.552654,0,0,0.552654,487.464,69.7854),1,1)
G_()
G()
fp((1,0.647,0.31))
lw(0.283465)
r(85.0392,0,0,-28.3464,248.032,240.945,0.0670228,0.151107)
fp((0,0,0))
le()
lw(1)
Fn('Helvetica')
Fs(14)
style('Text')
Fn('Helvetica-Bold')
Fs(18)
txt('Keybox Files',(0.552654,0,0,0.552654,289.59,226.322),1,1)
G_()

G()
fp((1,0.647,0.31))
lw(0.283465)
r(70.866,0,0,-28.3464,574.016,240.945,0.0670228,0.151107)
fp((0,0,0))
le()
lw(1)
Fn('Helvetica')
Fs(14)
style('Text')
Fn('Helvetica-Bold')
Fs(18)
txt('Private Keys',(0.552654,0,0,0.552654,609.449,226.772),1,1)
G_
G()
fp((0,0,0))
le()
lw(1)
Fn('Helvetica')
Fs(14)
style('Text')
Fn('Helvetica-Bold')
Fs(24)
txt('Scute',(0.552654,0,0,0.599958,224.978,465.775),1,1)
fp((0,0,0))
le()
lw(1)
Fn('Times-Roman')
Fs(10)
txt('(pkcs#11)',(1,0,0,1.08559,206.081,445.011))
G_
G()
fp((0.999,1,0.4))
lw(0.283465)
r(198.827,0,0,-56.6929,304.322,488.976,0.0603744,0.151107)
fp((0,0,0))
le()
lw(1)
Fn('Helvetica')
Fs(14)
style('Text')
Fn('Helvetica-Bold')
Fs(36)
txt('GPGME Library',(0.552654,0,0,0.552654,404.952,457.853),1,1)
G_
G()
lw(1)
style('Application Box')

```

r(197.598,0,0,-42.5187,304.724,566.928,0.0152672,0.0677968)
fp((0,0,0))
le()
lw(1)
Fn('Helvetica')
txt('GPGME aware Application',(0.98062,0,0,0.937018,334.892,540.985))
G_()
G()
lw(1)
style('Application Box')
r(127.829,0,0,-41.7496,162.992,566.159,0.0152672,0.0677968)
fp((0,0,0))
le()
lw(1)
Fn('Helvetica')
txt('Legacy Application',(174.688,540.01))
G_()
G()
G()
lp((0.392,0.584,0.929))
lw(4.25197)
b()
bs(749.296,162.296,0)
bs(705.89,162.296,0)
lw(3.25)
ld((1, 1))
la2([( (-4.0, 3.0), (2.0, 0.0), (-4.0, -3.0), (-4.0, 3.0) ], 1))
b()
bs(705.89,100.083,0)
bs(744.472,100.083,0)
lp((0.392,0.584,0.929))
lw(3.25)
ld((1, 1))
la2([( (-4.0, 3.0), (2.0, 0.0), (-4.0, -3.0), (-4.0, 3.0) ], 1))
b()
bs(705.89,131.189,0)
bs(744.472,131.189,0)
fp((0,0,0))
le()
lw(1)
Fn('Helvetica')
Fs(14)
style('Text')
txt('execute/access',(0.31891,0,0,0.280771,726.951,87.3768),1,1)
fp((0,0,0))
le()
lw(1)
Fn('Helvetica')

```

```

Fs(14)
style('Text')
txt('closely linked',(0.31891,0,0,0.280771,724.715,149.589),1,1)
fp((0,0,0))
le()
lw(1)
Fn('Helvetica')
Fs(14)
style('Text')
txt('Assuan protocol',(0.31891,0,0,0.280771,728.535,118.483),1,1)
G_()
lw(1)
r(56.6929,0,0,-92.126,701.575,170.079)
G_()
lp((0.392,0.584,0.929))
lw(3.25)
ld((1, 1))
la2([( (-4.0, 3.0), (2.0, 0.0), (-4.0, -3.0), (-4.0, 3.0) ], 1))
b()
bs(248.031,325.984,0)
bs(248.031,297.638,0)
bs(538.583,297.638,0)
bs(538.583,340.157,0)
bs(566.929,340.157,0)
lp((0.392,0.584,0.929))
lw(3.25)
ld((1, 1))
la2([( (-4.0, 3.0), (2.0, 0.0), (-4.0, -3.0), (-4.0, 3.0) ], 1))
b()
bs(375.591,325.984,0)
bs(375.591,304.724,0)
bs(531.496,304.724,0)
bs(531.496,347.244,0)
bs(566.929,347.244,0)
guidelayer('Guide Lines',1,0,0,1,(0,0,1))
grid((0,0,7.08661,7.08661),1,(0,0,1),'Grid')
2011-12-02 Werner Koch <wk@g10code.com>

```

NB: ChangeLog files are no longer manually maintained. Starting on December 1st, 2011 we put change information only in the GIT commit log, and generate a top-level ChangeLog file from logs at "make dist". See doc/HACKING for details.

2011-10-25 Marcus Brinkmann <marcus@g10code.com>

- * Makefile.am: Remove build rules for libpgme-pth.
- * pgme.m4: Remove support for libpgme-pth.

2011-05-26 Marcus Brinkmann <marcus@g10code.com>

- * decrypt.c (gpgme_op_decrypt_start, gpgme_op_decrypt): Check CTX.
- * decrypt-verify.c (gpgme_op_decrypt_verify_start)
(gpgme_op_decrypt_verify): Likewise.
- * delete.c (gpgme_op_delete_start, gpgme_op_delete): Likewise.
- * edit.c (gpgme_op_edit_start, gpgme_op_edit)
(gpgme_op_card_edit_start, gpgme_op_card_edit): Likewise.
- * encrypt.c (gpgme_op_encrypt_start, gpgme_op_encrypt): Likewise.
- * encrypt-sign.c (gpgme_op_encrypt_sign_start)
(gpgme_op_encrypt_sign): Likewise.
- * export.c (gpgme_op_export_start, gpgme_op_export)
(gpgme_op_export_ext_start, gpgme_op_export_ext)
(gpgme_op_export_keys_start, gpgme_op_export_keys): Likewise.
- * genkey.c (gpgme_op_genkey_start, gpgme_op_genkey): Likewise.
- * getauditlog.c (gpgme_op_getauditlog_start)
(gpgme_op_getauditlog): Likewise.
- * gpgconf.c (gpgme_op_conf_load, gpgme_op_conf_save): Likewise.
- * import.c (gpgme_op_import_start, gpgme_op_import_keys_start)
(gpgme_op_import_keys, gpgme_op_import): Likewise.
- * keylist.c (gpgme_op_keylist_start, gpgme_op_keylist_ext_start):
Likewise.
- * opassuan.c (gpgme_op_assuan_transact_start)
(gpgme_op_assuan_transact_ext): Likewise.
- * passwd.c (gpgme_op_passwd_start, gpgme_op_passwd): Likewise.
- * sign.c (gpgme_op_sign_start, gpgme_op_sign): Likewise.
- * trustlist.c (gpgme_op_trustlist_start)
(gpgme_op_trustlist_next): Likewise.
- * verify.c (gpgme_op_verify_start, gpgme_get_sig_key): Likewise.
- * op-support.c (_gpgme_op_data_lookup): Likewise.
- * vfs-create.c (gpgme_op_vfs_transact, gpgme_op_vfs_create): Likewise.
- * vfs-mount.c (gpgme_op_vfs_mount, gpgme_op_vfs_transact): Likewise.
- * gpgme.c (gpgme_set_protocol)
(gpgme_set_sub_protocol)
(gpgme_set_armor, gpgme_set_include_certs)
(gpgme_set_keylist_mode, gpgme_set_passphrase_cb)
(gpgme_set_progress_cb, gpgme_set_io_cbs, gpgme_set_locale)
(gpgme_ctx_set_engine_info, gpgme_sig_notation_clear): Likewise.
- * gpgme.c (gpgme_new): Check for valid R_CTX.
(gpgme_cancel, gpgme_cancel_async, gpgme_release): Likewise.

2011-04-06 Werner Koch <wk@g10code.com>

- * gpgme-config.in: Add option --host. Change options --cflags and --libs to collapse duplicate include and lib dirs. Try to put extra libs at the end.
- * gpgme.h.in: Use INSERT__TYPEDEFS_FOR_GPGME_H to include platform

specific typedefs.

2011-02-03 Werner Koch <wk@g10code.com>

- * extra-stati.h: New.
- * mkstatus: Extend to also process extra-stati.h
- * Makefile.am (main_sources): Add extra-stati.h (status-table.h): Depend on extra-stati.h and adjust rule.

2011-02-03 Marcus Brinkmann <marcus@g10code.com>

- * w32-io.c (_gpgme_io_socket): Return fd, not res.

2011-02-02 Marcus Brinkmann <mb@g10code.com>

- * assuan-support.c (my_socket, my_connect): New functions. (_gpgme_assuan_system_hooks): Add my_Socket, my_connect.
- * priv-io.h (_gpgme_io_socket): New prototype.
- * w32-io.c (pid_to_handle, handle_to_oid, fd_to_handle): Remove macros. (is_socket): Remove function. (_gpgme_io_spawn) [HAVE_W32CE_SYSTEM]: Remove some dead code. (_gpgme_io_spawn): Translate handles before DuplicateHandle them.

2011-02-02 Marcus Brinkmann <mb@g10code.com>

- * w32-util.c (mkstemp): Don't use CreateFile instead of open (the function is not used on Windows CE, and the callers were not adjusted).

2011-01-21 Marcus Brinkmann <mb@g10code.com>

- * engine-gpgconf.c (_gpgme_conf_opt_change): Fix the case that is not self-assignment.

2010-12-08 Werner Koch <wk@g10code.com>

- * gpgme-tool.c (strcpy_escaped_plus): New. (DIM, xtoi_1, xtoi_2): New. (cmd_keylist): Allow for multiple patterns.

2010-11-23 Marcus Brinkmann <mb@g10code.com>

- * w32-io.c (create_reader, create_writer): Use small stack size on Windows CE.

2010-11-23 Marcus Brinkmann <mb@g10code.com>

- * gpgme.h.in (gpgme_conf_arg_new): Make VALUE arg const void *.

* gpgconf.c (_gpgme_conf_arg_new): Likewise.
(gpgme_conf_arg_new): Likewise.
* engine-gpgconf.c (_gpgme_conf_arg_new): Likewise.
(gpgconf_write): Remove debug hack.

2010-11-19 Marcus Brinkmann <mb@g10code.com>

* engine-gpgconf.c (_gpgme_conf_opt_change): Support self-assignment. Requested by Marc Mutz.

2010-11-17 Marcus Brinkmann <mb@g10code.com>

* vasprintf.c (int_vasprintf) [HAVE_W32CE_SYSTEM]: Just use a fixed size buffer, as va_copy is not easy to fake.

2010-11-15 Marcus Brinkmann <mb@g10code.com>

* w32-ce.h (strcasecmp, strdup) [_MSC_VER]: Define.
* genkey.c, passphrase.c: Include util.h.

* w32-util.c (_gpgme_w32ce_get_debug_envvar): Fix return value.

2010-11-15 Werner Koch <wk@g10code.com>

* data-compat.c (gpgme_data_new_from_filepart)
(gpgme_data_new_from_file) [W32CE && _MSC_VER]: Return not
GPG_ERR_NOT_IMPLEMENTED.

* w32-ce.h (HKEY_PERFORMANCE_DATA, HKEY_CURRENT_CONFIG, _IOLBF)
(abort) [_MSC_VER]: Provide these macros.

* ath.h [W32CE && _MSC_VER]: Include winsock2.h.

* ath.c (ath_read, ath_write) [W32CE && _MSC_VER]: Do not call non-available functions.

2010-11-04 Werner Koch <wk@g10code.com>

* w32-ce.h [_MSC_VER && W32CE]: Undef leave.
* export.c: Include util.h so that we get the above undef.

* memrchr.c: Remove. Used to be a replacement function required by the formerly included assuan code.

2010-11-03 Werner Koch <wk@g10code.com>

* debug.c (_gpgme_debug) [W32CE]: Replace localtime by GetLocalTime.

* signers.c (gpgme_signers_clear): Remove useless return.

Reported by Patrick Spendrin.

* w32-util.c: s/___inline___/GPG_ERR_INLINE/

* setenv.c: Include string.h due to our strerror replacement.

* w32-ce.h (access, bsearch): New macros.

* w32-ce.c (_gpgme_wince_access): New.

(RegQueryValueExA): Change DATA to a void*.

(_gpgme_wince_bsearch): New. Taken from glibc 2.6.

Guard include of sys/stat.h and sys/types.h.

2010-11-02 Werner Koch <wk@g10code.com>

* data-fd.c (read, write, lseek) [W32CE && ! __MINGW32CE__]: New.

Taken from Pedro Alves Public Domain code.

* w32-ce.h (SHGetSpecialFolderPath): Remove our defines and prototypes. We use the system provided prototypes now.

* w32-ce.c: Include shlobj.h

(_WIN32_IE): Define to 0x0400

(CreateFileA): New.

* w32-util.c: Explicitly include windows headers before util.h.

(_gpgme_w32ce_get_debug_envvar): Do not use wchar_t strings for read_w32_registry_string.

(mkstemp): Use CreateFile instead of open.

* w32-io.c (handle_to_fd, fd_tohandle): Add. We need them for W32.

* w32-util.c (_WIN32_IE): Define to 0x0400.

* util.h [W32]: Include windows.h.

* w32-sema.c: Do not include windows.h directly.

* ath.c (ssize_t, pid_t)[_MSC_VER]: Add new types.

* gpgme.c (gpgme_result_ref, gpgme_result_unref): Do not use a void pointer in pointer arithmetic.

* w32-util.c: Include util.h prior to ath.h. Don't include windows.h directly.

(F_OK): Define if not defined.

* w32-ce.c: Include string.h.

(RegQueryValueExA): Use WINAPI modifier to match the declaration.

* vfs-create.c: Include string.h because under W32CE with MSC we get a warning related to our strerror replacement.

* encrypt-sign.c: Include stdlib.h, string.h and errno.h.

* priv-io.h [W32CE]: Include w32-ce.h

* w32-ce.h: Include winsock2.h and ws2tcpip.h.

(_MSV_VER): Remove useless macro.

(pid_t): Add typedef.

Guard all includes of unistd.h and sys/time.h.

2010-10-28 Marcus Brinkmann <marcus@g10code.com>

* opassuan.c (gpgme_op_assuan_transact_ext): Fix uninitialized value use. Reported by Marc Mutz.

2010-10-07 Werner Koch <wk@g10code.com>

* gpgme-tool.c (ARGP_ERR_UNKNOWN): Use EDEADLK if available.

* w32-util.c (_gpgme_w32ce_get_debug_envvar) [W32CE]: New.

* debug.c (debug_init) [W32CE]: Use new function.

2010-09-16 Werner Koch <wk@g10code.com>

* import.c: Include "util.h".

(parse_import): Return GPG_ERR_MISSING_ISSUER_CERT.

* util.h: Add fallback define for GPG_ERR_MISSING_ISSUER_CERT.

* op-support.c: Include "util.h".

(_gpgme_parse_inv_recip): Handle new code 12.

2010-09-02 Marcus Brinkmann <marcus@g10code.de>

* error.c (gpgme_err_code_to_errno): Fix cut and paste bug (thanks to Marc Mutz).

2010-09-01 Marcus Brinkmann <marcus@g10code.de>

* w32-io.c: Revert change from 2009-06-18, as it created a race condition.

2010-08-18 Marcus Brinkmann <marcus@g10code.de>

* gpgme.def: Add gpgme_err_code_from_syserror and gpgme_err_set_errno.

* libgpgme.vers: Likewise.

* gpgme.h.in (gpgme_error_from_errno): Fix return type to gpgme_error_t.

(gpgme_err_code_from_syserror, gpgme_err_set_errno): New prototype.

(gpgme_error_from_syserror): New inline function (why are gpgme_err_make_from_errno and gpgme_error_from_errno not inline functions?).

* error.c (gpgme_error_from_errno): Fix return type to gpgme_error_t.

(gpgme_err_set_errno, gpgme_err_code_from_syserror): New functions.

2010-08-03 Marcus Brinkmann <marcus@g10code.de>

* gpgme-tool.c (result_encrypt_to_xml, result_sign_to_xml)
(result_verify_to_xml, result_import_to_xml)
(result_genkey_to_xml): Check vigorously for null pointers.

* w32-io.c (GPGCEDEV_IOCTL_ASSIGN_RVID): New macro.
(_gpgme_io_spawn): Use ASSIGN_RVID.

2010-06-11 Marcus Brinkmann <marcus@g10code.de>

* w32-io.c (_gpgme_io_spawn): Remove debug printf.

2010-06-10 Marcus Brinkmann <marcus@g10code.de>

* gpgme-tool.c (gpgme_server): Use special hack for Windows CE to
get at stdin and stdout.

* engine-gpgsm.c (gpgsm_new): Translate returned achild_fds back
to child_fds.

* debug.h (TRACE_SUC6): New macro.

* w32-io.c (MAX_SLAFD): New macro.

(fd_table): New static variable.

(new_fd, release_fd): New functions.

(fd_to_handle, handle_to_fd, handle_to_socket): Remove macros.

(MAX_READERS, MAX_WRITERS): Increase to 64.

(notify_table): Increase to MAX_SLAFD.

(struct reader_context_s, struct writer_context_s): Add member
file_sock.

(reader, writer): Use file_hd vs file_sock to decide if socket
operations to use. Remove auto-detect mode.

(create_reader, create_writer): Set file_sock. Unblock pending
thread only if this is a pipe fd.

(_gpgme_io_pipe): Allocate fds from table and return slot indices
instead of windows handles. This allows to properly handle RVIDs.

(_gpgme_io_close): Handle dup'ed file descriptors.

(build_commandline) [HAVE_W32_SYSTEM]: Use RVID from fd table now.

(_gpgme_io_spawn): Use fd table now.

(_gpgme_io_fd2str): Use RVID from fd table now.

(_gpgme_io_dup): Implement using fd table.

(_gpgme_io_socket): Allocate fds from table.

(_gpgme_io_connect): Use fd from table.

* w32-glib-io.c (find_channel): Check that the slot is used.

2010-06-09 Marcus Brinkmann <marcus@g10code.de>

* w32-io.c [HAVE_W32CE_SYSTEM]: Include assuan.h and winioctl.h.
(GPGCEDEV_IOCTL_UNBLOCK) [HAVE_W32CE_SYSTEM]: Define.
(set_synchronize) [HAVE_W32CE_SYSTEM]: Stub it out.
(is_socket): Allow to return -1 for auto-detect (old behaviour).
(is_socket) [HAVE_W32CE_SYSTEM]: Return -1.
(reader): Handle auto-detect case. Handle ctx->stop_me before
checking for EOF.
(destroy_reader) [HAVE_W32CE_SYSTEM]: Unblock a pending reader.
(writer): Handle auto-detect case. Handle ctx->stop_me with
ERROR_BUSY.
(destroy_writer) [HAVE_W32CE_SYSTEM]: Unblock a pending writer.
(_gpgme_io_pipe) [HAVE_W32CE_SYSTEM]: Implement in terms of a
half-pipe.
(build_commandline) [HAVE_W32CE_SYSTEM]: New function.
(_gpgme_io_spawn) [HAVE_W32CE_SYSTEM]: Implement it differently
for this platform.
(_gpgme_io_fd2str) [HAVE_W32CE_SYSTEM]: Implement it for RVIDs.
(_gpgme_io_dup) [HAVE_W32CE_SYSTEM]: Stub it out.

* gpgme-tool.c (result_add_timestamp): Add missing NULL argument.
(result_sign_to_xml): Protect against NULL fingerprint.
(struct server): New members input_fd, input_filename,
input_stream output_fd, output_filename, output_stream,
message_filename, message_stream.
(server_reset_fds): Deallocate those.
(server_parse_fd): New function.
(server_data_obj): Take optional filename argument and direction
argument. Also take new argument to return a filestream that
needs to be closed after destroying the data object.
Change all callers, too.
(input_notify, output_notify): Removed.
(cmd_input, cmd_output): New functions.
(gpgme_server): Do not register input and output notifier.
(register_commands): Use cmd_input and cmd_output.
(cmd_message): Rewritten to use server_parse_fd.
(cmd_delete, cmd_keylist): Fix inverted option check.
(main) [HAVE_W32CE_SYSTEM]: Sleep a bit to work around bug in ssh.

* genkey.c (gpgme_op_genkey): Return err with TRACE_ERR.

2010-05-12 Marcus Brinkmann <marcus@g10code.de>

* conversion.c (_gpgme_timegm) [HAVE_W32_SYSTEM]: New static
function.
(_gpgme_parse_timestamp) [HAVE_W32_SYSTEM]: Use it.

* gpgme-tool.c (main): Protect call to setlocale with
HAVE_SETLOCALE.

* Makefile.am (system_components): Remove custom cppflags from RCCOMPILER (because gpg-error adds -idirafter that makes RC bail. [HAVE_W32CE_SYSTEM]: Add w32-ce.h and w32-ce.c, clear libexec_PROGRAMS.
* w32-ce.h, w32-ce.c: New files.

* priv-io.h: Include <sys/types.h>
* util.h: Likewise.

2010-05-11 Marcus Brinkmann <marcus@g10code.de>

* w32-util.c: Include ath.h
(HAVE_ALLOW_SET_FOREGROUND_WINDOW) [!HAVE_W32CE_SYSTEM]: Define it.
(RTLD_LAZY, dlopen, dlsym, dlclose) [!HAVE_ALLOW_SET_FOREGROUND_WINDOW]: Don't define anymore.
(_gpgme_allow_set_foreground_window) [!HAVE_ALLOW_SET_FOREGROUND_WINDOW]: Make it a stub.
(read_w32_registry_string): Use FooA variants of Windows functions instead of Foo (which dispatches depending on UNICODE).
[!HAVE_W32CE_SYSTEM]: Don't check environment.
(w32_shgetfolderpath): Remove.
(find_program_at_standard_place): Call SHGetSpecialFolderPath (which is available on all Windows systems and also Windows CE).
(mkstemp): Use ath_self instead of getpid.
(_gpgme_mkstemp): Use GetTempPathA instead of GetTempPath.

* gpgme.h.in: Use _WIN32 instead of _MSC_VER. Include time.h for time_t.

2010-05-07 Marcus Brinkmann <marcus@g10code.de>

* engine-g13.c, gpgme.c, engine-gpgsm.c, engine-gpg.c, op-support.c, engine-assuan.c, gpgme-tool.c: Include <locale.h> only if available with HAVE_LOCALE_H and conditionalize use of LC_CTYPE on its definition.
* engine-gpgconf.c: Do not include <locale.h>.

* engine-gpgsm.c (gpgsm_new, start): Cast between int and assuan_fd_t.
* assuan-support.c (my_pipe, my_close, my_read, my_write): Likewise.
* gpgme-tool.c (server_data_obj, server_reset_fds, gpgme_server), (my_recvmsg, my_sendmsg, my_spawn): Likewise.
* engine-assuan.c (start): Likewise.
* engine-g13.c (start): Likewise.

2010-05-06 Marcus Brinkmann <marcus@g10code.de>

* w32-glib-io.c, w32-io.c, w32-qt-io.cpp, w32-sema.c, w32-util.c:
Do not include <signal.h>.

* sign.c, data-user.c, conversion.c, debug.c, verify.c, data.c,
decrypt.c, delete.c, assuan-support.c, import.c, engine-gpgsm.c,
data-mem.c, op-support.c, w32-io.c, w32-util.c, data-compat.c: Use
gpg_error_from_syserror instead of gpg_error_from_errno, and use
gpg_err_set_errno to set error number.

* setenv.c: Include <gpg-error.h> and define __set_errno to use
gpg_err_set_errno.

* gpgme-tool.c (ARGP_ERR_UNKNOWN): Define to EDEADLOCK (which is
mapped in Windows CE) instead of E2BIG (which is not).

(gt_import_keys): Initialize err.

2010-04-19 Marcus Brinkmann <marcus@g10code.de>

* assuan-support.c (my_spawn): Cast to avoid warning.

* engine-g13.c (g13_new): Make ARGV array of pointer to const
char.

(g13_assuan_simple_command) [!USE_DESCRIPTOR_FUNCTION]: Don't define.

* ops.h (_gpgme_key_append_name): Same in prototype.

* key.c (_gpgme_key_append_name): Make SRC argument pointer to
const char.

* posix-util.c (_gpgme_get_uiserver_socket_path): Make HOMEDIR
const.

* vfs-mount.c (gpgme_op_vfs_transact_start): Never define this
potentially useful but currently unused function.

* vfs-create.c (gpgme_op_vfs_transact_start): Likewise.

2010-04-16 Werner Koch <wk@g10code.com>

* w32-io.c (is_socket): New.

(reader, writer): Use it to figure out the API to use.

2010-03-15 Werner Koch <wk@g10code.com>

* gpgme.h.in: Add autoconf template to set generated file to
read-only in an emacs buffer.

2010-03-12 Werner Koch <wk@g10code.com>

* gpgme.h.in (GPGME_STATUS_SUCCESS): Use the right file for the
change; see below.

* passwd.c (op_data_t): New.

(passwd_start): Setup OPD.

(passwd_status_handler): Return GPG_ERR_NOT_SUPPORTED if needed.

* context.h (OPDATA_PASSWD): New.

* gpgme.h (GPGME_STATUS_SUCCESS): New.

2010-03-09 Werner Koch <wk@g10code.com>

* engine-gpgsm.c (gpgsm_keylist): Try to start the agent.

2010-02-17 Werner Koch <wk@g10code.com>

* posix-io.c (notify_table): Change implementation.

(notify_table_item_t, notify_table_size, notify_table_lock): New.

(_gpgme_io_close, _gpgme_io_set_close_notify): Adjust for new implementation.

2010-02-16 Werner Koch <wk@g10code.com>

* gpgme-tool.c (spacep, has_option, skip_options): New.

(cmd_export): Implement option --minimal.

* gpgme.h.in (GPGME_EXPORT_MODE_MINIMAL): New.

* export.c (export_start, export_ext_start): Implement it.

* engine-gpg.c (export_common): Ditto.

2010-01-25 Werner Koch <wk@g10code.com>

* w32-io.c (_gpgme_io_connect): Fix return code check to make it work.

* version.c (do_subsystem_inits): Remove superfluous second WSASStartup.

2010-01-22 Werner Koch <wk@g10code.com>

* w32-io.c (writer): Try to use send first.

(reader): Try to use recv first.

2010-01-08 Werner Koch <wk@g10code.com>

* engine-gpg.c (gpg_passwd): New.

(_gpgme_engine_ops_gpg): Register.

* passwd.c (parse_error): New.

(passwd_status_handler): Use it.

2010-01-07 Marcus Brinkmann <marcus@g10code.de>

* gpgme-tool.c (result_xml_write_cb_t, struct result_xml_state):
New types.

(MAX_TAGS): New macro.

(result_init, result_xml_indent, result_xml_tag_start)
(result_xml_tag_data, result_xml_tag_end, result_add_error)
(result_add_pubkey_algo, result_add_hash_algo, result_add_keyid)
(result_add_fpr, result_add_timestamp, result_add_sig_mode)
(result_add_value, result_add_string, result_encrypt_to_xml)
(result_decrypt_to_xml, result_sign_to_xml)
(result_verify_to_xml, result_import_to_xml)
(result_genkey_to_xml, result_keylist_to_xml)
(result_vfs_mount_to_xml): New functions.
(gt_result): Rewritten.

2010-01-05 Werner Koch <wk@g10code.com>

* gpgme-tool.c (gt_passwd, cmd_passwd): New.
(register_commands): Register.

* gpgme.h.in (gpgme_op_passwd_start, gpgme_op_passwd): New.
* libgpgme.vers, gpgme.def: Add new functions.
* passwd.c: New.
* Makefile.am (main_sources): Add passwd.c
* engine.c, engine.h (_gpgme_engine_op_passwd): New.
* engine-backend.h (struct engine_ops): Add PASSWD.
* engine-gpgsm.c (gpgsm_passwd): New.
(_gpgme_engine_ops_gpgsm): Register.
(gpgsm_reset): Reset only if we have a connection.

* gpgme.h.in (GPGME_PK_ECDSA, GPGME_PK_ECDH): New.
* gpgme.c (gpgme_pubkey_algo_name): Add them.

2009-12-22 Marcus Brinkmann <marcus@g10code.de>

* debug.c: Test for TLS, not __GNU__

2009-12-15 Marcus Brinkmann <marcus@g10code.de>

* assuan-support.c (my_spawn): Calloc, not malloc, the fd_items.

2009-12-10 Werner Koch <wk@g10code.com>

* debug.c (debug_init): Test on sgid process.

2009-12-08 Marcus Brinkmann <marcus@g10code.de>

* Makefile.am (LTRCCOMPILER): Refactor with ...
(RCCOMPILER): ... this new macro.
(SUFFIXES): Add .lo.
(gpgme_res_ldflag): Removed.
(gpgme_res): Use libtool object file name here.

(libpgpme_la_LDFLAGS): Remove gpgme_res_ldflag usage.

(libpgpme_la_LIBADD): Add gpgme_res.

* ath.c (ath_self) [HAVE_W32_SYSTEM]: Fix typo.

2009-12-02 Werner Koch <wk@g10code.com>

* gpgconf.c (gpgme_conf_arg_release): No return in a function returning void. Reported by Wyllys Ingersoll.

2009-12-01 Werner Koch <wk@g10code.com>

* gpgme-tool.c (cmd_getauditlog): Add flag --html.
(hlp_getauditlog): New.

* gpgme-tool.c (GT_GCC_A_SENTINEL, GT_GCC_A_PRINTF): New.
(gt_write_status): Use sentinel.
(argp_error, log_error): Use printf attribute.
(argp_parse): Remove extra argument to argp_error.
(_gt_progress_cb, gt_get_engine_info, gt_get_keylist_mode)
(gt_result): Add NULL arg.

2009-11-26 Marcus Brinkmann <marcus@g10code.de>

* opassuan.c (opassuan_start): Allocate result structure before beginning operation.

2009-11-25 Marcus Brinkmann <marcus@g10code.de>

* gpgme-tool.c (gpgme_server): Use assuan_fd_t and assuan_fdopen on fds.

2009-11-13 <wk@g10code.com>

* sign.c (_gpgme_sign_status_handler): Handle SIG_CREATED_SEEN.
* engine-uiserver.c (uiserver_sign): Make sending SENDER optional.

2009-11-10 Marcus Brinkmann <marcus@g10code.de>

* op-support.c (_gpgme_op_reset): Instead of last change, only set sub protocol if it is not the default.

2009-11-10 Werner Koch <wk@g10code.com>

* op-support.c (_gpgme_op_reset): Ignore GPG_ERR_NOT_IMPLEMENTED while setting the sub protocol.

* engine-uiserver.c (uiserver_new): Pass fdpassing flag to

assuan_socket_connect.

(set_recipients): Replace fingerprint by user id.

* engine-gpgsm.c (set_recipients): Fix non-terminating loop in case of a missing key.

2009-11-10 Marcus Brinkmann <marcus@g10code.de>

* gpgme.c (gpgme_new): Set default sub protocol.

* gpgme-tool.c: Implement get sub protocol.

* gpgme.h.in (gpgme_get_sub_protocol): Add prototype.

* gpgme.def, libgpgme.vers: Add gpgme_get_sub_protocol.

* context.h (struct gpgme_context): New member sub_protocol.

* gpgme.c (gpgme_set_sub_protocol): Set CTX->sub_protocol.

(gpgme_get_sub_protocol): New function.

* op-support.c (_gpgme_op_reset): Set sub protocol.

* Makefile.am (uiserver_components): New variable.

(main_sources): Add it.

* ops.h, key.c (_gpgme_key_append_name): Take CONVERT argument, implement it. Adjust callers.

(gpgme_key_from_uid): New function.

* gpgme.h.in (gpgme_protocol_t): Add GPGME_PROTOCOL_DEFAULT.

(gpgme_encrypt_flags_t): Add GPGME_ENCRYPT_PREPARE, GPGME_ENCRYPT_EXPECT_SIGN.

(gpgme_set_sub_protocol, gpgme_key_from_uid): New functions.

* libgpgme.vers, gpgme.def: Add new functions.

* gpgme.c (gpgme_set_protocol): Add UIServer protocol.

(gpgme_set_sub_protocol): New function.

(gpgme_get_protocol_name): Add UIServer and default protocol.

* assuan-support.c: Return correct error values, implement socketpair for POSIX.

* priv-io.h, posix-io.c, w32-io.c, w32-glib-io.c,

w32-qt-io.cpp (_gpgme_io_spawn): Add ATFORK and ATFORKVALUE arguments. Implement it for POSIX. Adjust all callers.

* engine.h, engine-backend.h (_gpgme_engine_set_protocol)

(_gpgme_engine_op_decrypt_verify): New prototypes. Adjust all users.

* engine.c (engine_ops, gpgme_get_engine_info): Add UIServer engine.

(_gpgme_engine_set_protocol, _gpgme_engine_op_decrypt_verify): New function.

* decrypt-verify.c (decrypt_verify_start): Call _gpgme_engine_op_decrypt_verify.

* util.h, posix-util.c,

w32-util.c (_gpgme_get_uiserver_socket_path): New function.

* engine-gpgsm.c (gpgsm_set_fd): Fix _gpgme_io_pipe invocation.

- * gpgme-tool.c: Some support for UI Server protocol.
- * engine-uiserver.c: New file.

2009-11-09 Marcus Brinkmann <marcus@g10code.de>

- * engine-gpgsm.c (gpgsm_new): Close server side FDs.

2009-11-06 Marcus Brinkmann <marcus@g10code.de>

- * gpgme-tool.c (struct gpgme_tool): New members write_data and write_data_hook.
- (gt_write_data): New function.
- (gt_result): Output vfs_mount result.
- (server_write_data): New function.
- (gpgme_server): Initialize write_data members.

2009-11-05 Marcus Brinkmann <marcus@g10code.de>

- * engine-g13.c (struct engine_g13): Remove members RESULT_CB and RESULT_CB_VALUE.
- (g13_assuan_simple_command, status_handler): Don't use those anymore.
- (g13_transact): Remove them from argument list, too.
- * vfs-mount.c (_gpgme_vfs_mount_status_handler): New function.
- (_gpgme_op_vfs_mount): Pass it to transact.

- * engine-assuan.c (lass_new): Update use of assuan_socket_connect.
- * engine-gpgsm.c (gpgsm_new): Update use of assuan_pipe_connect.
- * engine-g13.c (g13_new): Likewise.

- * priv-io.h (IOspawn_FLAG_NOCLOSE): New flag.
- * w32-io.c (_gpgme_io_spawn): Implement this flag.
- * posix-io.c (_gpgme_io_spawn): Likewise.
- * w32-glib-io.c (_gpgme_io_spawn): Likewise.
- * assuan-support.c (my_spawn): Set this flag.

- * decrypt.c (gpgme_op_decrypt_start): Fix use of debug macro.
- * decrypt-verify.c (gpgme_op_decrypt_verify_start): Likewise.
- * delete.c (gpgme_op_delete_start): Likewise.
- * edit.c (gpgme_op_edit_start, gpgme_op_card_edit_start): Likewise.
- * encrypt.c (gpgme_op_encrypt_start): Likewise.
- * encrypt-sign.c (gpgme_op_encrypt_sign_start): Likewise.
- * export.c (gpgme_op_export_start, gpgme_op_export_ext_start) (gpgme_op_export_keys_start, gpgme_op_export_keys): Likewise.
- * genkey.c (gpgme_op_genkey_start): Likewise.
- * getauditlog.c (gpgme_op_getauditlog_start): Likewise.
- * import.c (gpgme_op_import_start, gpgme_op_import_keys_start): Likewise.

- * opassuan.c (gpgme_op_assuan_transact_start): Likewise.
- * sign.c (gpgme_op_sign_start): Likewise.
- * verify.c (gpgme_op_verify_start): Likewise.
- * vfs-create.c (gpgme_op_vfs_create): Likewise.
- * vfs-mount.c (gpgme_op_vfs_mount): Likewise.

2009-11-04 Marcus Brinkmann <marcus@g10code.de>

- * ath.h (ath_self): New prototype. Include <stdint.h>
- * ath.c, ath-pth.c, ath-pthread.c (ath_self): New function.
- * debug.h: Rewrite most macros to beautify debug output.
- (_gpgme_debug_buffer): Remove tagname and tag argument.
- (_gpgme_debug_frame_begin, _gpgme_debug_frame_end): New prototypes.
- * debug.c: Include <time.h>. Don't include assuan.h.
- (frame_nr, FRAME_NR): New thread-specific variable and macro.
- (debug_init): Do not initialize assuan. Call _gpgme_debug after initialization instead using printf directly.
- (_gpgme_debug): Do not call debug_init (we now ensure proper initialization by user). Add timestamp and thread/process ID.
- (_gpgme_debug_buffer): Do not take tagname and tag argument.
- (_gpgme_debug_frame_begin, _gpgme_debug_frame_end): New functions.
- * version.c (gpgme_check_version_internal, gpgme_check_version):
- Fix debug string. Do not initialize assuan.
- * posix-io.c (get_max_fds): Use 0 not NULL (nicer debug output).

2009-11-04 Werner Koch <wk@g10code.com>

- * gpgme-tool.c (register_commands): Add HELP feature.

2009-11-03 Werner Koch <wk@g10code.com>

- * gpgme.h.in (GPGME_PROTOCOL_UISERVER): New.

2009-11-03 Marcus Brinkmann <marcus@g10code.de>

- * Makefile.am (main_sources): Change g13.c to vfs-mount.c. Add vfs-create.c
- * vfs-create.c: New file.
- * g13.c: Renamed to ...
- * vfs-mount.c: ... this new file.
- * gpgme.h.in (gpgme_op_vfs_create): New prototype.
- * gpgme.def, libgpgme.vers: Add gpgme_op_vfs_create.
- * gpgme-tool.c (gt_vfs_create, cmd_vfs_create): New functions.
- (register_commands): Add VFS_CREATE and CREAET.

2009-11-02 Marcus Brinkmann <marcus@g10code.de>

- * debug.h (_gpgme_debug_buffer): Make TAG argument const const.

- * debug.c (_gpgme_debug_buffer): Likewise.
- * gpgme-tool.c (input_notify, output_notify): Adjust type to new assuan interface.
- * decrypt.c (gpgme_op_decrypt_result): Remove unused variable.
- * opassuan.c (gpgme_op_assuan_transact): Fix return value.

2009-10-30 Marcus Brinkmann <marcus@g10code.de>

- * Makefile.am (noinst_PROGRAMS): New target gpgme-tool.
- (gpgme_tool_LDADD): New variable.
- * gpgme-tool.c: New file.
- * ops.h (_gpgme_sig_notation_clearm _gpgme_signers_clear): New prototypes.
- * gpgme.c (gpgme_set_protocol): Allow GPGME_PROTOCOL_GPGCONF (when had that gone missing?).
- (_gpgme_sig_notation_clear): New function without debug output.
- (gpgme_release): Call it and _gpgme_signers_clear.
- * signers.c (_gpgme_signers_clear): New function without debug output.
- * g13.c (gpgme_op_vfs_mount): Add debug output.
- * assuan-support.c (my_spawn): Allow fd_child_list to be NULL.
- * conversion.c (_gpgme_encode_percent_string): Fix infinite loop.
- * debug.h: Put tag in front of debug lines, should make for nicer output.
- * engine-assuan.c (lass_new): Use our new system hooks for libassuan.
- * engine-g13.c (g13_new): Remove redundant assuan context allocation.
- * version.c (gpgme_check_version_internal): Delay debug output until after gpgme_check_version was called.

2009-10-28 Marcus Brinkmann <marcus@g10code.de>

- * signers.c, encrypt-sign.c, encrypt.c, delete.c, keylist.c, edit.c, import.c, export.c: Fix last change in debug output.

2009-10-27 Marcus Brinkmann <marcus@g10code.de>

- * edit.c (gpgme_op_edit_start, gpgme_op_edit)
- (gpgme_op_card_edit_start, gpgme_op_card_edit): Add debug output.
- * encrypt-sign.c (gpgme_op_encrypt_sign_start)
- (gpgme_op_encrypt_sign): Likewise.
- * encrypt.c (gpgme_op_encrypt_start, gpgme_op_encrypt)
- (gpgme_op_encrypt_result): Likewise.
- * export.c (gpgme_op_export_start, gpgme_op_export)
- (gpgme_op_export_ext_start, gpgme_op_export_ext)
- (gpgme_op_export_keys_start, gpgme_op_export_keys): Likewise.
- * genkey.c (gpgme_op_genkey_start, gpgme_op_genkey)
- (gpgme_op_genkey_result): Likewise.
- * getauditlog.c (gpgme_op_getauditlog_start)
- (gpgme_op_getauditlog): Likewise.

- * import.c (gpgme_op_import_result, gpgme_op_import_start)
(gpgme_op_import): Likewise.
- * keylist.c (gpgme_op_keylist_result, keylist_colon_handler)
(gpgme_op_keylist_start, gpgme_op_keylist_ext_start)
(gpgme_op_keylist_next, gpgme_op_keylist_end, gpgme_get_key): Likewise.
- * opassuan.c (gpgme_op_assuan_transact_start)
(gpgme_op_assuan_transact_ext, gpgme_op_assuan_result)
(gpgme_op_assuan_transact): Likewise.
- * signers.c (gpgme_signers_add, gpgme_signers_clear): Likewise.
- * trustlist.c (gpgme_op_trustlist_start)
(gpgme_op_trustlist_next, gpgme_op_trustlist_end): Likewise.
- * verify.c (gpgme_op_verify_start, gpgme_op_verify)
(gpgme_op_verify_result): Likewise.

2009-10-26 Marcus Brinkmann <marcus@g10code.de>

- * gpgme.h.in (struct gpgme_io_event_done_data)
(gpgme_io_event_done_data_t): New types.
- (struct _gpgme_op_assuan_result): Deprecate the err member.
- (gpgme_op_assuan_result): Deprecate (for now).
- (gpgme_op_assuan_transact_ext): New prototype.
- (gpgme_op_assuan_transact): Deprecate.
- (struct _gpgme_op_g13_result): Replace with ...
- (struct _gpgme_op_vfs_mount_result): ... this.
- (gpgme_op_g13_mount): Replace with ...
- (gpgme_op_vfs_mount): ... this.
- * gpgme.def (gpgme_op_assuan_transact_ext, gpgme_wait_ext)
(gpgme_op_vfs_mount_result, gpgme_op_vfs_mount): New.
- (gpgme_op_g13_mount): Remove.
- * libgpgme.vers: Likewise.
- * engine-backend.h (struct engine_ops): Remove RESULT_CB and
RESULT_CB_VALUE args in opassuan_transact member. Add CANCEL_OP
member.
- * ops.h (_gpgme_cancel_with_err, _gpgme_wait_on_condition): Add
OP_ERR argument.
- (_gpgme_wait_one_ext): New prototype.
- * context.h (ctx_op_data_id_t): Add OPDATA_VFS_MOUNT.
- * engine-g13.c (g13_cancel_op): New function.
- (parse_status): Remove declaration.
- (g13_assuan_simple_command): Do nothing with status lines for now.
- (status_handler): Update opaque value access.
- (_gpgme_engine_ops_g13): Add new cancel_op member.
- * gpgme.c (_gpgme_cancel_with_err): Add new parameter OP_ERR.
Handle operational errors.
- (gpgme_cancel, gpgme_io_read, gpgme_io_write): Add debug output.
- * data.c (_gpgme_data_inbound_handler)
(_gpgme_data_outbound_handler): Adjust opaque value access.
- * engine-gpg.c (command_handler, status_handler)

(colon_line_handler): Likewise.

* engine-gpgsm.c (status_handler): Likewise.

* engine-gpg.c (_gpgme_engine_ops_gpg): Add cancel_op member.

* engine-gpgsm.c (_gpgme_engine_ops_gpgsm): Likewise.

* g13.c: Rewritten (and will be rewritten again).

* engine.h (_gpgme_engine_op_assuan_transact): Remove result_cb and result_cb_value parameters from prototype.

(_gpgme_engine_cancel_op): New prototype.

* engine.c (engine_ops) [! ENABLE_ASSUAN]: Add missing comma.

(_gpgme_engine_op_assuan_transact): Remove result_cb and result_cb_value parameter.

(_gpgme_engine_cancel_op): New function.

* wait.h (_gpgme_run_io_cb): Add new argument OP_ERR.

(struct io_cb_data): New struct to pass opaque data and get a op_err return value. Needed because we can't modify I/O callback handler signature because it is exposed to the user.

* wait.c (_gpgme_run_io_cb): Add OP_ERR parameter. Handle operational errors.

* wait-user.c (_gpgme_user_io_cb_handler): Handle operational errors.

* wait-private.c (_gpgme_wait_on_condition): New argument to retrieve the operational result. Handle operational errors in session based protocols.

(_gpgme_wait_one_ext): New function.

(_gpgme_wait_one): Pass argument in invocation of _gpgme_wait_on_condition.

* wait-global.c (struct ctx_list_item): Add member OP_ERR.

(ctx_done): New argument OP_ERR.

(ctx_wait): New argument OP_ERR.

(gpgme_wait_ext): New function based on gpgme_wait but handling operational errors.

(gpgme_wait): Implement in term of gpgme_wait_ext.

* keylist.c (gpgme_op_keylist_next): Pass argument in invocation of _gpgme_wait_on_condition.

* trustlist.c (gpgme_op_trustlist_next): Pass argument in invocation of _gpgme_wait_on_condition.

* engine-assuan.c (struct engine_llas): Replace members RESULT_CB and RESULT_CB_VALUE by LAST_OP_ERR.

(_gpgme_engine_assuan_last_op_err): Add this hack function.

(llas_cancel_op): New function.

(_gpgme_engine_llas_ops): Add cancel_op member.

(llas_status_handler): Update opaque value access.

(llas_transact): Remove RESULT_CB and RESULT_CB_VALUE arguments.

* opassuan.c: Move compat hacks to the end of file.

(opassuan_start): Do not set OPD->result.err.

Do not pass RESULT_Cb and CTX to _gpgme_engine_op_assuan_transact.

(gpgme_op_assuan_transact_ext): New function.

- * debug.h (DEBUG_GLOBAL): New debug level.
- * conversion.c (gnupg_errors, _gpgme_map_gnupg_error): Removed.
- * data-user.c (gpgme_data_new_from_cbs): Add debug output.
- * data-fd.c (gpgme_data_new_from_fd): Likewise.
- * data-stream.c (gpgme_data_new_from_stream): Likewise.
- * decrypt.c (gpgme_op_decrypt_result, gpgme_op_decrypt_start) (gpgme_op_decrypt): Likewise.
- * delete.c (gpgme_op_delete_start, gpgme_op_delete): Likewise.
- * decrypt-verify.c (gpgme_op_decrypt_verify_start) (gpgme_op_decrypt_verify): Likewise.
- * sign.c (gpgme_op_sign_result): Fix debug message.
- * data-mem.c (gpgme_data_new): Improve debug output.
- * verify.c (parse_trust): Use atoi instead of _gpgme_map_gnupg_error.
- * decrypt.c (_gpgme_decrypt_status_handler): Likewise.

2009-10-22 Marcus Brinkmann <marcus@g10code.de>

- * Makefile.am: Remove @NETLIBS@ from LIBADDs. (g13_components): New variable. (main_sources): Add \$(g13_components).
- * g13.c, engine-g13.c: New files.
- * engine.c (engine_ops): Check for assuan for assuan engine, add g13 engine.
- * util.h (_gpgme_get_g13_path, _gpgme_encode_percent_string): New prototypes.
- * conversion.c (_gpgme_encode_percent_string): New function.
- * gpgme.h.in (gpgme_protocol_t): Add GPGME_PROTOCOL_G13. (struct_gpgme_op_g13_result, gpgme_g13_result_t): New types. (gpgme_op_g13_mount): New function.
- * gpgme.def, libgpgme.vers: Add gpgme_op_g13_mount.
- * gpgme.c (gpgme_set_protocol): Allow GPGME_PROTOCOL_G13. (gpgme_get_protocol_name): Add GPGME_PROTOCOL_G13.
- * posix-util.c (_gpgme_get_g13_path): New function.
- * w32-util.c (_gpgme_get_g13_path): New function.
- * engine-backend.h (_gpgme_engine_ops_g13): New declaration.

2009-10-20 Marcus Brinkmann <marcus@g10code.de>

- * gpgme-config.in (netlibs): Remove. (assuan_cflags, assuan_libs): Add.
- * Makefile.am (assuan_cppflags, assuan_libobjs): Removed. (gpgsm_components): Move engine-assuan.c to ... (assuan_components): ... this new variable. (main_sources): Add this new variable. (AM_CPPFLAGS): Remove \$(assuan_cppflags). (AM_CFLAGS): Add @LIBASSUAN_CFLAGS@.

(libgpgme_la_DEPENDENCIES, libgpgme_ptl_la_DEPENDENCIES)
(libgpgme_glib_la_DEPENDENCIES, libgpgme_qt_la_DEPENDENCIES)
(libgpgme_pthread_la_DEPENDENCIES): Remove \$(assuan_libobjs).
(libgpgme_la_LIBADD, libgpgme_ptl_la_LIBADD)
(libgpgme_glib_la_LIBADD, libgpgme_qt_la_LIBADD))
(libgpgme_pthread_la_LIBADD): Replace \$(assuan_libobjs) by
@LIBASSUAN_LIBS@.

* priv-io.h [!HAVE_W32_SYSTEM]: Declare _gpgme_io_recvmsg,
_gpgme_io_sendmsg, _gpgme_io_waitpid.

* engine-backend.h: Define with [ENABLE_ASSUAN] instead
of [ENABLE_GPGSM].

* posix-io.c (_gpgme_io_waitpid): Make non-static.

* util.h (ENABLE_ASSUAN): Declare _gpgme_assuan_system_hooks,
_gpgme_assuan_malloc_hooks, _gpgme_assuan_log_cb.

* engine-gpgsm.c: Don't map assuan error codes. Use
assuan_release instead of assuan_disconnect.

(map_assuan_error): Remove function.

(gpgsm_new): Use new assuan context interface.

* engine-assuan.c: Use assuan_release instead of
assuan_disconnect.

(lass_new): Use new assuan context interface.

2009-10-07 <wk@g10code.com>

* priv-io.h [W32]: Include windows.h instead of sys/socket.h.

2009-08-06 Werner Koch <wk@g10code.com>

* op-support.c (_gpgme_parse_inv_recp): Allow for no fingerprint.

* engine-gpgsm.c (gpgsm_sign): Hook up the status func for the
SIGNER command.

* gpgme.h.in (GPGME_STATUS_INV_SGMR, GPGME_STATUS_NO_SGMR): New.

* sign.c (op_data_t): Add fields IGNORE_INV_RECP and INV_SGMR_SEEN.

(_gpgme_op_sign_init_result): Factor code out to ...

(sign_init_result): .. new. Init new fields.

(sign_start): Use sign_init_result.

(_gpgme_sign_status_handler): Take care of the new INV_SGMR.

Return an error if no signature has been created.

2009-07-07 Werner Koch <wk@g10code.com>

* engine-gpgsm.c (struct engine_gpgsm): Add fields
input_helper_data and input_helper_memory.

(close_notify_handler): Release these new fields.

(gpgsm_import): Implement the keyarray feature.

* engine-gpg.c (gpg_import): Actually return GPG_ERR_INV_VALUE.

* engine-gpgsm.c (gpgsm_import): Return an error for unknown data encodings.

2009-06-22 Marcus Brinkmann <marcus@g10code.de>

* debug.h: Everywhere, use %p instead of 0x%x to print pointer.

[HAVE_STDINT_H]: Include <stdint.h>.

(_TRACE, TRACE, TRACE0, TRACE1, TRACE2, TRACE3, TRACE6): Cast tag to (uintptr_t) before casting it to (void*) to silence GCC warning.

* gpgme.h.in (_GPGME_DEPRECATED_OUTSIDE_GPGME): New macro.

* sign.c (_GPGME_IN_GPGME): Define it.

* keylist.c (_GPGME_IN_GPGME): Define it.

* debug.c (_gpgme_debug_begin, _gpgme_debug_add): Handle error in vasprintf and asprintf.

* priv-io.h: Include <sys/socket.h>. Declare _gpgme_io_connect.

2009-06-18 Marcus Brinkmann <marcus@g10code.de>

* gpgme.h.in (GPGME_CONF_PATHNAME): Revert last change, it's back! (GPA still uses it...).

* gpgme.def: Fix stupid typo.

* w32-io.c (_gpgme_io_pipe): Add missing declaration.

* gpgme.h.in (GPGME_CONF_PATHNAME): Remove obsolete macro.

* w32-io.c (_gpgme_io_pipe): Allocate reader/writer thread right away.

(_gpgme_io_read, _gpgme_io_write, _gpgme_io_select)

(_gpgme_io_dup): Never allocate threads here.

(find_writer, find_reader): Check return value of thread creation function.

* context.h (CTX_OP_DATA_MAGIC): New macro.

(struct ctx_op_data): New member MAGIC.

* op-support.c (_gpgme_op_data_lookup): Initialize magic.

* gpgme.c (gpgme_result_unref, gpgme_result_ref): Check magic.

2009-06-16 Marcus Brinkmann <marcus@g10code.de>

* gpgme.c (gpgme_result_unref): Hot fix to release a lock.

* gpgme.c (result_ref_lock): New global variable.

(gpgme_result_ref, gpgme_result_unref): use it.

2009-06-16 Werner Koch <wk@g10code.com>

* version.c: Include stdlib.h.

* gpgme.h.in (gpgme_data_encoding_t): Add GPGME_DATA_ENCODING_URL, GPGME_DATA_ENCODING URLESC, GPGME_DATA_ENCODING_URL0.

* data.c (gpgme_data_set_encoding): Adjust for new values.

* engine-gpg.c (string_from_data): New.

(gpg_import): Implement --fetch-key feature.

* gpgme.h.in (gpgme_op_export_keys_start, gpgme_op_export_keys): New.

* gpgme.def, libgpgme.vers: Add them.

* export.c (gpgme_op_export_keys_start, gpgme_op_export_keys): New.

(export_keys_start): New.

* gpgme.h.in (gpgme_export_mode_t, GPGME_EXPORT_MODE_EXTERN): New.

(gpgme_op_export_start, gpgme_op_export, gpgme_op_export_ext_start)

(gpgme_op_export_ext): Change arg RESERVED to MODE of new compatible type.

* export.c (gpgme_export_ext_start, gpgme_op_export)

(gpgme_op_export_ext_start, gpgme_op_export_ext): Ditto.

(export_start): Ditto.

* engine.c (_gpgme_engine_op_export): Ditto.

* engine-backend.h (struct engine_ops): Ditto.

* engine-gpgsm.c (gpgsm_export, gpgsm_export_ext): Ditto.

* engine-gpg.c (gpg_export, gpg_export_ext): Ditto. Implement mode EXTERN.

(gpg_export, gpg_export_ext): Factor common code out to ..

(export_common): .. this.

* gpgme.h.in (gpgme_op_import_keys_start, gpgme_op_import_keys): New.

* gpgme.def, libgpgme.vers: Add them.

* import.c (gpgme_op_import_keys_start, gpgme_op_import_keys): New.

(_gpgme_op_import_keys_start): New.

* engine.c (_gpgme_engine_op_import): Add arg KEYARRAY.

* engine-backend.h (struct engine_ops): Ditto.

* engine-gpgsm.c (gpgsm_import): Ditto. Not functional.

* engine-gpg.c (gpg_import): Ditto. Implement it.

2009-06-15 Marcus Brinkmann <marcus@g10code.de>

* gpgme.h.in (gpgme_result_ref, gpgme_result_unref): Add prototypes.

* gpgme.def, libgpgme.vers (gpgme_result_ref, gpgme_result_unref): Add these.

* context.h (struct ctx_op_data): Add member "references".

- * gpgme.c (gpgme_result_ref, gpgme_result_unref): New functions.
- (_gpgme_release_result): Use gpgme_result_unref.
- * op-support.c (_gpgme_op_data_lookup): Initialize references.

2009-06-12 Werner Koch <wk@g10code.com>

- * gpgme-w32spawn.c (translate_get_from_file): Parse optional spawn flags. Add new arg R_FLAGS. Fix segv on file w/o LF.
- (translate_handles): Add new arg R_FLAGS. Avoid possible segv.
- (main): Pass flags for my_spawn.
- (my_spawn): Add arg FLAGS and implement AllowSetForegroundWindow.

- * priv-io.h (IOSPAWN_FLAG_ALLOW_SET_FG): New.
- * w32-io.c (_gpgme_io_spawn): Add arg FLAGS and implement it.
- * w32-glib-io.c (_gpgme_io_spawn): Ditto.
- * w32-qt-io.cpp (_gpgme_io_spawn): Ditto.
- * posix-io.c (_gpgme_io_spawn): Add dummy arg FLAGS.
- * engine-gpg.c (start): Call spawn with new flag.

- * w32-util.c (_gpgme_allow_set_foreground_window): Rename to _gpgme_allow_set_foreground_window. Change all callers.
- * posix-util.c (_gpgme_allow_set_foreground_window): Ditto.

2009-06-10 Werner Koch <wk@g10code.com>

- * w32-util.c (_gpgme_allow_set_foreground_window): Add trace support.

2009-06-09 Werner Koch <wk@g10code.com>

- * engine-gpg.c (gpg_io_event): Test for cmd.fd.
- * version.c (gpgme_check_version_internal): Make result const.
- * gpgme.c: Include priv-io.h.
- (gpgme_io_read, gpgme_io_write): New.
- * libgpgme.vers (GPGME_1.1): Add them.
- * gpgme.def: Ditto.
- * Makefile.am (main_sources): Remove gpgme.h.
- (include_HEADERS): Rename to nodist_include_HEADERS so that a VPATH build won't use the distributed one.
- * util.h (GPG_ERR_NOT_OPERATIONAL): Define.

2009-05-28 Marcus Brinkmann <marcus@g10code.de>

- * gpgme.h.in (gpgme_check_version_internal): New prototype.
- (gpgme_check_version): New macro, overriding function of the same

name.
* libgpgme.vers, gpgme.def: Add gpgme_check_version_internal.o
* context.h (_gpgme_selftest): New variable declaration.
* version.c: Include "context.h".
(gpgme_check_version): Set _gpgme_selftest on success.
(gpgme_check_version_internal): New function.
* gpgme.c (_gpgme_selftest): Define it.
(gpgme_new): Check the selftest result.

2009-05-18 Marcus Brinkmann <marcus@g10code.de>

* gpgme.h.in (gpgme_encrypt_flags_t): Add
GPGME_ENCRYPT_NO_ENCRYPT_TO.
* engine-gpg.c (gpg_encrypt): Pass --no-encrypt-to to gpg if
GPGME_ENCRYPT_NO_ENCRYPT_TO flag is set.

2009-05-14 Werner Koch <wk@g10code.com>

* gpgme.h.in (gpgme_status_code_t): Explicitly initialize for
better maintainability and to help debugging.

2009-05-05 Marcus Brinkmann <marcus@g10code.de>

* gpgme.h.in: Add compile time check for _FILE_OFFSET_BITS.

2009-04-15 Marcus Brinkmann <marcus@g10code.de>

* posix-io.c (_gpgme_io_socket, _gpgme_io_connect): New functions.
* w32-io.c (_gpgme_io_connect): Fix stupid error.

2009-04-08 Marcus Brinkmann <marcus@g10code.de>

* w32-glib-io.c (giochannel_table): New members used, fd, socket.
(find_channel): Drop CREATE argument.
(new_dummy_channel_from_fd, new_channel_from_fd)
(new_channel_from_socket): New functions.
(_gpgm_io_fd2str): Implement for sockets.
(_gpgme_io_write, _gpgme_io_read): Translate EAGAIN errors
correctly.
(_gpgme_io_pipe): Fix for new channel bookkeeping.
(_gpgme_io_close, _gpgme_io_dup): Likewise.
(wsa2errno, _gpgme_io_socket, _gpgme_io_connect): New.
* w32-io.c (MAX_READERS, MAX_WRITERS): Bump up to 40.
(wsa2errno, _gpgme_io_socket, _gpgme_io_connect): New.
* w32-qt-io.cpp (_gpgme_io_socket, _gpgme_io_connect): New stubs.
* version.c [HAVE_W32_SYSTEM]: Include "windows.h".
(do_subsystem_inits) [HAVE_W32_SYSTEM]: Call WSASStartup.
* engine-assuan.c (lass_status_handler): Ignore EAGAIN errors.

2009-03-18 Werner Koch <wk@g10code.com>

- * gpgme.h.in (GPGME_KEYLIST_MODE_EPHEMERAL): New.
- * engine-gpgsm.c (gpgsm_keylist): Send new option.

2009-03-13 Werner Koch <wk@g10code.com>

- * gpgme-config.in: Make sure locale is set to C.

2009-02-24 Werner Koch <wk@g10code.com>

- * gpgme.h.in (struct _gpgme_op_assuan_result): New.
- (gpgme_assuan_result_t): New.
- (gpgme_op_assuan_result): Change return type.
- (struct _gpgme_assuan_sendfnc_ctx)
- (gpgme_assuan_sendfnc_ctx_t, gpgme_assuan_sendfnc_t): Remove.
- (gpgme_assuan_inquire_cb_t): Changed.
- * opassuan.c (op_data_t): Make use of a result structure.
- (gpgme_op_assuan_result): Change return type.
- (opassuan_start): Use result structure.
- (result_cb): Ditto.
- * engine-assuan.c (struct _gpgme_assuan_sendfnc_ctx): Remove.
- (inquire_cb_sendfnc): Remove.
- (inquire_cb): Change for new callback scheme. Not yet finished.
- (lass_status_handler): Allow sending a CANCEL from the inquire CB.

2009-02-04 Werner Koch <wk@g10code.com>

- * w32-glib-io.c (_gpgme_io_spawn): Make ARGV argument const to match prototype.
- * w32-qt-io.cpp (_gpgme_io_spawn): Ditto.

2009-02-03 Werner Koch <wk@g10code.com>

- * gpgme.h.in (struct _gpgme_subkey): Add fields IS_CARDKEY and CARD_NUMBER..
- * key.c (gpgme_key_unref): Release field CARD_NUMBER.
- * keylist.c (keylist_colon_handler): Factor common code out to ...
- (parse_sec_field15): New. Set card number.

2009-01-26 Werner Koch <wk@g10code.com>

- * opassuan.c, dirinfo.c, engine-assuan.c: New.
- * Makefile.am: Add them.
- * engine-backend.h: Add _gpgme_engine_ops_assuan.
- (struct engine_ops): Add field OPASSUAN_TRANSACT. Update all engine initializers.

- * Makefile.am (gpgsm_components): Add engine-assuan.c.
- * gpgme.h.in (gpgme_protocol_t): Add GPGME_PROTOCOL_ASSUAN.
(gpgme_assuan_data_cb_t, gpgme_assuan_sendfnc_ctx_t)
(gpgme_assuan_inquire_cb_t, gpgme_assuan_status_cb_t): New.
- (gpgme_op_assuan_transact_start, gpgme_op_assuan_transact): New.
- * gpgme.c (gpgme_get_protocol_name): Ditto.
- (gpgme_set_protocol): Support it.
- * engine.c (gpgme_get_engine_info): Ditto.
- (engine_ops): Register it.
- (_gpgme_engine_op_assuan_transact): New.
- * libgpgme.vers (gpgme_op_assuan_transact_start)
(gpgme_op_assuan_transact): New.
- * gpgme.def (gpgme_op_assuan_transact_start)
(gpgme_op_assuan_transact): New.
- * engine-backend.h (struct engine_ops): Add GET_HOME_DIR and
initialize to NULL for all engines.
- * engine.c (engine_get_home_dir): New.
- (gpgme_get_engine_info): Use it.
- (_gpgme_set_engine_info): Use it.
- * engine.h (engine_assuan_result_cb_t): New.
- * context.h (ctx_op_data_id_t): Add OPDATA_ASSUAN.

- * util.h (GPG_ERR_UNFINISHED): Define if not yet defined.

- * version.c (gpgme_check_version): Protect trace arg against NULL.

2009-01-19 Werner Koch <wk@g10code.com>

- * runpgg.c: Rename to engine-gpg.c
- * Makefile.am (main_sources): Ditto.

2008-12-03 Marcus Brinkmann <marcus@g10code.de>

- * Makefile.am (status-table.h): Use \$(builddir) to find gpgme.h.

2008-11-18 Werner Koch <wk@g10code.com>

- * version.c (do_subsystem_inits): Always initialize I/O
subsystem. Fixes regression from 2007-08-02.

- * decrypt.c (_gpgme_decrypt_status_handler): Use
_gpgme_map_gnupg_error to parse the error code for decrypt.algorithm.

2008-10-30 Marcus Brinkmann <marcus@g10code.de>

- * wait-private.c (_gpgme_wait_on_condition): Remove unused
variable IDX.
- * wait-global.c: Include ops.h to silence gcc warning.

(_gpgme_wait_global_event_cb): Pass error value directly.

* wait-user.c: Include ops.h to silence gcc warning.

* posix-io.c (_gpgme_io_spawn): Make ARGV argument const to silence gcc warning. Cast argument to execv to silence warning.

* w32-io.c (_gpgme_io_spawn): Likewise.

* priv-io.h (_gpgme_io_spawn): Likewise for prototype.

2008-10-24 Werner Koch <wk@g10code.com>

* runpgp.c (gpg_keylist_preprocess): Escape backslashes too.

2008-10-23 Marcus Brinkmann <marcus@g10code.de>

* runpgp.c (gpg_keylist_preprocess): Convert percent escaped string to C coded string.

2008-10-20 Werner Koch <wk@g10code.com>

* Makefile.am (EXTRA_DIST): Add gpgme.h.in.

* gpgme.h: Rename to gpgme.h.in.

* gpgme.h.in (GPGME_VERSION): Use autoconf substitution.

* posix-io.c: Include sys/uio.h. Fixes bug #818.

2008-10-18 Marcus Brinkmann <marcus@g10code.com>

* w32-util.c (find_program_in_registry): Don't define.

(_gpgme_get_gpg_path, _gpgme_get_gpgsm_path)

(_gpgme_get_gpgconf_path): Do not check for fooProgram in the registry anymore. It is now no longer possible to overwrite the default location in that way.

2008-10-17 Werner Koch <wk@g10code.com>

* w32-glib-io.c (_gpgme_io_fd2str): Use "%d" and not "%ld" to work around a bug in mingw32.

2008-09-23 Marcus Brinkmann <marcus@g10code.com>

* gpgme.c (gpgme_sig_notation_clear): Clear CTX->sig_notations.

Submitted by "Daniel Mueller" <daniel@danm.de>

2008-09-16 Marcus Brinkmann <marcus@g10code.com>

* runpgp.c (gpg_new): Don't use errno with ttyname_r.

2008-08-11 Marcus Brinkmann <marcus@g10code.com>

- * `runpg.c` (`gpg_cancel`): Remove `cmd fd` before `status fd`.
- * `gpgme.c` (`_gpgme_cancel_with_err`): New function.
- (`gpgme_cancel`): Reimplement in terms of `_gpgme_cancel_with_err`.
- * `wait-private.c` (`_gpgme_wait_on_condition`): Use `_gpgme_cancel_with_err`.
- * `wait-user.c` (`_gpgme_user_io_cb_handler`): Likewise.
- * `wait-global.c` (`_gpgme_wait_global_event_cb`, `gpgme_wait`): Likewise.

2008-08-08 Marcus Brinkmann <marcus@g10code.com>

- * `runpg.c` (`command_handler`): Remove I/O callback on error, too.

2008-06-29 Marcus Brinkmann <marcus@g10code.com>

- * `gpgme.c` (`gpgme_cancel_async`): Remove unused variable.

2008-06-27 Marcus Brinkmann <marcus@g10code.de>

- * `libgpgme.vers`: Add `gpgme_cancel_async`.
- * `gpgme.def`: Likewise.

- * `context.h`: Include `"sema.h"`.
- (`struct gpgme_context`): New members `lock` and `canceled`.
- * `gpgme.c` (`gpgme_new`): Initialize `lock`.
- (`gpgme_release`): Destroy `lock`.
- (`gpgme_cancel_async`): New function.
- * `op-support.c` (`_gpgme_op_reset`): Reset the `canceled` flag.
- * `wait-global.c` (`gpgme_wait`): Check `cancel` flag before processing any I/O callbacks.
- * `wait-private.c` (`_gpgme_wait_on_condition`): Likewise.
- * `wait-user.c` (`_gpgme_user_io_cb_handler`): Likewise.

2008-06-26 Werner Koch <wk@g10code.com>

- * `w32-util.c` (`_gpgme_mkstemp`): Replace `sprint` by `stpcpy`.
- (`mkstemp`): Need to use `GetSystemTimeAsFileTime` for better compatibility.

2008-06-25 Marcus Brinkmann <marcus@g10code.de>

- * `gpgme-w32spawn.c`: New file.
- * `Makefile.am` (`libexec_PROGRAMS`) [`HAVE_W32_SYSTEM`]: New variable with `gpgme-w32spawn`.
- * `engine-gpgsm.c` (`gpgsm_new`): Use server translated handles.
- (`gpgsm_set_locale`): Return early if `locale` value is `NULL`.
- * `util.h` (`_gpgme_mkstemp`)

(_gpgme_get_w32spawn_path) [HAVE_W32_SYSTEM]: New function prototypes.

* w32-util.c: Include <stdint.h>, <sys/stat.h> and <unistd.h>.

(letters, mkstemp, _gpgme_mkstemp, _gpgme_get_w32spawn_path): New functions.

* runpg.c (gpg_decrypt, gpg_encrypt, gpg_encrypt_sign)

(gpg_genkey, gpg_import, gpg_verify, gpg_sign): Pass data over special filename FD rather than stdin.

(struct arg_and_data_s): Add member ARG_LOCP.

(struct fd_data_map_s): Add member ARG_LOC.

(struct engine_gpg): Add member ARG_LOC to status and colon.

(_add_arg, add_arg_with_locp): New function.

(add_arg_ext): Reimplement in terms of _add_arg.

(gpg_new): Remember argument location for status FD.

(build_argv): Set argument location if requested. Also set argument location of fd_data_map for data items.

(start): Adjust caller of _gpgme_io_spawn.

* priv-io.h (struct spawn_fd_item_s): Add members peer_name and arg_loc.

(_gpgme_io_spawn): Remove parent fd list argument.

* posix-io.c (get_max_fds): New function.

(_gpgme_io_dup): Add tracing.

(_gpgme_io_spawn): Remove parent fd list. Change meaning of child fd list to contain all child fds that should be inherited. Close all other file descriptors after fork.

* w32-io.c, w32-glib-io.c, w32-qt-io.c(_gpgme_io_spawn): Remove parent fd list. Change meaning of child fd list to contain all child fds that should be inherited. Do not inherit any file descriptors, but DuplicateHandle them. Spawn process through wrapper process. Provide wrapper process with a temporary file containing handle translation data. Return translated handle names.

* w32-io.c (reader): Add more tracing output.

(_gpgme_io_read): Likewise.

* engine-gpgconf.c (gpgconf_read): Adjust caller of _gpgme_io_spawn.

* version.c (_gpgme_get_program_version): Likewise.

2008-06-20 Werner Koch <wk@g10code.com>

* engine-gpgconf.c (gpgconf_read): Change ARGV initialization for compatibility with old compilers. Fix amount of memmove. Fix CR removal.

2008-06-19 Werner Koch <wk@g10code.com>

* gpgme.h (GPGME_CONF_PATHNAME): Replace by GPGME_CONF_FILENAME, change all callers and provide compatibility macro.

(gpgme_conf_type_t): Add complex types 34..37.
* engine-gpgconf.c (gpgconf_parse_option, arg_to_data)
(_gpgme_conf_arg_new, _gpgme_conf_arg_release): Add new types.

2008-06-19 Marcus Brinkmann <marcus@g10code.de>

* engine-gpgconf.c (gpgconf_parse_option): Fix comma detection.

2008-05-09 Werner Koch <wk@g10code.com>

* engine-gpgconf.c (gpgconf_read): Do not pass empty lines to the callback.

2008-05-07 Werner Koch <wk@g10code.com>

* engine-gpgconf.c (gpgconf_write): Change argv[0] to a self-explaining string. Needs a proper fix, though.

* runpg.c (gpg_keylist, gpg_keylist_ext): Factor common code out to ..

(gpg_build_keylist_options): .. new. Allow combination of extern and intern mode.

(gpg_new): DFT_TTYNAME is an array, thus check the first character.

2008-05-06 Werner Koch <wk@g10code.com>

* version.c (extract_version_string): New.

(_gpgme_get_program_version): Use it to allow for suffixes in the version line.

2008-04-28 Werner Koch <wk@g10code.com>

* engine-gpgconf.c (gpgconf_read): Fixed segv. Avoid memmove for each line.

2008-04-22 Marcus Brinkmann <marcus@g10code.de>

* w32-qt-io.cpp, kdpipeiodevice.cpp: New versions from Frank Osterfeld, implement blocking select.

2008-03-11 Marcus Brinkmann <marcus@g10code.de>

* data.c (gpgme_data_read, gpgme_data_write): Retry on EINTR.

2008-03-06 Marcus Brinkmann <marcus@g10code.de>

* key.c (_gpgme_key_add_sig): Terminate UID in case SRC is NULL. Reported by Marc Mutz.

2008-03-05 Marcus Brinkmann <marcus@g10code.de>

- * decrypt.c (release_op_data): Release OPD->result.recipients.
- * encrypt.c (release_op_data): Release invalid_recipient.

2008-02-15 Marcus Brinkmann <marcus@g10code.de>

- * engine-gpgconf.c (gpgconf_read): Fix end-of-line handline.

2008-02-14 Werner Koch <wk@g10code.com>

- * w32-io.c (_gpgme_io_spawn): Add arg R_PID to return the pid.
- * posix-io.c (_gpgme_io_spawn): Ditto.
- * w32-glib-io.c (_gpgme_io_spawn): Ditto.
- * w32-qt-io.cpp (_gpgme_io_spawn): Ditto.
- * priv-io.h (_gpgme_io_spawn): Adjust prototyp and change all callers.
- * runpgg.c (start): Call _gpgme_allow_set_foreground_window.

- * w32-util.c (_gpgme_allow_set_foreground_window): New.
- * posix-util.c (_gpgme_allow_set_foreground_window): New.
- * engine-gpgsm.c (default_inq_cb): New.
- (gpgsm_new) [W32]: Enable pinentry notifications.
- (status_handler): Handle inquiries.

2008-01-30 Marcus Brinkmann <marcus@g10code.de>

- * kdpipelinedevice.cpp: New version by Frank Osterfeld, fixes race condition.

2008-01-28 Marcus Brinkmann <marcus@g10code.de>

- * engine-gpgsm.c (map_input_enc): Rename to ...
- (map_data_enc): ... this. Also change all callers.
- (gpgsm_encrypt, gpgsm_export, gpgsm_export_ext, gpgsm_genkey)
- (gpgsm_sign): Set encoding for output.

2008-01-28 Werner Koch <wk@g10code.com>

- * keylist.c (gpgme_get_key): Skip duplicated keys. Fixes bug 876.

2008-01-14 Marcus Brinkmann <marcus@g10code.de>

- * engine-gpgconf.c (gpgconf_config_load_cb): Fix program_name field.

2008-01-10 Marcus Brinkmann <marcus@g10code.de>

* kdpipelinedevice.cpp: New version from Frank Osterfeld.

* engine-gpgconf.c (gpgconf_config_load_cb2): Handle the flag NO_ARG_DESC.

2008-01-04 Marcus Brinkmann <marcus@g10code.de>

* Makefile.am (gpgconf_components): New variable.
(main_sources): Add gpgconf.c.
* gpgme.h (gpgme_protocol_t): New protocol GPGME_PROTOCOL_GPGCONF.
(gpgme_conf_level_t, gpgme_conf_type_t, gpgme_conf_arg_t)
(gpgme_conf_opt_t, gpgme_conf_comp_t, gpgme_conf_arg_new)
(gpgme_conf_arg_release, gpgme_conf_opt_change)
(gpgme_conf_release, gpgme_op_conf_load, gpgme_op_conf_save): New types.
* gpgconf.c, engine-gpgconf.c: New files.
* engine.h: (_gpgme_engine_op_conf_load, _gpgme_engine_op_conf_save): New prototypes.
* op-support.c (_gpgme_op_reset): Ignore not implemented locale function.
* posix-util.c (_gpgme_get_gpgconf_path): New function.
* w32-util.c (_gpgme_get_gpgconf_path): New function.
* engine-gpgsm.c:
(_gpgme_engine_ops_gpgsm): Add stubs for conf_load and conf_save.
* runpgg.c:
(_gpgme_engine_ops_gpg): Add stubs for conf_load and conf_save.
* gpgme.def: Add new gpgconf related interfaces.
* libgpgme.vers: Likewise.
* util.h (_gpgme_get_gpgconf_path): New prototype.
* gpgme.h (gpgme_protocol_t): Add GPGME_PROTOCOL_GPGCONF.
* engine-backend.h (_gpgme_engine_ops_gpgconf): New prototype.
(struct engine_ops): Add members for conf_load and conf_save.
* engine.c (engine_ops): Add _gpgme_engine_ops_gpgconf.
(_gpgme_engine_op_conf_load, _gpgme_engine_op_conf_save): New functions.
(gpgme_get_engine_info): Allow protocol GPGME_PROTOCOL_GPGCONF.

2007-11-28 Marcus Brinkmann <marcus@g10code.de>

* w32-util.c (_gpgme_get_gpg_path, _gpgme_get_gpgsm_path): Search for installation directory. Remove old fallback default.
(find_program_in_inst_dir): New function.

2007-11-26 Werner Koch <wk@g10code.com>

* engine-gpgsm.c (struct engine_gpgsm): Add field INLINE_DATA and always reset it before calling start.
(gpgsm_new): Clear it.

(status_handler): Implement it.

(gpgsm_getauditlog) [USE_DESCRIPTOR_PASSING]: Use INLINE_DATA.

2007-11-23 Werner Koch <wk@g10code.com>

* op-support.c (_gpgme_op_reset): Implement a no-reset flag.

* getauditlog.c (getauditlog_start): Use that flag.

2007-11-20 Werner Koch <wk@g10code.com>

* op-support.c (_gpgme_parse_inv_recv): Add new reason code 11.

2007-11-22 Werner Koch <wk@g10code.com>

* gpgme.h (gpgme_op_getauditlog_start, gpgme_op_getauditlog): New.

* libgpgme.vers: Ditto.

* gpgme.def: Ditto.

* getauditlog.c: New.

* engine-backend.h (struct engine_ops): Add member GETAUDITLOG.

* engine-gpgsm.c (gpgsm_getauditlog): New.

(_gpgme_engine_ops_gpgsm): Insert new function.

(gpgsm_new): Try to enable audit log support.

* runpg.c (_gpgme_engine_ops_gpg): Insert dummy entry.

2007-11-12 Marcus Brinkmann <marcus@g10code.de>

* kdpipelinedevice.cpp: New version from Frank Osterfeld.

2007-10-11 Marcus Brinkmann <marcus@g10code.de>

* kdpipelinedevice.cpp: New version from Frank Osterfeld.

2007-10-09 Marcus Brinkmann <marcus@g10code.de>

* kdpipelinedevice.cpp: New version from Frank Osterfeld and Marc Mutz.

2007-10-05 Marcus Brinkmann <marcus@g10code.de>

* kdpipelinedevice.cpp, w32-qt-io.cpp: New versions from Frank Osterfeld.

2007-10-04 Marcus Brinkmann <marcus@g10code.de>

* kdpipelinedevice.h, kdpipelinedevice.cpp, kdpipelinedevice.moc, w32-qt-io.cpp: New versions from Frank Osterfeld.

2007-10-02 Marcus Brinkmann <marcus@g10code.de>

* kdpipelineio.device.cpp, kdpipelineio.device.moc: New versions.
* w32-qt-io.cpp (_gpgme_io_fd2str): Print actual_fd if available.
(_gpgme_io_dup): Only acquire a reference, do not actually dup.
Submitted by Frank Osterfeld.

* priv-io.h, engine-gpgsm.c: Add comments.
* w32-qt-io.cpp (_gpgme_io_select): Remove code handling frozen FDs.
* w32-glib-io.c (_gpgme_io_close): Always dereference the channel,
even if not primary.
(_gpgme_io_dup): Acquire a reference. Replace unused
implementation by assertion.

2007-09-28 Werner Koch <wk@g10code.com>

* engine-gpgsm.c (iocb_data_t): Add SERVER_FD_STR.
(gpgsm_new): Set it.
(gpgsm_set_fd): Use it.

* w32-glib-io.c (find_channel): Add a new primary flag.
(_gpgme_io_close): Close channel only if primary.
(_gpgme_io_dup): Put newfd into the table as shallow copy.

* priv-io.h (struct io_select_fd_s): Remove member FROZEN.
* w32-io.c (_gpgme_io_select): Ditto.
* w32-glib-io.c (_gpgme_io_select): Ditto.

* posix-io.c (_gpgme_io_select): Ditto.
* runpg.c (read_status): Ditto.
* wait.c (fd_table_put): Ditto.

* runpg.c (gpg_io_event): Add tracing.
(start): Use gpg_io_event for sending the start event.
* engine-gpgsm.c (gpgsm_io_event): Add tracing.
(start): Use gpgsm_io_event for sending the start event.
* wait.c (_gpgme_add_io_cb, _gpgme_run_io_cb): Add tracing.

2007-09-28 Marcus Brinkmann <marcus@g10code.de>

* kdpipelineio.device.moc, w32-qt-io.cpp, kdpipelineio.device.cpp: New
versions from Frank Osterfeld.

2007-09-27 Marcus Brinkmann <marcus@g10code.de>

* w32-glib-io.c (_gpgme_io_spawn),
w32-qt-io.cpp (_gpgme_io_spawn), w32-io.c (_gpgme_io_spawn): Close
the process handle, return 0.

* gpgme.h (gpgme_protocol_t): Add GPGME_PROTOCOL_UNKNOWN.

* gpgme.c (gpgme_get_protocol_name): Implement support for GPGME_PROTOCOL_UNKNOWN.

* kdpipelineio.h: Fix last change.

* w32-glib-io.c (_gpgme_io_pipe), w32-qt-io.c (_gpgme_io_pipe), w32-io.c (_gpgme_io_pipe), posix-io.c (_gpgme_io_pipe): Fix debug output.

2007-09-25 Marcus Brinkmann <marcus@g10code.de>

* conversion.c, keylist.c: Include <sys/types.h>.

* kdpipelineio.h: Use namespace _gpgme_.

* kdpipelineio.cpp: Use namespace _gpgme_.

[Q_OS_WIN32 && NOMINMAX]: Do not define NOMINMAX again.

* w32-qt-io.cpp: Change namespace of KDPipelineIODevice to _gpgme_::KDPipelineIODevice.

2007-09-17 Werner Koch <wk@g10code.com>

* runpg.c (gpg_new): Make robust against undefined ttyname or ttytype.

2007-09-14 Werner Koch <wk@g10code.com>

* data-mem.c (gpgme_data_release_and_get_mem): Fix tracing bug.

2007-09-14 Marcus Brinkmann <marcus@g10code.de>

* gpgme.c (gpgme_release): Call gpgme_sig_notation_clear.

2007-09-13 Marcus Brinkmann <marcus@g10code.de>

* runpg.c (gpg_new): Handle return value of _gpgme_getenv (fixes small memory leak).

2007-09-07 Marcus Brinkmann <marcus@g10code.de>

* Makefile.am (libpgme_qt_la_SOURCES): Move moc_kdpipelineio.cpp to EXTRA_DIST, as this is only included by another file (it's more like a header file than a cpp file, but automake doesn't know that).

* w32-qt-io.cpp (_gpgme_io_spawn): Fix several cast errors and typos.

* w32-io.c (_gpgme_io_write): Use TRACE_SYSRES instead of TRACE_SYS.

(libpgme_qt_la_LIBADD): Add QT4_CORE_LIBS, not QT4_CORE_LIB.

* kdpipelineio.h, kdpipelineio.cpp, moc_kdpipelineio.cpp,
kdpipelineio.moc, w32-qt-io.c: New files.
* Makefile.am (ltlib_gpgme_extra): Rename to ltlib_gpgme_glib.
(ltlib_gpgme_qt): New variable.
(lib_LTLIBRARIES): Add \$(ltlib_gpgme_qt).
(libgpgme_qt_la_SOURCES): New variable.
(AM_CPPFLAGS): Add @QT4_CORE_INCLUDES@
(AM_CFLAGS): Add @QT4_CORE_CFLAGS@.
(libgpgme_qt_la_LDFLAGS, libgpgme_qt_la_DEPENDENCIES)
(libgpgme_qt_la_LIBADD): New variables.

* sema.h (struct critsect_s): Rename "private" to "priv" to make
C++ users happy. Change users.
* posix-sema.c (_gpgme_sema_cs_enter, _gpgme_sema_cs_leave)
(_gpgme_sema_cs_destroy): Likewise.
* w32-sema.c (critsect_init, _gpgme_sema_cs_enter)
(_gpgme_sema_cs_leave, _gpgme_sema_cs_destroy): Likewise.
* w32-glib-io.c (gpgme_get_giochannel): Change return type to
void*.
(gpgme_get_fdptr): New function.
* w32-io.c (gpgme_get_fdptr): New function
* gpgme.def: Add gpgme_get_fdptr.

2007-08-22 Marcus Brinkmann <marcus@g10code.de>

* w32-io.c (_gpgme_io_write): Return early if COUNT is zero.
(writer): Remove superfluous check.

2007-08-20 Marcus Brinkmann <marcus@g10code.de>

* gpgme.h: Move include of gpg-error.h out of extern "C".

2007-08-07 Werner Koch <wk@g10code.com>

* gpgme.h (struct _gpgme_signature): Add member CHAIN_MODEL.
* verify.c (parse_trust): Set Chain_MODEL.

2007-08-02 Werner Koch <wk@g10code.com>

* w32-glib-io.c (_gpgme_io_spawn): Use DETACHED_PROCESS flag.
* w32-io.c (_gpgme_io_spawn): Ditto.
(_gpgme_io_write): Map ERROR_NO_DATA to EPIPE.
* debug.c (_gpgme_debug): Enable assuan logging.
(_gpgme_debug_subsystem_init): New.
* version.c (do_subsystem_inits): Disable assuan logging and
initialize the debug system.
(gpgme_check_version): Do not trace before the subsystems are

initialized.

2007-07-17 Marcus Brinkmann <marcus@g10code.de>

- * debug.c: Include <errno.h> and "debug.h".
- (_gpgme_debug): Save and restore ERRNO.
- (TOHEX): New macro.
- (_gpgme_debug_buffer): New function.
- * conversion.c, data-compat.c, data-mem.c, data.c, engine-gpgsm.c, gpgme.c, keylist.c, posix-io.c, runpgg.c, sign.c, version.c, w32-io.c, wait.c: Replace DEBUG macros by TRACE_* variants. In most of these files, add many more tracepoints.

2007-07-16 Marcus Brinkmann <marcus@g10code.de>

- * engine-gpgsm.c (status_handler): Do not send BYE here.

- * w32-io.c (struct reader_context_s, struct writer_context_s): New members REFCOUNT.
- (create_reader, create_writer): Initialize C->refcount to 1.
- (destroy_reader, destroy_writer): Only destroy if C->refcount drops to 0.
- (find_reader, find_writer, kill_reader, kill_writer): Beautify.
- * priv-io.h (_gpgme_io_dup): New prototype.
- * posix-io.c (_gpgme_io_dup): New function.
- * w32-io.c (_gpgme_io_dup): Likewise.
- * w32-glib-io.c (_gpgme_io_dup): Likewise.
- * engine-gpgsm.c (start): Reverting to version 2007-07-10.

2007-07-13 Marcus Brinkmann <marcus@g10code.de>

- * data-user.c (user_read, user_write, user_seek): Set errno and return -1 instead returning the error code directly.
- * data-compat.c (old_user_seek): Likewise.
- * gpgme.c (gpgme_sig_notation_add): Return error properly.

- * Revert the "close_notify_handler" returns int stuff. Always close in the _gpgme_io_close implementations.
- * engine-gpgsm.c (status_handler): Try to terminate the connection in case of error.
- * w32-io.c (_gpgme_io_read): Return C->error_code in ERRNO.
- (_gpgme_io_write): Likewise.

- * priv-io.h (_gpgme_io_set_close_notify): Change type of HANDLER to _gpgme_close_notify_handler.
- (_gpgme_close_notify_handler): New type.
- (_gpgme_io_dup): Remove prototype.
- * posix-io.c (notify_table, _gpgme_io_set_close_notify): Change

type of HANDLER to `_gpgme_close_notify_handler_t`.
(`_gpgme_io_close`): Do not close the FD if handler returns 0.
(`_gpgme_io_dup`): Remove function.
* `w32-io.c` (`notify_table`, `_gpgme_io_set_close_notify`,
`_gpgme_io_close`): Change type of HANDLER to
`_gpgme_close_notify_handler_t`.
(`_gpgme_io_close`): Do not close the FD if handler returns 0.
(`_gpgme_io_dup`): Remove function.
* `w32-glib-io.c` (`_gpgme_io_dup`): Remove function.
(`_gpgme_io_set_close_notify`, `notify_table`): Change type of HANDLER
to `_gpgme_close_notify_handler_t`.
(`_gpgme_io_close`): Do not close the FD if handler returns 0.
* `rungpg.c` (`close_notify_handler`): Change return type to int,
return 1.
* `engine-gpgsm.c` (`close_notify_handler`): Change return type to
int, return 0 for status FD and 1 for all other FDs.
(`start`): Do not duplicate the status FD.

2007-07-12 Marcus Brinkmann <marcus@g10code.de>

* `Makefile.am`: Replace implicit rule by suffix rule. Add
SUFFIXES for that.

2007-07-12 Werner Koch <wk@g10code.com>

* `version.c` (`do_subsystem_inits`) [W32]: Make sure that the socket
system has been started.

2007-07-10 Marcus Brinkmann <marcus@g10code.de>

* `priv-io.h` (`_gpgme_io_dup`): New prototype.
* `posix-io.c` (`_gpgme_io_dup`): New function.
* `w32-io.c` (`_gpgme_io_dup`): Likewise.
* `w32-glib-io.c` (`_gpgme_io_dup`): Likewise.
* `engine-gpgsm.c` (`start`): Use `_gpgme_dup()` instead of `dup()`.

2007-07-08 Marcus Brinkmann <marcus@g10code.de>

* `engine-gpgsm.c` [HAVE_W32_SYSTEM]: Enable the bunch of the file.
* `funopen.c` (`funopen`): Rename to `_gpgme_funopen`.

2007-04-30 Marcus Brinkmann <marcus@g10code.de>

* `engine-gpgsm.c` (`gpgsm_new`): Fix error handling for `ttyname_r`.
* `rungpg.c` (`gpg_new`): Likewise.
Submitted by Stephen Tether.

2007-02-26 Werner Koch <wk@g10code.com>

* verify.c (op_data_t): New element PLAINTEXT_SEEN.
(_gpgme_verify_status_handler): Return an error if more than one
plaintext has been seen.
(parse_error): New arg SET_STATUS. Also detect it based on an
ERROR status (gpg > 1.4.6).

2007-01-26 Werner Koch <wk@g10code.com>

* w32-io.c (build_commandline): Fixed stupid quoting bug.
* w32-glib-io.c (build_commandline): Ditto.

* runpgp.c (gpg_set_locale): Avoid dangling pointer after free.

* gpgme-config.in: New options --get-gpg and --get-gpgsm.

2007-01-18 Marcus Brinkmann <marcus@g10code.de>

* data.h (_gpgme_data_get_fd): Add prototype.
(gpgme_data_get_fd_cb): New type.
(struct _gpgme_data_cbs): New member get_fd.
* data.c (_gpgme_data_get_fd): New function.
* data-fd.c (fd_get_fd): New function.
(fd_cbs): Add fd_get_fd.
* data-stream.c (stream_get_fd): New function.
(stream_cbs): Add stream_get_fd.
* data-mem.c (mem_cbs): Add NULL for get_fd callback.
* data-user.c (user_cbs): Likewise.
* engine-gpgsm.c (gpgsm_set_fd) [USE_DESCRIPTOR_PASSING]: Try to
short-cut by passing the data descriptor directly.

2007-01-17 Marcus Brinkmann <marcus@g10code.de>

* w32-io.c (build_commandline): Quote all command line arguments.
* w32-glib-io.c (build_commandline): Likewise.

2007-01-10 Werner Koch <wk@g10code.com>

* ttyname_r.c (ttyname_r) [W32]: Return a dummy name.

2007-01-08 Werner Koch <wk@g10code.com>

* version.c (do_subsystem_inits): Do assuan init only if building
with Assuan.
* setenv.c: Include assuan-def.h only if building with Assuan
support.

* op-support.c (_gpgme_op_reset): Set LC_MESSAGES only if

if defined.

* engine-gpgsm.c (gpgsm_set_locale): Ditto.

* runpg.c (gpg_set_locale): Ditto.

2006-12-17 Marcus Brinkmann <marcus@g10code.de>

* gpgme.c (gpgme_set_protocol): Shut down the engine when switching protocols.

(gpgme_ctx_set_engine_info): Likewise for engine info.

* engine.h (_gpgme_engine_reset): New function prototype.

* engine.c (_gpgme_engine_reset): New function.

* engine-backend.h (struct engine_ops): New member RESET.

* runpg.c (_gpgme_engine_ops_gpg): Add NULL for reset function.

* engine-gpgsm.c (_gpgme_engine_ops_gpgsm)

[USE_DESCRIPTOR_PASSING]: Add gpgsm_reset for reset.

(_gpgme_engine_ops_gpgsm) [!USE_DESCRIPTOR_PASSING]: Add NULL for reset function.

(gpgsm_reset) [USE_DESCRIPTOR_PASSING]: New function.

* op-support.c (_gpgme_op_reset): Try to use the engine's reset function if available.

* engine-gpgsm.c (gpgsm_new): Move code to dup status_fd to ...

(start): ... here.

* posix-io.c (_gpgme_io_recvmsg, _gpgme_io_sendmsg): New functions.

* engine.h (_gpgme_engine_new): Remove arguments lc_ctype and lc_messages from prototype.

(_gpgme_engine_set_locale): New prototype.

* engine.c (_gpgme_engine_set_locale): New function.

* op-support.c (_gpgme_op_reset): Call _gpgme_engine_set_locale.

* engine-backend.h (struct engine_ops): Add new member SET_LOCALE.

Remove arguments lc_messages and lc_ctype from member NEW.

* engine-gpgsm.c (struct engine_gpgsm): New members lc_ctype_set and lc_messages_set.

(gpgsm_new): Remove lc_messages and lc_ctype arguments.

(gpgsm_set_locale): New function.

(_gpgme_engine_ops_gpgsm): Add gpgsm_set_locale.

* runpg.c (struct engine_gpg): Add new members lc_messages and lc_ctype.

(gpg_release): Release lc_messages and lc_ctype if set.

(gpg_new): Remove lc_messages and lc_ctype arguments.

(gpg_set_locale): New function.

(_gpgme_engine_ops_gpg): Add gpg_set_locale.

(add_arg): Implement in terms of:

(add_arg_ext): New function.

(start): Set lc-messages and lc-ctype arguments here.

2006-12-03 Marcus Brinkmann <marcus@g10code.de>

* engine-gpgsm.c (struct engine_gpgsm): Move members input_fd_server, output_fd_server, message_fd_server to ... (iocb_data): ... here (as server_fd).
(close_notify_handler): Reset tags as well.
(gpgsm_new): Implement support for descriptor passing.
(fd_type_t): New type.
(gpgsm_clear_fd): New function. Use it instead of _gpgsm_io_close for unused communication channels.
(gpgsm_set_fd): Rewritten to support descriptor passing. All relevant callers adjusted as well (previously of _gpgme_io_close).

2006-12-02 Marcus Brinkmann <marcus@g10code.de>

* version.c: Include "assuan.h".
(do_subsystem_inits): Call assuan_set_assuan_err_source.

2006-12-01 Marcus Brinkmann <marcus@g10code.de>

* Makefile.am (libgpgme_real_la_SOURCES): Rename to main_sources.
(libgpgme_la_SOURCES, libgpgme_pthread_la_SOURCES, libgpgme_glib_la_SOURCES, libgpgme_pth_la_SOURCES): Add \$(main_sources).
(libgpgme_la_DEPENDENCIES, libgpgme_la_LIBADD, libgpgme_pthread_la_DEPENDENCIES, libgpgme_pthread_la_LIBADD, libgpgme_pth_la_DEPENDENCIES, libgpgme_pth_la_LIBADD, libgpgme_glib_la_DEPENDENCIES, libgpgme_glib_la_LIBADD): Remove libgpgme-real.la.
(noinst_LTLIBRARIES): Removed.
(libgpgme_glib_la_CFLAGS, libgpgme_pth_la_CFLAGS): Removed.
(AM_CFLAGS): New variable.

2006-11-30 Marcus Brinkmann <marcus@g10code.de>

* engine-gpgsm.c: Replace AssuanError with gpg_error_t and ASSUAN_CONTEXT with assuan_context_t.

2006-11-29 Marcus Brinkmann <marcus@g10code.de>

* engine-gpgsm.c (gpgsm_new): Check return value of assuan_pipe_connect.

* runpg.c: Include <unistd.h>.

(gpg_new): Support --display, --ttyname, --ttytype, --lc-ctype and --lc-messages. Fixes issue 734.

2006-10-24 Marcus Brinkmann <marcus@g10code.de>

* trustlist.c (gpgme_op_trustlist_next): Return error if OPD is NULL.

2006-10-23 Marcus Brinkmann <marcus@g10code.de>

* wait-global.c (gpgme_wait): Unlock CTX_LIST_LOCK while calling _gpgme_engine_io_event().

* keylist.c (gpgme_op_keylist_next): Return error if OPD is NULL.

2006-09-25 Marcus Brinkmann <marcus@g10code.de>

* data-mem.c (gpgme_data_release_and_get_mem): Release the data object properly.

2006-09-22 Marcus Brinkmann <marcus@g10code.de>

* keylist.c (keylist_colon_handler): Move debug output after initialising KEY.

2006-07-29 Marcus Brinkmann <marcus@g10code.de>

* gpgme-config.in (Options): Add NETLIBS.

* Makefile.am (libgpgme_la_LIBADD, libgpgme_pthread_la_LIBADD, libgpgme_pth_la_LIBADD, libgpgme_glib_la_LIBADD): Add NETLIBS.

* runpg.c (read_status): Fix comparison disguising as an assignment.

2005-03-24 Marcus Brinkmann <marcus@g10code.de>

* gpgme.c (gpgme_set_locale): Remove conditional on HAVE_W32_SYSTEM, and just check for LC_MESSAGES.

2006-07-16 Marcus Brinkmann <marcus@g10code.de>

* runpg.c (read_status): Strip potential carriage return.

* genkey.c (get_key_parameter): Skip potential carriage return.

* version.c (_gpgme_get_program_version): Strip potential carriage return.

* data.c (gpgme_data_set_file_name): Allow to clear the file name by passing NULL.

2006-06-22 Marcus Brinkmann <marcus@g10code.de>

* keylist.c (gpgme_get_key): Also clone the engine info.

2006-03-06 Marcus Brinkmann <marcus@g10code.de>

* gpgme-config.in (cflags_pth): Revert accidental removal of pthread support with last change.

2006-02-28 Marcus Brinkmann <marcus@g10code.de>

* w32-glib-io.c (O_BINARY) [!O_BINARY]: New macro.
(_gpgme_io_pipe): Open pipes in binary mode.

2006-02-22 Marcus Brinkmann <marcus@g10code.de>

* engine.c (gpgme_engine_check_version): Reimplemented to allow checking the version correctly even after changing the engine information. Bug reported by Stphane Corthsy.

* runpg.c (read_colon_line): Invoke colon preprocess handler if it is set.

(colon_preprocessor_t): New type.

(struct engine_gpg): New member colon.preprocess_fnc.

(gpg_keylist_preprocess): New function.

* keylist.c (keylist_colon_handler): Allow short key IDs.

2006-02-15 Marcus Brinkmann <marcus@g10code.de>

* w32-io.c (create_writer): Make C->have_data a manually reset event.

(writer): Move code from end of if block to beginning, so it is also run the first time.

(_gpgme_io_write): Move assert check after error check. Reset the is_empty event, and also do it eagerly.

(_gpgme_io_select): Unconditionally wait for the is_empty event.

2006-01-26 Werner Koch <wk@g10code.com>

* w32-util.c (_gpgme_get_conf_int): New.

* posix-util.c (_gpgme_get_conf_int): New.

* w32-io.c (get_desired_thread_priority): New.

(create_reader, create_writer): Use it here.

2006-01-04 Werner Koch <wk@g10code.com>

* debug.h (_gpgme_debug_srcname): New. Use it with the debug macros.

* w32-glib-io.c (_gpgme_io_set_nonblocking): Add debug statements. Disable error return for failed nonblocking call.

2006-01-03 Marcus Brinkmann <marcus@g10code.de>

* w32-glib-io.c (`_gpgme_io_close`): Only close fd if there is no channel for it.

2005-12-31 Marcus Brinkmann <marcus@g10code.de>

* w32-glib-io.c (`find_channel`): Set channel to unbuffered.
(`_gpgme_io_select`): Fix debug output.

2005-12-23 Werner Koch <wk@g10code.com>

* gpgme.h (struct `_gpgme_signature`): Append field `PKA_ADDRESS`.
* verify.c (`release_op_data`, `_gpgme_verify_status_handler`): Set this field.

2005-12-20 Werner Koch <wk@g10code.com>

* gpgme.h (`gpgme_status_code_t`): Added `GPGME_STATUS_PKA_TRUST_BAD` and `GPGME_STATUS_PKA_TRUST_GOOD`.
(struct `_gpgme_signature`): New field `pka_trust`.
* verify.c (`_gpgme_verify_status_handler`): Set `pka_trust`.

2005-12-06 Werner Koch <wk@g10code.com>

* keylist.c (`keylist_colon_handler`): Store fingerprints of the subkeys. Reset the secret flag of subkeys for stub secret keys.
(`NR_FIELDS`): Bumped up to 16

2005-11-27 Marcus Brinkmann <marcus@g10code.de>

* engine.c (`_gpgme_set_engine_info`): Use `new_file_name` in `engine_get_version` invocation. Reported by Stphane Corthsy.

2005-11-24 Marcus Brinkmann <marcus@g10code.de>

* w32-glib-io.c (`_gpgme_io_fd2str`): Remove debug printf.

2005-11-18 Werner Koch <wk@g10code.com>

* w32-glib-io.c: Include `glib.h` before windows to avoid a symbol shadowing warning.
(`find_channel`): Better use `g_io_channel_win32_new_fd` instead of the autodetection function `g_io_channel_unix_new`.
(`_gpgme_io_select`): Rewritten. It is now a fully working select implementation.

2005-11-18 Marcus Brinkmann <marcus@g10code.de>

- * priv-io.h (`_gpgme_io_fd2str`): New prototype.
- * posix-io.c (`_gpgme_io_fd2str`): New function.
- * w32-io.c (`_gpgme_io_fd2str`): New function.
- * `rungpg.c`: Use this new function.
- * w32-glib-io.c (`_gpgme_io_fd2str`): Rewrote the file handle code again. Two's company, three's the musketeers.

- * w32-glib-io.c: Rewrote the file handle code. We don't create system fds for every handle (doesn't work for inherited handles), but we create pseudo fds in a private namespace that designate a handle and potentially a giochannel.

2005-11-18 Werner Koch <wk@g10code.com>

- * `versioninfo.rc.in`: Set file version to LT-version + Svn-revision.

2005-11-17 Marcus Brinkmann <marcus@g10code.de>

- * w32-glib-io.c: New file.
- * `gpgme.def` (`gpgme_get_giochannel`): Add symbol.
- * `Makefile.am` (`system_components`) [`HAVE_DOSISH_SYSTEM`]: Remove `w32-io.c`.
- (`ltlib_gpgme_extra`): New variable.
- (`lib_LTLIBRARIES`): Add `$(ltlib_gpgme_extra)`.
- (`system_components_not_extra`): New variable.
- (`libgpgme_la_SOURCES`, `libgpgme_pthread_la_SOURCES`, `libgpgme_pth_la_SOURCES`): Add `$(system_components_not_extra)`.
- (`libgpgme_glib_la_LDFLAGS`, `libgpgme_glib_la_DEPENDENCIES`, `libgpgme_glib_la_LIBADD`, `libgpgme_glib_la_CFLAGS`) [`BUILD_W32_GLIB`]: New variables.
- * `gpgme-config.in` (`glib`): New option.
- * `gpgme.m4` (`AM_PATH_GPGME_GLIB`): New macro.

2005-11-17 Marcus Brinkmann <marcus@g10code.de>

- * priv-io.h (`_gpgme_io_waitpid`, `_gpgme_io_kill`): Removed.
- * w32-io.c (`_gpgme_io_waitpid`, `_gpgme_io_kill`): Removed.
- * posix-io.c (`_gpgme_io_kill`): Removed.
- (`_gpgme_io_waitpid`): Declare static.

2005-10-24 Marcus Brinkmann <marcus@g10code.de>

- * w32-io.c (`_gpgme_io_spawn`): Don't minimize window, hide it.

2005-10-21 Werner Koch <wk@g10code.com>

- * `Makefile.am`: Fixed cut+paste problem

2005-10-20 Marcus Brinkmann <marcus@g10code.de>

* Makefile.am: Build versioninfo.lo, not versioninfo.o. Also, fix the whole mess.

2005-10-16 Marcus Brinkmann <marcus@g10code.de>

* runpgg.c (gpg_edit): Don't add a key argument if in card edit mode.

2005-10-06 Marcus Brinkmann <marcus@g10code.de>

* Makefile.am (gpgme.dll gpgme.dll.a): Use \$(srcdir) for gpgme.def.

* gpgme.h (gpgme_free): New prototype.

* data-mem.c (gpgme_free): New function.

* libgpgme.vers (GPGME_1.1): Add gpgme_free.

* gpgme.def: Add gpgme_free.

2005-10-02 Marcus Brinkmann <marcus@g10code.de>

* util.h (_gpgme_decode_percent_string): Add new argument BINARY to prototype.

* verify.c (parse_notation): Likewise for invocation.

* conversion.c (_gpgme_decode_percent_string): Likewise to declaration. If set, do not replace '\0' characters with a printable string.

* gpgme.h (struct _gpgme_key_sig): New field notations.

* ops.h (_gpgme_parse_notation): New prototype.

* sig-notation.c (_gpgme_parse_notation): New function.

* key.c (gpgme_key_unref): Free all signature notations.

* keylist.c (op_data_t): New member tmp_keysig.

(finish_key): Clear OPD->tmp_keysig.

* gpgme.c (gpgme_set_keylist_mode): Remove check.

* runpgg.c (gpg_keylist): Support listing signature notations.

(gpg_keylist_ext): Likewise.

2005-10-01 Marcus Brinkmann <marcus@g10code.de>

* engine.h (_gpgme_set_engine_info): Add prototype.

* engine-backend.h (struct engine_ops): Change return type of get_file_name() to const char * to silence gcc warning.

* engine.c (engine_get_file_name): Change return type to const char * to silence gcc warning.

(gpgme_get_engine_info): Use transitional variable to go from const char * to char * to silence gcc warning.

(`_gpgme_set_engine_info`): Likewise.
* `engine-gpgsm.c` (`struct engine_gpgsm`): Change type of `LINE` to `char *` to silence gcc warning.
(`gpgsm_new`): Make `ARGV` a pointer to `const char`.
(`status_handler`): Change type of `SRC`, `END`, `DST`, `ALINE` and `NEWLINE` to `char *` to silence gcc warning.

* `gpgme.def`: Add `gpgme_data_set_file_name`,
`gpgme_data_get_file_name`, `gpgme_sig_notation_clear`,
`gpgme_sig_notation_add` and `gpgme_sig_notation_get`.
* `libgpgme.vers`: Add `gpgme_sig_notation_clear`,
`gpgme_sig_notation_add` and `gpgme_sig_notation_get`.
* `Makefile.am` (`libgpgme_real_la_SOURCES`): Add `sig-notation.c`.
* `context.h` (`struct gpgme_context`): New field `sig_notations`.
* `gpgme.h` (`struct _gpgme_sig_notation`): New member `value_len` and
`critical`.
(`GPGME_SIG_NOTATION_CRITICAL`): New symbol.
(`gpgme_sig_notation_flags_t`): New type.
(`gpgme_sig_notation_add`, `gpgme_sig_notation_clear`,
`gpgme_sig_notation_get`): New prototypes.
* `ops.h` (`_gpgme_sig_notation_create`, `_gpgme_sig_notation_free`):
New prototypes.
* `sig-notation.c` (`_gpgme_sig_notation_free`): New file.
* `verify.c` (`parse_notation`): Use support functions.
(`release_op_data`): Likewise.
* `rungpg.c` (`append_args_from_sig_notations`): New function.
(`gpg_encrypt_sign`, `gpg_sign`): Call it.

2005-09-30 Marcus Brinkmann <marcus@g10code.de>

* `data.h` (`struct gpgme_data`): New member `file_name`.
* `data.c` (`gpgme_data_set_filename`): New function.
(`_gpgme_data_release`): Free `DH->filename` if necessary.
(`gpgme_data_get_filename`): New function.
* `rungpg.c` (`gpg_encrypt`): Set filename option.
(`gpg_encrypt_sign`): Likewise.
(`gpg_sign`): Likewise.
* `libgpgme.vers` (`GPGME_1.1`): Add `gpgme_data_set_file_name` and
`gpgme_data_get_file_name`.
* `decrpyt.c`, `verify.c`, `gpgme.h`: Replace `plaintext_filename` with
`file_name`.

2005-09-29 Marcus Brinkmann <marcus@g10code.de>

* `gpgme.h` (`struct _gpgme_key`): Add field `is_qualified`.
(`struct _gpgme_subkey`): Likewise.
* `keylist.c` (`set_subkey_capability`, `set_mainkey_capability`): Set

field is_qualified.

2005-09-23 Werner Koch <wk@g10code.com>

* w32-io.c (_gpgme_io_pipe): Removed use of environment variable again.

(create_reader, create_writer): Set thread priority higher.

2005-09-19 Werner Koch <wk@g10code.com>

* w32-io.c (_gpgme_io_pipe): New environment variable to change the size of the pipe buffer.

2005-09-13 Werner Koch <wk@g10code.com>

* ath.c: Changes to make it work under W32.

2005-09-12 Marcus Brinkmann <marcus@g10code.de>

* Makefile.am (libgpgme_la_SOURCES): Set to ath.h and ath.c.

(ath_pth_src, ath_pthread_src): Removed.

(w32_o_files): Replace ath-compat.o with ath.o.

(libgpgme_pth_la_CFLAGS): New variable.

* ath-compat.c, ath-pthread-compat.c, ath-pth-compat.c: Removed.

* ath.h (ath_pthread_available, ath_pth_available): Removed.

(ath_init) [!_ATH_EXT_SYM_PREFIX]: Do not define macro.

(struct ath_ops, ath_init) [_ATH_COMPAT]: Removed.

(_ATH_COMPAT): Macro removed.

* posix-sema.c (_gpgme_sema_subsystem_init): Do not call _gpgme_ath_init.

2005-09-12 Marcus Brinkmann <marcus@g10code.de>

* keylist.c (release_op_data): Do not free opd->tmp_uid.

2005-09-07 Werner Koch <wk@g10code.com>

* w32-io.c (build_commandline): Quote argv[0].

2005-08-26 Marcus Brinkmann <marcus@g10code.de>

* runpgg.c (command_handler): Use _gpgme_io_write instead of write.

* edit.c (command_handler): Do not depend on PROCESSED being available.

* engine.h (engine_command_handler_t): Add new argument processed.

* ops.h (_gpgme_passphrase_command_handler_internal): Rename

prototype to ...

(_gpgme_passphrase_command_handler): ... this one.

* passphrase.c (_gpgme_passphrase_command_handler_internal):

Rename to ...

(_gpgme_passphrase_command_handler): ... this one.

* edit.c (command_handler): Add new argument processed. Remove local variable with the same name. Always return processed as true.

* runpg.c (command_handler): Send a newline character if the handler did not.

2005-08-26 Werner Koch <wk@g10code.com>

* w32-util.c (read_w32_registry_string): Updated from code used by GnuPG. This allows for expanding strings and features the implicit fallback key.

(w32_shgetfolderpath, find_program_at_standard_place): New.

(_gpgme_get_gpg_path, _gpgme_get_gpgsm_path): With no registry entry, locate the programs at the standard place.

(dlopen, dlsym, dlclose): New, so that we can keep on using what we are accustomed to.

* debug.c (debug_init): Use PATHSEP_C so that under W32 a semicolon is used which allows us to create files with drive letters.

* w32-io.c (_gpgme_io_read, _gpgme_io_write): Print content in debug mode too.

2005-07-27 Marcus Brinkmann <marcus@g10code.de>

* gpgme.h (gpgme_status_code_t): Add GPGME_STATUS_PLAINTEXT.

(struct _gpgme_op_decrypt_result): New member plaintext_filename.

(struct _gpgme_op_verify_result): Likewise.

* ops.h (_gpgme_parse_plaintext): Add prototype.

* op-support.c (_gpgme_parse_plaintext): New function.

* decrypt.c (release_op_data): Release

OPD->result.plaintext_filename.

(_gpgme_decrypt_status_handler): Handle GPGME_STATUS_PLAINTEXT.

* verify.c (release_op_data): Release

OPD->result.plaintext_filename.

(_gpgme_verify_status_handler): Handle GPGME_STATUS_PLAINTEXT.

2005-08-08 Werner Koch <wk@g10code.com>

* util.h (stpcpy): Renamed to ..

(_gpgme_stpcpy): .. this and made inline. This avoids duplicate definitions when linking statically.

* stpcpy.c: Removed.

2005-08-19 Werner Koch <wk@g10code.com>

* gpgme.def: New.

* versioninfo.rc.in: New.

* Makefile.am: Adds support for building a W32 DLL.

* ttyname_r.c (ttyname_r) [W32]: Return error.

* ath-compat.c [W32]: select and co are not yet supported; return error.

* data-stream.c (stream_seek): Use ftell if ftello is not available.

2005-07-26 Marcus Brinkmann <marcus@g10code.de>

* keylist.c (gpgme_get_key): Allow key IDs.

2005-06-20 Marcus Brinkmann <marcus@g10code.de>

* gpgme.m4: Only call GPGME_CONFIG if found.

2005-06-03 Marcus Brinkmann <marcus@g10code.de>

* gpgme.h (struct _gpgme_signature): New members pubkey_algo and hash_algo.

* verify.c (parse_valid_sig): Parse pubkey and hash algo numbers.

(parse_new_sig): Parse pubkey, hash algo and timestamp for ERRSIG.

(_gpgme_decrypt_status_handler): Fix last change.

* gpgme.h (struct _gpgme_recipient): New structure.

(gpgme_recipient_t): New type.

(struct _gpgme_op_decrypt_result): Add member recipients.

* decrypt.c (op_data_t): New member last_recipient_p.

(_gpgme_op_decrypt_init_result): Initialize last_recipient_p.

(parse_enc_to): New function.

(_gpgme_decrypt_status_handler): Handle status ENC_TO and NO_SECKEY.

* wait-global.c (gpgme_wait): Break out of the fd processing loop after an error.

Reported by Igor Belyi <gpgme@katehok.ac93.org>.

2005-06-02 Marcus Brinkmann <marcus@g10code.de>

* wait.h (_gpgme_run_io_cb): New prototype.

* wait.c (_gpgme_run_io_cb): New function.

* wait-global.c (gpgme_wait): Call it.

* wait-user.c (_gpgme_user_io_cb_handler): Likewise.
* wait-private.c (_gpgme_wait_on_condition): Likewise.

2005-06-02 Werner Koch <wk@g10code.com>

* passphrase.c (_gpgme_passphrase_status_handler): Take care of
GPGME_STATUS_NEED_PASSPHRASE_PIN.
(_gpgme_passphrase_command_handler_internal): Also act on the key
"passphrase.pin.ask".

* gpgme.h: Added status codes GPGME_STATUS_SIG_SUBPACKET,
GPGME_STATUS_NEED_PASSPHRASE_PIN, GPGME_STATUS_SC_OP_FAILURE,
GPGME_STATUS_SC_OP_SUCCESS, GPGME_STATUS_CARDCTRL,
GPGME_STATUS_BACKUP_KEY_CREATED.

2005-05-28 Marcus Brinkmann <marcus@g10code.de>

* data-user.c: Include <errno.h>.

2005-05-17 Marcus Brinkmann <marcus@g10code.de>

* gpgme.c (gpgme_new): Set the CTX->include_certs default to the
default.

2005-05-11 Marcus Brinkmann <marcus@g10code.de>

* w32-io.c (_gpgme_io_select): Fix loop increment.

2005-05-05 Marcus Brinkmann <marcus@g10code.de>

* data-user.c (user_release): Only call user hook if provided.
(user_seek): Return EBADF if no user hook is provided.
(user_read): Likewise.
(user_write): Likewise.

2005-04-28 Marcus Brinkmann <marcus@g10code.de>

* gpgme.h (GPGME_INCLUDE_CERTS_DEFAULT): New macro.
* engine-gpgsm.c (gpgsm_sign): Send the include-certs option after
the reset, just for cleanliness, and do not sent it at all if the
default is requested.
* gpgme.c (gpgme_set_include_certs): Allow to use
GPGME_INCLUDE_CERTS_DEFAULT.

2005-04-21 Werner Koch <wk@g10code.com>

* verify.c (calc_sig_summary): Set the key revoked bit.

2005-04-14 Marcus Brinkmann <marcus@g10code.de>

* wait-global.c (gpgme_wait): Use LI->ctx when checking a context in the list, not the user-provided CTX.

Reported by Igor Belyi <gpgme@katehok.ac93.org>.

* wait-global.c (gpgme_wait): If no context is found, and we should not hang, set *status to 0 and return NULL.

Reported by Igor Belyi <gpgme@katehok.ac93.org>.

2005-03-24 Marcus Brinkmann <marcus@g10code.de>

* data.h (EOPNOTSUPP) [_WIN32]: Remove definition.

* data.c (EOPNOTSUPP) [HAVE_W32_SYSTEM]: Remove definition.

(gpgme_data_read, gpgme_data_write, gpgme_data_seek): Return ENOSYS instead EOPNOTSUPP.

* data-compat.c (EOPNOTSUPP) [HAVE_W32_SYSTEM]: Remove definition.

(gpgme_error_to_errno): Map GPG_ERR_NOT_SUPPORTED to ENOSYS.

2005-03-24 Marcus Brinkmann <marcus@g10code.de>

* io.h: Rename to ...

* priv-io.h: ... this.

* Makefile.am (libgpgme_real_la_SOURCES): Change io.h to priv-io.h.

* data.c, engine-gpgsm.c, posix-io.c, runpgg.c, version.c, w32-io.c, wait-private.c, wait-global.c, wait-user.c, wait.c:
Change all includes of "io.h" to "priv-io.h"

2005-03-09 Werner Koch <wk@g10code.com>

* w32-util.c (_gpgme_get_gpg_path, _gpgme_get_gpgsm_path): Do not cast away type checks.

* io.h [W32]: Do not include stdio.h. If it is needed do it at the right place.

* data.h [W32]: Removed kludge for EOPNOTSUP.

* data.c, data-compat.c [W32]: Explicitly test for it here.

Replaced use of _WIN32 by HAVE_W32_SYSTEM except for public header files.

2005-03-07 Timo Schulz <twoaday@g10code.de>

* gpgme.h: [_WIN32] Removed ssize_t typedef.

* ath.h: [_WIN32] Added some (dummy) types.

* io.h: [_WIN32] include stdio.h.

- * data.h: [_WIN32] Define EOPNOTSUPP.
- * w32-io.c [_WIN32] (_gpgme_io_subsystem_init): New.
- * gpgme.c [_WIN32] (gpgme_set_locale): Disabled.

2004-12-12 Marcus Brinkmann <marcus@g10code.de>

- * engine.c (_gpgme_set_engine_info): Fix assertion.

2004-12-11 Marcus Brinkmann <marcus@g10code.de>

- * util.h [HAVE_CONFIG_H && HAVE_TTYNAME_R] (ttyname_r): Define prototype.
- * ttyname_r.c: New file.

2004-12-07 Marcus Brinkmann <marcus@g10code.de>

- * putc_unlocked.c, funopen.c: I just claim copyright on these files and change their license to LGPL, because they are totally trivial wrapper functions.
- * isascii.c: Change copyright notice to the one from ctype/ctype.h in the GNU C Library (CVS Head 2004-10-10), where isascii is defined as a macro doing exactly the same as the function in this file.
- * memrchr.c: Update from the GNU C Library (CVS Head 2001-07-06).
- * stpcpy.c: Update from the GNU C Library (CVS Head 2004-10-10).
- * ath.c, ath-compat.c, ath.h, ath-pth.c, ath-pth-compat.c, ath-pthread.c, ath-pthread-compat.c, context.h, conversion.c, data.c, data-compat.c, data-fd.c, data.h, data-mem.c, data-stream.c, data-user.c, debug.c, debug.h, decrypt.c, decrypt-verify.c, delete.c, edit.c, encrypt.c, encrypt-sign.c, engine-backend.h, engine.c, engine-gpgsm.c, engine.h, error.c, export.c, genkey.c, get-env.c, gpgme.c, gpgme.h, import.c, io.h, key.c, keylist.c, mkstatus, Makefile.am, ops.h, op-support.c, passphrase.c, posix-io.c, posix-sema.c, posix-util.c, progress.c, runpgp.c, sema.h, sign.c, signers.c, trust-item.c, trustlist.c, util.h, verify.c, version.c, w32-io.c, w32-sema.c, w32-util.c, wait.c, wait-global.c, wait.h, wait-private.c, wait-user.c: Change license to LGPL.

2004-12-07 Marcus Brinkmann <marcus@g10code.de>

- * libgpgme.vers (GPGME_1.1): New version.
- * engine-backend.h (struct engine_ops): Add argument FILE_NAME to member get_version(). Add arguments FILE_NAME and HOME_DIR to member new(). Change return type of get_file_name and get_version to char*.
- * engine-gpgsm.c (gpgsm_get_version): Change return type to char pointer. Do not cache result.

(gpgsm_new): Add file_name and home_dir argument, and use them instead of the defaults, if set.

* runpg.c (struct engine_gpg): New member file_name.

(gpg_get_version): Change return type to char pointer, and do not cache result.

(gpg_release): Free gpg->file_name.

(gpg_new): Take new arguments file_name and home_dir. Set the --homedir argument if HOME_DIR is not NULL. Set gpg->file_name.

(start): Use gpg->file_name instead _gpgme_get_gpg_path, if set.

* engine.h (_gpgme_engine_info_copy, _gpgme_engine_info_release): New prototypes.

(_gpgme_engine_new): Change first argument to gpgme_engine_info_t info.

* engine.c: Include <assert.h>.

(gpgme_get_engine_info): Set *INFO within the lock. Move ENGINE_INFO and ENGINE_INFO_LOCK to

(engine_info, engine_info_lock): ... here. New static variables.

(engine_get_version): Add file_name argument to get_version invocation. Change return type to char pointer.

(gpgme_engine_check_version): Rewritten to free() the return value of engine_get_version after using it.

(_gpgme_engine_info_release): New function.

(gpgme_get_engine_info): Rewritten.

(_gpgme_engine_info_copy): New function.

(_gpgme_set_engine_info): New function.

(gpgme_set_engine_info): New function.

(_gpgme_engine_new): Change first argument to gpgme_engine_info_t info, and use that.

* gpgme.h (struct _gpgme_engine_info): Change type of file_name and version to char * (remove the const). New member home_dir.

(gpgme_set_engine_info, gpgme_ctx_get_engine_info, gpgme_ctx_set_engine_info): New prototypes.

* context.h (struct gpgme_context): New member engine_info.

* gpgme.c (gpgme_new): Allocate CTX->engine_info.

(gpgme_release): Deallocate CTX->engine_info.

(gpgme_ctx_get_engine_info, gpgme_ctx_set_engine_info): New functions.

* op-support.c (_gpgme_op_reset): Look for correct engine info and pass it to _gpgme_engine_new.

* version.c (gpgme_check_version): Adjust to _gpgme_compare_versions returning an int.

(_gpgme_compare_versions): Return an int value, not a const char pointer.

* ops.h (_gpgme_compare_versions): Same for prototype.

2004-10-03 Marcus Brinkmann <marcus@g10code.de>

* verify.c (parse_trust): If no reason is provided, set

SIG->validity_reason to 0.

(calc_sig_summary): Set GPGME_SIGSUM_CRL_TOO_OLD if appropriate.

2004-10-22 Marcus Brinkmann <marcus@g10code.de>

* engine-gpgsm.c (map_assuan_error): Return 0 if ERR is 0.

(start): Call map_assuan_error on return value of
assuan_write_line.

2004-10-05 Marcus Brinkmann <marcus@g10code.de>

* op-support.c (_gpgme_op_data_lookup): Use char pointer for
pointer arithmetic.

2004-09-30 Marcus Brinkmann <marcus@g10code.de>

* gpgme.m4: Implement the --api-version check.

* runpg.c (read_status): Move the polling of the output data pipe
to just before removing the command fd, from just before adding
it. This avoids buffering problems.

* data.c (_gpgme_data_inbound_handler): Use _gpgme_io_read, not
read, to improve debug output.

2004-09-29 Marcus Brinkmann <marcus@g10code.de>

* gpgme.h (GPGME_IMPORT_NEW, GPGME_IMPORT_UID, GPGME_IMPORT_SIG,
GPGME_IMPORT_SUBKEY, GPGME_IMPORT_SECRET,
(GPGME_KEYLIST_MODE_LOCAL, GPGME_KEYLIST_MODERN_EXTERN,
GPGME_KEYLIST_MODE_SIGS, GPGME_KEYLIST_MODE_VALIDATE): Change from
enum to macros.

(gpgme_keylist_mode_t): Define as unsigned int.

(gpgme_key_t): Change type of keylist_mode to
gpgme_keylist_mode_t.

2004-09-23 Marcus Brinkmann <marcus@g10code.de>

* data.c (_gpgme_data_outbound_handler): Close the file descriptor
if we get an EPIPE.

* data-stream.c (stream_seek): Call ftello and return the current
offset.

* data.h (struct gpgme_data): Change type of data.mem.offset to
off_t.

* data.c (gpgme_data_seek): Check dh->cb->seek callback, not read
callback. If SEEK_CUR, adjust the offset by the pending buffer
size. Clear pending buffer on success.

2004-09-14 Marcus Brinkmann <marcus@g10code.de>

* gpgme.m4: Add copyright notice.

2004-08-18 Marcus Brinkmann <marcus@g10code.de>

* passphrase.c (_gpgme_passphrase_status_handler): Always run the status handler.

2004-08-17 Marcus Brinkmann <marcus@g10code.de>

* runpgg.c (build_argv): Use --no-sk-comment, not --no-comment.

2004-06-23 Marcus Brinkmann <marcus@g10code.de>

* key.c (_gpgme_key_append_name): Make sure tail points to the byte following the uid.
(_gpgme_key_add_sig): Likewise. Don't use calloc, but malloc and memset.

2004-06-02 Marcus Brinkmann <marcus@g10code.de>

* libgpgme.vers: Remove C-style comment, which is not supported by older binutils.

2004-05-21 Marcus Brinkmann <marcus@g10code.de>

* gpgme-config.in (Options): Support --api-version.

* libgpgme.vers: List all gpgme symbols under version GPGME_1.0.

* decrypt.c (_gpgme_decrypt_status_handler): Fix last change.

* verify.c (parse_error): Likewise.

* verify.c (parse_error): Do not skip location of where token.

* gpgme.h (gpgme_status_code_t): Add GPGME_STATUS_REVKEYSIG.

* verify.c (_gpgme_verify_status_handler): Add handling of GPGME_STATUS_REVKEYSIG.
(parse_trust): Likewise.

2004-05-21 Marcus Brinkmann <marcus@g10code.de>

* gpgme.h (struct _gpgme_decrypt_result): New fields wrong_key_usage and _unused.

* decrypt.c (_gpgme_decrypt_status_handler): Don't skip over

character after a matched string, as in a protocol error this could skip over the trailing binary zero.

Handle decrypt.keyusage error notifications.

* gpgme.h (struct _gpgme_key): New member keylist_mode.

* keylist.c (keylist_colon_handler): Set the keylist_mode of KEY.

2004-04-29 Marcus Brinkmann <marcus@g10code.de>

* gpgme.h (struct _gpgme_signature): Change member WRONG_KEY_USAGE to unsigned int. Same for member _unused.

* keylist.c (set_mainkey_trust_info): Rewritten.

(set_subkey_capability): Handle 'd' (disabled).

(set_mainkey_capability): Rewritten.

2004-04-22 Marcus Brinkmann <marcus@g10code.de>

* gpgme.m4: Quote first argument to AC_DEFUN.

2004-04-21 Werner Koch <wk@gnupg.org>

* key.c (gpgme_key_unref): Allow passing NULL like free does.

The rule of least surprise.

2004-04-15 Werner Koch <wk@gnupg.org>

* verify.c (prepare_new_sig, _gpgme_verify_status_handler): Remove unused result.signatures items.

* keylist.c (gpgme_get_key): Return an error if FPR is NULL.

2004-04-08 Werner Koch <wk@gnupg.org>

* verify.c (_gpgme_verify_status_handler): Ignore the error status if we can't process it.

* decrypt-verify.c (decrypt_verify_status_handler): Backed out yesterday's hack. It is not any longer required.

2004-04-07 Werner Koch <wk@gnupg.org>

* decrypt-verify.c (decrypt_verify_status_handler): Hack to cope with meaningless error codes from the verify status function.

2004-04-05 Werner Koch <wk@gnupg.org>

* gpgme.h: Add GPGME_STATUS_NEWSIG.

* verify.c (parse_error): Compare only the last part of the where token.

(prepare_new_sig): New.

(parse_new_sig): Use prepare_new_sig when required.

(_gpgme_verify_status_handler): Handle STATUS_NEWSIG.

* engine-gpgsm.c (gpgsm_keylist_ext): Send with-validation option. Fixed pattern construction.

(status_handler): Add debugging output.

2004-03-23 Marcus Brinkmann <marcus@g10code.de>

* engine-gpgsm.c (gpgsm_new): Protect _only_ tty related code with isatty(). Submitted by Bernhard Herzog.

2004-03-11 Marcus Brinkmann <marcus@g10code.de>

* engine-gpgsm.c (gpgsm_new): Protect all tty related code with isatty().

* runpg.c (gpg_cancel): Set GPG->fd_data_map to NULL after releasing it.

* engine-gpgsm.c (gpgsm_cancel): Only call assuan_disconnect if GPGSM->assuan_ctx is not NULL. Set it to NULL afterwards.

2004-03-07 Marcus Brinkmann <marcus@g10code.de>

* gpgme-config.in: Do not emit include and lib directory for prefix "/usr" or "".

2004-03-03 Werner Koch <wk@gnupg.org>

* engine-gpgsm.c (gpgsm_export_ext): Properly insert a space between patterns.

2004-02-18 Werner Koch <wk@gnupg.org>

* gpgme-config.in: Ignore setting of --prefix.

2004-02-25 Marcus Brinkmann <marcus@g10code.de>

* runpg.c (gpg_cancel): New function.

(gpg_release): Call it here.

(_gpgme_engine_ops_gpg): Add it here.

* engine-gpgsm.c (gpgsm_cancel): Fix last change.

2004-02-24 Marcus Brinkmann <marcus@g10code.de>

- * gpgme.c (gpgme_cancel): New function.
- * engine-backend.h (struct engine_ops): New member cancel.
- * engine.h (_gpgme_engine_cancel): New prototype.
- * engine.c (_gpgme_engine_cancel): New function.
- * engine-gpgsm.c (_gpgme_engine_ops_gpgsm): Add new member cancel. (gpgsm_cancel): New function.
- (gpgsm_release): Use it.
- * runpg.c (_gpgme_engine_ops_gpg): Add new member cancel.

2004-02-17 Werner Koch <wk@gnupg.org>

- * gpgme.h: Add GPGME_KEYLIST_MODE_VALIDATE.
- * engine-gpgsm.c (gpgsm_keylist): Send this to gpgsm.

2004-02-15 Werner Koch <wk@gnupg.org>

- * memchr.c (memchr): Fixed implementation. Problem pointed out by Adriaan de Groot.

2004-02-01 Marcus Brinkmann <marcus@g10code.de>

- * runpg.c (build_argv): Use --no-comment, not --comment "".
- * data-compat.c (gpgme_data_new_from_filepart): Call fseeko if available.
- * data-stream.c (stream_seek): Likewise.

2004-01-16 Werner Koch <wk@gnupg.org>

- * conversion.c (_gpgme_map_gnupg_error): Handle numerical codes as used by GnuPG 1.9.x

2004-01-13 Marcus Brinkmann <marcus@g10code.de>

- * gpgme.h (struct _gpgme_key_sig): Fix comment on REVOKED.

2004-01-12 Werner Koch <wk@gnupg.org>

- * sign.c: Include util.h for prototype of _gpgme_parse_timestamp.

2003-12-25 Marcus Brinkmann <marcus@g10code.de>

- * gpgme.h (_GPGME_D_CLASS): Revert this change.
- (struct _gpgme_key_sig): For C++ compilers, rename class member to _obsolete_class. Add new member sig_class.
- (struct _gpgme_new_signature): Same here.
- * key.c (gpgme_key_sig_get_ulong_attr): Use CERTSIG->sig_class, not CERTSIG->class.

- * keylist.c (keylist_colon_handler): Likewise for KEYSIG, but keep setting KEYSIG->class, too. Rename variable CLASS to SIG_CLASS.
- * sign.c (parse_sig_created): Set SIG->sig_class.

2003-12-22 Werner Koch <wk@gnupg.org>

- * gpgme.h (_GPGME_D_CLASS): Kludge for C++ compatibility without changing the C API.

2003-11-19 Werner Koch <wk@gnupg.org>

- * conversion.c (_gpgme_parse_timestamp): New.
- (atoi_1, atoi_2, atoi_4): New.
- * keylist.c (parse_timestamp): Removed. Changed all callers to use the new function.
- * verify.c (parse_valid_sig): Ditto. Repalced the errno check.
- * sign.c (parse_sig_created): Ditto.

2003-10-31 Werner Koch <wk@gnupg.org>

- * keylist.c (parse_timestamp): Detect ISO 8601 timestamps and try to convert them.

2003-10-10 Marcus Brinkmann <marcus@g10code.de>

- * genkey.c (get_key_parameter): Make a copy of the key parameters. Submitted by Miguel Coca <e970095@zipi.fi.upm.es>.

2003-10-06 Marcus Brinkmann <marcus@g10code.de>

- * data-compat.c: Include <sys/time.h> before <sys/stat.h> for broken systems.
- * engine-gpgsm.c (map_assuan_error): If ERR is -1, return sensible error.
- * io.h (_gpgme_io_subsystem_init): New prototype.
- * posix-io.c (_gpgme_io_subsystem_init): Add function.
- (_gpgme_io_spawn): Do not fixup signal handler here.
- * version.c (do_subsystem_inits): Call _gpgme_io_subsystem_init.
- * debug.c (debug_init): Drop const qualifier from E.
- * ath.h (struct ath_ops): Make ADDR argument of CONNECT prototype const.
- (ath_connect): Make ADDR argument const.
- * ath-pthread.c (ath_connect): Likewise.
- * ath-pth.c (ath_connect): Likewise.

- * ath-compat.c (ath_connect): Likewise.
- * ath.c (ath_connect): Likewise.

- * ath.h [HAVE_SYS_SELECT_H]: Include <sys/select.h> for fd_set.
[!HAVE_SYS_SELECT_H]: Include <sys/time.h>.

- * conversion.c (_gpgme_hextobyte): Drop "unsigned" from type of SRC argument.
- * util.h (_gpgme_hextobyte): Likewise for prototype.

- * gpgme.h: Remove trailing comma in enum.

- * runpgp.c: Do not include <time.h>, <sys/time.h>, <sys/types.h>, <signal.h>, <fcntl.h>, or "unistd.h".

2003-10-02 Marcus Brinkmann <marcus@g10code.de>

- * engine-backend.h (struct engine_ops): Add argument TYPE.
- * engine.c (_gpgme_engine_op_edit): Likewise.
- * engine.h: Likewise.
- * runpgp.c (gpg_edit): Likewise. Use it.
- * edit.c (edit_start): Likewise. Pass it on.
- (gpgme_op_edit_start, gpgme_op_edit): Likewise.
- (gpgme_op_card_edit_start, gpgme_op_card_edit): New functions.

2003-09-30 Marcus Brinkmann <marcus@g10code.de>

- * gpgme.h (gpg_strerror_r): Change prototype to match gpg_strerror_r change.
- * error.c (gpg_strerror_r): Likewise, also update implementation.

- * gpgme.c (gpgme_hash_algo_name): Change name of RMD160 to RIPEMD160, name of TIGER to TIGER192, name of CRC32-RFC1510 to CRC32RFC1510, and name of CRC24-RFC2440 to CRC24RFC2440.

2003-09-14 Marcus Brinkmann <marcus@g10code.de>

- * gpgme.h: Add prototype for gpgme_set_locale.

- * gpgme.h: Define macro _GPGME_INLINE depending on the compiler characteristics and use that instead __inline__.

- * context.h (struct gpgme_context): New members lc_ctype and lc_messages.
- * gpgme.c: Include <locale.h>.
- (def_lc_lock, def_lc_ctype, def_lc_messages): New static variables.
- (gpgme_set_locale): New function.

- * engine.c (_gpgme_engine_new): Add arguments lc_ctype and lc_messages.
- * engine.h (_gpgme_engine_new): Likewise.
- * engine-gpgsm.c (gpgsm_new): Likewise.
- * runpgg.c (gpg_new): Likewise.
- * engine-backend.h (struct engine_ops): Likewise to NEW.
- * op-support.c (_gpgme_op_reset): Likewise to invocation of _gpgme_engine_new.

2003-09-13 Marcus Brinkmann <marcus@g10code.de>

- * gpgme.h (gpgme_strerror_r): New prototype.
- * error.c (gpgme_strerror_r): New function.

- * get-env.c: New file.
- * util.h (_gpgme_getenv): Add prototype.
- * Makefile.am (libgpgme_real_la_SOURCES): Add get-env.c.
- * runpgg.c (build_argv): Use _gpgme_getenv.
- * debug.c (debug_init): Likewise.
- * engine-gpgsm.c (gpgsm_new): Likewise.
- (gpgsm_new): Use ttyname_r.
- * w32-io.c (_gpgme_io_spawn): Disable debugging for now.

2003-09-03 Marcus Brinkmann <marcus@g10code.de>

- * gpgme-config.in: Use \$libdir, not @libdir@, for the echo command.

- * gpgme-config.in: Rewritten.
- * gpgme.m4: Rewritten.

2003-08-19 Marcus Brinkmann <marcus@g10code.de>

The ath files (ath.h, ath.c, ath-pth.c, ath-pthread.c, ath-compat.c, ath-pth-compat.c and ath-pthread-compat.c) have been updated to have better thread support, and the Makefile.am was changed to reflect that.

- * util.h [!HAVE_FOPENCOOKIE]: Remove fopencookie declaration.
- * engine-gpgsm.c (gpgsm_assuan_simple_command): Set ERR to return value of status_fnc.
- * runpgg.c (start): Return SAVED_ERRNO, not errno.

2003-08-18 Marcus Brinkmann <marcus@g10code.de>

- * runpgg.c (start): Use saved_errno instead errno.

2003-08-18 Marcus Brinkmann <marcus@g10code.de>

- * funopen.c, putc_unlocked.c, isascii.c, memchr.c: New files.
- * fopencookie.c: File removed.

2003-08-15 Marcus Brinkmann <marcus@g10code.de>

- * gpgme-config.in: Put gpg-error related flags after gpgme's.

2003-08-14 Marcus Brinkmann <marcus@g10code.de>

- * gpgme.h (struct _gpgme_new_signature): Rename member CLASS to _OBSOLETE_CLASS, add member CLASS with type unsigned int.
- * sign.c (parse_sig_created): Also set SIG->unused_class for backward compatibility.

2003-08-04 Marcus Brinkmann <marcus@g10code.de>

- * verify.c (parse_new_sig): Fix status parsing case.

2003-07-31 Marcus Brinkmann <marcus@g10code.de>

- * gpgme.h (struct _gpgme_subkey): Add flag CAN_AUTHENTICATE. Lower _UNUSED to 23 bits.
- (struct _gpgme_key): Likewise.
- * keylist.c (set_mainkey_capability): Support 'a' and 'A'.
- (set_subkey_capability): Support 'a'.

- * keylist.c (gpgme_get_key): Check if there is more than one key listed, and return GPG_ERR_AMBIGUOUS_NAME in that case.

- * util.h (_gpgme_decode_c_string): Change type of LEN argument to size_t.

(_gpgme_decode_percent_string): Likewise.

- * conversion.c (_gpgme_decode_c_string): Likewise.

(_gpgme_decode_percent_string): Likewise.

(_gpgme_map_gnupg_error): Change type of I to unsigned int.

- * signers.c (gpgme_signers_clear): Likewise.

(gpgme_signers_enum): New unsigned variable SEQNO, set to SEQ. Use SEQNO instead SEQ.

- * wait.c (fd_table_put): Change type of I and J to unsigned int.

* wait-global.c (_gpgme_wait_global_event_cb): Change type of IDX to unsigned int.

(gpgme_wait): Change type of I and IDX to unsigned int.

- * wait-private.c (_gpgme_wait_on_condition): Change type of IDX and I to unsigned int.

* posix-io.c (_gpgme_io_close): Cast return value of macro DIM to int to suppress gcc warning.

(_gpgme_io_set_close_notify): Likewise.

(_gpgme_io_select): Change type of I to unsigned int.
* engine.c (gpgme_get_engine_info): Change type of PROTO to unsigned int.
* wait-user.c (_gpgme_user_io_cb_handler): Change type of IDX and I to unsigned int.

2003-07-29 Marcus Brinkmann <marcus@g10code.de>

* decrypt-verify.c (decrypt_verify_status_handler): Expand silly and wrong expression.
* encrypt-sign.c (encrypt_sign_status_handler): Likewise.
* encrypt.c (encrypt_sym_status_handler): Likewise.
* sign.c (sign_status_handler): Likewise.
* verify.c (verify_status_handler): Likewise.
* decrypt.c (decrypt_status_handler): Likewise.

* engine.c (gpgme_get_engine_info): Initialize NULL.

2003-07-23 Marcus Brinkmann <marcus@g10code.de>

* gpgme-config.in (gpg_error_libs): Quote GPG_ERROR_CFLAGS and GPG_ERROR_LIBS when setting the corresponding variables.
Reported by Stphane Corthsy.

2003-07-22 Marcus Brinkmann <marcus@g10code.de>

* engine-gpgsm.c (set_recipients): Move declaration of NEWLEN to the beginning of the block.

2003-06-22 Marcus Brinkmann <marcus@g10code.de>

* data-mem.c (mem_write): Copy original buffer content.

2003-06-22 Marcus Brinkmann <marcus@g10code.de>

* gpgme.h (gpgme_user_ids_release, gpgme_user_ids_append): Remove prototypes.

2003-06-06 Marcus Brinkmann <marcus@g10code.de>

* Makefile.am (AM_CPPFLAGS): Add @GPG_ERROR_CFLAGS@.
* gpgme-config.in (gpg_error_libs, gpg_error_cflags): New variables.
Print them.

* op-support.c (_gpgme_parse_inv_userid): Rename to _gpgme_parse_inv_recp and change to new datatype.
* ops.h (_gpgme_parse_inv_key): Fix prototype.
* gpgme.h (struct _gpgme_invalid_user_id): Rename to

__gpgme_invalid_key. Rename field ID to KEY.
(gpgme_invalid_user_id_t): Rename to gpgme_invalid_key_t.
(struct _gpgme_op_encrypt_result): Here, too.
(struct _gpgme_op_sign_result): Likewise.
* encrypt.c (struct op_data): Likewise.
(release_op_data): Likewise.
* sign.c (struct op_data): Likewise.
(release_op_data): Likewise.

* posix-io.c (_gpgme_io_read): Save errno across debug calls.
(_gpgme_io_write): Likewise.
(_gpgme_io_pipe): Likewise.
(_gpgme_io_select): Likewise.

* runpgg.c (struct engine_gpg): Remove arg_error.
(add_arg): Don't set arg_error.
(add_data): Likewise.
(start): Don't check arg_error.
(gpg_new): Check return value of add_arg.
* verify.c (parse_notation): Free allocated memory at error.

2003-06-05 Marcus Brinkmann <marcus@g10code.de>

Everywhere: Use libgpg-error error codes.

* Makefile.am (EXTRA_DIST): Remove mkerrors.
(BUILT_SOURCES): Remove errors.c.
(MOSTLYCLEANFILES): Likewise.
(libgpgme_la_SOURCES): Likewise. Add error.c.
(errors.c): Remove target.
* mkerrors: File removed.
* error.c: New file.

* gpgme.h (gpgme_error_t): Change to type gpg_error_t.
(gpgme_err_code_t, gpgme_err_source_t): New types.
(gpgme_err_code, gpgme_err_source, gpgme_error, gpgme_err_make):
New static inline functions.
(gpgme_strsource, gpgme_err_code_from_errno,
gpgme_err_code_to_errno, gpgme_err_make_from_errno,
gpgme_error_from_errno): New prototypes.

2003-05-29 Marcus Brinkmann <marcus@g10code.de>

* gpgme.h (gpgme_op_export_start): Change second arg to const char *.
(gpgme_op_export): Likewise.
(gpgme_op_export_ext_start): New prototype.
(gpgme_op_export_ext): Likewise.
* engine.h: Likewise for _gpgme_engine_op_export and

`_gpgme_engine_op_export_ext`.
 * `engine-backend.h` (`struct engine_ops`): Change second argument of prototype of `export` to `const char *`, and add reserved `int` as third argument. Add prototype for `export_ext`.
 * `engine.c` (`_gpgme_engine_op_export_ext`): New function.
 (`_gpgme_engine_op_export`): Change second argument of prototype of `export` to `const char *`, and add reserved `int` as third argument.
 * `rungpg.c` (`gpg_export`): Change second argument of prototype of `export` to `const char *`, and add reserved `int` as third argument.
 (`gpg_export_ext`): New function.
 (`gpg_keylist_ext`): Break loop at error.
 (`_gpgme_engine_ops_gpg`): Add `gpg_export_ext`.
 * `engine-gpgsm.c` (`gpgsm_export`): Change second argument of prototype of `export` to `const char *`, and add reserved `int` as third argument.
 (`gpgsm_export_ext`): New function.
 (`_gpgme_engine_ops_gpgsm`): Add `gpgsm_export_ext`.
 * `export.c` (`export_start`): Change second argument of prototype of `export` to `const char *`, and add reserved `int` as third argument.
 (`gpgme_op_export_start`): Likewise.
 (`export_ext_start`): New function.
 (`gpgme_op_export_ext_start`): Likewise.
 (`gpgme_op_export_ext`): Likewise.

* `gpgme.h` (`gpgme_keylist_mode_t`): New type for anonymous enum.
 (`gpgme_sigsum_t`): New type for anonymous enum.

* `encrypt-sign.c` (`encrypt_sign_start`): Check for errors earlier, and return an error if RECP is not set.

* `Makefile.am` (`libgpgme_la_SOURCES`): Remove `user-id.c`.
 * `user-id.c`: Remove file.
 * `ops.h`: Remove prototype for `_gpgme_user_ids_all_valid`.
 * `gpgme.h` (`gpgme_encrypt_flags_t`): New type.
 (`gpgme_op_encrypt_start`): Change second parameter to type `gpgme_key_t[]`, and add third parameter.
 (`gpgme_op_encrypt`): Likewise.
 (`gpgme_op_encrypt_sign_start`): Likewise.
 (`gpgme_op_encrypt_sign`): Likewise.
 * `encrypt.c` (`encrypt_start`): Likewise.
 (`gpgme_op_encrypt_start`): Likewise.
 (`gpgme_op_encrypt`): Likewise. Pass flags to engine.
 * `encrypt-sign.c` (`encrypt_sign_start`): Likewise.
 (`gpgme_op_encrypt_sign_start`): Likewise.
 (`gpgme_op_encrypt_sign`): Likewise.
 * `engine-backend.h` (`struct engine_ops`): Likewise for prototypes of `encrypt` and `encrypt_sign`.
 * `engine.h`: Likewise for prototypes of `_gpgme_engine_op_encrypt`

and `_gpgme_engine_op_encrypt_sign`.
* `engine.c` (`_gpgme_engine_op_encrypt`): Likewise.
(`_gpgme_engine_op_encrypt_sign`): Likewise.
* `rungpg.c` (`gpg_encrypt`): Likewise.
(`gpg_encrypt_sign`): Likewise.
* `rungpg.c` (`gpg_encrypt`): Check flags for always trust option.
* `engine-gpgsm.c` (`gpgsm_encrypt`): Likewise.
(`set_recipients`): Rewritten to use keys instead user IDs.
* `rungpg.c` (`append_args_from_recipients`): Rewritten to use keys instead user IDs.
* `encrypt.c` (`_gpgme_encrypt_status_handler`): Change errors returned to `GPGME_Invalid_Key` and `GPGME_General_Error`.

2003-05-28 Marcus Brinkmann <marcus@g10code.de>

* `engine-gpgsm.c`: Rename `GpgsmObject` to `engine_gpgsm_t`.
(`struct gpgsm_object_s`): Rename to `struct engine_gpgsm`.
* `rungpg.c`: Rename `GpgObject` to `engine_gpg_t`.
(`struct gpg_object_s`): Rename to `struct engine_gpg`.

* `context.h` (`struct gpgme_context`): Change `EngineObject` to `engine_object_t`.
(`enum ctx_op_data_type`): Rename to `ctx_op_data_id_t`.
(`ctx_op_data_t`): New type.
(`struct gpgme_context`): Use it.
* `ops.h` (`_gpgme_op_data_lookup`): Use new type name.
* `op-support.c` (`_gpgme_op_data_lookup`): Likewise.
* `engine.c`: Rename `EngineObject` to `engine_t` in the file. Also `EngineStatusHandler` to `engine_status_handler_t`, `EngineCommandHandler` to `engine_command_handler_t` and `EngineColonLineHandler` to `engine_colon_line_handler`.
* `rungpg.c` (`start`): Likewise.
* `engine-gpgsm.c`: Likewise.
* `engine-backend.h` (`struct engine_ops`): Likewise
* `engine.h` (`struct engine_object_s`): Rename to `struct engine`.
(`EngineObject`): Rename to `engine_t`. Also everywhere else in the file.
(`EngineStatusHandler`): Rename to `engine_status_handler_t`.
(`EngineColonLineHandler`): Rename to `engine_colon_line_handler_t`.
(`EngineCommandHandler`): Rename to `engine_command_handler_t`.

* `engine-gpgsm.c` (`gpgsm_export`): Fix bug in last change.

* `Makefile.am` (`libgpgme_la_SOURCES`): Remove `recipient.c`, add `user-id.c`.
* `gpgme.h` (`gpgme_recipients_t`): Removed.
(`gpgme_recipients_new`, `gpgme_recipients_release`, `gpgme_recipients_add_name`,

gpgme_recipients_add_name_with_validity, gpgme_recipients_count,
gpgme_recipients_enum_open, gpgme_recipients_enum_read,
gpgme_recipients_enum_close): Removed.
(gpgme_op_encrypt, gpgme_op_encrypt_start, gpgme_op_encrypt_sign,
gpgme_op_encrypt_sign_start, gpgme_op_export_start,
gpgme_op_export): Change second argument to gpgme_user_id_t.
(gpgme_user_ids_release): New prototype.
(gpgme_user_ids_append): Likewise.
* ops.h (_gpgme_recipients_all_valid): Remove.
(_gpgme_user_ids_all_valid): Add.
* context.h (struct gpgme_recipients): Removed.
* user-id.c: New file.
* recipient.c: Removed file.
* runpg.c (append_args_from_recipients): Change last arg to
gpgme_user_id_t. Reimplement.
(gpg_encrypt): Change second arg to gpgme_user_id_t.
(gpg_encrypt_sign): Likewise.
(gpg_export): Likewise. Rewrite user ID list code.
* engine.c (_gpgme_engine_op_encrypt): Change second arg to
gpgme_user_id_t.
(_gpgme_engine_op_encrypt_sign): Likewise.
(_gpgme_engine_op_export): Likewise.
* engine.h (_gpgme_engine_op_encrypt, _gpgme_engine_op_encrypt_sign,
_gpgme_engine_op_export): Likewise.
* engine-gpgsm.c (set_recipients): Likewise. Rewrite loop code.
(gpgsm_encrypt): Likewise.
(gpgsm_export): Likewise.
* engine-backend.h (struct engine_ops): Likewise for members
ENCRYPT, ENCRYPT_SIGN and EXPORT.
* export.c (export_start, gpgme_op_export_start, gpgme_op_export):
Likewise.
* encrypt.c (encrypt_start): Likewise. Don't check for count of
recipients.
(gpgme_op_encrypt_start): Likewise.
(gpgme_op_encrypt): Likewise.
* encrypt-sign.c (encrypt_sign_start): Likewise.
(gpgme_op_encrypt_sign): Likewise.
(gpgme_op_encrypt_sign_start): Likewise.

2003-05-27 Marcus Brinkmann <marcus@g10code.de>

* gpgme.h (struct _gpgme_op_import_result): Add skipped_new_keys.
* import.c (parse_import_res): Add skipped_new_keys parser.

* op-support.c (_gpgme_parse_inv_userid): Add missing break
statements.
* encrypt.c (gpgme_op_encrypt): Use gpgme_error_t instead of int.

2003-05-27 Marcus Brinkmann <marcus@g10code.de>

* encrypt.c (gpgme_op_encrypt_result): Use intermediate variable
HOOK to avoid compiler warning. Don't ask, you don't want to know.
(_gpgme_encrypt_status_handler): Likewise.
(_gpgme_op_encrypt_init_result): Likewise.
* decrypt.c (gpgme_op_decrypt_result): Likewise.
(_gpgme_decrypt_status_handler): Likewise.
(_gpgme_op_decrypt_init_result): Likewise.
* verify.c (gpgme_op_verify_result): Likewise.
(_gpgme_verify_status_handler): Likewise.
(_gpgme_op_verify_init_result): Likewise.
* edit.c (edit_status_handler): Likewise.
(command_handler): Likewise.
(edit_start): Likewise.
* genkey.c (gpgme_op_genkey_result): Likewise.
(genkey_status_handler): Likewise.
(genkey_start): Likewise.
* import.c (gpgme_op_import_result): Likewise.
(import_status_handler): Likewise.
(_gpgme_op_import_start): Likewise.
* trustlist.c (gpgme_op_trustlist_next): Likewise.
(_gpgme_op_trustlist_event_cb): Likewise.
(gpgme_op_trustlist_start): Likewise.
* keylist.c (gpgme_op_keylist_result): Likewise.
(keylist_colon_handler): Likewise.
(keylist_status_handler): Likewise.
(_gpgme_op_keylist_event_cb): Likewise.
(gpgme_op_keylist_start): Likewise.
(gpgme_op_keylist_ext_start): Likewise.
(gpgme_op_keylist_next): Likewise.
* passphrase.c (_gpgme_passphrase_status_handler): Likewise.
(_gpgme_passphrase_command_handler_internal): Likewise.
* sign.c (gpgme_op_sign_result): Likewise.
(_gpgme_sign_status_handler): Likewise.
(_gpgme_op_sign_init_result): Likewise.

* passphrase.c (_gpgme_passphrase_command_handler_internal): Fix
access to pointer type.

2003-05-26 Marcus Brinkmann <marcus@g10code.de>

* engine.h (EngineCommandHandler): Change last argument to int fd.
* gpgme.h (gpgme_passphrase_cb_t): Rewritten to take parts of the
description and fd.
(gpgme_edit_cb_t): Change last argument to int fd.
* ops.h (_gpgme_passphrase_command_handler_internal): New prototype.
* passphrase.c: Include <assert.h>.

(op_data_t): Rename userid_hint to uid_hint, remove last_pw_handle.
(release_op_data): Check values before calling free.
(_gpgme_passphrase_status_handler): Likewise.
(_gpgme_passphrase_command_handler_internal): New function.
(_gpgme_passphrase_command_handler): Rewritten.
* edit.c (edit_status_handler): Pass -1 as fd argument.
(command_handler): Update prototype. New variable processed. Use it to store return value of
_gpgme_passphrase_command_handler_internal which is now used instead _gpgme_passphrase_command_handler. Use it also to check if we should call the user's edit function. Pass fd to user's edit function.
* runpg.c (struct gpg_object_s): Change type of cmd.cb_data to void *.
(gpg_release): Check value before calling free. Do not release cmd.cb_data.
(command_cb): Function removed.
(command_handler): New function. Thus we don't use a data object for command handler stuff anymore, but handle it directly. This allows proper error reporting (cancel of passphrase requests, for example). Also all callbacks work via direct writes to the file descriptor (so that passphrases are not kept in insecure memory).
(gpg_set_command_handler): Rewritten to use even more ugly hacks.
(read_status): Check cmd.keyword before calling free. Install command_handler as the I/O callback handler with GPG as private data.

* runpg.c (gpg_new): Add --enable-progress-filter to gpg invocation.
* decrypt-verify.c (_gpgme_op_decrypt_verify_start): Rename to decrypt_verify_start.
(gpgme_op_decrypt_verify_start): Call decrypt_verify_start.
(gpgme_op_decrypt_verify): Likewise.
* verify.c (verify_status_handler): New function that also calls progress status handler.
(_gpgme_op_verify_start): Set status handler to verify_status_handler. Rename to (verify_start).
(gpgme_op_verify_start): Call verify_start.
(gpgme_op_verify): Likewise.
* encrypt.c (encrypt_status_handler): New function.
(_gpgme_encrypt_sym_status_handler): Call progress status handler. Make static. Rename to encrypt_sym_status_handler.
(encrypt_start): Set status handler to encrypt_sym_status_handler or encrypt_status_handler.
* sign.c (sign_status_handler): New function.
(sign_start): Set status handler to sign_status_handler.
* decrypt.c (decrypt_status_handler): New function that also calls progress status handler.

(decrypt_start): Set status handler to decrypt_status_handler.

* encrypt-sign.c (encrypt_sign_status_handler): Likewise.

* decrypt-verify.c (decrypt_verify_status_handler): Call
_gpgme_progress_status_handler.

* conversion.c (_gpgme_decode_c_string): Add missing break
statement.

* recipient.c (gpgme_recipients_add_name_with_validity): Add one
to buffer to allocate.

2003-05-19 Marcus Brinkmann <marcus@g10code.de>

* verify.c (parse_new_sig): Fix ERRSIG case.

Submitted by Benjamin Lee <benjaminlee@users.sf.net>.

2003-05-18 Marcus Brinkmann <marcus@g10code.de>

* gpgme.h: The following types are renamed. The old name is kept
as a deprecated typedef.

(GpgmeCtx): Rename to gpgme_ctx_t.

(GpgmeData): Rename to gpgme_data_t.

(GpgmeRecipients): Rename to gpgme_recipients_t.

(GpgmeError): Rename to gpgme_error_t.

(GpgmeDataEncoding): Rename to gpgme_data_encoding_t.

(GpgmePubKeyAlgo): Rename to gpgme_pubkey_algo_t.

(GpgmeHashAlgo): Rename to gpgme_hash_algo_t.

(GpgmeSigStat): Rename to gpgme_sig_stat_t.

(GpgmeSigMode): Rename to gpgme_sig_mode_t.

(GpgmeAttr): Rename to gpgme_attr_t.

(GpgmeValidity): Rename to gpgme_validity_t.

(GpgmeProtocol): Rename to gpgme_protocol_t.

(GpgmeStatusCode): Rename to gpgme_status_code_t.

(GpgmeEngineInfo): Rename to gpgme_engine_info_t.

(GpgmeSubkey): Rename to gpgme_subkey_t.

(GpgmeKeySig): Rename to gpgme_keysig_t.

(GpgmeUserID): Rename to gpgme_user_id_t.

(GpgmePassphraseCb): Rename to gpgme_passphrase_cb_t.

(GpgmeProgressCb): Rename to gpgme_progress_cb_t.

(GpgmeEditCb): Rename to gpgme_edit_cb_t.

(GpgmeIOCb): Rename to gpgme_io_cb_t.

(GpgmeRegisterIOCb): Rename to gpgme_register_io_cb_t.

(GpgmeRemoveIOCb): Rename to gpgme_remove_io_cb_t.

(GpgmeEventIO): Rename to gpgme_event_io_t.

(GpgmeEventIOCb): Rename to gpgme_event_io_cb_t.

(GpgmeIOCBs): Rename to gpgme_io_cbs.

(gpgme_io_cbs_t): New type.

(GpgmeDataReadCb): Rename to gpgme_data_read_cb_t.

(GpgmeDataWriteCb): Rename to gpgme_data_write_cb_t.
(GpgmeDataSeekCb): Rename to gpgme_data_seek_cb_t.
(GpgmeDataReleaseCb): Rename to gpgme_data_release_cb_t.
(GpgmeDataCbs): Rename to gpgme_data_cbs.
(gpgme_data_cbs_t): New type.
(GpgmeInvalidUserID): Rename to gpgme_invalid_user_id_t.
(GpgmeEncryptResult): Rename to gpgme_encrypt_result_t.
(GpgmeDecryptResult): Rename to gpgme_decrypt_result_t.
(GpgmeNewSignature): Rename to gpgme_new_signature_t.
(GpgmeSignResult): Rename to gpgme_sign_result_t.
(GpgmeSigNotation): Rename to gpgme_sig_notation_t.
(GpgmeSignature): Rename to gpgme_signature_t.
(GpgmeVerifyResult): Rename to gpgme_verify_result_t.
(GpgmeImportStatus): Rename to gpgme_import_status_t.
(GpgmeImportResult): Rename to gpgme_import_result_t.
(GpgmeGenKeyResult): Rename to gpgme_genkey_result_t.
(GpgmeKeyListResult): Rename to gpgme_keylist_result_t.
(GpgmeTrustItem): Rename to gpgme_trust_item_t.
* gpgme.h (gpgme_deprecated_error_t): New type, swallowing macros
GPGME_No_Recipients, GPGME_Invalid_Recipient and
GPGME_No_Passphrase.
* data.h (struct gpgme_data_s): Rename to struct gpgme_data.
* context.h (struct gpgme_context_s): Rename to struct
gpgme_context.
(struct gpgme_recipients_s): Rename to gpgme_recipients.

2003-05-18 Marcus Brinkmann <marcus@g10code.de>

* keylist.c (finish_key): Clear OPD->tmp_uid.

2003-05-18 Marcus Brinkmann <marcus@g10code.de>

* verify.c (_gpgme_verify_status_handler): Return GPGME_No_Data
for NODATA status without signatures.

2003-05-05 Marcus Brinkmann <marcus@g10code.de>

* key.c (_gpgme_key_append_name): Use decoded string to parse user id.
(_gpgme_key_add_sig): Likewise.

2003-05-04 Marcus Brinkmann <marcus@g10code.de>

* context.h (struct gpgme_context_s): Remove member op_info.

* key.c (_gpgme_key_add_sig): Initialize SIG->uid.

* gpgme.h (GpgmeError): Add deprecated values for
GPGME_Invalid_Type and GPGME_Invalid_Mode.

- * gpgme.h (gpgme_get_op_info): Remove prototype.
- * ops.h (_gpgme_set_op_info, _gpgme_data_release_and_return_string, _gpgme_data_get_as_string, _gpgme_data_append, _gpgme_data_append_string, _gpgme_data_append_string_for_xml, _gpgme_data_append_for_xml, _gpgme_data_append_percentstring_for_xml): Likewise.
- (_gpgme_progress_status_handler): Change first arg to void *.
- * progress.c (_gpgme_progress_status_handler): Likewise.
- * conversion.c: Do not include <string.h>, <errno.h>, <ctype.h>, and <sys/types.h>, but <string.h>.
- (_gpgme_data_append): Remove function.
- (_gpgme_data_append_string): Likewise.
- (_gpgme_data_append_for_xml): Likewise.
- (_gpgme_data_append_string_for_xml): Likewise.
- (_gpgme_data_append_percentstring_for_xml): Likewise.
- * data-mem.c (_gpgme_data_get_as_string): Likewise.
- (_gpgme_data_release_and_return_string): Likewise.
- * gpgme.c (gpgme_get_op_info): Likewise.
- (_gpgme_set_op_info): Likewise.

- * gpgme.h (struct _gpgme_key): New structure.
- (GpgmeKey): Define using _gpgme_key.
- (struct _gpgme_subkey): New structure.
- (GpgmeSubKey): New type.
- (struct _gpgme_key_sig): New structure.
- (GpgmeKeySig): New type.
- (struct _gpgme_user_id): New structure.
- (GpgmeUserID): New type.
- (struct _gpgme_op_keylist_result): New structure.
- (GpgmeKeyListResult): New type.
- (gpgme_op_keylist_result): New function.
- (gpgme_key_get_as_xml): Remove prototype.
- * context.h (struct gpgme_context_s): Remove members tmp_key, tmp_uid, key_cond and key_queue.
- (struct key_queue_item_s): Remove structure.
- (struct user_id_s): Remove structure.
- (struct gpgme_recipients_s): Replace with simple GpgmeUserID list.
- * gpgme.c (gpgme_release): Do not release CTX->tmp_key.
- * ops.h (_gpgme_key_add_subkey, _gpgme_key_append_name, _gpgme_key_add_sig, _gpgme_trust_item_new): New prototypes.
- * runpg.c (command_cb): Return GpgmeError instead int.
- New variable ERR. Use it to hold return value of cmd handler.
- (gpg_delete): Access fingerprint of key directly.
- (append_args_from_signers): Likewise.

(gpg_edit): Likewise.
(append_args_from_recipients): Use GpgmeUserID for recipient list.
* engine-gpgsm.c: Do not include "key.h".
(gpgsm_delete): Access fingerprint of key directly.
(gpgsm_sign): Likewise.
(set_recipients): Use GpgmeUserID for recipients. Invert invalid user ID flag.
* key.h: File removed.
* key.c: Completely reworked to use exposed GpgmeKey data types.
* keylist.c: Likewise.
* recipient.c: Completely reworked to use GpgmeUserID.

2003-04-29 Marcus Brinkmann <marcus@g10code.de>

* gpgme.h (gpgme_get_key): Remove force_update argument.
* key-cache.c: File removed.
* Makefile.am (libgpgme_la_SOURCES): Remove key-cache.c.
* ops.h (_gpgme_key_cache_add, _gpgme_key_cache_get): Remove prototypes.
* keylist.c (_gpgme_op_keylist_event_cb): Don't call _gpgme_key_cache_add.
(gpgme_get_key): New function.
* verify.c (gpgme_get_sig_key): Remove last argument to gpgme_get_key invocation.

* gpgme.h (struct _gpgme_trust_item): New structure.
(GpgmeTrustItem): New type.
(gpgme_trust_item_ref, gpgme_trust_item_unref): New prototypes.
* context.h (struct trust_queue_item_s): Remove structure.
(struct gpgme_context_s): Remove trust_queue member.
* Makefile.am (libgpgme_la_SOURCES): Add trust-item.c.
* trust-item.c: New file.
* trustlist.c: Do not include <stdio.h> or <time.h>, but "gpgme.h".
(struct trust_queue_item_s): Change to new type op_data_t.
(trust_status_handler): Change first argument to void *.
(trust_colon_handler): Likewise.
(_gpgme_op_trustlist_event_cb): Use op_data_t type.
(gpgme_op_trustlist_start): Use op_data_t and rework error handling.
(gpgme_op_trustlist_next): Use op_data_t.
(gpgme_trust_item_release): Remove function.
(gpgme_trust_item_get_string_attr): Likewise.
(gpgme_trust_item_get_int_attr): Likewise.

* verify.c (calc_sig_summary): Do not set GPGME_SIGSUM_SYS_ERROR for bad signatures.

- * context.h: Remove OPDATA_VERIFY_COLLECTING.
- (struct gpgme_context_s): Remove member notation.
- * gpgme.h: Make enum for GPGME_KEYLIST_MODE_* values.

- * gpgme.h (struct _gpgme_sig_notation): New structure.
- (GpgmeSigNotation): New type.
- (struct _gpgme_signature): New structure.
- (GpgmeSignature): New type.
- (struct _gpgme_op_verify_result): New structure.
- (GpgmeVerifyResult): New type.
- (gpgme_op_verify_result): New prototype.
- (gpgme_get_notation): Remove prototype.
- * ops.h (_gpgme_op_verify_init_result): New prototype.
- (_gpgme_verify_status_handler): Change first argument to void *.
- * util.h (_gpgme_decode_percent_string, _gpgme_map_gnupg_error):
New prototypes.
- * conversion.c (_gpgme_decode_percent_string): New function.
- (gnupg_errors): New static global.
- (_gpgme_map_gnupg_error): New function.
- * gpgme.c (gpgme_release): Don't release CTX->notation.
- (gpgme_get_notation): Remove function.
- * decrypt-verify.c (_gpgme_op_decrypt_verify_start): Call
_gpgme_op_verify_init_result.
- * verify.c: Do not include <stdio.h>, <assert.h> and "key.h", but
do include "gpgme.h".
- (struct verify_result): Replace with ...
- (op_data_t): ... this type.
- (release_verify_result): Remove function.
- (release_op_data): New function.
- (is_token): Remove function.
- (skip_token): Remove function.
- (copy_token): Remove function.
- (gpgme_op_verify_result): New function.
- (calc_sig_summary): Rewritten.
- (finish_sig): Remove function.
- (parse_new_sig): New function.
- (parse_valid_sig): New function.
- (parse_notation): New function.
- (parse_trust): New function.
- (parse_error): New function.
- (_gpgme_verify_status_handler): Rewritten. Change first argument
to void *.
- (_gpgme_op_verify_start): Rework error handling. Call
_gpgme_op_verify_init_result.
- (gpgme_op_verify): Do not release or clear CTX->notation.
- (gpgme_get_sig_status): Rewritten.

(gpgme_get_sig_string_attr): Likewise.
(gpgme_get_sig_ulong_attr): Likewise.
(gpgme_get_sig_key): Likewise.

* gpgme.h (struct _gpgme_op_decrypt_result): New structure.
(GpgmeDecryptResult): New type.
(gpgme_op_decrypt_result): New prototype.
* ops.h (_gpgme_op_decrypt_init_result): New prototype.
(_gpgme_decrypt_status_handler): Fix prototype.
(_gpgme_decrypt_start): Remove prototype.
* decrypt-verify.c: Do not include <stdio.h>, <stdlib.h>, <string.h> and <assert.h>, "util.h" and "context.h", but "gpgme.h".
(decrypt_verify_status_handler): Change first argument to void *, and rework error handling.
(_gpgme_op_decrypt_verify_start): New function.
(gpgme_op_decrypt_verify_start): Rewrite using _gpgme_op_decrypt_verify_start.
(gpgme_op_decrypt_verify): Likewise.
* decrypt.c: Include <string.h>, "gpgme.h" and "util.h".
(struct decrypt_result): Change to typedef op_data_t, rewritten.
(is_token): Remove function.
(release_op_data): New function.
(skip_token): Remove function.
(gpgme_op_decrypt_result): New function.
(_gpgme_decrypt_status_handler): Change first argument to void *. Rework error handling.
(_gpgme_decrypt_start): Rename to ...
(decrypt_start): ... this. Call _gpgme_op_decrypt_init_result.
(_gpgme_op_decrypt_init_result): New function.
(gpgme_op_decrypt_start): Use decrypt_start.
(gpgme_op_decrypt): Likewise.

2003-04-27 Marcus Brinkmann <marcus@g10code.de>

* encrypt-sign.c: Do not include <stddef.h>, <stdio.h>, <stdlib.h>, <string.h>, <assert.h> and "util.h", but "gpgme.h".
(_gpgme_op_encrypt_sign_start): Rename to ...
(encrypt_sign_start): ... this.
(gpgme_op_encrypt_sign_start): Use encrypt_sign_start, not _gpgme_op_encrypt_sign_start.
(gpgme_op_encrypt_sign): Likewise.

* gpgme.h (GpgmeEncryptResult): New data type.
(gpgme_op_encrypt_result): New prototype.
* ops.h (_gpgme_op_encrypt_init_result): New prototype.
(_gpgme_op_encrypt_status_handler): Fix prototype.
* encrypt-sign.c (_gpgme_op_encrypt_sign_start): Call

`_gpgme_op_encrypt_init_result`.
 * `encrypt.c`: Do not include `<stdio.h>`, `<assert.h>`, `"util.h"` and `"wait.h"`. Include `<errno.h>` and `"gpgme.h"`.
 (`SKIP_TOKEN_OR_RETURN`): Remove macro.
 (`struct encrypt_result`): Rename to ...
 (`op_data_t`): ... new data type. Rewrite for user result data.
 (`append_xml_encinfo`): Remove function.
 (`release_op_data`): New function.
 (`gpgme_op_encrypt_result`): New function.
 (`_gpgme_op_encrypt_status_handler`): Change first argument to `void *`. Rewrite result parsing.
 (`_gpgme_op_encrypt_sym_status_handler`): Change first argument to `void *`.
 (`_gpgme_op_encrypt_init_result`): New function.
 (`_gpgme_op_encrypt_start`): Rename to ...
 (`encrypt_start`): ... this.
 (`gpgme_op_encrypt_start`): Use `encrypt_start`, not `gpgme_op_encrypt_start`.
 (`gpgme_op_encrypt`): Likewise.

* `gpgme.h` (`GpgmePubKeyAlgo`, `GpgmeHashAlgo`, `GpgmeInvalidUserID`, `GpgmeNewSignature`, `GpgmeSignResult`): New data types.
 (`gpgme_op_sign_result`, `gpgme_pubkey_algo_name`, `gpgme_hash_algo_name`): New prototypes.
 * `gpgme.c` (`gpgme_pubkey_algo_name`): New function.
 (`gpgme_hash_algo_name`): Likewise.
 * `ops.h` (`_gpgme_parse_inv_userid`, `_gpgme_op_sign_init_result`): New prototype.
 (`_gpgme_op_sign_status_handler`): Fix prototype.
 * `op-support.c`: Include `<errno.h>` and `<string.h>`.
 (`_gpgme_parse_inv_userid`): New function.
 * `sign.c`: Include `<errno.h>` and `"gpgme.h"`, but not `<stdio.h>`, `<assert.h>` and `"util.h"`.
 (`SKIP_TOKEN_OR_RETURN`): Remove macro.
 (`struct sign_result`): Change to `op_data_t` type and rework it.
 (`release_sign_result`): Rename to ...
 (`release_op_data`): ... this and rewrite it.
 (`append_xml_info`): Remove function.
 (`gpgme_op_sign_result`): New function.
 (`parse_sig_created`): New function.
 (`_gpgme_sign_status_handler`): Change first argument to `void *`. Rewrite the function to use the new result structure and functions.
 (`_gpgme_op_sign_init_result`): New function.
 (`_gpgme_op_sign_start`): Rename to ...
 (`sign_start`): ... this. Call `_gpgme_op_sign_init_result`.
 (`gpgme_op_sign_start`): Use `sign_start` instead `_gpgme_op_sign_start`.
 (`gpgme_op_sign`): Likewise.
 * `encrypt-sign.c` (`_gpgme_op_encrypt_sign_start`): Call

`_gpgme_op_sign_init_result`.

* `delete.c`: Include `<errno.h>` and `"gpgme.h"`, but not `"util.h"` or `"key.h"`.

(enum `delete_problem`): Move into function `delete_status_handler`.

(`delete_status_handler`): Change first argument to void *. Parse `delete` problem with `strtol` instead `atoi`. Return better error values.

(`_gpgme_op_delete_start`): Rename to ...

(`delete_start`): ... this. Rework error handling.

(`gpgme_op_delete_start`): Use `delete_start` instead

`_gpgme_op_delete_start`.

(`gpgme_op_delete`): Likewise.

* `gpgme.h` (`GpgmeDataType`): Removed.

2003-04-25 Marcus Brinkmann <marcus@g10code.de>

* `gpgme.h`: Change `GPGME_IMPORT_PRIVATE` to `GPGME_IMPORT_SECRET`.

* `import.c` (`parse_import_res`): Parse unchanged field.

* `gpgme.h`: New enum for `GPGME_IMPORT_NEW`, `GPGME_IMPORT_UID`, `GPGME_IMPORT_SIG`, `GPGME_IMPORT_SUBKEY`, `GPGME_IMPORT_PRIVATE`.

(`GpgmeError`): `GPGME_Unknown_Reason`, `GPGME_Not_Found`,

`GPGME_Ambiguous_Specification`, `GPGME_Wrong_Key_Usage`,

`GPGME_Key_Revoked`, `GPGME_Key_Expired`, `GPGME_No_CRL_Known`,

`GPGME_CRL_Too_Old`, `GPGME_Policy_Mismatch`, `GPGME_No_Secret_Key`,

`GPGME_Key_Not_Trusted`, `GPGME_Issuer_Missing`, `GPGME_Chain_Too_Long`,

`GPGME_Unsupported_Algorithm`, `GPGME_Sig_Expired`,

`GPGME_Bad_Signature`, `GPGME_No_Public_Key` added as new error codes.

(`struct _gpgme_import_status`): New structure.

(`GpgmeImportStatus`): New type.

(`struct _gpgme_op_import_result`): New structure.

(`GpgmeImportResult`): New type.

(`gpgme_op_import_result`): New function.

* `import.c`: Include `<errno.h>` and `"gpgme.h"`, but not `"util.h"`.

(`struct import_result`): Change to type `op_data_t`.

(`release_import_result`): Rename to ...

(`release_op_data`): ... this.

(`append_xml_impinfo`): Function removed.

(`gpgme_op_import_result`): New function.

(`parse_import`): New function.

(`parse_import_res`): Likewise.

(`import_status_handler`): Change first argument to void *. Rewrite to use new functions.

(`_gpgme_op_import_start`): Rework error handling.

* `edit.c`: Do not include `<assert.h>`, `"util.h"`, but `"gpgme.h"`.

(`edit_resut`): Change to typedef for `op_data_t`.

(edit_status_handler): Change first argument to void *.
Rework error handling.

(command_handler): Rework error handling.

(_gpgme_op_edit_start): Rename to ...

(edit_start): ... this. Rework error handling.

(gpgme_op_edit_start): Rewrite using edit_start.

(gpgme_op_edit): Likewise.

* ops.h (_gpgme_passphrase_start): Remove prototype.

* passphrase.c: Do not include <assert.h>, "util.h" or "debug.h", but "gpgme.h".

(struct passphrase_result): Change to typedef for op_data_t.

(release_passphrase_result): Rename to release_op_data.

(_gpgme_passphrase_status_handler): Change first argument to void *.
Use new op_data_t type.

(_gpgme_passphrase_command_handler): Use new op_data_t type.

(_gpgme_passphrase_start): Remove function.

* decrypt.c (_gpgme_decrypt_start): Rewrite error handling. Do not call _gpgme_passphrase_start, but install command handler.

* encrypt.c (_gpgme_op_encrypt_start): Likewise.

* encrypt-sign.c (_gpgme_op_encrypt_sign_start): Likewise.

* sign.c (_gpgme_op_sign_start): Likewise.

* context.h (struct gpgme_context_s): Remove member initialized, use_cms and help_data_1. Add member protocol. Make use_armor and use_textmode bit flags. Make keylist_mode, include_certs, signers_len and signers_size unsigned.

* gpgme.c (gpgme_new): Initialize CTX->protocol.

(gpgme_set_protocol): Do not check CTX. Use CTX->protocol.

(gpgme_get_protocol): Likewise.

(gpgme_release): Do not release CTX->help_data_1.

* op-support.c (_gpgme_op_reset): Use CTX->protocol.

* wait-private.c (_gpgme_wait_private_event_cb): Remove variable CTX.

* data.c: Do not include <assert.h>, but "gpgme.h".

(_gpgme_data_inbound_handler): Expand _gpgme_data_append, because it will go. Do not assert DH.

(_gpgme_data_outbound_handler): Do not assert DH.

* export.c: Do not include <stdlib.h>, "debug.h" and "util.h", but "gpgme.h".

(export_status_handler): Change type of first argument to void *.

(_gpgme_op_export_start): Rename to ...

(export_start): ... this. Rework error handling.

(gpgme_op_export_start): Rewritten to use export_start instead _gpgme_op_export_start.

(gpgme_op_export): Likewise.

* gpgme.h (GpgmeError): Add GPGME_Busy, GPGME_No_Request.
(GPGME_No_Recipients, GPGME_Invalid_Recipient,
GPGME_No_Passphrase): New macros.

* key.c (gpgme_key_get_string_attr): Fix validity attribute.

2003-04-24 Marcus Brinkmann <marcus@g10code.de>

* gpgme.h (struct _gpgme_op_genkey_result): New structure.

(GpgmeGenKeyResult): New type.

(gpgme_op_genkey): Drop last argument.

(gpgme_op_genkey_result): New function.

* genkey.c: Do not include "util.h", but "gpgme.h".

(struct genkey_result): Replace with ...

(op_data_t): ... this new type.

(release_genkey_result): Replace with ...

(release_op_data): ... this new function.

(gpgme_op_genkey_result): New function.

(genkey_status_handler): Rewritten using new op_data_t type.

(get_key_parameter): New function.

(_gpgme_op_genkey_start): Renamed to

(genkey_start): ... this and rewritten.

(gpgme_op_genkey_start): Use genkey_start instead

_gpgme_op_genkey_start.

(gpgme_op_genkey): Rewritten. Remove FPR argument.

* context.h (struct gpgme_context_s): Remove member verbosity.

* gpgme.c (gpgme_new): Do not set member verbosity.

* engine.h (_gpgme_engine_set_verbosity): Remove prototype.

* engine.c (_gpgme_engine_set_verbosity): Remove function.

* engine-backend.h (struct engine_ops): Remove set_verbosity.

* engine-gpgsm.c (_gpgme_engine_ops_gpgsm): Remove set_verbosity member.

* runpgg.c (_gpgme_engine_ops_gpg): Likewise.

(gpg_set_verbosity): Remove function.

* decrypt.c (_gpgme_decrypt_start): Don't call

_gpgme_engine_set_verbosity.

* delete.c (_gpgme_op_delete_start): Likewise.

* edit.c (_gpgme_op_edit_start): Likewise.

* encrypt.c (_gpgme_op_encrypt_start): Likewise.

* encrypt-sign.c (_gpgme_op_encrypt_sign_start): Likewise.

* export.c (_gpgme_op_export_start): Likewise.

* genkey.c (_gpgme_op_genkey_start): Likewise.

* import.c (_gpgme_op_import_start): Likewise.

* keylist.c (gpgme_op_keylist_start): Likewise.

(gpgme_op_keylist_ext_start): Likewise.

* sign.c (_gpgme_op_sign_start): Likewise.

* verify.c (_gpgme_op_verify_start): Likewise.

- * Makefile.am (libpggme_la_SOURCES): Add key-cache.c.
- * key.c (key_cache_initialized, key_cache_size, key_cache_max_chain_length,): Removed.
- (struct key_cache_item_s, key_cache_lock, key_cache, key_cache_unused_items, hash_key, _gpgme_key_cache_add, _gpgme_key_cache_get, gpgme_get_key): Moved to ...
- * key-cache.c: ... here. New file.
- * key.h (_gpgme_key_cache_init): Remove prototypes.
- (_gpgme_key_cache_add, _gpgme_key_cache_get): Move to ...
- * ops.h: ... here.
- * version.c: Do not include "key.h".
- (do_subsystem_inits): Do not call _gpgme_key_cache_init.

- * mkstatus: Strip trailing comma.
- * gpgme.h (GpgmeStatus): Pretty print.

- * gpgme.h (GpgmeError): Rename GPGME_No_Passphrase to GPGME_Bad_Passphrase.
- * passphrase.c (_gpgme_passphrase_status_handler): Use GPGME_Bad_Passphrase instead GPGME_No_Passphrase.

- * gpgme.h (GpgmeError): Rename GPGME_No_Recipients to GPGME_No_UserID and GPGME_Invalid_Recipient to GPGME_Invalid_UserID.
- * encrypt.c (_gpgme_encrypt_status_handler): Use GPGME_No_UserID instead GPGME_No_Recipients and GPGME_Invalid_UserID instead GPGME_Invalid_Recipient.
- (_gpgme_op_encrypt_start): Likewise.

- * gpgme.h (GpgmeError): Remove GPGME_Busy and GPGME_No_Request.
- * wait-user.c (_gpgme_wait_user_event_cb): Don't clear CTX->pending.
- * wait-private.c (_gpgme_wait_private_event_cb): Likewise.
- * wait-global.c (gpgme_wait): Likewise.
- * verify.c (_gpgme_op_verify_start): Likewise.
- (gpgme_get_sig_status): Don't check pending flag.
- (gpgme_get_sig_string_attr): Likewise.
- (gpgme_get_sig_ulong_attr): Likewise.
- (gpgme_get_sig_key): Likewise.
- * op-support.c (_gpgme_op_reset): Likewise.
- * trustlist.c (gpgme_op_trustlist_start): Don't clear pending flag.
- (gpgme_op_trustlist_next): Don't check or clear pending flag.
- (gpgme_op_trustlist_end): Likewise.
- * sign.c (_gpgme_op_sign_start): Likewise.
- * context.h (struct gpgme_context_s): Remove member PENDING.
- * decrypt.c (_gpgme_decrypt_start): Likewise.
- * delete.c (_gpgme_op_delete_start): Likewise.
- * edit.c (_gpgme_op_edit_start): Likewise.

- * encrypt.c (_gpgme_op_encrypt_start): Likewise.
- * encrypt-sign.c (_gpgme_op_encrypt_sign_start): Likewise.
- * export.c (_gpgme_op_export_start): Likewise.
- * genkey.c (_gpgme_op_genkey_start): Likewise.
- * import.c (_gpgme_op_import_start): Likewise.
- * key.c (gpgme_get_key): Likewise.
- * keylist.c (gpgme_op_keylist_start): Likewise.
- (gpgme_op_keylist_ext_start): Likewise.
- (gpgme_op_keylist_next): Likewise.
- (gpgme_op_keylist_end): Likewise.
- * data-compat.c (gpgme_error_to_errno): Don't convert EBUSY.

2003-02-06 Marcus Brinkmann <marcus@g10code.de>

- * gpgme.h (GpgmePassphraseCb): Change type to return GpgmeError, and add argument for returning the result string.
- (gpgme_cancel): Remove prototype.
- * gpgme.c (gpgme_cancel): Remove function.
- * context.h (struct gpgme_context_s): Remove member cancel.
- * passphrase.c (_gpgme_passphrase_command_handler): Call the passphrase callback in the new way.

2003-01-30 Marcus Brinkmann <marcus@g10code.de>

- * edit.c (_gpgme_edit_status_handler): Call the progress status handler.

2003-02-05 Marcus Brinkmann <marcus@g10code.de>

- * wait-user.c (_gpgme_wait_user_remove_io_cb): Move check for no I/O handlers left to ...
- (_gpgme_user_io_cb_handler): ... here.

2003-02-04 Marcus Brinkmann <marcus@g10code.de>

- * trustlist.c (trustlist_colon_handler): Release ITEM if name could not be allocated.
- (gpgme_trust_item_release): Only release name if it is allocated.
- Reported by Marc Mutz <Marc.Mutz@uni-bielefeld.de>.

2003-02-04 Marcus Brinkmann <marcus@g10code.de>

- * runpg.c (read_status): If the status handler returns an error, return it.
- (status_handler): If read_status fails, just return the error.

2003-02-01 Marcus Brinkmann <marcus@g10code.de>

* engine-gpgsm.c (start): Handle all errors, not only most of them.
(xtoi_1, xtoi_2): Remove macro.
(status_handler): Replace use of xtoi_2 with _gpgme_hextoByte.

2003-02-01 Marcus Brinkmann <marcus@g10code.de>

* engine-gpgsm.c (map_assuan_error): Replace ASSUAN_Bad_Certificate_Path with ASSUAN_Bad_Certificate_Chain.
(gpgsm_new): Use assuan_pipe_connect instead assuan_pipe_connect2.

* util.h (DIMof): Remove macro.

* ops.h (_gpgme_op_event_cb, _gpgme_op_event_cb_user, _gpgme_data_unread): Prototypes removed.

2003-01-30 Marcus Brinkmann <marcus@g10code.de>

* types.h: File removed.
* Makefile.am (libgpgme_la_SOURCES): Remove types.h.
* io.h (struct spawn_fd_item_s): Do not include "types.h".
* key.h: Likewise.
* context.h: Likewise.
* engine-gpgsm.h: Likewise.
* engine.h: Include "gpgme.h" instead "types.h". Add prototypes for EngineStatusHandler, EngineColonLineHandler and EngineCommandHandler.
(_gpgme_engine_set_status_handler): Change parameter type from GpgmeStatusHandler to EngineStatusHandler.
(_gpgme_engine_set_command_handler): Change parameter type from GpgmeCommandHandler to EngineCommandHandler.
(_gpgme_engine_set_colon_line_handler): Change parameter type from GpgmeColonLineHandler to EngineColonLineHandler.
* engine-backend.h: Include "engine.h" instead "types.h".
(struct engine_ops): Change Gpgme*Handler parameters in members set_command_handler, set_colon_line_handler and set_status_handler to Engine*Handler.
* engine.c (_gpgme_engine_set_status_handler): Change parameter type from GpgmeStatusHandler to EngineStatusHandler.
(_gpgme_engine_set_command_handler): Change parameter type from GpgmeCommandHandler to EngineCommandHandler.
(_gpgme_engine_set_colon_line_handler): Change parameter type from GpgmeColonLineHandler to EngineColonLineHandler.
* runpg.c (struct gpg_object_s): Change type of member status.fnc from GpgmeStatusHandler to EngineStatusHandler. Change type of member colon.fnc from GpgmeColonLineHandler to EngineColonLineHandler. Change type of member cmd.fnc from GpgmeCommandHandler to EngineCommandHandler.

- * engine-gpgsm.c (struct gpgsm_object_s): Likewise.
- * runpgg.c (gpg_set_status_handler): Change parameter type from GpgmeStatusHandler to EngineStatusHandler.
- * engine-gpgsm.c (gpgsm_set_status_handler): Likewise.
- (assuan_simple_command): Likewise.
- * runpgg.c (gpg_set_colon_line_handler): Change parameter type from GpgmeColonLineHandler to EngineColonLineHandler.
- * engine-gpgsm.c (gpgsm_set_colon_line_handler): Likewise.
- * runpgg.c (gpg_set_command_handler): Change parameter type from GpgmeCommandHandler to EngineCommandHandler.

* engine-gpgsm.c (status_handler): Do not close status fd at end of function.

- * ops.h (_gpgme_op_data_lookup): Add prototype.
- * op-support.c: Include <stdlib.h>.
- (_gpgme_op_data_lookup): New function.
- * decrypt.c (_gpgme_release_decrypt_result): Function removed.
- (struct decrypt_result_s): Rename to ...
- (struct decrypt_resul): ... this.
- (DecryptResult): New type.
- (_gpgme_decrypt_status_handler): Don't use test_and_allocate_result, but use _gpgme_op_data_lookup to retrieve result data object.
- * sign.c (_gpgme_release_sign_result): Function removed.
- (release_sign_result): New function.
- (struct sign_result_s): Rename to ...
- (struct sign_result): ... this.
- (SignResult): New type.
- (_gpgme_sign_status_handler): Don't use test_and_allocate_result, but use _gpgme_op_data_lookup to retrieve result data object.
- * encrypt.c (struct encrypt_result_s): Rename to ...
- (struct encrypt_result): ... this.
- (_gpgme_release_encrypt_result): Function removed.
- (release_encrypt_result): New function.
- (_gpgme_encrypt_status_handler): Don't use test_and_allocate_result, but use _gpgme_op_data_lookup to retrieve result data object.
- * verify.c (struct verify_result_s): Rename to ...
- (struct verify_result): ... this. Remove member next.
- (VerifyResult): New type.
- (_gpgme_release_verify_result): Function removed.
- (release_verify_result): New function.
- (finish_sig): Change first argument to type VerifyResult. Diddle the type of the op_data structure.
- (add_notation): Change first argument to type VerifyResult.
- (_gpgme_verify_status_handler): Don't use

test_and_allocate_result, but use _gpgme_op_data_lookup to retrieve result data object.

- * passphrase.c (struct passphrase_result_s): Rename to ... (struct passphrase_result): ... this. Remove member next. (PassphraseResult): New type. (_gpgme_release_passphrase_result): Function removed. (release_passphrase_result): New function. (_gpgme_passphrase_status_handler): Don't use test_and_allocate_result, but use _gpgme_op_data_lookup to retrieve result data object. (_gpgme_passphrase_command_handler): Likewise.
- * keylist.c (struct keylist_result_s): Rename to ... (struct keylist_result): ... this. Remove member next. (KeylistResult): New type. (_gpgme_release_keylist_result): Function removed. (release_keylist_result): New function. (keylist_status_handler): Don't use test_and_allocate_result, but use _gpgme_op_data_lookup to retrieve result data object.
- * edit.c (struct edit_result_s): Rename to ... (struct edit_result): ... this. Remove member next. (EditResult): New type. (_gpgme_release_edit_result): Function removed. (release_edit_result): New function. (edit_status_handler): Don't use test_and_allocate_result, but use _gpgme_op_data_lookup to retrieve result data object. (command_handler): Likewise.
- * types.h (DecryptResult, SignResult, EncryptResult, PassphraseResult, ImportResult, DeleteResult, GenKeyResult, KeylistResult, EditResult): Types removed.
- * ops.h: Don't include "types.h", but "gpgme.h" and "context.h". (test_and_allocate_result): Remove macro. (_gpgme_release_decrypt_result): Remove prototype. (_gpgme_decrypt_result): Remove prototype. (_gpgme_release_sign_result): Remove prototype. (_gpgme_release_encrypt_result): Remove prototype. (_gpgme_release_passphrase_result): Remove prototype. (_gpgme_release_import_result): Remove prototype. (_gpgme_release_delete_result): Remove prototype. (_gpgme_release_genkey_result): Remove prototype. (_gpgme_release_keylist_result): Remove prototype. (_gpgme_release_edit_result): Remove prototype. (_gpgme_release_verify_result): Remove prototype.
- * gpgme.c (_gpgme_release_result): Rewritten.
- * context.h (enum ctx_op_data_type): New enum. (struct ctx_op_data): New structure. (struct gpgme_context_s): Replace the member result with a member

op_data.
(fail_on_pending_request): Remove macro.
* op-support.c (_gpgme_op_reset): Expand macro
fail_on_pending_request.
* util.h: Don't include "types.h" or "debug.h", but include "gpgme.h".

2003-01-19 Marcus Brinkmann <marcus@g10code.de>

* runpgp.c (_gpgme_engine_ops_gpg): Remove gpg_start.
(gpg_start): Rename to ...
(start): ... this function. Change arguments to GpgObject.
(gpg_decrypt): Call start.
(gpg_edit): Likewise.
(gpg_encrypt): Likewise.
(gpg_encrypt_sign): Likewise.
(gpg_export): Likewise.
(gpg_import): Likewise.
(gpg_keylist): Likewise.
(gpg_keylist_ext): Likewise.
(gpg_trustlist): Likewise.
(gpg_verify): Likewise.

* engine-gpgsm.c (_gpgme_engine_ops_encrypt): Remove gpgsm_start.
(gpgsm_start): Rename to ...
(struct gpgsm_object_s): Remove member command.
(gpgsm_release): Don't free command.
(start): ... this function. Change arguments to GpgsmObject and const char *.
(gpgsm_decrypt): Call start.
(gpgsm_delete): Likewise.
(gpgsm_encrypt): Likewise.
(gpgsm_export): Likewise.
(gpgsm_genkey): Likewise.
(gpgsm_import): Likewise.
(gpgsm_keylist): Likewise.
(gpgsm_keylist_ext): Likewise.
(gpgsm_verify): Likewise.

* decrypt.c (_gpgme_decrypt_start): Don't call
_gpgme_engine_start.
* delete.c (_gpgme_op_delete_start): Likewise.
* edit.c (_gpgme_op_edit_start): Likewise.
* encrypt.c (_gpgme_op_encrypt_start):
* encrypt-sign.c (_gpgme_op_encrypt_sign_start):
* export.c (_gpgme_op_export_start): Likewise.
* genkey.c (_gpgme_op_genkey_start): Likewise.
* import.c (_gpgme_op_import_start): Likewise.
* keylist.c (gpgme_op_keylist_ext_start): Likewise.

(gpgme_op_keylist_start): Likewise.

* sign.c (_gpgme_op_sign_start): Likewise.

* trustlist.c (gpgme_op_trustlist_start): Likewise.

* verify.c (_gpgme_op_verify_start): Likewise.

* engine-backend.h (struct engine_ops): Remove member start.

* engine.h (_gpgme_engine_start): Remove prototype.

* engine.c (_gpgme_engine_start): Remove function.

2003-01-19 Miguel Coca <mcoca@gnu.org>

* w32-io.c (_gpgme_io_select): Add missing argument in calls to
DEBUG_BEGIN.

* w32-util.c: Include "sema.h".

(find_program_in_registry): Change DEBUG1 to DEBUG2, fixes compilation
error.

2003-01-29 Marcus Brinkmann <marcus@g10code.de>

* types.h: Remove byte and ulong types.

* util.h (_gpgme_hextobyte): Change prototype to unsigned char
instead byte.

* conversion.c (_gpgme_hextobyte): Change argument to unsigned
char instead byte.

(_gpgme_decode_c_string): Likewise, and beautify. Also support a
few more escaped characters. Be more strict about buffer size.

(_gpgme_data_append_percentstring_for_xml): Change type of SRC,
BUF and DST to unsigned char instead byte.

* progress.c (_gpgme_progress_status_handler): Use unsigned char
instead byte.

* debug.c (trim_spaces): Likewise.

* util.h (mk_error): Remove macro.

* conversion.c, data.c, data-compatible.c, decrypt.c, delete.c,
edit.c, encrypt.c, encrypt-sign.c, engine.c, engine-gpgsm.c,
export.c, genkey.c, gpgme.c, import.c, key.c, keylist.c,
passphrase.c, progress.c, recipient.c, runpgp.c, sign.c,
signers.c, trustlist.c, verify.c, wait.c, wait-global.c,
wait-private (literally everywhere): Expand the mk_error macro.

* context.h (wait_on_request_or_fail): Remove macro.

* context.h (gpgme_context_s): Remove member ERROR.

* types.h (GpgmeStatusHandler): Change return type to GpgmeError.

(GpgmeCommandHandler): Change return type to GpgmeError and add
new argument RESULT.

* gpgme.h (GpgmeIOCb): Change return type to GpgmeError.

(GpgmeEventIO): New event GPGME_EVENT_START.

(GpgmeIdleFunc): Remove type.

(gpgme_register_idle): Remove prototype.

* data.c: Include <assert.h>.

(_gpgme_data_inbound_handler): Change return type to GpgmeError.
Return any error instead ignoring it, don't close file descriptor
on error.

(_gpgme_data_outbound_handler): Likewise.

* decrypt.c: Do not include <stdio.h>, <string.h> and <assert.h>.

(_gpgme_decrypt_status_handler): Change return type to GpgmeError.
Return error instead setting ctx->error. Return success at end of
function.

(gpgme_op_decrypt): Don't work around the old kludge anymore.

* decrypt-verify.c (decrypt_verify_status_handler): Change return
type to GpgmeError. Return possible errors.

* delete.c: Do not include <stdio.h>, <string.h>, <time.h> and
<assert.h>.

(delete_status_handler): Change return type to GpgmeError. Return
error instead setting ctx->error. Return success at end of
function.

* edit.c: Do not include <stdio.h> and <string.h>.

(_gpgme_edit_status_handler): Change type to GpgmeError,
make static and rename to ...

(edit_status_handler): ... this. Return error directly.

(command_handler): Change return type to GpgmeError, add result
argument. Return error directly.

* encrypt.c (status_handler_finish): Remove function.

(_gpgme_encrypt_status_handler): Change return type to GpgmeError.
Return error directly.

(_gpgme_encrypt_sym_status_handler): Likewise.

* encrypt-sign.c (encrypt_sign_status_handler): Likewise.

* engine-gpgsm.c (close_notify_handler): Do not signal done event
anymore.

(status_handler): Change return type to GpgmeError. Diddle things
around a bit to return errors directly.

(start): Send start event.

* export.c: Do not include <stdio.h>, <string.h> and <assert.h>.

(export_status_handler): Change return type to GpgmeError. Don't
check ctx->error.

* genkey.c: Do not include <stdio.h> and <assert.h>.

(genkey_status_handler): Change return type to GpgmeError. Don't
check ctx->error. Return errors directly.

* gpgme.c (_gpgme_release_result): Do not initialize ctx->error.

(_gpgme_op_event_cb): Function removed.

(_gpgme_op_event_cb_user): Likewise.

* import.c: Do not include <stdio.h>, <string.h> and <assert.h>.

(import_status_handler): Change return type to GpgmeError. Don't
check ctx->error.

* keylist.c (keylist_colon_handler, keylist_status_handler, finish_key):
Change return type to GpgmeError, return error directly.

* Makefile (libgpgme_la_SOURCES): Add wait-global.c, wait-private.c and wait-user.c

* ops.h (test_and_allocate_result): Return error instead setting ctx->error.

(_gpgme_data_inbound_handler, _gpgme_data_outbound_handler, _gpgme_verify_status_handler, _gpgme_decrypt_status_handler, _gpgme_sign_status_handler, _gpgme_encrypt_status_handler, _gpgme_passphrase_status_handler, _gpgme_progress_status_handler):
Change return type to GpgmeError.

(_gpgme_passphrase_command_handler): Change return type to GpgmeError and add new argument RESULT.

* op-support.c: Use new callback functions, and change private data to ctx everywhere.

* passphrase.c (_gpgme_passphrase_status_handler): Change return type to GpgmeError, return error directly.

(_gpgme_passphrase_command_handler): Change return type to GpgmeError, add result argument. Return results accordingly.

* progress.c (_gpgme_progress_status_handler): Change return type to GpgmeError, return errors directly.

* runpgg.c (status_handler): Change return type to GpgmeError. Return error directly.

(close_notify_handler): Don't send done event.

(colon_line_handler): Change return type to GpgmeError, return errors directly.

* runpgg.c (start): Send start event.

* sign.c (_gpgme_sign_status_handler): Change return type to GpgmeError, return errors directly.

* trustlist.c (trustlist_status_handler): Change return type to GpgmeError. Return 0.

(trustlist_colon_handler): Change return type GpgmeError. Return errors directly.

* verify.c (add_notation): Change return type to GpgmeError, return errors directly.

(_gpgme_verify_status_handler): Likewise.

* wait.h (struct fd_table): Remove lock member.

(struct wait_item_s): Moved here from wait.c.

(struct tag): New structure.

(_gpgme_wait_event_cb): Remove prototype.

(_gpgme_wait_private_event_cb, _gpgme_wait_global_event_cb, _gpgme_wait_user_add_io_cb, _gpgme_wait_user_remove_io_cb, _gpgme_wait_user_event_io_cb): New prototypes.

* wait.c: Don't include <stdio.h>.

(ftd_global, ctx_done_list, ctx_done_list_size, ctx_done_list_length, ctx_done_list_lock, idle_function): Remove global variable.

(gpgme_register_idle, do_select, _gpgme_wait_event_cb): Remove

function.
(gpgme_wait): Move to file wait-global.c.
(_gpgme_add_io_cb): Take ctx as private argument, initialize ctx member in wait item and tag.
(_gpgme_remove_io_cb): Take ctx from tag. Don't use FDT lock.
(_gpgme_wait_one, _gpgme_wait_on_condition): Move to wait-private.c.
(gpgme_fd_table_init): Don't initialize FDT->lock.
(gpgme_fd_table_deinit): Don't destroy FDT->lock.
(_gpgme_fd_table_put): Make static and rename to ...
(fd_table_put): ... this function. Don't use FDT->lock.
(struct wait_item_s): Move to wait.h.
* wait-global.c: New file.
* wait-private.c: New file.
* wait-user.c: New file.

* key.c (gpgme_key_sig_get_string_attr): Use validity_to_string instead of trust_to_string to calculate validity.

2003-01-30 Marcus Brinkmann <marcus@g10code.de>

* types.h (EngineObject): Move typedef to ...
* engine.h: ... here.
* types.h (GpgObject): Move typedef to ...
* runpgg.c: ... here.
* types.h (GpgsmObject): Move typedef to ...
* engine-gpgsm.c: ... here.

* util.h (return_if_fail, return_null_if_fail, return_val_if_fail): Remove macro.
* gpgme.c (gpgme_cancel): Don't use return_if_fail.
* key.c (gpgme_key_ref): Likewise.
* signers.c (gpgme_signers_enum): Likewise.
(gpgme_signers_clear): Likewise.

* engine-backend.h (struct engine_ops): Rename get_path to get_file_name.
* gpgme.h (struct _gpgme_engine_info): Rename member path to file_name.
* version.c: Do not include <stdio.h>, <stdlib.h>, context.h and util.h. Other clean ups.
(parse_version_number): Protect more seriously against overflow.
(gpgme_get_engine_info): Move to ...
* engine.c (gpgme_get_engine_info): ... here.
(_gpgme_engine_get_info): Function removed.
(_gpgme_engine_get_path): Make static and rename to ...
(engine_get_file_name): .. this.

(_gpgme_engine_get_version): Make static and rename to ...
(engine_get_version): ... this.
(_gpgme_engine_get_req_version): Make static and rename to ...
(engine_get_req_version): ... this.
* engine.h (_gpgme_engine_get_path, _gpgme_engine_get_version,
_gpgme_engine_req_version, _gpgme_engine_get_info.): Remove
prototypes.

* gpgme.h (enum GpgmeProtocol): Remove GPGME_PROTOCOL_AUTO.
* gpgme.c (gpgme_set_protocol): Don't handle GPGME_PROTOCOL_AUTO.
(gpgme_get_protocol_name): New function.

* engine-backend.h (struct engine_ops): New member
get_req_version, remove member check_version.
* engine.h (_gpgme_Engine_get_version): New prototype.
* runpgg.c (gpg_get_req_version): New function.
(gpg_check_version): Function removed.
(_gpgme_engine_ops_gpg): Add gpg_get_req_version, remove
gpg_check_version.
* engine-gpgsm.c (gpgsm_get_req_version): New function.
(gpgsm_check_version): Function removed.
(_gpgme_engine_ops_gpgsm): Add gpgsm_get_req_version, remove
gpgsm_check_version.
* engine.c: Include ops.h.
(_gpgme_engine_get_req_version): New function.
(gpgme_engine_check_version): Rewritten.
* version.c (gpgme_get_engine_info): Rewritten.
* gpgme.h (gpgme_engine_info): New structure.
(GpgmeEngineInfo): New type.

2003-01-06 Werner Koch <wk@gnupg.org>

* keylist.c (set_mainkey_capability): Handle 'd' and 'D' used
since gpg 1.3 to denote disabled keys.

2003-01-06 Marcus Brinkmann <marcus@g10code.de>

* data-mem.c: Include <string.h>.
* engine.c: Likewise.

2003-01-06 Marcus Brinkmann <marcus@g10code.de>

* Makefile.am (libgpgme_la_DEPENDENCIES): Correct bug in last change.

2002-12-24 Marcus Brinkmann <marcus@g10code.de>

* gpgme.h (gpgme_op_verify, gpgme_op_decrypt_verify): Drop R_STAT
argument.

- * decrypt-verify.c (gpgme_op_decrypt_verify): Drop R_STAT argument.
- * verify.c (gpgme_op_verify): Drop R_STAT argument.
- (_gpgme_intersect_stati): Function removed.
- * ops.h (_gpgme_intersect_stati): Remove prototype.

2002-12-24 Marcus Brinkmann <marcus@g10code.de>

- * libgpgme.vers: New file.
- * Makefile.am (EXTRA_DIST): Add libgpgme.vers.
- (libgpgme_version_script_cmd): New variable.
- (libgpgme_la_LDFLAGS): Add libgpgme_version_script_cmd here.
- (libgpgme_la_DEPENDENCIES): New variable.

2002-12-23 Marcus Brinkmann <marcus@g10code.de>

- * key.c (gpgme_key_get_string_attr): Don't accept GPGME_ATTR_IS_SECRET.
- (otrust_to_string): New function.
- (gpgme_key_get_as_xml): Use it.
- (validity_to_string): New function.
- (gpgme_key_get_string_attr): Beautify using above functions.
- (gpgme_key_get_ulong_attr): Likewise.

2002-12-23 Marcus Brinkmann <marcus@g10code.de>

- * data-mem.c (mem_release): Fix gcc warning.
- * data-user.c (user_release): Likewise.

2002-12-06 Marcus Brinkmann <marcus@g10code.de>

- * data.h (gpgme_data_release_cb): Change return type to void.
- (gpgme_data_read_cb): Change return type to ssize_t.
- * data.c (gpgme_data_read): Likewise.
- * data-stream.c (stream_read): Likewise.
- * data-fd.c (fd_read): Likewise.
- * data-mem.c (mem_read): Likewise.
- (mem_release): Change return type to void.
- * data-user.c (user_read): Change return type to ssize_t.
- (user_release): Change return type to void.
- * data-compat.c (old_user_read): Change return type to ssize_t.
- * gpgme.h (GpgmeDataReadCb): Likewise.
- (gpgme_data_read): Likewise.
- (GpgmeDataSeekCb): Change return type to off_t.

2002-12-04 Marcus Brinkmann <marcus@g10code.de>

- * gpgme.h: Add prototype for gpgme_get_key.
- * key.c (gpgme_get_key): New function.

- * verify.c (gpgme_get_sig_key): Rewrite using gpgme_get_key.

- * gpgme.h: Add prototypes for new interfaces
gpgme_key_sig_get_string_attr and gpgme_key_get_ulong_attr.
(enum GpgmeAttr): New attribute GPGME_ATTR_SIG_CLASS.
- * gpgme.c (gpgme_set_keylist_mode): Allow GPGME_KEYLIST_MODE_SIGS.
- * key.h (struct certsig_s): New members ALGO, NAME_PART,
EMAIL_PART, COMMENT_PART, NAME, SIG_STAT and SIG_CLASS.

- * conversion.c (_gpgme_decode_c_string): Add new parameter LEN.
Use that to determine if allocation is desired or not.
- * util.h: Adjust prototype of _gpgme_decode_c_string.
- * keylist.c (keylist_colon_handler): Adjust caller of
_gpgme_decode_c_string.

- * key.h (struct gpgme_key_s): New member last_uid.
- * key.c (_gpgme_key_append_name): Rewritten using
_gpgme_decode_c_string and the last_uid pointer.
(my_isdigit): Macro removed.
(ALLOC_CHUNK): Likewise.
- * keylist.c (set_userid_flags): Use last_uid member of KEY.

- * context.h (struct user_id_s): New member last_certsig.
- * key.h: Add prototype for _gpgme_key_add_certsig.
- * key.c (_gpgme_key_add_certsig): New function.
(set_user_id_part): Move function before _gpgme_key_add_certsig.
(parse_user_id): Change first argument to SRC, add new arguments
NAME, EMAIL and COMMENT. Change code to use these arguments
instead going through UID. Move function before
_gpgme_add_certsig.
(parse_x509_user_id): Likewise.
(_gpgme_key_append_name): Adjust arguments to parse_x509_user_id
and parse_user_id invocation.
(one_certsig_as_xml): New function.
(one_uid_as_xml): Print signatures.
- * context.h (struct gpgme_context_s): New member TMP_UID.
- * keylist.c (keylist_colon_handler): Rewritten, implement "sig"
record entries.

- * key.c (get_certsig): New function.
(gpgme_key_sig_get_string_attr): Likewise.
(gpgme_key_sig_get_ulong_attr): Likewise.

- * keylist.c: Include <ctype.h>.
(my_isdigit): Macro removed.
(set_mainkey_trust_info): Use isdigit, not my_isdigit.
(set_userid_flags): Likewise.
(set_subkey_trust_info): Likewise.

(set_ownertrust): Likewise.

(finish_key): Move function up a bit and remove prototype.

* runpgg.c (gpg_keylist_ext): Correct precedence of signature listing mode.

(gpg_keylist_ext): Implement signature listing mode.

2002-11-25 Marcus Brinkmann <marcus@g10code.de>

* runpgg.c (_gpgme_gpg_spawn): Do not set parent fds to -1.

* posix-io.c (_gpgme_io_spawn): Call _gpgme_io_close instead close for parent fds.

* w32-io.c (_gpgme_io_spawn): Call _gpgme_io_close instead CloseHandle for parent fds.

2002-11-22 Marcus Brinkmann <marcus@g10code.de>

* gpgme.h [_MSC_VER]: Define ssize_t as long.

2002-11-22 Werner Koch <wk@gnupg.org>

* engine-gpgsm.c (_gpgme_gpgsm_new): Save the result of a first setlocale before doing another setlocale.

2002-11-21 Marcus Brinkmann <marcus@g10code.de>

* decrypt.c: Some beautyfication.

* verify.c (_gpgme_verify_status_handler): Treat GPGME_STATUS_UNEXPECTED like GPGME_STATUS_NODATA. Reported by Miguel Coca <e970095@zipi.fi.upm.es>.

2002-11-19 Marcus Brinkmann <marcus@g10code.de>

* genkey.c: Only include <config.h> if [HAVE_CONFIG_H].

(struct genkey_result_s): Add new member FPR.

(_gpgme_release_genkey_result): Free RESULT->fpr if set.

(genkey_status_handler): Extract the fingerprint from the status line.

(gpgme_op_genkey): Add new argument FPR and return the fingerprint in it.

* gpgme.h: Adjust prototype of gpgme_op_genkey.

2002-11-19 Marcus Brinkmann <marcus@g10code.de>

* runpgg.c (gpg_keylist): Add --with-fingerprint to gpg invocation twice, to get fingerprints on subkeys. Suggested by Timo Schulz <twoaday@freakmail.de>.

(gpg_keylist_ext): Likewise.

2002-11-05 Marcus Brinkmann <marcus@g10code.de>

* import.c (append_xml_impinfo): Use
_gpgme_data_append_string_for_xml rather than
_gpgme_data_append_string for the field content.
Submitted by Miguel Coca <e970095@zipi.fi.upm.es>.

2002-10-10 Marcus Brinkmann <marcus@g10code.de>

* runpgg.h, engine-gpgsm.h: File removed.
* engine-backend.h: New file.
* Makefile.am (gpgsm_components): New variable, set depending on
automake conditional HAVE_GPGSM.
(libgpgme_la_SOURCES): Add engine-backend.h, remove runpgg.h and
engine-gpgsm.h. Replace engine-gpgsm.c with \${gpgsm_components}.
(status-table.h): Depend on gpgme.h, not runpgg.h.
* conversion.c: Include <stdlib.h>.
* engine-gpgsm.c: Do not set ENABLE_GPGSM here. Include
"engine-backend.h" instead "engine-gpgsm.h". Reorder some
functions and remove all function prototypes.
(_gpgme_gpgsm_get_version): Make static and rename to ...
(gpgsm_get_version): ... this.
(_gpgme_gpgsm_check_version): Make static and rename to ...
(gpgsm_check_version): ... this.
(_gpgme_gpgsm_new): Make static. Change argument type from
GpgsmObject * to void **. Call gpgsm_release instead
_gpgme_gpgsm_release.
(_gpgme_gpgsm_op_decrypt): Make static and rename to ...
(gpgsm_check_decrypt): ... this.
(_gpgme_gpgsm_op_delete): Make static and rename to ...
(gpgsm_check_delete): ... this.
(_gpgme_gpgsm_set_recipients): Make static and rename to ...
(gpgsm_check_set_recipients): ... this.
(_gpgme_gpgsm_op_encrypt): Make static and rename to ...
(gpgsm_encrypt): ... this.
(_gpgme_gpgsm_op_export): Make static and rename to ...
(gpgsm_export): ... this.
(_gpgme_gpgsm_op_genkey): Make static and rename to ...
(gpgsm_genkey): ... this.
(_gpgme_gpgsm_op_import): Make static and rename to ...
(gpgsm_import): ... this.
(_gpgme_gpgsm_op_keylist): Make static and rename to ...
(gpgsm_keylist): ... this.
(_gpgme_gpgsm_op_keylist_ext): Make static and rename to ...
(gpgsm_keylist_ext): ... this.
(_gpgme_gpgsm_op_sign): Make static and rename to ...

(gpgsm_sign): ... this.

(_gpgme_gpgsm_op_trustlist): Make static and rename to ...

(gpgsm_trustlist): ... this.

(_gpgme_gpgsm_op_verify): Make static and rename to ...

(gpgsm_verify): ... this.

(gpgsm_status_handler): Rename to ...

(status_handler): ... this.

(_gpgme_gpgsm_set_status_handler): Make static and rename to ...

(gpgsm_set_status_handler): ... this.

(_gpgme_gpgsm_set_colon_line_handler): Make static and rename to ...

(gpgsm_set_colon_line_handler): ... this.

(_gpgme_gpgsm_add_io_cb): Rename to ...

(add_io_cb): ... this.

(_gpgme_gpgsm_start): Make static and rename to ...

(gpgsm_start): ... this.

(_gpgme_gpgsm_set_io_cb): Make static and rename to ...

(gpgsm_set_io_cb): ... this.

(_gpgme_gpgsm_io_event): Make static and rename to ...

(gpgsm_io_event): ... this.

(struct _gpgme_engine_ops_gpgsm): New variable.

[!ENABLE_GPGSM]: Removed.

* engine.c: Do not include <time.h>, <sys/types.h>, <string.h>, <assert.h>, "io.h", "rungpg.h" and "engine-gpgsm.h". Include <stdlib.h> and "engine-backend.h".

(struct engine_object_s): Rewritten.

(engine_ops): New variable.

* engine.c (_gpgme_engine_get_path, _gpgme_engine_get_version, _gpgme_engine_check_version, _gpgme_engine_new, _gpgme_engine_release, _gpgme_engine_set_verbosity, _gpgme_engine_set_status_handler, _gpgme_engine_set_command_handler, _gpgme_engine_set_colon_line_handler, _gpgme_engine_op_decrypt, _gpgme_engine_op_delete, _gpgme_engine_op_edit, _gpgme_engine_op_encrypt, _gpgme_engine_op_encrypt_sign, _gpgme_engine_op_export, _gpgme_engine_op_genkey, _gpgme_engine_op_import, _gpgme_engine_op_keylist, _gpgme_engine_op_keylist_ext, _gpgme_engine_op_sign, _gpgme_engine_op_trustlist, _gpgme_engine_op_verify, _gpgme_engine_start, _gpgme_engine_set_io_cbs, _gpgme_engine_io_event): Reimplement.

* engine.h: Fix a few comments and a variable name in a prototype.

* ops.h: Do not include "rungpg.h".

* passphrase.c: Include config.h only if [HAVE_CONFIG_H]. Do not include "rungpg.h".

* recipient.c: Likewise.

* signers.c: Likewise.

* version.c: Likewise.

* rungpg.c: Likewise. Include "engine-backend.h". Reorder

functions and remove prototypes.

(_gpgme_gpg_get_version): Make static and rename to ...

(gpg_get_version): ... this.

(_gpgme_gpg_check_version): Make static and rename to ...

(gpg_check_version): ... this.

(_gpgme_gpg_new): Make static. Change argument type from GpgObject * to void **. Call gpg_release instead _gpgme_gpg_release.

(_gpgme_gpg_op_decrypt): Make static and rename to ...

(gpg_check_decrypt): ... this.

(_gpgme_gpg_op_delete): Make static and rename to ...

(gpg_check_delete): ... this.

(_gpgme_gpg_set_recipients): Make static and rename to ...

(gpg_check_set_recipients): ... this.

(_gpgme_gpg_op_encrypt): Make static and rename to ...

(gpg_encrypt): ... this.

(_gpgme_gpg_op_export): Make static and rename to ...

(gpg_export): ... this.

(_gpgme_gpg_op_genkey): Make static and rename to ...

(gpg_genkey): ... this.

(_gpgme_gpg_op_import): Make static and rename to ...

(gpg_import): ... this.

(_gpgme_gpg_op_keylist): Make static and rename to ...

(gpg_keylist): ... this.

(_gpgme_gpg_op_keylist_ext): Make static and rename to ...

(gpg_keylist_ext): ... this.

(_gpgme_gpg_op_sign): Make static and rename to ...

(gpg_sign): ... this.

(_gpgme_gpg_op_trustlist): Make static and rename to ...

(gpg_trustlist): ... this.

(_gpgme_gpg_op_verify): Make static and rename to ...

(gpg_verify): ... this.

(gpg_status_handler): Rename to ...

(status_handler): ... this.

(_gpgme_gpg_set_status_handler): Make static and rename to ...

(gpg_set_status_handler): ... this.

(_gpgme_gpg_set_colon_line_handler): Make static and rename to ...

(gpg_set_colon_line_handler): ... this.

(gpgme_gpg_add_io_cb): Rename to ...

(add_io_cb): ... this.

(_gpgme_gpg_start): Make static and rename to ...

(gpg_start): ... this.

(_gpgme_gpg_set_io_cb): Make static and rename to ...

(gpg_set_io_cb): ... this.

(_gpgme_gpg_io_event): Make static and rename to ...

(gpg_io_event): ... this.

(struct_gpgme_engine_ops_gpg): New variable.

2002-10-10 Marcus Brinkmann <marcus@g10code.de>

* engine-gpgsm.c (`_gpgme_gpgsm_op_verify`) [`!ENABLE_GPGSM`]: Add missing argument.

2002-10-09 Marcus Brinkmann <marcus@g10code.de>

* data.h, data-user.c, data-stream.c, data-mem.c, data-fd.c, data-compat.c: New file. Really check them in this time, completes 2002-10-08 change.

* `rungpg.h` (`GpgStatusHandler`): Rename type to `GpgmeStatusHandler` and move to ...

* `types.h` (`GpgmeStatusHandler`): ... here.

* `rungpg.h` (`GpgColonLineHandler`): Rename type to `GpgmeColonLineHandler`. and move to ...

* `types.h` (`GpgmeColonLineHandler`): ... here.

* `rungpg.h` (`GpgCommandHandler`): Rename type to `GpgmeCommandHandler`. and move to ...

* `types.h` (`GpgmeCommandHandler`): ... here.

* `engine.h`: Don't include "`rungpg.h`".

(`_gpgme_engine_set_status_handler`): Change type of argument from `GpgStatusHandler` to `GpgmeStatusHandler`.

(`_gpgme_engine_set_colon_line_handler`): Change type of argument from `GpgColonLineHandler` to `GpgmeColonLineHandler`.

(`_gpgme_engine_set_command_handler`): Change type of argument from `GpgCommandHandler` to `GpgmeCommandHandler`.

* `engine-gpgsm.h`: Don't include "`rungpg.h`".

(`_gpgme_gpgsm_set_status_handler`): Change type of argument from `GpgStatusHandler` to `GpgmeStatusHandler`.

(`_gpgme_gpgsm_set_colon_line_handler`): Change type of argument from `GpgColonLineHandler` to `GpgmeColonLineHandler`.

* `engine-gpgsm.c`: Do not include "`rungpg.h`".

(`struct gpgsm_object_s`): Change type of `status.fnc` to `GpgmeStatusHandler`. Change type of `colon.fnc` to `GpgmeColonLineHandler`.

(`gpgsm_assuan_simple_command`): Change type of argument from `GpgStatusHandler` to `GpgmeStatusHandler`.

(`_gpgme_gpgsm_set_status_handler`): Likewise.

(`_gpgme_gpgsm_set_colon_line_handler`): Change type of argument from `GpgColonLineHandler` to `GpgmeColonLineHandler`.

* `rungpg.h` (`_gpgme_gpg_set_status_handler`): Change type of argument from `GpgStatusHandler` to `GpgmeStatusHandler`.

(`_gpgme_gpg_set_colon_line_handler`): Change type of argument from `GpgColonLineHandler` to `GpgmeColonLineHandler`.

(`_gpgme_gpg_set_command_handler`): Change type of argument from `GpgCommandHandler` to `GpgmeCommandHandler`.

* `rungpg.c` (`struct gpg_object_s`): Change type of `status.fnc` to

GpgmeStatusHandler. Change type of colon.fnc to
GpgmeColonLineHandler. Change type of cmd.fnc to
GpgmeCommandLineHandler.
(_gpgme_gpg_set_status_handler): Change type of argument FNC to
GpgmeStatusHandler.
(_gpgme_gpg_set_colon_line_handler): Change type of argument FNC
to GpgmeColonLineHandler.
(_gpgme_gpg_set_command_handler): Change type of argument FNC to
GpgmeCommandHandler.
* engine.c (_gpgme_engine_set_status_handler): Change type of
argument FNC to GpgmeStatusHandler.
(_gpgme_engine_set_colon_line_handler): Change type of argument FNC
to GpgmeColonLineHandler.
(_gpgme_engine_set_command_handler): Change type of argument FNC to
GpgmeCommandHandler.

* runpg.h (_gpgme_gpg_enable_pipemode): Remove prototype.

* runpg.c (struct gpg_object_s): Remove PM.

(pipemode_cb): Prototype removed.

(add_pm_data): Function removed.

(_gpgme_gpg_enable_pipemode): Likewise.

(pipemode_copy): Likewise.

(pipemode_cb): Likewise.

(add_arg): Don't check for pipemode.

(add_data): Likewise.

(_gpgme_gpg_set_status_handler): Likewise.

(_gpgme_gpg_set_colon_line_handler): Likewise.

(_gpgme_gpg_set_command_handler): Likewise.

(_gpgme_gpg_spawn): Likewise.

(_gpgme_gpg_spawn): Don't set PM.active.

(_gpgme_gpg_op_verify): Remove pipemode case.

* verify.c (_gpgme_op_verify_start): Remove pipemode case.

* runpg.h (_gpgme_gpg_add_arg, _gpgme_gpg_add_data,
_gpgme_gpg_add_pm_data, _gpgme_gpg_housecleaning,
_gpgme_gpg_set_simple_line_handler): Prototype removed.

(_gpgme_gpg_set_verbosity): New prototype.

* runpg.c (_gpgme_gpg_add_data): Make static and rename to ...

(add_data): ... this.

(_gpgme_gpg_add_pm_data): Call add_data, not _gpgme_gpg_add_data.

(_gpgme_gpg_set_command_handler): Likewise.

(_gpgme_gpg_op_decrypt, _gpgme_gpg_op_edit, _gpgme_gpg_op_encrypt,

_gpgme_gpg_op_encrypt_sign, _gpgme_gpg_op_export,

_gpgme_gpg_op_genkey, _gpgme_gpg_op_import, _gpgme_gpg_op_sign,

_gpgme_gpg_op_verify): Likewise.

(_gpgme_gpg_add_pm_data): Rename to ...

(add_pm_data): ... this.

(_gpgme_gpg_op_verify): Call add_pm_data, not

`_gpgme_gpg_add_pm_data`.
`(_gpgme_gpg_add_arg)`: Make static and rename to ...
`(add_arg)`: ... this.
`(_gpgme_gpg_set_command_handler, _gpgme_gpg_new,`
`_gpgme_gpg_op_decrypt, _gpgme_gpg_op_delete,`
`_gpgme_append_gpg_args_from_signers, _gpgme_gpg_op_edit,`
`_gpgme_append_gpg_args_from_recipients, _gpgme_gpg_op_encrypt,`
`_gpgme_gpg_op_encrypt_sign, _gpgme_gpg_op_export,`
`_gpgme_gpg_op_genkey, _gpgme_gpg_op_import, _gpgme_gpg_op_keylist,`
`_gpgme_gpg_op_keylist_ext, _gpgme_gpg_op_trustlist,`
`_gpgme_gpg_op_sign, _gpgme_gpg_op_verify)`: Use `add_arg`, not
`_gpgme_gpg_add_arg`.
`(_gpgme_gpg_set_verbosity)`: New function.
`(struct gpg_object_s)`: Remove member `simple` from colon.
`(_gpgme_gpg_set_colon_line_handler)`: Don't initialize `simple`.
`(_gpgme_gpg_set_simple_line_handler)`: Removed function.
`(read_colon_line)`: Don't check the GPG->colon.`simple`.
`* engine.c (_gpgme_engine_set_verbosity)`: Call
`_gpgme_gpg_set_verbosity` instead `_gpgme_gpg_add_arg`.

2002-10-08 Marcus Brinkmann <marcus@g10code.de>

`* util.h (_gpgme_malloc, _gpgme_realloc, _gpgme_calloc,`
`_gpgme_strdup, _gpgme_free)`: Remove prototypes.
`(xtrymalloc, xtrycalloc, xtryrealloc, xtrystrdup, xfree)`: Remove
macros.
`* util.c`: File removed.
`* Makefile.am (libgpgme_la_SOURCES)`: Remove `util.h`.
`* conversion.c (_gpgme_decode_c_string)`: Use `malloc` instead of
`xtrymalloc`, `realloc` instead of `xtryrealloc`, `calloc` instead of
`xtrycalloc`, `free` instead of `xfree`.
`(_gpgme_data_append_percentstring_for_xml)`: Likewise.
`* data.c (_gpgme_data_new, _gpgme_data_release)`: Likewise.
`* data-compat.c (gpgme_data_new_from_filepart)`: Likewise.
`* data-mem.c (mem_write, mem_release, gpgme_data_new_from_mem,`
`_gpgme_data_get_as_string)`: Likewise.
`* debug.c (debug_init)`: Likewise.
`* decrypt.c (_gpgme_release_decrypt_result)`: Likewise.
`* delete.c (_gpgme_release_delete_result)`: Likewise.
`* edit.c (_gpgme_release_edit_result, _gpgme_op_edit_start)`:
Likewise.
`* encrypt.c (_gpgme_release_encrypt_result)`: Likewise.
`* engine.c (_gpgme_engine_get_info, _gpgme_engine_new,`
`_gpgme_engine_release)`: Likewise.
`* engine-gpgsm.c (_gpgme_gpgsm_new, _gpgme_gpgsm_release,`
`_gpgme_gpgsm_op_decrypt, _gpgme_gpgsm_op_delete,`
`gpgsm_set_recipients, _gpgme_gpgsm_op_encrypt,`
`_gpgme_gpgsm_op_export, _gpgme_gpgsm_op_genkey,`

`_gpgme_gpgsm_op_import`, `_gpgme_gpgsm_op_keylist`,
`_gpgme_gpgsm_op_keylist_ext`, `_gpgme_gpgsm_op_sign`,
`_gpgme_gpgsm_op_verify`, `gpgsm_status_handler`): Likewise.
* `genkey.c` (`_gpgme_release_genkey_result`): Likewise.
* `gpgme.c` (`gpgme_new`, `gpgme_release`): Likewise.
* `import.c` (`_gpgme_release_import_result`): Likewise.
* `key.c` (`_gpgme_key_cache_init`, `_gpgme_key_cache_add`, `key_new`,
`add_subkey`, `gpgme_key_release`, `_gpgme_key_append_name`): Likewise.
* `keylist.c` (`_gpgme_release_keylist_result`, `keylist_colon_handler`,
`_gpgme_op_keylist_event_cb`, `gpgme_op_keylist_next`): Likewise.
* `ops.h` (`test_and_allocate_result`): Likewise.
* `passphrase.c` (`_gpgme_release_passphrase_result`,
`_gpgme_passphrase_status_handler`,
`_gpgme_passphrase_command_handler`): Likewise.
* `progress.c` (`_gpgme_progress_status_handler`): Likewise.
* `recipient.c` (`gpgme_recipients_new`, `gpgme_recipients_release`,
`gpgme_recipients_add_name_with_validity`): Likewise.
* `rungpg.c` (`_gpgme_gpg_new`, `_gpgme_gpg_release`,
`_gpgme_gpg_add_arg`, `_gpgme_gpg_add_data`,
`_gpgme_gpg_set_colon_line_handler`, `free_argv`, `free_fd_data_map`,
`build_argv`, `_gpgme_gpg_spawn`, `read_status`, `read_colon_line`):
Likewise.
* `sign.c` (`_gpgme_release_sign_result`): Likewise.
* `signers.c` (`_gpgme_signers_add`): Likewise.
* `trustlist.c` (`trust_item_new`, `trustlist_colon_handler`,
`_gpgme_op_trustlist_event_cb`, `gpgme_op_trustlist_next`,
`gpgme_trustitem_release`): Likewise.
* `verify.c` (`_gpgme_release_verify_result`, `finish_sig`): Likewise.
* `version.c` (`gpgme_get_engine_info`, `_gpgme_get_program_version`):
Likewise.
* `w32-io.c` (`create_reader`, `create_writer`, `destroy_reader`,
`destroy_writer`, `build_commandline`, `_gpgme_io_spawn`): Likewise.
* `w32-sema.c` (`critsect_init`, `_gpgme_sema_cs_destroy`): Likewise.
* `w32-util.c` (`read_w32_registry_string`): Likewise.
* `wait.c` (`_gpgme_fd_table_deinit`, `_gpgme_fd_table_put`,
`_gpgme_wait_event_cb`, `_gpgme_add_io_cb`, `_gpgme_remove_io_cb`)
* `data-compat.c`: Include `<stdlib.h>`.

2002-10-08 Marcus Brinkmann <marcus@g10code.de>

New data object component:

* `gpgme.h` (`GpgmeDataReadCb`, `GpgmeDataWriteCb`, `GpgmeDataSeekCb`,
`GpgmeDataReleaseCb`): New types.
(struct `GpgmeDataCbs`): New structure.
(`gpgme_data_read`): Changed prototype to match that of `read()` closely.
(`gpgme_data_write`): Similar for `write()`.
(`gpgme_data_seek`, `gpgme_data_new_from_cbs`, `gpgme_data_new_from_fd`,

gpgme_data_new_from_stream): New prototypes.
(gpgme_data_get_type, gpgme_check_engine): Prototype removed.

- * Makefile.am (libgpgme_la_SOURCES): Add data.h, data-fd.c, data-stream.c, data-mem.c, data-user.c and data-compat.c.
- * data.c: Reimplemented from scratch.
- * (data-compat.c, data-fd.c, data.h, data-mem.c, data-stream.c, data-user.c): New file.
- * context.h (struct gpgme_data_s): Removed.
- * conversion.c: Include <errno.h> and <sys/types.h>.
- (_gpgme_data_append): New function.
- * data.c (_gpgme_data_append_string): Move to ...
- * conversion.c (_gpgme_data_append_string): ... here.
- * data.c (_gpgme_data_append_for_xml): Move to ...
- * conversion.c (_gpgme_data_append_for_xml): ... here.
- * data.c (_gpgme_data_append_string_for_xml): Move to ...
- * conversion.c (_gpgme_data_append_string_for_xml): ... here.
- * data.c (_gpgme_data_append_percentstring_for_xml): Move to ...
- * conversion.c (_gpgme_data_append_percentstring_for_xml): ... here.
- * ops.h (_gpgme_data_get_mode, _gpgme_data_set_mode): Prototype removed.
- * types.h (GpgmeDataMode): Type removed.
- * decrypt.c (_gpgme_decrypt_start): Don't check data type or mode.
- * edit.c (_gpgme_op_edit_start): Likewise.
- * encrypt.c (_gpgme_op_encrypt_start): Likewise.
- * encrypt-sign.c (_gpgme_op_encrypt_sign_start): Likewise.
- * encrypt-sign.c (_gpgme_op_encrypt_sign_start): Likewise.
- * export.c (_gpgme_op_export_start): Likewise.
- * genkey.c (_gpgme_op_genkey_start): Likewise.
- * import.c (_gpgme_op_import_start): Likewise.
- * sign.c (_gpgme_op_sign_start): Likewise.
- * verify.c (_gpgme_op_verify_start): Likewise.
- * encrypt.c (gpgme_op_encrypt): Remove hack that returns invalid no recipient if no data was returned.
- * encrypt-sign.c (gpgme_op_encrypt_sign): Remove hack that returns no recipient if no data was returned.
- * encrypt-sign.c (gpgme_op_encrypt_sign): Remove hack that returns no recipient if no data was returned.
- * engine.c (_gpgme_engine_op_verify): Add new argument to differentiate detached from normal signatures.
- * engine.h (_gpgme_engine_op_verify): Likewise for prototype.
- * engine-gpgsm.c (_gpgme_gpgsm_op_verify): Likewise. Don't check mode of data argument.
- * engine-gpgsm.h (_gpgme_gpgsm_op_verify): Likewise for prototype.

* gpgme.h (gpgme_op_verify_start): Likewise for prototype.
(gpgme_op_verify): Likewise for prototype.
* runpgg.c (_gpgme_gpg_op_verify): Likewise.
* runpgg.h (_gpgme_gpg_op_verify): Likewise for prototype.
* verify.c (_gpgme_op_verify_start): Likewise.
(gpgme_op_verify_start): Likewise.
(gpgme_op_verify): Likewise.

* runpgg.c (struct arg_and_data_s): New member INBOUND to hold direction of data object.
(_gpgme_gpg_add_data): Add new argument INBOUND. Use it to determine direction of data object.
(_gpgme_gpg_add_pm_data, _gpgme_gpg_set_command_handler, _gpgme_gpg_op_decrypt, _gpgme_gpg_op_edit, _gpgme_gpg_op_encrypt, _gpgme_gpg_op_encrypt_sign, _gpgme_gpg_op_export, _gpgme_gpg_op_genkey, _gpgme_gpg_op_import, _gpgme_gpg_op_sign, _gpgme_gpg_op_verify): Add new argument to _gpgme_gpg_add_data invocation.
(build_argv): Use new member INBOUND to determine direction of file descriptor. Don't check the data type.
* runpgg.h (_gpgme_gpg_add_data): Add new argument to prototype.

* gpgme.c (gpgme_get_op_info): Don't call _gpgme_data_get_as_string if CTX->op_info is NULL.

* version.c (gpgme_check_engine): Function removed.

2002-09-30 Werner Koch <wk@gnupg.org>

* keylist.c (keylist_colon_handler): Take care when printing a NULL with the DEBUG.

* engine-gpgsm.c (struct gpgsm_object_s): New member ANY.
(gpgsm_status_handler): Run the colon function to indicate EOF.
(_gpgme_gpgsm_set_colon_line_handler): Better reset ANY here.

2002-09-28 Marcus Brinkmann <marcus@g10code.de>

* conversion.c (_gpgme_hextobyte): Prevent superfluous multiplication with base. Reported by Stphane Corthisy.

* keylist.c (gpgme_op_keylist_ext_start): Use private asynchronous operation type in invocation of _gpgme_op_reset.

2002-09-20 Werner Koch <wk@gnupg.org>

* ath.c: Include sys/time.h if sys/select.h is not available.

2002-09-13 Marcus Brinkmann <marcus@g10code.de>

* keylist.c (keylist_status_handler): Do not call finish_key() here.
(gpgme_op_keylist_ext_start): Set CTX->tmp_key to NULL.

2002-09-03 Marcus Brinkmann <marcus@g10code.de>

* Makefile.am (assuan_libobjs): Remove @LTLIBOBJS@ as we link them
into gpgme unconditionally.
(libgpgme_la_LIBADD): Change @LIBOBJS@ into @LTLIBOBJS@.

2002-09-02 Marcus Brinkmann <marcus@g10code.de>

* Makefile.am (assuan_libobjs): Use @LTLIBOBJS@ instead @LIBOBJS@.

2002-09-02 Marcus Brinkmann <marcus@g10code.de>

* debug.c (_gpgme_debug_add): Test *LINE, not LINE.
(_gpgme_debug_end): Likewise.
Reported by Dr. Stefan Dalibor <Dr.Stefan.Dalibor@bfa.de>.

2002-09-02 Marcus Brinkmann <marcus@g10code.de>

* posix-io.c (_gpgme_io_select): Don't use a non-constant struct
initializer.
* version.c (_gpgme_get_program_version): Likewise.
Reported by Dr. Stefan Dalibor <Dr.Stefan.Dalibor@bfa.de>.

2002-09-02 Marcus Brinkmann <marcus@g10code.de>

* conversion.c (_gpgme_decode_c_string): Set DESTP before
modifying DEST.

* conversion.c (_gpgme_decode_c_string): Fix off by one error in
last change.
* runpg.c (_gpgme_append_gpg_args_from_signers): Move before
_gpgme_op_edit so its prototype is known early on.

* conversion.c: New file.
* util.h: Add prototypes for _gpgme_decode_c_string and
_gpgme_hexbyte.
* keylist.c (keylist_colon_handler): Call _gpgme_decode_c_string
on issuer name.
* Makefile.am (libgpgme_la_SOURCES): Add conversion.c
* key.c (_gpgme_key_append_name): Replace calls to hexbyte by
calls to _gpgme_hexbyte.
(hash_key): Likewise.

2002-09-01 Marcus Brinkmann <marcus@g10code.de>

* op-support.c (`_gpgme_op_reset`): Set `CTX->pending` after calling `_gpgme_engine_release`, as this will reset pending to zero in the event done callback on cancelled operations.

2002-08-30 Marcus Brinkmann <marcus@g10code.de>

* `rungpg.c` (`_gpgme_gpg_op_edit`): Add args from signers.
Suggested by Miguel Coca <e970095@zipi.fi.upm.es>.

* `rungpg.c` (`_gpgme_gpg_op_edit`): Add bogus ctx argument.

* `rungpg.h`: Also to prototype.

* `engine.c` (`_gpgme_engine_op_edit`): Likewise.

* `engine.h`: Likewise.

* `edit.c` (`_gpgme_op_edit_start`): Likewise.

2002-08-29 Werner Koch <wk@gnupg.org>

* `engine-gpgsm.c` (`_gpgme_gpgsm_op_sign`): Implement signer selection.

* `vasprintf.c` (`va_copy`): Define macro if not yet defined.

2002-08-29 Marcus Brinkmann <marcus@g10code.de>

* `passphrase.c` (`_gpgme_passphrase_status_handler`): Reset `CTX->result.passphrase->no_passphrase` if passphrase is given (good or bad). Submitted by Jean DIRAISON <jean.diraison@free.fr>.

2002-08-28 Marcus Brinkmann <marcus@g10code.de>

* `posix-io.c` (`_gpgme_io_spawn`): Use a double-fork approach.
Return 0 on success, -1 on error.

* `version.c` (`_gpgme_get_program_version`): Don't wait for the child.

* `engine.c` (`_gpgme_engine_housecleaning`): Function removed.
(`do_reaping`): Likewise.

(`_gpgme_engine_add_child_to_reap_list`): Likewise.

(`struct reap_s`): Removed.

(`reap_list`): Likewise.

(`reap_list_lock`): Likewise.

* `engine.h` (`_gpgme_engine_io_event`): Remove prototypes for `_gpgme_engine_housecleaning` and `_gpgme_engine_add_child_to_reap_list`.

* `rungpg.c` (`_gpgme_gpg_release`): Don't add child to reap list.
(`struct gpg_object_s`): Remove PID member.

(`_gpgme_gpg_new`): Don't initialize `GPG->pid`.

(`_gpgme_gpg_spawn`): Don't set `GPG->pid`.

* `wait.c` (`run_idle`): Removed.

(gpgme_wait): Run idle_function directly.

2002-08-21 Marcus Brinkmann <marcus@g10code.de>

* encrypt-sign.c (encrypt_sign_status_handler): Remove dead variables encrypt_info and encrypt_info_len.

* trustlist.c (gpgme_op_trustlist_start): Set colon line handler.

* posix-sema.c (sema_fatal): Remove function.

All these reported by Stphane Corthisy.

2002-08-23 Werner Koch <wk@gnupg.org>

* gpgme-config.in: Made --prefix work for --libs.

2002-08-21 Marcus Brinkmann <marcus@g10code.de>

* ath.h: Update list of symbols that get a prefix: Rename the ath_mutex_*_available symbols to ath_*_available.

2002-08-21 Marcus Brinkmann <marcus@g10code.de>

* stpcpy.c: New file from gnulib.

* Makefile.am (assuan_libobjs): Remove jnlib.

2002-08-20 Marcus Brinkmann <marcus@g10code.de>

* gpgme.h: Add prototype for gpgme_op_import_ext.

* import.c (struct import_result_s): New member `nr_considered'.

Rename `any_imported' to `nr_imported'.

(import_status_handler): Increment nr_imported. Set nr_considered if appropriate.

(gpgme_op_import_ext): New function.

(gpgme_op_import): Implement in terms of gpgme_op_import_ext.

2002-08-20 Werner Koch <wk@gnupg.org>

* gpgme.m4: Replaced with a new and faster version. This does not anymore try to build test programs. If we really need test programs, we should add an option to gpgme-config to do so.

* vasprintf.c (int_vasprintf): Hack to handle NULL passed for %s.

2002-08-20 Marcus Brinkmann <marcus@g10code.de>

* gpgme.c (_gpgme_set_op_info): Append data on subsequent calls.

* encrypt-sign.c (encrypt_sign_status_handler): Remove op_info handling.

2002-08-19 Werner Koch <wk@gnupg.org>

- * `decrypt.c` (`is_token,skip_token`): Duplicated from `verify.c`
- (`gpgme_op_decrypt`): Hack to properly return `Decryption_Failed..`
- (`_gpgme_decrypt_status_handler`): Create an operation info.

2002-08-14 Werner Koch <wk@gnupg.org>

- * `key.h` (`struct certsig_s`): New. Use it in `gpgme_key_s`.
- * `key.c` (`gpgme_key_release`): Release it. We need to add more code of course.
- (`_gpgme_key_append_name`): Use `memset` to initialize the struct.
- * `gpgme.h` (`GPGME_KEYLIST_MODE_SIGS`): New.
- * `rungpg.c` (`_gpgme_gpg_op_keylist`): Include sigs in listing depending non the list mode.

- * `key.c` (`gpgme_key_get_string_attr`): Use `GPGME_ATTR_TYPE` to return information about the key type (PGP or X.509).
- (`gpgme_key_get_ulong_attr`): Likewise.

- * `keylist.c` (`keylist_colon_handler`): Include 1 in the check for valid algorithms so that RSA is usable. Store the issuer name and serial number also for "crs" records. Parse the expire date for subkeys.
- (`set_userid_flags`): Put them onto the last appended key.

2002-07-29 Marcus Brinkmann <marcus@g10code.de>

- * `rungpg.c` (`_gpgme_gpg_op_edit`): Use `--with-colons`.

2002-07-28 Marcus Brinkmann <marcus@g10code.de>

- * `data.c` (`gpgme_data_read`): For `GPGME_DATA_TYPE_NONE`, return EOF instead an error.

The following changes make it possible to flush an inbound data pipe before invoking a command handler:

- * `posix-io.c` (`_gpgme_io_select`): Accept new argument `NONBLOCK` to `_gpgme_io_select`. Set timeout of 0 if this is set.
- * `w32-io.c` (`_gpgme_io_select`): Likewise.
- * `io.h`: Add new argument `NONBLOCK` to `_gpgme_io_select` prototype.
- * `wait.c` (`do_select`): Add new argument to `_gpgme_io_select` invocation.
- * `rungpg.h` (`_gpgme_gpg_set_command_handler`): Add new argument `linked_data` to prototype.
- * `engine.h` (`_gpgme_engine_set_command_handler`): Likewise.
- * `engine.c` (`_gpgme_engine_set_command_handler`): Likewise.

- * passphrase.c (`_gpgme_passphrase_start`): Pass NULL as `linked_data` argument to `_gpgme_engine_set_command_handler`.
- * `rungpg.c` (`struct gpg_object_s`): New members `linked_data` and `linked_idx` in `CMD`.
- (`_gpgme_gpg_new`): Initialize those new members.
- (`_gpgme_gpg_set_command_handler`): Accept new argument `linked_data`.
- (`build_argv`): Handle `linked_data` in the same hack as `cb_data`.
- (`read_status`): If `linked_data` is in use, flush the pipe before activating the command handler.
- * `gpgme.h`: Add prototypes for `gpgme_op_edit_start` and `gpgme_op_edit`.

The next changes export the status codes to the user:

- * `decrypt.c` (`_gpgme_decrypt_status_handler`): Likewise, also prefix all `STATUS_` with `GPGME_`.
- * `delete.c` (`delete_status_handler`): Likewise.
- * `decrypt-verify.c` (`decrypt_verify_status_handler`): Likewise.
- * `encrypt.c` (`_gpgme_encrypt_status_handler`): Likewise.
- (`_gpgme_encrypt_sym_status_handler`): Likewise.
- * `encrypt-sign.c` (`encrypt_sign_status_handler`): Likewise.
- * `engine-gpgsm.c` (`parse_status`): Likewise.
- (`gpgsm_status_handler`): Likewise.
- (`gpgsm_set_recipients`): Likewise.
- * `export.c` (`export_status_handler`): Likewise.
- * `genkey.c` (`genkey_status_handler`): Likewise.
- * `import.c` (`append_xml_impinfo`): Likewise.
- (`import_status_handler`): Likewise.
- * `keylist.c` (`keylist_status_handler`): Likewise.
- * `passphrase.c` (`_gpgme_passphrase_status_handler`): Likewise.
- (`command_handler`): Likewise.
- * `progress.c` (`_gpgme_progress_status_handler`): Likewise.
- * `sign.c` (`_gpgme_sign_status_handler`): Likewise.
- * `trustlist.c` (`trustlist_status_handler`): Likewise.
- * `verify.c` (`_gpgme_verify_status_handler`): Likewise.
- * `gpgme.h` (`GpgmeEditCb`): New type.
- * `rungpg.h` (`GpgStatusCode`): Rename and move to ...
- * `gpgme.h` (`GpgmeStatusCode`): ... this and here.
- * `Makefile.am` (`status-table.h`): Run `mkstatus` on `gpgme.h`, not `rungpg.h`.
- * `mkstatus`: Prefix `STATUS` with `GPGME_`.
- * `rungpg.h` (`GpgStatusHandler`, `GpgCommandHandler`): Change type accordingly.
- * `ops.h` (`_gpgme_verify_status_handler`,
`_gpgme_decrypt_status_handler`, `_gpgme_sign_status_handler`,
`_gpgme_encrypt_status_handler`, `_gpgme_passphrase_status_handler`,
`_gpgme_progress_status_handler`): Likewise.
- * `rungpg.c` (`struct gpg_object_s`): Likewise for `CMD.code`.

These changes add an edit operation to GPGME:

- * context.h (struct gpgme_context_s): New member RESULT.edit. *
- ops.h: Add prototype for _gpgme_release_edit_result and _gpgme_passphrase_command_handler.
- * passphrase.c (command_handler): Make non-static and rename to ... (_gpgme_passphrase_command_handler): ... this.
- (_gpgme_passphrase_start): Use new name for command handler.
- * types.h: Add EditResult type.
- * gpgme.c (_gpgme_release_result): Release EDIT result.
- * edit.c: New file.
- * Makefile.am (libgpgme_la_SOURCES): Add edit.c.
- (libgpgme_la_LDADD): Rename to libgpgme_la_LIBADD, and include assuan_libobjs.
- (assuan_libobjs): New variable, set this instead libgpgme_la_LIBADD.
- * engine.h (_gpgme_engine_op_edit): New prototype.
- * engine.c (_gpgme_engine_op_edit): New function.
- * runpgg.h (_gpgme_gpg_op_edit): New prototype.
- * runpgg.c (_gpgme_gpg_op_edit): New function.

2002-07-27 Marcus Brinkmann <marcus@g10code.de>

- * delete.c (delete_problem): New case ambiguous specification.
- (delete_status_handler): Handle new case (poorly).

2002-07-25 Marcus Brinkmann <marcus@g10code.de>

- * engine-gpgsm.c (_gpgme_gpgsm_op_delete): Implement this.

2002-07-25 Marcus Brinkmann <marcus@g10code.de>

- * Makefile.am (libgpgme_la_LDADD): Add @LIBOBJS@ for vasprintf and fopencookie.
- * vasprintf.c: Update to more recent libiberty version.
- * debug.h: Replace #elif with #elif.

Submitted by Stphane Corthisy:

- * util.h (vasprintf): Correct prototype.
- * encrypt-sign.c: Include <stddef.h>.
- (encrypt_sign_status_handler): Change type of ENCRYPT_INFO_LEN to size_t.
- * ath-pthread.c: Include <stdlib.h>, not <malloc.h>.
- * ath-pth.c: Likewise.

2002-07-25 Marcus Brinkmann <marcus@g10code.de>

- * wait.c (fdt_global): Make static. Reported by Stphane

Corthsy.

* `rungpg.c` (`_gpgme_gpg_op_keylist_ext`): Skip empty string patterns. Reported by Stphane Corthsy.

* `key.c` (`gpgme_key_get_as_xml`): Add OTRUST attribute. Requested by Stphane Corthsy.

(`gpgme_key_get_string_attr`): Add `GPGME_ATTR_SIG_SUMMARY` case to silence gcc warning.

* `rungpg.c` (`_gpgme_gpg_new`): Always set utf8 as charset.

2002-07-03 Marcus Brinkmann <marcus@g10code.de>

* `gpgme.c` (`gpgme_set_io_cbs`): Deal with CTX being NULL.

* `gpgme.c` (`_gpgme_op_event_cb_user`): New function.

* `op-support.c` (`_gpgme_op_reset`): Support a new mode of operation for private or user event loop. Use new user event callback wrapper.

* `trustlist.c` (`gpgme_op_trustlist_start`): Use this new mode.

* `keylist.c` (`gpgme_op_keylist_start`): Likewise.

* `rungpg.c` (`_gpgme_gpg_io_event`): New function.

* `rungpg.h` (`_gpgme_gpg_io_event`): New prototype.

* `engine-gpgsm.c` (`_gpgme_gpg_io_event`): New function.

* `engine-gpgsm.h` (`_gpgme_gpgsm_io_event`): New prototype.

* `engine.c` (`_gpgme_engine_io_event`): New function.

* `engine.h` (`_gpgme_engine_io_event`): New prototype.

* `keylist.c` (`finish_key`): Call `_gpgme_engine_io_event`, and move the real work for the default IO callback routines to ...

(`_gpgme_op_keylist_event_cb`): ... here. New function.

* `trustlist.c` (`trustlist_colon_handler`): Signal `GPGME_EVENT_NEXT_TRUSTITEM`. Move queue manipulation to ...

(`_gpgme_op_trustlist_event_cb`): ... here. New function.

* `gpgme.c` (`_gpgme_op_event_cb`): Call `_gpgme_op_keylist_event_cb` and `_gpgme_op_trustlist_event_cb` when appropriate.

* `ops.h` (`_gpgme_op_keylist_event_cb`): New prototype.

(`_gpgme_op_trustlist_event_cb`): Likewise.

* `op-support.c` (`_gpgme_op_reset`): Add comment why we don't use the user provided event handler directly.

* `gpgme.h` (`GpgmeRegisterIOCb`): Return `GpgmeError` value, and TAG in a pointer argument.

* `wait.c` (`_gpgme_add_io_cb`): Likewise.

* `wait.h` (`_gpgme_add_io_cb`): Likewise for prototype.

* `rungpg.c` (`_gpgme_gpg_add_io_cb`): Call `IO_CBS->add` with new argument. Fix up error handling.

* `engine-gpgsm.c` (`_gpgme_gpgsm_add_io_cb`): Call `IO_CBS->add` with

new argument, fix up error handling.

2002-07-03 Werner Koch <wk@gnupg.org>

* encrypt.c (status_handler_finish): New.
(_gpgme_encrypt_status_handler): Moved some code out to the new function and call this function also in case we get into the status handler with an error which might happen due to a kludge in engine-gpgsm.c

2002-06-28 Marcus Brinkmann <marcus@g10code.de>

* keylist.c (gpgme_op_keylist_ext_start): Always use our own FD table (eg use synchronous mode).

2002-06-27 Marcus Brinkmann <marcus@g10code.de>

* gpgme.h: Fix documentation of key attribute retrieval functions.

2002-06-28 Marcus Brinkmann <marcus@g10code.de>

* ops.h (_gpgme_wait_on_condition): Remove HANG argument from prototype and change return type to GpgmeError.
(_gpgme_wait_one): New prototype.
* wait.c (gpgme_wait): Replace with the meat from _gpgme_wait_on_condition here, and remove the support for conditions.
(_gpgme_wait_on_condition): Remove HANG argument from prototype and change return type to GpgmeError. Replace with meat from _gpgme_wait_one and add support for conditions.
(_gpgme_wait_one): Just call _gpgme_wait_on_condition without condition.
* keylist.c (gpgme_op_keylist_ext_start): Always use our own FD table (eg use synchronous mode).
(gpgme_op_keylist_next): Remove HANG argument from _gpgme_wait_on_condition. Check its return value.
* trustlist.c (gpgme_op_trustlist_start): Always use our own FD table (eg use synchronous mode).
(gpgme_op_trustlist_next): Remove HANG argument from _gpgme_wait_on_condition. Check its return value.

2002-06-26 Werner Koch <wk@gnupg.org>

* engine-gpgsm.c (map_assuan_error): Map No_Data_Available to EOF.

* import.c (append_xml_impinfo): Kludge to print fingerprint instead of keyid for use with gpgsm.
(import_status_handler): Set a flag to know whether any import

occurred.

(gpgme_op_import): Return -1 if no certificate was imported.

2002-06-25 Werner Koch <wk@gnupg.org>

* engine-gpgsm.c (_gpgme_gpgsm_set_io_cbs) [ENABLE_GPGSM]: Fixed function arguments.

2002-06-25 Marcus Brinkmann <marcus@g10code.de>

* engine-gpgsm.c (_gpgme_gpgsm_op_export): Only export the keys listed in RECP.

* export.c (gpgme_op_export): If no data was returned, return GPGME_No_Recipients.

2002-06-25 Marcus Brinkmann <marcus@g10code.de>

* engine-gpgsm.c (_gpgme_gpgsm_op_export): Implement.

2002-06-21 Marcus Brinkmann <marcus@g10code.de>

* engine-gpgsm.c (gpgsm_assuan_simple_command): Return ERR.

(parse_status): New function.

(gpgsm_status_handler): Use parse_status.

(gpgsm_assuan_simple_command): Accept new arguments STATUS_FNC and STATUS_FNC_VALUE and process status messages.

(gpgsm_set_recipients): Pass new arguments to gpgsm_assuan_simple_command.

(gpgsm_set_fd): Likewise.

(_gpgme_gpgsm_op_keylist): Likewise.

(_gpgme_gpgsm_op_keylist_ext): Likewise.

(_gpgme_gpgsm_op_sign): Likewise.

2002-06-21 Marcus Brinkmann <marcus@g10code.de>

* wait.c (_gpgme_remove_io_cb): Unlock FDT->lock.

2002-06-20 Werner Koch <wk@gnupg.org>

* runpg.c (build_argv): Ignore GPG_AGENT_INFO if set but empty.

* verify.c (calc_sig_summary): Set bad policy for wrong key usage.

(skip_token): New.

(_gpgme_verify_status_handler): Watch out for wrong key usage.

(gpgme_get_sig_string_attr): Hack to return info on the key usage. Does now make use of the former RESERVED argument which has been renamed to WHATIDX.

(gpgme_get_sig_ulong_attr): Renamed RESERVED to WHATIDX.

2002-06-14 Marcus Brinkmann <marcus@g10code.de>

* wait.c (do_select): Return -1 on error, and 0 if nothing to run.
(_gpgme_wait_one): Only set HANG to zero if do_select returned an error, or there are no more file descriptors to wait on.
(_gpgme_wait_on_condition): Ignore return value from do_select for now.

2002-06-13 Werner Koch <wk@gnupg.org>

* verify.c (gpgme_op_verify): Make sure that we never access an uninitialized result structure.

2002-06-12 Werner Koch <wk@gnupg.org>

* keylist.c (struct keylist_result_s): New.
(_gpgme_release_keylist_result): Release it here
(keylist_status_handler): Handle truncated.
(append_xml_keylistinfo): New.
* gpgme.c (_gpgme_release_result): and use it here.
* types.h: Declare the new type here.
* context.h (struct gpgme_context_s): Use it here.

2002-06-11 Marcus Brinkmann <marcus@g10code.de>

* engine-gpgsm.c (_gpgme_gpgsm_release): Close status_cb.fd.
(_gpgme_gpgsm_new): Duplicate status file descriptor, so we can use our own close notification mechanism without interfering with assuan.

2002-06-11 Werner Koch <wk@gnupg.org>

* gpgme.h: Add GPGME_ATTR_SIG_SUMMARY and the GPGME_SIGSUM_ constants.
* verify.c (calc_sig_summary): New.
(gpgme_get_sig_ulong_attr): And use it here.

2002-06-10 Werner Koch <wk@gnupg.org>

* runpgg.h: Add new status codes TRUNCATED and ERROR.
* verify.c (is_token, copy_token): New.
(_gpgme_verify_status_handler): Use copy_token, handle the new ERROR status and store the errorcode used withgpgsm and trust status codes.
* gpgme.h: New attribute ERRTOK.
* key.c (gpgme_key_get_string_attr): Add dummy case for it.
(gpgme_get_sig_string_attr): Use it here to return the last error.

* engine-gpgsm.c (_gpgme_gpgsm_start): Move the code that sets the close notification for the status fd to ...

(_gpgme_gpgsm_new): ... here.

* wait.h: Include "sema.h". Remove prototypes of _gpgme_remove_proc_from_wait_queue and _gpgme_register_pipe_handler. Add prototypes of _gpgme_fd_table_init, _gpgme_fd_table_deinit, _gpgme_fd_table_put, _gpgme_add_io_cb, _gpgme_remove_io_cb, _gpgme_wait_event_cb and _gpgme_wait_one..

* wait.c: Remove global variables PROC_QUEUE, PROC_QUEUE_LOCK, FD_TABLE_SIZE, FD_TABLE, FD_TABLE_LOCK. New global variables FDT_GLOBAL, CTX_DONE_LIST, CTX_DONE_LIST_SIZE, CTX_DONE_LIST_LENGTH and CTX_DONE_LIST_LOCK. Remove struct proc_s. Replace struct wait_item_s.

(_gpgme_fd_table_init): New function.

(_gpgme_fd_table_deinit): Likewise.

(_gpgme_fd_table_put): Likewise.

(set_process_done): Remove function.

(do_select): Take argument FDT. Use that to decide which fds to select on.

(_gpgme_remove_proc_from_wait_queue): Remove function.

(_gpgme_wait_event_cb): New function.

(_gpgme_wait_one): Likewise.

(_gpgme_register_pipe_handler): Remove function.

(_gpgme_add_io_cb): New function.

(_gpgme_remove_io_cb): Likewise.

(_gpgme_freeze_fd): Remove function.

(_gpgme_thaw_fd): Remove function.

* runpg.c (struct fd_data_map_s): Add new member TAG.

(struct gpg_object_s): Likewise for STATUS and COLON. Add member IDX to CMD. Add new member IO_CBS.

(close_notify_handler): New variables POSSIBLY_DONE and NOT_DONE. For each I/O callback, check if it should be unregistered. If all callbacks have been unregistered, trigger GPGME_EVENT_DONE.

Remove member RUNNING.

(_gpgme_gpg_new): Initialize new members.

(_gpgme_gpg_release): Check PID not RUNNING. Don't call _gpgme_remove_proc_from_wait_queue. Close GPG->CMD.FD if set.

(build_argv): Store away the index instead the file descriptor for CMD.

(_gpgme_gpg_add_io_cb): New function.

(_gpgme_gpg_spawn): Use _gpgme_gpg_add_io_cb to register IO callbacks.

(gpg_status_handler): Change return type to void, remove PID argument, close filedescriptor if EOF or error occurs.

(read_status): Use _gpgme_gpg_add_io_cb instead _gpgme_thaw_fd.

Use IO_CBS->remove instead _gpgme_freeze_fd.

(gpg_colon_line_handler): Change return type to void, remove PID argument, close filedescriptor if EOF or error occurs.

(command_cb): Use IO_CBS->remove instead _gpgme_freeze_fd.

(_gpgme_gpg_set_io_cbs): New function.

* runpgg.h (_gpgme_gpg_set_io_cbs): Prototype for _gpgme_gpg_set_io_cbs.

* gpgme.h (GpgmeIOCb): New type.

(GpgmeRegisterIOCb): Likewise.

(GpgmeRemoveIOCb): Likewise.

(GpgmeEventIO): Likewise.

(GpgmeEventIOCb): Likewise.

(struct GpgmeIOCbs): New structure to hold I/O callbacks.

(gpgme_set_op_io_cbs): New prototype.

(gpgme_get_op_io_cbs): Likewise.

* ops.h: New prototype for _gpgme_op_event_cb. Remove prototypes for _gpgme_freeze_fd and _gpgme_thaw_fd. Remove PID argument from _gpgme_data_inbound_handler and _gpgme_data_outbound_handler prototype. Add prototype for _gpgme_op_reset.

Add synchronous argument to _gpgme_decrypt_start prototype.

* io.h: Beautification.

* gpgme.c: Include "wait.h".

(gpgme_new): Initialize FDT.

(gpgme_set_io_cbs): New function.

(gpgme_get_io_cbs): Likewise.

(_gpgme_op_event_cb): Likewise.

* data.c (_gpgme_data_inbound_handler): Change return type to void. Drop PID argument. Close FD on error and EOF.

(write_mem_data): Don't close FD here ...

(write_cb_data): ... or here ...

(_gpgme_data_outbound_handler): ... but here. Change return type to void. Drop PID argument.

* context.h: Include "wait.h".

(struct gpgme_context_s): New members FDT and IO_CBS.

* op-support.c: New file.

* Makefile.am (libgpgme_la_SOURCES): Add op-support.c.

* ops.h: Add prototype for _gpgme_op_reset().

* decrypt.c (_gpgme_decrypt_start): New argument SYNCHRONOUS. Use _gpgme_op_reset.

(gpgme_op_decrypt_start): Add synchronous argument.

(gpgme_op_decrypt): Likewise. Use _gpgme_wait_one instead gpgme_wait.

* delete.c (gpgme_op_delete_start): Rename to ...

(_gpgme_op_delete_start): ... this. New argument SYNCHRONOUS. Use _gpgme_op_reset. Make function static.

(gpgme_op_delete_start): Just a wrapper around _gpgme_op_delete_start now.

(gpgme_op_delete): Add synchronous argument. Use _gpgme_wait_one

instead `gpgme_wait`.

- * `encrypt.c`: Include `"wait.h"`.
- `(gpgme_op_encrypt_start)`: Rename to ...
- `(_gpgme_op_encrypt_start)`: ... this. New argument `SYNCHRONOUS`.
- Use `_gpgme_op_reset`. Make function static.
- `(gpgme_op_encrypt_start)`: Just a wrapper around `_gpgme_op_encrypt_start` now.
- `(gpgme_op_encrypt)`: Add synchronous argument. Use `_gpgme_wait_one` instead `gpgme_wait`.
- * `encrypt_sign.c` (`gpgme_op_encrypt_sign_start`): Rename to ...
- `(_gpgme_op_encrypt_sign_start)`: ... this. New argument `SYNCHRONOUS`. Use `_gpgme_op_reset`. Make function static.
- `(gpgme_op_encrypt_sign_start)`: Just a wrapper around `_gpgme_op_encrypt_sign_start` now.
- `(gpgme_op_encrypt_sign)`: Add synchronous argument. Use `_gpgme_wait_one` instead `gpgme_wait`.
- * `export.c` (`gpgme_op_export_start`): Rename to ...
- `(_gpgme_op_export_start)`: ... this. New argument `SYNCHRONOUS`.
- Use `_gpgme_op_reset`. Make function static.
- `(gpgme_op_export_start)`: Just a wrapper around `_gpgme_op_export_start` now.
- `(gpgme_op_export)`: Add synchronous argument. Use `_gpgme_wait_one` instead `gpgme_wait`.
- * `genkey.c` (`gpgme_op_genkey_start`): Rename to ...
- `(_gpgme_op_genkey_start)`: ... this. New argument `SYNCHRONOUS`.
- Use `_gpgme_op_reset`. Make function static.
- `(gpgme_op_genkey_start)`: Just a wrapper around `_gpgme_op_genkey_start` now.
- `(gpgme_op_genkey)`: Add synchronous argument. Use `_gpgme_wait_one` instead `gpgme_wait`.
- * `import.c` (`gpgme_op_import_start`): Rename to ...
- `(_gpgme_op_import_start)`: ... this. New argument `SYNCHRONOUS`.
- Use `_gpgme_op_reset`. Make function static.
- `(gpgme_op_import_start)`: Just a wrapper around `_gpgme_op_import_start` now.
- `(gpgme_op_import)`: Add synchronous argument. Use `_gpgme_wait_one` instead `gpgme_wait`.
- * `keylist.c` (`gpgme_op_keylist_start`): Use `_gpgme_op_reset`.
- `(gpgme_op_keylist_ext_start)`: Likewise.
- * `sign.c` (`gpgme_op_sign_start`): Rename to ...
- `(_gpgme_op_sign_start)`: ... this. New argument `SYNCHRONOUS`. Use `_gpgme_op_reset`. Make function static.
- `(gpgme_op_sign_start)`: Just a wrapper around `_gpgme_op_sign_start` now.
- `(gpgme_op_sign)`: Add synchronous argument. Use `_gpgme_wait_one` instead `gpgme_wait`.
- * `trustlist.c` (`gpgme_op_trustlist_start`): Use `_gpgme_op_reset`.
- * `verify.c` (`gpgme_op_verify_start`): Rename to ...

(`_gpgme_op_verify_start`): ... this. New argument `SYNCHRONOUS`.
Use `_gpgme_op_reset`. Make function static.
(`gpgme_op_verify_start`): Just a wrapper around
`_gpgme_op_verify_start` now.
(`gpgme_op_verify`): Add synchronous argument. Use `_gpgme_wait_one`
instead `gpgme_wait`.
* `engine-gpgsm.c` (`iocb_data_t`): New type.
(`struct gpgsm_object_s`): New member `status_cb`. Replace `input_fd`
and `input_data` with `input_cb`. Replace `output_fd` and `output_data`
with `output_cb`. Replace `message_fd` and `message_data` with
`message_cb`. New member `io_cbs`.
(`_gpgme_gpgsm_new`): Initialize all new members (and drop the old
ones).
(`close_notify_handler`): New variable `POSSIBLY_DONE`. For each I/O
callback, check if it should be unregistered. If all callbacks
have been unregistered, trigger `GPGME_EVENT_DONE`.
(`_gpgme_gpgsm_release`): Remove variable `PID`. Use new variable
names to close the file descriptors.
(`_gpgme_gpgsm_op_decrypt`): Use new variable names,
(`_gpgme_gpgsm_op_encrypt`): Likewise.
(`_gpgme_gpgsm_op_genkey`): Likewise.
(`_gpgme_gpgsm_op_import`): Likewise.
(`_gpgme_gpgsm_op_keylist`): Likewise.
(`_gpgme_gpgsm_op_keylist_ext`): Likewise.
(`_gpgme_gpgsm_op_sign`): Likewise.
(`_gpgme_gpgsm_op_verify`): Likewise.
(`gpgsm_status_handler`): Drop argument `PID`. Change return type to
void. Close status pipe before returning because of EOF or error.
(`_gpgme_gpgsm_add_io_cb`): New function.
(`_gpgme_gpgsm_start`): Use `_gpgme_gpgsm_add_io_cb` to register
callback function.
(`_gpgme_gpgsm_set_io_cbs`): New function.
* `engine-gpgsm.h`: New prototype for `_gpgme_gpgsm_set_io_cbs`.
* `engine.c` (`_gpgme_engine_set_io_cbs`): New function.
* `engine.h`: New prototype for `_gpgme_engine_set_io_cbs`.

2002-06-04 Marcus Brinkmann <marcus@g10code.de>

* `Makefile.am` (`libgpgme_la_SOURCES`): Remove `mutex.h`.

2002-06-03 Marcus Brinkmann <marcus@g10code.de>

* `key.c`: Include <ctype.h>.

(`_gpgme_key_append_name`): Skip one more char when
processing escaped char. Submitted by Marc Mutz <mutz@kde.org>.
Handle hexadecimal encodings. Also reported by Marc. Thanks!

2002-06-02 Marcus Brinkmann <marcus@g10code.de>

* ath.h: Enable the `_gpgme_` prefix. Fix all those prefix macros.
* posix-sema.c: Use that prefix here.
* posix-io.c: Include "ath.h".
(`_gpgme_io_read`): Use `_gpgme_ath_read` instead read.
(`_gpgme_io_write`): Use `_gpgme_ath_write` instead write.
(`_gpgme_io_waitpid`): Use `_gpgme_ath_waitpid` instead waitpid.
(`_gpgme_io_select`): Use `_gpgme_ath_select` instead select.

2002-06-02 Marcus Brinkmann <marcus@g10code.de>

* Makefile.am (ath_components): New variable.
(ath_components_pthread): Likewise.
(ath_components_pth): Likewise.
(system_components): Add ath_componentes.

* ath.h: New file.
* ath.c: Likewise.
* ath-pthread.c: Likewise.
* ath-pth.c: Likewise.
* posix-sema.c (`_gpgme_sema_cs_enter`): Rework to use the ATH interface.
* mutex.h: Remove file.

2002-05-30 Werner Koch <wk@gnupg.org>

* key.c (`gpgme_key_get_string_attr`): Return NULL when asking for an issuer with `IDX > 0`. We don't support `altIssuerNames` for now.

2002-05-22 Werner Koch <wk@gnupg.org>

* engine-gpgsm.c (`_gpgme_gpgsm_op_keylist_ext`): Aehmm, added missing variable definition. Oohh - Marcus was faster.

2002-05-22 Marcus Brinkmann <marcus@gnu.org>

* engine-gpgsm.c (`_gpgme_gpgsm_op_keylist_ext`): Fix last change.

2002-05-21 Werner Koch <wk@gnupg.org>

* engine-gpgsm.c (`_gpgme_gpgsm_op_keylist`)
(`_gpgme_gpgsm_op_keylist_ext`): Pass the keylist mode to gpgsm.

2002-05-10 Werner Koch <wk@gnupg.org>

* key.h (`gpgme_key_s`): Add OTRUST.
* keylist.c (`set_ownertrust`): New.
(`keylist_colon_handler`): Get the ownertrust value

* key.c (gpgme_key_get_string_attr,gpgme_key_get_ulong_attr):
Return that value.

2002-05-08 Marcus Brinkmann <marcus@g10code.de>

* w32-util.c: New static variable GET_PATH_LOCK.
(_gpgme_get_gpg_path): Remove superfluous NULL initializer.
Take lock while determining path.
(_gpgme_get_gpgsm_path): Likewise.
* version.c (do_subsystem_inits): Set DONE to 1 after
initialization.
(gpgme_get_engine_info): New variable ENGINE_INFO_LOCK. Take lock
while determining engine info.
* runpg.c (_gpgme_gpg_get_version): New variable
GPG_VERSION_LOCK. Take the lock while determining the program
version.
* posix-io.c: Include "sema.h".
(_gpgme_io_spawn): New variable FIXED_SIGNALS_LOCK. Take the lock
while fixing the signals.
(_gpgme_io_select): Make READFDS and WRITEFDS non-static.
* key.c: Include "sema.h". New globals KEY_CACHE_LOCK and
KEY_REF_LOCK.
(capabilities_to_string): Make STRINGS very const.
(_gpgme_key_cache_add): Lock the key cache.
(_gpgme_key_cache_get): Likewise.
(gpgme_key_ref, gpgme_key_release): Lock the key_ref_lock.
* import.c (append_xml_impinfo): Make IMPORTED_FIELDS and
IMPORT_RES_FIELDS very const. Make FIELD and FIELD_NAME a little
const.
* engine.c (_gpgme_engine_get_info): New variable
ENGINE_INFO_LOCK. Take lock while determining engine info.
* engine-gpgsm.c: Include "sema.h".
(_gpgme_gpgsm_get_version): New variable GPGSM_VERSION_LOCK. Take
lock while getting program version.

2002-05-08 Marcus Brinkmann <marcus@g10code.de>

* debug.h: New file.
* Makefile.am (libgpgme_la_SOURCES): Add debug.h.
* util.h: Removed all prototypes and declarations related to
debugging. Include "debug.h".

* debug.c (debug_level): Comment variable and remove superfluous
zero initializer.
(errfp): Likewise.
(_gpgme_debug_enabled): Function removed.
(struct debug_control_s): Definition removed.
(_gpgme_debug_level): Function removed.

(`_gpgme_debug_begin`): Rewritten to use `vasprintf`. Accept a `printf`-style format specification and a variable number of arguments.

(`_gpgme_debug_add`): Rewritten using `vasprintf`. Expect that format starts out with "%s" for simplicity.

(`_gpgme_debug_end`): Rewritten using `vasprintf`. Do not accept a TEXT argument anymore.

* `posix-io.c` (`_gpgme_io_select`): Use new level argument for `DEBUG_BEGIN` instead explicit if construct.

* `debug.c` (`debug_init`): Remove superfluous zero initializer, remove volatile flag of `INITIALIZED`. Do not use the double-checked locking algorithm, it is fundamentally flawed and will empty your fridge (on a more serious note, despite the volatile flag it doesn't give you the guarantee you would expect, for example on a DEC Alpha or an SMP machine. The volatile only serializes accesses to the volatile variable, but not to the other variables).

2002-05-03 Werner Koch <wk@gnupg.org>

* `engine-gpgsm.c` (`_gpgme_gpgsm_new`): Redirect any gpgsm error output to `/dev/null`.

* `verify.c` (`gpgme_get_sig_key`): Set the protocol of the listctx.

* `gpgme.c` (`gpgme_get_protocol`): New.

* `data.c` (`gpgme_data_write`): Changed type of `BUFFER` to `void*`.
(`gpgme_data_read`): Ditto.

* `verify.c` (`_gpgme_verify_status_handler`): Handle `TRUST_*` status lines so that a claim can be made without looking up the key.

(`gpgme_get_sig_string_attr`): New.

(`gpgme_get_sig_ulong_attr`): New.

* `gpgme.h` (`GpgmeAttr`): Added `GPGME_ATTR_SIG_STATUS`.

* `rungpg.h`: Add new status codes from `gpg 1.0.7` and formatted the list to align with the `status.h` file from `gnupg`.

* `gpgme.h` (`GpgmeSigStat`): Add `_GOOD_EXP` and `_GOOD_EXPKEY`.

* `verify.c` (`_gpgme_verify_status_handler`, `finish_sig`): Handle these new status codes. Store the expiration time

2002-04-27 Werner Koch <wk@gnupg.org>

* `gpgme.h` (`GpgmeData_Encoding`): New.

* data.c (gpgme_data_get_encoding,gpgme_data_set_encoding): New.
* engine-gpgsm.c (map_input_enc): New. Use it in all local functions where the INPUT command gets send.

2002-04-27 Marcus Brinkmann <marcus@g10code.de>

* engine-gpgsm.c (_gpgme_gpgsm_op_verify): Close the output descriptor only when we don't need it anymore. Close the message descriptor if we don't need it.

2002-04-26 Werner Koch <wk@gnupg.org>

* Makefile.am (libgpgme_la_LIBADD): Use libtool libraries.

2002-04-25 Marcus Brinkmann <marcus@g10code.de>

* runpgp.c (_gpgme_gpg_release): Call gpgme_data_release on GPG->cmd.cb_data, not xfree.

2002-04-25 Marcus Brinkmann <marcus@g10code.de>

* engine-gpgsm.c (_gpgme_gpgsm_new): Set the display, ttyname, ttytype, lc_ctype and lc_messages options in the server.

2002-04-24 Marcus Brinkmann <marcus@g10code.de>

* engine-gpgsm.c (map_assuan_error): Add new error codes.

2002-04-23 Werner Koch <wk@gnupg.org>

* key.c (gpgme_key_get_ulong_attr): Swapped use of can_encrypt and can_certify to return the requested values.

2002-04-23 Marcus Brinkmann <marcus@g10code.de>

* gpgme.c (gpgme_get_progress_cb): Allow either return parameter to be NULL.
(gpgme_get_passphrase_cb): Likewise.

2002-04-22 Marcus Brinkmann <marcus@g10code.de>

* gpgme.c (gpgme_get_passphrase_cb): New function.
(gpgme_get_progress_cb): New function.
* gpgme.h: Add new prototypes for gpgme_get_passphrase_cb and gpgme_get_progress_cb.

2002-03-28 Werner Koch <wk@gnupg.org>

- * gpgme.h (GpgmeAttr): Add values for issuer and chaining.
- * key.h (gpgme_key_s): Add issuer and chaining elements for X509.
- * keylist.c (keylist_colon_handler): Store them.
- * key.c (gpgme_key_release): Free them.
- (gpgme_key_get_as_xml,gpgme_key_get_string_attr): Print them.

2002-03-26 Werner Koch <wk@gnupg.org>

- * Makefile.am (libgpgme_la_SOURCES): Add mutex.h

2002-03-21 Werner Koch <wk@gnupg.org>

- * util.h [!HAVE_FOPENCOOKIE]: Make sure off_t and ssize_t are defined.

2002-03-18 Marcus Brinkmann <marcus@g10code.de>

- * Makefile.am (system_components): New variable, set depending on HAVE_DOSISH_SYSTEM.
- (libgpgme_la_SOURCES): Use system_components. Remove `syshdr.h'.
- * syshdr.h: File removed.

- * posix-io.c: Remove !HAVE_DOSISH_SYSTEM safeguard. Clean up source.

- * posix-sema.c: Likewise.

- * posix-util.c: Likewise.

- * w32-io.c: Remove HAVE_DOSISH_SYSTEM safeguard.

- * w32-sema.c: Likewise.

- * w32-util.c: Likewise.

- * posix-io.c: Include `unistd.h', do not include `syshdr.h'.

- * posix-sema.c: Likewise.

- * w32-io.c: Include `io.h', do not include `syshdr.h'

- * w32-sema.c: Likewise.

- * w32-util.c: Likewise.

- * data.c: Do not include `syshdr.h'.

- * wait.c: Likewise.

- * wait.h: Code cleanup.

- * mutex.h: New file.

- * posix-sema.c: Implement.

2002-03-08 Werner Koch <wk@gnupg.org>

- * util.h [!HAVE_FOPENCOOKIE]: Fixed type. Thanks to Frank Heckenbach.

2002-03-07 Werner Koch <wk@gnupg.org>

* gpgme.h (gpgme_op_keylist_ext_start): Add prototype.

2002-03-06 Marcus Brinkmann <marcus@g10code.de>

* encrypt.c (_gpgme_encrypt_sym_status_handler): New function.
(gpgme_op_encrypt_start): New variable SYMMETRIC, set it if RECP is null, and if it is set, use _gpgme_encrypt_sym_status_handler as status handler and run _gpgme_passphrase_start.

* runpgg.c (_gpgme_gpg_op_encrypt): If RECP is zero, do symmetric encryption.

* engine-gpgsm.c (_gpgme_gpgsm_op_encrypt): If RECP is zero, return error value.

* runpgg.c (_gpgme_gpg_op_verify): Add "--" argument.

2002-03-03 Marcus Brinkmann <marcus@g10code.de>

* passphrase.c (_gpgme_passphrase_status_handler): Also set the error No_Passphrase if only a bad passphrase was provided.

2002-03-03 Marcus Brinkmann <marcus@g10code.de>

* runpgg.c (_gpgme_gpg_op_verify): If TEXT is of mode GPGME_DATA_MODE_IN, construct a command line that stores the plaintext in TEXT.

* verify.c (gpgme_op_verify_start): Accept TEXT being uninitialized, and in this case interpret SIG as a normal or cleartext signature and TEXT as a return data object.

* engine-gpgsm.c (_gpgme_gpgsm_op_verify): Likewise.

2002-03-03 Marcus Brinkmann <marcus@g10code.de>

* engine-gpgsm.c (_gpgme_gpgsm_op_keylist_ext) [!ENABLE_GPGSM]: Add stub function.

2002-02-28 Werner Koch <wk@gnupg.org>

* key.h (subkey_s): New member expires_at.

* keylist.c (keylist_colon_handler): Set it here

* key.c (gpgme_key_get_as_xml, gpgme_key_get_ulong_attr): Return it.

2002-02-27 Marcus Brinkmann <marcus@g10code.de>

* runpgg.h (_gpgme_gpg_op_keylist_ext): New prototype.

* runpgg.c (_gpgme_gpg_op_keylist_ext): New function.

* engine-gpgsm.h (_gpgme_gpgsm_op_keylist_ext): New prototype.

* engine-gpgsm.c (_gpgme_gpgsm_op_keylist_ext): New function.

* engine.h (_gpgme_engine_op_keylist_ext): New prototype.

- * engine.c (_gpgme_engine_op_keylist_ext): New function.
- * keylist.c (gpgme_op_keylist_ext_start): New function.

2002-02-27 Marcus Brinkmann <marcus@g10code.de>

- * gpgme.h: Add new error code GPGME_Invalid_Recipient.
- * encrypt.c (struct encrypt_result_s): New member invalid_recipients, rename no_recipients to no_valid_recipients.
- (_gpgme_encrypt_status_handler): Include error for invalid recipients.
- * engine-gpgsm.c (gpgsm_set_recipients): Change type of first argument to GpgsmObject. Use that to report back the status about the recipients.

2002-02-26 Marcus Brinkmann <marcus@g10code.de>

- * verify.c (_gpgme_verify_status_handler): Fix the last change.

2002-02-25 Marcus Brinkmann <marcus@g10code.de>

- * verify.c (_gpgme_verify_status_handler): Parse the args line to see if the problem is due to a missing key, and report that back to the user.

2002-02-25 Marcus Brinkmann <marcus@g10code.de>

- * engine.c (_gpgme_engine_op_encrypt_sign): New function.
- * engine.h (_gpgme_engine_op_encrypt_sign): New prototype.
- * runpgp.c (_gpgme_append_gpg_args_from_signers): New function.
- (_gpgme_gpg_op_sign): Use that new function.
- (_gpgme_gpg_op_encrypt_sign): New function.
- * runpgp.h (_gpgme_gpg_op_encrypt_sign): New prototype.
- * gpgme.h (gpgme_op_encrypt_sign_start): New prototype.
- (gpgme_op_encrypt_sign): Likewise.
- * Makefile.am (libgpgme_la_SOURCES): Add encrypt-sign.c.
- * ops.h (_gpgme_encrypt_status_handler): Add prototype.
- (_gpgme_sign_status_handler): Add prototype.
- * sign.c (sign_status_handler): Rename to ...
- (_gpgme_sign_status_handler): ... this and make non-static.
- * encrypt.c (encrypt_status_handler): Rename to ...
- (_gpgme_encrypt_status_handler): ... this and make non-static.
- * encrypt.c (gpgme_op_encrypt_start): Use new status handler name.
- * sign.c (gpgme_op_sign_start): Likewise.

2002-02-25 Marcus Brinkmann <marcus@g10code.de>

- * context.h (struct gpgme_context_s): New member include_certs.
- * gpgme.h (gpgme_set_include_certs): Add prototype.

(gpgme_get_include_certs): Likewise.
* gpgme.c (gpgme_set_include_certs): New function.
(gpgme_get_include_certs): Likewise.
(gpgme_new): Set include_certs to 1 (the default).
* engine.c (_gpgme_engine_op_sign): Accept new argument include_certs, and pass it to _gpgme_gpgsm_op_sign.
* engine.h (_gpgme_engine_op_sign): Likewise for prototype.
* engine-gpgsm.c (_gpgme_gpgsm_op_sign): Accept new argument include_certs and handle it.
* engine-gpgsm.h (_gpgme_gpgsm_start): Add new argument include_certs.
* sign.c (gpgme_op_sign_start): Add new argument to _gpgme_engine_op_sign call.

2002-02-14 Werner Koch <wk@gnupg.org>

* keylist.c (gpgme_op_keylist_start): Do not use a verbose listing.

2002-02-13 Werner Koch <wk@gnupg.org>

* vasprintf.c, fopencookie.c: Add replacement functions.
* util.h: Add prototypes for them.

2002-02-09 Marcus Brinkmann <marcus@g10code.de>

* engine-gpgsm.c (gpgsm_assuan_simple_command): Return 0 if we reach the end of the function.

2002-02-09 Marcus Brinkmann <marcus@g10code.de>

* genkey.c (gpgme_op_genkey_start): Fix logic in validity check.
(gpgme_op_genkey_start): Skip newlines after opening tag.
* engine-gpgsm.c (_gpgme_gpgsm_start): Remove cruft.

2002-02-08 Marcus Brinkmann <marcus@g10code.de>

* genkey.c (gpgme_op_genkey_start): Allow PUBKEY and SECKEY to be set, and pass them down to the crypto engine.
* engine-gpgsm.h (_gpgme_gpgsm_start): New arguments PUBKEY and SECKEY.
* engine.h: Likewise.
* runpg.h (_gpgme_gpg_spawn): Likewise.
* engine.c (_gpgme_engine_op_genkey): Likewise. Use those arguments.
* runpg.c (_gpgme_gpg_op_genkey): Likewise. Complain if those arguments are set.
* engine-gpgsm.c (_gpgme_gpgsm_op_genkey): Likewise. Implement function.

* engine-gpgsm.c (_gpgme_gpgsm_op_keylist): Beautify comment.

2002-02-06 Marcus Brinkmann <marcus@g10code.de>

* runpgg.c (_gpgme_gpg_op_keylist): Remove handling of keylist mode (for now).

2002-02-06 Marcus Brinkmann <marcus@g10code.de>

* wait.c (gpgme_wait): Add new argument STATUS, in which the status of the returned context is returned.
(_gpgme_wait_on_condition): Rework the function a bit, to make it aware of cancelled processes, and to allow to use gpgme_wait with CTX being NULL (as documented in the source).
(struct proc_s): New member REPORTED.
* gpgme.h: Fix prototype.
* verify.c (gpgme_op_verify): Fix use of gpgme_wait.
* sign.c (gpgme_op_sign): Likewise.
* import.c (gpgme_op_import): Likewise.
* genkey.c (gpgme_op_genkey): Likewise.
* export.c (gpgme_op_export): Likewise.
* encrypt.c (gpgme_op_encrypt): Likewise.
* delete.c (gpgme_op_delete): Likewise.
* decrypt-verify.c (gpgme_op_decrypt_verify): Likewise.

2002-02-06 Marcus Brinkmann <marcus@g10code.de>

* gpgme.c (gpgme_set_keylist_mode): Possibly return an error value.
(gpgme_get_keylist_mode): New function.
(gpgme_new): Set the default for keylist_mode member of CTX.

* gpgme.h (gpgme_set_keylist_mode): Fix prototype.
(gpgme_get_keylist_mode): New prototype.
(GPGME_KEYLIST_MODE_LOCAL): New macro.
(GPGME_KEYLIST_MODE_EXTERN): Likewise..

2002-02-02 Marcus Brinkmann <marcus@g10code.de>

This patch has gotten a bit large... mmh. The main thing that happens here is that error values are now not determined in the operation function after gpgme_wait completed, but in the status handler when EOF is received. It should always be the case that either an error is flagged or EOF is received, so that after a gpgme_wait you should never have the situation that no error is flagged and EOF is not received. One problem is that the engine status handlers don't have access to the context, a horrible kludge works around this for now. All errors that happen during a

pending operation should be caught and reported in `ctx->error`, including out-of-core and cancellation. This rounds up neatly a couple of loose ends, and makes it possible to pass up any errors in the communication with the backend as well. As a bonus, there will be a function to access `gpgme->wait`, so that the operations can truly be implemented with their `_start` function.

* `engine-gpgsm.c` (`gpgsm_status_handler`): Horrible kludge to report error back to the context.

* `rungpg.c` (`gpg_status_handler`): Same horrible kludge applied here.

* `engine-gpgsm.c` (`gpgsm_assuan_simple_command`): Add error checking.

* `wait.c` (`_gpgme_wait_on_condition`): If canceled, set `CTX->error` to a value indication that.

* `verify.c` (`add_notation`): Set error, not `out_of_core`.

(`finish_sig`): Likewise.

(`gpgme_op_verify_start`): Don't clear `out_of_core`.

(`_gpgme_verify_status_handler`): At EOF, clean up the notation data.

(`gpgme_op_verify`): And don't do it here.

* `trustlist.c` (`trustlist_status_handler`): Check error, not `out_of_core`.

(`gpgme_op_trustlist_start`): Don't clear `out_of_core`.

(`gpgme_op_trustlist_next`): Check error, not `out_of_core`.

(`gpgme_op_trustlist_end`): Likewise.

* `ops.h` (`test_and_allocate_result`): New macro.

(`_gpgme_passphrase_result`): Remove prototype.

* `delete.c` (`gpgme_op_delete`): Return error from context.

(`delete_status_handler`): Use macro `test_and_allocate_result`.

Perform error checking at EOF.

(`gpgme_op_delete_start`): Release result.

* `passphrase.c` (`_gpgme_passphrase_status_handler`): Use macro `test_and_allocate_result`, and perform error checking here.

(`_gpgme_passphrase_result`): Function removed.

* `sign.c` (`gpgme_op_sign_start`): Do not set `out_of_core` to zero.

(`gpgme_op_sign`): Just return the error value from the context.

(`sign_status_handler`): Only progress if no error is set yet. If we process an EOF, set the resulting error value (if any).

* `decrypt.c` (`_gpgme_decrypt_result`): Function removed.

(`create_result_struct`): Function removed.

(`_gpgme_decrypt_status_handler`): Use macro `test_and_allocate_result`, calculate error on EOF, do not progress with errors.

(`_gpgme_decrypt_start`): Do not set `out_of_core` to zero.

(`gpgme_op_decrypt`): Just return the error value from the context.

* `encrypt.c` (`encrypt_status_handler`): Perform the error checking here.

(gpgme_op_encrypt_start): Do not clear out_of_core.
* export.c (export_status_handler): Return if error is set in context.
(gpgme_op_export_start): Release result.
(gpgme_op_export): Return error from context.
* decrypt-verify.c (gpgme_op_decrypt_verify): Return the error in the context.
* genkey.c (genkey_status_handler): Use macro test_and_allocate_result. Perform error checking at EOF.
(gpgme_op_genkey): Just return the error from context.
* import.c (gpgme_op_import): Return the error from context.
(import_status_handler): Use macro test_and_allocate_result.
* keylist.c (gpgme_op_keylist_start): Do not clear out_of_core.
(gpgme_op_keylist_next): Return error of context.
(keylist_colon_handler): Set error instead out_of_code.
(finish_key): Likewise.

* context.h: Remove member out_of_core, add member error.
* gpgme.c (_gpgme_release_result): Clear error flag.

* engine.h (_gpgme_engine_get_error): New prototype.
* engine.c (_gpgme_engine_get_error): New function.
* engine-gpgsm.c (_gpgme_gpgsm_get_error): New function.

* engine-gpgsm.c (map_assuan_error): New function.
(gpgsm_assuan_simple_command): Change return type to GpgmeError, use the new function to map error values.
(gpgsm_set_fd): Change return type to GpgmeError.
(_gpgme_gpgsm_op_decrypt): Change type of ERR to GpgmeError.
(gpgsm_set_recipients): Likewise. Change type of return value equivalently. Adjust error values.
(_gpgme_gpgsm_op_import): Likewise.
(_gpgme_gpgsm_op_sign): Likewise.
(struct gpgsm_object_s): New member error.
(gpgsm_status_handler): Set error if error occurs. Determine error number from ERR line received. If assuan_read_line fails, terminate the connection.

2002-02-01 Marcus Brinkmann <marcus@g10code.de>

* Makefile.am (MOSTLYCLEANFILES): New variable.

2002-02-01 Marcus Brinkmann <marcus@g10code.de>

* engine-gpgsm.c (gpgsm_status_handler): At error, terminate the connection to the server.

2002-01-31 Marcus Brinkmann <marcus@g10code.de>

- * `runpgg.h`: Add `STATUS_KEY_CREATED`.

- * `progress.c`: New file.
- * `Makefile.am` (`libpggme_la_SOURCES`): Add `progress.c`.

- * `genkey.c` (`genkey_status_handler`): Use `_gpgme_progress_status_handler`. Add check for status.
(`struct genkey_result_s`): New structure.
(`_gpgme_release_genkey_result`): New function.
(`gpgme_op_genkey`): Check for error.
- * `gpgme.c` (`_gpgme_release_result`): Call `_gpgme_release_genkey_result`.
- * `ops.h` (`_gpgme_release_genkey_result`): Add prototype.
- * `types.h` (`GenKeyResult`): New type.
- * `context.h` (`gpgme_context_s`): Add `GenKeyResult` to member `result`.

2002-01-30 Marcus Brinkmann <marcus@g10code.de>

- * `gpgme.c` (`_gpgme_release_result`): Call `_gpgme_release_delete_result`.
- * `ops.h` (`_gpgme_release_delete_result`): Add prototype.
- * `types.h` (`DeleteResult`): New type.
- * `context.h` (`gpgme_context_s`): Add `DeleteResult` to member `result`.

- * `delete.c` (`enum delete_problem`): New type.
(`struct delete_result_s`): New structure.
(`_gpgme_release_delete_result`): New function.
(`delete_status_handler`): Implement more status codes.
(`gpgme_op_delete`): Return error on failure.

- * `import.c` (`MAX_IMPORTED_FIELDS`): Bump up to 14.

2002-01-30 Marcus Brinkmann <marcus@g10code.de>

- * `import.c` (`struct import_result_s`): New structure.
(`_gpgme_release_import_result`): New function.
(`append_xml_impinfo`): Likewise.
(`import_status_handler`): Implement.
- * `gpgme.c` (`_gpgme_release_result`): Add call to `_gpgme_release_import_result`.
- * `ops.h` (`_gpgme_release_import_result`): Add prototype.
- * `types.h` (`ImportResult`): New type.
- * `context.h` (`gpgme_context_s`): Add `ImportResult` to member `result`.

- * `encrypt.c` (`gpgme_op_encrypt`): Code clean up.

2002-01-30 Marcus Brinkmann <marcus@g10code.de>

* gpgme.h: Add lots of comment and fix the formatting. Add gpgme_trustlist_end prototype.

2002-01-29 Marcus Brinkmann <marcus@g10code.de>

* gpgme.h: Add new type GpgmeIdleFunc. Change type of gpgme_register_idle to return and accept this type.

* wait.c (gpgme_register_idle): Fix type.

Save and return old value of idle_function.

2002-01-29 Werner Koch <wk@gnupg.org>

* engine-gpgsm.c (_gpgme_gpgsm_op_keylist): Implement secret only mode.

* keylist.c (keylist_colon_handler): Add support for the new "crs" record type.

2002-01-22 Marcus Brinkmann <marcus@g10code.de>

* engine-gpgsm.c (_gpgme_gpgsm_release): Call assuan_disconnect, not assuan_pipe_disconnect.

* Makefile.am (libgpgme_la_LIBADD): Change to link assuan and jnlib (needed by assuan) statically into libgpgme. Linking a static library into a shared library this way is not portable.

2002-01-22 Marcus Brinkmann <marcus@g10code.de>

* gpgme.h (GpgmePassphraseCb): Change type of R_HD from void* to void**.

2002-01-22 Marcus Brinkmann <marcus@g10code.de>

* data.c (gpgme_data_new_from_filepart): Change type of LENGTH from off_t to size_t.

* gpgme.h: Likewise.

2002-01-22 Marcus Brinkmann <marcus@g10code.de>

* wait.c (_gpgme_wait_on_condition): If the process finished, reset the pending flag. Also if the operation was cancelled.

(struct proc_s): Rename READY to DONE.

(wait_item_s): Likewise.

(set_process_ready): Rename to ...

(set_process_done): ... this.

(_gpgme_remove_proc_from_wait_queue): Call set_process_done instead set_process_ready.

(_gpgme_wait_on_condition): Likewise.

(do_select): Rename READY to DONE.

* verify.c (gpgme_op_verify): Do not set pending to zero here.

* sign.c (gpgme_op_sign): Likewise.

* import.c (gpgme_op_import): Likewise.

* genkey.c (gpgme_op_genkey): Likewise.

* export.c (gpgme_op_export): Likewise.

* encrypt.c (gpgme_op_encrypt): Likewise.

* delete.c (gpgme_op_delete): Likewise.

* decrypt-verify.c (gpgme_op_decrypt_verify): Likewise.

* decrypt.c (gpgme_op_decrypt): Likewise.

2002-01-22 Marcus Brinkmann <marcus@g10code.de>

* export.c: Cleanup.

2002-01-15 Marcus Brinkmann <marcus@g10code.de>

* trustlist.c: Various source clean ups.

(my_isdigit): Removed.

(gpgme_op_trustlist_end): New function.

2002-01-13 Marcus Brinkmann <marcus@g10code.de>

* gpgme.c: Various source clean ups, like renaming C to CTX where appropriate.

(gpgme_new): Clear R_CTX before starting the work.

(my_isdigit): Removed.

(my_isxdigit): Likewise.

* data.c: Various source clean ups.

(gpgme_data_new_from_mem): Check BUFFER after clearing R_DH.

(gpgme_data_new_with_read_cb): Similar for READ_CB.

(gpgme_data_new_from_file): Loop over fread while EINTR.

(gpgme_data_new_from_filepart): Rediddled a bit. Allow LENGTH to be zero. Loop over fread while EINTR.

(my_isdigit): Removed.

(my_isxdigit): Likewise.

2001-12-21 Marcus Brinkmann <marcus@g10code.de>

* engine-gpgsm.c (_gpgme_gpgsm_new): Replace General_Error with Pipe_Error where appropriate.

2001-12-19 Marcus Brinkmann <marcus@g10code.de>

* engine.c: Include `string.h'. Reported by Stphane Corthsy.

* version.c (get_engine_info): Remove prototype.

2001-12-19 Marcus Brinkmann <marcus@g10code.de>

* engine-gpgsm.c (_gpgme_gpgsm_new): New variable CHILD_FDS.
Fill it with the servers fds, and pass it to assuan_pipe_connect.

2001-12-18 Marcus Brinkmann <marcus@g10code.de>

* keylist.c (gpgme_op_keylist_end): New function.

* gpgme.h (gpgme_op_keylist_end): New prototype.

* engine.h (gpgme_engine_check_version): Move prototype to ...

* gpgme.h (gpgme_engine_check_version): ... here.

* genkey.c (gpgme_op_genkey_start): Remove unused variable.

2001-12-18 Marcus Brinkmann <marcus@g10code.de>

* version.c (gpgme_get_engine_info): Reimplemented.

(gpgme_check_engine): Reimplemented.

(_gpgme_compare_versions): Return NULL if MY_VERSION is NULL.

* engine.c: Include `io.h'.

(gpgme_engine_get_info): New function.

* engine.h (gpgme_engine_check_version, _gpgme_engine_get_info):

Add prototype.

2001-12-18 Marcus Brinkmann <marcus@g10code.de>

* runpg.c (struct reap_s, reap_list, reap_list_lock): Moved to ...

* engine.c (struct reap_s, reap_list, reap_list_lock): ... here.

Include `time.h', `sys/types.h', `assert.h', and `sema.h'.

* runpg.c (_gpgme_engine_add_child_to_reap_list): New function.

(do_reaping, _gpgme_gpg_housecleaning): Moved to ...

* engine.c (do_reaping, _gpgme_engine_housecleaning): ... here.

* runpg.c (_gpgme_gpg_release): Replace code that is now in its
own function by call to _gpgme_engine_add_child_to_reap_list().

* wait.c: Include `engine.h'.

(run_idle): Call _gpgme_engine_housecleaning(), not

_gpgme_gpg_housecleaning().

2001-12-18 Marcus Brinkmann <marcus@g10code.de>

* key.c (`_gpgme_key_append_name`): Append, not prepend, the uid.
Initialize the next field of the uid structure.
(`gpgme_key_get_as_xml`): Do not list last uid first.

2001-12-17 Marcus Brinkmann <marcus@g10code.de>

* engine-gpgsm.c (`_gpgme_gpgsm_set_colon_line_handler`): New function [!ENABLE_GPGSM].

2001-12-14 Marcus Brinkmann <marcus@g10code.de>

* engine-gpgsm.c (`_gpgme_gpgsm_op_verify`): Put TEXT into `message_data`, not SIG.
(`_gpgme_gpgsm_op_sign`): Use `--detached`, not `--detach`.

* sign.c (`sign_status_handler`): Call `_gpgme_passphrase_status_handler` early.

2001-12-14 Marcus Brinkmann <marcus@g10code.de>

* engine-gpgsm.c: Revert last change.

2001-12-14 Marcus Brinkmann <marcus@g10code.de>

* engine-gpgsm.c (`gpgsm_status_handler`): Freeze the output file handler when ending this operation, otherwise the wait function will sit on it.

2001-12-14 Marcus Brinkmann <marcus@g10code.de>

* engine-gpgsm.c (`struct gpgsm_object_s`): New member `colon.attic`.
(`_gpgme_gpgsm_new`): Initialize some more members.
(`_gpgme_gpgsm_release`): Free the colon line handler's attic line.
(`gpgsm_status_handler`): Rework the inline-data processing.

2001-12-13 Marcus Brinkmann <marcus@g10code.de>

* `rungpg.c` (`_gpgme_gpg_spawn`): Do not add the fds to the child list that are not dup'ed, for those the close-on-exec flag is set now.
* `version.c` (`_gpgme_get_program_version`): Remove first entry in CFD, as the close-on-exec flag is now set for this fd.

2001-12-13 Marcus Brinkmann <marcus@g10code.de>

* engine-gpgsm.c (`_gpgme_gpgsm_op_encrypt`): Do not add `'armor'` option to `'ENCRYPT'`.
* engine-gpgsm.c (`gpgsm_set_recipients`): Free LINE when returning

successfully.

2001-12-13 Marcus Brinkmann <marcus@g10code.de>

- * engine-gpgsm.c (close_notify_handler): New function.
- (_gpgme_gpgsm_new): Manage the file descriptors a bit differently. Do not set close-on-exec flags.
- (_gpgme_gpgsm_op_decrypt): Do not set message_fd to -1, this is done by the close handler.
- (_gpgme_gpgsm_op_encrypt): Likewise.
- (_gpgme_gpgsm_op_import): Likewise (also for output_fd).
- (_gpgme_gpgsm_op_keylist): Likewise (also for input_fd and output_fd).
- (_gpgme_gpgsm_op_sign): Likewise.
- (_gpgme_gpgsm_op_verify): Likewise, but for output_fd.

- * posix-io.c (_gpgme_io_pipe): Set the close-on-exec flag for the non-inherited file descriptor index of the pipe.

2001-12-13 Werner Koch <wk@gnupg.org>

- * engine-gpgsm.c (_gpgme_gpgsm_set_colon_line_handler): New.
- (gpgsm_status_handler): Pass datalines to a colon handler
- * engine.c (_gpgme_engine_set_colon_line_handler): Set the colon handler for gpgsm.

- * engine-gpgsm.c (_gpgme_gpgsm_op_keylist): Allow NULL for pattern.
- (gpgsm_assuan_simple_command): Removed underscore from assuan_write_line.
- (_gpgme_gpgsm_start): Ditto.
- (gpgsm_assuan_simple_command): Replaced internal Assuan read function by the new assuan_read_line. Removed the use of the internal header.
- (gpgsm_status_handler): Ditto. Use the new assuan_pending_line.
- (_gpgme_gpgsm_start): Use the documented way to get an fd from assuan.

- * keylist.c (keylist_colon_handler): Handle "crt" records
- * key.h (gpgme_key_s): Add an x509 flag.
- * key.c (parse_x509_user_id): New.
- (_gpgme_key_append_name): Handle x.509 names.

2001-12-05 Marcus Brinkmann <marcus@g10code.de>

- * engine-gpgsm.c (gpgsm_status_handler): Make it work with current version of assuan.

2001-12-05 Marcus Brinkmann <marcus@g10code.de>

* engine-gpgsm.c (gpgsm_set_fd): Accept one more argument OPT.
(_gpgme_gpgsm_op_encrypt): Pass armor argument to gpgsm_set_fd for
output descriptor.
(_gpgme_gpgsm_op_sign): Likewise.

2001-12-05 Marcus Brinkmann <marcus@g10code.de>

* keylist.c (gpgme_op_keylist_next): Set pending to 0 if EOF
occurs.

2001-11-26 Marcus Brinkmann <marcus@g10code.de>

* engine-gpgsm.c (_gpgme_gpgsm_op_sign): Fix stupid typo.

2001-11-24 Marcus Brinkmann <marcus@g10code.de>

* engine-gpgsm.c (gpgsm_status_handler): Don't break if bsearch fails.
Deal with assuan read line returning more than one line (for now).

2001-11-23 Marcus Brinkmann <marcus@g10code.de>

* engine-gpgsm.c (_gpgme_gpgsm_op_sign): Implement it according to
the current protocol definition.

2001-11-23 Marcus Brinkmann <marcus@g10code.de>

* engine-gpgsm.c (_gpgme_gpgsm_new): Set CLOEXEC flag for parent
ends of the pipe.

2001-11-22 Marcus Brinkmann <marcus@g10code.de>

* engine-gpgsm.c: Include stdlib.h and string.h. Also include,
for now, runpg.h and status-table.h.
(gpgsm_status_handler): Implement more of the status handler.

2001-11-22 Marcus Brinkmann <marcus@g10code.de>

* engine.c (_gpgme_engine_op_decrypt): Implement CMS case.
(_gpgme_engine_op_delete): Likewise.
(_gpgme_engine_op_encrypt): Likewise.
(_gpgme_engine_op_export): Likewise.
(_gpgme_engine_op_genkey): Likewise.
(_gpgme_engine_op_keylist): Likewise.
(_gpgme_engine_op_sign): Likewise.
(_gpgme_engine_op_trustlist): Likewise.

* engine-gpgsm.c (_gpgme_gpgsm_op_encrypt): New function.

(gpgsm_assuan_simple_command): Likewise.
(gpgsm_set_recipients): Likewise.
(gpgsm_set_fd): Reimplement using gpgsm_assuan_simple_command.
(_gpgme_gpgsm_op_delete): New function.
(_gpgme_gpgsm_op_export): Likewise.
(_gpgme_gpgsm_op_genkey): Likewise.
(_gpgme_gpgsm_op_sign): Likewise.
(_gpgme_gpgsm_op_keylist): Likewise.
(_gpgme_gpgsm_op_trustlist): Likewise.
(_gpgme_gpgsm_release): Release command.
(_gpgme_gpgsm_op_decrypt): Allocate command.
(_gpgme_gpgsm_op_import): Likewise.
(gpgsm_status_handler): Also treat `ERR` strings as EOF.

2001-11-22 Marcus Brinkmann <marcus@g10code.de>

* gpgme.h (gpgme_set_protocol): New prototype.

2001-11-22 Marcus Brinkmann <marcus@g10code.de>

* engine-gpgsm.c (_gpgme_gpgsm_op_decrypt): New function.
(_gpgme_gpgsm_op_import): Likewise.

2001-11-22 Marcus Brinkmann <marcus@g10code.de>

* engine-gpgsm.c: Shuffle around header inclusion a bit, to still keep them separate.
(_gpgme_set_status_handler) [ENABLE_GPGSM]: New function.

2001-11-22 Werner Koch <wk@gnupg.org>

* engine-gpgsm.c: Include more headers so that NULL and mk_error is defined even with an undefined GPGSM_PATH.

2001-11-22 Marcus Brinkmann <marcus@g10code.de>

* runpg.c (gpg_inbound_handler, write_mem_data, write_cb_data, gpg_outbound_handler): Moved to ...
* data.c (_gpgme_data_inbound_handler, write_mem_data, write_cb_data, _gpgme_data_outbound_handler): ... here. Make the _gpgme_* ones non-static.
* data.c: Include io.h.

* ops.h (_gpgme_data_inbound_handler): New prototype.
(_gpgme_data_outbound_handler): Likewise.
(_gpgme_gpg_spawn): Use these new functions.

* engine-gpgsm.h (_gpgme_gpgsm_op_decrypt, _gpgme_gpgsm_op_delete,

`_gpgme_gpgsm_op_encrypt`, `_gpgme_gpgsm_op_export`,
`_gpgme_gpgsm_op_genkey`, `_gpgme_gpgsm_op_import`,
`_gpgme_gpgsm_op_keylist`, `_gpgme_gpgsm_op_sign`,
`_gpgme_gpgsm_op_trustlist`, `_gpgme_gpgsm_op_verify`,
`_gpgme_gpgsm_start`, `_gpgme_gpgsm_set_status_handler`): New prototype.
Include `<runpg.h>` for status handler function.

* `engine-gpgsm.c` (`struct gpgsm_object_s`): New members `input_fd`,
`input_data`, `output_fd`, `output_data`, `message_fd`, `message_data`, `command`
and `status`.

`(_gpgme_gpgsm_new)`: Open input, output and message pipes before
connecting to the client. Close server's ends afterwards.

`(_gpgme_gpgsm_release)`: Close open file descriptors. Remove
server process from wait queue.

`(_gpgme_gpgsm_op_verify`, `_gpgme_gpgsm_start`,
`_gpgme_gpgsm_set_status_handler`, `gpgms_status_handler`): New function.

* `engine.c` (`_gpgme_engine_start`): Implement for `GPGME_PROTOCOL_CMS`.

`(_gpgme_engine_set_status_handler)`: Likewise.

`(_gpgme_engine_op_verify)`: Likewise.

2001-11-21 Marcus Brinkmann <marcus@g10code.de>

* `context.h`: Do not include `runpg.h`, but `engine.h`.

`(struct gpgme_context_s)`: Replace member `gpg` with `engine`.

* `gpgme.c` (`gpgme_release`): Release engine, not `gpg`.

* `recipient.c` (`_gpgme_append_gpg_args_from_recifgipients`): Function
moved ...

* `runpg.c` (`_gpgme_append_gpg_args_from_recipients`): ... here.

Make static, change order of arguments, and return an error value.

* `ops.h` (`_gpgme_append_gpg_args_from_recipients`): Removed prototype.

* `runpg.h` (`_gpgme_gpg_op_verify`): Add prototype.

`(_gpgme_gpg_op_encrypt)`: Likewise.

`(_gpgme_gpg_op_decrypt)`: Likewise.

`(_gpgme_gpg_op_delete)`: Likewise.

`(_gpgme_gpg_op_export)`: Likewise.

`(_gpgme_gpg_op_genkey)`: Likewise.

`(_gpgme_gpg_op_import)`: Likewise.

`(_gpgme_gpg_op_keylist)`: Likewise.

`(_gpgme_gpg_op_sign)`: Likewise.

`(_gpgme_gpg_op_trustlist)`: Likewise.

* `runpg.c` (`_gpgme_gpg_op_verify`): New function.

`(_gpgme_gpg_op_encrypt)`: Likewise.

`(_gpgme_gpg_op_decrypt)`: Likewise.

`(_gpgme_gpg_op_delete)`: Likewise.

`(_gpgme_gpg_op_export)`: Likewise.

(_gpgme_gpg_op_genkey): Likewise.
(_gpgme_gpg_op_import): Likewise.
(_gpgme_gpg_op_keylist): Likewise.
(_gpgme_gpg_op_sign): Likewise.
(_gpgme_gpg_op_trustlist): Likewise.

* engine.h (_gpgme_engine_set_status_handler): Add prototype.

(_gpgme_engine_set_command_handler): Likewise.
(_gpgme_engine_set_colon_line_handler): Likewise.
(_gpgme_engine_op_decrypt): Likewise.
(_gpgme_engine_op_delete): Likewise.
(_gpgme_engine_op_encrypt): Likewise.
(_gpgme_engine_op_export): Likewise.
(_gpgme_engine_op_genkey): Likewise.
(_gpgme_engine_op_import): Likewise.
(_gpgme_engine_op_keylist): Likewise.
(_gpgme_engine_op_sign): Likewise.
(_gpgme_engine_op_trustlist): Likewise.
(_gpgme_engine_op_verify): Likewise.
(_gpgme_engine_start): Likewise.

* engine.c (_gpgme_engine_set_status_handler): New function.

(_gpgme_engine_set_command_handler): Likewise.
(_gpgme_engine_set_colon_line_handler): Likewise.
(_gpgme_engine_op_decrypt): Likewise.
(_gpgme_engine_op_delete): Likewise.
(_gpgme_engine_op_encrypt): Likewise.
(_gpgme_engine_op_export): Likewise.
(_gpgme_engine_op_genkey): Likewise.
(_gpgme_engine_op_import): Likewise.
(_gpgme_engine_op_keylist): Likewise.
(_gpgme_engine_op_sign): Likewise.
(_gpgme_engine_op_trustlist): Likewise.
(_gpgme_engine_op_verify): Likewise.
(_gpgme_engine_start): Likewise.

* verify.c (gpgme_op_verify_start): Reimplement in terms of above functions.

* encrypt.c (gpgme_op_encrypt_start): Likewise.

* decrypt.c (_gpgme_decrypt_start): Likewise.

* passphrase.c (_gpgme_passphrase_start): Likewise.

* keylist.c (gpgme_op_keylist_start): Likewise.

2001-11-20 Marcus Brinkmann <marcus@g10code.de>

* types.h: Add types EngineObject and GpgsmObject.

* Makefile.am (libgpgme_la_SOURCES): Add engine-gpgsm.h, engine-gpgsm.c, engine.h and engine.c.

* engine.h: New file.
* engine.c: Likewise.
* engine-gpgsm.h: Likewise.
* engine-gpgsm.c: Likewise.

* runpg.c (`_gpgme_gpg_get_version`): New function.
(`_gpgme_gpg_check_version`): Likewise.
* runpg.h: Add prototypes for `_gpgme_gpg_get_version` and `_gpgme_gpg_check_version`.

* version.c (`compare_versions`): Rename to ...
(`_gpgme_compare_versions`): ... this. Make non-static.
(`gpgme_check_version`): Use `_gpgme_compare_versions` rather than `compare_versions`.
(`gpgme_check_engine`): Likewise.
* ops.h (`_gpgme_get_program_version`): Add prototype.

2001-11-20 Marcus Brinkmann <marcus@g10code.de>

* Makefile.am (`libgpgme_la_INCLUDES`): Remove obsolete directive.
(`AM_CPPFLAGS`): New directive [`BUILD_ASSUAN`].
(`libgpgme_la_LIBADD`): Likewise.

2001-11-20 Marcus Brinkmann <marcus@g10code.de>

* version.c: Remove global variables `lineno` and `tmp_engine_version`.
(`version_handler`): Removed.
(`_gpgme_get_program_version`): New function.
(`get_engine_info`): Don't use context and `version_handler`, but `_gpgme_get_program_version`.
* ops.h (`_gpgme_get_program_version`): Add prototype for `_gpgme_get_program_version` (we expect to use it elsewhere soon).

2001-11-18 Marcus Brinkmann <marcus@g10code.de>

* version.c (`get_engine_info`): If GnuPG is not available, return an error message.
* posix-util.c (`_gpgme_get_gpg_path`): Allow `GPG_PATH` to be undefined.
(`_gpgme_get_gpgsm_path`): New function.
* w32-util.c (`find_program_in_registry`): New static function.
(`_gpgme_get_gpg_path`): Allow `GPG_PATH` to be undefined. Rework to use `find_program_in_registry`.
(`_gpgme_get_gpgsm_path`): New function.
(`util.h`): Prototype `_gpgme_get_gpgsm_path`.
* runpg.c (`_gpgme_gpg_spawn`): Verify that `_gpgme_get_gpg_path()` returns non-null.

2001-11-16 Marcus Brinkmann <marcus@g10code.de>

- * decrypt-verify.c: New file.
- * Makefile.am (libpggme_la_SOURCES): Add decrypt-verify.c.
- * types.h: Add decrypt-verify types.
- * ops.h: Likewise.
- * context.h: Add result type for decrypt-verify.
- * gpgme.h: Add decrypt-verify prototypes.

- * decrypt.c (decrypt_status_handler): Renamed to ...
(_gpgme_decrypt_status_handler): ... this. Make non-static.
- (_gpgme_decrypt_start): New function, derived from
gpgme_op_decrypt_start.
- (gpgme_op_decrypt_start): Reimplement in terms of
_gpgme_decrypt_start.
- (_gpgme_decrypt_result): New function to retrieve error value.
- (gpgme_op_decrypt): Use _gpgme_decrypt_result.
- * ops.h: Add prototypes for new functions.

- * verify.c (verify_status_handler): Renamed to ...
(_gpgme_verify_status_handler): ... this. Make non-static.
- (gpgme_op_verify_start): Use new function name.
- (intersect_stati): Renamed to ...
(_gpgme_intersect_stati): ... this. Make non-static.
- (gpgme_op_verify): Use new name.
- * ops.h: Add prototypes for new functions.

2001-11-16 Marcus Brinkmann <marcus@g10code.de>

- * passphrase.c: New file.
- * Makefile.am (libpggme_la_SOURCES): Add passphrase.c.
- * ops.h (_gpgme_passphrase_result): Add prototypes from
passphrase.c.
- * types.h: Likewise.
- * context.h: Add member passphrase to result.
- * gpgme.c (_gpgme_release_result): Release passphrase member.

- * decrypt.c: Some formatting and variable name changes (like
CTX instead C).
- (struct decrypt_result_s): Remove members now found in
passphrase result.
- (_gpgme_release_decrypt_result): Don't release removed members.
- (decrypt_status_handler): Call _gpgme_passphrase_status_handler,
and don't handle the cases caught there.
- (command_handler): Removed.
- (gpgme_op_decrypt_start): Don't set command handler, but invoke
_gpgme_passphrase_start which does it.

(gpgme_op_decrypt): Invoke `_gpgme_passphrase_result` and drop the cases covered by it.

* `sign.c` Some formatting and variable name changes (like `CTX` instead `C`).

(`struct sign_result_s`): Remove members now found in `passphrase` result.

(`_gpgme_release_sign_result`): Don't release removed members.

(`sign_status_handler`): Call `_gpgme_passphrase_status_handler`, and don't handle the cases caught there.

(`command_handler`): Removed.

(`gpgme_op_sign_start`): Don't set command handler, but invoke `_gpgme_passphrase_start` which does it.

(`gpgme_op_sign`): Invoke `_gpgme_passphrase_result` and drop the cases covered by it.

2001-11-15 Marcus Brinkmann <marcus@g10code.de>

* `decrypt.c` (`command_handler`): Fix last change.

2001-11-15 Marcus Brinkmann <marcus@g10code.de>

* `verify.c` (`_gpgme_release_verify_result`): Rename `RES` to `RESULT`.
Rename `R2` to `NEXT_RESULT`.

(`intersect_stati`): Rename `RES` to `RESULT`.

(`gpgme_get_sig_status`): Likewise. Do not check `return_type`, but the member `verify` of result.

(`gpgme_get_sig_key`): Likewise.

* `sign.c` (`_gpgme_release_sign_result`): Rename `RES` to `RESULT`. If `RESULT` is zero, return.

(`sign_status_handler`, `command_handler`): Do not check `return_type`, but the member `sign` of result.

(`gpgme_op_sign`): Likewise. Drop assertion.

* `encrypt.c` (`_gpgme_release_encrypt_result`): Rename `RES` to `RESULT`.
If `RESULT` is zero, return.

(`encrypt_status_handler`): Do not check `return_type`, but the member `encrypt` of result.

(`gpgme_op_encrypt`): Likewise. Drop assertion.

* `decrypt.c` (`_gpgme_release_decrypt_result`): Rename `RES` to `RESULT`.

(`create_result_struct`): Do not set `result_type`.

(`command_handler`, `decrypt_status_handler`): Do not check `return_type`, but the member `decrypt` of result.

(`gpgme_op_decrypt`): Likewise. Drop assertion.

* `context.h` (`enum ResultType`): Removed.

(struct gpgme_context_s): Remove member result_type.
(struct result): Replaces union result.
* gpgme.c: Include string.h.
(_gpgme_release_result): Release all members of c->result, which is now a struct. Zero out all members of the struct afterwards.

2001-11-11 Marcus Brinkmann <marcus@g10code.de>

* runpgp.c (_gpgme_gpg_release): Release GPG->cmd.cb_data. Release all members of the list GPG->arglist.
Reported by Michael Schmidt <mschmidt@cs.uni-sb.de>.

2001-11-02 Marcus Brinkmann <marcus@g10code.de>

* runpgp.c (pipemode_copy): Change type of NBYTES to size_t.

* key.c: Include string.h.
* data.c: Likewise.
* recipient.c: Likewise.

2001-10-29 Marcus Brinkmann <marcus@g10code.de>

* context.h: New member signers_len.
* signers.c (gpgme_signers_clear): Require that signers are non-NULL with assertion. Use signers_len to determine how much keys to release. Add documentation.
(gpgme_signers_add): Use signers_len to determine if the buffer is large enough. Use xtryrealloc rather than xtrymalloc and copying. Add documentation.
(gpgme_signers_enum): Use signers_len to determine if key is available. Add documentation.

2001-10-22 Marcus Brinkmann <marcus@g10code.de>

* data.c (_gpgme_data_append): Check if LENGTH is smaller than ALLOC_CHUNK, not DH->length.

2001-10-17 Marcus Brinkmann <marcus@g10code.de>

* gpgme.c (gpgme_set_protocol): Fix last change.

2001-10-15 Werner Koch <wk@gnupg.org>

* gpgme.h (GpgmeProtocol): New.
* gpgme.c (gpgme_set_protocol): New.

2001-09-26 Werner Koch <wk@gnupg.org>

* gpgme.c (gpgme_set_passphrase_cb): Ignore a NULL context.
(gpgme_set_progress_cb): Ditto. Suggested by Mark Mutz.

2001-09-17 Werner Koch <wk@gnupg.org>

* keylist.c (finish_key): Shortcut for no tmp_key. Changed all callers to use this function without a check for tmp_key.

* keylist.c (gpgme_op_keylist_next): Reset the key_cond after emptying the queue. Bug reported by Stphane Corthsy.

2001-09-12 Werner Koch <wk@gnupg.org>

* data.c (gpgme_data_rewind): Allow rewind for callbacks.

2001-09-07 Werner Koch <wk@gnupg.org>

* runpgg.h: Add NO_RECP.

* encrypt.c (encrypt_status_handler): Take on No_RECP.
(gpgme_op_encrypt): Better error return.

* verify.c (verify_status_handler): Take on NODATA.

2001-09-03 Werner Koch <wk@gnupg.org>

* runpgg.h: Added STATUS_INV_RECP.

* gpgme.c (_gpgme_release_result): Add support for new EncryptResult object.

* encrypt.c (append_xml_encinfo): New.
(encrypt_status_handler): Add some status parsing.
(_gpgme_release_encrypt_result): New.

2001-08-29 Werner Koch <wk@gnupg.org>

* recipient.c (gpgme_recipients_release): Free the list. By Timo.

* keylist.c (keylist_colon_handler): Do a finish key if we receive an EOF here. This is probably the reason for a lot of bugs related to keylisting. It is so obvious. Kudos to Enno Cramer for pointing that out.

2001-08-28 Werner Koch <wk@gnupg.org>

* gpgme.c, gpgme.h (gpgme_get_op_info): New.
(_gpgme_set_op_info): New.

(_gpgme_release_result): Reset the op_info here.

* sign.c (append_xml_siginfo): New.

(sign_status_handler): Store the sig create information.

2001-07-31 Werner Koch <wk@gnupg.org>

* encrypt.c (gpgme_op_encrypt): Hack to detect no valid recipients.

2001-07-30 Werner Koch <wk@gnupg.org>

* gpgme.c (gpgme_get_armor,gpgme_get_textmode): New.

* runpgg.c (build_argv): Disable armor comments

* w32-io.c (build_commandline): Need to add quotes here

2001-07-24 Werner Koch <wk@gnupg.org>

* data.c (gpgme_data_read): Add a way to return the available bytes.

2001-07-23 Werner Koch <wk@gnupg.org>

* util.c: Removed stpcpy() because we use the version from jnlib.

2001-07-19 Werner Koch <wk@gnupg.org>

* mkstatus: Define the collating sequence for sort.

2001-06-26 Werner Koch <wk@gnupg.org>

* runpgg.h: Add STATUS_UNEXPECTED as suggested by Timo.

2001-06-15 Werner Koch <wk@gnupg.org>

* keylist.c (set_userid_flags): Fixed the assigned values. Kudos to Timo for pointing this out.

2001-06-01 Werner Koch <wk@gnupg.org>

* debug.c (_gpgme_debug_begin): Fixed a /tmp race. Noted by Johannes Poehlmann.

2001-05-28 Werner Koch <wk@gnupg.org>

* version.c (gpgme_check_engine): Stop version number parsing at the opening angle and not the closing one. By Tommy Reynolds.

2001-05-01 Jos Carlos Garca Sogo <jose@jaimedelamo.eu.org>

* encrypt.c (gpgme_op_encrypt_start): Deleted the assert (!c->gpg) line, because it gave an error if another operation had been made before using the same context.

* decrypt.c (gpgme_op_decrypt_start): The same as above. Also added one line to release the gpg object in the context (if any).

2001-04-26 Werner Koch <wk@gnupg.org>

* key.c, key.h (_gpgme_key_cache_init): New.
(_gpgme_key_cache_add): New.
(_gpgme_key_cache_get): New.
* version.c (do_subsystem_inits): Init the cache.
* keylist.c (finish_key): Put key into the cache
* verify.c (gpgme_get_sig_key): First look into the cache.

2001-04-19 Werner Koch <wk@gnupg.org>

* keylist.c (parse_timestamp): Adjusted for the changed --fixed-list-mode of gpg 1.0.4h.

2001-04-05 Werner Koch <wk@gnupg.org>

* verify.c (gpgme_op_verify_start): Enabled pipemode for detached sigs.

2001-04-04 Werner Koch <wk@gnupg.org>

* w32-io.c (_gpgme_io_select): Don't select on the writer if there are still bytes pending. Timo found this not easy to track down race condition.

2001-04-02 Werner Koch <wk@gnupg.org>

* gpgme.h: Add GPGME_ATTR_KEY_{EXPIRED,DISABLED}.
* key.c (gpgme_key_get_ulong_attr): And return those attribs.

* verify.c (gpgme_get_sig_key): Set keylisting mode depending on the mode set in the current context. Suggested by Timo.

* key.c (gpgme_key_get_ulong_attr): Return can_certify and not can_encrypt. By Timo.

2001-03-30 Werner Koch <wk@gnupg.org>

* debug.c (debug_init): Allow to specify a debug file.
(_gpgme_debug_level): New.

* posix-io.c (_gpgme_io_read, _gpgme_io_write): Print output.
(_gpgme_io_select): Debug only with level > 2.

2001-03-15 Werner Koch <wk@gnupg.org>

* `rungpg.c`: Included `time.h`.

* `key.h`: New keyflags for capabilities.

* `keylist.c` (`set_mainkey_capability`, `set_subkey_capability`): New.
(`keylist_colon_handler`): Parse them.

* `gpgme.h`: New attribute values for capabilities.

* `key.c` (`gpgme_key_get_string_attr`): Return them.

(`capabilities_to_string`): New.

(`gpgme_key_get_ulong_attr`): Return the global caps.

2001-03-14 Werner Koch <wk@gnupg.org>

* `w32-io.c` (`destroy_reader`,`destroy_writer`): Fixed syntax error.

Thanks to Jan Oliver Wagner.

2001-03-13 Werner Koch <wk@gnupg.org>

* `context.h`: Add invalid and revoke flags to `user_id` structure.

* `keylist.c` (`gpgme_op_keylist_start`): Use `--fixed-list-mode`.

(`keylist_colon_handler`): Adjust for that.

(`set_userid_flags`): New.

(`set_mainkey_trust_info`): Handle new key invalid flag

(`set_subkey_trust_info`): Ditto.

* `gpgme.h`: Add new attributes for key and user ID flags.

* `key.c` (`_gpgme_key_append_name`): Init these flags

(`gpgme_key_get_as_xml`): Print them.

(`one_uid_as_xml`): New helper for above.

(`gpgme_key_get_string_attr`, `gpgme_key_get_ulong_attr`):

Return the new attributes. Enhanced, so that subkey information
can be returned now.

2001-02-28 Werner Koch <wk@gnupg.org>

* `w32-io.c` (`destroy_reader`): Set `stop_me` flag.

(`writer`,`create_writer`,`destroy_writer`,`find_writer`,`kill_writer`): New.

(`_gpgme_io_write`): Use a writer thread to avoid blocking.

(`_gpgme_io_close`): Cleanup a writer thread

(`_gpgme_io_select`): Replace the faked wait on writing by a real
waiting which is now possible due to the use of a writer thread.

2001-02-20 Werner Koch <wk@gnupg.org>

* `w32-io.c` (`destroy_reader`,`kill_reader`): New.

(`create_reader`, `reader`): Add a new event to stop the thread.

(`_gpgme_io_close`): Kill the reader thread.

* `posix-io.c` (`_gpgme_io_select`): Handle frozen fds here.

* 32-io.c (`_gpgme_io_select`): Ditto. Removed a bunch of unused code.

* wait.c: Reworked the whole thing.

* runpg.c (`_gpgme_gpg_new`): Init pid to -1.

(`_gpgme_gpg_release`): Remove the process from the wait queue.

2001-02-19 Werner Koch <wk@gnupg.org>

* w32-io.c (`_gpgme_io_set_close_notify`): New.

(`_gpgme_io_close`): Do the notification.

* posix-io.c (`_gpgme_io_select`): Use a 1 sec timeout and not 200 microseconds.

* wait.c (`remove_process`): Don't close the fd here.

(`do_select`): Set the fd to -1 and remove the `is_closed` flag everywhere.

(`_gpgme_wait_on_condition`): Remove the assert on the queue and break out if we could not find the queue. The whole thing should be reworked.

* posix-io.c (`_gpgme_io_set_close_notify`): New.

(`_gpgme_io_close`): Do the notification.

* runpg.c (`close_notify_handler`): New.

(`_gpgme_gpg_new`): Register a callback for the fd.

(`_gpgme_gpg_set_colon_line_handler`): Ditto.

(`build_argv`): Ditto

2001-02-13 Werner Koch <wk@gnupg.org>

* runpg.c (`struct reap_s`): Replaced `pid_t` by `int`.

* types.h: Add `ulong` typedef.

* runpg.c (`do_reaping`, `_gpgme_gpg_housecleaning`): New.

(`_gpgme_gpg_release`): Reap children.

* io.h, posix-io.c (`_gpgme_io_kill`): New.

* w32-io.c (`_gpgme_io_kill`): New (dummy).

* keylist.c (`gpgme_op_keylist_start`): Cancel a pending request.

* posix-io.c (`_gpgme_io_read`): Add some debug output.

(`_gpgme_io_write`): Ditto.

(`_gpgme_io_select`): Increased the timeout.

2001-02-12 Werner Koch <wk@gnupg.org>

Enhanced the signature verification, so that it can now handle

more than one signature and is able to return more information on the signatures.

* verify.c (gpgme_get_sig_key): New.
(gpgme_get_sig_status): New.

* gpgme.h: Add stdio.h.
(GpgmeSigStat): New status DIFF.

2001-02-01 Werner Koch <wk@gnupg.org>

* w32-io.c (set_synchronize): Add EVENT_MODIFY_STATE. Add Debug code to all Set/ResetEvent().

* runpg.c (read_status): Check for end of stream only if we have an r. By Timo.

2001-01-31 Werner Koch <wk@gnupg.org>

* wait.c (_gpgme_wait_on_condition): Removed all exit code processing.
(propagate_term_results,clear_active_fds): Removed.
(count_active_fds): Renamed to ..
(count_active_and_thawed_fds): .. this and count only thawed fds.

* runpg.c (gpg_colon_line_handler): Return colon.eof and not status.eof ;-)

2001-01-30 Werner Koch <wk@gnupg.org>

* w32-io.c (_gpgme_io_spawn): Use the supplied path arg.

* version.c (get_engine_info): Return better error information.

* posix-util.c, w32-util.c: New.
(_gpgme_get_gpg_path): New, suggested by Jan-Oliver.
* runpg.c (_gpgme_gpg_spawn): Use new function to get GPG's path.

* signers.c (gpgme_signers_add): Oops, one should test code and not just write it; the newarr was not assigned. Thanks to Jos for pointing this out. Hmm, still not tested, why should a coder test his fix :-)

* w32-io.c: Does now use reader threads, so that we can use WaitForMultipleObjects.
* sema.h, posix-sema.c, w32-sema.c: Support for Critical sections. Does currently only work for W32.

* debug.c, util.h : New. Changed all fprintfs to use this new set of debugging functions.

2001-01-23 Werner Koch <wk@gnupg.org>

* data.c (_gpgme_data_release_and_return_string): Fixed string termination.

2001-01-22 Werner Koch <wk@gnupg.org>

* delete.c: New.

* signers.c: New.

* key.c (gpgme_key_ref, gpgme_key_unref): New.

* sign.c (gpgme_op_sign_start): Allow the use of other keys.

* version.c (gpgme_get_engine_info, gpgme_check_engine): New.

* runpgg.c (_gpgme_gpg_set_simple_line_handler): New.

2001-01-05 Werner Koch <wk@gnupg.org>

* data.c (gpgme_data_rewind): Allow to rewind data_type_none.

Copyright (C) 2001,2002,2003,2004,2005,2006,2007,2008,2009,2010,
2011 g10 Code GmbH

This file is free software; as a special exception the author gives unlimited permission to copy and/or distribute it, with or without modifications, as long as this notice is preserved.

This file is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY, to the extent permitted by law; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.

Just GNU it!

Just GNU it!

Just GNU it!

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free

software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this

License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any

associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by

all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes

make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful,

but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

```
commit 2145348ec54c6027f2ea20f695de0277e2871405
```

```
Merge: 348ba88 2036f1a
```

```
Author: Ben McGinnes <ben@adversary.org>
```

```
Date: Wed May 6 03:04:19 2015 +1000
```

Merge pull request #4 from Hasimir/master

history

commit 2036f1a0a670a0561993e195c458059220b36114
Merge: dbabf0c 348ba88
Author: Ben McGinnes <ben@adversary.org>
Date: Wed May 6 02:57:44 2015 +1000

Merge branch 'master' of github:adversary-org/pyme3

commit dbabf0cf1f2985755c2293b619011832e34faa9c
Author: Ben McGinnes <ben@adversary.org>
Date: Wed May 6 02:52:23 2015 +1000

Added a short history

- * A (very) brief summary of the project's history since 2002.
- * Deals with why the commit log in the GPGME repo does not include the history of PyME.
- * Mentions that intact git repos will be maintained, but not where they are (one will be on github, another will be in a user directory on playfair.gnupg.org).

docs/Short_History.rst | 57 +++++
1 file changed, 57 insertions(+)

commit 348ba883424778c711c04ae9b66035ccdb36eb8c
Merge: 127d0a5 7c37a27
Author: Ben McGinnes <ben@adversary.org>
Date: Wed May 6 02:21:34 2015 +1000

Merge pull request #3 from Hasimir/master

Version release preparation

commit 7c37a27a6845c58222d4d947c2efbe38e955b612
Merge: f692cff 127d0a5
Author: Ben McGinnes <ben@adversary.org>
Date: Wed May 6 02:17:14 2015 +1000

Merge branch 'master' of github:adversary-org/pyme3

commit f692cff50a89c2c61acdbd3d7dd60f5ce3cd15af
Author: Ben McGinnes <ben@adversary.org>
Date: Wed May 6 02:09:44 2015 +1000

TODO update

- * Removed reference to GitHub, replaced with impending new home at gnupg.org.

docs/TODO.rst | 4 +--

1 file changed, 2 insertions(+), 2 deletions(-)

commit bd5ccf9e3bfe69fa681613757577e87b72ca08ec

Author: Ben McGinnes <ben@adversary.org>

Date: Wed May 6 02:00:44 2015 +1000

Version bump

- * Bumped version number to 0.9.1 to keep it somewhat in line with the existing PyME project, even though there will be some divergence at some point (or even re-merging, depending on how many of the Python 3 modifications can be back-ported to the Python 2 version).
- * Updated the author and copyright information to reflect the two current authors (Martin and I).
- * Replaced Igor's contact details with mine.
- * Replaced project home page with the GnuPG one.

pyme/version.py | 16 ++++++-----

1 file changed, 9 insertions(+), 7 deletions(-)

commit ec167512f4ca88d8f6e89e2ae831798c8283b4df

Author: Ben McGinnes <ben@adversary.org>

Date: Wed May 6 01:48:01 2015 +1000

README preparation.

- * Changes in preparation for impending move of code to the GnuPG git server as a part of GPGME.

README.rst | 14 ++++++-----

1 file changed, 7 insertions(+), 7 deletions(-)

commit 8a48515e884c36b5bdb24a13cb4d2e49f4ee6f17

Author: Ben McGinnes <ben@adversary.org>

Date: Wed May 6 01:43:53 2015 +1000

TODO moved to docs

- * As it says.

TODO.rst | 25 -----

docs/TODO.rst | 25 ++++++

2 files changed, 25 insertions(+), 25 deletions(-)

commit f968c777472f01f308f6e57eac1740bf5c76c205

Author: Ben McGinnes <ben@adversary.org>

Date: Sun May 3 16:52:13 2015 +1000

Started another TODO file.

TODO.rst | 25 +++++
1 file changed, 25 insertions(+)

commit 127d0a56fa9f7ad1d4fb39d0b529b890a8d67365
Merge: db72dea 44837f6
Author: Ben McGinnes <ben@adversary.org>
Date: Sun May 3 14:59:44 2015 +1000

Merge pull request #2 from Hasimir/master

Minor editing.

commit 44837f6e50fc539c86aef1f75a6a3538b02029ea
Author: Ben McGinnes <ben@adversary.org>
Date: Sun May 3 14:56:55 2015 +1000

Minor editing.

- * Fixed another URL.
- * Changed Py3 version's version number to v0.9.1-beta0.

README.rst | 4 ++--
1 file changed, 2 insertions(+), 2 deletions(-)

commit db72deaae19c3513391df040bc6a66a88d9213af
Merge: db34286 48eb185
Author: Ben McGinnes <ben@adversary.org>
Date: Sun May 3 14:26:11 2015 +1000

Merge pull request #1 from Hasimir/master

Links

commit 48eb1856cb0739cc9f0b9084da9d965e1fc7fddd
Author: Ben McGinnes <ben@adversary.org>
Date: Sun May 3 14:22:30 2015 +1000

Links

- * Fixed URLs for authors.
- * Updated my entry to point to github location.
- ** I strongly suspect the result of this work will be concurrent projects, so preparing for that eventuality with this repo.

README.rst | 8 ++++----
1 file changed, 4 insertions(+), 4 deletions(-)

commit db3428659783f30b9a76204403daedf9fc4cf7cf
Author: Ben McGinnes <ben@adversary.org>
Date: Sun May 3 11:29:00 2015 +1000

Explicit over Implicit ...

... isn't just for code.

- * Removed the 2to3 working directory and its contents.
- * Made the README.rst file a little more clear that this branch is for Python 3 (set Python 3.2 as a fairly arbitrary requirement for the moment, but will probably raise this to 3.3).

2to3/2to3-output-remaining.log | 60 ---
2to3/2to3-output-setup.log | 35 --
2to3/2to3-output.log | 950 -----
README.rst | 10 +-
4 files changed, 7 insertions(+), 1048 deletions(-)

commit 3edf07a4ba8a86af3a33246234d6e133074862af
Author: Ben McGinnes <ben@adversary.org>
Date: Sun May 3 11:19:41 2015 +1000

Added authors.

- * In alphabetical order.
- * Mine will need updating once Martin and I have decided what to do regarding the two main branches.

README.rst | 12 ++++++++
1 file changed, 12 insertions(+)

commit 811eb14b53e8856312d99f46b77215f7f9bd672c
Author: Ben McGinnes <ben@adversary.org>
Date: Sun May 3 10:23:00 2015 +1000

Docs and other things.

- * Now able to import pyme.core without error, indicates port process is successful.
- * Code is **not** compatible with the Python 2 version.
- * Will need to consider making this a parallel project with the master branch.
- * Got rid of the .org TODO file.
- * Changed the README to use the reST file extension since it's full of reST anyway.

2to3/TODO.org | 5 ----
README.rst | 32 ++++++
README.txt | 32 -----
3 files changed, 32 insertions(+), 37 deletions(-)

commit 79e784bdcce1de6f7856921b5431044c62c6f015
Author: Ben McGinnes <ben@adversary.org>
Date: Sun May 3 10:18:40 2015 +1000

Fixed another implicit import by making it explicit. Hopefully this is the last one.

pyme/util.py | 2 +-
1 file changed, 1 insertion(+), 1 deletion(-)

commit 2b52b46ccda3e7abcc50eed0745062259d698661
Author: Ben McGinnes <ben@adversary.org>
Date: Sun May 3 10:16:01 2015 +1000

Fixed another implicit import by making it explicit.

pyme/errors.py | 2 +-
1 file changed, 1 insertion(+), 1 deletion(-)

commit 409c8fd565e21f23cd41daaeffc867e6d23a0863
Author: Ben McGinnes <ben@adversary.org>
Date: Sun May 3 10:08:22 2015 +1000

Bytes vs. Unicode

* Trying PyBytes instead of PyUnicode.

gpgme.i | 14 ++++++-----
helpers.c | 8 +++++-----
2 files changed, 11 insertions(+), 11 deletions(-)

commit d8164aa2ae98bf8c807c16e2d9be12c5fba7cfd
Author: Ben McGinnes <ben@adversary.org>
Date: Sun May 3 09:22:58 2015 +1000

String to Unicode

* Replaced all instances of PyString with PyUnicode (and hoping there's no byte data in there).

gpgme.i | 14 ++++++-----
helpers.c | 8 +++++-----
2 files changed, 11 insertions(+), 11 deletions(-)

commit bd99b7865656e559b17c419c6b64b412a22c6c44

Author: Ben McGinnes <ben@adversary.org>

Date: Sun May 3 09:17:06 2015 +1000

PyInt_AsLong

* Replaced all instances of PyInt with PyLong, as per C API docs.

gpgme.i | 4 +++-

helpers.c | 8 ++++----

2 files changed, 6 insertions(+), 6 deletions(-)

commit 3c91e2ccf8ca788b51e3308e292c6b64888fdb15

Author: Ben McGinnes <ben@adversary.org>

Date: Sun May 3 05:59:36 2015 +1000

Import correction

* Once pygpgme.py is generated and moved, it will be in the right directory for the explicit "from . import pygpgme" to be correct.

pyme/core.py | 2 +-

1 file changed, 1 insertion(+), 1 deletion(-)

commit 23a49e7070812ff1ce138d8d4cc46d0b80328897

Author: Ben McGinnes <ben@adversary.org>

Date: Sun May 3 05:38:29 2015 +1000

The -py3 flag.

Makefile | 2 +-

1 file changed, 1 insertion(+), 1 deletion(-)

commit b1549587d6db5e33081b9c20f75d1348a1d25938

Author: Ben McGinnes <ben@adversary.org>

Date: Sun May 3 05:01:42 2015 +1000

Fixed indentation - 4.

pyme/core.py | 2 +-

1 file changed, 1 insertion(+), 1 deletion(-)

commit a685142ce46761ee6f5176e90717176e38e0d24f

Author: Ben McGinnes <ben@adversary.org>

Date: Sun May 3 05:00:16 2015 +1000

Fixed indentation - 3.

pyme/core.py | 5 +++--

1 file changed, 2 insertions(+), 3 deletions(-)

commit 488a70b490cc64eb1c47d2483cb2f4079c6767f7

Author: Ben McGinnes <ben@adversary.org>

Date: Sun May 3 04:53:21 2015 +1000

Pet Peeve

```
def pet_peeve(self):
    peeve = print("people who don't press return after a colon!")
```

FFS!

pyme/core.py | 5 +++--

1 file changed, 3 insertions(+), 2 deletions(-)

commit a5d38eb47d64bb17bb609fe594dae2aca480bac9

Author: Ben McGinnes <ben@adversary.org>

Date: Sun May 3 04:47:54 2015 +1000

Fixed indentation - 2.

pyme/core.py | 2 +-

1 file changed, 1 insertion(+), 1 deletion(-)

commit 476a207f732b8559abb1ea3c23147c0e34804730

Author: Ben McGinnes <ben@adversary.org>

Date: Sun May 3 04:46:01 2015 +1000

Fixed indentation.

pyme/core.py | 4 +++--

1 file changed, 2 insertions(+), 2 deletions(-)

commit 0572900eba9bcd9b0283c7d8e022e8972f06f9f8

Author: Ben McGinnes <ben@adversary.org>

Date: Sun May 3 04:43:49 2015 +1000

Replaced all tabs with 4 spaces.

pyme/core.py | 18 ++++++++-----

1 file changed, 9 insertions(+), 9 deletions(-)

commit 78c0b7677e94ce1e11b8cdb833a9064527187330

Author: Ben McGinnes <ben@adversary.org>

Date: Sun May 3 04:39:07 2015 +1000

SWIG flags in the wrong place.

Makefile | 4 +++-

1 file changed, 2 insertions(+), 2 deletions(-)

commit dfa7f2589963494a8f89277560d8c1116604a3c8

Author: Ben McGinnes <ben@adversary.org>

Date: Sun May 3 04:35:09 2015 +1000

Fixed subprocess call for swig (again).

setup.py | 2 +-

1 file changed, 1 insertion(+), 1 deletion(-)

commit 249bfd8c714dcda53127b99b6cc8a6c7c4a99f20

Author: Ben McGinnes <ben@adversary.org>

Date: Sun May 3 04:32:40 2015 +1000

Fixed subprocess call for swig.

setup.py | 2 +-

1 file changed, 1 insertion(+), 1 deletion(-)

commit 6fd7e719cf4c975f466ceb39835db7007df36fb2

Author: Ben McGinnes <ben@adversary.org>

Date: Sun May 3 03:51:48 2015 +1000

Linking swig to py3

* Changed the swig invocations to run with the -python -py3 flags explicitly.

Makefile | 4 +++-

setup.py | 2 +-

2 files changed, 3 insertions(+), 3 deletions(-)

commit 7a6b584f50ed6ddc8617a642185eea1f24ff791a

Author: Ben McGinnes <ben@adversary.org>

Date: Sat May 2 11:12:00 2015 +1000

String fun

* streamlined confdata details, including decoding strom binary to string.

setup.py | 4 +---

1 file changed, 1 insertion(+), 3 deletions(-)

commit f7fd3f270592021a95a8f779bfe85ac18f4e390b

Author: Ben McGinnes <ben@adversary.org>

Date: Sat May 2 10:46:59 2015 +1000

Open File

* Removed deprecated file() and replaced with open().

examples/PyGtkGpgKeys.py | 2 +-
examples/pygpa.py | 6 +++---
gpgme-h-clean.py | 2 +-
3 files changed, 5 insertions(+), 5 deletions(-)

commit 4227d486f9558015e7e548d71085e58e1b50ec08
Author: Ben McGinnes <ben@adversary.org>
Date: Sat May 2 10:36:15 2015 +1000

print() fix

* Makefile includes a python print, changed from statement to function.

Makefile | 2 +-
1 file changed, 1 insertion(+), 1 deletion(-)

commit 406f7f2567b701502186fe0a325dc2a3491ff7f8
Author: Ben McGinnes <ben@adversary.org>
Date: Sat May 2 10:28:42 2015 +1000

Updated Makefile

* set make to use python3 instead.
* This will mean a successful port may need to be maintained separately from the original python2 code instead of merged, but ought to be able to share most things. So maybe merge with separated make files or a pre-make script to set python2 or python3 prior to building ... decide later, after it works.

Makefile | 6 +++---
1 file changed, 3 insertions(+), 3 deletions(-)

commit 90b3efa5b193d37e08dc9b4ee766ba9ebc9412af
Author: Ben McGinnes <ben@adversary.org>
Date: Sat May 2 10:15:20 2015 +1000

Env and a little license issue

* Updated all the /usr/bin/env paths to point to python3.
* Also fixed the hard coded /usr/bin/python paths.
* Updated part of setup.py which gave the impression this package was only licensed under the GPL (it's actually licensed under the LGPL as

well, essentially the same dual licensing as the GPGME library).

```
examples/PyGtkGpgKeys.py | 2 +-
examples/delkey.py      | 2 +-
examples/encrypt-to-all.py | 2 +-
examples/exportimport.py | 2 +-
examples/genkey.py     | 2 +-
examples/inter-edit.py | 2 +-
examples/pygpa.py     | 2 +-
examples/sign.py      | 2 +-
examples/signverify.py | 2 +-
examples/simple.py    | 2 +-
examples/t-edit.py    | 2 +-
examples/testCMSgetkey.py | 2 +-
examples/verifydetails.py | 2 +-
gpgme-h-clean.py     | 2 +-
setup.py             | 4 ++--
15 files changed, 16 insertions(+), 16 deletions(-)
```

```
commit 1a4b55dbccd2774344352e579130bf494bc5fa4b
Author: Ben McGinnes <ben@adversary.org>
Date: Sat May 2 08:50:54 2015 +1000
```

Removed extraneous files.

* The two .bak files.

```
pyme/errors.py.bak | 46 -----
setup.py.bak      | 116 -----
2 files changed, 162 deletions(-)
```

```
commit 208879d4f2a6d0514c3f8ee2fc0da8bba42350de
Author: Ben McGinnes <ben@adversary.org>
Date: Sat May 2 08:19:37 2015 +1000
```

Added TODO.org

* TODO list in Emacs org-mode.
* Will eventually be removed along with this entire directory when the porting process is complete.

```
2to3/TODO.org | 5 +++++
1 file changed, 5 insertions(+)
```

```
commit 1548bf201059638675c5387c6f124d4b703363a9
Author: Ben McGinnes <ben@adversary.org>
Date: Sat May 2 07:58:40 2015 +1000
```

2to3 conversion of remaining files

- * Ran the extended version against all the unmodified python files.
- * Only pyme/errors.py required additional work.

```
2to3/2to3-output-remaining.log | 60 ++++++
pyme/errors.py                | 2 +-
pyme/errors.py.bak            | 46 ++++++
3 files changed, 107 insertions(+), 1 deletion(-)
```

commit 1230650bc6bbe4c14d1284f7877aa932f3e86eb4
Author: Ben McGinnes <ben@adversary.org>
Date: Sat May 2 07:50:39 2015 +1000

2to3 conversion of setup.py

- * Ran extended 2to3 command to produce python 3 code for setup.py.
- * Effectively testing for what to run against the other originally unmodified py2 files.

```
2to3/2to3-output-setup.log | 35 ++++++
setup.py                    | 7 +-
setup.py.bak                 | 116 ++++++
3 files changed, 154 insertions(+), 4 deletions(-)
```

commit edad44955f59aa879e95a369591717fb19eec6b7
Author: Ben McGinnes <ben@adversary.org>
Date: Fri May 1 21:50:07 2015 +1000

Removing 2to3 generated .bak files.

- * Not really needed with a real VCS, but couldn't hurt to have them for a couple of revisions. ;)

```
examples/PyGtkGpgKeys.py.bak | 663 -----
examples/encrypt-to-all.py.bak | 65 --
examples/exportimport.py.bak | 75 --
examples/genkey.py.bak | 45 -
examples/inter-edit.py.bak | 57 --
examples/pygpa.py.bak | 1457 -----
examples/sign.py.bak | 31 -
examples/signverify.py.bak | 78 --
examples/simple.py.bak | 52 --
examples/t-edit.py.bak | 59 --
examples/testCMSgetkey.py.bak | 45 -
examples/verifydetails.py.bak | 100 ---
gpgme-h-clean.py.bak | 42 -
pyme/callbacks.py.bak | 47 --
```

```
pyme/constants/data/__init__.py.bak | 4 -
pyme/constants/keylist/__init__.py.bak | 4 -
pyme/constants/sig/__init__.py.bak | 4 -
pyme/core.py.bak | 463 -----
pyme/util.py.bak | 72 --
pyme/version.py.bak | 41 -
20 files changed, 3404 deletions(-)
```

commit 1cfc3c969f885ed191610bffbbd60ac23fdd349e

Author: Ben McGinnes <ben@adversary.org>

Date: Fri May 1 21:45:50 2015 +1000

2to3 conversion log

* The output of the command to convert the code from Python 2 to 3.

* Note: this contains the list of files which were not modified and which will or may need to be modified.

```
2to3/2to3-output.log | 950 +++++++++++++++++++++++++++++++++++++++++++++++++++++
1 file changed, 950 insertions(+)
```

commit 078f6cf878aa62d12704fab424198a613a24cc8c

Author: Ben McGinnes <ben@adversary.org>

Date: Fri May 1 21:36:58 2015 +1000

2to3 conversion of pyme master

* Branch from commit 459f3eca659b4949e394c4a032d9ce2053e6c721

* Ran this: `or x in `find . | egrep .py$` ; do 2to3 -w $x; done ;`

* Multiple files not modified, will record elsewhere (see next commit).

```
examples/PyGtkGpgKeys.py | 10 +-
examples/PyGtkGpgKeys.py.bak | 663 +++++
examples/encrypt-to-all.py | 12 +-
examples/encrypt-to-all.py.bak | 65 ++
examples/exportimport.py | 20 +-
examples/exportimport.py.bak | 75 ++
examples/genkey.py | 2 +-
examples/genkey.py.bak | 45 +
examples/inter-edit.py | 8 +-
examples/inter-edit.py.bak | 57 ++
examples/pygpa.py | 40 +-
examples/pygpa.py.bak | 1457 +++++
examples/sign.py | 2 +-
examples/sign.py.bak | 31 +
examples/signverify.py | 18 +-
examples/signverify.py.bak | 78 ++
examples/simple.py | 8 +-

```

```
examples/simple.py.bak      | 52 ++
examples/t-edit.py         | 12 +-
examples/t-edit.py.bak     | 59 ++
examples/testCMSgetkey.py  | 8 +-
examples/testCMSgetkey.py.bak | 45 +
examples/verifydetails.py  | 34 +-
examples/verifydetails.py.bak | 100 +++
gpgme-h-clean.py          | 2 +-
gpgme-h-clean.py.bak      | 42 +
pyme/callbacks.py         | 6 +-
pyme/callbacks.py.bak     | 47 ++
pyme/constants/data/__init__.py | 2 +-
pyme/constants/data/__init__.py.bak | 4 +
pyme/constants/keylist/__init__.py | 2 +-
pyme/constants/keylist/__init__.py.bak | 4 +
pyme/constants/sig/__init__.py | 2 +-
pyme/constants/sig/__init__.py.bak | 4 +
pyme/core.py              | 26 +-
pyme/core.py.bak          | 463 ++++++++
pyme/util.py              | 6 +-
pyme/util.py.bak          | 72 ++
pyme/version.py           | 2 +-
pyme/version.py.bak       | 41 +
40 files changed, 3515 insertions(+), 111 deletions(-)
```

commit 459f3eca659b4949e394c4a032d9ce2053e6c721

Merge: c5966ab dae7f14

Author: Martin Albrecht <martinralbrecht@googlemail.com>

Date: Wed Jul 9 10:48:33 2014 +0100

Merged in jerrykan/pyme/fix_setup_26 (pull request #1)

Provide support for using setup.py with Python v2.6

commit dae7f14a54e6c2bde0ad4da7308cc7fc0d0c0469

Author: John Kristensen <john.kristensen@dpipwe.tas.gov.au>

Date: Wed Jul 9 15:54:39 2014 +1000

Provide support for using setup.py with Python v2.6

The setup.py script uses subprocess.check_output() which was introduced in Python v2.7. The equivalent functionality can be achieved without adding much extra code and provide support for Python v2.6.

```
setup.py | 4 +++-
```

1 file changed, 3 insertions(+), 1 deletion(-)

commit c5966abec9d772b3922d32650da288fd50a217be

Author: Martin Albrecht <martinralbrecht@googlemail.com>

Date: Thu May 15 19:43:00 2014 +0100

README.txt in ReST, including headlines

README.txt | 8 ++++++--

1 file changed, 6 insertions(+), 2 deletions(-)

commit 43ee8c6f34fa9b6d3975aa6ea60b3d4a741fa721

Author: Martin Albrecht <martinralbrecht@googlemail.com>

Date: Thu May 15 19:37:15 2014 +0100

README.txt in ReST

README.txt | 25 ++++++-----

1 file changed, 13 insertions(+), 12 deletions(-)

commit f71a369484cba8801df23ccc5842335fa496c0df

Author: Martin Albrecht <martinralbrecht@googlemail.com>

Date: Thu May 15 19:28:12 2014 +0100

added MANIFEST.in and README.txt (instead of .md)

MANIFEST.in | 6 ++++++

README.md | 27 -----

README.txt | 27 ++++++-----

3 files changed, 33 insertions(+), 27 deletions(-)

commit d0d6755229f920b0bed043e9c2731de2d57c096c

Author: Martin Albrecht <martinralbrecht@googlemail.com>

Date: Tue May 13 09:52:44 2014 +0100

added mailing list to README

README.md | 19 ++++++-----

1 file changed, 16 insertions(+), 3 deletions(-)

commit 30ca60ddf92df684de261cb24c83c68089be0adc

Author: Martin Albrecht <martinralbrecht@googlemail.com>

Date: Sun May 11 13:34:28 2014 +0100

we don't need a separate out of date ChangeLog file

ChangeLog | 802 -----

1 file changed, 802 deletions(-)

commit 8263f1a6d38fdb7f5f3dd5c7e28f83caa7528a08

Author: Martin Albrecht <martinralbrecht@googlemail.com>

Date: Sun May 11 13:32:31 2014 +0100

adding README.md

README.md | 14 ++++++

1 file changed, 14 insertions(+)

commit 3fc71b47e9e14b0b984801c28d722723baa4b406

Author: Martin Albrecht <martinralbrecht@googlemail.com>

Date: Sat May 10 15:43:06 2014 +0100

ValueError -> RuntimeError

setup.py | 4 +++-

1 file changed, 2 insertions(+), 2 deletions(-)

commit eec432abea56296b9fa36aac0d10926a2335b739

Merge: eea6537 d2738b3

Author: Martin Albrecht <martinralbrecht@googlemail.com>

Date: Sat May 10 15:41:02 2014 +0100

Merge branch 'master' of bitbucket.org:malb/pyme

Conflicts:

setup.py

commit eea6537921061b4dcfc54e00a99d3fa110e71433

Author: Martin Albrecht <martinralbrecht@googlemail.com>

Date: Sat May 10 15:39:51 2014 +0100

check for swig

setup.py | 8 ++++++

1 file changed, 8 insertions(+)

commit 53867bf9715ee1b4ea873bf5e2fbb7d9740a2b4a

Author: Martin Albrecht <martinralbrecht@googlemail.com>

Date: Sat May 10 15:35:04 2014 +0100

more friendly error message if gpgme is missing

setup.py | 8 ++++++-

1 file changed, 7 insertions(+), 1 deletion(-)

commit d2738b35d63b1492d69641c5466103685f2d3a30

Author: Martin Albrecht <martinralbrecht@googlemail.com>

Date: Sat May 10 15:35:04 2014 +0100

more friendly error message if gpgme is missing

setup.py | 8 ++++++--

1 file changed, 7 insertions(+), 1 deletion(-)

commit c0b01240becf8ba6cf1d4c1f64b2cb4c056f5163

Author: Martin Albrecht <martinralbrecht@googlemail.com>

Date: Fri May 9 15:20:24 2014 +0100

version number should have three digits

pyme/version.py | 2 +-

1 file changed, 1 insertion(+), 1 deletion(-)

commit 6672bb60b9bec60d38e854016c48658b57774578

Author: Martin Albrecht <martinralbrecht@googlemail.com>

Date: Wed May 7 15:11:08 2014 +0100

bump version number for upcoming release

pyme/version.py | 2 +-

1 file changed, 1 insertion(+), 1 deletion(-)

commit 7bd6de700f33ca5d1f27bc16ebbd401f21d2e788

Author: Martin Albrecht <martinralbrecht@googlemail.com>

Date: Sat May 3 19:36:25 2014 +0100

bump version number to indicate changes

pyme/version.py | 2 +-

1 file changed, 1 insertion(+), 1 deletion(-)

commit 4fb6bd9b3f47c1a343242ac83b326cadc12a136e

Author: Martin Albrecht <martinralbrecht@googlemail.com>

Date: Sat May 3 19:34:07 2014 +0100

pyme instead of pygpgme

setup.py | 2 +-

1 file changed, 1 insertion(+), 1 deletion(-)

commit 9548973138d78241a45ccb82333b25f2cf36ce7d

Author: Martin Albrecht <martinralbrecht@googlemail.com>

Date: Sat May 3 19:31:10 2014 +0100

dirty hack to make 'python setup.py install' work

setup.py | 7 +++++--

1 file changed, 4 insertions(+), 3 deletions(-)

commit a961d7eab9db478b7e603324bc5d243bd3c84bad
Author: Martin Albrecht <martinralbrecht@googlemail.com>
Date: Sat May 3 19:05:44 2014 +0100

moved everything down to the toplevel directory

```
COPYING | 340 ++
COPYING.LESSER | 510 +++
ChangeLog | 802 +++++
INSTALL | 15 +
Makefile | 104 +
debian/README.Debian | 6 +
debian/changelog | 93 +
debian/control | 34 +
debian/copyright | 25 +
debian/docs | 2 +
debian/examples | 2 +
debian/rules | 99 +
examples/PyGtkGpgKeys.glade | 1394 ++++++++
examples/PyGtkGpgKeys.gladep | 8 +
examples/PyGtkGpgKeys.py | 663 ++++
examples/delkey.py | 34 +
examples/encrypt-to-all.py | 65 +
examples/exportimport.py | 75 +
examples/genkey.py | 45 +
examples/inter-edit.py | 57 +
examples/pygpa.glade | 5546 +++++
examples/pygpa.py | 1457 ++++++
examples/sign.py | 31 +
examples/signverify.py | 78 +
examples/simple.py | 52 +
examples/t-edit.py | 59 +
examples/testCMSgetkey.py | 45 +
examples/verifydetails.py | 100 +
gpgme-h-clean.py | 42 +
gpgme.i | 267 ++
helpers.c | 154 +
helpers.h | 36 +
pyme/COPYING | 340 --
pyme/COPYING.LESSER | 510 ---
pyme/ChangeLog | 802 -----
pyme/INSTALL | 15 -
pyme/Makefile | 104 -
pyme/__init__.py | 137 +
pyme/callbacks.py | 47 +
pyme/constants/__init__.py | 7 +
```

```

pyme/constants/data/__init__.py      | 4 +
pyme/constants/data/encoding.py      | 20 +
pyme/constants/event.py              | 20 +
pyme/constants/import.py              | 20 +
pyme/constants/keylist/__init__.py   | 4 +
pyme/constants/keylist/mode.py        | 20 +
pyme/constants/md.py                  | 20 +
pyme/constants/pk.py                  | 20 +
pyme/constants/protocol.py            | 20 +
pyme/constants/sig/__init__.py       | 4 +
pyme/constants/sig/mode.py            | 20 +
pyme/constants/sigsum.py              | 20 +
pyme/constants/status.py              | 20 +
pyme/constants/validity.py            | 20 +
pyme/core.py                          | 463 +++
pyme/debian/README.Debian             | 6 -
pyme/debian/changelog                 | 93 -
pyme/debian/control                   | 34 -
pyme/debian/copyright                 | 25 -
pyme/debian/docs                      | 2 -
pyme/debian/examples                  | 2 -
pyme/debian/rules                     | 99 -
pyme/errors.py                        | 46 +
pyme/examples/PyGtkGpgKeys.glade      | 1394 -----
pyme/examples/PyGtkGpgKeys.gladep    | 8 -
pyme/examples/PyGtkGpgKeys.py         | 663 ----
pyme/examples/delkey.py               | 34 -
pyme/examples/encrypt-to-all.py       | 65 -
pyme/examples/exportimport.py         | 75 -
pyme/examples/genkey.py               | 45 -
pyme/examples/inter-edit.py           | 57 -
pyme/examples/pygpa.glade              | 5546 -----
pyme/examples/pygpa.py                 | 1457 -----
pyme/examples/sign.py                 | 31 -
pyme/examples/signverify.py           | 78 -
pyme/examples/simple.py               | 52 -
pyme/examples/t-edit.py               | 59 -
pyme/examples/testCMSgetkey.py        | 45 -
pyme/examples/verifydetails.py        | 100 -
pyme/gpgme-h-clean.py                 | 42 -
pyme/gpgme.i                          | 267 --
pyme/helpers.c                         | 154 -
pyme/helpers.h                         | 36 -
pyme/pyme/__init__.py                 | 137 -
pyme/pyme/callbacks.py                | 47 -
pyme/pyme/constants/__init__.py       | 7 -
pyme/pyme/constants/data/__init__.py  | 4 -
pyme/pyme/constants/data/encoding.py  | 20 -

```

```

pyme/pyme/constants/event.py      | 20 -
pyme/pyme/constants/import.py     | 20 -
pyme/pyme/constants/keylist/__init__.py | 4 -
pyme/pyme/constants/keylist/mode.py | 20 -
pyme/pyme/constants/md.py         | 20 -
pyme/pyme/constants/pk.py         | 20 -
pyme/pyme/constants/protocol.py   | 20 -
pyme/pyme/constants/sig/__init__.py | 4 -
pyme/pyme/constants/sig/mode.py   | 20 -
pyme/pyme/constants/sigsum.py     | 20 -
pyme/pyme/constants/status.py     | 20 -
pyme/pyme/constants/validity.py   | 20 -
pyme/pyme/core.py                 | 463 ---
pyme/pyme/errors.py               | 46 -
pyme/pyme/util.py                 | 72 -
pyme/pyme/version.py              | 41 -
pyme/setup.py                     | 99 -
pyme/util.py                       | 72 +
pyme/version.py                   | 41 +
setup.py                           | 99 +
108 files changed, 13384 insertions(+), 13384 deletions(-)

```

commit 8148cdd424c434e833ce427612ea8c89abc6e41c
Author: Martin Albrecht <martinralbrecht@googlemail.com>
Date: Sat May 3 18:58:52 2014 +0100

removing pyme-web

```

pyme-web/Makefile                 | 15 -
pyme-web/default.css              | 37 --
pyme-web/doc/gpgme/ASCII-Armor.html | 57 ---
pyme-web/doc/gpgme/Advanced-Key-Editing.html | 98 ----
pyme-web/doc/gpgme/Algorithms.html | 47 --
pyme-web/doc/gpgme/Building-the-Source.html | 82 ----
../doc/gpgme/Callback-Based-Data-Buffers.html | 148 -----
pyme-web/doc/gpgme/Cancellation.html | 67 ---
pyme-web/doc/gpgme/Concept-Index.html | 186 -----
pyme-web/doc/gpgme/Context-Attributes.html | 52 --
pyme-web/doc/gpgme/Contexts.html | 61 ---
pyme-web/doc/gpgme/Creating-Contexts.html | 49 --
pyme-web/doc/gpgme/Creating-Data-Buffers.html | 47 --
pyme-web/doc/gpgme/Creating-a-Signature.html | 143 -----
pyme-web/doc/gpgme/Crypto-Engine.html | 79 ---
pyme-web/doc/gpgme/Crypto-Operations.html | 67 ---
../doc/gpgme/Cryptographic-Message-Syntax.html | 42 --
../doc/gpgme/Data-Buffer-I_002fO-Operations.html | 104 ----
pyme-web/doc/gpgme/Data-Buffer-Meta_002dData.html | 100 ----
pyme-web/doc/gpgme/Decrypt-and-Verify.html | 79 ---

```

| | |
|--|-----------|
| pyme-web/doc/gpgme/Decrypt.html | 123 ----- |
| pyme-web/doc/gpgme/Deleting-Keys.html | 67 --- |
| pyme-web/doc/gpgme/Destroying-Contexts.html | 46 -- |
| pyme-web/doc/gpgme/Destroying-Data-Buffers.html | 70 --- |
| pyme-web/doc/gpgme/Encrypt.html | 45 -- |
| pyme-web/doc/gpgme/Encrypting-a-Plaintext.html | 147 ----- |
| pyme-web/doc/gpgme/Engine-Configuration.html | 65 --- |
| pyme-web/doc/gpgme/Engine-Information.html | 119 ----- |
| pyme-web/doc/gpgme/Engine-Version-Check.html | 48 -- |
| pyme-web/doc/gpgme/Error-Codes.html | 133 ----- |
| pyme-web/doc/gpgme/Error-Handling.html | 72 --- |
| pyme-web/doc/gpgme/Error-Sources.html | 89 ---- |
| pyme-web/doc/gpgme/Error-Strings.html | 80 --- |
| pyme-web/doc/gpgme/Error-Values.html | 159 ----- |
| pyme-web/doc/gpgme/Exchanging-Data.html | 58 --- |
| pyme-web/doc/gpgme/Exporting-Keys.html | 101 ---- |
| pyme-web/doc/gpgme/Features.html | 59 --- |
| pyme-web/doc/gpgme/File-Based-Data-Buffers.html | 74 --- |
| pyme-web/doc/gpgme/Function-and-Data-Index.html | 229 ----- |
| pyme-web/doc/gpgme/Generating-Keys.html | 144 ----- |
| pyme-web/doc/gpgme/Getting-Started.html | 55 --- |
| pyme-web/doc/gpgme/Hash-Algorithms.html | 59 --- |
| pyme-web/doc/gpgme/Header.html | 53 -- |
| .../doc/gpgme/I_002fO-Callback-Example-GDK.html | 85 ---- |
| .../gpgme/I_002fO-Callback-Example-GTK_002b.html | 86 ---- |
| .../doc/gpgme/I_002fO-Callback-Example-Qt.html | 99 ---- |
| pyme-web/doc/gpgme/I_002fO-Callback-Example.html | 259 ----- |
| pyme-web/doc/gpgme/I_002fO-Callback-Interface.html | 142 ----- |
| pyme-web/doc/gpgme/Importing-Keys.html | 171 ----- |
| pyme-web/doc/gpgme/Included-Certificates.html | 70 --- |
| pyme-web/doc/gpgme/Information-About-Keys.html | 207 ----- |
| .../doc/gpgme/Information-About-Trust-Items.html | 75 --- |
| pyme-web/doc/gpgme/Introduction.html | 53 -- |
| pyme-web/doc/gpgme/Key-Listing-Mode.html | 99 ---- |
| pyme-web/doc/gpgme/Key-Management.html | 260 ----- |
| pyme-web/doc/gpgme/Key-Signatures.html | 130 ----- |
| .../doc/gpgme/Largefile-Support-_0028LFS_0029.html | 110 ----- |
| pyme-web/doc/gpgme/Library-Copying.html | 542 ----- |
| pyme-web/doc/gpgme/Library-Version-Check.html | 97 --- |
| pyme-web/doc/gpgme/Listing-Keys.html | 204 ----- |
| pyme-web/doc/gpgme/Listing-Trust-Items.html | 88 ---- |
| pyme-web/doc/gpgme/Locale.html | 69 --- |
| pyme-web/doc/gpgme/Manipulating-Data-Buffers.html | 45 -- |
| pyme-web/doc/gpgme/Manipulating-Keys.html | 63 --- |
| pyme-web/doc/gpgme/Manipulating-Trust-Items.html | 62 --- |
| pyme-web/doc/gpgme/Memory-Based-Data-Buffers.html | 107 ---- |
| pyme-web/doc/gpgme/Multi-Threading.html | 93 ---- |
| pyme-web/doc/gpgme/OpenPGP.html | 44 -- |

pyme-web/doc/gpgme/Overview.html | 57 ---
 pyme-web/doc/gpgme/Passphrase-Callback.html | 101 ----
 pyme-web/doc/gpgme/Preparation.html | 54 --
 pyme-web/doc/gpgme/Progress-Meter-Callback.html | 80 ---
 pyme-web/doc/gpgme/Protocol-Selection.html | 60 ---
 pyme-web/doc/gpgme/Protocols-and-Engines.html | 82 ----
 pyme-web/doc/gpgme/Public-Key-Algorithms.html | 74 ---
 .../doc/gpgme/Registering-I_002fO-Callbacks.html | 81 ---
 pyme-web/doc/gpgme/Run-Control.html | 53 --
 pyme-web/doc/gpgme/Selecting-Signers.html | 64 ---
 pyme-web/doc/gpgme/Sign.html | 50 --
 pyme-web/doc/gpgme/Signal-Handling.html | 61 ---
 pyme-web/doc/gpgme/Signature-Notation-Data.html | 85 ----
 pyme-web/doc/gpgme/Text-Mode.html | 63 ---
 pyme-web/doc/gpgme/Trust-Item-Management.html | 68 ---
 pyme-web/doc/gpgme/Using-Automake.html | 74 ---
 pyme-web/doc/gpgme/Using-External-Event-Loops.html | 74 ---
 pyme-web/doc/gpgme/Using-Libtool.html | 44 --
 pyme-web/doc/gpgme/Verify.html | 492 -----
 pyme-web/doc/gpgme/Waiting-For-Completion.html | 77 ---
 pyme-web/doc/gpgme/index.html | 169 -----
 pyme-web/doc/pyme/index.html | 164 -----
 pyme-web/doc/pyme/pyme.callbacks.html | 42 --
 .../doc/pyme/pyme.constants.data.encoding.html | 48 --
 pyme-web/doc/pyme/pyme.constants.data.html | 29 --
 pyme-web/doc/pyme/pyme.constants.event.html | 48 --
 pyme-web/doc/pyme/pyme.constants.html | 39 --
 pyme-web/doc/pyme/pyme.constants.import.html | 49 --
 pyme-web/doc/pyme/pyme.constants.keylist.html | 29 --
 pyme-web/doc/pyme/pyme.constants.keylist.mode.html | 49 --
 pyme-web/doc/pyme/pyme.constants.md.html | 58 ---
 pyme-web/doc/pyme/pyme.constants.pk.html | 50 --
 pyme-web/doc/pyme/pyme.constants.protocol.html | 48 --
 pyme-web/doc/pyme/pyme.constants.sig.html | 29 --
 pyme-web/doc/pyme/pyme.constants.sig.mode.html | 47 --
 pyme-web/doc/pyme/pyme.constants.sigsum.html | 55 ---
 pyme-web/doc/pyme/pyme.constants.status.html | 126 ----
 pyme-web/doc/pyme/pyme.constants.validity.html | 50 --
 pyme-web/doc/pyme/pyme.core.html | 277 -----
 pyme-web/doc/pyme/pyme.errors.html | 82 ----
 pyme-web/doc/pyme/pyme.html | 164 -----
 pyme-web/doc/pyme/pyme.util.html | 81 ---
 pyme-web/doc/pyme/pyme.version.html | 37 --
 pyme-web/index.html | 72 ---
 112 files changed, 10551 deletions(-)

commit 684d95feb7e10e538a56fb1b27f1456111bacb60
 Author: Martin Albrecht <martinralbrecht@googlemail.com>

Date: Mon Jan 6 17:44:20 2014 +0100

fixing op_export_keys()

the conversion of gpgme_key_t [] was restricted to gpgme_key_t [] with the name recv, i.e. only the use-cases of encryption were covered.

see: http://sourceforge.net/mailarchive/forum.php?forum_name=pyme-help&max_rows=25&style=nested&viewmonth=201309

pyme/gpgme.i | 6 +++--

1 file changed, 3 insertions(+), 3 deletions(-)

commit 658d23b95110d21eeb50abf4e74701a667521a88

Author: Martin Albrecht <martinralbrecht@googlemail.com>

Date: Mon Jan 6 17:41:33 2014 +0100

deleting CVSROOT

CVSROOT/checkoutlist | 13 -----

CVSROOT/commitinfo | 15 -----

CVSROOT/config | 21 -----

CVSROOT/cvswrappers | 19 -----

CVSROOT/editinfo | 21 -----

CVSROOT/loginfo | 26 -----

CVSROOT/modules | 26 -----

CVSROOT/notify | 12 -----

CVSROOT/rcsinfo | 13 -----

CVSROOT/taginfo | 20 -----

CVSROOT/verifymsg | 21 -----

11 files changed, 207 deletions(-)

commit 576b555499c094c4786d42de9e59aa9826009b89

Author: convert-repo <devnull@localhost>

Date: Mon Jan 6 15:22:44 2014 +0000

update tags

commit 2dcf0c5b702eb5a18c66ff1e42a72eaa7427af1d

Author: belyi <devnull@localhost>

Date: Wed Nov 26 02:38:33 2008 +0000

Move Windows specific fix from helpers.c to helpers.h so that it works for edit callback as well as for the passphrase one.

pyme/helpers.c | 5 -----

pyme/helpers.h | 5 +++++

2 files changed, 5 insertions(+), 5 deletions(-)

commit 42a035f2ef62470fea7a7f8ee33a1297fa90a603
Author: belyi <devnull@localhost>
Date: Mon Nov 24 21:44:30 2008 +0000

Update the way build directives are constructed on MinGW to have a bit more robust. Update PyMe build version to 0.8.1 in version.py

pyme/pyme/version.py | 2 +-
pyme/setup.py | 10 ++++++---
2 files changed, 9 insertions(+), 3 deletions(-)

commit 3aaa20fbcba17066c9ffd580f5209946022793a2
Author: belyi <devnull@localhost>
Date: Mon Nov 24 06:57:11 2008 +0000

Update changelog

pyme/debian/changelog | 5 ++++-
1 file changed, 4 insertions(+), 1 deletion(-)

commit 689ff46b2550547e3883f809a6dc40c22c3e137e
Author: belyi <devnull@localhost>
Date: Mon Nov 24 06:50:41 2008 +0000

Fix hang problem on Windows when password is written to a filehandle.
Fix the way path is constructed on MinGW platform.

pyme/helpers.c | 5 +++++
pyme/setup.py | 4 +++-
2 files changed, 7 insertions(+), 2 deletions(-)

commit 852a60d541d66cb56f40378182b976fd87a02c46
Author: belyi <devnull@localhost>
Date: Sun Nov 23 04:31:31 2008 +0000

Add Bernard's example testCMSgetkey.py and his updates for verifydetails.py

pyme/examples/testCMSgetkey.py | 45 +++
pyme/examples/verifydetails.py | 43 +++++++++++++++++++++++++++++++++++++-----
2 files changed, 77 insertions(+), 11 deletions(-)

commit f080527d9184f3360f0a8ef6136b9a188d8e7d2a
Author: belyi <devnull@localhost>
Date: Thu May 29 18:29:37 2008 +0000

Remove debian packaging for python2.3 since it is removed from both

testing and unstable dists.

Update docs build target to have correct PYTHONPATH set.

```
pyme/Makefile      | 2 +-  
pyme/debian/changelog | 4 +++-  
pyme/debian/control | 4 +++-  
pyme/debian/rules  | 2 --  
4 files changed, 6 insertions(+), 6 deletions(-)
```

commit c25d133fcbadf3c7f6e655586b4a05d6e3cf6f0b

Author: belyi <devnull@localhost>

Date: Thu Apr 3 13:37:12 2008 +0000

Forgot to adjust mainText margin. Doing it now.

```
pyme-web/default.css | 2 +-  
1 file changed, 1 insertion(+), 1 deletion(-)
```

commit 897286a54a32336d060cd03305cdec7905f34f1

Author: belyi <devnull@localhost>

Date: Thu Apr 3 13:00:11 2008 +0000

Fix an error in default.css and make index.html "Standards Compliant".

```
pyme-web/default.css | 2 +-  
pyme-web/index.html | 7 ++++---  
2 files changed, 5 insertions(+), 4 deletions(-)
```

commit 4e049212bd214449cc0ba1ce06e00782783f328a

Author: belyi <devnull@localhost>

Date: Thu Apr 3 12:38:42 2008 +0000

Adjust spacing between links.

```
pyme-web/default.css | 9 ++++++---  
1 file changed, 6 insertions(+), 3 deletions(-)
```

commit cb2bddfbd77483b1deb14f2eab0715a03dd33fcd

Author: belyi <devnull@localhost>

Date: Wed Apr 2 22:50:21 2008 +0000

Make style a big more IE friendly.

```
pyme-web/default.css | 15 ++++++++-----  
1 file changed, 11 insertions(+), 4 deletions(-)
```

commit ad66f0a1bb01b46baac328e9fee439b35a60c232

Author: belyi <devnull@localhost>

Date: Wed Apr 2 11:58:32 2008 +0000

Make GPGME documentation a bit more web friendly on the index.html page.

```
pyme-web/doc/gpgme/Algorithms.html      | 2 +-
pyme-web/doc/gpgme/Concept-Index.html   | 2 +-
pyme-web/doc/gpgme/Contexts.html        | 2 +-
pyme-web/doc/gpgme/Error-Handling.html   | 2 +-
pyme-web/doc/gpgme/Exchanging-Data.html | 2 +-
pyme-web/doc/gpgme/Function-and-Data-Index.html | 2 +-
pyme-web/doc/gpgme/Introduction.html     | 4 +-
pyme-web/doc/gpgme/Library-Copying.html  | 2 +-
pyme-web/doc/gpgme/Preparation.html      | 2 +-
pyme-web/doc/gpgme/Protocols-and-Engines.html | 2 +-
pyme-web/doc/gpgme/index.html           | 229 +-----
11 files changed, 12 insertions(+), 239 deletions(-)
```

commit 4f57c0ccb049d4442e7732e2d1d05dabffd2a21d

Author: belyi <devnull@localhost>

Date: Wed Apr 2 06:12:57 2008 +0000

Add missing core.set_locale() to set default locale for contexts.

```
pyme/debian/changelog | 2 +-
pyme/pyme/core.py     | 4 ++++
2 files changed, 5 insertions(+), 1 deletion(-)
```

commit acf7ead3dea8590cf9fe86b67bb125837ad6ed4f

Author: belyi <devnull@localhost>

Date: Wed Apr 2 05:50:24 2008 +0000

Avoid leaks caused by keys.
Add set/get methods for engine info.

```
pyme/debian/changelog | 10 ++++++++
pyme/pyme/core.py     | 24 ++++++++
2 files changed, 34 insertions(+)
```

commit df4a2fb518adbb6420d95ce74af212c87abff7e7

Author: belyi <devnull@localhost>

Date: Wed Apr 2 04:04:41 2008 +0000

Update index.html to reflect new versions on the web.

```
pyme-web/Makefile      | 3 +-
pyme-web/doc/gpgme/index.html | 4 +---
pyme-web/index.html    | 4 +-
3 files changed, 5 insertions(+), 6 deletions(-)
```

commit bd3ffc9bdf98d6aafde6b689c6c8215fa468612d
Author: belyi <devnull@localhost>
Date: Wed Apr 2 04:01:04 2008 +0000

Update PyMe documentation to match 0.8.0 version of the package.

```
pyme-web/doc/pyme/index.html          | 14 ++++-----  
pyme-web/doc/pyme/pyme.constants.keylist.mode.html | 1 +  
pyme-web/doc/pyme/pyme.constants.protocol.html    | 4 ++-  
pyme-web/doc/pyme/pyme.constants.status.html      | 9 ++++++  
pyme-web/doc/pyme/pyme.core.html                 | 36 ++++++-----  
pyme-web/doc/pyme/pyme.errors.html               | 8 +++-  
pyme-web/doc/pyme/pyme.html                     | 14 ++++-----  
pyme-web/doc/pyme/pyme.util.html                 | 17 ++++++---  
pyme-web/doc/pyme/pyme.version.html              | 14 ++++-----  
9 files changed, 82 insertions(+), 35 deletions(-)
```

commit 6973a69a317608a0d0661590d701f4e3f3a21b32
Author: belyi <devnull@localhost>
Date: Wed Apr 2 02:35:24 2008 +0000

Have a fix for Contents being put onto 'Function and Data Index' page.

```
pyme-web/doc/gpgme/Concept-Index.html          | 2 +-  
pyme-web/doc/gpgme/Function-and-Data-Index.html | 153 +-----  
pyme-web/doc/gpgme/index.html                  | 154 ++++++-----  
3 files changed, 155 insertions(+), 154 deletions(-)
```

commit 086315964cbc2abad1187f306dcb9c72ac3257f3
Author: belyi <devnull@localhost>
Date: Wed Apr 2 01:00:29 2008 +0000

Update GPGME documentation. It's for v1.1.6 now.

```
pyme-web/doc/gpgme/ASCII-Armor.html           | 57 ++  
pyme-web/doc/gpgme/Advanced-Key-Editing.html  | 98 +++  
pyme-web/doc/gpgme/Algorithms.html           | 47 ++  
pyme-web/doc/gpgme/Building-the-Source.html   | 82 +++  
.../doc/gpgme/Callback-Based-Data-Buffers.html | 148 ++++++  
pyme-web/doc/gpgme/Cancellation.html         | 67 ++  
pyme-web/doc/gpgme/Concept-Index.html        | 186 ++++++  
pyme-web/doc/gpgme/Context-Attributes.html    | 52 ++  
pyme-web/doc/gpgme/Contexts.html             | 61 ++  
pyme-web/doc/gpgme/Creating-Contexts.html     | 49 ++  
pyme-web/doc/gpgme/Creating-Data-Buffers.html | 47 ++  
pyme-web/doc/gpgme/Creating-a-Signature.html  | 143 ++++++  
pyme-web/doc/gpgme/Crypto-Engine.html        | 79 +++
```

pyme-web/doc/gpgme/Crypto-Operations.html | 67 ++
 ../doc/gpgme/Cryptographic-Message-Syntax.html | 42 ++
 ../doc/gpgme/Data-Buffer-I_002fO-Operations.html | 104 +++++
 pyme-web/doc/gpgme/Data-Buffer-Meta_002dData.html | 100 +++
 pyme-web/doc/gpgme/Decrypt-and-Verify.html | 79 +++
 pyme-web/doc/gpgme/Decrypt.html | 123 +++++
 pyme-web/doc/gpgme/Deleting-Keys.html | 67 ++
 pyme-web/doc/gpgme/Destroying-Contexts.html | 46 ++
 pyme-web/doc/gpgme/Destroying-Data-Buffers.html | 70 +++
 pyme-web/doc/gpgme/Encrypt.html | 45 ++
 pyme-web/doc/gpgme/Encrypting-a-Plaintext.html | 147 ++++++
 pyme-web/doc/gpgme/Engine-Configuration.html | 65 ++
 pyme-web/doc/gpgme/Engine-Information.html | 119 +++++
 pyme-web/doc/gpgme/Engine-Version-Check.html | 48 ++
 pyme-web/doc/gpgme/Error-Codes.html | 133 +++++
 pyme-web/doc/gpgme/Error-Handling.html | 72 +++
 pyme-web/doc/gpgme/Error-Sources.html | 89 +++
 pyme-web/doc/gpgme/Error-Strings.html | 80 +++
 pyme-web/doc/gpgme/Error-Values.html | 159 ++++++
 pyme-web/doc/gpgme/Exchanging-Data.html | 58 ++
 pyme-web/doc/gpgme/Exporting-Keys.html | 101 +++
 pyme-web/doc/gpgme/Features.html | 59 ++
 pyme-web/doc/gpgme/File-Based-Data-Buffers.html | 74 +++
 pyme-web/doc/gpgme/Function-and-Data-Index.html | 380 ++++++
 pyme-web/doc/gpgme/Generating-Keys.html | 144 ++++++
 pyme-web/doc/gpgme/Getting-Started.html | 55 ++
 pyme-web/doc/gpgme/Hash-Algorithms.html | 59 ++
 pyme-web/doc/gpgme/Header.html | 53 ++
 ../doc/gpgme/I_002fO-Callback-Example-GDK.html | 85 +++
 ../gpgme/I_002fO-Callback-Example-GTK_002b.html | 86 +++
 ../doc/gpgme/I_002fO-Callback-Example-Qt.html | 99 +++
 pyme-web/doc/gpgme/I_002fO-Callback-Example.html | 259 ++++++
 pyme-web/doc/gpgme/I_002fO-Callback-Interface.html | 142 ++++++
 pyme-web/doc/gpgme/Importing-Keys.html | 171 ++++++
 pyme-web/doc/gpgme/Included-Certificates.html | 70 +++
 pyme-web/doc/gpgme/Information-About-Keys.html | 207 ++++++
 ../doc/gpgme/Information-About-Trust-Items.html | 75 +++
 pyme-web/doc/gpgme/Introduction.html | 53 ++
 pyme-web/doc/gpgme/Key-Listing-Mode.html | 99 +++
 pyme-web/doc/gpgme/Key-Management.html | 260 ++++++
 pyme-web/doc/gpgme/Key-Signatures.html | 130 +++++
 ../doc/gpgme/Largefile-Support-_0028LFS_0029.html | 110 +++++
 pyme-web/doc/gpgme/Library-Copying.html | 542 ++++++
 pyme-web/doc/gpgme/Library-Version-Check.html | 97 +++
 pyme-web/doc/gpgme/Listing-Keys.html | 204 ++++++
 pyme-web/doc/gpgme/Listing-Trust-Items.html | 88 +++
 pyme-web/doc/gpgme/Locale.html | 69 +++
 pyme-web/doc/gpgme/Manipulating-Data-Buffers.html | 45 ++

| | |
|--|------------|
| pyme-web/doc/gpgme/Manipulating-Keys.html | 63 ++ |
| pyme-web/doc/gpgme/Manipulating-Trust-Items.html | 62 ++ |
| pyme-web/doc/gpgme/Memory-Based-Data-Buffers.html | 107 ++++ |
| pyme-web/doc/gpgme/Multi-Threading.html | 93 +++ |
| pyme-web/doc/gpgme/OpenPGP.html | 44 ++ |
| pyme-web/doc/gpgme/Overview.html | 57 ++ |
| pyme-web/doc/gpgme/Passphrase-Callback.html | 101 +++ |
| pyme-web/doc/gpgme/Preparation.html | 54 ++ |
| pyme-web/doc/gpgme/Progress-Meter-Callback.html | 80 +++ |
| pyme-web/doc/gpgme/Protocol-Selection.html | 60 ++ |
| pyme-web/doc/gpgme/Protocols-and-Engines.html | 82 +++ |
| pyme-web/doc/gpgme/Public-Key-Algorithms.html | 74 +++ |
| ../doc/gpgme/Registering-I_002fO-Callbacks.html | 81 +++ |
| pyme-web/doc/gpgme/Run-Control.html | 53 ++ |
| pyme-web/doc/gpgme/Selecting-Signers.html | 64 ++ |
| pyme-web/doc/gpgme/Sign.html | 50 ++ |
| pyme-web/doc/gpgme/Signal-Handling.html | 61 ++ |
| pyme-web/doc/gpgme/Signature-Notation-Data.html | 85 +++ |
| pyme-web/doc/gpgme/Text-Mode.html | 63 ++ |
| pyme-web/doc/gpgme/Trust-Item-Management.html | 68 ++ |
| pyme-web/doc/gpgme/Using-Automake.html | 74 +++ |
| pyme-web/doc/gpgme/Using-External-Event-Loops.html | 74 +++ |
| pyme-web/doc/gpgme/Using-Libtool.html | 44 ++ |
| pyme-web/doc/gpgme/Verify.html | 492 ++++++ |
| pyme-web/doc/gpgme/Waiting-For-Completion.html | 77 +++ |
| pyme-web/doc/gpgme/gpgme.html | 251 ----- |
| pyme-web/doc/gpgme/gpgme_1.html | 76 --- |
| pyme-web/doc/gpgme/gpgme_10.html | 61 -- |
| pyme-web/doc/gpgme/gpgme_11.html | 130 ---- |
| pyme-web/doc/gpgme/gpgme_12.html | 82 --- |
| pyme-web/doc/gpgme/gpgme_13.html | 130 ---- |
| pyme-web/doc/gpgme/gpgme_14.html | 108 ---- |
| pyme-web/doc/gpgme/gpgme_15.html | 69 --- |
| pyme-web/doc/gpgme/gpgme_16.html | 169 ----- |
| pyme-web/doc/gpgme/gpgme_17.html | 63 -- |
| pyme-web/doc/gpgme/gpgme_18.html | 63 -- |
| pyme-web/doc/gpgme/gpgme_19.html | 66 -- |
| pyme-web/doc/gpgme/gpgme_2.html | 79 --- |
| pyme-web/doc/gpgme/gpgme_20.html | 120 ---- |
| pyme-web/doc/gpgme/gpgme_21.html | 102 --- |
| pyme-web/doc/gpgme/gpgme_22.html | 108 ---- |
| pyme-web/doc/gpgme/gpgme_23.html | 237 ----- |
| pyme-web/doc/gpgme/gpgme_24.html | 154 ----- |
| pyme-web/doc/gpgme/gpgme_25.html | 248 ----- |
| pyme-web/doc/gpgme/gpgme_26.html | 107 ---- |
| pyme-web/doc/gpgme/gpgme_27.html | 80 --- |
| pyme-web/doc/gpgme/gpgme_28.html | 67 -- |
| pyme-web/doc/gpgme/gpgme_29.html | 164 ----- |

| | |
|----------------------------------|-----------|
| pyme-web/doc/gpgme/gpgme_3.html | 86 --- |
| pyme-web/doc/gpgme/gpgme_30.html | 106 ---- |
| pyme-web/doc/gpgme/gpgme_31.html | 232 ----- |
| pyme-web/doc/gpgme/gpgme_32.html | 85 --- |
| pyme-web/doc/gpgme/gpgme_33.html | 223 ----- |
| pyme-web/doc/gpgme/gpgme_34.html | 83 --- |
| pyme-web/doc/gpgme/gpgme_35.html | 70 --- |
| pyme-web/doc/gpgme/gpgme_36.html | 63 -- |
| pyme-web/doc/gpgme/gpgme_37.html | 66 -- |
| pyme-web/doc/gpgme/gpgme_38.html | 86 --- |
| pyme-web/doc/gpgme/gpgme_39.html | 79 --- |
| pyme-web/doc/gpgme/gpgme_4.html | 83 --- |
| pyme-web/doc/gpgme/gpgme_40.html | 89 --- |
| pyme-web/doc/gpgme/gpgme_41.html | 99 --- |
| pyme-web/doc/gpgme/gpgme_42.html | 144 ---- |
| pyme-web/doc/gpgme/gpgme_43.html | 152 ---- |
| pyme-web/doc/gpgme/gpgme_44.html | 112 ---- |
| pyme-web/doc/gpgme/gpgme_45.html | 101 --- |
| pyme-web/doc/gpgme/gpgme_46.html | 459 ----- |
| pyme-web/doc/gpgme/gpgme_47.html | 292 ----- |
| pyme-web/doc/gpgme/gpgme_48.html | 363 ----- |
| pyme-web/doc/gpgme/gpgme_49.html | 209 ----- |
| pyme-web/doc/gpgme/gpgme_5.html | 74 --- |
| pyme-web/doc/gpgme/gpgme_50.html | 88 --- |
| pyme-web/doc/gpgme/gpgme_51.html | 208 ----- |
| pyme-web/doc/gpgme/gpgme_52.html | 154 ---- |
| pyme-web/doc/gpgme/gpgme_53.html | 291 ----- |
| pyme-web/doc/gpgme/gpgme_54.html | 91 --- |
| pyme-web/doc/gpgme/gpgme_55.html | 107 ---- |
| pyme-web/doc/gpgme/gpgme_56.html | 140 ---- |
| pyme-web/doc/gpgme/gpgme_57.html | 106 ---- |
| pyme-web/doc/gpgme/gpgme_58.html | 89 --- |
| pyme-web/doc/gpgme/gpgme_59.html | 97 --- |
| pyme-web/doc/gpgme/gpgme_6.html | 77 --- |
| pyme-web/doc/gpgme/gpgme_60.html | 142 ---- |
| pyme-web/doc/gpgme/gpgme_61.html | 626 ----- |
| pyme-web/doc/gpgme/gpgme_62.html | 107 ---- |
| pyme-web/doc/gpgme/gpgme_63.html | 67 -- |
| pyme-web/doc/gpgme/gpgme_64.html | 95 --- |
| pyme-web/doc/gpgme/gpgme_65.html | 233 ----- |
| pyme-web/doc/gpgme/gpgme_66.html | 65 -- |
| pyme-web/doc/gpgme/gpgme_67.html | 220 ----- |
| pyme-web/doc/gpgme/gpgme_68.html | 75 --- |
| pyme-web/doc/gpgme/gpgme_69.html | 119 ---- |
| pyme-web/doc/gpgme/gpgme_7.html | 123 ---- |
| pyme-web/doc/gpgme/gpgme_70.html | 107 ---- |
| pyme-web/doc/gpgme/gpgme_71.html | 218 ----- |
| pyme-web/doc/gpgme/gpgme_72.html | 134 ---- |

```

pyme-web/doc/gpgme/gpgme_73.html      | 299 -----
pyme-web/doc/gpgme/gpgme_74.html      | 103 ----
pyme-web/doc/gpgme/gpgme_75.html      | 104 ----
pyme-web/doc/gpgme/gpgme_76.html      | 118 ----
pyme-web/doc/gpgme/gpgme_77.html      | 95 ---
pyme-web/doc/gpgme/gpgme_78.html      | 71 ---
pyme-web/doc/gpgme/gpgme_79.html      | 686 -----
pyme-web/doc/gpgme/gpgme_8.html       | 155 ----
pyme-web/doc/gpgme/gpgme_80.html       | 120 ----
pyme-web/doc/gpgme/gpgme_81.html       | 278 -----
pyme-web/doc/gpgme/gpgme_82.html       | 272 -----
pyme-web/doc/gpgme/gpgme_83.html       | 180 -----
pyme-web/doc/gpgme/gpgme_84.html       | 99 ---
pyme-web/doc/gpgme/gpgme_9.html        | 104 ----
pyme-web/doc/gpgme/gpgme_abt.html      | 206 -----
pyme-web/doc/gpgme/gpgme_fot.html      | 53 --
pyme-web/doc/gpgme/gpgme_ovr.html      | 68 --
pyme-web/doc/gpgme/gpgme_toc.html      | 247 -----
pyme-web/doc/gpgme/index.html          | 497 ++++++-----
176 files changed, 9054 insertions(+), 13378 deletions(-)

```

commit 163c1053dc761682f5a4231da163bdd0ff7162d7

Author: belyi <devnull@localhost>

Date: Tue Apr 1 21:14:29 2008 +0000

Update Home page to be a bit more visitor friendly.

```

pyme-web/Makefile | 2 +-
pyme-web/default.css | 27 ++++++
pyme-web/index.html | 70 ++++++-----
3 files changed, 75 insertions(+), 24 deletions(-)

```

commit 05db2d17d8fda0ab8c948bbdc0643dfc1466830d

Author: belyi <devnull@localhost>

Date: Sun Mar 30 21:27:38 2008 +0000

Add a rule to build binary distribution for Windows.

```

pyme/Makefile | 16 ++++++
1 file changed, 14 insertions(+), 2 deletions(-)

```

commit 57acb1089f5f8c24323ee62fc0a7f492a496b9c0

Author: belyi <devnull@localhost>

Date: Sat Mar 29 22:50:11 2008 +0000

Switch to using central location for python files (pycentral)

Update docs rule to fix location of the python source files.

```
pyme/Makefile      | 5 +++-
pyme/debian/changelog | 4 +-
pyme/debian/control | 74 +++++-----
pyme/debian/dirs    | 2 --
pyme/debian/docs    | 1 +
pyme/debian/postinst.ex | 48 -----
pyme/debian/postrm.ex | 38 -----
pyme/debian/preinst.ex | 44 -----
pyme/debian/prerm.ex  | 39 -----
pyme/debian/rules    | 50 +++++-----
pyme/debian/setup.cfg-2.2 | 8 ----
pyme/debian/setup.cfg-2.3 | 8 ----
pyme/debian/setup.cfg-2.4 | 8 ----
pyme/gpgme-h-clean.py | 2 +-
pyme/pyme/core.py    | 2 +-
pyme/pyme/util.py    | 2 +-
16 files changed, 28 insertions(+), 307 deletions(-)
```

commit 2b56fd10517cfbcffaa4ba98d8ea42f40f0d38a9

Author: belyi <devnull@localhost>

Date: Sun Mar 23 02:01:12 2008 +0000

Turn SWIG's autodoc feature on. Ignore 'next' in the types which are lists now.

Use new style for class declarations. Specify None as a default value for core.check_version() method. Update version.py for 0.8.0 version.

```
pyme/examples/pygpa.py | 2 +-
pyme/gpgme.i           | 5 +++++
pyme/pyme/core.py      | 2 +-
pyme/pyme/util.py      | 5 +++-
pyme/pyme/version.py   | 6 +++-
5 files changed, 13 insertions(+), 7 deletions(-)
```

commit df5e25d7ee4dc0aa0d429f9d009322dd8ac33bb8

Author: belyi <devnull@localhost>

Date: Thu Mar 20 19:07:00 2008 +0000

Improve matching for DEPRECATED typedefs

```
pyme/gpgme-h-clean.py | 4 +++-
1 file changed, 2 insertions(+), 2 deletions(-)
```

commit 78d8fc732848ac267ec65e9069265cd500587cdf

Author: belyi <devnull@localhost>

Date: Wed Mar 19 19:28:40 2008 +0000

Update API to use list when types containing 'next' field are return.

Update examples accordingly

Add verifydetails.py example
Start adding bullets for 0.8.0 version.

```
pyme/Makefile          | 2 +-  
pyme/debian/changelog  | 14 +++++++-  
pyme/examples/PyGtkGpgKeys.py | 53 ++++++++-----  
pyme/examples/delkey.py   | 7 +--+  
pyme/examples/encrypt-to-all.py | 7 +--+  
pyme/examples/exportimport.py | 7 +--+  
pyme/examples/pygpa.py    | 70 ++++++++-----  
pyme/examples/signverify.py | 11 +----  
pyme/examples/verifydetails.py | 79 ++++++++-----  
pyme/gpgme.i            | 19 +++++++-  
10 files changed, 180 insertions(+), 89 deletions(-)
```

commit 342d85b07475e7360bcd62804bf5facda039494f

Author: belyi <devnull@localhost>

Date: Mon Mar 10 01:14:16 2008 +0000

Change references to source files so that they point to the WebCVS browse location.

```
pyme-web/doc/pyme/index.html          | 2 +-  
pyme-web/doc/pyme/pyme.callbacks.html | 2 +-  
pyme-web/doc/pyme/pyme.constants.data.encoding.html | 2 +-  
pyme-web/doc/pyme/pyme.constants.data.html | 2 +-  
pyme-web/doc/pyme/pyme.constants.event.html | 2 +-  
pyme-web/doc/pyme/pyme.constants.html | 2 +-  
pyme-web/doc/pyme/pyme.constants.import.html | 2 +-  
pyme-web/doc/pyme/pyme.constants.keylist.html | 2 +-  
pyme-web/doc/pyme/pyme.constants.keylist.mode.html | 2 +-  
pyme-web/doc/pyme/pyme.constants.md.html | 2 +-  
pyme-web/doc/pyme/pyme.constants.pk.html | 2 +-  
pyme-web/doc/pyme/pyme.constants.protocol.html | 2 +-  
pyme-web/doc/pyme/pyme.constants.sig.html | 2 +-  
pyme-web/doc/pyme/pyme.constants.sig.mode.html | 2 +-  
pyme-web/doc/pyme/pyme.constants.sigsum.html | 2 +-  
pyme-web/doc/pyme/pyme.constants.status.html | 2 +-  
pyme-web/doc/pyme/pyme.constants.validity.html | 2 +-  
pyme-web/doc/pyme/pyme.core.html | 2 +-  
pyme-web/doc/pyme/pyme.errors.html | 2 +-  
pyme-web/doc/pyme/pyme.html | 2 +-  
pyme-web/doc/pyme/pyme.util.html | 2 +-  
pyme-web/doc/pyme/pyme.version.html | 2 +-  
22 files changed, 22 insertions(+), 22 deletions(-)
```

commit 4139dd1d066c1a6c892d84fe45dc3e6c4aa1b803

Author: belyi <devnull@localhost>

Date: Sat Mar 8 18:21:08 2008 +0000

Add core.check_version(None) to all examples since this function is used by Gpgme to do internal initialization. Update debian/rules to use dh_pysupport instead of deprecated dh_python.

```
pyme/debian/rules          | 8 +++-----
pyme/examples/PyGtkGpgKeys.py | 7 +++++++
pyme/examples/delkey.py    | 2 ++
pyme/examples/encrypt-to-all.py | 3 +++
pyme/examples/exportimport.py | 2 ++
pyme/examples/genkey.py    | 1 +
pyme/examples/inter-edit.py | 3 +++
pyme/examples/pygpa.py     | 5 ++++++
pyme/examples/sign.py     | 2 ++
pyme/examples/signverify.py | 2 ++
pyme/examples/simple.py    | 2 ++
pyme/examples/t-edit.py   | 3 +++
12 files changed, 34 insertions(+), 6 deletions(-)
```

commit ae76c6176457dd38e0634cbc17d794294a3a81d2

Author: belyi <devnull@localhost>

Date: Wed Apr 12 22:20:38 2006 +0000

Change name of internal package name from 'gpgme' to 'pygpgme' to avoid conflict with gpgme.dll on Windows.

Fix build with SWIG 1.3.28.

Change version to 0.7.1 in a preparation for new release.

```
pyme/Makefile             | 3 +-
pyme/debian/changelog     | 12 +++++
pyme/gpgme.i              | 19 +++---
pyme/pyme/callbacks.py   | 1 -
pyme/pyme/core.py        | 153 ++++++-----
pyme/pyme/errors.py      | 12 +++-
pyme/pyme/util.py        | 10 +++-
pyme/pyme/version.py     | 2 +-
pyme/setup.py            | 4 +-
9 files changed, 116 insertions(+), 100 deletions(-)
```

commit d644383a76e9f83bc2d426628319e3c4a989dc2d

Author: belyi <devnull@localhost>

Date: Sat Dec 17 01:34:53 2005 +0000

Put all constants into pyme.constants package to avoid stepping on python reserved words.

Add build rules for Mingw32 and Cygwin on Windows. Rules for Mingw under Debian are still to come.

Fixed a small bug in pygpa.py example.

```
pyme/Makefile          | 11 ++++++----  
pyme/examples/pygpa.py | 3 ++-  
pyme/pyme/__init__.py  | 2 +-  
pyme/pyme/constants/__init__.py | 3 +++  
pyme/setup.py          | 42 ++++++-----  
5 files changed, 51 insertions(+), 10 deletions(-)
```

commit 89eb370fcaa8adc9d219eadbaa579dde7bf06329

Author: belyi <devnull@localhost>

Date: Mon Aug 1 03:08:32 2005 +0000

Imported changes provided by Joost van Baal:

Use dh_python in debian/rules and change the Section pyme belongs to from 'libs' to 'python'.

```
pyme/debian/control | 6 +++---  
pyme/debian/rules  | 2 ++  
2 files changed, 5 insertions(+), 3 deletions(-)
```

commit ad76d10c2a77b45b7459c62131279e946b860891

Author: belyi <devnull@localhost>

Date: Fri Jun 10 03:01:22 2005 +0000

Update 'docs' rule in Makefile to build packages first to ensure that documentation is build for the current version of pyme and not for the installed one.

Added 'callbacks' into the list of visible pyme modules (__all__ var.)

Slightly updated INSTALL file.

```
pyme/INSTALL          | 11 ++++++----  
pyme/Makefile         | 4 ++-  
pyme/pyme/__init__.py | 2 +-  
3 files changed, 11 insertions(+), 6 deletions(-)
```

commit 2fe1a81e00721698bfa6850b3db2eb85e43d1724

Author: belyi <devnull@localhost>

Date: Wed Jun 8 16:16:18 2005 +0000

Update pyme documentation to remove dead links to pyme.gpgme.html and pyme._gpgme.html

Added reference to the installed GPGME and PyMe documentation to the head web page.

Updated Makefile to install all *.html files and to clean *~ files in all subdirectories

```

pyme-web/Makefile          | 10 ++++++-----
pyme-web/doc/pyme/index.html      | 8 +++-----
pyme-web/doc/pyme/pyme.callbacks.html | 8 -----
pyme-web/doc/pyme/pyme.core.html   | 1 -
pyme-web/doc/pyme/pyme.errors.html | 8 -----
pyme-web/doc/pyme/pyme.html        | 8 +++-----
pyme-web/doc/pyme/pyme.util.html   | 8 -----
pyme-web/index.html              | 9 ++++++---
8 files changed, 19 insertions(+), 41 deletions(-)

```

commit 6aa34cce4ea0099e50b4936dfce59778157b8ca8

Author: belyi <devnull@localhost>

Date: Wed Jun 8 15:18:20 2005 +0000

Added pyme and gpgme documentation.

```

pyme-web/doc/gpgme/gpgme.html      | 251 ++++++++
pyme-web/doc/gpgme/gpgme_1.html    | 76 +++
pyme-web/doc/gpgme/gpgme_10.html   | 61 ++
pyme-web/doc/gpgme/gpgme_11.html   | 130 ++++
pyme-web/doc/gpgme/gpgme_12.html   | 82 +++
pyme-web/doc/gpgme/gpgme_13.html   | 130 ++++
pyme-web/doc/gpgme/gpgme_14.html   | 108 ++++
pyme-web/doc/gpgme/gpgme_15.html   | 69 +++
pyme-web/doc/gpgme/gpgme_16.html   | 169 ++++++
pyme-web/doc/gpgme/gpgme_17.html   | 63 ++
pyme-web/doc/gpgme/gpgme_18.html   | 63 ++
pyme-web/doc/gpgme/gpgme_19.html   | 66 ++
pyme-web/doc/gpgme/gpgme_2.html    | 79 +++
pyme-web/doc/gpgme/gpgme_20.html   | 120 ++++
pyme-web/doc/gpgme/gpgme_21.html   | 102 +++
pyme-web/doc/gpgme/gpgme_22.html   | 108 ++++
pyme-web/doc/gpgme/gpgme_23.html   | 237 ++++++++
pyme-web/doc/gpgme/gpgme_24.html   | 154 ++++++
pyme-web/doc/gpgme/gpgme_25.html   | 248 ++++++++
pyme-web/doc/gpgme/gpgme_26.html   | 107 ++++
pyme-web/doc/gpgme/gpgme_27.html   | 80 +++
pyme-web/doc/gpgme/gpgme_28.html   | 67 ++
pyme-web/doc/gpgme/gpgme_29.html   | 164 ++++++
pyme-web/doc/gpgme/gpgme_3.html    | 86 +++
pyme-web/doc/gpgme/gpgme_30.html   | 106 ++++
pyme-web/doc/gpgme/gpgme_31.html   | 232 ++++++++
pyme-web/doc/gpgme/gpgme_32.html   | 85 +++
pyme-web/doc/gpgme/gpgme_33.html   | 223 ++++++++
pyme-web/doc/gpgme/gpgme_34.html   | 83 +++
pyme-web/doc/gpgme/gpgme_35.html   | 70 +++
pyme-web/doc/gpgme/gpgme_36.html   | 63 ++

```

| | |
|----------------------------------|------------|
| pyme-web/doc/gpgme/gpgme_37.html | 66 ++ |
| pyme-web/doc/gpgme/gpgme_38.html | 86 +++ |
| pyme-web/doc/gpgme/gpgme_39.html | 79 +++ |
| pyme-web/doc/gpgme/gpgme_4.html | 83 +++ |
| pyme-web/doc/gpgme/gpgme_40.html | 89 +++ |
| pyme-web/doc/gpgme/gpgme_41.html | 99 +++ |
| pyme-web/doc/gpgme/gpgme_42.html | 144 +++++ |
| pyme-web/doc/gpgme/gpgme_43.html | 152 +++++ |
| pyme-web/doc/gpgme/gpgme_44.html | 112 +++++ |
| pyme-web/doc/gpgme/gpgme_45.html | 101 +++ |
| pyme-web/doc/gpgme/gpgme_46.html | 459 ++++++ |
| pyme-web/doc/gpgme/gpgme_47.html | 292 +++++ |
| pyme-web/doc/gpgme/gpgme_48.html | 363 +++++ |
| pyme-web/doc/gpgme/gpgme_49.html | 209 +++++ |
| pyme-web/doc/gpgme/gpgme_5.html | 74 +++ |
| pyme-web/doc/gpgme/gpgme_50.html | 88 +++ |
| pyme-web/doc/gpgme/gpgme_51.html | 208 +++++ |
| pyme-web/doc/gpgme/gpgme_52.html | 154 +++++ |
| pyme-web/doc/gpgme/gpgme_53.html | 291 +++++ |
| pyme-web/doc/gpgme/gpgme_54.html | 91 +++ |
| pyme-web/doc/gpgme/gpgme_55.html | 107 +++++ |
| pyme-web/doc/gpgme/gpgme_56.html | 140 +++++ |
| pyme-web/doc/gpgme/gpgme_57.html | 106 +++++ |
| pyme-web/doc/gpgme/gpgme_58.html | 89 +++ |
| pyme-web/doc/gpgme/gpgme_59.html | 97 +++ |
| pyme-web/doc/gpgme/gpgme_6.html | 77 +++ |
| pyme-web/doc/gpgme/gpgme_60.html | 142 +++++ |
| pyme-web/doc/gpgme/gpgme_61.html | 626 ++++++ |
| pyme-web/doc/gpgme/gpgme_62.html | 107 +++++ |
| pyme-web/doc/gpgme/gpgme_63.html | 67 ++ |
| pyme-web/doc/gpgme/gpgme_64.html | 95 +++ |
| pyme-web/doc/gpgme/gpgme_65.html | 233 +++++ |
| pyme-web/doc/gpgme/gpgme_66.html | 65 ++ |
| pyme-web/doc/gpgme/gpgme_67.html | 220 +++++ |
| pyme-web/doc/gpgme/gpgme_68.html | 75 +++ |
| pyme-web/doc/gpgme/gpgme_69.html | 119 +++++ |
| pyme-web/doc/gpgme/gpgme_7.html | 123 +++++ |
| pyme-web/doc/gpgme/gpgme_70.html | 107 +++++ |
| pyme-web/doc/gpgme/gpgme_71.html | 218 +++++ |
| pyme-web/doc/gpgme/gpgme_72.html | 134 +++++ |
| pyme-web/doc/gpgme/gpgme_73.html | 299 +++++ |
| pyme-web/doc/gpgme/gpgme_74.html | 103 +++++ |
| pyme-web/doc/gpgme/gpgme_75.html | 104 +++++ |
| pyme-web/doc/gpgme/gpgme_76.html | 118 +++++ |
| pyme-web/doc/gpgme/gpgme_77.html | 95 +++ |
| pyme-web/doc/gpgme/gpgme_78.html | 71 +++ |
| pyme-web/doc/gpgme/gpgme_79.html | 686 ++++++ |
| pyme-web/doc/gpgme/gpgme_8.html | 155 +++++ |

```

pyme-web/doc/gpgme/gpgme_80.html      | 120 ++++
pyme-web/doc/gpgme/gpgme_81.html      | 278 ++++++++
pyme-web/doc/gpgme/gpgme_82.html      | 272 ++++++++
pyme-web/doc/gpgme/gpgme_83.html      | 180 ++++++
pyme-web/doc/gpgme/gpgme_84.html      | 99 +++
pyme-web/doc/gpgme/gpgme_9.html       | 104 ++++
pyme-web/doc/gpgme/gpgme_abt.html     | 206 ++++++++
pyme-web/doc/gpgme/gpgme_fot.html     | 53 ++
pyme-web/doc/gpgme/gpgme_ovr.html     | 68 ++
pyme-web/doc/gpgme/gpgme_toc.html     | 247 ++++++++
pyme-web/doc/gpgme/index.html         | 251 ++++++++
pyme-web/doc/pyme/index.html           | 166 ++++++
pyme-web/doc/pyme/pyme.callbacks.html  | 50 ++
.../doc/pyme/pyme.constants.data.encoding.html | 48 ++
pyme-web/doc/pyme/pyme.constants.data.html | 29 +
pyme-web/doc/pyme/pyme.constants.event.html | 48 ++
pyme-web/doc/pyme/pyme.constants.html | 39 ++
pyme-web/doc/pyme/pyme.constants.import.html | 49 ++
pyme-web/doc/pyme/pyme.constants.keylist.html | 29 +
pyme-web/doc/pyme/pyme.constants.keylist.mode.html | 48 ++
pyme-web/doc/pyme/pyme.constants.md.html | 58 ++
pyme-web/doc/pyme/pyme.constants.pk.html | 50 ++
pyme-web/doc/pyme/pyme.constants.protocol.html | 46 ++
pyme-web/doc/pyme/pyme.constants.sig.html | 29 +
pyme-web/doc/pyme/pyme.constants.sig.mode.html | 47 ++
pyme-web/doc/pyme/pyme.constants.sigsum.html | 55 ++
pyme-web/doc/pyme/pyme.constants.status.html | 117 ++++
pyme-web/doc/pyme/pyme.constants.validity.html | 50 ++
pyme-web/doc/pyme/pyme.core.html       | 254 ++++++++
pyme-web/doc/pyme/pyme.errors.html     | 90 +++
pyme-web/doc/pyme/pyme.html            | 166 ++++++
pyme-web/doc/pyme/pyme.util.html       | 78 +++
pyme-web/doc/pyme/pyme.version.html    | 37 ++
pyme-web/index.html                   | 6 +-
113 files changed, 14966 insertions(+), 1 deletion(-)

```

commit 2d6fe54479f042644f7b0f3d2fe35877d2056144

Author: belyi <devnull@localhost>

Date: Thu May 19 02:06:09 2005 +0000

Added INSTALL file.

```
pyme/INSTALL | 10 ++++++++
```

1 file changed, 10 insertions(+)

commit d6892fff0c3cedf41dba4c25ab8608e7f2bc039c

Author: belyi <devnull@localhost>

Date: Tue May 17 16:49:28 2005 +0000

Update copyright note on simple.py

pyme/examples/simple.py | 4 +---
1 file changed, 2 insertions(+), 2 deletions(-)

commit c2cd9cdf5995843aad7b200b929db2969effc9d2
Author: belyi <devnull@localhost>
Date: Tue May 17 15:03:58 2005 +0000

Update simple.py to catch errors.

pyme/examples/simple.py | 17 ++++++++-----
1 file changed, 11 insertions(+), 6 deletions(-)

commit eaedae7c6a0ea993caab067efe781a59b6769c44
Author: belyi <devnull@localhost>
Date: Tue May 17 01:18:23 2005 +0000

Added 'PYTHON = python' into Makefile for bug #1199122

pyme/Makefile | 1 +
pyme/examples/signverify.py | 1 +
2 files changed, 2 insertions(+)

commit 56fd244bb2636a4d58629899ea3cde1d96428198
Author: belyi <devnull@localhost>
Date: Wed Apr 27 21:37:06 2005 +0000

Added pygpa example.

pyme/debian/changelog | 3 +-
pyme/examples/pygpa.glade | 5546 +++
pyme/examples/pygpa.py | 1459 ++++++++
3 files changed, 7007 insertions(+), 1 deletion(-)

commit 2d9a2a91a59ac3fee5410c953b7e0859e9e7cd35
Author: belyi <devnull@localhost>
Date: Thu Apr 21 15:17:51 2005 +0000

Change version to 0.7.0 due to the change in license.

pyme/debian/changelog | 2 +-
pyme/pyme/version.py | 2 +-
2 files changed, 2 insertions(+), 2 deletions(-)

commit 94e34e38d742f145385bd235825b6ba1e30d8339
Author: belyi <devnull@localhost>

Date: Thu Apr 21 03:53:12 2005 +0000

Changed license on PyMe from GPL to LGPL.

PyMe examples keep GPL license.

```
pyme/COPYING.LESSER      | 510 ++++++
pyme/Makefile            | 20 +-
pyme/debian/changelog    | 4 +-
pyme/debian/copyright    | 22 +-
pyme/gpgme-h-clean.py   | 16 ++
pyme/gpgme.i            | 20 +-
pyme/helpers.c           | 20 +-
pyme/helpers.h          | 20 +-
pyme/pyme/__init__.py    | 20 +-
pyme/pyme/callbacks.py   | 20 +-
pyme/pyme/constants/data/encoding.py | 20 +-
pyme/pyme/constants/event.py | 20 +-
pyme/pyme/constants/import.py | 20 +-
pyme/pyme/constants/keylist/mode.py | 20 +-
pyme/pyme/constants/md.py | 20 +-
pyme/pyme/constants/pk.py | 20 +-
pyme/pyme/constants/protocol.py | 20 +-
pyme/pyme/constants/sig/mode.py | 20 +-
pyme/pyme/constants/sigsum.py | 20 +-
pyme/pyme/constants/status.py | 20 +-
pyme/pyme/constants/validity.py | 20 +-
pyme/pyme/core.py        | 20 +-
pyme/pyme/errors.py      | 20 +-
pyme/pyme/util.py        | 20 +-
pyme/pyme/version.py     | 22 +-
pyme/setup.py           | 20 +-
26 files changed, 761 insertions(+), 233 deletions(-)
```

commit 0d8aa0f6335cb1506a37085095ed45173b099a02

Author: belyi <devnull@localhost>

Date: Tue Apr 19 01:46:06 2005 +0000

Added `__hash__` and `__eq__` methods to `GpgmeWrapper` to allow both `Context()` and `Data()` to be used as a dictionary key.

Changed `core.wait()` function to always return a tuple. On timeout now it returns `(0, None)` instead of just `None`. Plus, return context is now a `Context()` object instead of a wrapper return by underlying `gpgme`.

```
pyme/helpers.c | 1 -
pyme/pyme/core.py | 25 ++++++-----
pyme/pyme/util.py | 9 ++++++
3 files changed, 24 insertions(+), 11 deletions(-)
```

commit 63ff6d10637be1dcbcd78c939ac1ef1ac30b1024

Author: belyi <devnull@localhost>

Date: Wed Apr 6 04:58:40 2005 +0000

Made hook parameter optional in passphrase_cb and progress_cb.
Allowed None for callbacks to unset ones set previously.
Removed cleanup of exception in callbacks - now just retrieve the error code.
Added prev_bad parameter in passphrase_cb since it can be used in change password protocols.
Updated examples to follow new sets of arguments in callbacks
Updated op_edit to check if passed key is None (otherwise gpgme dumps core)
God rid of annoying warning "function declaration isn't a prototype" in helpers.c and helpers.h by changing from () to (void) list of arguments.

```
pyme/debian/changelog      | 10 ++++++---
pyme/examples/signverify.py | 2 +-
pyme/examples/t-edit.py   | 2 +-
pyme/gpgme.i              | 18 ++++++++-----
pyme/helpers.c            | 60 ++++++++-----
pyme/helpers.h            | 4 +--
pyme/pyme/callbacks.py    | 6 +++--
pyme/pyme/core.py         | 47 ++++++++-----
pyme/pyme/errors.py       | 2 +-
9 files changed, 96 insertions(+), 55 deletions(-)
```

commit 8f0ab8138c7aa190936376ccbbf33bb09c64d6f1

Author: belyi <devnull@localhost>

Date: Thu Mar 31 23:50:59 2005 +0000

Added exception handling in passphrase_cb and edit_cb. If GPGMEEError exception is thrown in those callbacks it will be converted into its core representation and return as an error code to the caller.
On all other exceptions error code will be GPG_ERR_GENERAL.

```
pyme/Makefile             | 1 +
pyme/debian/changelog     | 8 ++++++++
pyme/gpgme.i              | 20 ++++++++-----
pyme/helpers.c            | 51 ++++++++-----
pyme/helpers.h            | 3 +++
5 files changed, 71 insertions(+), 12 deletions(-)
```

commit 9903d1fb11231e7e3d920e58d1ecb674c5988b07

Author: belyi <devnull@localhost>

Date: Thu Mar 31 05:12:15 2005 +0000

Remove workaround from Context.wait() method since the bug report and patch fixing gpgme_wait's behavior is sent to GPMGE developers already.
Added errorcheck into op_edit() so that it can report an error.

pyme/pyme/core.py | 10 +++++-----
1 file changed, 5 insertions(+), 5 deletions(-)

commit 45e8a5f4e13d3ca797ec3b0037242874a6be5562

Author: belyi <devnull@localhost>

Date: Sat Mar 26 19:44:18 2005 +0000

Updated version number to 0.6.2 in version.py
Added examples/*.glade files into documentation package.

pyme/debian/examples | 1 +
pyme/pyme/version.py | 2 +-
2 files changed, 2 insertions(+), 1 deletion(-)

commit 270b87bb40e180cb6e8f1de9a0e8161525ffa4ab

Author: belyi <devnull@localhost>

Date: Sat Mar 26 19:31:14 2005 +0000

Updated debian/changelog regarding PyGtkGpgKeys example and a fix in errors.

pyme/debian/changelog | 5 ++++-
1 file changed, 4 insertions(+), 1 deletion(-)

commit ea4682009a506db91e5174ffd038fe7e4406b591

Author: belyi <devnull@localhost>

Date: Sat Mar 26 19:25:36 2005 +0000

Added handling of right mouse button click.
Changed reporting a string instead of a number on key generation failure.

pyme/examples/PyGtkGpgKeys.glade | 2 ++
pyme/examples/PyGtkGpgKeys.py | 30 ++++++-----
2 files changed, 29 insertions(+), 3 deletions(-)

commit f65ad1a703d0098a3204fb8527a54d253e5847e7

Author: belyi <devnull@localhost>

Date: Sat Mar 26 18:11:11 2005 +0000

Added another column indicating if a key has a secret part.
Automated generation of the View menu from the view field of the KeyColumn class.

pyme/examples/PyGtkGpgKeys.glade | 93 ++-----
pyme/examples/PyGtkGpgKeys.py | 74 ++++++-----
2 files changed, 44 insertions(+), 123 deletions(-)

commit b54e83a7a7a5785502f3c7e8b95f15e23b40e65a

Author: belyi <devnull@localhost>
Date: Sat Mar 26 16:45:13 2005 +0000

Small change to the way gtk.TreeModel object is used.

pyme/examples/PyGtkGpgKeys.py | 21 ++++++-----
1 file changed, 10 insertions(+), 11 deletions(-)

commit 7078db75cef4c1fd70cf03e37172bdb4f933fd1b

Author: belyi <devnull@localhost>
Date: Fri Mar 25 23:33:06 2005 +0000

Use more comprehensible error reporting since gpgme_strerror_r returns None all the time.

pyme/pyme/errors.py | 6 +++--
1 file changed, 3 insertions(+), 3 deletions(-)

commit 151213f4344d9984975721440af07de09e3df61c

Author: belyi <devnull@localhost>
Date: Fri Mar 25 04:30:17 2005 +0000

Improved PyGtkGpgKeys example to manage owner_trust on keys.
Added another example inter-edit.py which is just a helper to write scripts for Context.op_edit() command.

pyme/examples/PyGtkGpgKeys.glade | 78 ++++++-----
pyme/examples/PyGtkGpgKeys.py | 68 ++++++-----
pyme/examples/inter-edit.py | 54 ++++++-----
pyme/examples/t-edit.py | 18 ++++++
4 files changed, 212 insertions(+), 6 deletions(-)

commit fc7235af217bcee5231ce7fbd7f234712d5ad3b0

Author: belyi <devnull@localhost>
Date: Fri Mar 25 00:30:39 2005 +0000

Updated PyGtkGpgKeys example to include import, export and reload functionality. Also added ability to remove number of keys simultaneously. Rearranged how KeyColumn is used to avoid unnecessary sorts and duplication of information in different parts of the code.

pyme/examples/PyGtkGpgKeys.glade | 86 ++++++-----
pyme/examples/PyGtkGpgKeys.py | 332 ++++++-----
2 files changed, 325 insertions(+), 93 deletions(-)

commit 9f65749ccb1b7cab562e19c03f4371d5f7d94912

Author: belyi <devnull@localhost>
Date: Thu Mar 24 05:51:03 2005 +0000

Added example of PyGTK+ and PyMe integration.
For now it does only simple things - listing, deleting, and generating keys.

```
pyme/examples/PyGtkGpgKeys.glade | 1321 ++++++
pyme/examples/PyGtkGpgKeys.gladep | 8 +
pyme/examples/PyGtkGpgKeys.py | 424 ++++++
3 files changed, 1753 insertions(+)
```

commit 59e23f32c3b46413c9ec09e23e1a385a110fb103

Author: belyi <devnull@localhost>

Date: Thu Mar 24 05:44:58 2005 +0000

Added wait method Context class which handles asynchronous calls a little
bit better than the one generated by SWIG.

```
pyme/debian/changelog | 7 ++++++
pyme/gpgme.i | 1 +
pyme/pyme/core.py | 40 ++++++
3 files changed, 48 insertions(+)
```

commit 4c1b5259e4985df2cba0ae4fc09f12cd94603a75

Author: belyi <devnull@localhost>

Date: Tue Mar 22 18:29:31 2005 +0000

Added correct handling of Context.op_edit() method.
Added example/t-edit.py showing usage for this method.
Output of this example should match output of the tests/gpg/t-edit
from the GPGME test suite.
Remove unused static function from helpers.c

```
pyme/examples/t-edit.py | 38 ++++++
pyme/gpgme.i | 36 ++++++
pyme/helpers.c | 36 -----
pyme/pyme/core.py | 5 ++++-
4 files changed, 78 insertions(+), 37 deletions(-)
```

commit dc587e215283bfef2dd594f86a7b2945f74f5155

Author: belyi <devnull@localhost>

Date: Sat Mar 19 01:43:59 2005 +0000

Update changelog to include note about deprecated function in 0.6.1 release

```
pyme/debian/changelog | 3 +-
pyme/examples/encrypt-to-all.py | 3 +-
2 files changed, 3 insertions(+), 3 deletions(-)
```

commit 86de4b3ad777f980ccf7ba3462c85bbe1787d1fd

Author: belyi <devnull@localhost>
Date: Sat Mar 19 01:40:07 2005 +0000

Remove deprecated functions from helpers.[ch]
Use gpgme-h-clean.py to remove deprecated functions and typedefs from
the GPGME header file. This will reduce the number of unused methods.

```
pyme/Makefile      | 4 +++-
pyme/gpgme-h-clean.py | 26 ++++++
pyme/helpers.c     | 8 -----
pyme/helpers.h     | 2 --
4 files changed, 28 insertions(+), 12 deletions(-)
```

commit 2483efcbd0d73c628c4d7717928a766c3b58f0aa
Author: belyi <devnull@localhost>
Date: Fri Mar 18 22:15:52 2005 +0000

Update copyright and author values in pyme/version.py
Create rules to build distribution files - one full and one without
debian bits.

```
pyme/Makefile      | 28 ++++++
pyme/pyme/version.py | 12 ++++++
2 files changed, 28 insertions(+), 12 deletions(-)
```

commit 168593285380f5a7805f3dd08657d429a72d3621
Author: belyi <devnull@localhost>
Date: Fri Mar 18 19:09:33 2005 +0000

Added package building for python2.4

Updated copyright notes to include myself and avoid confusion who's the
maintainer. In John's own words: "I'd prefer to just step out of the picture".
Jonh's copyright notice left intact.

```
pyme/Makefile      | 6 +++-
pyme/debian/changelog | 7 ++++++
pyme/debian/control  | 30 ++++++
pyme/debian/copyright | 10 ++++++
pyme/debian/rules    | 4 ++++
pyme/debian/setup.cfg-2.4 | 8 ++++++
pyme/examples/genkey.py | 4 +++-
pyme/gpgme.i         | 4 +++-
pyme/helpers.c       | 4 +++-
pyme/helpers.h       | 4 +++-
pyme/pyme/__init__.py | 4 +++-
pyme/pyme/callbacks.py | 4 +++-
pyme/pyme/constants/data/encoding.py | 4 +++-
```

```
pyme/pyme/constants/event.py      | 4 +++-
pyme/pyme/constants/import.py     | 4 +++-
pyme/pyme/constants/keylist/mode.py | 4 +++-
pyme/pyme/constants/md.py         | 4 +++-
pyme/pyme/constants/pk.py         | 4 +++-
pyme/pyme/constants/protocol.py   | 4 +++-
pyme/pyme/constants/sig/mode.py   | 4 +++-
pyme/pyme/constants/sigsum.py     | 4 +++-
pyme/pyme/constants/status.py     | 4 +++-
pyme/pyme/constants/validity.py   | 4 +++-
pyme/pyme/core.py                 | 4 +++-
pyme/pyme/errors.py              | 4 +++-
pyme/pyme/util.py                | 4 +++-
pyme/pyme/version.py             | 2 +-
pyme/setup.py                   | 3 +-
28 files changed, 96 insertions(+), 54 deletions(-)
```

commit 6dbbb252771133724b2879ed6d767cd708196dae

Author: belyi <devnull@localhost>

Date: Fri Mar 18 18:04:35 2005 +0000

Remove the note about gpgme.i to be generated - it's been the primary source for some time.

```
pyme/gpgme.i | 6 -----
1 file changed, 6 deletions(-)
```

commit 9d449fa4889c6bda6d14583c0625b8d5c4ffe759

Author: belyi <devnull@localhost>

Date: Fri May 7 18:31:22 2004 +0000

Added my copyright in genkey.py since there's enough changes made.
Updated signverify to use only keys generated by genkey.py, to check that keys added to singers are able to sign and to check that the list of signers is not empty. The last check is necessary to prevent signing with the key of the user running signverify.py script.
Added delkey.py script to delete keys generated by genkey.py
Added exportimport.py example for key export/import.

```
pyme/examples/delkey.py      | 29 ++++++
pyme/examples/exportimport.py | 76 ++++++
pyme/examples/genkey.py     | 6 +++-
pyme/examples/signverify.py | 18 ++++++
4 files changed, 119 insertions(+), 10 deletions(-)
```

commit df98c8d28245ad2c14b0ab50fc8f8932853bec8b

Author: belyi <devnull@localhost>

Date: Tue May 4 17:34:15 2004 +0000

Added examples/signverify.py for unattended sing/verify.
Updated examples/genkey.py to work correctly.
Updated gpgme.i to allow None as a value for gpgme_data_t

```
pyme/examples/genkey.py | 14 +++-----  
pyme/examples/signverify.py | 72 ++++++  
pyme/gpgme.i | 21 ++++++-----  
3 files changed, 87 insertions(+), 20 deletions(-)
```

commit ba45931abf530ab89ead46d7233ff1b62b629a18
Author: belyi <devnull@localhost>
Date: Thu Apr 8 16:15:09 2004 +0000

Ensure that we support only python2.2 and up. :-)
Use generators in core.Context class which makes pyme.aux obsolete
Remove importing future nested_scopes since they are standard starting
with python2.2

```
pyme/pyme/__init__.py | 5 +++--  
pyme/pyme/aux.py | 56 -----  
pyme/pyme/core.py | 15 ++++++-----  
pyme/pyme/errors.py | 1 -  
pyme/pyme/util.py | 2 +-  
5 files changed, 15 insertions(+), 64 deletions(-)
```

commit 4e9be5a55ecffa4da7ad5c192cc892eddaaa9586
Author: belyi <devnull@localhost>
Date: Sun Mar 21 03:53:30 2004 +0000

Small change to index.html
Added clean: rule to the Makefile

```
pyme-web/Makefile | 3 +++  
pyme-web/index.html | 6 +++--  
2 files changed, 6 insertions(+), 3 deletions(-)
```

commit 2efb95176f4edf56ed61c9ac0c3aa09c56534df0
Author: belyi <devnull@localhost>
Date: Sun Mar 21 03:00:32 2004 +0000

Added Makefile rules for pyme module installation.

```
pyme/Makefile | 5 ++++  
1 file changed, 4 insertions(+), 1 deletion(-)
```

commit 2b83d5d8b513029cc3e54f2fa502ccc85618104b
Author: belyi <devnull@localhost>

Date: Sun Mar 21 02:29:54 2004 +0000

Decorative change.

pyme/pyme/aux.py | 2 +-
1 file changed, 1 insertion(+), 1 deletion(-)

commit e3478015d763a036c1d806ae01433f59712204

Author: belyi <devnull@localhost>

Date: Sun Mar 21 02:25:55 2004 +0000

Added RCS Id: tags

pyme/Makefile | 1 +
pyme/examples/encrypt-to-all.py | 3 ++-
pyme/examples/genkey.py | 3 ++-
pyme/examples/sign.py | 3 ++-
pyme/examples/simple.py | 3 ++-
pyme/gpgme.i | 1 +
pyme/helpers.c | 1 +
pyme/helpers.h | 1 +
pyme/pyme/__init__.py | 1 +
pyme/pyme/aux.py | 1 +
pyme/pyme/callbacks.py | 1 +
pyme/pyme/constants/__init__.py | 2 ++
pyme/pyme/constants/data/__init__.py | 2 ++
pyme/pyme/constants/data/encoding.py | 1 +
pyme/pyme/constants/event.py | 1 +
pyme/pyme/constants/import.py | 1 +
pyme/pyme/constants/keylist/__init__.py | 2 ++
pyme/pyme/constants/keylist/mode.py | 1 +
pyme/pyme/constants/md.py | 1 +
pyme/pyme/constants/pk.py | 1 +
pyme/pyme/constants/protocol.py | 1 +
pyme/pyme/constants/sig/__init__.py | 2 ++
pyme/pyme/constants/sig/mode.py | 1 +
pyme/pyme/constants/sigsum.py | 1 +
pyme/pyme/constants/status.py | 1 +
pyme/pyme/constants/validity.py | 1 +
pyme/pyme/core.py | 1 +
pyme/pyme/errors.py | 1 +
pyme/pyme/util.py | 1 +
pyme/pyme/version.py | 2 ++
30 files changed, 39 insertions(+), 4 deletions(-)

commit b3b3712645332c5bc3e8d9d557aab21d48ff0f86

Author: belyi <devnull@localhost>

Date: Sun Mar 21 02:07:36 2004 +0000

Added Id: RCS tags to all files.

pyme-web/Makefile | 2 ++
pyme-web/index.html | 3 +-
2 files changed, 4 insertions(+), 1 deletion(-)

commit 6aea2426beaaa8c43e6f2310a37a2737c0c3a1b5
Author: belyi <devnull@localhost>
Date: Sun Mar 21 01:50:55 2004 +0000

Update example on the init pyme.html page to match simple.py example.
Fix core.py to use getcode() instead of getvalue() method of the exception.

pyme/pyme/__init__.py | 22 ++++++-----
pyme/pyme/core.py | 4 +---
2 files changed, 16 insertions(+), 10 deletions(-)

commit dee337455ffd624d3f83e1c159c4bb2cefc692c9
Author: belyi <devnull@localhost>
Date: Sat Mar 20 20:32:29 2004 +0000

Added Makefile to simplify publishing web files.

pyme-web/Makefile | 7 ++++++
1 file changed, 7 insertions(+)

commit af7129baa8260697d85c2ddb434562e8a80b62d8
Author: belyi <devnull@localhost>
Date: Sat Mar 20 20:15:53 2004 +0000

Added minimum of formatting and SF icon.

pyme-web/index.html | 18 ++++++-----
1 file changed, 11 insertions(+), 7 deletions(-)

commit 2e64dcbf99cee796b51667b04d8961e390edde87
Author: belyi <devnull@localhost>
Date: Sat Mar 20 18:30:09 2004 +0000

Initial revision

pyme-web/index.html | 33 ++++++-----
1 file changed, 33 insertions(+)

commit 1c51644b3d0b6611422d971758e35f303d2ad5df
Author: belyi <devnull@localhost>
Date: Sat Mar 20 05:10:46 2004 +0000

Update examples and package information on the initial pyme doc page.

```
pyme/pyme/__init__.py | 27 ++++++-----  
1 file changed, 12 insertions(+), 15 deletions(-)
```

commit b2d31b0bfbffdf5247d6db4e3c95140cc1b1f19

Author: belyi <devnull@localhost>

Date: Sat Mar 20 04:47:42 2004 +0000

Deleted unnecessary files.

Updated debian/control to remove dependency on python-xml package since there's none now.

Move example files from 'doc' into separate control file.

Update debian/rules to build documentation from *.py files and to exclude CVS directories from the installation.

```
pyme/Makefile          | 26 ++-----  
pyme/debian/control    | 8 +--  
pyme/debian/docs       | 1 -  
pyme/debian/ex.package.doc-base | 22 -----  
pyme/debian/examples   | 1 +  
pyme/debian/manpage.1.ex | 60 -----  
pyme/debian/manpage.sgml.ex | 152 -----  
pyme/debian/rules      | 12 +++-  
8 files changed, 15 insertions(+), 267 deletions(-)
```

commit 1b517dd9b82a433499b4696b06d94d756cd36e53

Author: belyi <devnull@localhost>

Date: Sat Mar 20 02:59:15 2004 +0000

Remove doc/gpgme directory containing GPGME documentation since this belongs to a different project. Need to add reference in our documentation.

```
pyme/doc/gpgme/fdl.texi | 402 -----  
pyme/doc/gpgme/gpgme.texi | 3372 -----  
pyme/doc/gpgme/gpl.texi | 397 -----  
pyme/doc/gpgme/version.texi | 4 -  
4 files changed, 4175 deletions(-)
```

commit 95d7d171da115a0fedfe2a4a7e5acc8aa408f673

Author: belyi <devnull@localhost>

Date: Sat Mar 20 02:45:03 2004 +0000

Change debian/rules to generate files by swig during build and to cleanup those files on 'clean' rule.

Plus, leave generated gpgme_wrap.c in the root directory instead of moving it into subdirectory 'generated'.

```
pyme/Makefile | 8 +++-----
pyme/debian/rules | 3 +-
pyme/setup.py | 2 +-
3 files changed, 6 insertions(+), 7 deletions(-)
```

commit 545b3d90d445c5c78e8d72b2c1780863e02c789a

Author: belyi <devnull@localhost>

Date: Sat Mar 20 02:18:01 2004 +0000

Initial revision

```
pyme/COPYING | 340 ++++
pyme/ChangeLog | 802 ++++++++
pyme/Makefile | 79 +
pyme/debian/README.Debian | 6 +
pyme/debian/changelog | 19 +
pyme/debian/control | 68 +
pyme/debian/copyright | 27 +
pyme/debian/dirs | 2 +
pyme/debian/docs | 2 +
pyme/debian/ex.package.doc-base | 22 +
pyme/debian/manpage.1.ex | 60 +
pyme/debian/manpage.sgml.ex | 152 ++
pyme/debian/postinst.ex | 48 +
pyme/debian/postrm.ex | 38 +
pyme/debian/preinst.ex | 44 +
pyme/debian/prerm.ex | 39 +
pyme/debian/rules | 130 ++
pyme/debian/setup.cfg-2.2 | 8 +
pyme/debian/setup.cfg-2.3 | 8 +
pyme/doc/gpgme/fdl.texi | 402 ++++
pyme/doc/gpgme/gpgme.texi | 3372 +++++
pyme/doc/gpgme/gpl.texi | 397 ++++
pyme/doc/gpgme/version.texi | 4 +
pyme/examples/encrypt-to-all.py | 63 +
pyme/examples/genkey.py | 55 +
pyme/examples/sign.py | 28 +
pyme/examples/simple.py | 44 +
pyme/gpgme.i | 191 ++
pyme/helpers.c | 139 ++
pyme/helpers.h | 29 +
pyme/pyme/__init__.py | 134 ++
pyme/pyme/aux.py | 55 +
pyme/pyme/callbacks.py | 45 +
pyme/pyme/constants/__init__.py | 2 +
pyme/pyme/constants/data/__init__.py | 2 +
pyme/pyme/constants/data/encoding.py | 19 +
```

```

pyme/pyme/constants/event.py      | 19 +
pyme/pyme/constants/import.py     | 19 +
pyme/pyme/constants/keylist/__init__.py | 2 +
pyme/pyme/constants/keylist/mode.py | 19 +
pyme/pyme/constants/md.py         | 19 +
pyme/pyme/constants/pk.py         | 19 +
pyme/pyme/constants/protocol.py   | 19 +
pyme/pyme/constants/sig/__init__.py | 2 +
pyme/pyme/constants/sig/mode.py   | 19 +
pyme/pyme/constants/sigsum.py     | 19 +
pyme/pyme/constants/status.py     | 19 +
pyme/pyme/constants/validity.py   | 19 +
pyme/pyme/core.py                 | 367 +++++
pyme/pyme/errors.py              | 46 +
pyme/pyme/util.py                | 61 +
pyme/pyme/version.py             | 39 +
pyme/setup.py                   | 60 +
53 files changed, 7642 insertions(+)

```

commit a3d5a442dc713b6c4d6fc4134db5b47e379dc41d

Author: root <devnull@localhost>

Date: Fri Mar 19 14:12:30 2004 +0000

initial checkin

```

CVSROOT/checkoutlist | 13 ++++++
CVSROOT/commitinfo  | 15 ++++++
CVSROOT/config      | 21 ++++++
CVSROOT/cvswrappers | 19 ++++++
CVSROOT/editinfo    | 21 ++++++
CVSROOT/loginfo     | 26 ++++++
CVSROOT/modules     | 26 ++++++
CVSROOT/notify      | 12 ++++++
CVSROOT/rcsinfo     | 13 ++++++
CVSROOT/taginfo     | 20 ++++++
CVSROOT/verifymsg   | 21 ++++++

```

11 files changed, 207 insertions(+)

```

\input texinfo @c -*- texinfo -*-
@c %**start of header
@setfilename short-history.info
@settitle A Short History of the GPGME bindings for Python
@documentencoding utf-8
@documentlanguage en
@c %**end of header

```

```

@finalout
@titlepage
@title A Short History of the GPGME bindings for Python

```

@author Ben McGinnes

@end titlepage

@contents

@ifnottex

@node Top

@top A Short History of the GPGME bindings for Python

@end ifnottex

@menu

* Overview::

* Relics of the past::

@detailmenu

--- The Detailed Node Listing ---

Overview

* In the beginning::

* Keeping the flame alive::

* Passing the torch::

* Coming full circle::

Relics of the past

* The Annoyances of Git::

* The Perils of PyPI::

The Perils of PyPI

* GPG 180 - Python bindings for GPGME GnuPG cryptography library::

* PyME 090 - Python support for GPGME GnuPG cryptography library::

@end detailmenu

@end menu

@node Overview

@chapter Overview

@multitable {aaaaaaaaaaaaaaaa} {aa}

@item Version:

@tab 0.0.1

@item GPGME Version:

@tab 1.13.0

@item Author:

@tab Ben McGinnes <ben@gnupg.org>

@item Author GPG Key:

@tab DB4724E6FA4286C92B4E55C4321E4E2373590E5D

@item Language:

@tab Australian English, British English

@item xml:lang:

@tab en-AU, en-GB, en

@end multitable

The GPGME Python bindings passed through many hands and numerous phases before, after a fifteen year journey, coming full circle to return to the source. This is a short explanation of that journey.

@menu

* In the beginning::

* Keeping the flame alive::

* Passing the torch::

* Coming full circle::

@end menu

@node In the beginning

@section In the beginning

In 2002 John Goerzen released PyME; Python bindings for the GPGME module which utilised the current release of Python of the time and SWIG. @footnote{In all likelihood this would have been Python 2.2 or possibly Python 2.3.} Shortly after creating it and ensuring it worked he stopped supporting it, though he left his work available on his Gopher site.

@node Keeping the flame alive

@section Keeping the flame alive

A couple of years later the project was picked up by Igor Belyi and actively developed and maintained by him from 2004 to 2008. Igor's whereabouts at the time of this document's creation are unknown, but the current authors do hope he is well. We're assuming (or hoping) that life did what life does and made continuing untenable.

@node Passing the torch

@section Passing the torch

In 2014 Martin Albrecht wanted to patch a bug in the PyME code and discovered the absence of Igor. Following a discussion on the PyME mailing list he became the new maintainer for PyME, releasing version 0.9.0 in May of that year. He remains the maintainer of the original PyME release in Python 2.6 and 2.7 (available via PyPI).

@node Coming full circle

@section Coming full circle

In 2015 Ben McGinnes approached Martin about a Python 3 version, while investigating how complex a task this would be the task ended up being completed. A subsequent discussion with Werner Koch led to the decision to fold the Python 3 port back into the original GPGME release in the languages subdirectory for non-C bindings under the module name of @samp{pyme3}.

In 2016 this PyME module was integrated back into the GPGME project by Justus Winter. During the course of this work Justus adjusted the port to restore limited support for Python 2, but not as many minor point releases as the original PyME package supports. During the course of this integration the package was renamed to more accurately reflect its status as a component of GPGME. The @samp{pyme3} module was renamed to @samp{gpg} and adopted by the upstream GnuPG team.

In 2017 Justus departed G10code and the GnuPG team. Following this Ben returned to maintain of gpgme Python bindings and continue building them from that point.

@node Relics of the past

@chapter Relics of the past

There are a few things, in addition to code specific factors, such as SWIG itself, which are worth noting here.

@menu

* The Annoyances of Git::

* The Perils of PyPI::

@end menu

@node The Annoyances of Git

@section The Annoyances of Git

As anyone who has ever worked with git knows, submodules are horrible way to deal with pretty much anything. In the interests of avoiding migraines, that was skipped with addition of the PyME code to GPGME.

Instead the files were added to a subdirectory of the @samp{lang/} directory, along with a copy of the entire git log up to that point as a separate file within the @samp{lang/python/docs/} directory. @footnote{The entire PyME git log and other preceding VCS logs are located in the @samp{gpgme/lang/python/docs/old-commits.log} file.} As the log for PyME is nearly 100KB and the log for GPGME is approximately 1MB, this would cause considerable bloat, as well as some confusion, should the two be merged.

Hence the unfortunate, but necessary, step to simply move the files. A regular repository version has been maintained should it be possible to implement this better in the future.

```
@node The Perils of PyPI
@section The Perils of PyPI
```

The early port of the Python 2 `@samp{pyme}` module as `@samp{pyme3}` was never added to PyPI while the focus remained on development and testing during 2015 and early 2016. Later in 2016, however, when Justus completed his major integration work and subsequently renamed the module from `@samp{pyme3}` to `@samp{gpg}`, some prior releases were also provided through PyPI.

Since these bindings require a matching release of the GPGME libraries in order to function, it was determined that there was little benefit in also providing a copy through PyPI since anyone obtaining the GPGME source code would obtain the Python bindings source code at the same time. Whereas there was the potential to sew confusion amongst Python users installing the module from PyPI, only to discover that without the relevant C files, header files or SWIG compiled binaries, the Python module did them little good.

There are only two files on PyPI which might turn up in a search for this module or a sample of its content:

```
@enumerate
@item
gpg (1.8.0) - Python bindings for GPGME GnuPG cryptography library
@item
pyme (0.9.0) - Python support for GPGME GnuPG cryptography library
@end enumerate
```

```
@menu
* GPG 180 - Python bindings for GPGME GnuPG cryptography library::
* PyME 090 - Python support for GPGME GnuPG cryptography library::
@end menu
```

```
@node GPG 180 - Python bindings for GPGME GnuPG cryptography library
@subsection GPG 180 - Python bindings for GPGME GnuPG cryptography library
```

This is the most recent version to reach PyPI and is the version of the official Python bindings which shipped with GPGME 1.8.0. If you have GPGME 1.8.0 installed and `@emph{only}` 1.8.0 installed, then it is probably safe to use this copy from PyPI.

As there have been a lot of changes since the release of GPGME

1.8.0, the GnuPG Project recommends not using this version of the module and instead installing the current version of GPGME along with the Python bindings included with that package.

@node PyME 090 - Python support for GPGME GnuPG cryptography library

@subsection PyME 090 - Python support for GPGME GnuPG cryptography library

This is the last release of the PyME bindings maintained by Martin Albrecht and is only compatible with Python 2, it will not work with Python 3. This is the version of the software from which the port from Python 2 to Python 3 code was made in 2015.

Users of the more recent Python bindings will recognise numerous points of similarity, but also significant differences. It is likely that the more recent official bindings will feel "more pythonic."

For those using Python 2, there is essentially no harm in using this module, but it may lack a number of more recent features added to GPGME.

@bye

-*- mode: org -*-

#+TITLE: GNU Privacy Guard (GnuPG) Made Easy Python Bindings

#+AUTHOR: Ben McGinnes

#+LATEX_COMPILER: xelatex

#+LATEX_CLASS: article

#+LATEX_CLASS_OPTIONS: [12pt]

#+LATEX_HEADER: \usepackage{xltextra}

#+LATEX_HEADER: \usepackage[margin=1in]{geometry}

#+LATEX_HEADER: \setmainfont[Ligatures={Common}]{Times New Roman}

#+LATEX_HEADER: \author{Ben McGinnes <ben@gnupg.org>}

* GPGME Python Bindings

:PROPERTIES:

:CUSTOM_ID: top

:END:

** Contents

:PROPERTIES:

:CUSTOM_ID: contents

:END:

- [[file:short-history]] [A short history of the project]

- [[file:what-is-new]] [What's New]

- [[file:maintenance-mode][Maintenance Mode]] (from January, 2019)
 - [[file:what-was-new][What Was New]]
 - [[file:gpgme-python-howto][GPGME Python Bindings HOWTO]]
- BEGIN PGP PUBLIC KEY BLOCK-----

```
mQENBFrsKEkBCADKw4Wt8J6M/88qD8PO6lSMCxH1cpwH8iK0uPaFFYsJkkXo7kWf
PTAtrV+REqF/o80dvYcdLvRsV21pvncZz/HXLU1yQ18mC3XObrKokbdgrTTKA5XE
BZkNsqyaMMJauT18H4hYkSg62/tTdO1cu/zWv/LFf7Xyn6+uA74ovXCJIO1s0N2c
PSht98QRzPMf2owgVk37JnDNp4gGVDGHxSZOUwXgYAZYnA8SFc+c+3ZrQfY870
+O4j3Mz4p7yD13AwP4buQLBsb/icxekeQCqRjHLH9f7MdEcGXa1x36RcEkHdu+M
yJ392eMgD+dKNfRCtyTPhjZTxvbNELIBYICfABEBAAG0EHRlc3RAZXhhbXBsZS5v
cmeJAVQEEwEIA4W1QIUFzW5Ejb9uIIEjFojAWNe7/DLBQUCWuwoSQIbAwUJA8Jn
AAULCQgHAgYVCgkICwIEFgIDAQIeAQIXgAAKCRAjAWNe7/DLBf9kB/wOQ/S60HGw
Fq07W9N01HWULyhHKOmmHL6rfZ64oDqLxolPSasz7WAMW1jN4qtWJ0mFzwo83V6
kaBe+wF6Kqir6udFSBW9rPcFg6/VZXPlt0a6uacIHq6DyQ5iMW4YQWbVY9OR2rN
GkYo1JCBR0XdRjYCSX3yB4TWv/eXnZ37/WjmiTOIZh35rjs+NuU/S5JPDfAp2/k7
0DevQeBsv+UjVXjWpNTZmPbvDnd995uSmC6UY4hzyP84ORYMYn9n1QAR0goxDN6U
unOf9Rlp1oMzdxMool/d1MICxg2h3jheuhv7lgUF4KpvHOuEPXQ7UO417E0TYcDZ
1J8Nsv87SZeUQENBFrsKEkBCADjoEBhG/QPqZHg8VyoD1xYRAWGxyDjKX/GrSs6
yE+x2hk5FoQCajxKa/d4AVxOnJpdwhAfeXeSNaql5Ejgzax+Tdj9BV6vtGVJVv0p
O7bgAiZxkA6RHxtNqhpPnPQoXvUzkzpRgpuL+Nj4yIg7z1ITH6KQH4u5SI9vd+j/
8i9Taz67pdZwuJjac8qBuJHjzAo1bjYctFYUSG5pbmMQyNLySzziNkFa4DajODlt
3RuqVGP316Fk+Sy2+60tC/HIX8jgMyMONfOGBQx6jk8tvAphS/LAqrrNepnagIyL
UGKU+L8cB2g1PGGp2biBFWqZbudZoyRBet/0yH/zirBdQJw1ABEBAAGJATwEGAEI
ACYWIQTUFzW5Ejb9uIIEjFojAWNe7/DLBQUCWuwoSQIbDAUJA8JnAAAKCRAjAWNe
7/DLBf0pCACPP5hBUWngu2Hqvg+tNiujsiYzId3MffFxEk3CbXeHcJ5F32NDJ9
PYCnra4L8wSv+Nzt9gIa81FwoFSFQCjzH7KE86XcV3MhfdJTNb/+9CR7Jq3e/4Iy
0N5ip7PNYMCyakcAsxvsNCJKrSaDuYe/OAoTXRBtgRWE2uyT315em02Lkr+2Cc/Q
k6H+vlNOHGRgnpl/OZZjnUuUfBUvMGHr1phW+y7aeymC9PnUGdViRdJe23nntMSD
A+0/I7ESO9JsWvJbyBmuiZpu9JjScOjYH9xpQLqRNyw4WHpZriN69F0t9Mmd7bM1
+UyPgbPEr0iWMeyctYsuOLeUyQKMscDT
=QyY6
```

-----END PGP PUBLIC KEY BLOCK-----

```
\input texinfo @c -* - texinfo -* -
```

```
@c %**start of header
```

```
@setfilename what-is-new.info
```

```
@settitle What's New in the GPGME Python Bindings and Documentation
```

```
@documentencoding utf-8
```

```
@documentlanguage en
```

```
@c %**end of header
```

```
@finalout
```

```
@titlepage
```

```
@title What's New in the GPGME Python Bindings and Documentation
```

```
@author Ben McGinnes
```

```
@end titlepage
```

```
@contents
```

```
@ifnottex
@node Top
@top What's New in the GPGME Python Bindings and Documentation
@end ifnottex
```

```
@menu
* What's New::
```

```
@detailmenu
--- The Detailed Node Listing ---
```

```
What's New
```

```
* New in GPGME 1130::
```

```
@end detailmenu
@end menu
```

```
@node What's New
@chapter What's New
```

```
@multitable {aaaaaaaaaaaaaaaa} {aaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa}
@item Version:
@tab 0.0.1
@item GPGME Version:
@tab 1.13.0
@item Author:
@tab Ben McGinnes <ben@gnupg.org>
@item Author GPG Key:
@tab DB4724E6FA4286C92B4E55C4321E4E2373590E5D
@item Language:
@tab Australian English, British English
@item xml:lang:
@tab en-AU, en-GB, en
@end multitable
```

Last time the most obviously new thing was adding the @emph{What's New} section to the HOWTO. Now it's moving it out of the HOWTO.

```
@menu
* New in GPGME 1130::
@end menu
```

```
@node New in GPGME 1130
@section New in GPGME 1130
```

Additions since GPGME 1.12.0 include:

@itemize

@item

Moving the @emph{What's New} section out of the basic @uref{gpgme-python-howto.org, HOWTO} document and

into its own file so as to more readily include other documents

beyond that HOWTO.

@item

Moving the preceding, archival, segments into @uref{what-was-new.org, another file}.

@item

Added @samp{gpg.version.versionintlist} to make it easier for Python developers to check for a specific version number, even with beta versions (it will drop the "-betaN" part).

@item

Added expanded detail on issues pertaining to installing for Windows users.

@item

Bindings enter @uref{maintenance-mode, maintenance mode} from January, 2019.

@item

Added documentation on maintenance mode and what changes can be made to the code when in that status. Essentially that boils down to bug fixes only and no feature requests.

@item

The import-keys-hkp.py example script, which uses the @samp{hkp4py} module to search the SKS servers for a key, has been tightened up to search for both hexadecimal key IDs and user ID strings with reduced chance of unnecessary repetition. There may still be some repetition if a key includes a user ID matching the hexadecimal value of a key ID.

@end itemize

@bye

Using gpgme.js

At first, make sure that the environment you want to use gpgme.js in has access and permissions for nativeMessaging, and gpgme-json installed. For details, see the README.

The library itself is started via the {@link init} method. This will test the nativeMessaging connection, and then resolve into an Object offering the top level API:

- * [encrypt]{ @link GpgME#encrypt}
- * [decrypt]{ @link GpgME#decrypt}
- * [sign]{ @link GpgME#sign}
- * [verify]{ @link GpgME#verify}
- * [Keyring]{ @link GPGME_Keyring}

```

...
gpgmejs.init()
  .then(function(GPGME) {
    // using GPGME
  }, function(error){
    // error handling;
  })
...

```

All methods that require communication with `nativeMessaging` are asynchronous, using Promises. Rejections will be instances of { @link GPGME_Error }.

An exception are Keys, which can be initialized in a 'sync' mode, allowing them to be cached and used synchronously until manually refreshed.

Keyring and Keys

The gnupg keys can be accessed via the [Keyring]{ @link GPGME_Keyring }.

The Keyring offers the methods for accessing information on all Keys known to gnupg.

****Due to security constraints, the javascript-binding currently only offers limited support for secret-Key interaction.****

The existence of secret Keys is not secret, and those secret Keys can be used for signing, but Operations that may expose, modify or delete secret Keys are not supported.

- * [getKeysArmored]{ @link GPGME_Keyring#getKeysArmored }
- * [getKeys]{ @link GPGME_Keyring#getKeys }
- * [getDefaultKey]{ @link GPGME_Keyring#getDefaultKey }
- * [generateKey]{ @link GPGME_Keyring#generateKey }
- * [deleteKey]{ @link GPGME_Keyring#deleteKey }

For a list of the authors of the source code of GPGME, please see the file AUTHORS. The following people supported GPGME development in various ways (for example by finding bugs or giving advice), and we want to thank them for their help. If we forgot you, please let us know.

Adriaan de Groot adridg@cs.kun.nl
 Albrecht Dre albrecht.dress@arcor.de
 Alfons Hoogervorst alfons@proteus.demon.nl
 Daniel Mueller daniel@danm.de
 Enno Cramer uebergeek@web.de
 Frank Heckenbach frank@g-n-u.de
 Igor Belyi gpgme@katehok.ac93.org
 Jan-Oliver Wagner jan@intevation.de

Johannes Poehlmann jhp@caldera.de
Jose C. Garca Sogo jose@jaimedelamo.eu.org
Leo Gaspard ekleog@gmail.com
Mark Mutz mutz@kde.org
Miguel Coca mcoca@gnu.org
Noel Torres envite@rolamasao.org
Patrick Spendrin patrick.spendrin@kdab.com
Stphane Corttsy stephane@sente.ch
Timo Schulz twoday@freakmail.de
Tommy Reynolds reynolds@redhat.com
W. Trevor King wking@tremily.us

Copyright 2001, 2002, 2004, 2010, 2012 g10 Code GmbH

This file is free software; as a special exception the author gives unlimited permission to copy and/or distribute it, with or without modifications, as long as this notice is preserved.

This file is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY, to the extent permitted by law; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.

```
(21:protected-private-key(3:elg(1:p129:W#} }}l;;m>
;4YV$Qg
LoLy~*Tru*+ID8"-9,:17^g*({ #7)(1:g1:)(1:y128:2o62,Tj/
rRi3sSS iCAYNYbVtAHKi7(UPp)?Od{'R^f)(9:protected25:openpgp-s2k3-sha1-aes-
cbc((4:sha18:fw`E7:5242880)16:aqR)192:5f1a-`{^EV699WoB\,:Rs1*W6Lu iZ
:=ZqURM47;pA3#DL
so8O)Th^P@IP0&.DR;"rkN7)(12:protected-at15:20101008T070216)))
;;; gpgme-grovel.lisp
```

```
;;; This file is part of GPGME-CL.
```

```
;;;
```

```
;;; GPGME-CL is free software; you can redistribute it and/or modify it
;;; under the terms of the GNU General Public License as published by
;;; the Free Software Foundation; either version 2 of the License, or
;;; (at your option) any later version.
```

```
;;;
```

```
;;; GPGME-CL is distributed in the hope that it will be useful, but
;;; WITHOUT ANY WARRANTY; without even the implied warranty of
;;; MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU
;;; Lesser General Public License for more details.
```

```
;;;
```

```
;;; You should have received a copy of the GNU General Public License
;;; along with GPGME; if not, write to the Free Software Foundation,
;;; Inc., 59 Temple Place - Suite 330, Boston, MA 02111-1307, USA.
```

```
(in-package :gpgme)
```

```

(include "errno.h" "sys/types.h")

(constant (+ebadf+ "EBADF"))

(ctype off-t "off_t")
(ctype size-t "size_t")
(ctype ssize-t "ssize_t")

(cvar ("errno" *errno*) :int)
# This is a template. The dist target uses it to create the real file.
Summary: GPGME - GnuPG Made Easy
Name: gpgme
Version: 1.13.1
Release: 1
URL: https://gnupg.org/gpgme.html
Source: https://www.gnupg.org/ftp/gcrypt/gpgme/% {name}-% {version}.tar.gz
Group: Development/Libraries
Copyright: GPL
BuildRoot: % {_tmppath}/% {name}-% {version}
BuildRequires: make
Prereq: /sbin/ldconfig /sbin/install-info
Requires: gnupg

%description
GnuPG Made Easy (GPGME) is a library designed to make access to GnuPG easier
for applications. It provides a High-Level Crypto API for encryption,
decryption, signing, signature verification and key management.

%prep
%setup -q

%build
CFLAGS="$RPM_OPT_FLAGS"; export CFLAGS
./configure --prefix=/usr
make

%install
rm -fr $RPM_BUILD_ROOT
mkdir -p $RPM_BUILD_ROOT
make install prefix=$RPM_BUILD_ROOT/usr infodir=$RPM_BUILD_ROOT% {_infodir}
rm -f $RPM_BUILD_ROOT% {_infodir}/dir

%clean
rm -fr $RPM_BUILD_ROOT
make distclean

```

```

%post
/sbin/ldconfig
/sbin/install-info % {_infodir}/gpgme.info.gz % {_infodir}/dir
/sbin/install-info % {_infodir}/gpgme-python-howto.info.gz % {_infodir}/dir

%preun
if [ "$1" = 0 ]; then
/sbin/install-info --delete % {_infodir}/gpgme.info.gz % {_infodir}/dir
/sbin/install-info --delete % {_infodir}/gpgme-python-howto.info.gz % {_infodir}/dir
fi

%postun
/sbin/ldconfig

%files
%defattr(-,root,root)
%doc COPYING COPYING.LESSER AUTHORS README INSTALL NEWS ChangeLog TODO THANKS
%attr(0755,root,root) % {_bindir}/gpgme-config
%attr(0755,root,root) % {_libdir}/*gpgme.so*
%attr(0755,root,root) % {_libdir}/*gpgme.la
%attr(0644,root,root) % {_libdir}/*gpgme.a
% {_includedir}/gpgme.h
% {_datadir}/aclocal/gpgme.m4
% {_infodir}/gpgme.info*
% {_infodir}/gpgme-python-howto.info*

%changelog
* Sat Aug 30 2003 Robert Schiele <rschiele@uni-mannheim.de>
- % {_infodir}/dir is not packaged, remove to prevent checking failure
* Mon Jul 01 2002 Wojciech Polak <polak@lodz.pdi.net>
- initial specfile release for GPGME.

# EOF
# *- mode: org *-
#+TITLE: GNU Privacy Guard (GnuPG) Made Easy Python Bindings HOWTO (English)
#+AUTHOR: Ben McGinnes
#+LATEX_COMPILER: xelatex
#+LATEX_CLASS: article
#+LATEX_CLASS_OPTIONS: [12pt]
#+LATEX_HEADER: \usepackage{xltextra}
#+LATEX_HEADER: \usepackage[margin=1in]{geometry}
#+LATEX_HEADER: \setmainfont[Ligatures={Common}]{Times New Roman}
#+LATEX_HEADER: \author{Ben McGinnes <ben@gnupg.org>}

* Introduction
:PROPERTIES:
:CUSTOM_ID: intro

```

:END:

```
| Version:      | 0.1.5          |
| GPGME Version: | 1.13.0        |
| Author:      | Ben McGinnes <ben@gnupg.org> |
| Author GPG Key: | DB4724E6FA4286C92B4E55C4321E4E2373590E5D |
| Language:    | Australian English, British English |
| Language codes: | en-AU, en-GB, en |
```

This document provides basic instruction in how to use the GPGME Python bindings to programmatically leverage the GPGME library.

**** Python 2 versus Python 3**

```
:PROPERTIES:
:CUSTOM_ID: py2-vs-py3
:END:
```

Though the GPGME Python bindings themselves provide support for both Python 2 and 3, the focus is unequivocally on Python 3 and specifically from Python 3.4 and above. As a consequence all the examples and instructions in this guide use Python 3 code.

Much of it will work with Python 2, but much of it also deals with Python 3 byte literals, particularly when reading and writing data. Developers concentrating on Python 2.7, and possibly even 2.6, will need to make the appropriate modifications to support the older string and unicode types as opposed to bytes.

There are multiple reasons for concentrating on Python 3; some of which relate to the immediate integration of these bindings, some of which relate to longer term plans for both GPGME and the python bindings and some of which relate to the impending EOL period for Python 2.7. Essentially, though, there is little value in tying the bindings to a version of the language which is a dead end and the advantages offered by Python 3 over Python 2 make handling the data types with which GPGME deals considerably easier.

**** Examples**

```
:PROPERTIES:
:CUSTOM_ID: howto-python3-examples
:END:
```

All of the examples found in this document can be found as Python 3 scripts in the =lang/python/examples/howto= directory.

** Unofficial Drafts

:PROPERTIES:
:CUSTOM_ID: unofficial-drafts
:END:

In addition to shipping with each release of GPGME, there is a section on locations to read or download `[[#draft-editions][draft editions]]` of this document from at the end of it. These are unofficial versions produced in between major releases.

** What's New

:PROPERTIES:
:CUSTOM_ID: new-stuff
:END:

Full details of what is new are now available in the `[[file:what-is-new.org][What's New]]` file and archives of the preceding `/What's New/` sections are available in the `[[file:what-was-new][What Was New]]` file.

*** New in GPGME 1130

:PROPERTIES:
:CUSTOM_ID: new-stuff-1-13-0
:END:

See the `[[file:what-is-new#new-stuff-1-13-0][What's New]]` document for what is new in version 1.13.0.

*** New in GPGME 1120

:PROPERTIES:
:CUSTOM_ID: new-stuff-1-12-0
:END:

See the `[[file:what-was-new#new-stuff-1-12-0][What Was New]]` document for what was new in version 1.12.0.

* GPGME Concepts

:PROPERTIES:
:CUSTOM_ID: gpgme-concepts
:END:

** A C API

:PROPERTIES:
:CUSTOM_ID: gpgme-c-api
:END:

Unlike many modern APIs with which programmers will be more familiar with these days, the GPGME API is a C API. The API is intended for use by C coders who would be able to access its features by including the `=gpgme.h=` header file with their own C source code and then access its functions just as they would any other C headers.

This is a very effective method of gaining complete access to the API and in the most efficient manner possible. It does, however, have the drawback that it cannot be directly used by other languages without some means of providing an interface to those languages. This is where the need for bindings in various languages stems.

```
** Python bindings
:PROPERTIES:
:CUSTOM_ID: gpgme-python-bindings
:END:
```

The Python bindings for GPGME provide a higher level means of accessing the complete feature set of GPGME itself. It also provides a more pythonic means of calling these API functions.

The bindings are generated dynamically with SWIG and the copy of `=gpgme.h=` generated when GPGME is compiled.

This means that a version of the Python bindings is fundamentally tied to the exact same version of GPGME used to generate that copy of `=gpgme.h=`.

```
** Difference between the Python bindings and other GnuPG Python packages
:PROPERTIES:
:CUSTOM_ID: gpgme-python-bindings-diffs
:END:
```

There have been numerous attempts to add GnuPG support to Python over the years. Some of the most well known are listed here, along with what differentiates them.

```
*** The python-gnupg package maintained by Vinay Sajip
:PROPERTIES:
:CUSTOM_ID: diffs-python-gnupg
:END:
```

This is arguably the most popular means of integrating GPG with Python. The package utilises the `=subprocess=` module to implement wrappers for the `=gpg=` and `=gpg2=` executables normally invoked on the

command line (=gpg.exe= and =gpg2.exe= on Windows).

The popularity of this package stemmed from its ease of use and capability in providing the most commonly required features.

Unfortunately it has been beset by a number of security issues in the past; most of which stemmed from using unsafe methods of accessing the command line via the =subprocess= calls. While some effort has been made over the last two to three years (as of 2018) to mitigate this, particularly by no longer providing shell access through those subprocess calls, the wrapper is still somewhat limited in the scope of its GnuPG features coverage.

The python-gnupg package is available under the MIT license.

```
*** The gnupg package created and maintained by Isis Lovecruft
:PROPERTIES:
:CUSTOM_ID: diffs-isis-gnupg
:END:
```

In 2015 Isis Lovecruft from the Tor Project forked and then re-implemented the python-gnupg package as just gnupg. This new package also relied on subprocess to call the =gpg= or =gpg2= binaries, but did so somewhat more securely.

The naming and version numbering selected for this package, however, resulted in conflicts with the original python-gnupg and since its functions were called in a different manner to python-gnupg, the release of this package also resulted in a great deal of consternation when people installed what they thought was an upgrade that subsequently broke the code relying on it.

The gnupg package is available under the GNU General Public License version 3.0 (or any later version).

```
*** The PyME package maintained by Martin Albrecht
:PROPERTIES:
:CUSTOM_ID: diffs-pyme
:END:
```

This package is the origin of these bindings, though they are somewhat different now. For details of when and how the PyME package was folded back into GPGME itself see the [\[\[file:short-history.org\]\]](http://file:short-history.org) [Short History] document.[fn:1]

The PyME package was first released in 2002 and was also the first attempt to implement a low level binding to GPGME. In doing so it

provided access to considerably more functionality than either the `=python-gnupg=` or `=gnupg=` packages.

The PyME package is only available for Python 2.6 and 2.7.

Porting the PyME package to Python 3.4 in 2015 is what resulted in it being folded into the GPGME project and the current bindings are the end result of that effort.

The PyME package is available under the same dual licensing as GPGME itself: the GNU General Public License version 2.0 (or any later version) and the GNU Lesser General Public License version 2.1 (or any later version).

```
* GPGME Python bindings installation
:PROPERTIES:
:CUSTOM_ID: gpgme-python-install
:END:
```

```
** No PyPI
:PROPERTIES:
:CUSTOM_ID: do-not-use-pypi
:END:
```

Most third-party Python packages and modules are available and distributed through the Python Package Installer, known as PyPI.

Due to the nature of what these bindings are and how they work, it is infeasible to install the GPGME Python bindings in the same way.

This is because the bindings use SWIG to dynamically generate C bindings against `=gpgme.h=` and `=gpgme.h=` is generated from `=gpgme.h.in=` at compile time when GPGME is built from source. Thus to include a package in PyPI which actually built correctly would require either statically built libraries for every architecture bundled with it or a full implementation of C for each architecture.

See the additional notes regarding `[[#snafu-ffi][CFFI and SWIG]]` at the end of this section for further details.

```
** Requirements
:PROPERTIES:
:CUSTOM_ID: gpgme-python-requirements
:END:
```

The GPGME Python bindings only have three requirements:

1. A suitable version of Python 2 or Python 3. With Python 2 that means CPython 2.7 and with Python 3 that means CPython 3.4 or higher.
2. [\[\[https://www.swig.org\]\[SWIG\]\]](https://www.swig.org).
3. GPGME itself. Which also means that all of GPGME's dependencies must be installed too.

*** Recommended Additions

```
:PROPERTIES:  
:CUSTOM_ID: gpgme-python-recommendations  
:END:
```

Though none of the following are absolute requirements, they are all recommended for use with the Python bindings. In some cases these recommendations refer to which version(s) of CPython to use the bindings with, while others refer to third party modules which provide a significant advantage in some way.

1. If possible, use Python 3 instead of 2.
2. Favour a more recent version of Python since even 3.4 is due to reach EOL soon. In production systems and services, Python 3.6 should be robust enough to be relied on.
3. If possible add the following Python modules which are not part of the standard library: [\[\[http://docs.python-requests.org/en/latest/index.html\]\[Requests\]\]](http://docs.python-requests.org/en/latest/index.html), [\[\[https://cython.org/\]\[Cython\]\]](https://cython.org/), [\[\[https://pendulum.eustace.io/\]\[Pendulum\]\]](https://pendulum.eustace.io/) and [\[\[https://github.com/Selfnet/hkp4py\]\[hkp4py\]\]](https://github.com/Selfnet/hkp4py).

Chances are quite high that at least the first one and maybe two of those will already be installed.

Note that, as with Cython, some of advanced use case scenarios will bring with them additional requirements. Most of these will be fairly well known and commonly installed ones, however, which are in many cases likely to have already been installed on many systems or be familiar to Python programmers.

** Installation

```
:PROPERTIES:  
:CUSTOM_ID: installation  
:END:
```

Installing the Python bindings is effectively achieved by compiling and installing GPGME itself.

Once SWIG is installed with Python and all the dependencies for GPGME are installed you only need to confirm that the version(s) of Python you want the bindings installed for are in your `=$PATH=`.

By default GPGME will attempt to install the bindings for the most recent or highest version number of Python 2 and Python 3 it detects in `=$PATH=`. It specifically checks for the `=python=` and `=python3=` executables first and then checks for specific version numbers.

For Python 2 it checks for these executables in this order: `=python=`, `=python2=` and `=python2.7=`.

For Python 3 it checks for these executables in this order: `=python3=`, `=python3.7=`, `=python3.6=`, `=python3.5=` and `=python3.4=`.^[fn:2]

On systems where `=python=` is actually `=python3=` and not `=python2=` it may be possible that `=python2=` may be overlooked, but there have been no reports of that actually occurring as yet.

In the three months or so since the release of Python 3.7.0 there has been extensive testing and work with these bindings with no issues specifically relating to the new version of Python or any of the new features of either the language or the bindings. This has also been the case with Python 3.7.1rc1. With that in mind and given the release of Python 3.7.1 is scheduled for around the same time as GPGME 1.12.0, the order of preferred Python versions has been changed to move Python 3.7 ahead of Python 3.6.

```
*** Installing GPGME
:PROPERTIES:
:CUSTOM_ID: install-gpgme
:END:
```

See the GPGME `=README=` file for details of how to install GPGME from source.

```
** Known Issues
:PROPERTIES:
:CUSTOM_ID: snafu
:END:
```

There are a few known issues with the current build process and the Python bindings. For the most part these are easily addressed should they be encountered.

*** Breaking Builds

```
:PROPERTIES:  
:CUSTOM_ID: snafu-a-swig-of-this-builds-character  
:END:
```

Occasionally when installing GPGME with the Python bindings included it may be observed that the `=make=` portion of that process induces a large very number of warnings and, eventually errors which end that part of the build process. Yet following that with `=make check=` and `=make install=` appears to work seamlessly.

The cause of this is related to the way SWIG needs to be called to dynamically generate the C bindings for GPGME in the first place. So the entire process will always produce `=lang/python/python2-gpg/=` and `=lang/python/python3-gpg/=` directories. These should contain the build output generated during compilation, including the complete bindings and module installed into `=site-packages=`.

Occasionally the errors in the early part or some other conflict (e.g. not installing as `*/root/*` or `*/su/*`) may result in nothing being installed to the relevant `=site-packages=` directory and the build directory missing a lot of expected files. Even when this occurs, the solution is actually quite simple and will always work.

That solution is simply to run the following commands as either the `*root*` user or prepended with `=sudo -H=[fn:3]` in the `=lang/python/=` directory:

```
#+BEGIN_SRC shell  
/path/to/pythonX.Y setup.py build  
/path/to/pythonX.Y setup.py build  
/path/to/pythonX.Y setup.py install  
#+END_SRC
```

Yes, the build command does need to be run twice. Yes, you still need to run the potentially failing or incomplete steps during the `=configure=`, `=make=` and `=make install=` steps with installing GPGME. This is because those steps generate a lot of essential files needed, both by and in order to create, the bindings (including both the `=setup.py=` and `=pggme.h=` files).

**** IMPORTANT Note

```
:PROPERTIES:  
:CUSTOM_ID: snafu-swig-build-note  
:END:
```

If specifying a selected number of languages to create bindings for,

try to leave Python last. Currently the majority of the other language bindings are also preceding Python of either version when listed alphabetically (not counting the Qt bindings).

If Python is set to precede one of the other languages then it is possible that the errors described here may interrupt the build process before generating bindings for those other languages. In these cases it may be preferable to configure all preferred language bindings separately with alternative `=configure=` steps for GPGME using the `--enable-languages=$LANGUAGE=` option.

Alternatively `=make=` (or `=gmake=`, depending on your platform) may be run with the `=-k=` option, which tells make to keep going even if errors are encountered. In that case the failure of one language's set of bindings to build should not hamper another language's bindings to build.

*** Reinstalling Responsibly

```
:PROPERTIES:  
:CUSTOM_ID: snafu-lessons-for-the-lazy  
:END:
```

Regardless of whether you're installing for one version of Python or several, there will come a point where reinstallation is required. With most Python module installations, the installed files go into the relevant `site-packages` directory and are then forgotten about. Then the module is upgraded, the new files are copied over the old and that's the end of the matter.

While the same is true of these bindings, there have been intermittent issues observed on some platforms which have benefited significantly from removing all the previous installations of the bindings before installing the updated versions.

Removing the previous version(s) is simply a matter of changing to the relevant `site-packages=` directory for the version of Python in question and removing the `=gpg/=` directory and any accompanying `egg-info` files for that module.

In most cases this will require root or administration privileges on the system, but the same is true of installing the module in the first place.

*** Multiple installations

```
:PROPERTIES:  
:CUSTOM_ID: snafu-the-full-monty
```


:END:

For a variety of reasons it may be either necessary or just preferable to install the bindings to alternative installed Python versions which meet the requirements of these bindings.

On POSIX systems this will generally be most simply achieved by running the manual installation commands (build, build, install) as described in the previous section for each Python installation the bindings need to be installed to.

As per the SWIG documentation: the compilers, libraries and runtime used to build GPGME and the Python Bindings **must** match those used to compile Python itself, including the version number(s) (at least going by major version numbers and probably minor numbers too).

On most POSIX systems, including OS X, this will very likely be the case in most, if not all, cases.

Note that from GPGME [[<https://dev.gnupg.org/rMff6ff616aea6f59b7f2ce1176492850ecdf3851e>][1.12.1]] the default installation installs to each version of Python it can find first. That is that it will currently install for the first copies of Python versions 2.7, 3.4, 3.5, 3.6, 3.7 and 3.8 (dev branch) that it finds. Usually this will be in the same prefix as GPGME itself, but is dictated by the `=PATH=` when the installation is performed. The above instructions can still be performed on other python installations which the installer does not find, including alternative prefixes.

*** Won't Work With Windows

```
:PROPERTIES:  
:CUSTOM_ID: snafu-runtime-not-funtime  
:END:
```

There are semi-regular reports of Windows users having considerable difficulty in installing and using the Python bindings at all. Very often, possibly even always, these reports come from Cygwin users and/or MinGW users and/or Msys2 users. Though not all of them have been confirmed, it appears that these reports have also come from people who installed Python using the Windows installer files from the [[<https://python.org>][Python website]] (i.e. mostly MSI installers, sometimes self-extracting `=.exe=` files).

The Windows versions of Python are not built using Cygwin, MinGW or Msys2; they're built using Microsoft Visual Studio. Furthermore the version used is /considerably/ more advanced than the version which

MinGW obtained a small number of files from many years ago in order to be able to compile anything at all. Not only that, but there are changes to the version of Visual Studio between some micro releases, though that is particularly the case with Python 2.7, since it has been kept around far longer than it should have been.

There are two theoretical solutions to this issue:

1. Compile and install the GnuPG stack, including GPGME and the Python bindings using the same version of Microsoft Visual Studio used by the Python Foundation to compile the version of Python installed.

If there are multiple versions of Python then this will need to be done with each different version of Visual Studio used for those versions of Python.

2. Compile and install Python using the same tools used by choice, such as MinGW or Msys2.

Do **not** use the official Windows installer for Python unless following the first method.

In this type of situation it may even be for the best to accept that there are less limitations on permissive software than free software and simply opt to use a recent version of the Community Edition of Microsoft Visual Studio to compile and build all of it, no matter what.

Investigations into the extent or the limitations of this issue are ongoing.

The following table lists the version of Microsoft Visual Studio which needs to be used when compiling GPGME and the Python bindings with each version of the CPython binary released [<https://www.python.org/downloads/windows/>][for Windows]:

| CPython | Microsoft product name | runtime filename |
|---------|------------------------|--------------------|
| 2.7.6 | Visual Studio 2008 | MSVCR90.DLL |
| 3.4.0 | Visual Studio 2010 | MSVCR100.DLL |
| 3.5.0 | Visual Studio 2015 | <i>*see below*</i> |
| 3.6.0 | Visual Studio 2015 | <i>*see below*</i> |
| 3.7.0 | Visual Studio 2017* | <i>*see below*</i> |

It is important to note that MingW and Msys2 ship with the Visual C runtime from Microsoft Visual Studio 2005 and are thus **incompatible** with all the versions of CPython which can be used with the GPGME Python bindings.

It is also important to note that from CPython 3.5 onwards, the Python Foundation has adopted the reworking of the Visual C runtime which was performed for Visual Studio 2015 and aimed at resolving many of these kinds of issues. Much greater detail on these issues and the correct file(s) to link to are available from Matthew Brett's invaluable page, [\[\[https://matthew-brett.github.io/pydagogue/python_msvc.html\]\]](https://matthew-brett.github.io/pydagogue/python_msvc.html)[[Using Microsoft Visual C with Python]]. It is also worth reading the Microsoft Developer Network blog post on [\[\[http://blogs.msdn.com/b/vcblog/archive/2015/03/03/introducing-the-universal-crt.aspx\]\]](http://blogs.msdn.com/b/vcblog/archive/2015/03/03/introducing-the-universal-crt.aspx)[[the universal CRT]] and Steve Dower's blog posts on Python extensions ([\[\[http://stevedower.id.au/blog/building-for-python-3-5\]\]](http://stevedower.id.au/blog/building-for-python-3-5)[[part 1]] and [\[\[http://stevedower.id.au/blog/building-for-python-3-5-part-two\]\]](http://stevedower.id.au/blog/building-for-python-3-5-part-two)[[part 2]]).

The second of those two posts by Steve Dower contains the details of specific configuration options required for compiling anything to be used with official CPython releases. In addition to those configuration and compiler settings to use, the versions of Visual Studio prior to Visual Studio 2015 did not support 64-bit systems by default. So compiling a 64-bit version of these bindings for a 64-bit version of CPython 2.7 or 3.4 requires additional work.

In addition to the blog posts, the [\[\[https://wiki.python.org/moin/WindowsCompilers\]\]](https://wiki.python.org/moin/WindowsCompilers)[[Windows compilers]] wiki page on the CPython wiki is another essential reference on the relevant versions of Visual Studio to use and the degree of compatibility with CPython releases.

Eventually someone will ask why there isn't an installable binary for Windows, which the GPGME of the licenses do not preclude as long as the source code is available in conjunction with such a release.

The sheer number of versions of Visual Studio in conjunction with differing configuration options depending on the target Windows version and whether the architecture is 64-bit or 32-bit makes it difficult to provide a correct binary installer for Windows users. At the bare minimum doing so would require the GnuPG project compile ten different versions of the bindings with each release; both 32-bit and 64-bit versions for CPython 2.7 and 3.4, with 64-bit versions for both x86-64 (i.e. Intel and AMD) and ARM architectures for CPython 3.5, 3.6, 3.7 and later releases. That's the bare *minimum*, it'd probably be higher.

Additionally, with only a binary installation used in conjunction with the CPython installer from `=python.org=` the advanced options available which utilise [\[\[#cython\]\]](#)[[Cython]] will not be able to be used at all. Cython depends on being able to compile the C code it generates and that too would need to utilise a matching runtime to both the installed version of CPython and these bindings in order to work with the bindings.

Considering all of that, what do we recommend?

1. Use a recent version of CPython; at least 3.5, but ideally 3.6 or later.
2. Use Visual Studio 2015 or the standalone build tools for Visual Studio 2017 (or later).
3. Compile both CPython and GPGME with these bindings using the tools selected in step 2.
4. Ignore MingW, Msys2 and the official CPython binary installers.
5. Be thankful the answer to this question wasn't simply to say something like, install Linux or install FreeBSD (or even Apple's OS X).

```
*** CFFI is the Best and GPGME should use it instead of SWIG
:PROPERTIES:
:CUSTOM_ID: snafu-cffi
:END:
```

There are many reasons for favouring [<https://cffi.readthedocs.io/en/latest/overview.html>][CFFI] and proponents of it are

quite happy to repeat these things as if all it would take to switch from SWIG to CFFI is repeating that list as if it were a new concept.

The fact is that there are things which Python's CFFI implementation cannot handle in the GPGME C code. Beyond that there are features of SWIG which are simply not available with CFFI at all. SWIG generates the bindings to Python using the `=gpgme.h=` file, but that file is not a single version shipped with each release, it too is generated when GPGME is compiled.

CFFI is currently unable to adapt to such a potentially mutable codebase. If there were some means of applying SWIG's dynamic code generation to produce the Python/CFFI API modes of accessing the GPGME libraries (or the source source code directly), but such a thing does not exist yet either and it currently appears that work is needed in at least one of CFFI's dependencies before any of this can be addressed.

So if you're a massive fan of CFFI; that's great, but if you want this project to switch to CFFI then rather than just insisting that it should, I'd suggest you volunteer to bring CFFI up to the level this project needs.

If you're actually seriously considering doing so, then I'd suggest taking the `=gpgme-tool.c=` file in the GPGME `=src/=` directory and getting that to work with any of the CFFI API methods (not the ABI methods, they'll work with pretty much anything). When you start running into trouble with "ifdefs" then you'll know what sort of things are lacking. That doesn't even take into account the amount of work saved via SWIG's code generation techniques either.

*** Virtualised Environments

```
:PROPERTIES:  
:CUSTOM_ID: snafu-venv  
:END:
```

It is fairly common practice amongst Python developers to, as much as possible, use packages like `virtualenv` to keep various things that are to be installed from interfering with each other. Given how much of the GPGME bindings is often at odds with the usual pythonic way of doing things, it stands to reason that this would be called into question too.

As it happens the answer as to whether or not the bindings can be used with `virtualenv`, the answer is both yes and no.

In general we recommend installing to the relevant path and matching prefix of GPGME itself. Which means that when GPGME, and ideally the rest of the GnuPG stack, is installed to a prefix like `=usr/local=` or `=opt/local=` then the bindings would need to be installed to the main Python installation and not a virtualised abstraction. Attempts to separate the two in the past have been known to cause weird and intermittent errors ranging from minor annoyances to complete failures in the build process.

As a consequence we only recommend building with and installing to the main Python installations within the same prefix as GPGME is installed to or which are found by GPGME's configuration stage immediately prior to running the make commands. Which is exactly what the compiling and installing process of GPGME does by default.

Once that is done, however, it appears that a copy of the compiled module may be installed into a `virtualenv` of the same major and minor version matching the build. Alternatively it is possible to utilise a `=sites.pth=` file in the `=site-packages/=` directory of a `virtualenv` installation, which links back to the system installations corresponding directory in order to import anything installed system wide. This may or may not be appropriate on a case by case basis.

Though extensive testing of either of these options is not yet

complete, preliminary testing of them indicates that both are viable as long as the main installation is complete. Which means that certain other options normally restricted to virtual environments are also available, including integration with pythonic test suites (e.g. [\[\[https://docs.pytest.org/en/latest/index.html\]\]](https://docs.pytest.org/en/latest/index.html)`[[pytest]]`) and other large projects.

That said, it is worth reiterating the warning regarding non-standard installations. If one were to attempt to install the bindings only to a virtual environment without somehow also including the full GnuPG stack (or enough of it as to include GPGME) then it is highly likely that errors would be encountered at some point and more than a little likely that the build process itself would break.

If a degree of separation from the main operating system is still required in spite of these warnings, then consider other forms of virtualisation. Either a virtual machine (e.g. [\[\[https://www.virtualbox.org/\]\]](https://www.virtualbox.org/)`[[VirtualBox]]`), a hardware emulation layer (e.g. [\[\[https://www.qemu.org/\]\]](https://www.qemu.org/)`[[QEMU]]`) or an application container (e.g. [\[\[https://www.docker.com/why-docker/\]\]](https://www.docker.com/why-docker/)`[[Docker]]`).

Finally it should be noted that the limited tests conducted thus far have been using the `=virtualenv=` command in a new directory to create the virtual python environment. As opposed to the standard `=python3 -m venv=` and it is possible that this will make a difference depending on the system and version of Python in use. Another option is to run the command `=python3 -m virtualenv /path/to/install/virtual/thingy=` instead.

```
*** Post installation
:PROPERTIES:
:CUSTOM_ID: snafu-docs
:END:
```

Following installation it is recommended to move the `=post_installer.py=` script from the `=lang/python/examples/howto/=` directory to the `=lang/python/=` directory and run it. This will fix or restore files needed by Sphinx which may be removed during a distribution build for release. It will also generate reST files from Org mode files with Pandoc and generate Texinfo files from Org mode files with GNU Emacs and Org mode (in batch mode). Additionally it will fix the UTF-8 declaration line in the Texinfo files (Emacs expects "UTF-8" to be "utf-8").

```
* Fundamentals
:PROPERTIES:
:CUSTOM_ID: howto-fund-a-mental
:END:
```

Before we can get to the fun stuff, there are a few matters regarding GPGME's design which hold true whether you're dealing with the C code directly or these Python bindings.

```
** No REST
:PROPERTIES:
:CUSTOM_ID: no-rest-for-the-wicked
:END:
```

The first part of which is or will be fairly blatantly obvious upon viewing the first example, but it's worth reiterating anyway. That being that this API is *not* a REST API. Nor indeed could it ever be one.

Most, if not all, Python programmers (and not just Python programmers) know how easy it is to work with a RESTful API. In fact they've become so popular that many other APIs attempt to emulate REST-like behaviour as much as they are able. Right down to the use of JSON formatted output to facilitate the use of their API without having to retrain developers.

This API does not do that. It would not be able to do that and also provide access to the entire C API on which it's built. It does, however, provide a very pythonic interface on top of the direct bindings and it's this pythonic layer that this HOWTO deals with.

```
** Context
:PROPERTIES:
:CUSTOM_ID: howto-get-context
:END:
```

One of the reasons which prevents this API from being RESTful is that most operations require more than one instruction to the API to perform the task. Sure, there are certain functions which can be performed simultaneously, particularly if the result known or strongly anticipated (e.g. selecting and encrypting to a key known to be in the public keybox).

There are many more, however, which cannot be manipulated so readily: they must be performed in a specific sequence and the result of one operation has a direct bearing on the outcome of subsequent operations. Not merely by generating an error either.

When dealing with this type of persistent state on the web, full of both the RESTful and REST-like, it's most commonly referred to as a

session. In GPGME, however, it is called a context and every operation type has one.

* Working with keys

```
:PROPERTIES:
```

```
:CUSTOM_ID: howto-keys
```

```
:END:
```

** Key selection

```
:PROPERTIES:
```

```
:CUSTOM_ID: howto-keys-selection
```

```
:END:
```

Selecting keys to encrypt to or to sign with will be a common occurrence when working with GPGMe and the means available for doing so are quite simple.

They do depend on utilising a Context; however once the data is recorded in another variable, that Context does not need to be the same one which subsequent operations are performed.

The easiest way to select a specific key is by searching for that key's key ID or fingerprint, preferably the full fingerprint without any spaces in it. A long key ID will probably be okay, but is not advised and short key IDs are already a problem with some being generated to match specific patterns. It does not matter whether the pattern is upper or lower case.

So this is the best method:

```
#+BEGIN_SRC python -i
import gpg
```

```
k = gpg.Context().keylist(pattern="258E88DCBD3CD44D8E7AB43F6ECB6AF0DEADBEEF")
keys = list(k)
#+END_SRC
```

This is passable and very likely to be common:

```
#+BEGIN_SRC python -i
import gpg
```

```
k = gpg.Context().keylist(pattern="0x6ECB6AF0DEADBEEF")
keys = list(k)
#+END_SRC
```


And this is a really bad idea:

```
#+BEGIN_SRC python -i
import gpg

k = gpg.Context().keylist(pattern="0xDEADBEEF")
keys = list(k)
#+END_SRC
```

Alternatively it may be that the intention is to create a list of keys which all match a particular search string. For instance all the addresses at a particular domain, like this:

```
#+BEGIN_SRC python -i
import gpg

ncsc = gpg.Context().keylist(pattern="ncsc.mil")
nsa = list(ncsc)
#+END_SRC
```

```
*** Counting keys
:PROPERTIES:
:CUSTOM_ID: howto-keys-counting
:END:
```

Counting the number of keys in your public keybox (=pubring.kbx=), the format which has superseded the old keyring format (=pubring.gpg= and =secring.gpg=), or the number of secret keys is a very simple task.

```
#+BEGIN_SRC python -i
import gpg

c = gpg.Context()
seckeys = c.keylist(pattern=None, secret=True)
pubkeys = c.keylist(pattern=None, secret=False)

seclist = list(seckeys)
secnum = len(seclist)

publist = list(pubkeys)
pubnum = len(publist)

print("""
Number of secret keys: {0}
Number of public keys: {1}
""".format(secnum, pubnum))
#+END_SRC
```

NOTE: The `[[#cython][Cython]]` introduction in the `[[#advanced-use][Advanced and Experimental]]` section uses this same key counting code with Cython to demonstrate some areas where Cython can improve performance even with the bindings. Users with large public keyrings or keyboxes, for instance, should consider these options if they are comfortable with using Cython.

```
** Get key
:PROPERTIES:
:CUSTOM_ID: howto-get-key
:END:
```

An alternative method of getting a single key via its fingerprint is available directly within a Context with `=Context().get_key=`. This is the preferred method of selecting a key in order to modify it, sign or certify it and for obtaining relevant data about a single key as a part of other functions; when verifying a signature made by that key, for instance.

By default this method will select public keys, but it can select secret keys as well.

This first example demonstrates selecting the current key of Werner Koch, which is due to expire at the end of 2018:

```
#+BEGIN_SRC python -i
import gpg

fingerprint = "80615870F5BAD690333686D0F2AD85AC1E42B367"
key = gpg.Context().get_key(fingerprint)
#+END_SRC
```

Whereas this example demonstrates selecting the author's current key with the `=secret=` key word argument set to `=True=`:

```
#+BEGIN_SRC python -i
import gpg

fingerprint = "DB4724E6FA4286C92B4E55C4321E4E2373590E5D"
key = gpg.Context().get_key(fingerprint, secret=True)
#+END_SRC
```

It is, of course, quite possible to select expired, disabled and revoked keys with this function, but only to effectively display information about those keys.

It is also possible to use both unicode or string literals and byte literals with the fingerprint when getting a key in this way.

```
** Importing keys
:PROPERTIES:
:CUSTOM_ID: howto-import-key
:END:
```

Importing keys is possible with the `key_import()` method and takes one argument which is a bytes literal object containing either the binary or ASCII armoured key data for one or more keys.

The following example retrieves one or more keys from the SKS key servers via the web using the `requests` module. Since `requests` returns the content as a bytes literal object, we can then use that directly to import the resulting data into our keybox.

```
#+BEGIN_SRC python -i
import gpg
import os.path
import requests

c = gpg.Context()
url = "https://sks-key servers.net/pks/lookup"
pattern = input("Enter the pattern to search for key or user IDs: ")
payload = {"op": "get", "search": pattern}

r = requests.get(url, verify=True, params=payload)
result = c.key_import(r.content)

if result is not None and hasattr(result, "considered") is False:
    print(result)
elif result is not None and hasattr(result, "considered") is True:
    num_keys = len(result.imports)
    new_revs = result.new_revocations
    new_sigs = result.new_signatures
    new_subs = result.new_sub_keys
    new_uids = result.new_user_ids
    new_scr = result.secret_imported
    nochange = result.unchanged
    print("""
The total number of keys considered for import was: {0}

    Number of keys revoked: {1}
    Number of new signatures: {2}
    Number of new subkeys: {3}
    Number of new user IDs: {4}

```

```
Number of new secret keys: {5}
Number of unchanged keys: {6}
```

The key IDs for all considered keys were:

```
"""format(num_keys, new_revs, new_sigs, new_subs, new_uids, new_scert,
         nochange))
for i in range(num_keys):
    print("{0}\n".format(result.imports[i].fpr))
else:
    pass
#+END_SRC
```

NOTE: When searching for a key ID of any length or a fingerprint (without spaces), the SKS servers require the the leading =0x= indicative of hexadecimal be included. Also note that the old short key IDs (e.g. =0xDEADBEEF=) should no longer be used due to the relative ease by which such key IDs can be reproduced, as demonstrated by the Evil32 Project in 2014 (which was subsequently exploited in 2016).

Testing for whether a string in any given search is or may be a hexadecimal value which may be missing the leading =0x= is a simple matter of using a try/except statement which attempts to convert the string as hex to an integer and then back to hex; then using that to search with. Raising a ValueError simply results in treating the string as a string. This is the method and logic utilised in the =import-keys-hkp.py= script (see below).

```
*** Working with ProtonMail
:PROPERTIES:
:CUSTOM_ID: import-protonmail
:END:
```

Here is a variation on the example above which checks the constrained ProtonMail keyserver for ProtonMail public keys.

```
#+BEGIN_SRC python -i
import gpg
import requests
import sys

print("""
This script searches the ProtonMail key server for the specified key and
imports it.
""")

c = gpg.Context(armor=True)
```

```

url = "https://api.protonmail.ch/pks/lookup"
ksearch = []

if len(sys.argv) >= 2:
    keyterm = sys.argv[1]
else:
    keyterm = input("Enter the key ID, UID or search string: ")

if keyterm.count("@") == 2 and keyterm.startswith("@") is True:
    ksearch.append(keyterm[1:])
    ksearch.append(keyterm[1:])
    ksearch.append(keyterm[1:])
elif keyterm.count("@") == 1 and keyterm.startswith("@") is True:
    ksearch.append("{}@protonmail.com".format(keyterm[1:]))
    ksearch.append("{}@protonmail.ch".format(keyterm[1:]))
    ksearch.append("{}@pm.me".format(keyterm[1:]))
elif keyterm.count("@") == 0:
    ksearch.append("{}@protonmail.com".format(keyterm))
    ksearch.append("{}@protonmail.ch".format(keyterm))
    ksearch.append("{}@pm.me".format(keyterm))
elif keyterm.count("@") == 2 and keyterm.startswith("@") is False:
    uidlist = keyterm.split("@")
    for uid in uidlist:
        ksearch.append("{}@protonmail.com".format(uid))
        ksearch.append("{}@protonmail.ch".format(uid))
        ksearch.append("{}@pm.me".format(uid))
elif keyterm.count("@") > 2:
    uidlist = keyterm.split("@")
    for uid in uidlist:
        ksearch.append("{}@protonmail.com".format(uid))
        ksearch.append("{}@protonmail.ch".format(uid))
        ksearch.append("{}@pm.me".format(uid))
else:
    ksearch.append(keyterm)

for k in ksearch:
    payload = {"op": "get", "search": k}
    try:
        r = requests.get(url, verify=True, params=payload)
        if r.ok is True:
            result = c.key_import(r.content)
        elif r.ok is False:
            result = r.content
    except Exception as e:
        result = None

if result is not None and hasattr(result, "considered") is False:
    print("{} for {}".format(result.decode(), k))

```

```
elif result is not None and hasattr(result, "considered") is True:
```

```
    num_keys = len(result.imports)
    new_revs = result.new_revocations
    new_sigs = result.new_signatures
    new_subs = result.new_sub_keys
    new_uids = result.new_user_ids
    new_scert = result.secret_imported
    nochange = result.unchanged
    print("""
```

```
The total number of keys considered for import was: {0}
```

With UIDs wholly or partially matching the following string:

```
{1}
```

```
Number of keys revoked: {2}
```

```
Number of new signatures: {3}
```

```
Number of new subkeys: {4}
```

```
Number of new user IDs: {5}
```

```
Number of new secret keys: {6}
```

```
Number of unchanged keys: {7}
```

The key IDs for all considered keys were:

```
"".format(num_keys, k, new_revs, new_sigs, new_subs, new_uids, new_scert,
          nochange))
for i in range(num_keys):
    print(result.imports[i].fpr)
print("")
elif result is None:
    print(e)
#+END_SRC
```

Both the above example, `[./examples/howto/pmkey-import.py][pmkey-import.py]`, and a version which prompts for an alternative GnuPG home directory, `[./examples/howto/pmkey-import-alt.py][pmkey-import-alt.py]`, are available with the other examples and are executable scripts.

Note that while the ProtonMail servers are based on the SKS servers, their server is related more to their API and is not feature complete by comparison to the servers in the SKS pool. One notable difference being that the ProtonMail server does not permit non ProtonMail users to update their own keys, which could be a vector for attacking ProtonMail users who may not receive a key's revocation if it had been compromised.

```
*** Importing with HKP for Python
```

```
:PROPERTIES:
```

```
:CUSTOM_ID: import-hkp4py
```

:END:

Performing the same tasks with the [\[\[https://github.com/Selfnet/hkp4py\]\]](https://github.com/Selfnet/hkp4py) `hkp4py` module (available via PyPI) is not too much different, but does provide a number of options of benefit to end users. Not least of which being the ability to perform some checks on a key before importing it or not. For instance it may be the policy of a site or project to only import keys which have not been revoked. The `hkp4py` module permits such checks prior to the importing of the keys found.

```
#+BEGIN_SRC python -i
import gpg
import hkp4py
import sys

c = gpg.Context()
server = hkp4py.KeyServer("hkps://hkps.pool.sks-keyservers.net")
results = []
keys = []

if len(sys.argv) > 2:
    pattern = " ".join(sys.argv[1:])
elif len(sys.argv) == 2:
    pattern = sys.argv[1]
else:
    pattern = input("Enter the pattern to search for keys or user IDs: ")

if pattern is not None:
    try:
        key = server.search(hex(int(pattern, 16)))
        keyed = True
    except ValueError as ve:
        key = server.search(pattern)
        keyed = False

    if key is not None:
        keys.append(key[0])
        if keyed is True:
            try:
                fob = server.search(pattern)
            except:
                fob = None
            if fob is not None:
                keys.append(fob[0])
        else:
            pass
    else:
```

```

pass

for logrus in pattern.split():
    try:
        key = server.search(hex(int(logrus, 16)))
        hexed = True
    except ValueError as ve:
        key = server.search(logrus)
        hexed = False

    if key is not None:
        keys.append(key[0])
        if hexed is True:
            try:
                fob = server.search(logrus)
            except:
                fob = None
            if fob is not None:
                keys.append(fob[0])
        else:
            pass
    else:
        pass

if len(keys) > 0:
    for key in keys:
        import_result = c.key_import(key.key_blob)
        results.append(import_result)

for result in results:
    if result is not None and hasattr(result, "considered") is False:
        print(result)
    elif result is not None and hasattr(result, "considered") is True:
        num_keys = len(result.imports)
        new_revs = result.new_revocations
        new_sigs = result.new_signatures
        new_subs = result.new_sub_keys
        new_uids = result.new_user_ids
        new_scert = result.secret_imported
        nochange = result.unchanged
        print("""
The total number of keys considered for import was: {0}

Number of keys revoked: {1}
Number of new signatures: {2}
Number of new subkeys: {3}
Number of new user IDs: {4}

```


Number of new secret keys: {5}

Number of unchanged keys: {6}

The key IDs for all considered keys were:

```
"".format(num_keys, new_revs, new_sigs, new_subs, new_uids, new_scrt,
          nochange))
    for i in range(num_keys):
        print(result.imports[i].fpr)
    print("")
else:
    pass
#+END_SRC
```

Since the `hkp4py` module handles multiple keys just as effectively as one (`=keys=` is a list of responses per matching key), the example above is able to do a little bit more with the returned data before anything is actually imported.

```
*** Importing from ProtonMail with HKP for Python
:PROPERTIES:
:CUSTOM_ID: import-protonmail-hkp4py
:END:
```

Though this can provide certain benefits even when working with ProtonMail, the scope is somewhat constrained there due to the limitations of the ProtonMail keyserver.

For instance, searching the SKS keyserver pool for the term "gnupg" produces hundreds of results from any time the word appears in any part of a user ID. Performing the same search on the ProtonMail keyserver returns zero results, even though there are at least two test accounts which include it as part of the username.

The cause of this discrepancy is the deliberate configuration of that server by ProtonMail to require an exact match of the full email address of the ProtonMail user whose key is being requested. Presumably this is intended to reduce breaches of privacy of their users as an email address must already be known before a key for that address can be obtained.

```
**** Import from ProtonMail via HKP for Python Example no. 1
:PROPERTIES:
:CUSTOM_ID: import-hkp4py-pm1
:END:
```

The following script is available with the rest of the examples under

the somewhat less than original name, =pmkey-import-hkp.py=.

```
#+BEGIN_SRC python -i
import gpg
import hkp4py
import os.path
import sys

print("""
This script searches the ProtonMail key server for the specified key and
imports it.

Usage: pmkey-import-hkp.py [search strings]
""")

c = gpg.Context(armor=True)
server = hkp4py.KeyServer("hkps://api.protonmail.ch")
keyterms = []
ksearch = []
allkeys = []
results = []
paradox = []
homeless = None

if len(sys.argv) > 2:
    keyterms = sys.argv[1:]
elif len(sys.argv) == 2:
    keyterm = sys.argv[1]
    keyterms.append(keyterm)
else:
    key_term = input("Enter the key ID, UID or search string: ")
    keyterms = key_term.split()

for keyterm in keyterms:
    if keyterm.count("@") == 2 and keyterm.startswith("@") is True:
        ksearch.append(keyterm[1:])
        ksearch.append(keyterm[1:])
        ksearch.append(keyterm[1:])
    elif keyterm.count("@") == 1 and keyterm.startswith("@") is True:
        ksearch.append("{}@protonmail.com".format(keyterm[1:]))
        ksearch.append("{}@protonmail.ch".format(keyterm[1:]))
        ksearch.append("{}@pm.me".format(keyterm[1:]))
    elif keyterm.count("@") == 0:
        ksearch.append("{}@protonmail.com".format(keyterm))
        ksearch.append("{}@protonmail.ch".format(keyterm))
        ksearch.append("{}@pm.me".format(keyterm))
    elif keyterm.count("@") == 2 and keyterm.startswith("@") is False:
        uidlist = keyterm.split("@")
```

```

for uid in uidlist:
    ksearch.append("{0}@protonmail.com".format(uid))
    ksearch.append("{0}@protonmail.ch".format(uid))
    ksearch.append("{0}@pm.me".format(uid))
elif keyterm.count("@") > 2:
    uidlist = keyterm.split("@")
    for uid in uidlist:
        ksearch.append("{0}@protonmail.com".format(uid))
        ksearch.append("{0}@protonmail.ch".format(uid))
        ksearch.append("{0}@pm.me".format(uid))
else:
    ksearch.append(keyterm)

for k in ksearch:
    print("Checking for key for: {0}".format(k))
    try:
        keys = server.search(k)
        if isinstance(keys, list) is True:
            for key in keys:
                allkeys.append(key)
                try:
                    import_result = c.key_import(key.key_blob)
                except Exception as e:
                    import_result = c.key_import(key.key)
            else:
                paradox.append(keys)
                import_result = None
        except Exception as e:
            import_result = None
        results.append(import_result)

for result in results:
    if result is not None and hasattr(result, "considered") is False:
        print("{0} for {1}".format(result.decode(), k))
    elif result is not None and hasattr(result, "considered") is True:
        num_keys = len(result.imports)
        new_revs = result.new_revocations
        new_sigs = result.new_signatures
        new_subs = result.new_sub_keys
        new_uids = result.new_user_ids
        new_scert = result.secret_imported
        nochange = result.unchanged
        print("""
The total number of keys considered for import was: {0}

With UIDs wholly or partially matching the following string:

{1}

```

```
Number of keys revoked: {2}
Number of new signatures: {3}
Number of new subkeys: {4}
Number of new user IDs: {5}
Number of new secret keys: {6}
Number of unchanged keys: {7}
```

The key IDs for all considered keys were:

```
"".format(num_keys, k, new_revs, new_sigs, new_subs, new_uids, new_scert,
          nochange))
for i in range(num_keys):
    print(result.imports[i].fpr)
    print("")
elif result is None:
    pass
#+END_SRC
```

**** Import from ProtonMail via HKP for Python Example no. 2

```
:PROPERTIES:
:CUSTOM_ID: import-hkp4py-pm2
:END:
```

Like its counterpart above, this script can also be found with the rest of the examples, by the name `pmkey-import-hkp-alt.py`.

With this script a modicum of effort has been made to treat anything passed as a `=homedir=` which either does not exist or which is not a directory, as also being a possible user ID to check for. It's not guaranteed to pick up on all such cases, but it should cover most of them.

```
#+BEGIN_SRC python -i
import gpg
import hkp4py
import os.path
import sys

print("""
This script searches the ProtonMail key server for the specified key and
imports it. Optionally enables specifying a different GnuPG home directory.

Usage: pmkey-import-hkp.py [homedir] [search string]
or: pmkey-import-hkp.py [search string]
""")
```

```
c = gpg.Context(armor=True)
```

```

server = hkpy4py.KeyServer("hkps://api.protonmail.ch")
keyterms = []
ksearch = []
allkeys = []
results = []
paradox = []
homeless = None

if len(sys.argv) > 3:
    homedir = sys.argv[1]
    keyterms = sys.argv[2:]
elif len(sys.argv) == 3:
    homedir = sys.argv[1]
    keyterm = sys.argv[2]
    keyterms.append(keyterm)
elif len(sys.argv) == 2:
    homedir = ""
    keyterm = sys.argv[1]
    keyterms.append(keyterm)
else:
    keyterm = input("Enter the key ID, UID or search string: ")
    homedir = input("Enter the GPG configuration directory path (optional): ")
    keyterms.append(keyterm)

if len(homedir) == 0:
    homedir = None
    homeless = False

if homedir is not None:
    if homedir.startswith("~"):
        if os.path.exists(os.path.expanduser(homedir)) is True:
            if os.path.isdir(os.path.expanduser(homedir)) is True:
                c.home_dir = os.path.realpath(os.path.expanduser(homedir))
            else:
                homeless = True
        else:
            homeless = True
    elif os.path.exists(os.path.realpath(homedir)) is True:
        if os.path.isdir(os.path.realpath(homedir)) is True:
            c.home_dir = os.path.realpath(homedir)
        else:
            homeless = True
    else:
        homeless = True

# First check to see if the homedir really is a homedir and if not, treat it as
# a search string.
if homeless is True:

```

```

keyterms.append(homedir)
c.home_dir = None
else:
    pass

for keyterm in keyterms:
    if keyterm.count("@") == 2 and keyterm.startswith("@") is True:
        ksearch.append(keyterm[1:])
        ksearch.append(keyterm[1:])
        ksearch.append(keyterm[1:])
    elif keyterm.count("@") == 1 and keyterm.startswith("@") is True:
        ksearch.append("{}@protonmail.com".format(keyterm[1:]))
        ksearch.append("{}@protonmail.ch".format(keyterm[1:]))
        ksearch.append("{}@pm.me".format(keyterm[1:]))
    elif keyterm.count("@") == 0:
        ksearch.append("{}@protonmail.com".format(keyterm))
        ksearch.append("{}@protonmail.ch".format(keyterm))
        ksearch.append("{}@pm.me".format(keyterm))
    elif keyterm.count("@") == 2 and keyterm.startswith("@") is False:
        uidlist = keyterm.split("@")
        for uid in uidlist:
            ksearch.append("{}@protonmail.com".format(uid))
            ksearch.append("{}@protonmail.ch".format(uid))
            ksearch.append("{}@pm.me".format(uid))
    elif keyterm.count("@") > 2:
        uidlist = keyterm.split("@")
        for uid in uidlist:
            ksearch.append("{}@protonmail.com".format(uid))
            ksearch.append("{}@protonmail.ch".format(uid))
            ksearch.append("{}@pm.me".format(uid))
    else:
        ksearch.append(keyterm)

for k in ksearch:
    print("Checking for key for: {}".format(k))
    try:
        keys = server.search(k)
        if isinstance(keys, list) is True:
            for key in keys:
                allkeys.append(key)
                try:
                    import_result = c.key_import(key.key_blob)
                except Exception as e:
                    import_result = c.key_import(key.key)
            else:
                paradox.append(keys)
                import_result = None
    except Exception as e:

```

```
import_result = None
results.append(import_result)
```

for result in results:

if result is not None and hasattr(result, "considered") is False:

```
    print("{0} for {1}".format(result.decode(), k))
```

elif result is not None and hasattr(result, "considered") is True:

```
    num_keys = len(result.imports)
    new_revs = result.new_revocations
    new_sigs = result.new_signatures
    new_subs = result.new_sub_keys
    new_uids = result.new_user_ids
    new_scert = result.secret_imported
    nochange = result.unchanged
    print("""
```

The total number of keys considered for import was: {0}

With UIDs wholly or partially matching the following string:

```
{1}
```

Number of keys revoked: {2}

Number of new signatures: {3}

Number of new subkeys: {4}

Number of new user IDs: {5}

Number of new secret keys: {6}

Number of unchanged keys: {7}

The key IDs for all considered keys were:

```
"".format(num_keys, k, new_revs, new_sigs, new_subs, new_uids, new_scert,
          nochange))
for i in range(num_keys):
    print(result.imports[i].fpr)
print("")
elif result is None:
    pass
#+END_SRC
```

** Exporting keys

```
:PROPERTIES:
```

```
:CUSTOM_ID: howto-export-key
```

```
:END:
```

Exporting keys remains a reasonably simple task, but has been separated into three different functions for the OpenPGP cryptographic engine. Two of those functions are for exporting public keys and the third is for exporting secret keys.

```
*** Exporting public keys
:PROPERTIES:
:CUSTOM_ID: howto-export-public-key
:END:
```

There are two methods of exporting public keys, both of which are very similar to the other. The default method, `=key_export()`, will export a public key or keys matching a specified pattern as normal. The alternative, the `=key_export_minimal()` method, will do the same thing except producing a minimised output with extra signatures and third party signatures or certifications removed.

```
#+BEGIN_SRC python -i
import gpg
import os.path
import sys

print("""
This script exports one or more public keys.
""")

c = gpg.Context(armor=True)

if len(sys.argv) >= 4:
    keyfile = sys.argv[1]
    logrus = sys.argv[2]
    homedir = sys.argv[3]
elif len(sys.argv) == 3:
    keyfile = sys.argv[1]
    logrus = sys.argv[2]
    homedir = input("Enter the GPG configuration directory path (optional): ")
elif len(sys.argv) == 2:
    keyfile = sys.argv[1]
    logrus = input("Enter the UID matching the key(s) to export: ")
    homedir = input("Enter the GPG configuration directory path (optional): ")
else:
    keyfile = input("Enter the path and filename to save the secret key to: ")
    logrus = input("Enter the UID matching the key(s) to export: ")
    homedir = input("Enter the GPG configuration directory path (optional): ")

if homedir.startswith("~"):
    if os.path.exists(os.path.expanduser(homedir)) is True:
        c.home_dir = os.path.expanduser(homedir)
    else:
        pass
elif os.path.exists(homedir) is True:
```



```

    c.home_dir = homedir
else:
    pass

try:
    result = c.key_export(pattern=logrus)
except:
    result = c.key_export(pattern=None)

if result is not None:
    with open(keyfile, "wb") as f:
        f.write(result)
else:
    pass
#+END_SRC

```

It should be noted that the result will only return =None= when a search pattern has been entered, but has not matched any keys. When the search pattern itself is set to =None= this triggers the exporting of the entire public keybox.

```

#+BEGIN_SRC python -i
import gpg
import os.path
import sys

print("""
This script exports one or more public keys in minimised form.
""")

c = gpg.Context(armor=True)

if len(sys.argv) >= 4:
    keyfile = sys.argv[1]
    logrus = sys.argv[2]
    homedir = sys.argv[3]
elif len(sys.argv) == 3:
    keyfile = sys.argv[1]
    logrus = sys.argv[2]
    homedir = input("Enter the GPG configuration directory path (optional): ")
elif len(sys.argv) == 2:
    keyfile = sys.argv[1]
    logrus = input("Enter the UID matching the key(s) to export: ")
    homedir = input("Enter the GPG configuration directory path (optional): ")
else:
    keyfile = input("Enter the path and filename to save the secret key to: ")
    logrus = input("Enter the UID matching the key(s) to export: ")
    homedir = input("Enter the GPG configuration directory path (optional): ")

```

```

if homedir.startswith("~"):
    if os.path.exists(os.path.expanduser(homedir)) is True:
        c.home_dir = os.path.expanduser(homedir)
    else:
        pass
elif os.path.exists(homedir) is True:
    c.home_dir = homedir
else:
    pass

try:
    result = c.key_export_minimal(pattern=logrus)
except:
    result = c.key_export_minimal(pattern=None)

if result is not None:
    with open(keyfile, "wb") as f:
        f.write(result)
else:
    pass
#+END_SRC

```

```

*** Exporting secret keys
:PROPERTIES:
:CUSTOM_ID: howto-export-secret-key
:END:

```

Exporting secret keys is, functionally, very similar to exporting public keys; save for the invocation of `=pinentry=` via `=gpg-agent=` in order to securely enter the key's passphrase and authorise the export.

The following example exports the secret key to a file which is then set with the same permissions as the output files created by the command line secret key export options.

```

#+BEGIN_SRC python -i
import gpg
import os
import os.path
import sys

print("""
This script exports one or more secret keys.

The gpg-agent and pinentry are invoked to authorise the export.
""")

```

```

c = gpg.Context(armor=True)

if len(sys.argv) >= 4:
    keyfile = sys.argv[1]
    logrus = sys.argv[2]
    homedir = sys.argv[3]
elif len(sys.argv) == 3:
    keyfile = sys.argv[1]
    logrus = sys.argv[2]
    homedir = input("Enter the GPG configuration directory path (optional): ")
elif len(sys.argv) == 2:
    keyfile = sys.argv[1]
    logrus = input("Enter the UID matching the secret key(s) to export: ")
    homedir = input("Enter the GPG configuration directory path (optional): ")
else:
    keyfile = input("Enter the path and filename to save the secret key to: ")
    logrus = input("Enter the UID matching the secret key(s) to export: ")
    homedir = input("Enter the GPG configuration directory path (optional): ")

if len(homedir) == 0:
    homedir = None
elif homedir.startswith("~"):
    userdir = os.path.expanduser(homedir)
    if os.path.exists(userdir) is True:
        homedir = os.path.realpath(userdir)
    else:
        homedir = None
else:
    homedir = os.path.realpath(homedir)

if os.path.exists(homedir) is False:
    homedir = None
else:
    if os.path.isdir(homedir) is False:
        homedir = None
    else:
        pass

if homedir is not None:
    c.home_dir = homedir
else:
    pass

try:
    result = c.key_export_secret(pattern=logrus)
except:
    result = c.key_export_secret(pattern=None)

```

```

if result is not None:
    with open(keyfile, "wb") as f:
        f.write(result)
    os.chmod(keyfile, 0o600)
else:
    pass
#+END_SRC

```

Alternatively the approach of the following script can be used. This longer example saves the exported secret key(s) in files in the GnuPG home directory, in addition to setting the file permissions as only readable and writable by the user. It also exports the secret key(s) twice in order to output both GPG binary (=gpg=) and ASCII armoured (=asc=) files.

```

#+BEGIN_SRC python -i
import gpg
import os
import os.path
import subprocess
import sys

print("""
This script exports one or more secret keys as both ASCII armored and binary
file formats, saved in files within the user's GPG home directory.

The gpg-agent and pinentry are invoked to authorise the export.
""")

if sys.platform == "win32":
    gpgconfgcmd = "gpgconf.exe --list-dirs homedir"
else:
    gpgconfgcmd = "gpgconf --list-dirs homedir"

a = gpg.Context(armor=True)
b = gpg.Context()
c = gpg.Context()

if len(sys.argv) >= 4:
    keyfile = sys.argv[1]
    logrus = sys.argv[2]
    homedir = sys.argv[3]
elif len(sys.argv) == 3:
    keyfile = sys.argv[1]
    logrus = sys.argv[2]
    homedir = input("Enter the GPG configuration directory path (optional): ")
elif len(sys.argv) == 2:

```

```

keyfile = sys.argv[1]
logrus = input("Enter the UID matching the secret key(s) to export: ")
homedir = input("Enter the GPG configuration directory path (optional): ")
else:
    keyfile = input("Enter the filename to save the secret key to: ")
    logrus = input("Enter the UID matching the secret key(s) to export: ")
    homedir = input("Enter the GPG configuration directory path (optional): ")

if len(homedir) == 0:
    homedir = None
elif homedir.startswith("~"):
    userdir = os.path.expanduser(homedir)
    if os.path.exists(userdir) is True:
        homedir = os.path.realpath(userdir)
    else:
        homedir = None
else:
    homedir = os.path.realpath(homedir)

if os.path.exists(homedir) is False:
    homedir = None
else:
    if os.path.isdir(homedir) is False:
        homedir = None
    else:
        pass

if homedir is not None:
    c.home_dir = homedir
else:
    pass

if c.home_dir is not None:
    if c.home_dir.endswith("/"):
        gpgfile = "{0}{1}.gpg".format(c.home_dir, keyfile)
        ascfile = "{0}{1}.asc".format(c.home_dir, keyfile)
    else:
        gpgfile = "{0}/{1}.gpg".format(c.home_dir, keyfile)
        ascfile = "{0}/{1}.asc".format(c.home_dir, keyfile)
else:
    if os.path.exists(os.environ["GNUPGHOME"]) is True:
        hd = os.environ["GNUPGHOME"]
    else:
        try:
            hd = subprocess.getoutput(gpgconfcmd)
        except:
            process = subprocess.Popen(gpgconfcmd.split(),
                                       stdout=subprocess.PIPE)

```

```

    procom = process.communicate()
    if sys.version_info[0] == 2:
        hd = procom[0].strip()
    else:
        hd = procom[0].decode().strip()
    gpgfile = "{0}/{1}.gpg".format(hd, keyfile)
    ascfile = "{0}/{1}.asc".format(hd, keyfile)

try:
    a_result = a.key_export_secret(pattern=logrus)
    b_result = b.key_export_secret(pattern=logrus)
except:
    a_result = a.key_export_secret(pattern=None)
    b_result = b.key_export_secret(pattern=None)

if a_result is not None:
    with open(ascfile, "wb") as f:
        f.write(a_result)
    os.chmod(ascfile, 0o600)
else:
    pass

if b_result is not None:
    with open(gpgfile, "wb") as f:
        f.write(b_result)
    os.chmod(gpgfile, 0o600)
else:
    pass
#+END_SRC

```

```

*** Sending public keys to the SKS Keyservers
:PROPERTIES:
:CUSTOM_ID: howto-send-public-key
:END:

```

As with the previous section on importing keys, the `hkp4py` module adds another option with exporting keys in order to send them to the public key servers.

The following example demonstrates how this may be done.

```

#+BEGIN_SRC python -i
import gpg
import hkp4py
import os.path
import sys

```

```

print("""
This script sends one or more public keys to the SKS keyservers and is
essentially a slight variation on the export-key.py script.
""")

c = gpg.Context(armor=True)
server = hkp4py.KeyServer("hkps://hkps.pool.sks-keyservers.net")

if len(sys.argv) > 2:
    logrus = " ".join(sys.argv[1:])
elif len(sys.argv) == 2:
    logrus = sys.argv[1]
else:
    logrus = input("Enter the UID matching the key(s) to send: ")

if len(logrus) > 0:
    try:
        export_result = c.key_export(pattern=logrus)
    except Exception as e:
        print(e)
        export_result = None
    else:
        export_result = c.key_export(pattern=None)

if export_result is not None:
    try:
        try:
            send_result = server.add(export_result)
        except:
            send_result = server.add(export_result.decode())
        if send_result is not None:
            print(send_result)
        else:
            pass
    except Exception as e:
        print(e)
    else:
        pass
#+END_SRC

```

An expanded version of this script with additional functions for specifying an alternative homedir location is in the examples directory as `=send-key-to-keyserver.py=`.

The `=hkp4py=` module appears to handle both string and byte literal text data equally well, but the GPGME bindings deal primarily with byte literal data only and so this script sends in that format first, then tries the string literal form.

* Basic Functions

:PROPERTIES:

:CUSTOM_ID: howto-the-basics

:END:

The most frequently called features of any cryptographic library will be the most fundamental tasks for encryption software. In this section we will look at how to programmatically encrypt data, decrypt it, sign it and verify signatures.

** Encryption

:PROPERTIES:

:CUSTOM_ID: howto-basic-encryption

:END:

Encrypting is very straight forward. In the first example below the message, =text=, is encrypted to a single recipient's key. In the second example the message will be encrypted to multiple recipients.

*** Encrypting to one key

:PROPERTIES:

:CUSTOM_ID: howto-basic-encryption-single

:END:

Once the the Context is set the main issues with encrypting data is essentially reduced to key selection and the keyword arguments specified in the =gpg.Context().encrypt()= method.

Those keyword arguments are: =recipients=, a list of keys encrypted to (covered in greater detail in the following section); =sign=, whether or not to sign the plaintext data, see subsequent sections on signing and verifying signatures below (defaults to =True=); =sink=, to write results or partial results to a secure sink instead of returning it (defaults to =None=); =passphrase=, only used when utilising symmetric encryption (defaults to =None=); =always_trust=, used to override the trust model settings for recipient keys (defaults to =False=); =add_encrypt_to=, utilises any preconfigured =encrypt-to= or =default-key= settings in the user's =gpg.conf= file (defaults to =False=); =prepare=, prepare for encryption (defaults to =False=); =expect_sign=, prepare for signing (defaults to =False=); =compress=, compresses the plaintext prior to encryption (defaults to =True=).

```
#+BEGIN_SRC python -i
```

```
import gpg
```



```
a_key = "0x12345678DEADBEEF"
text = b""Some text to test with.
```

Since the text in this case must be bytes, it is most likely that the input form will be a separate file which is opened with "rb" as this is the simplest method of obtaining the correct data format.

```
"""
```

```
c = gpg.Context(armor=True)
rkey = list(c.keylist(pattern=a_key, secret=False))
ciphertext, result, sign_result = c.encrypt(text, recipients=rkey, sign=False)
```

```
with open("secret_plans.txt.asc", "wb") as afile:
    afile.write(ciphertext)
#+END_SRC
```

Though this is even more likely to be used like this; with the plaintext input read from a file, the recipient keys used for encryption regardless of key trust status and the encrypted output also encrypted to any preconfigured keys set in the =gpg.conf= file:

```
#+BEGIN_SRC python -i
import gpg
```

```
a_key = "0x12345678DEADBEEF"
```

```
with open("secret_plans.txt", "rb") as afile:
    text = afile.read()
```

```
c = gpg.Context(armor=True)
rkey = list(c.keylist(pattern=a_key, secret=False))
ciphertext, result, sign_result = c.encrypt(text, recipients=rkey, sign=True,
                                           always_trust=True,
                                           add_encrypt_to=True)
```

```
with open("secret_plans.txt.asc", "wb") as afile:
    afile.write(ciphertext)
#+END_SRC
```

If the =recipients= parameter is empty then the plaintext is encrypted symmetrically. If no =passphrase= is supplied as a parameter or via a callback registered with the =Context()= then an out-of-band prompt for the passphrase via pinentry will be invoked.

```
*** Encrypting to multiple keys
:PROPERTIES:
```

```
:CUSTOM_ID: howto-basic-encryption-multiple
```

```
:END:
```

Encrypting to multiple keys essentially just expands upon the key selection process and the recipients from the previous examples.

The following example encrypts a message (=text=) to everyone with an email address on the =gnupg.org= domain,[fn:4] but does /not/ encrypt to a default key or other key which is configured to normally encrypt to.

```
#+BEGIN_SRC python -i
import gpg
```

```
text = b"""Oh look, another test message.
```

The same rules apply as with the previous example and more likely than not, the message will actually be drawn from reading the contents of a file or, maybe, from entering data at an input() prompt.

Since the text in this case must be bytes, it is most likely that the input form will be a separate file which is opened with "rb" as this is the simplest method of obtaining the correct data format.

```
"""
```

```
c = gpg.Context(armor=True)
rpattern = list(c.keylist(pattern="@gnupg.org", secret=False))
logrus = []
```

```
for i in range(len(rpattern)):
    if rpattern[i].can_encrypt == 1:
        logrus.append(rpattern[i])
```

```
ciphertext, result, sign_result = c.encrypt(text, recipients=logrus,
                                             sign=False, always_trust=True)
```

```
with open("secret_plans.txt.asc", "wb") as afile:
    afile.write(ciphertext)
```

```
#+END_SRC
```

All it would take to change the above example to sign the message and also encrypt the message to any configured default keys would be to change the =c.encrypt= line to this:

```
#+BEGIN_SRC python -i
ciphertext, result, sign_result = c.encrypt(text, recipients=logrus,
```

```

        always_trust=True,
        add_encrypt_to=True)
#+END_SRC

```

The only keyword arguments requiring modification are those for which the default values are changing. The default value of `=sign=` is `=True=`, the default of `=always_trust=` is `=False=`, the default of `=add_encrypt_to=` is `=False=`.

If `=always_trust=` is not set to `=True=` and any of the recipient keys are not trusted (e.g. not signed or locally signed) then the encryption will raise an error. It is possible to mitigate this somewhat with something more like this:

```

#+BEGIN_SRC python -i
import gpg

with open("secret_plans.txt.asc", "rb") as afile:
    text = afile.read()

c = gpg.Context(armor=True)
rpattern = list(c.keylist(pattern="@gnupg.org", secret=False))
logrus = []

for i in range(len(rpattern)):
    if rpattern[i].can_encrypt == 1:
        logrus.append(rpattern[i])

    try:
        ciphertext, result, sign_result = c.encrypt(text, recipients=logrus,
                                                    add_encrypt_to=True)
    except gpg.errors.InvalidRecipients as e:
        for i in range(len(e.recipients)):
            for n in range(len(logrus)):
                if logrus[n].fpr == e.recipients[i].fpr:
                    logrus.remove(logrus[n])
            else:
                pass

    try:
        ciphertext, result, sign_result = c.encrypt(text,
                                                    recipients=logrus,
                                                    add_encrypt_to=True)

        with open("secret_plans.txt.asc", "wb") as afile:
            afile.write(ciphertext)
    except:
        pass
#+END_SRC

```

This will attempt to encrypt to all the keys searched for, then remove invalid recipients if it fails and try again.

** Decryption

```
:PROPERTIES:  
:CUSTOM_ID: howto-basic-decryption  
:END:
```

Decrypting something encrypted to a key in one's secret keyring is fairly straight forward.

In this example code, however, preconfiguring either `=gpg.Context()` or `=gpg.core.Context()` as `=c=` is unnecessary because there is no need to modify the Context prior to conducting the decryption and since the Context is only used once, setting it to `=c=` simply adds lines for no gain.

```
#+BEGIN_SRC python -i  
import gpg  
  
ciphertext = input("Enter path and filename of encrypted file: ")  
newfile = input("Enter path and filename of file to save decrypted data to: ")  
  
with open(ciphertext, "rb") as cfile:  
    try:  
        plaintext, result, verify_result = gpg.Context().decrypt(cfile)  
    except gpg.errors.GPGMEError as e:  
        plaintext = None  
        print(e)  
  
if plaintext is not None:  
    with open(newfile, "wb") as nfile:  
        nfile.write(plaintext)  
    else:  
        pass  
#+END_SRC
```

The data available in `=plaintext=` in this example is the decrypted content as a byte object, the recipient key IDs and algorithms in `=result=` and the results of verifying any signatures of the data in `=verify_result=`.

If `=gpg.Context().decrypt(cfile, verify=False)=` is called instead, then `=verify_result=` will be returned as `=None=` and the rest remains as described here.

```
** Signing text and files
:PROPERTIES:
:CUSTOM_ID: howto-basic-signing
:END:
```

The following sections demonstrate how to specify keys to sign with.

```
*** Signing key selection
:PROPERTIES:
:CUSTOM_ID: howto-basic-signing-signers
:END:
```

By default GPGME and the Python bindings will use the default key configured for the user invoking the GPGME API. If there is no default key specified and there is more than one secret key available it may be necessary to specify the key or keys with which to sign messages and files.

```
#+BEGIN_SRC python -i
import gpg

logrus = input("Enter the email address or string to match signing keys to: ")
hancock = gpg.Context().keylist(pattern=logrus, secret=True)
sig_src = list(hancock)
#+END_SRC
```

The signing examples in the following sections include the explicitly designated `=signers=` parameter in two of the five examples; once where the resulting signature would be ASCII armoured and once where it would not be armoured.

While it would be possible to enter a key ID or fingerprint here to match a specific key, it is not possible to enter two fingerprints and match two keys since the `patten` expects a string, bytes or None and not a list. A string with two fingerprints won't match any single key.

```
*** Normal or default signing messages or files
:PROPERTIES:
:CUSTOM_ID: howto-basic-signing-normal
:END:
```

The normal or default signing process is essentially the same as is most often invoked when also encrypting a message or file. So when the encryption component is not utilised, the result is to produce an encoded and signed output which may or may not be ASCII armoured and

which may or may not also be compressed.

By default compression will be used unless GnuPG detects that the plaintext is already compressed. ASCII armouring will be determined according to the value of `=gpg.Context().armor=`.

The compression algorithm is selected in much the same way as the symmetric encryption algorithm or the hash digest algorithm is when multiple keys are involved; from the preferences saved into the key itself or by comparison with the preferences with all other keys involved.

```
#+BEGIN_SRC python -i
import gpg

text0 = """Declaration of ... something.

"""
text = text0.encode()

c = gpg.Context(armor=True, signers=sig_src)
signed_data, result = c.sign(text, mode=gpg.constants.sig.mode.NORMAL)

with open("/path/to/statement.txt.asc", "w") as afile:
    afile.write(signed_data.decode())
#+END_SRC
```

Though everything in this example is accurate, it is more likely that reading the input data from another file and writing the result to a new file will be performed more like the way it is done in the next example. Even if the output format is ASCII armoured.

```
#+BEGIN_SRC python -i
import gpg

with open("/path/to/statement.txt", "rb") as tfile:
    text = tfile.read()

c = gpg.Context()
signed_data, result = c.sign(text, mode=gpg.constants.sig.mode.NORMAL)

with open("/path/to/statement.txt.sig", "wb") as afile:
    afile.write(signed_data)
#+END_SRC
```

```
*** Detached signing messages and files
:PROPERTIES:
```

```
:CUSTOM_ID: howto-basic-signing-detached
:END:
```

Detached signatures will often be needed in programmatic uses of GPGME, either for signing files (e.g. tarballs of code releases) or as a component of message signing (e.g. PGP/MIME encoded email).

```
#+BEGIN_SRC python -i
import gpg

text0 = """Declaration of ... something.

"""
text = text0.encode()

c = gpg.Context(armor=True)
signed_data, result = c.sign(text, mode=gpg.constants.sig.mode.DETACH)

with open("/path/to/statement.txt.asc", "w") as afile:
    afile.write(signed_data.decode())
#+END_SRC
```

As with normal signatures, detached signatures are best handled as byte literals, even when the output is ASCII armoured.

```
#+BEGIN_SRC python -i
import gpg

with open("/path/to/statement.txt", "rb") as tfile:
    text = tfile.read()

c = gpg.Context(signers=sig_src)
signed_data, result = c.sign(text, mode=gpg.constants.sig.mode.DETACH)

with open("/path/to/statement.txt.sig", "wb") as afile:
    afile.write(signed_data)
#+END_SRC
```

```
*** Clearsigning messages or text
:PROPERTIES:
:CUSTOM_ID: howto-basic-signing-clear
:END:
```

Though PGP/in-line messages are no longer encouraged in favour of PGP/MIME, there is still sometimes value in utilising in-line signatures. This is where clear-signed messages or text is of value.

```

#+BEGIN_SRC python -i
import gpg

text0 = """Declaration of ... something.

"""
text = text0.encode()

c = gpg.Context()
signed_data, result = c.sign(text, mode=gpg.constants.sig.mode.CLEAR)

with open("/path/to/statement.txt.asc", "w") as afile:
    afile.write(signed_data.decode())
#+END_SRC

```

In spite of the appearance of a clear-signed message, the data handled by GPGME in signing it must still be byte literals.

```

#+BEGIN_SRC python -i
import gpg

with open("/path/to/statement.txt", "rb") as tfile:
    text = tfile.read()

c = gpg.Context()
signed_data, result = c.sign(text, mode=gpg.constants.sig.mode.CLEAR)

with open("/path/to/statement.txt.asc", "wb") as afile:
    afile.write(signed_data)
#+END_SRC

```

```

** Signature verification
:PROPERTIES:
:CUSTOM_ID: howto-basic-verification
:END:

```

Essentially there are two principal methods of verification of a signature. The first of these is for use with the normal or default signing method and for clear-signed messages. The second is for use with files and data with detached signatures.

The following example is intended for use with the default signing method where the file was not ASCII armoured:

```

#+BEGIN_SRC python -i
import gpg
import time

```



```

filename = "statement.txt"
gpg_file = "statement.txt.gpg"

c = gpg.Context()

try:
    data, result = c.verify(open(gpg_file))
    verified = True
except gpg.errors.BadSignatures as e:
    verified = False
    print(e)

if verified is True:
    for i in range(len(result.signatures)):
        sign = result.signatures[i]
        print("""Good signature from:
{0}
with key {1}
made at {2}
""".format(c.get_key(sign.fpr).uids[0].uid, sign.fpr,
            time.ctime(sign.timestamp)))
    else:
        pass
#+END_SRC

```

Whereas this next example, which is almost identical would work with normal ASCII armoured files and with clear-signed files:

```

#+BEGIN_SRC python -i
import gpg
import time

filename = "statement.txt"
asc_file = "statement.txt.asc"

c = gpg.Context()

try:
    data, result = c.verify(open(asc_file))
    verified = True
except gpg.errors.BadSignatures as e:
    verified = False
    print(e)

if verified is True:
    for i in range(len(result.signatures)):
        sign = result.signatures[i]

```

```

        print("""Good signature from:
{0}
with key {1}
made at {2}
""".format(c.get_key(sign.fpr).uids[0].uid, sign.fpr,
            time.ctime(sign.timestamp)))
    else:
        pass
#+END_SRC

```

In both of the previous examples it is also possible to compare the original data that was signed against the signed data in `=data=` to see if it matches with something like this:

```

#+BEGIN_SRC python -i
with open(filename, "rb") as afile:
    text = afile.read()

if text == data:
    print("Good signature.")
else:
    pass
#+END_SRC

```

The following two examples, however, deal with detached signatures. With his method of verification the data that was signed does not get returned since it is already being explicitly referenced in the first argument of `=c.verify=`. So `=data=` is `=None=` and only the information in `=result=` is available.

```

#+BEGIN_SRC python -i
import gpg
import time

filename = "statement.txt"
sig_file = "statement.txt.sig"

c = gpg.Context()

try:
    data, result = c.verify(open(filename), open(sig_file))
    verified = True
except gpg.errors.BadSignatures as e:
    verified = False
    print(e)

if verified is True:
    for i in range(len(result.signatures)):

```

```

        sign = result.signatures[i]
        print("""Good signature from:
{0}
with key {1}
made at {2}
""".format(c.get_key(sign.fpr).uids[0].uid, sign.fpr,
           time.ctime(sign.timestamp)))
    else:
        pass
#+END_SRC

#+BEGIN_SRC python -i
import gpg
import time

filename = "statement.txt"
asc_file = "statement.txt.asc"

c = gpg.Context()

try:
    data, result = c.verify(open(filename), open(asc_file))
    verified = True
except gpg.errors.BadSignatures as e:
    verified = False
    print(e)

if verified is True:
    for i in range(len(result.signatures)):
        sign = result.signatures[i]
        print("""Good signature from:
{0}
with key {1}
made at {2}
""".format(c.get_key(sign.fpr).uids[0].uid, sign.fpr,
           time.ctime(sign.timestamp)))
    else:
        pass
#+END_SRC

* Creating keys and subkeys
:PROPERTIES:
:CUSTOM_ID: key-generation
:END:

```

The one thing, aside from GnuPG itself, that GPGME depends on, of course, is the keys themselves. So it is necessary to be able to

generate them and modify them by adding subkeys, revoking or disabling them, sometimes deleting them and doing the same for user IDs.

In the following examples a key will be created for the world's greatest secret agent, Danger Mouse. Since Danger Mouse is a secret agent he needs to be able to protect information to =SECRET= level clearance, so his keys will be 3072-bit keys.

The pre-configured =gpg.conf= file which sets cipher, digest and other preferences contains the following configuration parameters:

```
#+BEGIN_SRC conf
expert
allow-freeform-uid
allow-secret-key-import
trust-model tofu+pgp
tofu-default-policy unknown
enable-large-rsa
enable-dsa2
cert-digest-algo SHA512
default-preference-list TWOFISH CAMELLIA256 AES256 CAMELLIA192 AES192 CAMELLIA128 AES
BLOWFISH IDEA CAST5 3DES SHA512 SHA384 SHA256 SHA224 RIPEMD160 SHA1 ZLIB BZIP2 ZIP
Uncompressed
personal-cipher-preferences TWOFISH CAMELLIA256 AES256 CAMELLIA192 AES192 CAMELLIA128 AES
BLOWFISH IDEA CAST5 3DES
personal-digest-preferences SHA512 SHA384 SHA256 SHA224 RIPEMD160 SHA1
personal-compress-preferences ZLIB BZIP2 ZIP Uncompressed
#+END_SRC
```

```
** Primary key
:PROPERTIES:
:CUSTOM_ID: keygen-primary
:END:
```

Generating a primary key uses the =create_key= method in a Context. It contains multiple arguments and keyword arguments, including: =userid=, =algorithm=, =expires_in=, =expires=, =sign=, =encrypt=, =certify=, =authenticate=, =passphrase= and =force=. The defaults for all of those except =userid=, =algorithm=, =expires_in=, =expires= and =passphrase= is =False=. The defaults for =algorithm= and =passphrase= is =None=. The default for =expires_in= is =0=. The default for =expires= is =True=. There is no default for =userid=.

If =passphrase= is left as =None= then the key will not be generated with a passphrase, if =passphrase= is set to a string then that will be the passphrase and if =passphrase= is set to =True= then gpg-agent will launch pinentry to prompt for a passphrase. For the sake of

convenience, these examples will keep `=passphrase=` set to `=None=`.

```
#+BEGIN_SRC python -i
import gpg

c = gpg.Context()

c.home_dir = "~/gnupg-dm"
userid = "Danger Mouse <dm@secret.example.net>"

dmkey = c.create_key(userid, algorithm="rsa3072", expires_in=31536000,
                    sign=True, certify=True)
#+END_SRC
```

One thing to note here is the use of setting the `=c.home_dir=` parameter. This enables generating the key or keys in a different location. In this case to keep the new key data created for this example in a separate location rather than adding it to existing and active key store data. As with the default directory, `=~/gnupg=`, any temporary or separate directory needs the permissions set to only permit access by the directory owner. On posix systems this means setting the directory permissions to 700.

The `=temp-homedir-config.py=` script in the HOWTO examples directory will create an alternative homedir with these configuration options already set and the correct directory and file permissions.

The successful generation of the key can be confirmed via the returned `=GenkeyResult=` object, which includes the following data:

```
#+BEGIN_SRC python -i
print("""
Fingerprint: {0}
Primary Key: {1}
Public Key: {2}
Secret Key: {3}
Sub Key: {4}
User IDs: {5}
""").format(dmkey.fpr, dmkey.primary, dmkey.pubkey, dmkey.seckey, dmkey.sub,
           dmkey.uid)
#+END_SRC
```

Alternatively the information can be confirmed using the command line program:

```
#+BEGIN_SRC shell
bash-4.4$ gpg --homedir ~/gnupg-dm -K
~/gnupg-dm/pubring.kbx
```

```
-----  
sec rsa3072 2018-03-15 [SC] [expires: 2019-03-15]  
177B7C25DB99745EE2EE13ED026D2F19E99E63AA  
uid      [ultimate] Danger Mouse <dm@secret.example.net>
```

```
bash-4.4$  
#+END_SRC
```

As with generating keys manually, to preconfigure expanded preferences for the cipher, digest and compression algorithms, the `=gpg.conf=` file must contain those details in the home directory in which the new key is being generated. I used a cut down version of my own `=gpg.conf=` file in order to be able to generate this:

```
#+BEGIN_SRC shell  
bash-4.4$ gpg --homedir ~/.gnupg-dm --edit-key 177B7C25DB99745EE2EE13ED026D2F19E99E63AA showpref  
quit  
Secret key is available.
```

```
sec rsa3072/026D2F19E99E63AA  
  created: 2018-03-15 expires: 2019-03-15 usage: SC  
  trust: ultimate validity: ultimate  
[ultimate] (1). Danger Mouse <dm@secret.example.net>
```

```
[ultimate] (1). Danger Mouse <dm@secret.example.net>  
  Cipher: TWOFISH, CAMELLIA256, AES256, CAMELLIA192, AES192, CAMELLIA128, AES, BLOWFISH,  
  IDEA, CAST5, 3DES  
  Digest: SHA512, SHA384, SHA256, SHA224, RIPEMD160, SHA1  
  Compression: ZLIB, BZIP2, ZIP, Uncompressed  
  Features: MDC, Keyserver no-modify
```

```
bash-4.4$  
#+END_SRC
```

```
** Subkeys  
:PROPERTIES:  
:CUSTOM_ID: keygen-subkeys  
:END:
```

Adding subkeys to a primary key is fairly similar to creating the primary key with the `=create_subkey=` method. Most of the arguments are the same, but not quite all. Instead of the `=userid=` argument there is now a `=key=` argument for selecting which primary key to add the subkey to.

In the following example an encryption subkey will be added to the primary key. Since Danger Mouse is a security conscious secret agent,

this subkey will only be valid for about six months, half the length of the primary key.

```
#+BEGIN_SRC python -i
import gpg

c = gpg.Context()
c.home_dir = "~/gnupg-dm"

key = c.get_key(dmkey.fpr, secret=True)
dmsub = c.create_subkey(key, algorithm="rsa3072", expires_in=15768000,
                        encrypt=True)
#+END_SRC
```

As with the primary key, the results here can be checked with:

```
#+BEGIN_SRC python -i
print("""
Fingerprint: {0}
Primary Key: {1}
Public Key: {2}
Secret Key: {3}
Sub Key: {4}
User IDs: {5}
""").format(dmsub.fpr, dmsub.primary, dmsub.pubkey, dmsub.seckey, dmsub.sub,
            dmsub.uid)
#+END_SRC
```

As well as on the command line with:

```
#+BEGIN_SRC shell
bash-4.4$ gpg --homedir ~/.gnupg-dm -K
~/.gnupg-dm/pubring.kbx
-----
sec  rsa3072 2018-03-15 [SC] [expires: 2019-03-15]
177B7C25DB99745EE2EE13ED026D2F19E99E63AA
uid    [ultimate] Danger Mouse <dm@secret.example.net>
ssb  rsa3072 2018-03-15 [E] [expires: 2018-09-13]

bash-4.4$
#+END_SRC
```

```
** User IDs
:PROPERTIES:
:CUSTOM_ID: keygen-uids
:END:
```

```
*** Adding User IDs
:PROPERTIES:
:CUSTOM_ID: keygen-uids-add
:END:
```

By comparison to creating primary keys and subkeys, adding a new user ID to an existing key is much simpler. The method used to do this is `=key_add_uid=` and the only arguments it takes are for the `=key=` and the new `=uid=`.

```
#+BEGIN_SRC python -i
import gpg

c = gpg.Context()
c.home_dir = "~/gnupg-dm"

dmfpr = "177B7C25DB99745EE2EE13ED026D2F19E99E63AA"
key = c.get_key(dmfpr, secret=True)
uid = "Danger Mouse <danger.mouse@secret.example.net>"

c.key_add_uid(key, uid)
#+END_SRC
```

Unsurprisingly the result of this is:

```
#+BEGIN_SRC shell
bash-4.4$ gpg --homedir ~/.gnupg-dm -K
~/.gnupg-dm/pubring.kbx
-----
sec  rsa3072 2018-03-15 [SC] [expires: 2019-03-15]
177B7C25DB99745EE2EE13ED026D2F19E99E63AA
uid    [ultimate] Danger Mouse <danger.mouse@secret.example.net>
uid    [ultimate] Danger Mouse <dm@secret.example.net>
ssb  rsa3072 2018-03-15 [E] [expires: 2018-09-13]

bash-4.4$
#+END_SRC
```

```
*** Revoking User IDs
:PROPERTIES:
:CUSTOM_ID: keygen-uids-revoke
:END:
```

Revoking a user ID is a fairly similar process, except that it uses the `=key_revoke_uid=` method.


```

#+BEGIN_SRC python -i
import gpg

c = gpg.Context()
c.home_dir = "~/gnupg-dm"

dmfpr = "177B7C25DB99745EE2EE13ED026D2F19E99E63AA"
key = c.get_key(dmfpr, secret=True)
uid = "Danger Mouse <danger.mouse@secret.example.net>"

c.key_revoke_uid(key, uid)
#+END_SRC

```

```

** Key certification
:PROPERTIES:
:CUSTOM_ID: key-sign
:END:

```

Since key certification is more frequently referred to as key signing, the method used to perform this function is `key_sign`.

The `key_sign` method takes four arguments: `key`, `uids`, `expires_in` and `local`. The default value of `uids` is `None` and which results in all user IDs being selected. The default value of both `expires_in` and `local` is `False`; which results in the signature never expiring and being able to be exported.

The `key` is the key being signed rather than the key doing the signing. To change the key doing the signing refer to the signing key selection above for signing messages and files.

If the `uids` value is not `None` then it must either be a string to match a single user ID or a list of strings to match multiple user IDs. In this case the matching of those strings must be precise and it is case sensitive.

To sign Danger Mouse's key for just the initial user ID with a signature which will last a little over a month, do this:

```

#+BEGIN_SRC python -i
import gpg

c = gpg.Context()
uid = "Danger Mouse <dm@secret.example.net>"

dmfpr = "177B7C25DB99745EE2EE13ED026D2F19E99E63AA"
key = c.get_key(dmfpr, secret=True)

```

```
c.key_sign(key, uids=uid, expires_in=2764800)
#+END_SRC
```

```
*** Verifying key certifications
:PROPERTIES:
:CUSTOM_ID: key-sign-verify
:END:
```

```
#+BEGIN_SRC python -i
import gpg
import time

c = gpg.Context()
dmfpr = "177B7C25DB99745EE2EE13ED026D2F19E99E63AA"
keys = list(c.keylist(pattern=dmuid, mode=gpg.constants.keylist.mode.SIGS))
key = keys[0]

for user in key.uids:
    for sig in user.signatures:
        print("0x{0}".format(sig.keyid), "", time.ctime(sig.timestamp), "",
              sig.uid)
#+END_SRC
```

Which for Danger Mouse displays the following:

```
#+BEGIN_EXAMPLE
0x92E3F6115435C65A Thu Mar 15 13:17:44 2018 Danger Mouse <dm@secret.example.net>
0x321E4E2373590E5D Mon Nov 26 12:46:05 2018 Ben McGinnes <ben@adversary.org>
#+END_EXAMPLE
```

The two key signatures listed are for the self-certification of Danger Mouse's key made when the key was created in March, 2018; and the second is a signature made by the author and set to expire at the end of the year. Note that the second signature was made with the following code (including the preceding code to display the output of the certifications or key signatures):

```
#+BEGIN_SRC python -i
import gpg
import math
import pendulum
import time

hd = "/home/dm/.gnupg"
c = gpg.Context()
d = gpg.Context(home_dir=hd)
dmfpr = "177B7C25DB99745EE2EE13ED026D2F19E99E63AA"
```

```

dmuid = "Danger Mouse <dm@secret.example.net>"
dkeys = list(c.keylist(pattern=dmuid))
dmkey = dkeys[0]

c.key_import(d.key_export(pattern=None))

tp = pendulum.period(pendulum.now(tz="local"), pendulum.datetime(2019, 1, 1))
ts = tp.total_seconds()
total_secs = math.ceil(ts)
c.key_sign(dmkey, uids=dmuid, expires_in=total_secs)

d.key_import(c.key_export(pattern=dmuid))
keys = list(c.keylist(pattern=dmuid, mode=gpg.constants.keylist.mode.SIGS))
key = keys[0]

for user in key.uids:
    for sig in user.signatures:
        print("0x{0}".format(sig.keyid), "", time.ctime(sig.timestamp), "",
              sig.uid)
#+END_SRC

```

Note that this final code block includes the use of a module which is /not/ part of Python's standard library, the [\[\[https://pendulum.eustace.io/\]\[pendulum module\]\]](https://pendulum.eustace.io/). Unlike the standard datetime module, pendulum makes working with dates and times significantly easier in Python; just as the requests module makes working with HTTP and HTTPS easier than the builtin modules do.

Though neither requests nor pendulum are required modules for using the GPGME Python bindings, they are both highly recommended more generally.

```

* Advanced or Experimental Use Cases
:PROPERTIES:
:CUSTOM_ID: advanced-use
:END:

```

```

** C plus Python plus SWIG plus Cython
:PROPERTIES:
:CUSTOM_ID: cython
:END:

```

In spite of the apparent incongruence of using Python bindings to a C interface only to generate more C from the Python; it is in fact quite possible to use the GPGME bindings with [\[\[http://docs.cython.org/en/latest/index.html\]\[Cython\]\]](http://docs.cython.org/en/latest/index.html). Though in many cases

the benefits may not be obvious since the most computationally

intensive work never leaves the level of the C code with which GPGME itself is interacting with.

Nevertheless, there are some situations where the benefits are demonstrable. One of the better and easier examples being the one of the early examples in this HOWTO, the `[[#howto-keys-counting][key counting]]` code. Running that example as an executable Python script, `=keycount.py=` (available in the `=examples/howto/=` directory), will take a noticeable amount of time to run on most systems where the public keybox or keyring contains a few thousand public keys.

Earlier in the evening, prior to starting this section, I ran that script on my laptop; as I tend to do periodically and timed it using `=time=` utility, with the following results:

```
#+BEGIN_SRC shell
bash-4.4$ time keycount.py
```

```
Number of secret keys: 23
Number of public keys: 12112
```

```
real 11m52.945s
user 0m0.913s
sys 0m0.752s
```

```
bash-4.4$
#+END_SRC
```

Sometime after that I imported another key and followed it with a little test of Cython. This test was kept fairly basic, essentially lifting the material from the `[[http://docs.cython.org/en/latest/src/tutorial/cython_tutorial.html][Cython Basic Tutorial]]` to demonstrate compiling Python code to C. The first step was to take the example key counting code quoted previously, essentially from the importing of the `=gpg=` module to the end of the script:

```
#+BEGIN_SRC python -i
import gpg

c = gpg.Context()
seckeys = c.keylist(pattern=None, secret=True)
pubkeys = c.keylist(pattern=None, secret=False)

seclist = list(seckeys)
secnum = len(seclist)

publist = list(pubkeys)
```

```

pubnum = len(publist)

print("""
    Number of secret keys: {0}
    Number of public keys: {1}

""".format(secnum, pubnum))
#+END_SRC

```

Save that into a file called `=keycount.pyx=` and then create a `=setup.py=` file which contains this:

```

#+BEGIN_SRC python -i
from distutils.core import setup
from Cython.Build import cythonize

setup(
    ext_modules = cythonize("keycount.pyx")
)
#+END_SRC

```

Compile it:

```

#+BEGIN_SRC shell
bash-4.4$ python setup.py build_ext --inplace
bash-4.4$
#+END_SRC

```

Then run it in a similar manner to `=keycount.py=`:

```

#+BEGIN_SRC shell
bash-4.4$ time python3.7 -c "import keycount"

```

```

Number of secret keys: 23
Number of public keys: 12113

```

```

real 6m47.905s
user 0m0.785s
sys 0m0.331s

```

```

bash-4.4$
#+END_SRC

```

Cython turned `=keycount.pyx=` into an 81KB `=keycount.o=` file in the `=build/=` directory, a 24KB `=keycount.cpython-37m-darwin.so=` file to be imported into Python 3.7 and a 113KB `=keycount.c=` generated C source code file of nearly three thousand lines. Quite a bit bigger than the

314 bytes of the =keycount.pyx= file or the full 1,452 bytes of the full executable =keycount.py= example script.

On the other hand it ran in nearly half the time; taking 6 minutes and 47.905 seconds to run. As opposed to the 11 minutes and 52.945 seconds which the CPython script alone took.

The =keycount.pyx= and =setup.py= files used to generate this example have been added to the =examples/howto/advanced/cython/= directory. The example versions include some additional options to annotate the existing code and to detect Cython's use. The latter comes from the [\[http://docs.cython.org/en/latest/src/tutorial/pure.html#magic-attributes-within-the-pxd\]](http://docs.cython.org/en/latest/src/tutorial/pure.html#magic-attributes-within-the-pxd) [Magic Attributes] section of the Cython documentation.

```
* Miscellaneous extras and work-arounds
:PROPERTIES:
:CUSTOM_ID: cheats-and-hacks
:END:
```

Most of the things in the following sections are here simply because there was no better place to put them, even though some are only peripherally related to the GPGME Python bindings. Some are also workarounds for functions not integrated with GPGME as yet. This is especially true of the first of these, dealing with `[[#group-lines][group lines]]`.

```
** Group lines
:PROPERTIES:
:CUSTOM_ID: group-lines
:END:
```

There is not yet an easy way to access groups configured in the `gpg.conf` file from within GPGME. As a consequence these central groupings of keys cannot be shared amongst multiple programs, such as MUAs readily.

The following code, however, provides a work-around for obtaining this information in Python.

```
#+BEGIN_SRC python -i
import subprocess
import sys

if sys.platform == "win32":
    gpgconfgcmd = "gpgconf.exe --list-options gpg"
else:
    gpgconfgcmd = "gpgconf --list-options gpg"
```

```

process = subprocess.Popen(gpgconfcmd.split(), stdout=subprocess.PIPE)
procom = process.communicate()

if sys.version_info[0] == 2:
    lines = procom[0].splitlines()
else:
    lines = procom[0].decode().splitlines()

for line in lines:
    if line.startswith("group") is True:
        break

groups = line.split(":")[-1].replace("'", "").split(',')

group_lines = []
group_lists = []

for group in groups:
    group_lines.append(group.split("="))
    group_lists.append(group.split("="))

for glist in group_lists:
    glist[1] = glist[1].split()
#+END_SRC

```

The result of that code is that `group_lines` is a list of lists where `group_lines[i][0]` is the name of the group and `group_lines[i][1]` is the key IDs of the group as a string.

The `group_lists` result is very similar in that it is a list of lists. The first part, `group_lists[i][0]` matches `group_lines[i][0]` as the name of the group, but `group_lists[i][1]` is the key IDs of the group as a list.

A demonstration of using the `groups.py` module is also available in the form of the executable `mutt-groups.py` script. This second script reads all the group entries in a user's `gpg.conf` file and converts them into crypt-hooks suitable for use with the Mutt and Neomutt mail clients.

```

** Keyserver access for Python
:PROPERTIES:
:CUSTOM_ID: hkp4py
:END:

```

The [\[\[https://github.com/Selfnet/hkp4py\]\[hkp4py\]\]](https://github.com/Selfnet/hkp4py) module by Marcel Fest was originally a port of the old

[\[\[https://github.com/dgladkov/python-hkp\]\]](https://github.com/dgladkov/python-hkp) `[python-hkp]` module from Python 2 to Python 3 and updated to use the [\[\[http://docs.python-requests.org/en/latest/index.html\]\]](http://docs.python-requests.org/en/latest/index.html) `[requests]` module instead. It has since been modified to provide support for Python 2.7 as well and is available via PyPI.

Since it rewrites the `=hkp=` protocol prefix as `=http=` and `=hkps=` as `=https=`, the module is able to be used even with servers which do not support the full scope of keyserver functions.^[fn:5] It also works quite readily when incorporated into a `[#cython][Cython]` generated and compiled version of any code.

```
*** Key import format
:PROPERTIES:
:CUSTOM_ID: hkp4py-strings
:END:
```

The `hkp4py` module returns key data via requests as string literals (`=r.text=`) instead of byte literals (`=r.content=`). This means that the returned key data must be encoded to UTF-8 when importing that key material using a `=gpg.Context().key_import(=` method.

For this reason an alternative method has been added to the `=search=` function of `=hkp4py.KeyServer(=` which returns the key in the correct format as expected by `=key_import=`. When importing using this module, it is now possible to import with this:

```
#+BEGIN_SRC python -i
for key in keys:
    if key.revoked is False:
        gpg.Context().key_import(key.key_blob)
    else:
        pass
#+END_SRC
```

Without that recent addition it would have been necessary to encode the contents of each `=hkp4py.KeyServer().search()[i].key=` in `=hkp4py.KeyServer().search(=` before trying to import it.

An example of this is included in the `[#howto-import-key][Importing Keys]` section of this HOWTO and the corresponding executable version of that example is available in the `=lang/python/examples/howto=` directory as normal; the executable version is the `=import-keys-hkp.py=` file.

```
** GPGME version checking
:PROPERTIES:
:CUSTOM_ID: gpgme-version-check
```


:END:

For various reasons it may be necessary to check which version of GPGME the bindings have been built against; including whether a minimum required version of GPGME is in use.

For the most part the `=gpg.version.versionstr=` and `=gpg.version.versionlist=` methods have been quite sufficient. The former returns the same string as `=gpgme-config --version=`, while the latter returns the major, minor and patch values in a list.

To check if the installed bindings have actually been built against the current installed `libgpgme` version, this check can be performed:

```
#+BEGIN_SRC python -i
import gpg
import subprocess
import sys

gpgme_version_call = subprocess.Popen(["gpgme-config", "--version"],
                                       stdout=subprocess.PIPE,
                                       stderr=subprocess.PIPE)
gpgme_version_str = gpgme_version_call.communicate()

if sys.version_info[0] == 2:
    gpgme_version = gpgme_version_str[0].strip()
elif sys.version_info[0] >= 3:
    gpgme_version = gpgme_version_str[0].decode().strip()
else:
    gpgme_version = None

if gpgme_version is not None:
    if gpgme_version == gpg.version.versionstr:
        print("The GPGME Python bindings match libgpgme.")
    else:
        print("The GPGME Python bindings do NOT match libgpgme.")
else:
    print("Upgrade Python and reinstall the GPGME Python bindings.")
#+END_SRC
```

For many developers, however, the preferred checking means checking for a minimum version or point release. This is now readily available via the `=gpg.version.versionintlist=` method (added in version `=1.12.1-beta79=`). It is also now possible to easily check whether the installed GPGME Python bindings were built from a development or beta branch of the GPGME source code.

The following code demonstrates how both of those methods may be used:

```

#+BEGIN_SRC python -i
import gpg

try:
    if gpg.version.is_beta is True:
        print("The installed GPGME Python bindings were built from beta code.")
    else:
        print("The installed GPGME Python bindings are a released version.")
except Exception as e:
    print(e)

try:
    if gpg.version.versionintlist[0] == 1:
        if gpg.version.versionintlist[1] == 12:
            if gpg.version.versionintlist[2] == 1:
                print("This is the minimum version for using versionintlist.")
            elif gpg.version.versionintlist[2] > 1:
                print("The versionintlist method is available.")
            else:
                pass
        elif gpg.version.versionintlist[1] > 12:
            print("The versionintlist method is available.")
        else:
            pass
    elif gpg.version.versionintlist[0] > 1:
        print("The versionintlist method is available.")
    else:
        pass
except Exception as e:
    print(e)
#+END_SRC

```

The points where `=pass=` is used in the above example will most likely also produce an `=Exception=` error since those results should only occur in versions which do not have the `=gpgme.version.is_beta=` and `=gpgme.version.versionintlist=` methods available.

```

* Copyright and Licensing
:PROPERTIES:
:CUSTOM_ID: copyright-and-license
:END:

```

```

** Copyright
:PROPERTIES:
:CUSTOM_ID: copyright

```

:END:

Copyright The GnuPG Project, 2018.

** Draft Editions of this HOWTO

:PROPERTIES:

:CUSTOM_ID: draft-editions

:END:

Draft editions of this HOWTO may be periodically available directly from the author at any of the following URLs:

- [\[\[https://files.au.adversary.org/crypto/gpgme-python-howto.html\]\]](https://files.au.adversary.org/crypto/gpgme-python-howto.html) [GPGME Python Bindings HOWTO draft (HTML single file, AWS S3 SSL)]
- [\[\[http://files.au.adversary.org/crypto/gpgme-python-howto.html\]\]](http://files.au.adversary.org/crypto/gpgme-python-howto.html) [GPGME Python Bindings HOWTO draft (HTML single file, AWS S3 no SSL)]
- [\[\[https://files.au.adversary.org/crypto/gpgme-python-howto-split/index.html\]\]](https://files.au.adversary.org/crypto/gpgme-python-howto-split/index.html) [GPGME Python Bindings HOWTO draft (HTML multiple files, AWS S3 SSL)]
- [\[\[http://files.au.adversary.org/crypto/gpgme-python-howto/index.html\]\]](http://files.au.adversary.org/crypto/gpgme-python-howto/index.html) [GPGME Python Bindings HOWTO draft (HTML multiple files, AWS S3 no SSL)]

These draft versions have been generated from this document via GNU Emacs [\[\[https://orgmode.org/\]\]](https://orgmode.org/) [Org mode] to =.texi= and [\[\[https://www.gnu.org/software/texinfo/\]\]](https://www.gnu.org/software/texinfo/) [GNU Texinfo] to HTML. Though it is likely that the specific [\[\[https://files.au.adversary.org/crypto/gpgme-python-howto/\]\]](https://files.au.adversary.org/crypto/gpgme-python-howto/) [file] [\[\[http://files.au.adversary.org/crypto/gpgme-python-howto.org/\]\]](http://files.au.adversary.org/crypto/gpgme-python-howto.org/) [version] used will be on the same server with the generated output formats. Occasionally I may include the Org mode generated XHTML versions:

- [\[\[https://files.au.adversary.org/crypto/gpgme-python-howto.xhtml\]\]](https://files.au.adversary.org/crypto/gpgme-python-howto.xhtml) [GPGME Python Bindings HOWTO draft (HTML single file, AWS S3 SSL)]
- [\[\[http://files.au.adversary.org/crypto/gpgme-python-howto.xhtml\]\]](http://files.au.adversary.org/crypto/gpgme-python-howto.xhtml) [GPGME Python Bindings HOWTO draft (HTML single file, AWS S3 no SSL)]

That XHTML version, however, is exported in a way which inherits a colour scheme from [\[\[https://github.com/holomorph/emacs-zenburn\]\]](https://github.com/holomorph/emacs-zenburn) [the author's Emacs theme] (which is a higher contrast version of [\[\[http://kippura.org/zenburnpage/\]\]](http://kippura.org/zenburnpage/) [Zenburn] ported by [\[\[https://github.com/holomorph/\]\]](https://github.com/holomorph/) [Holomorph]). So it's fine for people who prefer dark themed web pages, but not so great for everyone else.

The GNU Texinfo and reStructured Text versions ship with the software, while the GNU Emacs Info version is generated from the Texinfo version using GNU Texinfo or GNU Makeinfo. The Texinfo format is generated from the original Org mode source file in Org mode itself either within GNU Emacs or via the command line by invoking Emacs in batch mode:

```
#+BEGIN_SRC shell
emacs gpgme-python-howto.org --batch -f org-texinfo-export-to-texinfo --kill
emacs gpgme-python-howto --batch -f org-texinfo-export-to-texinfo --kill
#+END_SRC
```

The reStructuredText format is also generated from the Org mode source file, except it is generated using [[<https://pandoc.org>][Pandoc]] with either of the following commands (depending on the filename):

```
#+BEGIN_SRC shell
pandoc -f org -t rst+smart -o gpgme-python-howto.rst gpgme-python-howto.org
pandoc -f org -t rst+smart -o gpgme-python-howto.rst gpgme-python-howto
#+END_SRC
```

Note that the Org mode source files are identified as such via a mode line at the top of each file and have had their `.org` file extensions dropped in order to make scripted generation of output formats easier and not require renaming files post-conversion.

Due to a bug in Org mode's texinfo conversion method, the recommended steps for generating the Texinfo files for all the files in the `=lang/python/doc/src/=` directory are as follows:

```
#+BEGIN_SRC shell
for x in * ; do
    emacs $x --batch -f org-texinfo-export-to-texinfo --kill
    cat $x.texi | sed -e 's/@documentencoding UTF-8/@documentencoding utf-8/g' > ../texinfo/$x.texi
    pandoc -f org -t rst+smart -o ../rst/$x.rst $x
done ;
rm -fv *.texi
cd ../texinfo
mkdir info
mkdir html
for x in *.texi ; do
    makeinfo -v $x
    makeinfo --html --no-split $x
done ;
mv *.info info/
mv *.html html/
#+END_SRC
```

This code snippet includes the generation of the reStructuredText files and would be expected to be run from the `=doc/src/=` directory containing the Org mode source files. It also assumes that the commands are being run on POSIX compliant systems with basic tools like sed, the Bourne shell and GNU Emacs[fn:6] available. The code snippet also includes the steps for generating the Emacs Info files

and HTML files from the Texinfo files. Using reStructuredText files with Sphinx is best left for the documentation of that project.

In addition to these there is a significantly less frequently updated version as a HTML [\[\[https://files.au.adversary.org/crypto/gpgme-python/dita/webhelp/index.html\]\]](https://files.au.adversary.org/crypto/gpgme-python/dita/webhelp/index.html) [WebHelp site] (AWS S3 SSL); generated from DITA XML source files, which can be found in [\[\[https://dev.gnupg.org/source/gpgme/browse/ben%252Fhowto-dita/\]\]](https://dev.gnupg.org/source/gpgme/browse/ben%252Fhowto-dita/) [an alternative branch] of the GPGME git repository.

Various generated output formats may occasionally be found in subdirectories of the [\[\[https://s3.amazonaws.com/files.au.adversary.org/crypto/gpgme-python\]\]](https://s3.amazonaws.com/files.au.adversary.org/crypto/gpgme-python) [gpgme-python] directory. In particular within the [\[\[https://s3.amazonaws.com/files.au.adversary.org/crypto/gpgme-python/dita\]\]](https://s3.amazonaws.com/files.au.adversary.org/crypto/gpgme-python/dita) [DITA], [\[\[https://s3.amazonaws.com/files.au.adversary.org/crypto/gpgme-python/rst\]\]](https://s3.amazonaws.com/files.au.adversary.org/crypto/gpgme-python/rst) [reStructuredText] and [\[\[https://s3.amazonaws.com/files.au.adversary.org/crypto/gpgme-python/texinfo\]\]](https://s3.amazonaws.com/files.au.adversary.org/crypto/gpgme-python/texinfo) [Texinfo] subdirectories. The =rst= directory contains output files generated with Sphinx and may include a considerable number of its possible output formats, but there are no guarantees as to how recent these are or even if they are present.

These draft editions are not official documents and the version of documentation in the master branch or which ships with released versions is the only official documentation. Nevertheless, these draft editions may occasionally be of use by providing more accessible web versions which are updated between releases. They are provided on the understanding that they may contain errors or may contain content subject to change prior to an official release.

```
** License GPL compatible
:PROPERTIES:
:CUSTOM_ID: license
:END:
```

This file is free software; as a special exception the author gives unlimited permission to copy and/or distribute it, with or without modifications, as long as this notice is preserved.

This file is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY, to the extent permitted by law; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.

* Footnotes

[fn:1] =short-history= and/or =short-history.html=.

[fn:2] With no issues reported specific to Python 3.7, the release of Python 3.7.1 at around the same time as GPGME 1.12.0 and the testing with Python 3.7.1rc1, there is no reason to delay moving 3.7 ahead of 3.6 now. Production environments with more conservative requirements will always enforce their own policies anyway and installation to each supported minor release is quite possible too.

[fn:3] Yes, even if you use virtualenv with everything you do in Python. If you want to install this module as just your user account then you will need to manually configure, compile and install the /entire/ GnuPG stack as that user as well. This includes libraries which are not often installed that way. It can be done and there are circumstances under which it is worthwhile, but generally only on POSIX systems which utilise single user mode (some even require it).

[fn:4] You probably don't really want to do this. Searching the key servers for "gnupg.org" produces over 400 results, the majority of which aren't actually at the gnupg.org domain, but just included a comment regarding the project in their key somewhere.

[fn:5] Such as with ProtonMail servers. This also means that restricted servers which only advertise either HTTP or HTTPS end points and not HKP or HKPS end points must still be identified as as HKP or HKPS within the Python Code. The =hkp4py= module will rewrite these appropriately when the connection is made to the server.

[fn:6] Okay, Emacs might not necessarily qualify as a basic tool, but it is common enough that having it installed on a system isn't too great an expectation, nor is it difficult to add to most POSIX systems, even if the users of those systems do not personally use it.
;; -*- Mode: lisp -*-

```
;; Copyright (C) 2006 g10 Code GmbH
;;
;; This file is part of GPGME.
;;
;; GPGME is free software; you can redistribute it and/or
;; modify it under the terms of the GNU Lesser General Public License
;; as published by the Free Software Foundation; either version 2.1 of
;; the License, or (at your option) any later version.
;;
;; GPGME is distributed in the hope that it will be useful, but
;; WITHOUT ANY WARRANTY; without even the implied warranty of
;; MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU
;; Lesser General Public License for more details.
;;
;; You should have received a copy of the GNU Lesser General Public
```

```
;;; License along with GPGME; if not, write to the Free
;;; Software Foundation, Inc., 59 Temple Place - Suite 330, Boston, MA
;;; 02111-1307, USA.
```

```
(defpackage #:gpgme-system
  (:use #:common-lisp #:asdf))
```

```
(in-package #:gpgme-system)
```

```
(defsystem gpgme
  :description "GnuPG Made Easy."
  :author "g10 Code GmbH"
  :version "1.13.1"
  :licence "GPL"
  :defsystem-depends-on ("cffi-grovel")
  :depends-on ("cffi" "gpg-error" "trivial-garbage")
  :components ((:file "gpgme-package")
               (:cffi-grovel-file "gpgme-grovel"
                                   :depends-on ("gpgme-package")))
               (:file "gpgme"
                     :depends-on ("gpgme-package" "gpgme-grovel"))))
:cython
(21:protected-private-key(3:dsa(1:p129:_d8|po3s@!WGUOAXRC$_[8SN:y|o?2[,pVxn(kOc\Bk0zu&FnK)(1:q21:
vBeOP\p)(1:g129:fU/e(2hp@hjc2uE=Sg GO;ZkIyFnGM!GsG@
= _SZkII)(1:y128:K:9tA]4SU1 }sG`nZpx/imV^>A;V%?5!!sS{!=-6@|
=d
)(9:protected25:openpgp-s2k3-sha1-aes-cbc((4:sha18:Li7:6452224)16:,kO{,}80:z7OCG/sB48(H9%*ojSO
OGSma`YUs1h<_)(12:protected-at15:20130812T105134)))
#+TITLE: GPGME Python Bindings HOWTO Examples
#+LATEX_COMPILER: xelatex
#+LATEX_CLASS: article
#+LATEX_CLASS_OPTIONS: [12pt]
#+LATEX_HEADER: \usepackage{xltextra}
#+LATEX_HEADER: \usepackage[margin=1in]{geometry}
#+LATEX_HEADER: \setmainfont[Ligatures={Common}]{Times New Roman}
#+LATEX_HEADER: \author{Ben McGinnes <ben@gnupg.org>}
```

```
* Examples
```

```
:PROPERTIES:
```

```
:CUSTOM_ID: gpgme-python3-examples
```

```
:END:
```

The contents of this directory are the examples included in the /GNU Privacy Guard (GnuPG) Made Easy Python Bindings HOWTO/ file. Each script is explicitly for Python 3 and specifically for Python 3.4 or later.

Some of these scripts may work with Python 2.7, but there are no guarantees. They will include the relevant imports from the `__future__` module to facilitate that if possible.

* Copyright and Licensing

:PROPERTIES:

:CUSTOM_ID: copyright-and-license

:END:

Unless otherwise stated, all the examples in this directory are released under the same terms as GPGME itself; that is they are dual licensed under the terms of both the GNU General Public License version 2.0 (or any later version) *and* the GNU Lesser General Public License version 2.1 (or any later version).

** Copyright (C) The GnuPG Project, 2018

:PROPERTIES:

:CUSTOM_ID: copyright

:END:

Copyright The GnuPG Project, 2018.

** License GPL compatible

:PROPERTIES:

:CUSTOM_ID: license

:END:

This file is free software; as a special exception the author gives unlimited permission to copy and/or distribute it, with or without modifications, as long as this notice is preserved.

This file is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY, to the extent permitted by law; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.

```
\input texinfo @c -*- texinfo -*-
```

```
@c %**start of header
```

```
@setfilename index.info
```

```
@settitle GNU Privacy Guard (GnuPG) Made Easy Python Bindings
```

```
@documentencoding utf-8
```

```
@documentlanguage en
```

```
@c %**end of header
```

```
@finalout
```

```
@titlepage
```


@title GNU Privacy Guard (GnuPG) Made Easy Python Bindings

@author Ben McGinnes

@end titlepage

@contents

@ifnottex

@node Top

@top GNU Privacy Guard (GnuPG) Made Easy Python Bindings

@end ifnottex

@menu

* GPGME Python Bindings::

@detailmenu

--- The Detailed Node Listing ---

GPGME Python Bindings

* Contents::

@end detailmenu

@end menu

@node GPGME Python Bindings

@chapter GPGME Python Bindings

@menu

* Contents::

@end menu

@node Contents

@section Contents

@itemize

@item

@uref{short-history, A short history of the project}

@item

@uref{what-is-new, What's New}

@itemize

@item

@uref{maintenance-mode, Maintenance Mode} (from January, 2019)

@end itemize

@item

@uref{what-was-new, What Was New}

@item

@uref{gpgme-python-howto, GPGME Python Bindings HOWTO}

@end itemize

```

@bye
;;; gpgme-package.lisp

;;; Copyright (C) 2006 g10 Code GmbH
;;;
;;; This file is part of GPGME-CL.
;;;
;;; GPGME-CL is free software; you can redistribute it and/or modify
;;; it under the terms of the GNU General Public License as published
;;; by the Free Software Foundation; either version 2 of the License,
;;; or (at your option) any later version.
;;;
;;; GPGME-CL is distributed in the hope that it will be useful, but
;;; WITHOUT ANY WARRANTY; without even the implied warranty of
;;; MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU
;;; Lesser General Public License for more details.
;;;
;;; You should have received a copy of the GNU General Public License
;;; along with GPGME; if not, write to the Free Software Foundation,
;;; Inc., 59 Temple Place - Suite 330, Boston, MA 02111-1307, USA.

;;; Conventions:
;;;
;;; gpg-error is used for error handling.
;;;
;;; Standard I/O streams are used for input and output.

(defpackage #:gpgme
  (:use #:common-lisp #:cffi #:gpg-error)
  (:import-from #:trivial-garbage
    #:finalize)
  (:export #:check-version
    #:*version*
    #:context
    #:protocol
    #:armorp
    #:textmodep
    #:+include-certs-default+
    #:include-certs
    #:keylist-mode
    #:signers
    #:sig-notations
    #:with-context
    #:key-data
    #:get-key
    #:op-encrypt
    #:op-decrypt

```

#:op-sign
#:op-verify
#:op-import
#:op-export))

2011-12-02 Werner Koch <wk@g10code.com>

NB: ChangeLog files are no longer manually maintained. Starting on December 1st, 2011 we put change information only in the GIT commit log, and generate a top-level ChangeLog file from logs at "make dist". See doc/HACKING for details.

2011-05-12 Marcus Brinkmann <marcus@g10code.com>

* gpgme.texi (I/O Callback Example): Fix example code.

* gpgme.texi (Generating Keys): Fix OpenPGP parameters and reference GPG and GPGSM manual.

2010-01-05 Werner Koch <wk@g10code.com>

* gpgme.texi (Changing Passphrases): New.

2009-07-21 Werner Koch <wk@g10code.com>

* uiserver.texi (UI Server Encrypt): Add --expect-sign option to PREP_ENCRYPT.

2009-06-16 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Result Management): New section.

2009-06-16 Werner Koch <wk@g10code.com>

* gpgme.texi (Exporting Keys): Document gpgme_op_export_keys.
(Importing Keys): Document gpgme_op_import_keys.
(Data Buffer Meta-Data): Document URL encodings.

2009-05-28 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Library Version Check): Document selftest error.
(Creating Contexts): Likewise.

2009-05-18 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Encrypting a Plaintext): Document
GPGME_ENCRYPT_NO_ENCRYPT_TO.

2009-05-05 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Engine Information): Replace path by file_name.

2008-11-28 Werner Koch <wk@g10code.com>

* gpgme.texi (Listing Keys): Change description of the return value to match the code. Spotted by Colin Leroy.

2008-10-15 Werner Koch <wk@g10code.com>

* uiserver.texi (Miscellaneous UI Server Commands): Add option --protocol to the SENDER command.

2008-07-17 Werner Koch <wk@g10code.com>

* module-overview.sk: New.

2008-07-04 Werner Koch <wk@g10code.com>

* gpgme.texi (Algorithms): Add a hint on symmetric only encryption.

2008-06-27 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Cancellation): Document gpgme_cancel_async.

2008-06-25 Werner Koch <wk@g10code.com>

* gpgme.texi (Listing Keys): Updated example to the current API. Noted by Nico Schottelius.

2008-06-05 Werner Koch <wk@g10code.com>

* uiserver.texi (Miscellaneous UI Server Commands): Describe START_CONFDialog.

2008-06-04 Werner Koch <wk@g10code.com>

* gpgme.texi: Use @copying command. Change license to GPLv3. Include protocol specs from GpgOL and GPGEEx. Minor cleanups.

2008-03-11 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (File Based Data Buffers): Document the need for blocking operations.
(Callback Based Data Buffers): Likewise.

2008-03-05 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Library Version Check): Rename snippet function to
init_gpgme.
(I/O Callback Example): Call it here.

2008-01-28 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi: Document that data encoding affects some output data
objects now.

2007-09-27 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Protocols and Engines): Document GPGME_PROTOCOL_UNKNOWN.

2007-09-11 Werner Koch <wk@g10code.com>

* gpgme.texi (I/O Callback Example): Typo fix.

2007-08-07 Werner Koch <wk@g10code.com>

* gpgme.texi (Verify): Describe chain_model.

2007-07-12 Werner Koch <wk@g10code.com>

* gpgme.texi (Library Version Check): Add remark that the socket
layer will get initialized.

2007-06-05 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Advanced Key Editing): New section.

2007-05-21 Werner Koch <wk@g10code.com>

* Makefile.am (online): New target.

2007-05-18 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Error Strings): Fix documentation of
gpgme_strerror_r.

2006-11-01 Moritz Schulte <moritz@g10code.com>

* gpgme.texi (Data Buffer I/O Operations): Fixed entry for
gpgme_data_seek: OFFSET is not a pointer; some s/whence/offset/.

2006-09-25 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Destroying Data Buffers): Clarify that

gpgme_data_release_and_get_mem destroys DH unconditionally.

2005-03-24 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Library Version Check): Make example code compatible to W32 systems.

2006-06-21 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Passphrase Callback): Fix inverted condition in description.

2005-12-20 Werner Koch <wk@g10code.com>

* gpgme.texi (Verify): Document pka_trust.

2005-12-06 Werner Koch <wk@g10code.com>

* gpgme.texi (Key Management): Updated to match the fixes for subkey fingerprints and the secret flag.

2005-10-06 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Destroying Data Buffers): Document gpgme_free.

2005-10-02 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Key Management): Add the new member notations of gpgme_sig_key_t.
(Key Listing Mode): Document GPGME_KEYLIST_MODE_SIG_NOTATIONS.

2005-10-01 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi: Enclose all return parameters of dectypes in curly brackets.

* gpgme.texi (Signature Notation Data): New section.
(Verify): Added more about the notation data structure.

2005-09-30 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Data Buffer I/O Operations, Data Buffer Meta-Data):
New subsections.

* gpgme.texi: Replace plaintext_filename with file_name.

* gpgme.texi (Key Management): Document is_qualified.

2005-07-27 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Decrypt): Add plaintext_filename to
gpgme_decrypt_result_t.
(Verify): Likewise for gpgme_verify_result_t.

2005-06-03 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Verify): Add information about new fields in
gpgme_signature_t.

* gpgme.texi (Decrypt): Add gpgme_recipient_t.

2005-05-28 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Key Listing Mode): Fix return type of
gpgme_set_keylist_mode.
Reported by "Sergio" <ml_sergico@virgilio.it>.

2005-04-28 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Included Certificates): Document
GPGME_INCLUDE_CERTS_DEFAULT.

2005-01-12 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Engine Configuration): New section.
(Crypto Engine): New subsection.

2004-12-07 Marcus Brinkmann <marcus@g10code.de>

* lesser.texi (Library Copying): Change from @appendixsec to
@appendix.
* gpgme.texi (Features): Change reference to GPL to one to LGPL.

* Makefile.am: Change license to LGPL.
(gpgme_TEXINFOS): Replace gpl.texi with lesser.texi.

* gpgme.texi: Change license to LGPL (also for documentation of
GPGME's license).

* lesser.texi: New file.

* gpl.texi: File removed.

* gpgme.texi (Creating Contexts): Fix cut&paste error. Reported
by Noel Torres <envite@rolamasao.org>.

2004-09-30 Marcus Brinkmann <marcus@g10code.de>

- * Makefile.am (gpgme_TEXINFOS): Remove fdl.texi.
- * gpgme.texi: Do not include fdl.texi. Change license to GPL.
- * fdl.texi: File removed.

2004-09-29 Marcus Brinkmann <marcus@g10code.de>

- * gpgme.texi (Key Management): Change type of keylist_mode in gpgme_key_t to gpgme_keylist_mode_t.

2004-09-28 Marcus Brinkmann <marcus@g10code.de>

- * gpgme.texi (Passphrase Callback): Fix last change.

2004-09-27 Marcus Brinkmann <marcus@g10code.de>

- * gpgme.texi (Passphrase Callback): Document GPG_ERR_NOT_IMPLEMENTED.

- * gpgme.texi: Update copyright year for tex version.

2004-07-29 Moritz Schulte <moritz@g10code.com>

- * gpgme.texi (Verify): Fix gpgme_get_key example (ancient force_update argument was still there).

2004-06-08 Marcus Brinkmann <marcus@g10code.de>

- * gpgme.texi (Listing Keys): Elaborate on the length restrictions on search patterns.

- * gpgme.texi (Decrypt and Verify): Document the NO_DATA error code.

(Verify): Document the relationship between gpgme_op_verify_result and the decrypt and verify operations.

2004-05-21 Marcus Brinkmann <marcus@g10code.de>

- * gpgme.texi (Verify): Document GPG_ERR_CERT_REVOKED status.

- * gpgme.texi (Decrypt): Add note about new field wrong_key_usage of gpgme_decrypt_result_t.

- * gpgme.texi (Key Management): Add note about new field keylist_mode of gpgme_key_t.

2004-04-29 Marcus Brinkmann <marcus@g10code.de>

- * gpgme.texi (Verify): Correct type of member wrong_key_usage.

2004-03-29 Moritz Schulte <moritz@duesseldorf.ccc.de>

- * gpgme.texi (Verify): Fix type of gpgme_op_verify_result.
- * gpgme.texi (Key Listing Mode): Typo fix.

2004-03-23 Marcus Brinkmann <marcus@g10code.de>

- * gpgme.texi (Library Version Check): Fix the instruction when to set the locale.

2004-03-03 Marcus Brinkmann <marcus@g10code.de>

- * gpgme.texi (I/O Callback Example Qt): New section by Marc Mutz.

2004-02-24 Marcus Brinkmann <marcus@g10code.de>

- * gpgme.texi (cancellation): New section.

2004-02-17 Werner Koch <wk@gnupg.org>

- * gpgme.texi (Key Listing Mode): Doc KEYLIST_MODE_VALIDATE.

2004-02-06 Moritz Schulte <mo@g10code.com>

- * gpgme.texi: A couple of small fixes regarding the Largfile Support section.

2004-02-01 Marcus Brinkmann <marcus@g10code.de>

- * gpgme.texi (Largefile Support): New section.

2004-01-13 Marcus Brinkmann <marcus@g10code.de>

- * gpgme.texi (Key Management): Fix exportable field.

2003-12-25 Marcus Brinkmann <marcus@g10code.de>

- * gpgme.texi (Key Management): Rename member class in gpgme_key_sig_t to sig_class.
(Creating a Signature): Likewise for gpgme_signature_t.

2003-12-23 Moritz Schulte <mo@g10code.com>

- * gpgme.texi (Listing Keys): Minor clarification for gpgme_get_key.

2003-10-06 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Signal Handling): New section.

2003-09-14 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Multi Threading): Correct documentation on memory synchronization requirement.

* gpgme.texi (Locale): New section.
(Multi Threading): Set locale in example.

2003-09-13 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Error Strings): Add gpgme_strerror_r.

2003-09-13 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Multi Threading): Update documentation.

2003-09-03 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Header): We don't use the assuan namespace anymore.
Document new thread options.

2003-08-14 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Creating a Signature): Change type of member class
to unsigned int.

2003-08-04 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Verify): Get error code from SIG->status in the code
for gpgme_get_sig_status.

2003-07-31 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Key Management): Add can_authenticate flag.

* gpgme.texi (Listing Keys): Document GPG_ERR_AMBIGUOUS_NAME for
gpgme_get_key.

2003-07-29 Marcus Brinkmann <marcus@g10code.de>

* Makefile.am (EXTRA_DIST): Remove variable.

* gpgme.texi (Encrypting a Plaintext): Bad passphrase is only
possible with symmetric encryption, change the wording to reflect
that.

* gpgme.texi (Creating a Signature): Document
GPG_ERR_UNUSABLE_SECKEY.

* gpgme.texi (Encrypting a Plaintext): Mention encrypt and sign
operations in result function.
(Creating a Signature): Likewise.

2003-07-23 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Key Listing Mode): Remove word duplication.
(Listing Keys): Remove mentioning of force argument.
(Verify): Don't mention r_stat. Fix some typos.
(Decrypt and Verify): Correct info how to get the result. Don't
mention r_stat.
(Manipulating Data Buffers): Fix documentation of return value.
(Listing Keys): Update examples.
(Decrypt): Result might also be available when operation failed.
(Verify): Result might also be available when operation failed.
All spotted by Stphane Corthsy.

2003-07-22 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Error Sources): Fix cut and paste error.

2003-07-09 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Key Management): Clarify difference between can_sign
and can_certify.
(Information About Keys): Likewise for GPGME_ATTR_CAN_SIGN and
GPGME_ATTR_CAN_CERTIFY.

2003-07-08 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Progress Meter Callback): Change return type of
gpgme_progress_cb_t to void.

2003-06-22 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi: Add 2003 to copyright notice.

* gpgme.texi (Header): Fix name space documentation on
libgpg-error.

2003-06-22 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Multi Threading): Remove reference to
gpgme_recipients_t.

2003-06-06 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Crypto Operations): Rename gpgme_invalid_user_id_t to gpgme_invalid_key_t.

2003-06-06 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi: Change error codes to GPG_ERR_* variants. (Error Handling): Rewritten.

2003-05-29 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Exporting Keys): Change and document prototypes. Add new gpgme_op_export_ext and gpgme_op_export_ext_start variants. (Selecting Recipients): Section removed. (Encrypting a Plaintext): Change prototypes and document the changes.

2003-05-28 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Exporting Keys): Change argument type from gpgme_recipient_t to gpgme_user_id_t. (Encrypting a Plaintext): Likewise. (Selecting Recipients): Rewritten.

2003-05-27 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Protocol Selection): Do not use @acronym in @node because that breaks texi2dvi.

* gpgme.texi (Passphrase Callback): Document new prototype.

2003-05-18 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Header): Remove Gpgme as namespace prefix. Add _GPGME to namespace prefix.

* gpgme.texi (Multi Threading): Add note about link order.

2003-05-04 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Listing Keys): Document what happens if key is not found.

* gpgme.texi (Importing Keys): Fix cut and paste error.

2003-04-30 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Encrypting a Plaintext): Remove reference to gpgme_get_op_info.
(Detailed Results): Subsection removed.

* gpgme.texi (Key Listing Mode): Add GPGME_KEYLIST_MODE_SIGS.
(Manipulating Keys): Add obsolescence note.
(Key Signatures): Likewise.
(Information About Keys): Likewise.
(Key Management): Add new data types GpgmeSubkey, GpgmeKeySig, GpgmeUserID, and all the information about GpgmeKey.

2003-04-29 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Listing Keys): Remove force_update argument from gpgme_get_key.

* gpgme.texi (Trust Item Management): Add data members of GpgmeTrustItem type.
(Information About Trust Items): Add note about obsolescence.
(Manipulating Trust Items): Add gpgme_trust_item_ref and gpgme_trust_item_unref.

2003-04-28 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Verify): Rewritten to take into account new and deprecated functions and data types.

* gpgme.texi (Decrypt): Describe gpgme_op_decrypt_result and GpgmeDecryptResult.

2003-04-27 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Encrypting a Plaintext): Add info about GpgmeEncryptResult and gpgme_op_encrypt_result.

* gpgme.texi (Creating a Signature): Add info about GpgmeNewSignature, GpgmeSignResult and gpgme_op_sign_result.
(Crypto Operations): Add GpgmeInvalidUserID.
(Algorithms): New chapter.

* gpgme.texi (Deleting Keys): Document GPGME_Ambiguous_Specification.
(Error Values): Remove GPGME_Invalid_Type and GPGME_Invalid_Mode.
Add GPGME_Unknown_Reason, GPGME_Not_Found, GPGME_Ambiguous_Specification, GPGME_Wrong_Key_Usage, GPGME_Key_Revoked, GPGME_Key_Expired, GPGME_No_CRL_Known, GPGME_CRL_Too_Old, GPGME_Policy_Mismatch, GPGME_No_Secret_Key,

GPGME_Key_Not_Trusted, GPGME_Issuer_Missing, GPGME_Chain_Too_Long,
GPGME_Unsupported_Algorithm, GPGME_Sig_Expired,
GPGME_Bad_Signature, GPGME_No_Public_Key.

2003-04-25 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Importing Keys): Change GPGME_IMPORT_PRIVATE to
GPGME_IMPORT_SECRET.

* gpgme.texi (Importing Keys): Remove note about gpgme_get_op_info.
(Detailed Results): Remove note about import.

* gpgme.texi (Importing Keys): Add documentation for
GpgmeImportStatus, GpgmeImportResult and gpgme_op_import_result.

* gpgme.texi (Generating Keys): Fix documentation of public and
secret arguments.

2003-04-24 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Generating Keys): Document changed gpgme_op_genkey
and new gpgme_op_genkey_result function. Document
GpgmeGenKeyResult data type.

* gpgme.texi (Error Values): Rename GPGME_No_Passphrase to
GPGME_Bad_Passphrase.

* gpgme.texi (Decrypt): Likewise.

(Decrypt and Verify): Likewise.

(Creating a Signature): Likewise.

(Encrypting a Plaintext): Likewise.

* gpgme.texi (Error Values): Rename GPGME_No_Recipients to
GPGME_No_UserID and GPGME_Invalid_Recipient to
GPGME_Invalid_UserID.

(Encrypting a Plaintext): Likewise.

* gpgme.texi (Error Values): Remove GPGME_Busy and GPGME_No_Request.

(Listing Keys): Likewise.

(Listing Trust Items): Likewise.

2003-02-06 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Cancelling an Operation): Removed.

(Passphrase Callback): Document new type for GpgmePassphraseCb.

2003-01-30 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Engine Information): Rename member part to

file_name.

* gpgme.texi (Protocols and Engines): Document
gpgme_get_protocol_name.

* gpgme.texi (Engine Information): Rewritten.

2003-01-29 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (I/O Callback Interface): Document new even
GPGME_EVENT_START.
(Waiting For Completion): Document new possible return values.
(I/O Callback Interface): Document return type of GpgmeIOCb.

2003-01-29 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Hooking Up Into Idle Time): Section removed.

2002-12-24 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Verify): Drop R_STAT argument in gpgme_op_verify.
* gpgme.texi (Decrypt and Verify): Likewise for
gpgme_op_decrypt_verify.

2002-12-23 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Information About Keys): Document that
GPGME_ATTR_IS_SECRET is not representable as a string anymore.

2002-12-22 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Key Signatures): New section.
(Listing Keys): Add gpgme_get_key.

2002-12-06 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Memory Based Data Buffers): New subsection.
(File Based Data Buffers): Likewise.
(Callback Based Data Buffers): Likewise.
(Manipulating Data Buffers): Update interfaces. Add
gpgme_data_seek.
* gpgme.texi (Engine Version Check): Remove gpgme_check_engine.

2002-11-21 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Verify): Document the new interface.

2002-11-19 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Generating Keys): Document new argument to gpgme_op_genkey.

2002-11-05 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Verify): Fix prototype of gpgme_get_sig_key.
Reported by Miguel Coca <e970095@zipi.fi.upm.es>.

2002-08-30 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Selecting Signers): Fix reference count.

2002-08-21 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Header): Document name space.

2002-08-20 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Importing Keys): Document gpgme_op_import_ext.

* gpgme.texi (Importing Keys): Undocument EOF.

2002-08-14 Werner Koch <wk@gnupg.org>

* gpgme.texi (Information About Keys): Changed GPGME_ATTR_TYPE.

2002-07-25 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Deleting Keys): Say that secret keys might not be deleted.

2002-07-25 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Information About Keys): Document (badly) the new key attributes.

* gpgme.texi (Manipulating Data Buffers): Mention that backend tries to detect encoding automatically.

2002-07-03 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Run Control): Update this section.
(Waiting For Completion): Likewise for this subsection.
(Cancelling an Operation): Likewise for this subsection.
(Using External Event Loops): New subsection with several subsubsections.

2002-06-28 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Multi Threading): Remove item about the need to synchronize anything against gpgme_wait (except gpgme_wait itself).

2002-06-27 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Information About Keys): Fix documentation for IDX. (Information About Trust Items): Likewise.

2002-06-26 Werner Koch <wk@gnupg.org>

* gpgme.texi (Importing Keys): Document the return value -1 of gpgme_op_import.

2002-06-20 Werner Koch <wk@gnupg.org>

* gpgme.texi (Verify): Explain the new whatidx variable.

2002-06-10 Werner Koch <wk@gnupg.org>

* gpgme.texi (Verify): Document attribute GPGME_ATTR_ERRTOK.

2002-06-04 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Multi Threading): Document new autodetection.

2002-06-04 Marcus Brinkmann <marcus@g10code.de>

* Makefile.am (DISTCLEANFILES): New variable.

2002-05-26 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi: Some typographical corrections throughout.

2002-05-09 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Using Automake): New section.

2002-05-09 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Multi Threading): Escape { and }.

2002-05-09 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Overview): Replace note about thread-safeness. (Multi Threading): New section.

2002-05-03 Werner Koch <wk@gnupg.org>

* gpgme.texi (Manipulating Data Buffers): Changed some data types to void*.

(Protocol Selection): Added gpgme_get_protocol.

(Verify): Updated to include the new attribute functions and status codes.

2002-04-27 Werner Koch <wk@gnupg.org>

* gpgme.texi (Manipulating Data Buffers): New type GpgmeDataEncoding.

2002-04-23 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Passphrase Callback): Document that either return argument can be NULL.

(Progress Meter Callback): Likewise.

2002-04-22 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Passphrase Callback): Fix small typo. Document the new function gpgme_get_passphrase_cb.

(Progress Meter Callback): Document the new function gpgme_get_progress_cb.

2002-04-16 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Creating a Signature): Fix function name. Reported by Wichert Ackerman <wichert@debian.org>.

2002-03-29 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (direntry): End index entry with a full stop.

Patch submitted by Jose Carlos Garcia Sogo <jsogo@debian.org>.

2002-03-17 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Detailed Results): Fix syntax error in last change.

2002-03-08 Werner Koch <wk@gnupg.org>

* gpgme.texi (Detailed Results): Import does also return info.

2002-03-06 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Encrypting a Plaintext): Document symmetric encryption.

2002-03-06 Marcus Brinkmann <marcus@g10code.de>

- * gpgme.texi (Error Strings): Add example.
- * gpgme.texi (Listing Keys): Likewise.

2002-03-03 Marcus Brinkmann <marcus@g10code.de>

- * gpgme.texi (Information About Keys): Document GPGME_ATTR_EXPIRE.

2002-03-03 Marcus Brinkmann <marcus@g10code.de>

- * gpgme.texi (Verify): Document verification of normal and cleartext signatures.

2002-02-27 Marcus Brinkmann <marcus@g10code.de>

- * gpgme.texi (Listing Keys): Document gpgme_op_keylist_ext_start.

2002-02-27 Marcus Brinkmann <marcus@g10code.de>

- * gpgme.texi (Encrypting a Plaintext): Document GPGME_Invalid_Recipients.
(Error Values): Likewise.

2002-02-26 Marcus Brinkmann <marcus@g10code.de>

- * gpgme.texi (Encrypting a Plaintext): Document gpgme_op_encrypt_sign and gpgme_op_encrypt_sign_start.

2002-02-25 Marcus Brinkmann <marcus@g10code.de>

- * gpgme.texi (Creating a Signature): Add a note about certificates to include.
(Included Certificates): New section.

2002-02-09 Marcus Brinkmann <marcus@g10code.de>

- * gpgme.texi (Detailed Results): Remove literal tags.
(Generating Keys): Update documentation.

- * gpgme.texi (Generating Keys): Fix syntax error.

2002-02-06 Marcus Brinkmann <marcus@g10code.de>

- * gpgme.texi (Waiting For Completion): Adjust doc to changes in the code.

2002-02-06 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Key Listing Mode): Update documentation.

2002-01-31 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Generating Keys): Document error at creation failure.

2002-01-30 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Deleting Keys): Document new error values.

2002-01-30 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Importing Keys): Add reference to gpgme_get_op_info.

2002-01-30 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi: Some spell checking.

2002-01-30 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi: Add all the gpgme_op_*_start functions.
Fill the concept index with many, many entries.

2002-01-29 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Run Control): New section.
(Verify): Document gpgme_get_notation.
(More Information): New section describing gpgme_get_op_info.

2002-01-22 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Passphrase callback): Change GpgmePassphraseCb's
R_HD type from void* to void**.

2002-01-22 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Creating data buffers): Change
gpgme_data_new_from_filepart's LENGTH type from off_t to size_t.

2002-01-22 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi (Generating keys): New subsection.
(Exporting keys): Likewise.
(Importing keys): Likewise.
(Deleting keys): Likewise.

2002-01-16 Marcus Brinkmann <marcus@g10code.de>

* gpgme.texi: g10Code -> g10 Code

* gpgme.texi (Top): Complete detailmenu.

* gpgme.texi: Convert embarrassing cruft to the real thing.

2002-01-16 Marcus Brinkmann <marcus@g10code.de>

* ChangeLog: New file.

* gpgme.texi: Likewise.

* gpl.texi: Likewise.

* fdl.texi: Likewise.

* Makefile.am (info_TEXINFOS): New variable.

(gpgme_TEXINFOS): Likewise.

Copyright (C) 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010,
2011 g10 Code GmbH

This file is free software; as a special exception the author gives unlimited permission to copy and/or distribute it, with or without modifications, as long as this notice is preserved.

This file is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY, to the extent permitted by law; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.

\input texinfo @c -*- mode: texinfo; coding: utf-8; -*-

@documentencoding UTF-8

@setfilename gpgme.info

@include defs.inc

@settitle The `GnuPG Made Easy' Reference Manual

@dircategory GNU Libraries

@direntry

* @acronym{GPGME}: (gpgme). Adding support for cryptography to your program.

@end direntry

@c Unify some of the indices.

@syncodeindex tp fn

@syncodeindex pg fn

@copying

Copyright @copyright{ } 2002--2008, 2010, 2012--2018 g10 Code GmbH.

@quotation

Permission is granted to copy, distribute and/or modify this document

under the terms of the GNU General Public License as published by the Free Software Foundation; either version 3 of the License, or (at your option) any later version. The text of the license can be found in the section entitled ``Copying".

@end quotation

This document is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

@end copying

@c Macros used by the description of the UI server protocol

@macro clnt{string}

@sc{c:} \string\

@end macro

@macro srvr{string}

@sc{s:} \string\

@end macro

@c API version.

@macro since{string}

@sc{Since:} \string\

@end macro

@c

@c T I T L E P A G E

@c

@ifinfo

This file documents the @acronym{GPGME} library.

This is Edition @value{EDITION}, last updated @value{UPDATED}, of @cite{The `GnuPG Made Easy' Reference Manual}, for Version @value{VERSION}.

@c NOTE: Don't forget to update the year for the TeX version, too.

@insertcopying

@end ifinfo

@c We do not want that bastard short titlepage.

@c @iftex

@c @shorttitlepage The `GnuPG Made Easy' Reference Manual

@c @end iftex

@titlepage

@center @titlefont{The `GnuPG Made Easy'}

@sp 1

@center @titlefont{Reference Manual}
@sp 6
@center Edition @value{EDITION}
@sp 1
@center last updated @value{UPDATED}
@sp 1
@center for version @value{VERSION}
@page
@vskip 0pt plus 1filll
Published by The GnuPG Project@* c/o g10 Code GmbH@* Httenstr. 61@* 40699 Erkrath, Germany

@insertcopying
@end titlepage
@page

@summarycontents
@contents

@ifnottex
@node Top
@top Main Menu
This is Edition @value{EDITION}, last updated @value{UPDATED}, of
@cite{The `GnuPG Made Easy' Reference Manual}, for Version
@value{VERSION} of the @acronym{GPGME} library.
@end ifnottex

@menu
* Introduction:: How to use this manual.
* Preparation:: What you should do before using the library.
* Protocols and Engines:: Supported crypto protocols.
* Algorithms:: Supported algorithms.
* Error Handling:: Error numbers and their meanings.
* Exchanging Data:: Passing data to and from @acronym{GPGME}.
* Contexts:: Handling @acronym{GPGME} contexts.

Appendices

* UI Server Protocol:: The GnuPG UI Server Protocol.
* Debugging:: How to solve problems.
* Deprecated Functions:: Documentation of deprecated functions.

* Library Copying:: The GNU Lesser General Public License says
how you can copy and share `GnuPG Made Easy'.
* Copying:: The GNU General Public License says how you
can copy and share this manual.

Indices

- * Concept Index:: Index of concepts and programs.
- * Function and Data Index:: Index of functions, variables and data types.

@detailmenu

--- The Detailed Node Listing ---

Introduction

- * Getting Started:: Purpose of the manual, and how to use it.
- * Features:: Reasons to install and use @acronym{GPGME}.
- * Overview:: Basic architecture of the @acronym{GPGME} library.

Preparation

- * Header:: What header file you need to include.
- * Building the Source:: Compiler options to be used.
- * Largefile Support (LFS):: How to use @acronym{GPGME} with LFS.
- * Using Automake:: Compiler options to be used the easy way.
- * Using Libtool:: Avoiding compiler options entirely.
- * Library Version Check:: Getting and verifying the library version.
- * Signal Handling:: How @acronym{GPGME} affects signal handling.
- * Multi-Threading:: How @acronym{GPGME} can be used in an MT environment.

Protocols and Engines

- * Engine Version Check:: Verifying the engine version.
- * Engine Information:: Obtaining more information about the engines.
- * Engine Configuration:: Changing the engine configuration.
- * OpenPGP:: Support for the OpenPGP protocol.
- * Cryptographic Message Syntax:: Support for the CMS.

Algorithms

- * Public Key Algorithms:: A list of all public key algorithms.
- * Hash Algorithms:: A list of all hash algorithms.

Error Handling

- * Error Values:: The error value and what it means.
- * Error Codes:: A list of important error codes.
- * Error Sources:: A list of important error sources.
- * Error Strings:: How to get a descriptive string from a value.

Exchanging Data

- * Creating Data Buffers:: Creating new data buffers.
- * Destroying Data Buffers:: Releasing data buffers.
- * Manipulating Data Buffers:: Operations on data buffers.

Creating Data Buffers

- * Memory Based Data Buffers:: Creating memory based data buffers.
- * File Based Data Buffers:: Creating file based data buffers.
- * Callback Based Data Buffers:: Creating callback based data buffers.

Manipulating Data Buffers

- * Data Buffer I/O Operations:: I/O operations on data buffers.
- * Data Buffer Meta-Data:: Meta-data manipulation of data buffers.
- * Data Buffer Convenience:: Convenience function for data buffers.

Contexts

- * Creating Contexts:: Creating new @acronym{GPGME} contexts.
- * Destroying Contexts:: Releasing @acronym{GPGME} contexts.
- * Result Management:: Managing the result of crypto operations.
- * Context Attributes:: Setting properties of a context.
- * Key Management:: Managing keys with @acronym{GPGME}.
- * Trust Item Management:: Managing trust items with @acronym{GPGME}.
- * Crypto Operations:: Using a context for cryptography.
- * Miscellaneous:: Miscellaneous operations.
- * Run Control:: Controlling how operations are run.

Context Attributes

- * Protocol Selection:: Selecting the protocol used by a context.
- * Crypto Engine:: Configuring the crypto engine.
- * Setting the Sender:: How to tell the engine the sender.
- * ASCII Armor:: Requesting @acronym{ASCII} armored output.
- * Text Mode:: Choosing canonical text mode.
- * Offline Mode:: Choosing offline mode.
- * Included Certificates:: Including a number of certificates.
- * Key Listing Mode:: Selecting key listing mode.
- * Passphrase Callback:: Getting the passphrase from the user.
- * Progress Meter Callback:: Being informed about the progress.
- * Status Message Callback:: Status messages received from gpg.
- * Locale:: Setting the locale of a context.

Key Management

- * Key objects:: Description of the key structures.
- * Listing Keys:: Browsing the list of available keys.
- * Information About Keys:: Requesting detailed information about keys.
- * Manipulating Keys:: Operations on keys.
- * Generating Keys:: Creating new key pairs.
- * Signing Keys:: Adding key signatures to public keys.

- * Exporting Keys:: Retrieving key data from the key ring.
- * Importing Keys:: Adding keys to the key ring.
- * Deleting Keys:: Removing keys from the key ring.
- * Changing Passphrases:: Change the passphrase of a key.
- * Changing TOFU Data:: Changing data pertaining to TOFU.
- * Advanced Key Editing:: Advanced key edit operation.

Trust Item Management

- * Listing Trust Items:: Browsing the list of available trust items.
- * Manipulating Trust Items:: Operations on trust items.

Crypto Operations

- * Decrypt:: Decrypting a ciphertext.
- * Verify:: Verifying a signature.
- * Decrypt and Verify:: Decrypting a signed ciphertext.
- * Sign:: Creating a signature.
- * Encrypt:: Encrypting a plaintext.

Sign

- * Selecting Signers:: How to choose the keys to sign with.
- * Creating a Signature:: How to create a signature.
- * Signature Notation Data:: How to add notation data to a signature.

Encrypt

- * Encrypting a Plaintext:: How to encrypt a plaintext.

Miscellaneous

- * Running other Programs:: Running other Programs.
- * Using the Assuan protocol:: Using the Assuan protocol.
- * Checking for updates:: How to check for software updates.

Run Control

- * Waiting For Completion:: Waiting until an operation is completed.
- * Using External Event Loops:: Advanced control over what happens when.
- * Cancellation:: How to end pending operations prematurely.

Using External Event Loops

- * I/O Callback Interface:: How I/O callbacks are registered.
- * Registering I/O Callbacks:: How to use I/O callbacks for a context.
- * I/O Callback Example:: An example how to use I/O callbacks.
- * I/O Callback Example GTK+:: How to integrate @acronym{GPGME} in GTK+.

* I/O Callback Example GDK:: How to integrate @acronym{GPGME} in GDK.

* I/O Callback Example Qt:: How to integrate @acronym{GPGME} in Qt.

@end detailmenu

@end menu

@node Introduction

@chapter Introduction

`GnuPG Made Easy' (@acronym{GPGME}) is a C language library that allows to add support for cryptography to a program. It is designed to make access to public key crypto engines like GnuPG or GpgSM easier for applications. @acronym{GPGME} provides a high-level crypto API for encryption, decryption, signing, signature verification and key management.

@acronym{GPGME} uses GnuPG and GpgSM as its backends to support OpenPGP and the Cryptographic Message Syntax (CMS).

@menu

* Getting Started:: Purpose of the manual, and how to use it.

* Features:: Reasons to install and use @acronym{GPGME}.

* Overview:: Basic architecture of the @acronym{GPGME} library.

@end menu

@node Getting Started

@section Getting Started

This manual documents the @acronym{GPGME} library programming interface. All functions and data types provided by the library are explained.

The reader is assumed to possess basic knowledge about cryptography in general, and public key cryptography in particular. The underlying cryptographic engines that are used by the library are not explained, but where necessary, special features or requirements by an engine are mentioned as far as they are relevant to @acronym{GPGME} or its users.

This manual can be used in several ways. If read from the beginning to the end, it gives a good introduction into the library and how it can be used in an application. Forward references are included where necessary. Later on, the manual can be used as a reference manual to get just the information needed about any particular interface of the library. Experienced programmers might want to start looking at the examples at the end of the manual, and then only read up those parts of the interface which are unclear.

The documentation for the language bindings is currently not included in this manual. Those languages bindings follow the general programming model of @acronym{GPGME} but may provide some extra high level abstraction on top of the @acronym{GPGME} style API. For now please see the README files in the @file{lang/} directory of the source distribution.

@node Features

@section Features

@acronym{GPGME} has a couple of advantages over other libraries doing a similar job, and over implementing support for GnuPG or other crypto engines into your application directly.

@table @asis

@item it's free software

Anybody can use, modify, and redistribute it under the terms of the GNU Lesser General Public License (@pxref{Library Copying}).

@item it's flexible

@acronym{GPGME} provides transparent support for several cryptographic protocols by different engines. Currently, @acronym{GPGME} supports the OpenPGP protocol using GnuPG as the backend, and the Cryptographic Message Syntax using GpgSM as the backend.

@item it's easy

@acronym{GPGME} hides the differences between the protocols and engines from the programmer behind an easy-to-use interface. This way the programmer can focus on the other parts of the program, and still integrate strong cryptography in his application. Once support for @acronym{GPGME} has been added to a program, it is easy to add support for other crypto protocols once @acronym{GPGME} backends provide them.

@item it's language friendly

@acronym{GPGME} comes with languages bindings for several common programming languages: Common Lisp, C++, Python 2, and Python 3.

@end table

@node Overview

@section Overview

@acronym{GPGME} provides a data abstraction that is used to pass data to the crypto engine, and receive returned data from it. Data can be read from memory or from files, but it can also be provided by a callback function.

The actual cryptographic operations are always set within a context.

A context provides configuration parameters that define the behaviour of all operations performed within it. Only one operation per context is allowed at any time, but when one operation is finished, you can run the next operation in the same context. There can be more than one context, and all can run different operations at the same time.

Furthermore, @acronym{GPGME} has rich key management facilities including listing keys, querying their attributes, generating, importing, exporting and deleting keys, and acquiring information about the trust path.

With some precautions, @acronym{GPGME} can be used in a multi-threaded environment, although it is not completely thread safe and thus needs the support of the application.

@node Preparation

@chapter Preparation

To use @acronym{GPGME}, you have to perform some changes to your sources and the build system. The necessary changes are small and explained in the following sections. At the end of this chapter, it is described how the library is initialized, and how the requirements of the library are verified.

@menu

- * Header:: What header file you need to include.
- * Building the Source:: Compiler options to be used.
- * Largefile Support (LFS):: How to use @acronym{GPGME} with LFS.
- * Using Automake:: Compiler options to be used the easy way.
- * Using Libtool:: Avoiding compiler options entirely.
- * Library Version Check:: Getting and verifying the library version.
- * Signal Handling:: How @acronym{GPGME} affects signal handling.
- * Multi-Threading:: How @acronym{GPGME} can be used in an MT environment.

@end menu

@node Header

@section Header

@cindex header file

@cindex include file

All interfaces (data types and functions) of the library are defined in the header file `gpgme.h'. You must include this in all programs using the library, either directly or through some other header file, like this:

@example

```
#include <gpgme.h>
@end example
```

The name space of `@acronym{GPGME}` is `@code{gpgme_*}` for function names and data types and `@code{GPGME_*}` for other symbols. Symbols internal to `@acronym{GPGME}` take the form `@code{_gpgme_*}` and `@code{_GPGME_*}`.

Because `@acronym{GPGME}` makes use of the GPG Error library, using `@acronym{GPGME}` will also use the `@code{GPG_ERR_*}` name space directly, and the `@code{gpg_err*}`, `@code{gpg_str*}`, and `@code{gpgtr_*}` name space indirectly.

```
@node Building the Source
@section Building the Source
@cindex compiler options
@cindex compiler flags
```

If you want to compile a source file including the ``gpgme.h'` header file, you must make sure that the compiler can find it in the directory hierarchy. This is accomplished by adding the path to the directory in which the header file is located to the compilers include file search path (via the `@option{-I}` option).

However, the path to the include file is determined at the time the source is configured. To solve this problem, `gpgme` ships with a small helper program `@command{gpgme-config}` that knows about the path to the include file and other configuration options. The options that need to be added to the compiler invocation at compile time are output by the `@option{--cflags}` option to `@command{gpgme-config}`. The following example shows how it can be used at the command line:

```
@example
gcc -c foo.c `gpgme-config --cflags`
@end example
```

Adding the output of `@samp{gpgme-config --cflags}` to the compiler command line will ensure that the compiler can find the `@acronym{GPGME}` header file.

A similar problem occurs when linking the program with the library. Again, the compiler has to find the library files. For this to work, the path to the library files has to be added to the library search path (via the `@option{-L}` option). For this, the option `@option{--libs}` to `@command{gpgme-config}` can be used. For convenience, this option also outputs all other options that are required to link the program with `@acronym{GPGME}` (in particular, the `@samp{-lgpgme}` option). The example shows how to link `@file{foo.o}`

with the `@acronym{GPGME}` library to a program `@command{foo}`.

```
@example
gcc -o foo foo.o `gpgme-config --libs`
@end example
```

Of course you can also combine both examples to a single command by specifying both options to `@command{gpgme-config}`:

```
@example
gcc -o foo foo.c `gpgme-config --cflags --libs`
@end example
```

If you need to detect the installed language bindings you can use list them using:

```
@example
gpgme-config --print-lang
@end example
```

or test for the availability using

```
@example
gpgme-config --have-lang=python && echo 'Bindings for Pythons available'
@end example
```

```
@node Largefile Support (LFS)
@section Largefile Support (LFS)
@cindex largefile support
@cindex LFS
```

`@acronym{GPGME}` is compiled with largefile support by default, if it is available on the system. This means that GPGME supports files larger than two gigabyte in size, if the underlying operating system can. On some systems, largefile support is already the default. On such systems, nothing special is required. However, some systems provide only support for files up to two gigabyte in size by default. Support for larger file sizes has to be specifically enabled.

To make a difficult situation even more complex, such systems provide two different types of largefile support. You can either get all relevant functions replaced with alternatives that are largefile capable, or you can get new functions and data types for largefile support added. Those new functions have the same name as their smallfile counterparts, but with a suffix of 64.

An example: The data type `@code{off_t}` is 32 bit wide on GNU/Linux PC

systems. To address offsets in large files, you can either enable largefile support add-on. Then a new data type `@code{off64_t}` is provided, which is 64 bit wide. Or you can replace the existing `@code{off_t}` data type with its 64 bit wide counterpart. All occurrences of `@code{off_t}` are then automatically replaced.

As if matters were not complex enough, there are also two different types of file descriptors in such systems. This is important because if file descriptors are exchanged between programs that use a different maximum file size, certain errors must be produced on some file descriptors to prevent subtle overflow bugs from occurring.

As you can see, supporting two different maximum file sizes at the same time is not at all an easy task. However, the maximum file size does matter for `@acronym{GPGME}`, because some data types it uses in its interfaces are affected by that. For example, the `@code{off_t}` data type is used in the `@code{gpgme_data_seek}` function, to match its `@acronym{POSIX}` counterpart. This affects the call-frame of the function, and thus the ABI of the library. Furthermore, file descriptors can be exchanged between GPGME and the application.

For you as the user of the library, this means that your program must be compiled in the same file size mode as the library. Luckily, there is absolutely no valid reason for new programs to not enable largefile support by default and just use that. The compatibility modes (small file sizes or dual mode) can be considered an historic artefact, only useful to allow for a transitional period.

On POSIX platforms `@acronym{GPGME}` is compiled using largefile support by default. This means that your application must do the same, at least as far as it is relevant for using the `@file{gpgme.h}` header file. All types in this header files refer to their largefile counterparts, if they are different from any default types on the system.

On 32 and 64 bit Windows platforms `@code{off_t}` is declared as 32 bit signed integer. There is no specific support for LFS in the C library. The recommendation from Microsoft is to use the native interface (`@code{CreateFile}` et al.) for large files. Released binary versions of `@acronym{GPGME}` (`libgpgme-11.dll`) have always been build with a 32 bit `@code{off_t}`. To avoid an ABI break we stick to this convention for 32 bit Windows by using `@code{long}` there. `@acronym{GPGME}` versions for 64 bit Windows have never been released and thus we are able to use `@code{int64_t}` instead of `@code{off_t}` there. For easier migration the typedef `@code{gpgme_off_t}` has been defined. The reason we cannot use `@code{off_t}` directly is that some toolchains (e.g. mingw64) introduce a POSIX compatible hack for `@code{off_t}`. Some widely used toolkits make use of this hack and in

turn `@acronym{GPGME}` would need to use it also. However, this would introduce an ABI break and existing software making use of `libpgpme` might suffer from a severe break. Thus with version 1.4.2 we redefined all functions using `@code{off_t}` to use `@code{gpgme_off_t}` which is defined as explained above. This way we keep the ABI well defined and independent of any toolchain hacks. The bottom line is that LFS support in `@acronym{GPGME}` is only available on 64 bit versions of Windows.

On POSIX platforms you can enable largefile support, if it is different from the default on the system the application is compiled on, by using the Autoconf macro `@code{AC_SYS_LARGEFILE}`. If you do this, then you don't need to worry about anything else: It will just work. In this case you might also want to use `@code{AC_FUNC_FSEEKO}` to take advantage of some new interfaces, and `@code{AC_TYPE_OFF_T}` (just in case).

If you do not use Autoconf, you can define the preprocessor symbol `@code{_FILE_OFFSET_BITS}` to 64 *before* including any header files, for example by specifying the option `@code{-D_FILE_OFFSET_BITS=64}` on the compiler command line. You will also want to define the preprocessor symbol `@code{LARGEFILE_SOURCE}` to 1 in this case, to take advantage of some new interfaces.

If you do not want to do either of the above, you probably know enough about the issue to invent your own solution. Just keep in mind that the `@acronym{GPGME}` header file expects that largefile support is enabled, if it is available. In particular, we do not support dual mode (`@code{_LARGEFILE64_SOURCE}`).

```
@node Using Automake
@section Using Automake
@cindex automake
@cindex autoconf
```

It is much easier if you use GNU Automake instead of writing your own Makefiles. If you do that you do not have to worry about finding and invoking the `@command{gpgme-config}` script at all. `@acronym{GPGME}` provides an extension to Automake that does all the work for you.

```
@c A simple macro for optional variables.
@macro ovar{varname}
@r{[]@var{\varname\}@r{[]}
@end macro
@defmac AM_PATH_GPGME (@ovar{minimum-version}, @ovar{action-if-found}, @ovar{action-if-not-found})
@defmacx AM_PATH_GPGME_PTH (@ovar{minimum-version}, @ovar{action-if-found}, @ovar{action-if-not-found})
```

```
@defmacx AM_PATH_GPGME_PTHREAD (@ovar{minimum-version}, @ovar{action-if-found}, @ovar{action-if-not-found})
```

Check whether `@acronym{GPGME}` (at least version `@var{minimum-version}`, if given) exists on the host system. If it is found, execute `@var{action-if-found}`, otherwise do `@var{action-if-not-found}`, if given.

Additionally, the function defines `@code{GPGME_CFLAGS}` to the flags needed for compilation of the program to find the `@file{gpgme.h}` header file, and `@code{GPGME_LIBS}` to the linker flags needed to link the program to the `@acronym{GPGME}` library. If the used helper script does not match the target type you are building for a warning is printed and the string `@code{libgcrypt}` is appended to the variable `@code{gpg_config_script_warn}`.

`@code{AM_PATH_GPGME_PTH}` checks for the version of `@acronym{GPGME}` that can be used with GNU Pth, and defines `@code{GPGME_PTH_CFLAGS}` and `@code{GPGME_PTH_LIBS}`.

`@code{AM_PATH_GPGME_PTHREAD}` checks for the version of `@acronym{GPGME}` that can be used with the native pthread implementation, and defines `@code{GPGME_PTHREAD_CFLAGS}` and `@code{GPGME_PTHREAD_LIBS}`. Since version 1.8.0 this is no longer required to `GPGME_PTHREAD` as `@acronym{GPGME}` itself is thread safe.

This macro searches for `@command{gpgme-config}` along the PATH. If you are cross-compiling, it is useful to set the environment variable `@code{SYSROOT}` to the top directory of your target. The macro will then first look for the helper program in the `@file{bin}` directory below that top directory. An absolute directory name must be used for `@code{SYSROOT}`. Finally, if the configure command line option `@code{--with-gpgme-prefix}` is used, only its value is used for the top directory below which the helper script is expected.

```
@end defmac
```

You can use the defined Autoconf variables like this in your `@file{Makefile.am}`:

```
@example
AM_CPPFLAGS = $(GPGME_CFLAGS)
LDADD = $(GPGME_LIBS)
@end example
```

```
@node Using Libtool
@section Using Libtool
@cindex libtool
```

The easiest way is to just use GNU Libtool. If you use libtool, and link to `libpgpme.la`, `libpgpme-pth.la` or `libpgpme-pthread.la` respectively, everything will be done automatically by Libtool.

@node Library Version Check

@section Library Version Check

@cindex version check, of the library

@deftypefun {const char *} gpgme_check_version (@w{const char *}@var{required_version})

The function `gpgme_check_version` has four purposes. It can be used to retrieve the version number of the library. In addition it can verify that the version number is higher than a certain required version number. In either case, the function initializes some sub-systems, and for this reason alone it must be invoked early in your program, before you make use of the other functions in `GPGME`. The last purpose is to run selftests.

As a side effect for W32 based systems, the socket layer will get initialized.

If `@var{required_version}` is `NULL`, the function returns a pointer to a statically allocated string containing the version number of the library.

If `@var{required_version}` is not `NULL`, it should point to a string containing a version number, and the function checks that the version of the library is at least as high as the version number provided. In this case, the function returns a pointer to a statically allocated string containing the version number of the library. If `REQUIRED_VERSION` is not a valid version number, or if the version requirement is not met, the function returns `NULL`.

If you use a version of a library that is backwards compatible with older releases, but contains additional interfaces which your program uses, this function provides a run-time check if the necessary features are provided by the installed version of the library.

If a selftest fails, the function may still succeed. Selftest errors are returned later when invoking `gpgme_new` or `gpgme-data_new`, so that a detailed error code can be returned (historically, `gpgme_check_version` does not return a detailed error code).

@end deftypefun

```
@deftypefun {int} gpgme_set_global_flag @
  (@w{const char *@var{name}}, @
  @w{const char *@var{value}})
```

```
@since{1.4.0}
```

On some systems it is not easy to set environment variables and thus hard to use `@acronym{GPGME}`'s internal trace facility for debugging. This function has been introduced as an alternative way to enable debugging and for a couple of other rarely used tweaks. It is important to assure that only one thread accesses `@acronym{GPGME}` functions between a call to this function and after the return from the call to `@code{gpgme_check_version}`.

All currently supported features require that this function is called as early as possible --- even before `@code{gpgme_check_version}`. The features are identified by the following values for `@var{name}`:

```
@table @code
```

```
@item debug
```

To enable debugging use the string `debug` for `@var{name}` and `@var{value}` identical to the value used with the environment variable `@code{GPGME_DEBUG}`.

```
@item disable-gpgconf
```

Using this feature with any `@var{value}` disables the detection of the `gpgconf` program and thus forces GPGME to fallback into the simple OpenPGP only mode. It may be used to force the use of GnuPG-1 on systems which have both GPG versions installed. Note that in general the use of `@code{gpgme_set_engine_info}` is a better way to select a specific engine version.

```
@item gpgconf-name
```

```
@itemx gpg-name
```

Set the name of the `gpgconf` respective `gpg` binary. The defaults are `@code{GNU/GnuPG/gpgconf}` and `@code{GNU/GnuPG/gpg}`. Under Unix the leading directory part is ignored. Under Windows the leading directory part is used as the default installation directory; the `@code{.exe}` suffix is added by GPGME. Use forward slashed even under Windows.

```
@item require-gnupg
```

Set the minimum version of the required GnuPG engine. If that version is not met, GPGME fails early instead of trying to use the existent version. The given version must be a string with major, minor, and micro number. Example: `"2.1.0"`.

@item w32-inst-dir

On Windows GPGME needs to know its installation directory to find its spawn helper. This is in general no problem because a DLL has this information. Some applications however link statically to GPGME and thus GPGME can only figure out the installation directory of this application which may be wrong in certain cases. By supplying an installation directory as value to this flag, GPGME will assume that that directory is the installation directory. This flag has no effect on non-Windows platforms.

@end table

This function returns @code{0} on success. In contrast to other functions the non-zero return value on failure does not convey any error code. For setting ``debug" the only possible error cause is an out of memory condition; which would exhibit itself later anyway. Thus the return value may be ignored.

@end deftypefun

After initializing @acronym{GPGME}, you should set the locale information to the locale required for your output terminal. This locale information is needed for example for the curses and Gtk pinentry. Here is an example of a complete initialization:

@example

```
#include <locale.h>
```

```
#include <gpgme.h>
```

```
void
```

```
init_gpgme (void)
```

```
@{
```

```
/* Initialize the locale environment. */
```

```
setlocale (LC_ALL, "");
```

```
gpgme_check_version (NULL);
```

```
gpgme_set_locale (NULL, LC_CTYPE, setlocale (LC_CTYPE, NULL));
```

```
#ifdef LC_MESSAGES
```

```
gpgme_set_locale (NULL, LC_MESSAGES, setlocale (LC_MESSAGES, NULL));
```

```
#endif
```

```
@}
```

@end example

Note that you are highly recommended to initialize the locale settings like this. @acronym{GPGME} can not do this for you because it would not be thread safe. The conditional on LC_MESSAGES is only necessary for portability to W32 systems.

@node Signal Handling
@section Signal Handling
@cindex signals
@cindex signal handling

The @acronym{GPGME} library communicates with child processes (the crypto engines). If a child process dies unexpectedly, for example due to a bug, or system problem, a @code{SIGPIPE} signal will be delivered to the application. The default action is to abort the program. To protect against this, @code{gpgme_check_version} sets the @code{SIGPIPE} signal action to @code{SIG_IGN}, which means that the signal will be ignored.

@acronym{GPGME} will only do that if the signal action for @code{SIGPIPE} is @code{SIG_DEF} at the time @code{gpgme_check_version} is called. If it is something different, @code{GPGME} will take no action.

This means that if your application does not install any signal handler for @code{SIGPIPE}, you don't need to take any precautions. If you do install a signal handler for @code{SIGPIPE}, you must be prepared to handle any @code{SIGPIPE} events that occur due to @acronym{GPGME} writing to a defunct pipe. Furthermore, if your application is multi-threaded, and you install a signal action for @code{SIGPIPE}, you must make sure you do this either before @code{gpgme_check_version} is called or afterwards.

@node Multi-Threading
@section Multi-Threading
@cindex thread-safeness
@cindex multi-threading

The @acronym{GPGME} library is mostly thread-safe, and can be used in a multi-threaded environment but there are some requirements for multi-threaded use:

@itemize @bullet
@item

The function @code{gpgme_check_version} must be called before any other function in the library, because it initializes the thread support subsystem in @acronym{GPGME}. To achieve this in multi-threaded programs, you must synchronize the memory with respect to other threads that also want to use @acronym{GPGME}. For this, it is sufficient to call @code{gpgme_check_version} before creating the other threads using @acronym{GPGME} @footnote{At least this is true for POSIX threads, as @code{pthread_create} is a function that

synchronizes memory with respects to other threads. There are many functions which have this property, a complete list can be found in POSIX, IEEE Std 1003.1-2003, Base Definitions, Issue 6, in the definition of the term ``Memory Synchronization". For other thread packages other, more relaxed or more strict rules may apply.}.

@item

Any @code{gpgme_data_t} and @code{gpgme_ctx_t} object must only be accessed by one thread at a time. If multiple threads want to deal with the same object, the caller has to make sure that operations on that object are fully synchronized.

@item

Only one thread at any time is allowed to call @code{gpgme_wait}. If multiple threads call this function, the caller must make sure that all invocations are fully synchronized. It is safe to start asynchronous operations while a thread is running in gpgme_wait.

@item

The function @code{gpgme_strerror} is not thread safe. You have to use @code{gpgme_strerror_r} instead.

@end itemize

@node Protocols and Engines

@chapter Protocols and Engines

@cindex protocol

@cindex engine

@cindex crypto engine

@cindex backend

@cindex crypto backend

@acronym{GPGME} supports several cryptographic protocols, however, it does not implement them. Rather it uses backends (also called engines) which implement the protocol. @acronym{GPGME} uses inter-process communication to pass data back and forth between the application and the backend, but the details of the communication protocol and invocation of the backend is completely hidden by the interface. All complexity is handled by @acronym{GPGME}. Where an exchange of information between the application and the backend is necessary, @acronym{GPGME} provides the necessary callback function hooks and further interfaces.

@defftp {Data type} {enum gpgme_protocol_t}

@tindex gpgme_protocol_t

The @code{gpgme_protocol_t} type specifies the set of possible protocol values that are supported by @acronym{GPGME}. The following protocols are supported:

@table @code

@item GPGME_PROTOCOL_OpenPGP

@itemx GPGME_PROTOCOL_OPENPGP

This specifies the OpenPGP protocol.

@item GPGME_PROTOCOL_CMS

This specifies the Cryptographic Message Syntax.

@item GPGME_PROTOCOL_GPGCONF

Under development. Please ask on @email{gnupg-devel@@gnupg.org} for help.

@item GPGME_PROTOCOL_ASSUAN

@since{1.2.0}

This specifies the raw Assuan protocol.

@item GPGME_PROTOCOL_G13

@since{1.3.0}

Under development. Please ask on @email{gnupg-devel@@gnupg.org} for help.

@item GPGME_PROTOCOL_UISERVER

Under development. Please ask on @email{gnupg-devel@@gnupg.org} for help.

@item GPGME_PROTOCOL_SPAWN

@since{1.5.0}

Special protocol for use with @code{gpgme_op_spawn}.

@item GPGME_PROTOCOL_UNKNOWN

Reserved for future extension. You may use this to indicate that the used protocol is not known to the application. Currently,

@acronym{GPGME} does not accept this value in any operation, though, except for @code{gpgme_get_protocol_name}.

@end table

@end deftp

@deftypefun {const char *} gpgme_get_protocol_name (@w{gpgme_protocol_t} @var{protocol})

The function @code{gpgme_get_protocol_name} returns a statically allocated string describing the protocol @var{protocol}, or

@code{NULL} if the protocol number is not valid.

@end deftypefun

@menu

* Engine Version Check:: Verifying the engine version.

* Engine Information:: Obtaining more information about the engines.

* Engine Configuration:: Changing the engine configuration.
* OpenPGP:: Support for the OpenPGP protocol.
* Cryptographic Message Syntax:: Support for the CMS.
* Assuan:: Support for the raw Assuan protocol.
@end menu

@node Engine Version Check
@section Engine Version Check
@cindex version check, of the engines

@deftypefun @w{const char *} gpgme_get_dirinfo (@w{cons char *}@var{what})
@since{1.5.0}

The function @code{gpgme_get_dirinfo} returns a statically allocated string with the value associated to @var{what}. The returned values are the defaults and won't change even after @code{gpgme_set_engine_info} has been used to configure a different engine. @code{NULL} is returned if no value is available. Commonly supported values for @var{what} are:

@table @code
@item homedir
Return the default home directory.

@item sysconfdir
Return the name of the system configuration directory

@item bindir
Return the name of the directory with GnuPG program files.

@item libdir
Return the name of the directory with GnuPG related library files.

@item libexecdir
Return the name of the directory with GnuPG helper program files.

@item datadir
Return the name of the directory with GnuPG shared data.

@item localedir
Return the name of the directory with GnuPG locale data.

@item agent-socket
Return the name of the socket to connect to the gpg-agent.

@item agent-ssh-socket
Return the name of the socket to connect to the ssh-agent component of

gpg-agent.

@item dirmngr-socket

Return the name of the socket to connect to the dirmngr.

@item uiserver-socket

Return the name of the socket to connect to the user interface server.

@item gpgconf-name

Return the file name of the engine configuration tool.

@item gpg-name

Return the file name of the OpenPGP engine.

@item gpgsm-name

Return the file name of the CMS engine.

@item g13-name

Return the name of the file container encryption engine.

@item gpg-wks-client-name

Return the name of the Web Key Service tool.

@end table

@end deftypefun

@deftypefun gpgme_error_t gpgme_engine_check_version (@w{gpgme_protocol_t @var{protocol}})

The function @code{gpgme_engine_check_version} verifies that the engine implementing the protocol @var{PROTOCOL} is installed in the expected path and meets the version requirement of @acronym{GPGME}.

This function returns the error code @code{GPG_ERR_NO_ERROR} if the engine is available and @code{GPG_ERR_INV_ENGINE} if it is not.

@end deftypefun

@node Engine Information

@section Engine Information

@cindex engine, information about

@deftp {Data type} {gpgme_engine_info_t}

@tindex gpgme_protocol_t

The @code{gpgme_engine_info_t} type specifies a pointer to a structure describing a crypto engine. The structure contains the following elements:

@table @code

@item gpgme_engine_info_t next

This is a pointer to the next engine info structure in the linked list, or @code{NULL} if this is the last element.

@item gpgme_protocol_t protocol

This is the protocol for which the crypto engine is used. You can convert this to a string with @code{gpgme_get_protocol_name} for printing.

@item const char *file_name

This is a string holding the file name of the executable of the crypto engine. Currently, it is never @code{NULL}, but using @code{NULL} is reserved for future use, so always check before you use it.

@item const char *home_dir

This is a string holding the directory name of the crypto engine's configuration directory. If it is @code{NULL}, then the default directory is used. See @code{gpgme_get_dirinfo} on how to get the default directory.

@item const char *version

This is a string containing the version number of the crypto engine. It might be @code{NULL} if the version number can not be determined, for example because the executable doesn't exist or is invalid.

@item const char *req_version

This is a string containing the minimum required version number of the crypto engine for @acronym{GPGME} to work correctly. This is the version number that @code{gpgme_engine_check_version} verifies against. Currently, it is never @code{NULL}, but using @code{NULL} is reserved for future use, so always check before you use it.

@end table

@end deftp

@deftypefun gpgme_error_t gpgme_get_engine_info (@w{gpgme_engine_info_t *@var{info}})

The function @code{gpgme_get_engine_info} returns a linked list of engine info structures in @var{info}. Each info structure describes the defaults of one configured backend.

The memory for the info structures is allocated the first time this function is invoked, and must not be freed by the caller.

This function returns the error code @code{GPG_ERR_NO_ERROR} if successful, and a system error if the memory could not be allocated.

@end deftypefun

Here is an example how you can provide more diagnostics if you receive

an error message which indicates that the crypto engine is invalid.

@example

```
gpgme_ctx_t ctx;  
gpgme_error_t err;
```

[...]

```
if (gpgme_err_code (err) == GPG_ERR_INV_ENGINE)  
@{  
    gpgme_engine_info_t info;  
    err = gpgme_get_engine_info (&info);  
    if (!err)  
        @{  
            while (info && info->protocol != gpgme_get_protocol (ctx))  
                info = info->next;  
            if (!info)  
                fprintf (stderr, "GPGME compiled without support for protocol %s",  
                        gpgme_get_protocol_name (info->protocol));  
            else if (info->file_name && !info->version)  
                fprintf (stderr, "Engine %s not installed properly",  
                        info->file_name);  
            else if (info->file_name && info->version && info->req_version)  
                fprintf (stderr, "Engine %s version %s installed, "  
                        "but at least version %s required", info->file_name,  
                        info->version, info->req_version);  
            else  
                fprintf (stderr, "Unknown problem with engine for protocol %s",  
                        gpgme_get_protocol_name (info->protocol));  
        @}  
    @}  
@end example
```

@node Engine Configuration

@section Engine Configuration

@cindex engine, configuration of

@cindex configuration of crypto backend

You can change the configuration of a backend engine, and thus change the executable program and configuration directory to be used. You can make these changes the default or set them for some contexts individually.

```
@deftypedefun gpgme_error_t gpgme_set_engine_info (@w{gpgme_protocol_t @var{proto}}, @w{const char  
*@var{file_name}}, @w{const char *@var{home_dir}})  
@since{1.1.0}
```

The function `gpgme_set_engine_info` changes the default configuration of the crypto engine implementing the protocol `proto`.

`file_name` is the file name of the executable program implementing this protocol, and `home_dir` is the directory name of the configuration directory for this crypto engine. If `home_dir` is `NULL`, the engine's default will be used.

The new defaults are not applied to already created GPGME contexts.

This function returns the error code `GPG_ERR_NO_ERROR` if successful, or an error code on failure.

`end deftypedefun`

The functions `gpgme_ctx_get_engine_info` and `gpgme_ctx_set_engine_info` can be used to change the engine configuration per context. [Crypto Engine](#).

`node OpenPGP`

`section OpenPGP`

`cindex OpenPGP`

`cindex GnuPG`

`cindex protocol, GnuPG`

`cindex engine, GnuPG`

OpenPGP is implemented by GnuPG, the GNU Privacy Guard.

This is the first protocol that was supported by GPGME.

The OpenPGP protocol is specified by `GPGME_PROTOCOL_OpenPGP`.

`node Cryptographic Message Syntax`

`section Cryptographic Message Syntax`

`cindex CMS`

`cindex cryptographic message syntax`

`cindex GpgSM`

`cindex protocol, CMS`

`cindex engine, GpgSM`

`cindex S/MIME`

`cindex protocol, S/MIME`

`acronym CMS` is implemented by GpgSM, the S/MIME implementation for GnuPG.

The `acronym CMS` protocol is specified by `GPGME_PROTOCOL_CMS`.

@node Assuan
@section Assuan
@cindex ASSUAN
@cindex protocol, ASSUAN
@cindex engine, ASSUAN

Assuan is the RPC library used by the various @acronym{GnuPG} components. The Assuan protocol allows one to talk to arbitrary Assuan servers using @acronym{GPGME}. @xref{Using the Assuan protocol}.

The ASSUAN protocol is specified by @code{GPGME_PROTOCOL_ASSUAN}.

@node Algorithms
@chapter Algorithms
@cindex algorithms

The crypto backends support a variety of algorithms used in public key cryptography. @footnote{Some engines also provide symmetric only encryption; see the description of the encryption function on how to use this.} The following sections list the identifiers used to denote such an algorithm.

@menu
* Public Key Algorithms:: A list of all public key algorithms.
* Hash Algorithms:: A list of all hash algorithms.
@end menu

@node Public Key Algorithms
@section Public Key Algorithms
@cindex algorithms, public key
@cindex public key algorithms

Public key algorithms are used for encryption, decryption, signing and verification of signatures.

@deftp {Data type} {enum gpgme_pubkey_algo_t}
@tindex gpgme_pubkey_algo_t
The @code{gpgme_pubkey_algo_t} type specifies the set of all public key algorithms that are supported by @acronym{GPGME}. Possible values are:

@table @code
@item GPGME_PK_RSA
This value indicates the RSA (Rivest, Shamir, Adleman) algorithm.

@item GPGME_PK_RSA_E

Deprecated. This value indicates the RSA (Rivest, Shamir, Adleman) algorithm for encryption and decryption only.

@item GPGME_PK_RSA_S

Deprecated. This value indicates the RSA (Rivest, Shamir, Adleman) algorithm for signing and verification only.

@item GPGME_PK_DSA

This value indicates DSA, the Digital Signature Algorithm.

@item GPGME_PK_ELG

This value indicates ElGamal.

@item GPGME_PK_ELG_E

This value also indicates ElGamal and is used specifically in GnuPG.

@item GPGME_PK_ECC

@since{1.5.0}

This value is a generic indicator for elliptic curve algorithms.

@item GPGME_PK_ECDSA

@since{1.3.0}

This value indicates ECDSA, the Elliptic Curve Digital Signature Algorithm as defined by FIPS 186-2 and RFC-6637.

@item GPGME_PK_ECDH

@since{1.3.0}

This value indicates ECDH, the Elliptic Curve Diffie-Hellmann encryption algorithm as defined by RFC-6637.

@item GPGME_PK_EDDSA

@since{1.7.0}

This value indicates the EdDSA algorithm.

@end table

@end deftp

@deftypedefun {const char *} gpgme_pubkey_algo_name (@w{gpgme_pubkey_algo_t @var{algo}})

The function @code{gpgme_pubkey_algo_name} returns a pointer to a statically allocated string containing a description of the public key algorithm @var{algo}. This string can be used to output the name of the public key algorithm to the user.

If `@var{algo}` is not a valid public key algorithm, `@code{NULL}` is returned.

`@end deftypefun`

```
@deftypefun {char *} gpgme_pubkey_algo_string (@w{gpgme_subkey_t @var{key}})
@since{1.7.0}
```

The function `@code{gpgme_pubkey_algo_string}` is a convenience function to build and return an algorithm string in the same way GnuPG does (e.g. ```rsa2048"` or ```ed25519"`). The caller must free the result using `@code{gpgme_free}`. On error (e.g. invalid argument or memory exhausted), the function returns `NULL` and sets `@code{ERRNO}`.

`@end deftypefun`

`@node Hash Algorithms`

`@section Hash Algorithms`

`@cindex algorithms, hash`

`@cindex algorithms, message digest`

`@cindex hash algorithms`

`@cindex message digest algorithms`

Hash (message digest) algorithms are used to compress a long message to make it suitable for public key cryptography.

```
@defstp {Data type} {enum gpgme_hash_algo_t}
```

```
@tindex gpgme_hash_algo_t
```

The `@code{gpgme_hash_algo_t}` type specifies the set of all hash algorithms that are supported by `@acronym{GPGME}`. Possible values are:

```
@table @code
```

```
@item GPGME_MD_MD5
```

```
@item GPGME_MD_SHA1
```

```
@item GPGME_MD_RMD160
```

```
@item GPGME_MD_MD2
```

```
@item GPGME_MD_TIGER
```

```
@item GPGME_MD_HAVAL
```

```
@item GPGME_MD_SHA256
```

```
@item GPGME_MD_SHA384
```

```
@item GPGME_MD_SHA512
```

```
@item GPGME_MD_SHA224
```

```
@since{1.5.0}
```

```
@item GPGME_MD_MD4
```

```
@item GPGME_MD_CRC32
```

```
@item GPGME_MD_CRC32_RFC1510
```

```
@item GPGME_MD_CRC24_RFC2440
```


@end table

@end deftp

@deftypefun {const char *} gpgme_hash_algo_name (@w{gpgme_hash_algo_t @var{algo}})

The function @code{gpgme_hash_algo_name} returns a pointer to a statically allocated string containing a description of the hash algorithm @var{algo}. This string can be used to output the name of the hash algorithm to the user.

If @var{algo} is not a valid hash algorithm, @code{NULL} is returned.

@end deftypefun

@node Error Handling

@chapter Error Handling

@cindex error handling

Many functions in @acronym{GPGME} can return an error if they fail. For this reason, the application should always catch the error condition and take appropriate measures, for example by releasing the resources and passing the error up to the caller, or by displaying a descriptive message to the user and cancelling the operation.

Some error values do not indicate a system error or an error in the operation, but the result of an operation that failed properly. For example, if you try to decrypt a tempered message, the decryption will fail. Another error value actually means that the end of a data buffer or list has been reached. The following descriptions explain for many error codes what they mean usually. Some error values have specific meanings if returned by a certain functions. Such cases are described in the documentation of those functions.

@acronym{GPGME} uses the @code{libgpg-error} library. This allows to share the error codes with other components of the GnuPG system, and thus pass error values transparently from the crypto engine, or some helper application of the crypto engine, to the user. This way no information is lost. As a consequence, @acronym{GPGME} does not use its own identifiers for error codes, but uses those provided by @code{libgpg-error}. They usually start with @code{GPG_ERR_}.

However, @acronym{GPGME} does provide aliases for the functions defined in libgpg-error, which might be preferred for name space consistency.

@menu

* Error Values:: The error value and what it means.

* Error Sources:: A list of important error sources.

* Error Codes:: A list of important error codes.

* Error Strings:: How to get a descriptive string from a value.

@end menu

@node Error Values

@section Error Values

@cindex error values

@cindex error codes

@cindex error sources

@deftp {Data type} {gpgme_err_code_t}

The @code{gpgme_err_code_t} type is an alias for the @code{libgpg-error} type @code{gpg_err_code_t}. The error code indicates the type of an error, or the reason why an operation failed.

A list of important error codes can be found in the next section.

@end deftp

@deftp {Data type} {gpgme_err_source_t}

The @code{gpgme_err_source_t} type is an alias for the @code{libgpg-error} type @code{gpg_err_source_t}. The error source has not a precisely defined meaning. Sometimes it is the place where the error happened, sometimes it is the place where an error was encoded into an error value. Usually the error source will give an indication to where to look for the problem. This is not always true, but it is attempted to achieve this goal.

A list of important error sources can be found in the next section.

@end deftp

@deftp {Data type} {gpgme_error_t}

The @code{gpgme_error_t} type is an alias for the @code{libgpg-error} type @code{gpg_error_t}. An error value like this has always two components, an error code and an error source. Both together form the error value.

Thus, the error value can not be directly compared against an error code, but the accessor functions described below must be used.

However, it is guaranteed that only 0 is used to indicate success (@code{GPG_ERR_NO_ERROR}), and that in this case all other parts of the error value are set to 0, too.

Note that in @acronym{GPGME}, the error source is used purely for diagnostical purposes. Only the error code should be checked to test for a certain outcome of a function. The manual only documents the error code part of an error value. The error source is left unspecified and might be anything.

@end deftp

```
@deftypefun {static inline gpgme_err_code_t} gpgme_err_code (@w{gpgme_error_t @var{err}})
The static inline function @code{gpgme_err_code} returns the
@code{gpgme_err_code_t} component of the error value @var{err}. This
function must be used to extract the error code from an error value in
order to compare it with the @code{GPG_ERR_*} error code macros.
@end deftypefun
```

```
@deftypefun {static inline gpgme_err_source_t} gpgme_err_source (@w{gpgme_error_t @var{err}})
The static inline function @code{gpgme_err_source} returns the
@code{gpgme_err_source_t} component of the error value @var{err}. This
function must be used to extract the error source from an error value in
order to compare it with the @code{GPG_ERR_SOURCE_*} error source macros.
@end deftypefun
```

```
@deftypefun {static inline gpgme_error_t} gpgme_err_make (@w{gpgme_err_source_t @var{source}},
@w{gpgme_err_code_t @var{code}})
The static inline function @code{gpgme_err_make} returns the error
value consisting of the error source @var{source} and the error code
@var{code}.
```

This function can be used in callback functions to construct an error value to return it to the library.

```
@end deftypefun
```

```
@deftypefun {static inline gpgme_error_t} gpgme_error (@w{gpgme_err_code_t @var{code}})
The static inline function @code{gpgme_error} returns the error value
consisting of the default error source and the error code @var{code}.
```

For @acronym{GPGME} applications, the default error source is @code{GPG_ERR_SOURCE_USER_1}. You can define @code{GPGME_ERR_SOURCE_DEFAULT} before including @file{gpgme.h} to change this default.

This function can be used in callback functions to construct an error value to return it to the library.

```
@end deftypefun
```

The @code{libpgg-error} library provides error codes for all system error numbers it knows about. If @var{err} is an unknown error number, the error code @code{GPG_ERR_UNKNOWN_ERRNO} is used. The following functions can be used to construct error values from system error numbers.

```
@deftypefun {gpgme_error_t} gpgme_err_make_from_errno (@w{gpgme_err_source_t @var{source}}, @w{int @var{err}})
The function @code{gpgme_err_make_from_errno} is like
@code{gpgme_err_make}, but it takes a system error like @code{errno}
```

instead of a `gpgme_err_code_t` error code.

`@end deftypefun`

`@deftypefun {gpgme_error_t} gpgme_error_from_errno (@w{int @var{err}})`

The function `gpgme_error_from_errno` is like `gpgme_error`, but it takes a system error like `errno` instead of a

`gpgme_err_code_t` error code.

`@end deftypefun`

Sometimes you might want to map system error numbers to error codes directly, or map an error code representing a system error back to the system error number. The following functions can be used to do that.

`@deftypefun {gpgme_err_code_t} gpgme_err_code_from_errno (@w{int @var{err}})`

The function `gpgme_err_code_from_errno` returns the error code for the system error `@var{err}`. If `@var{err}` is not a known system error, the function returns `GPG_ERR_UNKNOWN_ERRNO`.

`@end deftypefun`

`@deftypefun {int} gpgme_err_code_to_errno (@w{gpgme_err_code_t @var{err}})`

The function `gpgme_err_code_to_errno` returns the system error for the error code `@var{err}`. If `@var{err}` is not an error code representing a system error, or if this system error is not defined on this system, the function returns `0`.

`@end deftypefun`

`@node Error Sources`

`@section Error Sources`

`@cindex error codes, list of`

The library `libpgp-error` defines an error source for every component of the GnuPG system. The error source part of an error value is not well defined. As such it is mainly useful to improve the diagnostic error message for the user.

If the error code part of an error value is `0`, the whole error value will be `0`. In this case the error source part is of course `GPG_ERR_SOURCE_UNKNOWN`.

The list of error sources that might occur in applications using `GPGME` is:

`@table @code`

`@item GPG_ERR_SOURCE_UNKNOWN`

The error source is not known. The value of this error source is `0`.

@item GPG_ERR_SOURCE_GPGME

The error source is @acronym{GPGME} itself. This is the default for errors that occur in the @acronym{GPGME} library.

@item GPG_ERR_SOURCE_GPG

The error source is GnuPG, which is the crypto engine used for the OpenPGP protocol.

@item GPG_ERR_SOURCE_GPGSM

The error source is GPGSM, which is the crypto engine used for the CMS protocol.

@item GPG_ERR_SOURCE_GCRYPT

The error source is @code{libgcrypt}, which is used by crypto engines to perform cryptographic operations.

@item GPG_ERR_SOURCE_GPGAGENT

The error source is @command{gpg-agent}, which is used by crypto engines to perform operations with the secret key.

@item GPG_ERR_SOURCE_PINENTRY

The error source is @command{pinentry}, which is used by @command{gpg-agent} to query the passphrase to unlock a secret key.

@item GPG_ERR_SOURCE_SCD

The error source is the SmartCard Daemon, which is used by @command{gpg-agent} to delegate operations with the secret key to a SmartCard.

@item GPG_ERR_SOURCE_KEYBOX

The error source is @code{libkbx}, a library used by the crypto engines to manage local keyrings.

@item GPG_ERR_SOURCE_USER_1

@item GPG_ERR_SOURCE_USER_2

@item GPG_ERR_SOURCE_USER_3

@item GPG_ERR_SOURCE_USER_4

These error sources are not used by any GnuPG component and can be used by other software. For example, applications using

@acronym{GPGME} can use them to mark error values coming from callback handlers. Thus @code{GPG_ERR_SOURCE_USER_1} is the default for errors created with @code{gpgme_error} and @code{gpgme_error_from_errno}, unless you define @code{GPGME_ERR_SOURCE_DEFAULT} before including @file{gpgme.h}.

@end table

@node Error Codes

@section Error Codes

@cindex error codes, list of

The library @code{libgpg-error} defines many error values. Most of them are not used by @code{GPGME} directly, but might be returned by @acronym{GPGME} because it received them from the crypto engine. The below list only includes such error codes that have a specific meaning in @code{GPGME}, or which are so common that you should know about them.

@table @code

@item GPG_ERR_EOF

This value indicates the end of a list, buffer or file.

@item GPG_ERR_NO_ERROR

This value indicates success. The value of this error code is @code{0}. Also, it is guaranteed that an error value made from the error code @code{0} will be @code{0} itself (as a whole). This means that the error source information is lost for this error code, however, as this error code indicates that no error occurred, this is generally not a problem.

@item GPG_ERR_GENERAL

This value means that something went wrong, but either there is not enough information about the problem to return a more useful error value, or there is no separate error value for this type of problem.

@item GPG_ERR_ENOMEM

This value means that an out-of-memory condition occurred.

@item GPG_ERR_E...

System errors are mapped to GPG_ERR_FOO where FOO is the symbol for the system error.

@item GPG_ERR_INV_VALUE

This value means that some user provided data was out of range. This can also refer to objects. For example, if an empty @code{gpgme_data_t} object was expected, but one containing data was provided, this error value is returned.

@item GPG_ERR_UNUSABLE_PUBKEY

This value means that some recipients for a message were invalid.

@item GPG_ERR_UNUSABLE_SECKEY

This value means that some signers were invalid.

@item GPG_ERR_NO_DATA

This value means that a @code{gpgme_data_t} object which was expected

to have content was found empty.

@item GPG_ERR_CONFLICT

This value means that a conflict of some sort occurred.

@item GPG_ERR_NOT_IMPLEMENTED

This value indicates that the specific function (or operation) is not implemented. This error should never happen. It can only occur if you use certain values or configuration options which do not work, but for which we think that they should work at some later time.

@item GPG_ERR_DECRYPT_FAILED

This value indicates that a decryption operation was unsuccessful.

@item GPG_ERR_BAD_PASSPHRASE

This value means that the user did not provide a correct passphrase when requested.

@item GPG_ERR_CANCELED

This value means that the operation was canceled.

@item GPG_ERR_INV_ENGINE

This value means that the engine that implements the desired protocol is currently not available. This can either be because the sources were configured to exclude support for this engine, or because the engine is not installed properly.

@item GPG_ERR_AMBIGUOUS_NAME

This value indicates that a user ID or other specifier did not specify a unique key.

@item GPG_ERR_WRONG_KEY_USAGE

This value indicates that a key is not used appropriately.

@item GPG_ERR_CERT_REVOKED

This value indicates that a key signature was revoked.

@item GPG_ERR_CERT_EXPIRED

This value indicates that a key signature expired.

@item GPG_ERR_NO_CRL_KNOWN

This value indicates that no certificate revocation list is known for the certificate.

@item GPG_ERR_NO_POLICY_MATCH

This value indicates that a policy issue occurred.

@item GPG_ERR_NO_SECKEY

This value indicates that no secret key for the user ID is available.

@item GPG_ERR_MISSING_CERT

This value indicates that a key could not be imported because the issuer certificate is missing.

@item GPG_ERR_BAD_CERT_CHAIN

This value indicates that a key could not be imported because its certificate chain is not good, for example it could be too long.

@item GPG_ERR_UNSUPPORTED_ALGORITHM

This value means a verification failed because the cryptographic algorithm is not supported by the crypto backend.

@item GPG_ERR_BAD_SIGNATURE

This value means a verification failed because the signature is bad.

@item GPG_ERR_NO_PUBKEY

This value means a verification failed because the public key is not available.

@item GPG_ERR_USER_1

@item GPG_ERR_USER_2

@item ...

@item GPG_ERR_USER_16

These error codes are not used by any GnuPG component and can be freely used by other software. Applications using @acronym{GPGME} might use them to mark specific errors returned by callback handlers if no suitable error codes (including the system errors) for these errors exist already.

@end table

@node Error Strings

@section Error Strings

@cindex error values, printing of

@cindex error codes, printing of

@cindex error sources, printing of

@cindex error strings

@deftypefun {const char *} gpgme_strerror (@w{gpgme_error_t @var{err}})

The function @code{gpgme_strerror} returns a pointer to a statically allocated string containing a description of the error code contained in the error value @var{err}. This string can be used to output a diagnostic message to the user.

This function is not thread safe. Use @code{gpgme_strerror_r} in multi-threaded programs.

@end deftypefun

```
@deftypefun {int} gpgme_strerror_r (@w{gpgme_error_t @var{err}}, @w{char *@var{buf}}, @w{size_t @var{buflen}})
```

The function `gpgme_strerror_r` returns the error string for `@var{err}` in the user-supplied buffer `@var{buf}` of size `@var{buflen}`.

This function is, in contrast to `gpgme_strerror`, thread-safe if a thread-safe `strerror_r` function is provided by the system.

If the function succeeds, 0 is returned and `@var{buf}` contains the string describing the error. If the buffer was not large enough, ERANGE is returned and `@var{buf}` contains as much of the beginning of the error string as fits into the buffer.

@end deftypefun

```
@deftypefun {const char *} gpgme_strerror (@w{gpgme_error_t @var{err}})
```

The function `gpgme_strerror` returns a pointer to a statically allocated string containing a description of the error source contained in the error value `@var{err}`. This string can be used to output a diagnostic message to the user.

@end deftypefun

The following example illustrates the use of `gpgme_strerror`:

@example

```
gpgme_ctx_t ctx;
gpgme_error_t err = gpgme_new (&ctx);
if (err)
@ {
    fprintf (stderr, "%s: creating GpgME context failed: %s: %s\n",
            argv[0], gpgme_strerror (err), gpgme_strerror (err));
    exit (1);
@ }
@end example
```

@node Exchanging Data

@chapter Exchanging Data

@cindex data, exchanging

A lot of data has to be exchanged between the user and the crypto engine, like plaintext messages, ciphertext, signatures and information about the keys. The technical details about exchanging the data information are completely abstracted by `GPGME`.

The user provides and receives the data via `gpgme_data_t` objects, regardless of the communication protocol between `GPGME` and the crypto engine in use.

@deftp {Data type} {gpgme_data_t}

The @code{gpgme_data_t} type is a handle for a container for generic data, which is used by @acronym{GPGME} to exchange data with the user.

@end deftp

@code{gpgme_data_t} objects do not provide notifications on events.

It is assumed that read and write operations are blocking until data is available. If this is undesirable, the application must ensure that all GPGME data operations always have data available, for example by using memory buffers or files rather than pipes or sockets. This might be relevant, for example, if the external event loop mechanism is used.

@deftp {Data type} {gpgme_off_t}

@since{1.4.1}

On POSIX platforms the @code{gpgme_off_t} type is an alias for @code{off_t}; it may be used interchangeably. On Windows platforms @code{gpgme_off_t} is defined as a long (i.e. 32 bit) for 32 bit Windows and as a 64 bit signed integer for 64 bit Windows.

@end deftp

@deftp {Data type} {gpgme_ssize_t}

The @code{gpgme_ssize_t} type is an alias for @code{ssize_t}. It has only been introduced to overcome portability problems pertaining to the declaration of @code{ssize_t} by different toolchains.

@end deftp

@menu

- * Creating Data Buffers:: Creating new data buffers.
- * Destroying Data Buffers:: Releasing data buffers.
- * Manipulating Data Buffers:: Operations on data buffers.

@end menu

@node Creating Data Buffers

@section Creating Data Buffers

@cindex data buffer, creation

Data objects can be based on memory, files, or callback functions provided by the user. Not all operations are supported by all objects.

@menu

- * Memory Based Data Buffers:: Creating memory based data buffers.

* File Based Data Buffers:: Creating file based data buffers.
* Callback Based Data Buffers:: Creating callback based data buffers.
@end menu

@node Memory Based Data Buffers
@subsection Memory Based Data Buffers

Memory based data objects store all data in allocated memory. This is convenient, but only practical for an amount of data that is a fraction of the available physical memory. The data has to be copied from its source and to its destination, which can often be avoided by using one of the other data object

@deftypefun gpgme_error_t gpgme_data_new (@w{gpgme_data_t *@var{dh}})
The function @code{gpgme_data_new} creates a new @code{gpgme_data_t} object and returns a handle for it in @var{dh}. The data object is memory based and initially empty.

The function returns the error code @code{GPG_ERR_NO_ERROR} if the data object was successfully created, @code{GPG_ERR_INV_VALUE} if @var{dh} is not a valid pointer, and @code{GPG_ERR_ENOMEM} if not enough memory is available.
@end deftypefun

@deftypefun gpgme_error_t gpgme_data_new_from_mem (@w{gpgme_data_t *@var{dh}}, @w{const char *@var{buffer}}, @w{size_t @var{size}}, @w{int @var{copy}})
The function @code{gpgme_data_new_from_mem} creates a new @code{gpgme_data_t} object and fills it with @var{size} bytes starting from @var{buffer}.

If @var{copy} is not zero, a private copy of the data is made. If @var{copy} is zero, the data is taken from the specified buffer as needed, and the user has to ensure that the buffer remains valid for the whole life span of the data object.

The function returns the error code @code{GPG_ERR_NO_ERROR} if the data object was successfully created, @code{GPG_ERR_INV_VALUE} if @var{dh} or @var{buffer} is not a valid pointer, and @code{GPG_ERR_ENOMEM} if not enough memory is available.
@end deftypefun

@deftypefun gpgme_error_t gpgme_data_new_from_file (@w{gpgme_data_t *@var{dh}}, @w{const char *@var{filename}}, @w{int @var{copy}})
The function @code{gpgme_data_new_from_file} creates a new @code{gpgme_data_t} object and fills it with the content of the file @var{filename}.

If `@var{copy}` is not zero, the whole file is read in at initialization time and the file is not used anymore after that. This is the only mode supported currently. Later, a value of zero for `@var{copy}` might cause all reads to be delayed until the data is needed, but this is not yet implemented.

The function returns the error code `@code{GPG_ERR_NO_ERROR}` if the data object was successfully created, `@code{GPG_ERR_INV_VALUE}` if `@var{dh}` or `@var{filename}` is not a valid pointer, `@code{GPG_ERR_NOT_IMPLEMENTED}` if `@var{code}` is zero, and `@code{GPG_ERR_ENOMEM}` if not enough memory is available.

```
@end deftypefun
```

```
@deftypefun gpgme_error_t gpgme_data_new_from_filepart (@w{gpgme_data_t *}@var{dh}, @w{const char *}@var{filename}, @w{FILE *}@var{fp}, @w{off_t @var{offset}}, @w{size_t @var{length}})
```

The function `@code{gpgme_data_new_from_filepart}` creates a new `@code{gpgme_data_t}` object and fills it with a part of the file specified by `@var{filename}` or `@var{fp}`.

Exactly one of `@var{filename}` and `@var{fp}` must be non-zero, the other must be zero. The argument that is not zero specifies the file from which `@var{length}` bytes are read into the data object, starting from `@var{offset}`.

The function returns the error code `@code{GPG_ERR_NO_ERROR}` if the data object was successfully created, `@code{GPG_ERR_INV_VALUE}` if `@var{dh}` and exactly one of `@var{filename}` and `@var{fp}` is not a valid pointer, and `@code{GPG_ERR_ENOMEM}` if not enough memory is available.

```
@end deftypefun
```

```
@node File Based Data Buffers
```

```
@subsection File Based Data Buffers
```

File based data objects operate directly on file descriptors or streams. Only a small amount of data is stored in core at any time, so the size of the data objects is not limited by `@acronym{GPGME}`.

```
@deftypefun gpgme_error_t gpgme_data_new_from_fd (@w{gpgme_data_t *}@var{dh}, @w{int @var{fd}})
```

The function `@code{gpgme_data_new_from_fd}` creates a new `@code{gpgme_data_t}` object and uses the file descriptor `@var{fd}` to read from (if used as an input data object) and write to (if used as an output data object).

When using the data object as an input buffer, the function might read a bit more from the file descriptor than is actually needed by the crypto engine in the desired operation because of internal buffering.

Note that GPGME assumes that the file descriptor is set to blocking mode. Errors during I/O operations, except for EINTR, are usually fatal for crypto operations.

The function returns the error code `GPG_ERR_NO_ERROR` if the data object was successfully created, and `GPG_ERR_ENOMEM` if not enough memory is available.

@end deftypefun

```
@deftypefun gpgme_error_t gpgme_data_new_from_stream (@w{gpgme_data_t *@var{dh}}, @w{FILE *@var{stream}})
```

The function `gpgme_data_new_from_stream` creates a new `gpgme_data_t` object and uses the I/O stream `@var{stream}` to read from (if used as an input data object) and write to (if used as an output data object).

When using the data object as an input buffer, the function might read a bit more from the stream than is actually needed by the crypto engine in the desired operation because of internal buffering.

Note that GPGME assumes that the stream is in blocking mode. Errors during I/O operations, except for EINTR, are usually fatal for crypto operations.

The function returns the error code `GPG_ERR_NO_ERROR` if the data object was successfully created, and `GPG_ERR_ENOMEM` if not enough memory is available.

@end deftypefun

```
@deftypefun gpgme_error_t gpgme_data_new_from_estream (@w{gpgme_data_t *@var{dh}}, @w{gpgmt_stream_t @var{stream}})
```

The function `gpgme_data_new_from_estream` creates a new `gpgme_data_t` object and uses the gpgmt stream `@var{stream}` to read from (if used as an input data object) and write to (if used as an output data object).

When using the data object as an input buffer, the function might read a bit more from the stream than is actually needed by the crypto engine in the desired operation because of internal buffering.

Note that GPGME assumes that the stream is in blocking mode. Errors during I/O operations, except for EINTR, are usually fatal for crypto operations.

The function returns the error code `GPG_ERR_NO_ERROR` if the data object was successfully created, and `GPG_ERR_ENOMEM` if not enough memory is available.

@end deftypefun

@node Callback Based Data Buffers

@subsection Callback Based Data Buffers

If neither memory nor file based data objects are a good fit for your application, you can implement the functions a data object provides yourself and create a data object from these callback functions.

```
@deftp {Data type} {ssize_t (*gpgme_data_read_cb_t) (@w{void *}@var{handle}), @w{void @var{*buffer}}, @w{size_t @var{size}})}
```

```
@tindex gpgme_data_read_cb_t
```

The @code{gpgme_data_read_cb_t} type is the type of functions which @acronym{GPGME} calls if it wants to read data from a user-implemented data object. The function should read up to @var{size} bytes from the current read position into the space starting at @var{buffer}. The @var{handle} is provided by the user at data object creation time.

Note that GPGME assumes that the read blocks until data is available. Errors during I/O operations, except for EINTR, are usually fatal for crypto operations.

The function should return the number of bytes read, 0 on EOF, and -1 on error. If an error occurs, @var{errno} should be set to describe the type of the error.

```
@end deftp
```

```
@deftp {Data type} {ssize_t (*gpgme_data_write_cb_t) (@w{void *}@var{handle}), @w{const void @var{*buffer}}, @w{size_t @var{size}})}
```

```
@tindex gpgme_data_write_cb_t
```

The @code{gpgme_data_write_cb_t} type is the type of functions which @acronym{GPGME} calls if it wants to write data to a user-implemented data object. The function should write up to @var{size} bytes to the current write position from the space starting at @var{buffer}. The @var{handle} is provided by the user at data object creation time.

Note that GPGME assumes that the write blocks until data is available. Errors during I/O operations, except for EINTR, are usually fatal for crypto operations.

The function should return the number of bytes written, and -1 on error. If an error occurs, @var{errno} should be set to describe the type of the error.

```
@end deftp
```

```
@deftp {Data type} {off_t (*gpgme_data_seek_cb_t) (@w{void *}@var{handle}), @w{off_t @var{offset}}, @w{int @var{whence}})}
```

```
@tindex gpgme_data_seek_cb_t
```

The `gpgme_data_seek_cb_t` type is the type of functions which `GPGME` calls if it wants to change the current read/write position in a user-implemented data object, just like the `lseek` function.

The function should return the new read/write position, and -1 on error. If an error occurs, `errno` should be set to describe the type of the error.

`@end deftp`

```
@defun {Data type} {void (*gpgme_data_release_cb_t) (@w{void *}@var{handle})}
```

```
@tindex gpgme_data_release_cb_t
```

The `gpgme_data_release_cb_t` type is the type of functions which `GPGME` calls if it wants to destroy a user-implemented data object. The `handle` is provided by the user at data object creation time.

`@end deftp`

```
@defun {Data type} {struct gpgme_data_cbs}
```

This structure is used to store the data callback interface functions described above. It has the following members:

```
@table @code
```

```
@item gpgme_data_read_cb_t read
```

This is the function called by `GPGME` to read data from the data object. It is only required for input data object.

```
@item gpgme_data_write_cb_t write
```

This is the function called by `GPGME` to write data to the data object. It is only required for output data object.

```
@item gpgme_data_seek_cb_t seek
```

This is the function called by `GPGME` to change the current read/write pointer in the data object (if available). It is optional.

```
@item gpgme_data_release_cb_t release
```

This is the function called by `GPGME` to release a data object. It is optional.

```
@end table
```

```
@end deftp
```

```
@defun gpgme_error_t gpgme_data_new_from_cbs (@w{gpgme_data_t *}@var{dh},
```

```
@w{gpgme_data_cbs_t @var{cbs}}, @w{void *}@var{handle})
```

The function `gpgme_data_new_from_cbs` creates a new `gpgme_data_t` object and uses the user-provided callback functions to operate on the data object.

The handle `handle` is passed as first argument to the callback

functions. This can be used to identify this data object.

The function returns the error code `GPG_ERR_NO_ERROR` if the data object was successfully created, and `GPG_ERR_ENOMEM` if not enough memory is available.

@end deftypefun

@node Destroying Data Buffers

@section Destroying Data Buffers

@cindex data buffer, destruction

@deftypefun void gpgme_data_release (@w{gpgme_data_t @var{dh}})

The function `gpgme_data_release` destroys the data object with the handle `@var{dh}`. It releases all associated resources that were not provided by the user in the first place.

@end deftypefun

@deftypefun {char *} gpgme_data_release_and_get_mem (@w{gpgme_data_t @var{dh}}, @w{size_t *@var{length}})

The function `gpgme_data_release_and_get_mem` is like `gpgme_data_release`, except that it returns the data buffer and its length that was provided by the object.

The user has to release the buffer with `gpgme_free`. In case the user provided the data buffer in non-copy mode, a copy will be made for this purpose.

In case an error returns, or there is no suitable data buffer that can be returned to the user, the function will return `NULL`. In any case, the data object `@var{dh}` is destroyed.

@end deftypefun

@deftypefun void gpgme_free (@w{void *@var{buffer}})

@since{1.1.1}

The function `gpgme_free` releases the memory returned by `gpgme_data_release_and_get_mem` and `gpgme_pubkey_algo_string`. It should be used instead of the system libraries `free` function in case different allocators are used by a program. This is often the case if `gpgme` is used under Windows as a DLL.

@end deftypefun

@node Manipulating Data Buffers

@section Manipulating Data Buffers

@cindex data buffer, manipulation

Data buffers contain data and meta-data. The following operations can be used to manipulate both.

@menu

* Data Buffer I/O Operations:: I/O operations on data buffers.

* Data Buffer Meta-Data:: Meta-data manipulation of data buffers.

* Data Buffer Convenience:: Convenience function for data buffers.

@end menu

@node Data Buffer I/O Operations

@subsection Data Buffer I/O Operations

@cindex data buffer, I/O operations

@cindex data buffer, read

@cindex data buffer, write

@cindex data buffer, seek

@deftypefun ssize_t gpgme_data_read (@w{gpgme_data_t @var{dh}}, @w{void *@var{buffer}}, @w{size_t @var{length}})

The function @code{gpgme_data_read} reads up to @var{length} bytes from the data object with the handle @var{dh} into the space starting at @var{buffer}.

If no error occurs, the actual amount read is returned. If the end of the data object is reached, the function returns 0.

In all other cases, the function returns -1 and sets @var{errno}.

@end deftypefun

@deftypefun ssize_t gpgme_data_write (@w{gpgme_data_t @var{dh}}, @w{const void *@var{buffer}}, @w{size_t @var{size}})

The function @code{gpgme_data_write} writes up to @var{size} bytes starting from @var{buffer} into the data object with the handle @var{dh} at the current write position.

The function returns the number of bytes actually written, or -1 if an error occurs. If an error occurs, @var{errno} is set.

@end deftypefun

@deftypefun off_t gpgme_data_seek (@w{gpgme_data_t @var{dh}}, @w{off_t @var{offset}}, @w{int @var{whence}})

The function @code{gpgme_data_seek} changes the current read/write position.

The @var{whence} argument specifies how the @var{offset} should be

interpreted. It must be one of the following symbolic constants:

@table @code

@item SEEK_SET

Specifies that @var{offset} is a count of characters from the beginning of the data object.

@item SEEK_CUR

Specifies that @var{offset} is a count of characters from the current file position. This count may be positive or negative.

@item SEEK_END

Specifies that @var{offset} is a count of characters from the end of the data object. A negative count specifies a position within the current extent of the data object; a positive count specifies a position past the current end. If you set the position past the current end, and actually write data, you will extend the data object with zeros up to that position.

@end table

If successful, the function returns the resulting file position, measured in bytes from the beginning of the data object. You can use this feature together with @code{SEEK_CUR} to read the current read/write position.

If the function fails, -1 is returned and @var{errno} is set.

@end deftypefun

@node Data Buffer Meta-Data

@subsection Data Buffer Meta-Data

@cindex data buffer, meta-data

@cindex data buffer, file name

@cindex data buffer, encoding

@deftypefun {char *} gpgme_data_get_file_name (@w{gpgme_data_t @var{dh}})

@since{1.1.0}

The function @code{gpgme_data_get_file_name} returns a pointer to a string containing the file name associated with the data object. The file name will be stored in the output when encrypting or signing the data and will be returned to the user when decrypting or verifying the output data.

If no error occurs, the string containing the file name is returned.

Otherwise, @code{NULL} will be returned.

@end deftypefun

```
@deftypefun gpgme_error_t gpgme_data_set_file_name (@w{gpgme_data_t @var{dh}}, @w{const char
*@var{file_name}})
@since{1.1.0}
```

The function `gpgme_data_set_file_name` sets the file name associated with the data object. The file name will be stored in the output when encrypting or signing the data and will be returned to the user when decrypting or verifying the output data.

The function returns the error code `GPG_ERR_INV_VALUE` if `@var{dh}` is not a valid pointer and `GPG_ERR_ENOMEM` if not enough memory is available.

```
@end deftypefun
```

```
@defntp {Data type} {enum gpgme_data_encoding_t}
@tindex gpgme_data_encoding_t
```

The `gpgme_data_encoding_t` type specifies the encoding of a `gpgme_data_t` object. For input data objects, the encoding is useful to give the backend a hint on the type of data. For output data objects, the encoding can specify the output data format on certain operations. Please note that not all backends support all encodings on all operations. The following data types are available:

```
@table @code
```

```
@item GPGME_DATA_ENCODING_NONE
```

This specifies that the encoding is not known. This is the default for a new data object. The backend will try its best to detect the encoding automatically.

```
@item GPGME_DATA_ENCODING_BINARY
```

This specifies that the data is encoding in binary form; i.e. there is no special encoding.

```
@item GPGME_DATA_ENCODING_BASE64
```

This specifies that the data is encoded using the Base-64 encoding scheme as used by `MIME` and other protocols.

```
@item GPGME_DATA_ENCODING_ARMOR
```

This specifies that the data is encoded in an armored form as used by OpenPGP and PEM.

```
@item GPGME_DATA_ENCODING_MIME
```

```
@since{1.7.0}
```

This specifies that the data is encoded as a MIME part.

@item GPGME_DATA_ENCODING_URL

@since{1.2.0}

The data is a list of linefeed delimited URLs. This is only useful with @code{gpgme_op_import}.

@item GPGME_DATA_ENCODING_URL0

@since{1.2.0}

The data is a list of binary zero delimited URLs. This is only useful with @code{gpgme_op_import}.

@item GPGME_DATA_ENCODING_URLESC

@since{1.2.0}

The data is a list of linefeed delimited URLs with all control and space characters percent escaped. This mode is not yet implemented.

@end table

@end deftp

@deftypefun gpgme_data_encoding_t gpgme_data_get_encoding (@w{gpgme_data_t @var{dh}})

The function @code{gpgme_data_get_encoding} returns the encoding of the data object with the handle @var{dh}. If @var{dh} is not a valid pointer (e.g. @code{NULL}) @code{GPGME_DATA_ENCODING_NONE} is returned.

@end deftypefun

@deftypefun gpgme_error_t gpgme_data_set_encoding (@w{gpgme_data_t @var{dh}}, gpgme_data_encoding_t @var{enc})

The function @code{gpgme_data_set_encoding} changes the encoding of the data object with the handle @var{dh} to @var{enc}.

@end deftypefun

@deftypefun {gpgme_error_t} gpgme_data_set_flag @

(@w{gpgme_data_t @var{dh}}, @

@w{const char *@var{name}}, @

@w{const char *@var{value}})

@since{1.7.0}

Some minor properties of the data object can be controlled with flags set by this function. The properties are identified by the following values for @var{name}:

@table @code

@item size-hint

The value is a decimal number with the length gpgme shall assume for

this data object. This is useful if the data is provided by callbacks or via file descriptors but the applications knows the total size of the data. If this is set the OpenPGP engine may use this to decide on buffer allocation strategies and to provide a total value for its progress information.

@end table

This function returns @code{0} on success.

@end deftypefun

@node Data Buffer Convenience

@subsection Data Buffer Convenience Functions

@cindex data buffer, convenience

@cindex type of data

@cindex identify

@deftp {Data type} {enum gpgme_data_type_t}

@tindex gpgme_data_type_t

@since{1.4.3}

The @code{gpgme_data_type_t} type is used to return the detected type of the content of a data buffer.

@end deftp

@table @code

@item GPGME_DATA_TYPE_INVALID

This is returned by @code{gpgme_data_identify} if it was not possible to identify the data. Reasons for this might be a non-seekable stream or a memory problem. The value is 0.

@item GPGME_DATA_TYPE_UNKNOWN

The type of the data is not known.

@item GPGME_DATA_TYPE_PGP_SIGNED

The data is an OpenPGP signed message. This may be a binary signature, a detached one or a cleartext signature.

@item GPGME_DATA_TYPE_PGP_ENCRYPTED

@since{1.7.0}

The data is an OpenPGP encrypted message.

@item GPGME_DATA_TYPE_PGP_SIGNATURE

@since{1.7.0}

The data is an OpenPGP detached signature.

@item GPGME_DATA_TYPE_PGP_OTHER

This is a generic OpenPGP message. In most cases this will be encrypted data.

@item GPGME_DATA_TYPE_PGP_KEY

This is an OpenPGP key (private or public).

@item GPGME_DATA_TYPE_CMS_SIGNED

This is a CMS signed message.

@item GPGME_DATA_TYPE_CMS_ENCRYPTED

This is a CMS encrypted (enveloped data) message.

@item GPGME_DATA_TYPE_CMS_OTHER

This is used for other CMS message types.

@item GPGME_DATA_TYPE_X509_CERT

The data is a X.509 certificate

@item GPGME_DATA_TYPE_PKCS12

The data is a PKCS#12 message. This is commonly used to exchange private keys for X.509.

@end table

@deftypefun gpgme_data_type_t gpgme_data_identify (@w{gpgme_data_t @var{dh}})

@since{1.4.3}

The function @code{gpgme_data_identify} returns the type of the data with the handle @var{dh}. If it is not possible to perform the identification, the function returns zero

(@code{GPGME_DATA_TYPE_INVALID}). Note that depending on how the data object has been created the identification may not be possible or the data object may change its internal state (file pointer moved). For file or memory based data object, the state should not change.

@end deftypefun

@c

@c Chapter Contexts

@c

@node Contexts

@chapter Contexts

@cindex context

All cryptographic operations in @acronym{GPGME} are performed within a context, which contains the internal state of the operation as well as configuration parameters. By using several contexts you can run several cryptographic operations in parallel, with different configuration.

@deftp {Data type} {gpgme_ctx_t}

The @code{gpgme_ctx_t} type is a handle for a @acronym{GPGME} context, which is used to hold the configuration, status and result of cryptographic operations.

@end deftp

@menu

* Creating Contexts:: Creating new @acronym{GPGME} contexts.

- * Destroying Contexts:: Releasing @acronym{GPGME} contexts.
- * Result Management:: Managing the result of crypto operations.
- * Context Attributes:: Setting properties of a context.
- * Key Management:: Managing keys with @acronym{GPGME}.
- * Trust Item Management:: Managing trust items with @acronym{GPGME}.
- * Crypto Operations:: Using a context for cryptography.
- * Miscellaneous:: Miscellaneous operations
- * Run Control:: Controlling how operations are run.

@end menu

@node Creating Contexts
@section Creating Contexts
@cindex context, creation

@deftypefun gpgme_error_t gpgme_new (@w{gpgme_ctx_t *}@var{ctx})
The function @code{gpgme_new} creates a new @code{gpgme_ctx_t} object and returns a handle for it in @var{ctx}.

The function returns the error code @code{GPG_ERR_NO_ERROR} if the context was successfully created, @code{GPG_ERR_INV_VALUE} if @var{ctx} is not a valid pointer, and @code{GPG_ERR_ENOMEM} if not enough memory is available. Also, it returns @code{GPG_ERR_NOT_OPERATIONAL} if @code{gpgme_check_version} was not called to initialize GPGME, and @code{GPG_ERR_SELFTEST_FAILED} if a selftest failed. Currently, the only selftest is for Windows MingW32 targets to see if @code{-mms-bitfields} was used (as required).
@end deftypefun

@node Destroying Contexts
@section Destroying Contexts
@cindex context, destruction

@deftypefun void gpgme_release (@w{gpgme_ctx_t @var{ctx}})
The function @code{gpgme_release} destroys the context with the handle @var{ctx} and releases all associated resources.
@end deftypefun

@node Result Management
@section Result Management
@cindex context, result of operation

The detailed result of an operation is returned in operation-specific structures such as @code{gpgme_decrypt_result_t}. The corresponding retrieval functions such as @code{gpgme_op_decrypt_result} provide static access to the results after an operation completes. Those

structures shall be considered read-only and an application must not allocate such a structure on its own. The following interfaces make it possible to detach a result structure from its associated context and give it a lifetime beyond that of the current operation or context.

```
@deftypefun void gpgme_result_ref (@w{void *@var{result}})
@since{1.2.0}
```

The function `gpgme_result_ref` acquires an additional reference for the result `@var{result}`, which may be of any type `gpgme_*_result_t`. As long as the user holds a reference, the result structure is guaranteed to be valid and unmodified.

```
@end deftypefun

@deftypefun void gpgme_result_unref (@w{void *@var{result}})
@since{1.2.0}
```

The function `gpgme_result_unref` releases a reference for the result `@var{result}`. If this was the last reference, the result structure will be destroyed and all resources associated to it will be released.

Note that a context may hold its own references to result structures, typically until the context is destroyed or the next operation is started. In fact, these references are accessed through the `gpgme_op_*_result` functions.

```
@node Context Attributes
@section Context Attributes
@cindex context, attributes
```

```
@menu
```

- * Protocol Selection:: Selecting the protocol used by a context.
- * Crypto Engine:: Configuring the crypto engine.
- * Setting the Sender:: How to tell the engine the sender.
- * ASCII Armor:: Requesting `ASCII` armored output.
- * Text Mode:: Choosing canonical text mode.
- * Offline Mode:: Choosing offline mode.
- * Pinentry Mode:: Choosing the pinentry mode.
- * Included Certificates:: Including a number of certificates.
- * Key Listing Mode:: Selecting key listing mode.
- * Passphrase Callback:: Getting the passphrase from the user.
- * Progress Meter Callback:: Being informed about the progress.
- * Status Message Callback:: Status messages received from `gpg`.
- * Context Flags:: Additional flags for a context.

* Locale:: Setting the locale of a context.
* Additional Logs:: Additional logs of a context.
@end menu

@node Protocol Selection
@subsection Protocol Selection
@cindex context, selecting protocol
@cindex protocol, selecting

```
@deftypefun gpgme_error_t gpgme_set_protocol (@w{gpgme_ctx_t @var{ctx}}, @w{gpgme_protocol_t @var{proto}})
```

The function `gpgme_set_protocol` sets the protocol used within the context `@var{ctx}` to `@var{proto}`. All crypto operations will be performed by the crypto engine configured for that protocol. [@xref{Protocols and Engines}](#).

Setting the protocol with `gpgme_set_protocol` does intentionally not check if the crypto engine for that protocol is available and installed correctly. [@xref{Engine Version Check}](#).

The function returns the error code `GPG_ERR_NO_ERROR` if the protocol could be set successfully, and `GPG_ERR_INV_VALUE` if `@var{protocol}` is not a valid protocol.
@end deftypefun

```
@deftypefun gpgme_protocol_t gpgme_get_protocol (@w{gpgme_ctx_t @var{ctx}})
```

The function `gpgme_get_protocol` retrieves the protocol currently use with the context `@var{ctx}`.
@end deftypefun

@node Crypto Engine
@subsection Crypto Engine
@cindex context, configuring engine
@cindex engine, configuration per context

The following functions can be used to set and retrieve the configuration of the crypto engines of a specific context. The default can also be retrieved without any particular context. [@xref{Engine Information}](#). The default can also be changed globally. [@xref{Engine Configuration}](#).

```
@deftypefun gpgme_engine_info_t gpgme_ctx_get_engine_info (@w{gpgme_ctx_t @var{ctx}})  
@since{1.1.0}
```

The function `gpgme_ctx_get_engine_info` returns a linked list of engine info structures. Each info structure describes the

configuration of one configured backend, as used by the context @var{ctx}.

The result is valid until the next invocation of @code{gpgme_ctx_set_engine_info} for this particular context.

This function can not fail.
@end deftypefun

```
@deftypefun gpgme_error_t gpgme_ctx_set_engine_info (@w{gpgme_ctx_t @var{ctx}}, @w{gpgme_protocol_t @var{proto}}, @w{const char *@var{file_name}}, @w{const char *@var{home_dir}})
@since{1.1.0}
```

The function @code{gpgme_ctx_set_engine_info} changes the configuration of the crypto engine implementing the protocol @var{proto} for the context @var{ctx}.

@var{file_name} is the file name of the executable program implementing this protocol, and @var{home_dir} is the directory name of the configuration directory for this crypto engine. If @var{home_dir} is @code{NULL}, the engine's default will be used.

Currently this function must be used before starting the first crypto operation. It is unspecified if and when the changes will take effect if the function is called after starting the first operation on the context @var{ctx}.

This function returns the error code @code{GPG_ERR_NO_ERROR} if successful, or an error code on failure.
@end deftypefun

@node Setting the Sender

@subsection How to tell the engine the sender.

@cindex context, sender

@cindex sender

@cindex From:

Some engines can make use of the senders address, for example to figure out the best user id in certain trust models. For verification and signing of mails, it is thus suggested to let the engine know the sender ("From:") address. @acronym{GPGME} provides two functions to accomplish that. Note that the esoteric use of multiple "From:" addresses is not supported.

```
@deftypefun gpgme_error_t gpgme_set_sender @
  (@w{gpgme_ctx_t @var{ctx}}, @
  @w{int @var{address}})
```

@since{1.8.0}

The function `gpgme_set_sender` specifies the sender address for use in sign and verify operations. `address` is expected to be the `addr-spec` part of an address but may also be a complete mailbox address, in which case this function extracts the `addr-spec` from it. Using `NULL` for `address` clears the sender address.

The function returns 0 on success or an error code on failure. The most likely failure is that no valid `addr-spec` was found in `address`.

@end deftypefun

```
@deftypefun @w{const char *} gpgme_get_sender @
  (@w{gpgme_ctx_t @var{ctx}})
```

@since{1.8.0}

The function `gpgme_get_sender` returns the current sender address from the context, or `NULL` if none was set. The returned value is valid as long as the `ctx` is valid and `gpgme_set_sender` has not been called again.

@end deftypefun

@c FIXME: Unfortunately, using `@acronym` here breaks `texi2dvi`.

@node ASCII Armor

@subsection `@acronym{ASCII}` Armor

@cindex context, armor mode

@cindex `@acronym{ASCII}` armor

@cindex armor mode

```
@deftypefun void gpgme_set_armor (@w{gpgme_ctx_t @var{ctx}}, @w{int @var{yes}})
```

The function `gpgme_set_armor` specifies if the output should be `@acronym{ASCII}` armored. By default, output is not `@acronym{ASCII}` armored.

`@acronym{ASCII}` armored output is disabled if `yes` is zero, and enabled otherwise.

@end deftypefun

```
@deftypefun int gpgme_get_armor (@w{gpgme_ctx_t @var{ctx}})
```

The function `gpgme_get_armor` returns 1 if the output is `@acronym{ASCII}` armored, and `0` if it is not, or if `ctx` is

not a valid pointer.

@end deftypefun

@node Text Mode

@subsection Text Mode

@cindex context, text mode

@cindex text mode

@cindex canonical text mode

```
@deftypefun void gpgme_set_textmode (@w{gpgme_ctx_t @var{ctx}}, @w{int @var{yes}})
```

The function @code{gpgme_set_textmode} specifies if canonical text mode should be used. By default, text mode is not used.

Text mode is for example used for the RFC2015 signatures; note that the updated RFC 3156 mandates that the mail user agent does some preparations so that text mode is not needed anymore.

This option is only relevant to the OpenPGP crypto engine, and ignored by all other engines.

Canonical text mode is disabled if @var{yes} is zero, and enabled otherwise.

@end deftypefun

```
@deftypefun int gpgme_get_textmode (@w{gpgme_ctx_t @var{ctx}})
```

The function @code{gpgme_get_textmode} returns 1 if canonical text mode is enabled, and @code{0} if it is not, or if @var{ctx} is not a valid pointer.

@end deftypefun

@node Offline Mode

@subsection Offline Mode

@cindex context, offline mode

@cindex offline mode

```
@deftypefun void gpgme_set_offline (@w{gpgme_ctx_t @var{ctx}}, @w{int @var{yes}})
```

@since{1.6.0}

The function @code{gpgme_set_offline} specifies if offline mode should be used. Offline mode is disabled if @var{yes} is zero, and enabled otherwise. By default, offline mode is disabled.

The details of the offline mode depend on the used protocol and its backend engine. It may eventually be extended to be more stricter and for example completely disable the use of Dirmngr for any engine.

For the CMS protocol the offline mode specifies whether Dirmngr shall be used to do additional validation that might require connecting external services (e.g. CRL / OCSP checks). Here the offline mode only affects the keylist mode `GPGME_KEYLIST_MODE_VALIDATE`.

For the OpenPGP protocol offline mode entirely disables the use of the Dirmngr and will thus guarantee that no network connections are done as part of an operation on this context. It has only an effect with GnuPG versions 2.1.23 or later.

For all other protocols the offline mode is currently ignored.

`@end deftypefun`

```
@deftypefun int gpgme_get_offline (@w{gpgme_ctx_t @var{ctx}})
@since{1.6.0}
```

The function `gpgme_get_offline` returns 1 if offline mode is enabled, and `0` if it is not, or if `@var{ctx}` is not a valid pointer.

`@end deftypefun`

`@node Pinentry Mode`

`@subsection Pinentry Mode`

`@cindex context, pinentry mode`

`@cindex pinentry mode`

```
@deftypefun gpgme_error_t gpgme_set_pinentry_mode (@w{gpgme_ctx_t @var{ctx}},
@w{gpgme_pinentry_mode_t @var{mode}})
```

`@since{1.4.0}`

The function `gpgme_set_pinentry_mode` specifies the pinentry mode to be used.

For GnuPG ≥ 2.1 this option is required to be set to

`GPGME_PINENTRY_MODE_LOOPBACK` to enable the passphrase callback mechanism in GPGME through `gpgme_set_passphrase_cb`.

`@end deftypefun`

```
@deftypefun gpgme_pinentry_mode_t gpgme_get_pinentry_mode (@w{gpgme_ctx_t @var{ctx}})
@since{1.4.0}
```

The function `gpgme_get_pinentry_mode` returns the mode set for the context.

`@end deftypefun`

@deftp {Data type} {enum gpgme_pinentry_mode_t}
@tindex gpgme_pinentry_mode_t
@since{1.4.0}

The @code{gpgme_minentry_mode_t} type specifies the set of possible pinentry modes that are supported by @acronym{GPGME} if GnuPG >= 2.1 is used.

The following modes are supported:

@table @code
@item GPGME_PINENTRY_MODE_DEFAULT
@since{1.4.0}

Use the default of the agent, which is ask.

@item GPGME_PINENTRY_MODE_ASK
@since{1.4.0}

Force the use of the Pinentry.

@item GPGME_PINENTRY_MODE_CANCEL
@since{1.4.0}

Emulate use of Pinentry's cancel button.

@item GPGME_PINENTRY_MODE_ERROR
@since{1.4.0}

Return a Pinentry error @code{No Pinentry}.

@item GPGME_PINENTRY_MODE_LOOPBACK
@since{1.4.0}

Redirect Pinentry queries to the caller.

This enables the use of @code{gpgme_set_passphrase_cb} because pinentry queries are redirected to gpgme.

Note: For 2.1.0 - 2.1.12 this mode requires @code{allow-loopback-pinentry} to be enabled in the @file{gpg-agent.conf} or an agent started with that option.

@end table
@end deftp

@node Included Certificates
@subsection Included Certificates
@cindex certificates, included

@deftypedef void gpgme_set_include_certs (@w{gpgme_ctx_t @var{ctx}}, @w{int @var{nr_of_certs}})

The function `gpgme_set_include_certs` specifies how many certificates should be included in an S/MIME signed message. By default, only the sender's certificate is included. The possible values of `nr_of_certs` are:

```
@table @code
@item GPGME_INCLUDE_CERTS_DEFAULT
@since{1.0.3}
```

Fall back to the default of the crypto backend. This is the default for GPGME.

```
@item -2
Include all certificates except the root certificate.
@item -1
Include all certificates.
@item 0
Include no certificates.
@item 1
Include the sender's certificate only.
@item n
Include the first n certificates of the certificates path, starting
from the sender's certificate. The number n must be positive.
@end table
```

Values of `nr_of_certs` smaller than -2 are undefined.

This option is only relevant to the CMS crypto engine, and ignored by all other engines.

```
@end deftypefun
```

```
@deftypefun int gpgme_get_include_certs (@w{gpgme_ctx_t @var{ctx}})
```

The function `gpgme_get_include_certs` returns the number of certificates to include into an S/MIME signed message.

```
@end deftypefun
```

```
@node Key Listing Mode
```

```
@subsection Key Listing Mode
```

```
@cindex key listing mode
```

```
@cindex key listing, mode of
```

```
@deftypefun gpgme_error_t gpgme_set_keylist_mode (@w{gpgme_ctx_t @var{ctx}},
```

```
@w{gpgme_keylist_mode_t @var{mode}})
```

The function `gpgme_set_keylist_mode` changes the default behaviour of the key listing functions. The value in `mode` is a bitwise-or combination of one or multiple of the following bit values:

```
@table @code
```

@item GPGME_KEYLIST_MODE_LOCAL

The `{GPGME_KEYLIST_MODE_LOCAL}` symbol specifies that the local keyring should be searched for keys in the keylisting operation. This is the default.

Using only this option results in a `{--list-keys}`.

@item GPGME_KEYLIST_MODE_EXTERN

The `{GPGME_KEYLIST_MODE_EXTERN}` symbol specifies that an external source should be searched for keys in the keylisting operation. The type of external source is dependent on the crypto engine used and whether it is combined with `{GPGME_KEYLIST_MODE_LOCAL}`. For example, it can be a remote keyserver or LDAP certificate server.

Using only this option results in a `{--search-keys}` for `{GPGME_PROTOCOL_OpenPGP}` and something similar to `{--list-external-keys}` for `{GPGME_PROTOCOL_CMS}`.

@item GPGME_KEYLIST_MODE_LOCATE

This is a shortcut for the combination of `{GPGME_KEYLIST_MODE_LOCAL}` and `{GPGME_KEYLIST_MODE_EXTERN}`, which results in a `{--locate-keys}` for `{GPGME_PROTOCOL_OpenPGP}`.

@item GPGME_KEYLIST_MODE_SIGS

The `{GPGME_KEYLIST_MODE_SIGS}` symbol specifies that the key signatures should be included in the listed keys.

@item GPGME_KEYLIST_MODE_SIG_NOTATIONS

@since{1.1.1}

The `{GPGME_KEYLIST_MODE_SIG_NOTATIONS}` symbol specifies that the signature notations on key signatures should be included in the listed keys. This only works if `{GPGME_KEYLIST_MODE_SIGS}` is also enabled.

@item GPGME_KEYLIST_MODE_WITH_TOFU

@since{1.7.0}

The `{GPGME_KEYLIST_MODE_WITH_TOFU}` symbol specifies that information pertaining to the TOFU trust model should be included in the listed keys.

@item GPGME_KEYLIST_MODE_WITH_SECRET

@since{1.5.1}

The `{GPGME_KEYLIST_MODE_WITH_SECRET}` returns information about the presence of a corresponding secret key in a public key listing. A public key listing with this mode is slower than a standard listing

but can be used instead of a second run to list the secret keys. This is only supported for GnuPG versions ≥ 2.1 .

@item GPGME_KEYLIST_MODE_EPHEMERAL
@since{1.2.0}

The `GPGME_KEYLIST_MODE_EPHEMERAL` symbol specifies that keys flagged as ephemeral are included in the listing.

@item GPGME_KEYLIST_MODE_VALIDATE
@since{0.4.5}

The `GPGME_KEYLIST_MODE_VALIDATE` symbol specifies that the backend should do key or certificate validation and not just get the validity information from an internal cache. This might be an expensive operation and is in general not useful. Currently only implemented for the S/MIME backend and ignored for other backends.

@end table

At least one of `GPGME_KEYLIST_MODE_LOCAL` and `GPGME_KEYLIST_MODE_EXTERN` must be specified. For future binary compatibility, you should get the current mode with `gpgme_get_keylist_mode` and modify it by setting or clearing the appropriate bits, and then using that calculated value in the `gpgme_set_keylisting_mode` operation. This will leave all other bits in the mode value intact (in particular those that are not used in the current version of the library).

The function returns the error code `GPG_ERR_NO_ERROR` if the mode could be set correctly, and `GPG_ERR_INV_VALUE` if `@var{ctx}` is not a valid pointer or `@var{mode}` is not a valid mode.
@end deftypefun

@deftypefun gpgme_keylist_mode_t gpgme_get_keylist_mode (@w{gpgme_ctx_t @var{ctx}})

The function `gpgme_get_keylist_mode` returns the current key listing mode of the context `@var{ctx}`. This value can then be modified and used in a subsequent `gpgme_set_keylist_mode` operation to only affect the desired bits (and leave all others intact).

The function returns 0 if `@var{ctx}` is not a valid pointer, and the current mode otherwise. Note that 0 is not a valid mode value.
@end deftypefun

@node Passphrase Callback

@subsection Passphrase Callback

@cindex callback, passphrase

@cindex passphrase callback

```
@deftp {Data type} {gpgme_error_t (*gpgme_passphrase_cb_t)(void *@var{hook}, const char *@var{uid_hint},
const char *@var{passphrase_info}, @w{int @var{prev_was_bad}}, @w{int @var{fd}})}
```

```
@tindex gpgme_passphrase_cb_t
```

The @code{gpgme_passphrase_cb_t} type is the type of functions usable as passphrase callback function.

The argument @var{uid_hint} might contain a string that gives an indication for which user ID the passphrase is required. If this is not available, or not applicable (in the case of symmetric encryption, for example), @var{uid_hint} will be @code{NULL}.

The argument @var{passphrase_info}, if not @code{NULL}, will give further information about the context in which the passphrase is required. This information is engine and operation specific.

If this is the repeated attempt to get the passphrase, because previous attempts failed, then @var{prev_was_bad} is 1, otherwise it will be 0.

The user must write the passphrase, followed by a newline character, to the file descriptor @var{fd}. The function @code{gpgme_io_writen} should be used for the write operation. Note that if the user returns 0 to indicate success, the user must at least write a newline character before returning from the callback.

If an error occurs, return the corresponding @code{gpgme_error_t} value. You can use the error code @code{GPG_ERR_CANCELED} to abort the operation. Otherwise, return @code{0}.

Note: The passphrase_cb only works with GnuPG 1.x and 2.1.x and not with the 2.0.x series. See @code{gpgme_set_pinentry_mode} for more details on 2.1.x usage.

@end deftp

```
@deftypedef void gpgme_set_passphrase_cb (@w{gpgme_ctx_t @var{ctx}}, @w{gpgme_passphrase_cb_t
@var{passfunc}}, @w{void *@var{hook_value}})
```

The function @code{gpgme_set_passphrase_cb} sets the function that is used when a passphrase needs to be provided by the user to @var{passfunc}. The function @var{passfunc} needs to be implemented by the user, and whenever it is called, it is called with its first argument being @var{hook_value}. By default, no passphrase callback function is set.

Not all crypto engines require this callback to retrieve the

passphrase. It is better if the engine retrieves the passphrase from a trusted agent (a daemon process), rather than having each user to implement their own passphrase query. Some engines do not even support an external passphrase callback at all, in this case the error code `GPG_ERR_NOT_SUPPORTED` is returned.

For GnuPG ≥ 2.1 the pinentry mode has to be set to `GPGME_PINENTRY_MODE_LOOPBACK` to enable the passphrase callback. See `gpgme_set_pinentry_mode`.

The user can disable the use of a passphrase callback function by calling `gpgme_set_passphrase_cb` with `passfunc` being `NULL`.

```
@deftypedefun void gpgme_get_passphrase_cb (@w{gpgme_ctx_t @var{ctx}}, @w{gpgme_passphrase_cb_t  
*@var{passfunc}}, @w{void **@var{hook_value}})
```

The function `gpgme_get_passphrase_cb` returns the function that is used when a passphrase needs to be provided by the user in `passfunc`, and the first argument for this function in `hook_value`. If no passphrase callback is set, or `ctx` is not a valid pointer, `NULL` is returned in both variables.

`passfunc` or `hook_value` can be `NULL`. In this case, the corresponding value will not be returned.

```
@node Progress Meter Callback  
@subsection Progress Meter Callback  
@cindex callback, progress meter  
@cindex progress meter callback
```

```
@deftp {Data type} {void (*gpgme_progress_cb_t)(void *@var{hook}, const char *@var{what}, int @var{type},  
int @var{current}, int @var{total})}  
@tindex gpgme_progress_cb_t
```

The `gpgme_progress_cb_t` type is the type of functions usable as progress callback function.

The arguments are specific to the crypto engine. More information about the progress information returned from the GnuPG engine can be found in the GnuPG source code in the file `doc/DETAILS` in the section `PROGRESS`.

```
@deftypedefun void gpgme_set_progress_cb (@w{gpgme_ctx_t @var{ctx}}, @w{gpgme_progress_cb_t  
@var{progfunc}}, @w{void **@var{hook_value}})
```

The function `gpgme_set_progress_cb` sets the function that is

used when progress information about a cryptographic operation is available. The function `@var{progfunc}` needs to be implemented by the user, and whenever it is called, it is called with its first argument being `@var{hook_value}`. By default, no progress callback function is set.

Setting a callback function allows an interactive program to display progress information about a long operation to the user.

The user can disable the use of a progress callback function by calling `@code{gpgme_set_progress_cb}` with `@var{progfunc}` being `@code{NULL}`.

```
@end deftypefun
```

```
@deftypefun void gpgme_get_progress_cb (@w{gpgme_ctx_t} @var{ctx}, @w{gpgme_progress_cb_t} *@var{progfunc}, @w{void **} @var{hook_value})
```

The function `@code{gpgme_get_progress_cb}` returns the function that is used to inform the user about the progress made in `@var{*progfunc}`, and the first argument for this function in `@var{*hook_value}`. If no progress callback is set, or `@var{ctx}` is not a valid pointer, `@code{NULL}` is returned in both variables.

`@var{progfunc}` or `@var{hook_value}` can be `@code{NULL}`. In this case, the corresponding value will not be returned.

```
@end deftypefun
```

@node Status Message Callback

@subsection Status Message Callback

@cindex callback, status message

@cindex status message callback

```
@deftp {Data type} {gpgme_error_t (*gpgme_status_cb_t)(void *@var{hook}, const char *@var{keyword}, const char *@var{args})}
```

```
@tindex gpgme_status_cb_t
```

The `@code{gpgme_status_cb_t}` type is the type of function usable as a status message callback function.

The argument `@var{keyword}` is the name of the status message while the `@var{args}` argument contains any arguments for the status message.

If an error occurs, return the corresponding `@code{gpgme_error_t}` value. Otherwise, return `@code{0}`.

```
@end deftp
```

```
@deftypefun void gpgme_set_status_cb (@w{gpgme_ctx_t} @var{ctx}, @w{gpgme_status_cb_t} @var{statusfunc}, @w{void *} @var{hook_value})
```

```
@since{1.6.0}
```

The function `gpgme_set_status_cb` sets the function that is used when a status message is received from gpg to `statusfunc`. The function `statusfunc` needs to be implemented by the user, and whenever it is called, it is called with its first argument being `hook_value`. By default, no status message callback function is set.

The user can disable the use of a status message callback function by calling `gpgme_set_status_cb` with `statusfunc` being `NULL`.

```
@deftypefun void gpgme_get_status_cb (@w{gpgme_ctx_t @var{ctx}}, @w{gpgme_status_cb_t
*@var{statusfunc}}, @w{void **@var{hook_value}})
@since{1.6.0}
```

The function `gpgme_get_status_cb` returns the function that is used to process status messages from gpg in `statusfunc`, and the first argument for this function in `hook_value`. If no status message callback is set, or `ctx` is not a valid pointer, `NULL` is returned in both variables.

```
@end deftypefun
```

Context Flags

Context Flags

flags, of a context

```
@deftypefun {gpgme_error_t} gpgme_set_ctx_flag (@
(@w{gpgme_ctx_t @var{ctx}}, @
@w{const char *@var{name}}, @
@w{const char *@var{value}}))
```

```
@since{1.7.0}
```

Some minor properties of the context can be controlled with flags set by this function. The properties are identified by the following values for `name`:

redraw

"redraw"

This flag is normally not changed by the caller because GPGME sets and clears it automatically: The flag is cleared before an operation and set if an operation noticed that the engine has launched a Pinentry. A Curses based application may use this information to redraw the screen; for example:

Example

```
err = gpgme_op_keylist_start (ctx, "foo@@example.org", 0);
while (!err)
```

```

@{
    err = gpgme_op_keylist_next (ctx, &key);
    if (err)
        break;
    show_key (key);
    gpgme_key_release (key);
@}
if ((s = gpgme_get_ctx_flag (ctx, "redraw")) && *s)
    redraw_screen ();
gpgme_release (ctx);
@end example

```

@item "full-status"

Using a `@var{value}` of "1" the status callback set by `gpgme_set_status_cb` returns all status lines with the exception of PROGRESS lines. With the default of "0" the status callback is only called in certain situations.

@item "raw-description"

Setting the `@var{value}` to "1" returns human readable strings in a raw format. For example the non breaking space characters ("~") will not be removed from the `@code{description}` field of the `@code{gpgme_tofu_info_t}` object.

@item "export-session-key"

Using a `@var{value}` of "1" specifies that the context should try to export the symmetric session key when decrypting data. By default, or when using an empty string or "0" for `@var{value}`, session keys are not exported.

@item "override-session-key"

The string given in `@var{value}` is passed to the GnuPG engine to override the session key for decryption. The format of that session key is specific to GnuPG and can be retrieved during a decrypt operation when the context flag "export-session-key" is enabled. Please be aware that using this feature with GnuPG < 2.1.16 will leak the session key on many platforms via `ps(1)`.

@item "auto-key-retrieve"

Setting the `@var{value}` to "1" asks the backend to automatically retrieve a key for signature verification if possible. Note that this option makes a "web bug" like behavior possible. Keyserver or Web Key Directory operators can see which keys you request, so by sending you a message signed by a brand new key (which you naturally will not have on your local keyring), the operator can tell both your IP address and the time when you verified the signature.

@item "request-origin"

The string given in @var{value} is passed to the GnuPG engines to request restrictions based on the origin of the request. Valid values are documented in the GnuPG manual and the gpg man page under the option @option{--request-origin}. Requires at least GnuPG 2.2.6 to have an effect.

@item "no-symkey-cache"

For OpenPGP disable the passphrase cache used for symmetrical en- and decryption. This cache is based on the message specific salt value. Requires at least GnuPG 2.2.7 to have an effect.

@item "ignore-mdc-error"

This flag passes the option @option{--ignore-mdc-error} to gpg. This can be used to force decryption of a message which failed due to a missing integrity check. This flag must be used with great caution and only if it is a known non-corrupted old message and the decryption result of the former try had the decryption result flag

@code{legacy_cipher_nomdc} set. For failsafe reasons this flag is reset after each operation.

@item "auto-key-locate"

The string given in @var{value} is passed to gpg. This can be used to change the behavior of a @code{GPGME_KEYLIST_MODE_LOCATE} keylisting. Valid values are documented in the GnuPG manual and the gpg man page under the option @option{--auto-key-locate}. Requires at least GnuPG 2.1.18.

Note: Keys retrieved through @code{auto-key-locate} are automatically imported in the keyring.

@item trust-model

@since{1.11.2}

Change the trust-model for all GnuPG engine operations. An empty string sets the trust-model back to the users default. If the trust-model is not supported by GnuPG the behavior is undefined and will likely cause all operations to fail. Example: "tofu+pgp".

This options should be used carefully with a strict version requirement. In some versions of GnuPG setting the trust-model changes the default trust-model for future operations. A change in the trust-model also can have unintended side effects, like rebuilding the trust-db.

@end table

This function returns @code{0} on success.

@end deftypefun

```
@deftypefun {const char *} gpgme_get_ctx_flag @
  (@w{gpgme_ctx_t @var{ctx}}, @
  @w{const char *@var{name}})
```

@since{1.8.0}

The value of flags settable by @code{gpgme_set_ctx_flag} can be retrieved by this function. If @var{name} is unknown the function returns @code{NULL}. For boolean flags an empty string is returned for False and the string "1" is returned for True; either atoi(3) or a test for an empty string can be used to get the boolean value.

@end deftypefun

@node Locale

@subsection Locale

@cindex locale, default

@cindex locale, of a context

A locale setting can be associated with a context. This locale is passed to the crypto engine, and used for applications like the PIN entry, which is displayed to the user when entering a passphrase is required.

The default locale is used to initialize the locale setting of all contexts created afterwards.

```
@deftypefun gpgme_error_t gpgme_set_locale (@w{gpgme_ctx_t @var{ctx}}, @w{int @var{category}},
@w{const char *@var{value}})
@since{0.4.3}
```

The function @code{gpgme_set_locale} sets the locale of the context @var{ctx}, or the default locale if @var{ctx} is a null pointer.

The locale settings that should be changed are specified by @var{category}. Supported categories are @code{LC_CTYPE}, @code{LC_MESSAGES}, and @code{LC_ALL}, which is a wildcard you can use if you want to change all the categories at once.

The value to be used for the locale setting is @var{value}, which will be copied to @acronym{GPGME}'s internal data structures. @var{value} can be a null pointer, which disables setting the locale, and will make PIN entry and other applications use their default setting, which is usually not what you want.

Note that the settings are only used if the application runs on a text terminal, and that the settings should fit the configuration of the output terminal. Normally, it is sufficient to initialize the default value at startup.

The function returns an error if not enough memory is available.
@end dectypedefun

@node Additional Logs
@subsection Additional Logs
@cindex auditlog, of the engine
@cindex auditlog

Additional logs can be associated with a context. These logs are engine specific and can be obtained with @code{gpgme_op_getauditlog}.

@deftypedefun gpgme_error_t gpgme_op_getauditlog @
 (@w{gpgme_ctx_t @var{ctx}}, @w{gpgme_data_t @var{output}}, @
 @w{unsigned int @var{flags}})
@since{1.1.1}

The function @code{gpgme_op_getauditlog} is used to obtain additional logs as specified by @var{flags} into the @var{output} data. If

The function returns the error code @code{GPG_ERR_NO_ERROR} if a log could be queried from the engine, and @code{GPG_ERR_NOT_IMPLEMENTED} if the log specified in @var{flags} is not available for this engine. If no log is available @code{GPG_ERR_NO_DATA} is returned.

The value in @var{flags} is a bitwise-or combination of one or multiple of the following bit values:

@table @code
@item GPGME_AUDITLOG_DIAG
@since{1.11.2}

Obtain diagnostic output which would be written to @code{stderr} in interactive use of the engine. This can be used to provide additional diagnostic information in case of errors in other operations.

Note: If log-file has been set in the configuration the log will be empty and @code{GPG_ERR_NO_DATA} will be returned.

Implemented for: @code{GPGME_PROTOCOL_OpenPGP}

@item GPGME_AUDITLOG_DEFAULT

@since{1.11.2}

This flag has the value 0 for compatibility reasons. Obtains additional information from the engine by issuing the @code{GETAUDITLOG} command. For @code{GPGME_PROTOCOL_CMS} this provides additional information about the X509 certificate chain.

Implemented for: @code{GPGME_PROTOCOL_CMS}

@item GPGME_AUDITLOG_HTML

@since{1.1.1}

Same as @code{GPGME_AUDITLOG_DEFAULT} but in HTML.

Implemented for: @code{GPGME_PROTOCOL_CMS}

@end table

@end deftypefun

```
@deftypefun gpgme_error_t gpgme_op_getauditlog_start @
    (@w{gpgme_ctx_t @var{ctx}}, @w{gpgme_data_t @var{output}}, @
    @w{unsigned int @var{flags}})
@since{1.1.1}
```

This is the asynchronous variant of @code{gpgme_op_getauditlog}.

@end deftypefun

@node Key Management

@section Key Management

@cindex key management

Some of the cryptographic operations require that recipients or signers are specified. This is always done by specifying the respective keys that should be used for the operation. The following section describes how such keys can be selected and manipulated.

@menu

- * Key objects:: Description of the key structures.
- * Listing Keys:: Browsing the list of available keys.
- * Information About Keys:: Requesting detailed information about keys.
- * Manipulating Keys:: Operations on keys.
- * Generating Keys:: Creating new key pairs.
- * Signing Keys:: Adding key signatures to public keys.
- * Exporting Keys:: Retrieving key data from the key ring.
- * Importing Keys:: Adding keys to the key ring.
- * Deleting Keys:: Removing keys from the key ring.
- * Changing Passphrases:: Change the passphrase of a key.
- * Changing TOFU Data:: Changing data pertaining to TOFU.

* Advanced Key Editing:: Advanced key edit operation.

@end menu

@node Key objects

@subsection Key objects

The keys are represented in GPGME by structures which may only be read by the application but never be allocated or changed. They are valid as long as the key object itself is valid.

@deftp {Data type} gpgme_key_t

The @code{gpgme_key_t} type is a pointer to a key object. It has the following members:

@table @code

@item gpgme_keylist_mode_t keylist_mode

@since{0.9.0}

The keylist mode that was active when the key was retrieved.

@item unsigned int revoked : 1

This is true if the key is revoked.

@item unsigned int expired : 1

This is true if the key is expired.

@item unsigned int disabled : 1

This is true if the key is disabled.

@item unsigned int invalid : 1

This is true if the key is invalid. This might have several reasons, for a example for the S/MIME backend, it will be set during key listings if the key could not be validated due to missing certificates or unmatched policies.

@item unsigned int can_encrypt : 1

This is true if the key (ie one of its subkeys) can be used for encryption.

@item unsigned int can_sign : 1

This is true if the key (ie one of its subkeys) can be used to create data signatures.

@item unsigned int can_certify : 1

This is true if the key (ie one of its subkeys) can be used to create key certificates.

@item unsigned int can_authenticate : 1
@since{0.4.5}

This is true if the key (ie one of its subkeys) can be used for authentication.

@item unsigned int is_qualified : 1
@since{1.1.0}

This is true if the key can be used for qualified signatures according to local government regulations.

@item unsigned int secret : 1
This is true if the key is a secret key. Note, that this will always be true even if the corresponding subkey flag may be false (offline/stub keys). This is only set if a listing of secret keys has been requested or if @code{GPGME_KEYLIST_MODE_WITH_SECRET} is active.

@item unsigned int origin : 5
@since{1.8.0}

Reserved for the origin of this key.

@item gpgme_protocol_t protocol
This is the protocol supported by this key.

@item char *issuer_serial
If @code{protocol} is @code{GPGME_PROTOCOL_CMS}, then this is the issuer serial.

@item char *issuer_name
If @code{protocol} is @code{GPGME_PROTOCOL_CMS}, then this is the issuer name.

@item char *chain_id
If @code{protocol} is @code{GPGME_PROTOCOL_CMS}, then this is the chain ID, which can be used to built the certificate chain.

@item gpgme_validity_t owner_trust
If @code{protocol} is @code{GPGME_PROTOCOL_OpenPGP}, then this is the owner trust.

@item gpgme_subkey_t subkeys
This is a linked list with the subkeys of the key. The first subkey in the list is the primary key and usually available.

@item gpgme_user_id_t uids
This is a linked list with the user IDs of the key. The first user ID

in the list is the main (or primary) user ID.

```
@item char *fpr
@since{1.7.0}
```

This field gives the fingerprint of the primary key. Note that this is a copy of the fingerprint of the first subkey. For an incomplete key (for example from a verification result) a subkey may be missing but this field may be set nevertheless.

```
@item unsigned long last_update
@since{1.8.0}
```

Reserved for the time of the last update of this key.

```
@end table
@end deftp
```

```
@deftp {Data type} gpgme_subkey_t
@since{1.5.0}
```

The `gpgme_subkey_t` type is a pointer to a subkey structure. Subkeys are one component of a `gpgme_key_t` object. In fact, subkeys are those parts that contains the real information about the individual cryptographic keys that belong to the same key object. One `gpgme_key_t` can contain several subkeys. The first subkey in the linked list is also called the primary key.

The subkey structure has the following members:

```
@table @code
@item gpgme_subkey_t next
This is a pointer to the next subkey structure in the linked list, or
@code{NULL} if this is the last element.
```

```
@item unsigned int revoked : 1
This is true if the subkey is revoked.
```

```
@item unsigned int expired : 1
This is true if the subkey is expired.
```

```
@item unsigned int disabled : 1
This is true if the subkey is disabled.
```

```
@item unsigned int invalid : 1
This is true if the subkey is invalid.
```

@item unsigned int can_encrypt : 1

This is true if the subkey can be used for encryption.

@item unsigned int can_sign : 1

This is true if the subkey can be used to create data signatures.

@item unsigned int can_certify : 1

This is true if the subkey can be used to create key certificates.

@item unsigned int can_authenticate : 1

@since{0.4.5}

This is true if the subkey can be used for authentication.

@item unsigned int is_qualified : 1

@since{1.1.0}

This is true if the subkey can be used for qualified signatures according to local government regulations.

@item unsigned int is_de_vs : 1

@since{1.8.0}

This is true if the subkey complies with the rules for classified information in Germany at the restricted level (VS-NfD). This are currently RSA keys of at least 2048 bits or ECDH/ECDSA keys using a Brainpool curve.

@item unsigned int secret : 1

This is true if the subkey is a secret key. Note that it will be false if the key is actually a stub key; i.e. a secret key operation is currently not possible (offline-key). This is only set if a listing of secret keys has been requested or if

@code{GPGME_KEYLIST_MODE_WITH_SECRET} is active.

@item gpgme_pubkey_algo_t pubkey_algo

This is the public key algorithm supported by this subkey.

@item unsigned int length

This is the length of the subkey (in bits).

@item char *keyid

This is the key ID of the subkey in hexadecimal digits.

@item char *fpr

This is the fingerprint of the subkey in hexadecimal digits, if available.

@item char *keygrip

@since{1.7.0}

The keygrip of the subkey in hex digit form or @code{NULL} if not available.

@item long int timestamp

This is the creation timestamp of the subkey. This is -1 if the timestamp is invalid, and 0 if it is not available.

@item long int expires

This is the expiration timestamp of the subkey, or 0 if the subkey does not expire.

@item unsigned int is_cardkey : 1

@since{1.2.0}

True if the secret key is stored on a smart card.

@item char *card_number

@since{1.2.0}

The serial number of a smart card holding this key or @code{NULL}.

@item char *curve

For ECC algorithms the name of the curve.

@end table

@end deftp

@deftp {Data type} gpgme_user_id_t

A user ID is a component of a @code{gpgme_key_t} object. One key can have many user IDs. The first one in the list is the main (or primary) user ID.

The user ID structure has the following members.

@table @code

@item gpgme_user_id_t next

This is a pointer to the next user ID structure in the linked list, or @code{NULL} if this is the last element.

@item unsigned int revoked : 1

This is true if the user ID is revoked.

@item unsigned int invalid : 1

This is true if the user ID is invalid.

@item gpgme_validity_t validity

This specifies the validity of the user ID.

@item char *uid

This is the user ID string.

@item char *name

This is the name component of @code{uid}, if available.

@item char *comment

This is the comment component of @code{uid}, if available.

@item char *email

This is the email component of @code{uid}, if available.

@item char *address;

The mail address (addr-spec from RFC-5322) of the user ID string.

This is general the same as the @code{email} part of this structure but might be slightly different. If no mail address is available

@code{NULL} is stored.

@item gpgme_tofu_info_t tofu

@since{1.7.0}

If not @code{NULL} information from the TOFU database pertaining to this user id.

@item gpgme_key_sig_t signatures

This is a linked list with the signatures on this user ID.

@item unsigned int origin : 5

@since{1.8.0}

Reserved for the origin of this user ID.

@item unsigned long last_update

@since{1.8.0}

Reserved for the time of the last update of this user ID.

@end table

@end deftp

@deftp {Data type} gpgme_tofu_info_t

@since{1.7.0}

The `gpgme_tofu_info_t` type is a pointer to a tofu info structure. Tofu info structures are one component of a `gpgme_user_id_t` object, and provide information from the TOFU database pertaining to the user ID.

The tofu info structure has the following members:

`@table @code`

`@item gpgme_key_sig_t next`

This is a pointer to the next tofu info structure in the linked list, or `NULL` if this is the last element.

`@item unsigned int validity : 3`

This is the TOFU validity. It can have the following values:

`@table @code`

`@item 0`

The value `0` indicates a conflict.

`@item 1`

The value `1` indicates a key without history.

`@item 2`

The value `2` indicates a key with too little history.

`@item 3`

The value `3` indicates a key with enough history for basic trust.

`@item 4`

The value `4` indicates a key with a lot of history.

`@end table`

`@item unsigned int policy : 4`

This is the TOFU policy, see `gpgme_tofu_policy_t`.

`@item unsigned short signcount`

This is the number of signatures seen for this binding (or `USHRT_MAX` if there are more than that).

`@item unsigned short encrcount`

This is the number of encryptions done with this binding (or `USHRT_MAX` if there are more than that).

`@item unsigned long signfirst`

Number of seconds since Epoch when the first signature was seen with this binding.

@item unsigned long signlast

Number of seconds since Epoch when the last signature was seen with this binding.

@item unsigned long encrfirst

Number of seconds since Epoch when the first encryption was done with this binding.

@item unsigned long enclast

Number of seconds since Epoch when the last encryption was done with this binding.

@item char *description

A human-readable string summarizing the TOFU data (or NULL).

@end table

@end deftp

@deftp {Data type} gpgme_key_sig_t

The @code{gpgme_key_sig_t} type is a pointer to a key signature structure.

Key signatures are one component of a @code{gpgme_key_t} object, and validate user IDs on the key in the OpenPGP protocol.

The signatures on a key are only available if the key was retrieved via a listing operation with the @code{GPGME_KEYLIST_MODE_SIGS} mode enabled, because it can be expensive to retrieve all signatures of a key.

The signature notations on a key signature are only available if the key was retrieved via a listing operation with the @code{GPGME_KEYLIST_MODE_SIG_NOTATIONS} mode enabled, because it can be expensive to retrieve all signature notations.

The key signature structure has the following members:

@table @code

@item gpgme_key_sig_t next

This is a pointer to the next key signature structure in the linked list, or @code{NULL} if this is the last element.

@item unsigned int revoked : 1

This is true if the key signature is a revocation signature.

@item unsigned int expired : 1

This is true if the key signature is expired.

@item unsigned int invalid : 1

This is true if the key signature is invalid.

@item unsigned int exportable : 1

This is true if the key signature is exportable.

@item gpgme_pubkey_algo_t pubkey_algo

This is the public key algorithm used to create the signature.

@item char *keyid

This is the key ID of the key (in hexadecimal digits) used to create the signature.

@item long int timestamp

This is the creation timestamp of the key signature. This is -1 if the timestamp is invalid, and 0 if it is not available.

@item long int expires

This is the expiration timestamp of the key signature, or 0 if the key signature does not expire.

@item gpgme_error_t status

This is the status of the signature and has the same meaning as the member of the same name in a @code{gpgme_signature_t} object.

@item unsigned int sig_class

This specifies the signature class of the key signature. The meaning is specific to the crypto engine.

@item char *uid

This is the main user ID of the key used to create the signature.

@item char *name

This is the name component of @code{uid}, if available.

@item char *comment

This is the comment component of @code{uid}, if available.

@item char *email

This is the email component of @code{uid}, if available.

@item gpgme_sig_notation_t notations

This is a linked list with the notation data and policy URLs.

@end table

@end deftp

@node Listing Keys
@subsection Listing Keys
@cindex listing keys
@cindex key listing
@cindex key listing, start
@cindex key ring, list
@cindex key ring, search

```
@deftypefun gpgme_error_t gpgme_op_keylist_start (@w{gpgme_ctx_t @var{ctx}}, @w{const char
*@var{pattern}}, @w{int @var{secret_only}})
```

The function `gpgme_op_keylist_start` initiates a key listing operation inside the context `@var{ctx}`. It sets everything up so that subsequent invocations of `gpgme_op_keylist_next` return the keys in the list.

If `@var{pattern}` is `NULL`, all available keys are returned. Otherwise, `@var{pattern}` contains an engine specific expression that is used to limit the list to all keys matching the pattern. Note that the total length of the pattern is restricted to an engine-specific maximum (a couple of hundred characters are usually accepted). The pattern should be used to restrict the search to a certain common name or user, not to list many specific keys at once by listing their fingerprints or key IDs.

If `@var{secret_only}` is not `0`, the list is restricted to secret keys only.

The context will be busy until either all keys are received (and `gpgme_op_keylist_next` returns `GPG_ERR_EOF`), or `gpgme_op_keylist_end` is called to finish the operation.

The function returns the error code `GPG_ERR_INV_VALUE` if `@var{ctx}` is not a valid pointer, and passes through any errors that are reported by the crypto engine support routines.

@end deftypefun

```
@deftypefun gpgme_error_t gpgme_op_keylist_ext_start (@w{gpgme_ctx_t @var{ctx}}, @w{const char
*@var{pattern}}[], @w{int @var{secret_only}}, @w{int @var{reserved}})
```

The function `gpgme_op_keylist_ext_start` initiates an extended key listing operation inside the context `@var{ctx}`. It sets everything up so that subsequent invocations of `gpgme_op_keylist_next` return the keys in the list.

If `@var{pattern}` or `@var{*pattern}` is `NULL`, all available keys are returned. Otherwise, `@var{pattern}` is a `NULL` terminated

array of strings that are used to limit the list to all keys matching at least one of the patterns verbatim. Note that the total length of all patterns is restricted to an engine-specific maximum (the exact limit also depends on the number of patterns and amount of quoting required, but a couple of hundred characters are usually accepted). Patterns should be used to restrict the search to a certain common name or user, not to list many specific keys at once by listing their fingerprints or key IDs.

If `@var{secret_only}` is not `@code{0}`, the list is restricted to secret keys only.

The value of `@var{reserved}` must be `@code{0}`.

The context will be busy until either all keys are received (and `@code{gpgme_op_keylist_next}` returns `@code{GPG_ERR_EOF}`), or `@code{gpgme_op_keylist_end}` is called to finish the operation.

The function returns the error code `@code{GPG_ERR_INV_VALUE}` if `@var{ctx}` is not a valid pointer, and passes through any errors that are reported by the crypto engine support routines.

`@end deftypefun`

```
@deftypefun gpgme_error_t gpgme_op_keylist_from_data_start @
    (@w{gpgme_ctx_t @var{ctx}}, @
     @w{gpgme_data_t @var{data}}, @
     @w{int @var{reserved}})
```

`@since{1.8.0}`

The function `@code{gpgme_op_keylist_from_data_start}` initiates a key listing operation inside the context `@var{ctx}`. In contrast to the other key listing operation the keys are read from the supplied `@var{data}` and not from the local key database. The keys are also not imported into the local key database. The function sets everything up so that subsequent invocations of `@code{gpgme_op_keylist_next}` return the keys from `@var{data}`.

The value of `@var{reserved}` must be `@code{0}`.

This function requires at least GnuPG version 2.1.14 and currently works only with OpenPGP keys.

The context will be busy until either all keys are received (and `@code{gpgme_op_keylist_next}` returns `@code{GPG_ERR_EOF}`), or `@code{gpgme_op_keylist_end}` is called to finish the operation.

While the context is busy `@var{data}` may not be released.

The function returns the error code `GPG_ERR_INV_VALUE` if `@var{ctx}` is not a valid pointer, and passes through any errors that are reported by the crypto engine support routines.

```
@end deftypefun
```

```
@deftypefun gpgme_error_t gpgme_op_keylist_next (@w{gpgme_ctx_t @var{ctx}}, @w{gpgme_key_t
*@var{r_key}})
```

The function `gpgme_op_keylist_next` returns the next key in the list created by a previous `gpgme_op_keylist_start` operation in the context `@var{ctx}`. The key will have one reference for the user.

[@xref{Manipulating Keys}](#).

This is the only way to get at `gpgme_key_t` objects in `GPGME`.

If the last key in the list has already been returned, `gpgme_op_keylist_next` returns `GPG_ERR_EOF`.

The function returns the error code `GPG_ERR_INV_VALUE` if `@var{ctx}` or `@var{r_key}` is not a valid pointer, and `GPG_ERR_ENOMEM` if there is not enough memory for the operation.

```
@end deftypefun
```

```
@deftypefun gpgme_error_t gpgme_op_keylist_end (@w{gpgme_ctx_t @var{ctx}})
```

The function `gpgme_op_keylist_end` ends a pending key list operation in the context `@var{ctx}`.

After the operation completed successfully, the result of the key listing operation can be retrieved with `gpgme_op_keylist_result`.

The function returns the error code `GPG_ERR_INV_VALUE` if `@var{ctx}` is not a valid pointer, and `GPG_ERR_ENOMEM` if at some time during the operation there was not enough memory available.

```
@end deftypefun
```

The following example illustrates how all keys containing a certain string (`g10code`) can be listed with their key ID and the name and email address of the main user ID:

```
@example
gpgme_ctx_t ctx;
gpgme_key_t key;
gpgme_error_t err = gpgme_new (&ctx);

if (!err)
```

```

@{
err = gpgme_op_keylist_start (ctx, "g10code", 0);
while (!err)
  @{
err = gpgme_op_keylist_next (ctx, &key);
if (err)
  break;
printf ("%s:", key->subkeys->keyid);
if (key->uids && key->uids->name)
  printf (" %s", key->uids->name);
if (key->uids && key->uids->email)
  printf (" <%s>", key->uids->email);
putchar ('\n');
gpgme_key_release (key);
  @}
gpgme_release (ctx);
@}
if (gpg_err_code (err) != GPG_ERR_EOF)
  @{
  fprintf (stderr, "can not list keys: %s\n", gpgme_strerror (err));
  exit (1);
  @}
@end example

```

@deftp {Data type} {gpgme_keylist_result_t}

This is a pointer to a structure used to store the result of a

@code{gpgme_op_keylist_*} operation. After successfully ending a key listing operation, you can retrieve the pointer to the result with

@code{gpgme_op_keylist_result}. The structure contains the following member:

@table @code

@item unsigned int truncated : 1

This is true if the crypto backend had to truncate the result, and less than the desired keys could be listed.

@end table

@end deftp

@deftypefun gpgme_keylist_result_t gpgme_op_keylist_result (@w{gpgme_ctx_t @var{ctx}})

The function @code{gpgme_op_keylist_result} returns a

@code{gpgme_keylist_result_t} pointer to a structure holding the result of a @code{gpgme_op_keylist_*} operation. The pointer is only valid if the last operation on the context was a key listing operation, and if this operation finished successfully. The returned pointer is only valid until the next operation is started on the context.

@end deftypefun

In a simple program, for which a blocking operation is acceptable, the following function can be used to retrieve a single key.

```
@deftypefun gpgme_error_t gpgme_get_key (@w{gpgme_ctx_t @var{ctx}}, @w{const char *@var{fpr}},  
@w{gpgme_key_t *@var{r_key}}, @w{int @var{secret}})
```

The function `gpgme_get_key` gets the key with the fingerprint (or key ID) `@var{fpr}` from the crypto backend and return it in `@var{r_key}`. If `@var{secret}` is true, get the secret key. The currently active keylist mode is used to retrieve the key. The key will have one reference for the user.

If the key is not found in the keyring, `gpgme_get_key` returns the error code `GPG_ERR_EOF` and `*@var{r_key}` will be set to `NULL`.

The function returns the error code `GPG_ERR_INV_VALUE` if `@var{ctx}` or `@var{r_key}` is not a valid pointer or `@var{fpr}` is not a fingerprint or key ID, `GPG_ERR_AMBIGUOUS_NAME` if the key ID was not a unique specifier for a key, and `GPG_ERR_ENOMEM` if at some time during the operation there was not enough memory available.

```
@end deftypefun
```

Information About Keys

Information About Keys

key, information about

key, attributes

attributes, of a key

Please see the beginning of this section for more information about `gpgme_key_t` objects.

```
@deftp {Data type} gpgme_validity_t
```

The `gpgme_validity_t` type is used to specify the validity of a user ID in a key. The following validities are defined:

```
@table @code
```

```
@item GPGME_VALIDITY_UNKNOWN
```

The user ID is of unknown validity. The string representation of this validity is ```?```.

```
@item GPGME_VALIDITY_UNDEFINED
```

The validity of the user ID is undefined. The string representation of this validity is ```q```.

```
@item GPGME_VALIDITY_NEVER
```

The user ID is never valid. The string representation of this validity is ```n```.

@item GPGME_VALIDITY_MARGINAL

The user ID is marginally valid. The string representation of this validity is ``m".

@item GPGME_VALIDITY_FULL

The user ID is fully valid. The string representation of this validity is ``f".

@item GPGME_VALIDITY_ULTIMATE

The user ID is ultimately valid. The string representation of this validity is ``u".

@end table

@end deftp

@node Manipulating Keys

@subsection Manipulating Keys

@cindex key, manipulation

@deftypefun void gpgme_key_ref (@w{gpgme_key_t @var{key}})

The function @code{gpgme_key_ref} acquires an additional reference for the key @var{key}.

@end deftypefun

@deftypefun void gpgme_key_unref (@w{gpgme_key_t @var{key}})

The function @code{gpgme_key_unref} releases a reference for the key @var{key}. If this was the last reference, the key will be destroyed and all resources associated to it will be released.

@end deftypefun

@node Generating Keys

@subsection Generating Keys

@cindex key, creation

@cindex key ring, add

GPGME provides a set of functions to create public key pairs. Most of these functions require the use of GnuPG 2.1 and later; for older GnuPG versions the @code{gpgme_op_genkey} function can be used. Existing code which wants to update to the new functions or new code which shall supports older GnuPG versions may try the new functions first and provide a fallback to the old function if the error code @code{GPG_ERR_NOT_SUPPORTED} is received.

@c

```

@c gpgme_op_createkey
@c
@deftypedefun gpgme_error_t gpgme_op_createkey @
  (@w{gpgme_ctx_t @var{ctx}}, @
  @w{const char *@var{userid}}, @
  @w{const char *@var{algo}}, @
  @w{unsigned long @var{reserved}}, @
  @w{unsigned long @var{expires}}, @
  @w{gpgme_key_t @var{extrakey}}, @
  @w{unsigned int @var{flags}});

@since{1.7.0}

```

The function `gpgme_op_createkey` generates a new key for the protocol active in the context `@var{ctx}`. As of now this function does only work for OpenPGP and requires at least version 2.1.13 of GnuPG.

`@var{userid}` is commonly the mail address associated with the key. GPGME does not require a specific syntax but if more than a mail address is given, RFC-822 style format is suggested. The value is expected to be in UTF-8 encoding (i.e. no IDN encoding for mail addresses). This is a required parameter.

`@var{algo}` specifies the algorithm for the new key (actually a keypair of public and private key). For a list of supported algorithms, see the GnuPG manual. If `@var{algo}` is `NULL` or the string "default", the key is generated using the default algorithm of the engine. If the string "future-default" is used the engine may use an algorithm which is planned to be the default in a future release of the engine; however existing implementation of the protocol may not be able to already handle such future algorithms. For the OpenPGP protocol, the specification of a default algorithm, without requesting a non-default usage via `@var{flags}`, triggers the creation of a primary key plus a secondary key (subkey).

`@var{reserved}` must be set to zero.

`@var{expires}` specifies the expiration time in seconds. If you supply 0, a reasonable expiration time is chosen. Use the flag `GPGME_CREATE_NOEXPIRE` to create keys that do not expire. Note that this parameter takes an unsigned long value and not a `time_t` to avoid problems on systems which use a signed 32 bit `time_t`. Note further that the OpenPGP protocol uses 32 bit values for timestamps and thus can only encode dates up to the year 2106.

`@var{extrakey}` is currently not used and must be set to `NULL`.

A future version of GPGME may use this parameter to create X.509 keys.

@var{flags} can be set to the bit-wise OR of the following flags:

```
@table @code
@item GPGME_CREATE_SIGN
@itemx GPGME_CREATE_ENCR
@itemx GPGME_CREATE_CERT
@itemx GPGME_CREATE_AUTH
@since{1.7.0}
```

Do not create the key with the default capabilities (key usage) of the requested algorithm but use those explicitly given by these flags:

``signing'', ``encryption'', ``certification'', or ``authentication''.

The allowed combinations depend on the algorithm.

If any of these flags are set and a default algorithm has been selected only one key is created in the case of the OpenPGP protocol.

```
@item GPGME_CREATE_NOPASSWD
@since{1.7.0}
```

Request generation of the key without password protection.

```
@item GPGME_CREATE_SELFSIGNED
@since{1.7.0}
```

For an X.509 key do not create a CSR but a self-signed certificate. This has not yet been implemented.

```
@item GPGME_CREATE_NOSTORE
@since{1.7.0}
```

Do not store the created key in the local key database. This has not yet been implemented.

```
@item GPGME_CREATE_WANTPUB
@itemx GPGME_CREATE_WANTSEC
@since{1.7.0}
```

Return the public or secret key as part of the result structure. This has not yet been implemented.

```
@item GPGME_CREATE_FORCE
@since{1.7.0}
```

The engine does not allow the creation of a key with a user ID

already existing in the local key database. This flag can be used to override this check.

```
@item GPGME_CREATE_NOEXPIRE
@since{1.8.0}
```

Request generation of keys that do not expire.

```
@end table
```

After the operation completed successfully, information about the created key can be retrieved with `gpgme_op_genkey_result`.

The function returns zero on success, `GPG_ERR_NOT_SUPPORTED` if the engine does not support the command, or a bunch of other error codes.

```
@end dectyfefun
```

```
@dectyfefun gpgme_error_t gpgme_op_createkey_start @
  (@w{gpgme_ctx_t @var{ctx}}, @
  @w{const char *@var{userid}}, @
  @w{const char *@var{algo}}, @
  @w{unsigned long @var{reserved}}, @
  @w{unsigned long @var{expires}}, @
  @w{gpgme_key_t @var{extrakey}}, @
  @w{unsigned int @var{flags}});
```

```
@since{1.7.0}
```

The function `gpgme_op_createkey_start` initiates a `gpgme_op_createkey` operation; see there for details. It must be completed by calling `gpgme_wait` on the context. [Waiting For Completion](#).

```
@end dectyfefun
```

```
@c
```

```
@c gpgme_op_createsubkey
```

```
@c
```

```
@dectyfefun gpgme_error_t gpgme_op_createsubkey @
  (@w{gpgme_ctx_t @var{ctx}}, @
  @w{gpgme_key_t @var{key}}, @
  @w{const char *@var{algo}}, @
  @w{unsigned long @var{reserved}}, @
  @w{unsigned long @var{expires}}, @
  @w{unsigned int @var{flags}});
```

@since{1.7.0}

The function `gpgme_op_createsubkey` creates and adds a new subkey to the primary OpenPGP key given by `KEY`. The only allowed protocol in `ctx` is `GPGME_PROTOCOL_OPENPGP`. Subkeys (aka secondary keys) are a concept in the OpenPGP protocol to bind several keys to a primary key. As of now this function requires at least version 2.1.13 of GnuPG.

`key` specifies the key to operate on.

`algo` specifies the algorithm for the new subkey. For a list of supported algorithms, see the GnuPG manual. If `algo` is `NULL` or the string "default", the subkey is generated using the default algorithm for an encryption subkey of the engine. If the string "future-default" is used the engine may use an encryption algorithm which is planned to be the default in a future release of the engine; however existing implementation of the protocol may not be able to already handle such future algorithms.

`reserved` must be set to zero.

`expires` specifies the expiration time in seconds. If you supply 0, a reasonable expiration time is chosen. Use the flag `GPGME_CREATE_NOEXPIRE` to create keys that do not expire. Note that this parameter takes an unsigned long value and not a `time_t` to avoid problems on systems which use a signed 32 bit `time_t`. Note further that the OpenPGP protocol uses 32 bit values for timestamps and thus can only encode dates up to the year 2106.

`flags` takes the same values as described above for `gpgme_op_createkey`.

After the operation completed successfully, information about the created key can be retrieved with `gpgme_op_genkey_result`.

The function returns zero on success, `GPG_ERR_NOT_SUPPORTED` if the engine does not support the command, or a bunch of other error codes.

@end deftypefun

```
@deftypefun gpgme_error_t gpgme_op_createsubkey_start @
  (@w{gpgme_ctx_t @var{ctx}}, @
  @w{gpgme_key_t @var{key}}, @
```

```
@w{const char *@var{algo}}, @  
@w{unsigned long @var{reserved}}, @  
@w{unsigned long @var{expires}}, @  
@w{unsigned int @var{flags}});
```

@since{1.7.0}

The function @code{gpgme_op_createsubkey_start} initiates a @code{gpgme_op_createsubkey} operation; see there for details. It must be completed by calling @code{gpgme_wait} on the context. @xref{Waiting For Completion}.

@end deftypefun

@c

@c gpgme_op_adduid

@c

```
@deftypefun gpgme_error_t gpgme_op_adduid @  
  (@w{gpgme_ctx_t @var{ctx}}, @  
   @w{gpgme_key_t @var{key}}, @  
   @w{const char *@var{userid}}, @  
   @w{unsigned int @var{flags}});
```

@since{1.7.0}

The function @code{gpgme_op_adduid} adds a new user ID to the OpenPGP key given by @var{KEY}. Adding additional user IDs after key creation is a feature of the OpenPGP protocol and thus the protocol for the context @var{ctx} must be set to OpenPGP. As of now this function requires at least version 2.1.13 of GnuPG.

@var{key} specifies the key to operate on.

@var{userid} is the user ID to add to the key. A user ID is commonly the mail address to be associated with the key. GPGME does not require a specific syntax but if more than a mail address is given, RFC-822 style format is suggested. The value is expected to be in UTF-8 encoding (i.e. no IDN encoding for mail addresses). This is a required parameter.

@var{flags} are currently not used and must be set to zero.

The function returns zero on success, @code{GPG_ERR_NOT_SUPPORTED} if the engine does not support the command, or a bunch of other error codes.

@end deftypefun

```
@deftypefun gpgme_error_t gpgme_op_adduid_start @
  (@w{gpgme_ctx_t @var{ctx}}, @
   @w{gpgme_key_t @var{key}}, @
   @w{const char *@var{userid}}, @
   @w{unsigned int @var{flags}});
```

```
@since{1.7.0}
```

The function `gpgme_op_adduid_start` initiates a `gpgme_op_adduid` operation; see there for details. It must be completed by calling `gpgme_wait` on the context. [Waiting For Completion](#).

```
@end deftypefun
```

```
@c
```

```
@c gpgme_op_revuid
```

```
@c
```

```
@deftypefun gpgme_error_t gpgme_op_revuid @
  (@w{gpgme_ctx_t @var{ctx}}, @
   @w{gpgme_key_t @var{key}}, @
   @w{const char *@var{userid}}, @
   @w{unsigned int @var{flags}});
```

```
@since{1.7.0}
```

The function `gpgme_op_revuid` revokes a user ID from the OpenPGP key given by `KEY`. Revoking user IDs after key creation is a feature of the OpenPGP protocol and thus the protocol for the context `ctx` must be set to OpenPGP. As of now this function requires at least version 2.1.13 of GnuPG.

`key` specifies the key to operate on.

`userid` is the user ID to be revoked from the key. The user ID must be given verbatim because the engine does an exact and case sensitive match. Thus the `uid` field from the user ID object (`gpgme_user_id_t`) is to be used. This is a required parameter.

`flags` are currently not used and must be set to zero.

Note that the engine won't allow to revoke the last valid user ID. To change a user ID is better to first add the new user ID, then revoke the old one, and finally publish the key.

The function returns zero on success, `GPG_ERR_NOT_SUPPORTED` if

the engine does not support the command, or a bunch of other error codes.

```
@end dectyfefun
```

```
@dectyfefun gpgme_error_t gpgme_op_revuid_start @
  (@w{gpgme_ctx_t @var{ctx}}, @
   @w{gpgme_key_t @var{key}}, @
   @w{const char *@var{userid}}, @
   @w{unsigned int @var{flags}});
```

```
@since{1.7.0}
```

The function `gpgme_op_revuid_start` initiates a `gpgme_op_revuid` operation; see there for details. It must be completed by calling `gpgme_wait` on the context. [Waiting For Completion](#).

```
@end dectyfefun
```

```
@c
```

```
@c gpgme_op_set_uid_flag
```

```
@c
```

```
@dectyfefun gpgme_error_t gpgme_op_set_ui_flag @
  (@w{gpgme_ctx_t @var{ctx}}, @
   @w{gpgme_key_t @var{key}}, @
   @w{const char *@var{userid}}, @
   @w{cons char * @var{name}}, @
   @w{cons char * @var{value}});
```

```
@since{1.8.0}
```

The function `gpgme_op_set_uid_flag` is used to set flags on a user ID from the OpenPGP key given by `KEY`. Setting flags on user IDs after key creation is a feature of the OpenPGP protocol and thus the protocol for the context `ctx` must be set to OpenPGP.

`key` specifies the key to operate on. This parameters is required.

`userid` is the user ID of the key to be manipulated. This user ID must be given verbatim because the engine does an exact and case sensitive match. Thus the `uid` field from the user ID object (`gpgme_user_id_t`) is to be used. This is a required parameter.

`name` names the flag which is to be changed. The only currently supported flag is:

@table @code

@item primary

This sets the primary key flag on the given user ID. All other primary key flag on other user IDs are removed. @var{value} must be given as NULL. For technical reasons this functions bumps the creation timestamp of all affected self-signatures up by one second.

At least GnuPG version 2.1.20 is required.

@end table

The function returns zero on success, @code{GPG_ERR_NOT_SUPPORTED} if the engine does not support the command, or a bunch of other error codes.

@end dectyfefun

@dectyfefun gpgme_error_t gpgme_op_set_uid_flag_start @

(@w{gpgme_ctx_t @var{ctx}}, @

@w{gpgme_key_t @var{key}}, @

@w{const char *@var{userid}}, @

@w{cons char * @var{name}}, @

@w{cons char * @var{value}});

@since{1.8.0}

The function @code{gpgme_op_set_uid_flag_start} initiates a @code{gpgme_op_set_uid_flag} operation; see there for details. It must be completed by calling @code{gpgme_wait} on the context.

@xref{Waiting For Completion}.

@end dectyfefun

@c

@c gpgme_op_genkey

@c

@dectyfefun gpgme_error_t gpgme_op_genkey @

(@w{gpgme_ctx_t @var{ctx}}, @

@w{const char *@var{parms}}, @

@w{gpgme_data_t @var{public}}, @

@w{gpgme_data_t @var{secret}})

The function @code{gpgme_op_genkey} generates a new key pair in the context @var{ctx}. The meaning of @var{public} and @var{secret} depends on the crypto backend.

GPG does not support @var{public} and @var{secret}, they should be @code{NULL}. GnuPG will generate a key pair and add it to the standard key ring. The fingerprint of the generated key is available

with `@code{gpgme_op_genkey_result}`.

GpgSM requires `@var{public}` to be a writable data object. GpgSM will generate a secret key (which will be stored by `@command{gpg-agent}`), and return a certificate request in `@var{public}`, which then needs to be signed by the certification authority and imported before it can be used. GpgSM does not make the fingerprint available.

The argument `@var{parms}` specifies parameters for the key in a string that looks something like XML. The details about the format of `@var{parms}` are specific to the crypto engine used by `@var{ctx}`. The first line of the parameters must be `@code{<GnupgKeyParams format="internal">}` and the last line must be `@code{</GnupgKeyParams>}`. Every line in between the first and last lines is treated as a Header: Value pair. In particular, no XML escaping is necessary if you need to include the characters `@code{<}`, `@code{>}`, or `@code{&}`.

Here is an example for GnuPG as the crypto engine (all parameters of OpenPGP key generation are documented in the GPG manual):

```
@example
<GnupgKeyParms format="internal">
Key-Type: default
Subkey-Type: default
Name-Real: Joe Tester
Name-Comment: with stupid passphrase
Name-Email: joe@@foo.bar
Expire-Date: 0
Passphrase: abc
</GnupgKeyParms>
@end example
```

Here is an example for GpgSM as the crypto engine (all parameters of OpenPGP key generation are documented in the GPGSM manual):

```
@example
<GnupgKeyParms format="internal">
Key-Type: RSA
Key-Length: 1024
Name-DN: C=de,O=g10 code,OU=Testlab,CN=Joe 2 Tester
Name-Email: joe@@foo.bar
</GnupgKeyParms>
@end example
```

Strings should be given in UTF-8 encoding. The only format supported for now is `internal`. The content of the `@code{GnupgKeyParms}` container is passed verbatim to the crypto backend. Control

statements are not allowed.

After the operation completed successfully, the result can be retrieved with `gpgme_op_genkey_result`.

The function returns the error code `GPG_ERR_NO_ERROR` if the operation could be started successfully, `GPG_ERR_INV_VALUE` if `parms` is not a well-formed string (e.g. does not have the expected tag-like headers and footers), `GPG_ERR_NOT_SUPPORTED` if `public` or `secret` is not valid, and `GPG_ERR_GENERAL` if no key was created by the backend.

```
@deftypefun gpgme_error_t gpgme_op_genkey_start (@w{gpgme_ctx_t @var{ctx}}, @w{const char
*@var{parms}}, @w{gpgme_data_t @var{public}}, @w{gpgme_data_t @var{secret}})
```

The function `gpgme_op_genkey_start` initiates a `gpgme_op_genkey` operation. It can be completed by calling `gpgme_wait` on the context. [Waiting For Completion](#).

The function returns the error code `GPG_ERR_NO_ERROR` if the operation could be started successfully, `GPG_ERR_INV_VALUE` if `parms` is not a valid XML string, and `GPG_ERR_NOT_SUPPORTED` if `public` or `secret` is not `NULL`.

```
@c
@c gpgme_op_genkey_result
@c
@deftp {Data type} {gpgme_genkey_result_t}
```

This is a pointer to a structure used to store the result of a `gpgme_op_genkey` operation. After successfully generating a key, you can retrieve the pointer to the result with `gpgme_op_genkey_result`. The structure contains the following members:

```
@table @code
@item unsigned int primary : 1
This flag is set to 1 if a primary key was created and to 0
if not.

@item unsigned int sub : 1
This flag is set to 1 if a subkey was created and to 0 if not.

@item unsigned int uid : 1
```

This flag is set to 1 if a user ID was created and to 0 if not.

@item char *fpr

This is the fingerprint of the key that was created. If both a primary and a subkey were generated, the fingerprint of the primary key will be returned. If the crypto engine does not provide the fingerprint, @code{fpr} will be a null pointer.

@item gpgme_data_t pubkey

@since{1.7.0}

This will eventually be used to return the public key. It is currently not used.

@item gpgme_data_t seckey

@since{1.7.0}

This will eventually be used to return the secret key. It is currently not used.

@end table

@end deftp

@deftypefun gpgme_genkey_result_t gpgme_op_genkey_result (@w{gpgme_ctx_t @var{ctx}})

The function @code{gpgme_op_genkey_result} returns a @code{gpgme_genkey_result_t} pointer to a structure holding the result of a @code{gpgme_op_genkey} operation. The pointer is only valid if the last operation on the context was a @code{gpgme_op_genkey} or @code{gpgme_op_genkey_start} operation, and if this operation finished successfully. The returned pointer is only valid until the next operation is started on the context.

@end deftypefun

@c

@c SIGNING KEYS

@c

@node Signing Keys

@subsection Signing Keys

@cindex key, signing

Key signatures are a unique concept of the OpenPGP protocol. They can be used to certify the validity of a key and are used to create the Web-of-Trust (WoT). Instead of using the @code{gpgme_op_interact} function along with a finite state machine, GPGME provides a convenient function to create key signatures when using modern GnuPG

versions.

```
@c
@c gpgme_op_keysign
@c
@deftypefun gpgme_error_t gpgme_op_keysign @
  (@w{gpgme_ctx_t @var{ctx}}, @
   @w{gpgme_key_t @var{key}}, @
   @w{const char *@var{userid}}, @
   @w{unsigned long @var{expires}}, @
   @w{unsigned int @var{flags}});
```

@since{1.7.0}

The function `gpgme_op_keysign` adds a new key signature to the public key `KEY`. This function requires at least version 2.1.12 of GnuPG.

`CTX` is the usual context which describes the protocol to use (which must be OpenPGP) and has also the list of signer keys to be used for the signature. The common case is to use the default key for signing other keys. If another key or more than one key shall be used for a key signature, `gpgme_signers_add` can be used.

[Selecting Signers](#).

`key` specifies the key to operate on.

`userid` selects the user ID or user IDs to be signed. If `userid` is set to `NULL` all valid user IDs are signed. The user ID must be given verbatim because the engine does an exact and case sensitive match. Thus the `uid` field from the user ID object (`gpgme_user_id_t`) is to be used. To select more than one user ID put them all into one string separated by linefeed characters (`\n`) and set the flag `GPGME_KEYSIGN_LFSEP`.

`expires` specifies the expiration time of the new signature in seconds. The common case is to use 0 to not set an expiration date. However, if the configuration of the engine defines a default expiration for key signatures, that is still used unless the flag `GPGME_KEYSIGN_NOEXPIRE` is used. Note that this parameter takes an unsigned long value and not a `time_t` to avoid problems on systems which use a signed 32 bit `time_t`. Note further that the OpenPGP protocol uses 32 bit values for timestamps and thus can only encode dates up to the year 2106.

`flags` can be set to the bit-wise OR of the following flags:

```
@table @code
@item GPGME_KEYSIGN_LOCAL
@since{1.7.0}
```

Instead of creating an exportable key signature, create a key signature which is marked as non-exportable.

```
@item GPGME_KEYSIGN_LFSEP
@since{1.7.0}
```

Although linefeeds are uncommon in user IDs this flag is required to explicitly declare that `@var{userid}` may contain several linefeed separated user IDs.

```
@item GPGME_KEYSIGN_NOEXPIRE
```

Force the creation of a key signature without an expiration date. This overrides `@var{expire}` and any local configuration of the engine.

```
@end table
```

The function returns zero on success, `@code{GPG_ERR_NOT_SUPPORTED}` if the engine does not support the command, or a bunch of other error codes.

```
@end deftypefun
```

```
@deftypefun gpgme_error_t gpgme_op_keysign_start @
  (@w{gpgme_ctx_t @var{ctx}}, @
   @w{gpgme_key_t @var{key}}, @
   @w{const char *@var{userid}}, @
   @w{unsigned long @var{expires}}, @
   @w{unsigned int @var{flags}});
```

```
@since{1.7.0}
```

The function `@code{gpgme_op_keysign_start}` initiates a `@code{gpgme_op_keysign}` operation; see there for details. It must be completed by calling `@code{gpgme_wait}` on the context. [@xref{Waiting For Completion}](#).

```
@end deftypefun
```

```
@c
@c EXPORTING KEYS
@c
@node Exporting Keys
```

@subsection Exporting Keys
@cindex key, export
@cindex key ring, export from

Exporting keys means the same as running @command{gpg} with the command @option{--export}. However, a mode flag can be used to change the way the export works. The available mode flags are described below, they may be or-ed together.

@table @code

@item GPGME_EXPORT_MODE_EXTERN

If this bit is set, the output is send directly to the default keyserver. This is currently only allowed for OpenPGP keys. It is good practise to not send more than a few dozens key to a keyserver at one time. Using this flag requires that the @var{keydata} argument of the export function is set to @code{NULL}.

@item GPGME_EXPORT_MODE_MINIMAL

@since{1.3.1}

If this bit is set, the smallest possible key is exported. For OpenPGP keys it removes all signatures except for the latest self-signatures. For X.509 keys it has no effect.

@item GPGME_EXPORT_MODE_SECRET

@since{1.6.0}

Instead of exporting the public key, the secret key is exported. This may not be combined with @code{GPGME_EXPORT_MODE_EXTERN}. For X.509 the export format is PKCS#8.

@item GPGME_EXPORT_MODE_RAW

@since{1.6.0}

If this flag is used with @code{GPGME_EXPORT_MODE_SECRET} for an X.509 key the export format will be changed to PKCS#1. This flag may not be used with OpenPGP.

@item GPGME_EXPORT_MODE_PKCS12

@since{1.6.0}

If this flag is used with @code{GPGME_EXPORT_MODE_SECRET} for an X.509 key the export format will be changed to PKCS#12 which also includes the certificate. This flag may not be used with OpenPGP.

@item GPGME_EXPORT_MODE_NOUID

@since{1.12.0 - experimental}

Do not export user ids. Works only with certain gpg version.

@end table

```
@deftypefun gpgme_error_t gpgme_op_export (@w{gpgme_ctx_t @var{ctx}}, @w{const char *@var{pattern}},  
@w{gpgme_export_mode_t @var{mode}}, @w{gpgme_data_t @var{keydata}})
```

The function @code{gpgme_op_export} extracts public keys and returns them in the data buffer @var{keydata}. The output format of the key data returned is determined by the @acronym{ASCII} armor attribute set for the context @var{ctx}, or, if that is not set, by the encoding specified for @var{keydata}.

If @var{pattern} is @code{NULL}, all available keys are returned. Otherwise, @var{pattern} contains an engine specific expression that is used to limit the list to all keys matching the pattern.

@var{mode} is usually 0; other values are described above.

The function returns the error code @code{GPG_ERR_NO_ERROR} if the operation completed successfully, @code{GPG_ERR_INV_VALUE} if @var{keydata} is not a valid empty data buffer, and passes through any errors that are reported by the crypto engine support routines.

@end deftypefun

```
@deftypefun gpgme_error_t gpgme_op_export_start (@w{gpgme_ctx_t @var{ctx}}, @w{const char  
*@var{pattern}}, @w{gpgme_export_mode_t @var{mode}}, @w{gpgme_data_t @var{keydata}})
```

The function @code{gpgme_op_export_start} initiates a @code{gpgme_op_export} operation. It can be completed by calling @code{gpgme_wait} on the context. @xref{Waiting For Completion}.

The function returns the error code @code{GPG_ERR_NO_ERROR} if the operation could be started successfully, and @code{GPG_ERR_INV_VALUE} if @var{keydata} is not a valid empty data buffer.

@end deftypefun

```
@deftypefun gpgme_error_t gpgme_op_export_ext (@w{gpgme_ctx_t @var{ctx}}, @w{const char  
*@var{pattern}}[], @w{gpgme_export_mode_t @var{mode}}, @w{gpgme_data_t @var{keydata}})
```

The function @code{gpgme_op_export} extracts public keys and returns them in the data buffer @var{keydata}. The output format of the key data returned is determined by the @acronym{ASCII} armor attribute set for the context @var{ctx}, or, if that is not set, by the encoding specified for @var{keydata}.

If @var{pattern} or @var{*pattern} is @code{NULL}, all available keys are returned. Otherwise, @var{pattern} is a @code{NULL} terminated

array of strings that are used to limit the list to all keys matching at least one of the patterns verbatim.

@var{mode} is usually 0; other values are described above.

The function returns the error code @code{GPG_ERR_NO_ERROR} if the operation completed successfully, @code{GPG_ERR_INV_VALUE} if @var{keydata} is not a valid empty data buffer, and passes through any errors that are reported by the crypto engine support routines.

@end deftypefun

@deftypefun gpgme_error_t gpgme_op_export_ext_start (@w{gpgme_ctx_t @var{ctx}}, @w{const char *@var{pattern}}[], @w{gpgme_export_mode_t @var{mode}}, @w{gpgme_data_t @var{keydata}})

The function @code{gpgme_op_export_ext_start} initiates a @code{gpgme_op_export_ext} operation. It can be completed by calling @code{gpgme_wait} on the context. @xref{Waiting For Completion}.

The function returns the error code @code{GPG_ERR_NO_ERROR} if the operation could be started successfully, and @code{GPG_ERR_INV_VALUE} if @var{keydata} is not a valid empty data buffer.

@end deftypefun

@deftypefun gpgme_error_t gpgme_op_export_keys (@w{gpgme_ctx_t @var{ctx}}, @w{gpgme_key_t keys[]}, @w{gpgme_export_mode_t @var{mode}}, @w{gpgme_data_t @var{keydata}}) @since{1.2.0}

The function @code{gpgme_op_export_keys} extracts public keys and returns them in the data buffer @var{keydata}. The output format of the key data returned is determined by the @acronym{ASCII} armor attribute set for the context @var{ctx}, or, if that is not set, by the encoding specified for @var{keydata}.

The keys to export are taken from the @code{NULL} terminated array @var{keys}. Only keys of the currently selected protocol of @var{ctx} which do have a fingerprint set are considered for export. Other keys specified by the @var{keys} are ignored. In particular OpenPGP keys retrieved via an external key listing are not included.

@var{mode} is usually 0; other values are described above.

The function returns the error code @code{GPG_ERR_NO_ERROR} if the operation completed successfully, @code{GPG_ERR_INV_VALUE} if @var{keydata} is not a valid empty data buffer, @code{GPG_ERR_NO_DATA} if no useful keys are in @var{keys} and passes through any errors that are reported by the crypto engine support routines.

@end deftypefun

```
@deftypefun gpgme_error_t gpgme_op_export_keys_start (@w{gpgme_ctx_t @var{ctx}}, @w{gpgme_key_t @var{keys}}[], @w{gpgme_export_mode_t @var{mode}}, @w{gpgme_data_t @var{keydata}})
@since{1.2.0}
```

The function `gpgme_op_export_keys_start` initiates a `gpgme_op_export_ext` operation. It can be completed by calling `gpgme_wait` on the context. [Waiting For Completion](#).

The function returns the error code `GPG_ERR_NO_ERROR` if the operation could be started successfully, `GPG_ERR_INV_VALUE` if `keydata` is not a valid empty data buffer, `GPG_ERR_NO_DATA` if no useful keys are in `keys` and passes through any errors that are reported by the crypto engine support routines.

```
@end deftypefun
```

```
@node Importing Keys
@subsection Importing Keys
@cindex key, import
@cindex key ring, import to
```

Importing keys means the same as running `gpg` with the command `--import`.

```
@deftypefun gpgme_error_t gpgme_op_import (@w{gpgme_ctx_t @var{ctx}}, @w{gpgme_data_t @var{keydata}})
```

The function `gpgme_op_import` adds the keys in the data buffer `keydata` to the key ring of the crypto engine used by `ctx`. The format of `keydata` can be `ASCII` armored, for example, but the details are specific to the crypto engine.

After the operation completed successfully, the result can be retrieved with `gpgme_op_import_result`.

The function returns the error code `GPG_ERR_NO_ERROR` if the import was completed successfully, `GPG_ERR_INV_VALUE` if `keydata` if `ctx` or `keydata` is not a valid pointer, and `GPG_ERR_NO_DATA` if `keydata` is an empty data buffer.

```
@end deftypefun
```

```
@deftypefun gpgme_error_t gpgme_op_import_start (@w{gpgme_ctx_t @var{ctx}}, @w{gpgme_data_t @var{keydata}})
```

The function `gpgme_op_import_start` initiates a `gpgme_op_import` operation. It can be completed by calling `gpgme_wait` on the context. [Waiting For Completion](#).

The function returns the error code `GPG_ERR_NO_ERROR` if the

import could be started successfully, `GPG_ERR_INV_VALUE` if `ctx` or `keydata` is not a valid pointer, and `GPG_ERR_NO_DATA` if `keydata` is an empty data buffer.

```
@end deftypefun
```

```
@deftypefun gpgme_error_t gpgme_op_import_keys (@w{gpgme_ctx_t ctx}, @w{gpgme_key_t *keys})  
@since{1.2.0}
```

The function `gpgme_op_import_keys` adds the keys described by the `NULL` terminated array `keys` to the key ring of the crypto engine used by `ctx`. It is used to actually import and make keys permanent which have been retrieved from an external source (i.e. using `GPGME_KEYLIST_MODE_EXTERN`) earlier. The external keylisting must have been made with the same context configuration (in particular the same home directory). Thus it is a replacement for the usual workaround of exporting and then importing a key to make an X.509 key permanent. Note that for OpenPGP this may require another access to the keyserver over the network.

Only keys of the currently selected protocol of `ctx` are considered for import. Other keys specified by the `keys` are ignored. As of now all considered keys must have been retrieved using the same method, i.e. the used key listing mode must be identical.

After the operation completed successfully, the result can be retrieved with `gpgme_op_import_result`.

To move keys from one home directory to another, export and import the keydata using `gpgme_op_export` and `gpgme_op_import`.

The function returns the error code `GPG_ERR_NO_ERROR` if the import was completed successfully, `GPG_ERR_INV_VALUE` if `ctx` is not a valid pointer, `GPG_ERR_CONFLICT` if the key listing mode does not match, and `GPG_ERR_NO_DATA` if no keys are considered for export.

```
@end deftypefun
```

```
@deftypefun gpgme_error_t gpgme_op_import_keys_start (@w{gpgme_ctx_t ctx}, @w{gpgme_key_t *keys})  
@since{1.2.0}
```

The function `gpgme_op_import_keys_start` initiates a `gpgme_op_import_keys` operation. It can be completed by calling `gpgme_wait` on the context. Waiting For Completion.

The function returns the error code `GPG_ERR_NO_ERROR` if the import was completed successfully, `GPG_ERR_INV_VALUE` if

@var{keydata} if @var{ctx} or @var{keydata} is not a valid pointer,
@code{GPG_ERR_CONFLICT} if the key listing mode does not match, and
@code{GPG_ERR_NO_DATA} if no keys are considered for export.
@end deftypefun

@deftp {Data type} {gpgme_import_status_t}

This is a pointer to a structure used to store a part of the result of
a @code{gpgme_op_import} operation. For each considered key one
status is added that contains information about the result of the
import. The structure contains the following members:

@table @code

@item gpgme_import_status_t next

This is a pointer to the next status structure in the linked list, or
@code{NULL} if this is the last element.

@item char *fpr

This is the fingerprint of the key that was considered.

@item gpgme_error_t result

If the import was not successful, this is the error value that caused
the import to fail. Otherwise the error code is
@code{GPG_ERR_NO_ERROR}.

@item unsigned int status

This is a bit-wise OR of the following flags that give more
information about what part of the key was imported. If the key was
already known, this might be 0.

@table @code

@item GPGME_IMPORT_NEW

The key was new.

@item GPGME_IMPORT_UID

The key contained new user IDs.

@item GPGME_IMPORT_SIG

The key contained new signatures.

@item GPGME_IMPORT_SUBKEY

The key contained new sub keys.

@item GPGME_IMPORT_SECRET

The key contained a secret key.

@end table

@end table

@end deftp

@deftp {Data type} {gpgme_import_result_t}

This is a pointer to a structure used to store the result of a

@code{gpgme_op_import} operation. After a successful import

operation, you can retrieve the pointer to the result with

@code{gpgme_op_import_result}. The structure contains the following members:

@table @code

@item int considered

The total number of considered keys.

@item int no_user_id

The number of keys without user ID.

@item int imported

The total number of imported keys.

@item int imported_rsa

The number of imported RSA keys.

@item int unchanged

The number of unchanged keys.

@item int new_user_ids

The number of new user IDs.

@item int new_sub_keys

The number of new sub keys.

@item int new_signatures

The number of new signatures.

@item int new_revocations

The number of new revocations.

@item int secret_read

The total number of secret keys read.

@item int secret_imported

The number of imported secret keys.

@item int secret_unchanged

The number of unchanged secret keys.

@item int not_imported

The number of keys not imported.

@item gpgme_import_status_t imports

A list of `gpgme_import_status_t` objects which contain more information about the keys for which an import was attempted.

@item int skipped_v3_keys

For security reasons modern versions of GnuPG do not anymore support v3 keys (created with PGP 2.x) and ignores them on import. This counter provides the number of such skipped v3 keys.

@end table

@end deftp

@deftypefun `gpgme_import_result_t gpgme_op_import_result (@w{gpgme_ctx_t @var{ctx}})`

The function `gpgme_op_import_result` returns a

`gpgme_import_result_t` pointer to a structure holding the result of a `gpgme_op_import` operation. The pointer is only valid if the last operation on the context was a `gpgme_op_import` or `gpgme_op_import_start` operation, and if this operation finished successfully. The returned pointer is only valid until the next operation is started on the context.

@end deftypefun

@node Deleting Keys

@subsection Deleting Keys

@cindex key, delete

@cindex key ring, delete from

@deftypefun `gpgme_error_t gpgme_op_delete_ext (@w{gpgme_ctx_t @var{ctx}}, @w{const gpgme_key_t @var{key}}, @w{unsigned int @var{flags}})`

@since{1.9.1}

The function `gpgme_op_delete_ext` deletes the key `@var{key}` from the key ring of the crypto engine used by `@var{ctx}`.

`@var{flags}` can be set to the bit-wise OR of the following flags:

@table @code

@item GPGME_DELETE_ALLOW_SECRET

@since{1.9.1}

If not set, only public keys are deleted. If set, secret keys are deleted as well, if that is supported.

@item GPGME_DELETE_FORCE

@since{1.9.1}

If set, the user is not asked to confirm the deletion.

@end table

The function returns the error code `GPG_ERR_NO_ERROR` if the key was deleted successfully, `GPG_ERR_INV_VALUE` if `ctx` or `key` is not a valid pointer, `GPG_ERR_NO_PUBKEY` if `key` could not be found in the keyring, `GPG_ERR_AMBIGUOUS_NAME` if the key was not specified unambiguously, and `GPG_ERR_CONFLICT` if the secret key for `key` is available, but `allow_secret` is zero.

```
@end deftypefun
```

```
@deftypefun gpgme_error_t gpgme_op_delete_ext_start (@w{gpgme_ctx_t @var{ctx}}, @w{const gpgme_key_t @var{key}}, @w{unsigned int @var{flags}})
@since{1.9.1}
```

The function `gpgme_op_delete_ext_start` initiates a `gpgme_op_delete` operation. It can be completed by calling `gpgme_wait` on the context. [@xref{Waiting For Completion}](#).

The function returns the error code `GPG_ERR_NO_ERROR` if the operation was started successfully, and `GPG_ERR_INV_VALUE` if `ctx` or `key` is not a valid pointer.

```
@end deftypefun
```

The following functions allow only to use one particular flag.

```
@deftypefun gpgme_error_t gpgme_op_delete (@w{gpgme_ctx_t @var{ctx}}, @w{const gpgme_key_t @var{key}}, @w{int @var{allow_secret}})
Similar to gpgme_op_delete_ext, but only the flag GPGME_DELETE_ALLOW_SECRET can be provided.
@end deftypefun
```

```
@deftypefun gpgme_error_t gpgme_op_delete_start (@w{gpgme_ctx_t @var{ctx}}, @w{const gpgme_key_t @var{key}}, @w{int @var{allow_secret}})
Similar to gpgme_op_delete_ext_start, but only the flag GPGME_DELETE_ALLOW_SECRET can be provided.
@end deftypefun
```

```
@node Changing Passphrases
@subsection Changing Passphrases
@cindex passphrase, change
```

```
@deftypefun gpgme_error_t gpgme_op_passwd (@w{gpgme_ctx_t @var{ctx}}, @w{const gpgme_key_t @var{key}}, @w{unsigned int @var{flags}})
@
```

```
@since{1.3.0}
```

The function `gpgme_op_passwd` changes the passphrase of the private key associated with `key`. The only allowed value for `flags` is `0`. The backend engine will usually popup a window to ask for the old and the new passphrase. Thus this function is not useful in a server application (where passphrases are not required anyway).

Note that old `gpg` engines (before version 2.0.15) do not support this command and will silently ignore it.

`@end deftypefun`

```
@deftypefun gpgme_error_t gpgme_op_passwd_start    @
    (@w{gpgme_ctx_t @var{ctx}},    @
    @w{const gpgme_key_t @var{key}}, @
    @w{unsigned int @var{flags}})
```

`@since{1.3.0}`

The function `gpgme_op_passwd_start` initiates a `gpgme_op_passwd` operation. It can be completed by calling `gpgme_wait` on the context. [Waiting For Completion](#).

The function returns `0` if the operation was started successfully, and an error code if one of the arguments is not valid or the operation could not be started.

`@end deftypefun`

`@c`

`@c CHANGING TOFU DATA`

`@c`

`@node Changing TOFU Data`

`@subsection Changing TOFU Data`

`@cindex validity, TOFU`

The OpenPGP engine features a Trust-On-First-Use (TOFU) key validation model. For resolving conflicts it is necessary to declare the policy for a key. See the GnuPG manual for details on the TOFU implementation.

```
@deftp {Data type} {enum gpgme_tofu_policy_t}
```

`@since{1.7.0}`

```
@tindex gpgme_tofu_policy_t
```

The `gpgme_tofu_policy_t` type specifies the set of possible policy values that are supported by `GPGME`:

```
@table @code
```



```

@item GPGME_TOFU_POLICY_AUTO
Set the policy to ``auto".
@item GPGME_TOFU_POLICY_GOOD
Set the policy to ``good".
@item GPGME_TOFU_POLICY_BAD
Set the policy to ``bad".
@item GPGME_TOFU_POLICY_ASK
Set the policy to ``ask".
@item GPGME_TOFU_POLICY_UNKNOWN
Set the policy to ``unknown".
@end table

@end deftp

```

To change the policy for a key the following functions can be used:

```

@deftypefun gpgme_error_t gpgme_op_tofu_policy @
  (@w{gpgme_ctx_t @var{ctx}}, @
   @w{const gpgme_key_t @var{key}}, @
   @w{gpgme_tofu_policy_t @var{policy}})

@since{1.7.0}

```

The function `gpgme_op_tofu_policy` changes the TOFU policy of `@var{key}`. The valid values for `@var{policy}` are listed above. As of now this function does only work for OpenPGP and requires at least version 2.1.10 of GnuPG.

The function returns zero on success, `GPG_ERR_NOT_SUPPORTED` if the engine does not support the command, or a bunch of other error codes.

```

@end deftypefun

```

```

@deftypefun gpgme_error_t gpgme_op_tofu_policy_start @
  (@w{gpgme_ctx_t @var{ctx}}, @
   @w{const gpgme_key_t @var{key}}, @
   @w{gpgme_tofu_policy_t @var{policy}})

@since{1.7.0}

```

The function `gpgme_op_tofu_policy_start` initiates a `gpgme_op_tofu_policy` operation. It can be completed by calling `gpgme_wait` on the context. [Waiting For Completion](#).

The function returns `0` if the operation was started successfully, and an error code if one of the arguments is not valid or the operation could not be started.

@end deftypefun

@node Advanced Key Editing

@subsection Advanced Key Editing

@cindex key, edit

```
@deftp {Data type} {gpgme_error_t (*gpgme_interact_cb_t) @
(@w{void *@var{handle}}, @
 @w{const char *@var{status}}, @
 @w{const char *@var{args}}, @
 @w{int @var{fd}})}
```

@since{1.7.0}

@tindex gpgme_interact_cb_t

The @code{gpgme_interact_cb_t} type is the type of functions which @acronym{GPGME} calls if a key interact operation is on-going. The status keyword @var{status} and the argument line @var{args} are passed through by @acronym{GPGME} from the crypto engine. An empty string represents EOF. The file descriptor @var{fd} is -1 for normal status messages. If @var{status} indicates a command rather than a status message, the response to the command should be written to @var{fd}. The @var{handle} is provided by the user at start of operation.

The function should return @code{GPG_ERR_FALSE} if it did not handle the status code, @code{0} for success, or any other error value.

@end deftp

```
@deftypefun gpgme_error_t gpgme_op_interact (@w{gpgme_ctx_t @var{ctx}}, @
 @w{gpgme_key_t @var{key}}, @
 @w{unsigned int @var{flags}}, @
 @w{gpgme_interact_cb_t @var{fnc}}, @
 @w{void *@var{handle}}, @
 @w{gpgme_data_t @var{out}})
```

@since{1.7.0}

The function @code{gpgme_op_interact} processes the key @var{KEY} interactively, using the interact callback function @var{FNC} with the handle @var{HANDLE}. The callback is invoked for every status and command request from the crypto engine. The output of the crypto engine is written to the data object @var{out}.

Note that the protocol between the callback function and the crypto engine is specific to the crypto engine and no further support in

implementing this protocol correctly is provided by @acronym{GPGME}.

@var{flags} modifies the behaviour of the function; the only defined bit value is:

```
@table @code
@item GPGME_INTERACT_CARD
@since{1.7.0}
```

This is used for smartcard based keys and uses gpgs
@code{--card-edit} command.

@end table

The function returns @code{0} if the edit operation completes successfully, @code{GPG_ERR_INV_VALUE} if @var{ctx} or @var{key} is not a valid pointer, and any error returned by the crypto engine or the edit callback handler.

@end deftypefun

```
@deftypefun gpgme_error_t gpgme_op_interact_start (@w{gpgme_ctx_t @var{ctx}}, @
@w{gpgme_key_t @var{key}}, @
@w{unsigned int @var{flags}}, @
@w{gpgme_interact_cb_t @var{fnc}}, @
@w{void *@var{handle}}, @
@w{gpgme_data_t @var{out}})
```

@since{1.7.0}

The function @code{gpgme_op_interact_start} initiates a
@code{gpgme_op_interact} operation. It can be completed by calling
@code{gpgme_wait} on the context. @xref{Waiting For Completion}.

The function returns @code{0} if the operation was started successfully, and @code{GPG_ERR_INV_VALUE} if @var{ctx} or @var{key} is not a valid pointer.

@end deftypefun

```
@node Trust Item Management
@section Trust Item Management
@cindex trust item
```

@strong{Caution:} The trust items interface is experimental.

```
@defstp {Data type} gpgme_trust_item_t
```

The `gpgme_trust_item_t` type is a pointer to a trust item object.
It has the following members:

`@table @code`

`@item char *keyid`

This is a string describing the key to which this trust items belongs.

`@item int type`

This is the type of the trust item. A value of 1 refers to a key, a value of 2 refers to a user ID.

`@item int level`

This is the trust level.

`@item char *owner_trust`

The owner trust if `@code{type}` is 1.

`@item char *validity`

The calculated validity.

`@item char *name`

The user name if `@code{type}` is 2.

`@end table`

`@end deftp`

`@menu`

* Listing Trust Items:: Browsing the list of available trust items.

* Manipulating Trust Items:: Operations on trust items.

`@end menu`

`@node Listing Trust Items`

`@subsection Listing Trust Items`

`@cindex trust item list`

`@deftypedefun gpgme_error_t gpgme_op_trustlist_start (@w{gpgme_ctx_t @var{ctx}}, @w{const char *@var{pattern}}, @w{int @var{max_level}})`

The function `@code{gpgme_op_trustlist_start}` initiates a trust item listing operation inside the context `@var{ctx}`. It sets everything up so that subsequent invocations of `@code{gpgme_op_trustlist_next}` return the trust items in the list.

The string `@var{pattern}` contains an engine specific expression that is used to limit the list to all trust items matching the pattern. It can not be the empty string.

The argument `@var{max_level}` is currently ignored.

The context will be busy until either all trust items are received (and `gpgme_op_trustlist_next` returns `GPG_ERR_EOF`), or `gpgme_op_trustlist_end` is called to finish the operation.

The function returns the error code `GPG_ERR_INV_VALUE` if `ctx` is not a valid pointer, and passes through any errors that are reported by the crypto engine support routines.

```
@end deftypefun
```

```
@deftypefun gpgme_error_t gpgme_op_trustlist_next (@w{gpgme_ctx_t @var{ctx}}, @w{gpgme_trust_item_t *@var{r_item}})
```

The function `gpgme_op_trustlist_next` returns the next trust item in the list created by a previous `gpgme_op_trustlist_start` operation in the context `ctx`. The trust item can be destroyed with `gpgme_trust_item_release`. [Manipulating Trust Items](#).

This is the only way to get at `gpgme_trust_item_t` objects in `GPGME`.

If the last trust item in the list has already been returned, `gpgme_op_trustlist_next` returns `GPG_ERR_EOF`.

The function returns the error code `GPG_ERR_INV_VALUE` if `ctx` or `r_item` is not a valid pointer, and `GPG_ERR_ENOMEM` if there is not enough memory for the operation.

```
@end deftypefun
```

```
@deftypefun gpgme_error_t gpgme_op_trustlist_end (@w{gpgme_ctx_t @var{ctx}})
```

The function `gpgme_op_trustlist_end` ends a pending trust list operation in the context `ctx`.

The function returns the error code `GPG_ERR_INV_VALUE` if `ctx` is not a valid pointer, and `GPG_ERR_ENOMEM` if at some time during the operation there was not enough memory available.

```
@end deftypefun
```

```
@node Manipulating Trust Items
@subsection Manipulating Trust Items
@cindex trust item, manipulation
```

```
@deftypefun void gpgme_trust_item_ref (@w{gpgme_trust_item_t @var{item}})
```

The function `gpgme_trust_item_ref` acquires an additional reference for the trust item `item`.

```
@end deftypefun
```

```
@deftypefun void gpgme_trust_item_unref (@w{gpgme_trust_item_t @var{item}})
```

The function `gpgme_trust_item_unref` releases a reference for

the trust item @var{item}. If this was the last reference, the trust item will be destroyed and all resources associated to it will be released.

@end deftypefun

@node Crypto Operations

@section Crypto Operations

@cindex cryptographic operation

Sometimes, the result of a crypto operation returns a list of invalid keys encountered in processing the request. The following structure is used to hold information about such a key.

@deftp {Data type} {gpgme_invalid_key_t}

This is a pointer to a structure used to store a part of the result of a crypto operation which takes user IDs as one input parameter. The structure contains the following members:

@table @code

@item gpgme_invalid_key_t next

This is a pointer to the next invalid key structure in the linked list, or @code{NULL} if this is the last element.

@item char *fpr

The fingerprint or key ID of the invalid key encountered.

@item gpgme_error_t reason

An error code describing the reason why the key was found invalid.

@end table

@end deftp

@menu

* Decrypt:: Dec decrypting a ciphertext.

* Verify:: Verifying a signature.

* Decrypt and Verify:: Dec decrypting a signed ciphertext.

* Sign:: Creating a signature.

* Encrypt:: Encrypting a plaintext.

@end menu

@node Decrypt

@subsection Decrypt

@cindex decryption

@cindex cryptographic operation, decryption

@deftypefun gpgme_error_t gpgme_op_decrypt (@w{gpgme_ctx_t @var{ctx}}, @w{gpgme_data_t

```
@var{cipher}}, @w{gpgme_data_t @var{plain}})
```

The function `gpgme_op_decrypt` decrypts the ciphertext in the data object `@var{cipher}` and stores it into the data object `@var{plain}`.

The function returns the error code `GPG_ERR_NO_ERROR` if the ciphertext could be decrypted successfully, `GPG_ERR_INV_VALUE` if `@var{ctx}`, `@var{cipher}` or `@var{plain}` is not a valid pointer, `GPG_ERR_NO_DATA` if `@var{cipher}` does not contain any data to decrypt, `GPG_ERR_DECRYPT_FAILED` if `@var{cipher}` is not a valid cipher text, `GPG_ERR_BAD_PASSPHRASE` if the passphrase for the secret key could not be retrieved, and passes through some errors that are reported by the crypto engine support routines.

```
@end deftypefun
```

```
@deftypefun gpgme_error_t gpgme_op_decrypt_start (@w{gpgme_ctx_t @var{ctx}}, @w{gpgme_data_t @var{cipher}}, @w{gpgme_data_t @var{plain}})
```

The function `gpgme_op_decrypt_start` initiates a `gpgme_op_decrypt` operation. It can be completed by calling `gpgme_wait` on the context. [@xref{Waiting For Completion}](#).

The function returns the error code `GPG_ERR_NO_ERROR` if the operation could be started successfully, and `GPG_ERR_INV_VALUE` if `@var{cipher}` or `@var{plain}` is not a valid pointer.

```
@end deftypefun
```

```
@deftypefun gpgme_error_t gpgme_op_decrypt_ext ( @  
    @w{gpgme_ctx_t @var{ctx}}, @  
    @w{gpgme_decrypt_flags_t @var{flags}}, @  
    @w{gpgme_data_t @var{cipher}}, @  
    @w{gpgme_data_t @var{plain}})
```

```
@since{1.8.0}
```

The function `gpgme_op_decrypt_ext` is the same as `gpgme_op_decrypt` but has an additional argument `@var{flags}`. If `@var{flags}` is 0 both function behave identically.

The value in `@var{flags}` is a bitwise-or combination of one or multiple of the following bit values:

```
@table @code  
@item GPGME_DECRYPT_VERIFY  
@since{1.8.0}
```

The `GPGME_DECRYPT_VERIFY` symbol specifies that this function shall exactly act as `gpgme_op_decrypt_verify`.

@item GPGME_DECRYPT_UNWRAP

@since{1.8.0}

The @code{GPGME_DECRYPT_UNWRAP} symbol specifies that the output shall be an OpenPGP message with only the encryption layer removed. This requires GnuPG 2.1.12 and works only for OpenPGP. This is the counterpart to @code{GPGME_ENCRYPT_WRAP}.

@end table

The function returns the error codes as described for @code{gpgme_op_decrypt} respective @code{gpgme_op_encrypt}.
@end deftypefun

```
@deftypefun gpgme_error_t gpgme_op_decrypt_ext_start ( @
    @w{gpgme_ctx_t @var{ctx}}, @
    @w{gpgme_decrypt_flags_t @var{flags}}, @
    @w{gpgme_data_t @var{cipher}}, @
    @w{gpgme_data_t @var{plain}})
```

@since{1.8.0}

The function @code{gpgme_op_decrypt_ext_start} initiates a @code{gpgme_op_decrypt_ext} operation. It can be completed by calling @code{gpgme_wait} on the context. @xref{Waiting For Completion}.

The function returns the error code @code{GPG_ERR_NO_ERROR} if the operation could be started successfully, and @code{GPG_ERR_INV_VALUE} if @var{cipher} or @var{plain} is not a valid pointer.

@end deftypefun

@defftp {Data type} {gpgme_recipient_t}

@since{1.1.0}

This is a pointer to a structure used to store information about the recipient of an encrypted text which is decrypted in a @code{gpgme_op_decrypt} operation. This information (except for the status field) is even available before the operation finished successfully, for example in a passphrase callback. The structure contains the following members:

@table @code

@item gpgme_recipient_t next

This is a pointer to the next recipient structure in the linked list, or @code{NULL} if this is the last element.

@item gpgme_pubkey_algo_t

The public key algorithm used in the encryption.

@item char *keyid

This is the key ID of the key (in hexadecimal digits) used as recipient.

@item gpgme_error_t status

This is an error number with the error code GPG_ERR_NO_SECKEY if the secret key for this recipient is not available, and 0 otherwise.

@end table

@end deftp

@deftp {Data type} {gpgme_decrypt_result_t}

This is a pointer to a structure used to store the result of a

@code{gpgme_op_decrypt} operation. After successfully decrypting data, you can retrieve the pointer to the result with

@code{gpgme_op_decrypt_result}. As with all result structures, it this structure shall be considered read-only and an application must not allocate such a structure on its own. The structure contains the following members:

@table @code

@item char *unsupported_algorithm

If an unsupported algorithm was encountered, this string describes the algorithm that is not supported.

@item unsigned int wrong_key_usage : 1

@since{0.9.0}

This is true if the key was not used according to its policy.

@item unsigned int legacy_cipher_nomdc : 1

@since{1.11.2}

The message was made by a legacy algorithm without any integrity protection. This might be an old but legitimate message.

@item unsigned int is_mime : 1;

@since{1.11.0}

The message claims that the content is a MIME object.

@item unsigned int is_de_vs : 1;

@since{1.10.0}

The message was encrypted in a VS-NfD compliant way. This is a specification in Germany for a restricted communication level.

@item gpgme_recipient_t recipients

@since{1.1.0}

This is a linked list of recipients to which this message was encrypted.

@item char *file_name

This is the filename of the original plaintext message file if it is known, otherwise this is a null pointer.

@item char *session_key

@since{1.8.0}

A textual representation (nul-terminated string) of the session key used in symmetric encryption of the message, if the context has been set to export session keys (see @code{gpgme_set_ctx_flag, "export-session-key"}), and a session key was available for the most recent decryption operation. Otherwise, this is a null pointer.

You must not try to access this member of the struct unless

@code{gpgme_set_ctx_flag (ctx, "export-session-key")} returns success or @code{gpgme_get_ctx_flag (ctx, "export-session-key")} returns true (non-empty string).

@item char *symkey_algo

@since{1.11.0}

A string with the symmetric encryption algorithm and mode using the format "<algo>.<mode>". Note that the deprecated non-MDC encryption mode of OpenPGP is given as "PGPCFB".

@end table

@end deftp

@deftypefun gpgme_decrypt_result_t gpgme_op_decrypt_result (@w{gpgme_ctx_t @var{ctx}})

The function @code{gpgme_op_decrypt_result} returns a

@code{gpgme_decrypt_result_t} pointer to a structure holding the result of a @code{gpgme_op_decrypt} operation. The pointer is only valid if the last operation on the context was a

@code{gpgme_op_decrypt} or @code{gpgme_op_decrypt_start} operation.

If the operation failed this might be a @code{NULL} pointer. The returned pointer is only valid until the next operation is started on the context.

@end deftypefun

@node Verify

@subsection Verify

@cindex verification

@cindex signature, verification

@cindex cryptographic operation, verification

@cindex cryptographic operation, signature check

@cindex signature notation data

@cindex notation data

```
@deftypefun gpgme_error_t gpgme_op_verify (@w{gpgme_ctx_t @var{ctx}}, @w{gpgme_data_t @var{sig}},  
@w{gpgme_data_t @var{signed_text}}, @w{gpgme_data_t @var{plain}})
```

The function `gpgme_op_verify` verifies that the signature in the data object `@var{sig}` is a valid signature. If `@var{sig}` is a detached signature, then the signed text should be provided in `@var{signed_text}` and `@var{plain}` should be a null pointer. Otherwise, if `@var{sig}` is a normal (or cleartext) signature, `@var{signed_text}` should be a null pointer and `@var{plain}` should be a writable data object that will contain the plaintext after successful verification.

The results of the individual signature verifications can be retrieved with `gpgme_op_verify_result`.

The function returns the error code `GPG_ERR_NO_ERROR` if the operation could be completed successfully, `GPG_ERR_INV_VALUE` if `@var{ctx}`, `@var{sig}` or `@var{plain}` is not a valid pointer, `GPG_ERR_NO_DATA` if `@var{sig}` does not contain any data to verify, and passes through any errors that are reported by the crypto engine support routines.

@end deftypefun

```
@deftypefun gpgme_error_t gpgme_op_verify_start (@w{gpgme_ctx_t @var{ctx}}, @w{gpgme_data_t  
@var{sig}}, @w{gpgme_data_t @var{signed_text}}, @w{gpgme_data_t @var{plain}})
```

The function `gpgme_op_verify_start` initiates a `gpgme_op_verify` operation. It can be completed by calling `gpgme_wait` on the context. @xref{Waiting For Completion}.

The function returns the error code `GPG_ERR_NO_ERROR` if the operation could be started successfully, `GPG_ERR_INV_VALUE` if `@var{ctx}`, `@var{sig}` or `@var{plain}` is not a valid pointer, and `GPG_ERR_NO_DATA` if `@var{sig}` or `@var{plain}` does not contain any data to verify.

@end deftypefun

```
@deftp {Data type} {gpgme_sig_notation_t}
```

This is a pointer to a structure used to store a part of the result of a `gpgme_op_verify` operation. The structure contains the following members:

```
@table @code
```

```
@item gpgme_sig_notation_t next
```

This is a pointer to the next new signature notation structure in the linked list, or `NULL` if this is the last element.

@item char *name

The name of the notation field. If this is @code{NULL}, then the member @code{value} will contain a policy URL.

@item int name_len

The length of the @code{name} field. For strings the length is counted without the trailing binary zero.

@item char *value

The value of the notation field. If @code{name} is @code{NULL}, then this is a policy URL.

@item int value_len

The length of the @code{value} field. For strings the length is counted without the trailing binary zero.

@item gpgme_sig_notation_flags_t flags

The accumulated flags field. This field contains the flags associated with the notation data in an accumulated form which can be used as an argument to the function @code{gpgme_sig_notation_add}. The value @code{flags} is a bitwise-or combination of one or multiple of the following bit values:

@table @code

@item GPGME_SIG_NOTATION_HUMAN_READABLE

@since{1.1.0}

The @code{GPGME_SIG_NOTATION_HUMAN_READABLE} symbol specifies that the notation data is in human readable form

@item GPGME_SIG_NOTATION_CRITICAL

@since{1.1.0}

The @code{GPGME_SIG_NOTATION_CRITICAL} symbol specifies that the notation data is critical.

@end table

@item unsigned int human_readable : 1

This is true if the @code{GPGME_SIG_NOTATION_HUMAN_READABLE} flag is set and false otherwise. This flag is only valid for notation data, not for policy URLs.

@item unsigned int critical : 1

This is true if the @code{GPGME_SIG_NOTATION_CRITICAL} flag is set and false otherwise. This flag is valid for notation data and policy URLs.

@end table

@end deftp

@deftp {Data type} {gpgme_signature_t}

This is a pointer to a structure used to store a part of the result of a @code{gpgme_op_verify} operation. The structure contains the following members:

@table @code

@item gpgme_signature_t next

This is a pointer to the next new signature structure in the linked list, or @code{NULL} if this is the last element.

@item gpgme_sigsum_t summary

This is a bit vector giving a summary of the signature status. It provides an easy interface to a defined semantic of the signature status. Checking just one bit is sufficient to see whether a signature is valid without any restrictions. This means that you can check for GPGME_SIGSUM_VALID like this:

@example

```
if ((sig.summary & GPGME_SIGSUM_VALID))
```

```
@ {
```

```
    ..do stuff if valid..
```

```
@ }
```

```
else
```

```
@ {
```

```
    ..do stuff if not fully valid..
```

```
@ }
```

@end example

The defined bits are:

@table @code

@item GPGME_SIGSUM_VALID

The signature is fully valid.

@item GPGME_SIGSUM_GREEN

The signature is good but one might want to display some extra information. Check the other bits.

@item GPGME_SIGSUM_RED

The signature is bad. It might be useful to check other bits and display more information, i.e. a revoked certificate might not render a signature invalid when the message was received prior to the cause for the revocation.

@item GPGME_SIGSUM_KEY_REVOKED

The key or at least one certificate has been revoked.

@item GPGME_SIGSUM_KEY_EXPIRED

The key or one of the certificates has expired. It is probably a good idea to display the date of the expiration.

@item GPGME_SIGSUM_SIG_EXPIRED

The signature has expired.

@item GPGME_SIGSUM_KEY_MISSING

Can't verify due to a missing key or certificate.

@item GPGME_SIGSUM_CRL_MISSING

The CRL (or an equivalent mechanism) is not available.

@item GPGME_SIGSUM_CRL_TOO_OLD

Available CRL is too old.

@item GPGME_SIGSUM_BAD_POLICY

A policy requirement was not met.

@item GPGME_SIGSUM_SYS_ERROR

A system error occurred.

@item GPGME_SIGSUM_TOFU_CONFLICT

A TOFU conflict was detected.

@end table

@item char *fpr

This is the fingerprint or key ID of the signature.

@item gpgme_error_t status

This is the status of the signature. In particular, the following status codes are of interest:

@table @code

@item GPG_ERR_NO_ERROR

This status indicates that the signature is valid. For the combined result this status means that all signatures are valid.

@item GPG_ERR_SIG_EXPIRED

This status indicates that the signature is valid but expired. For the combined result this status means that all signatures are valid and expired.

@item GPG_ERR_KEY_EXPIRED

This status indicates that the signature is valid but the key used to verify the signature has expired. For the combined result this status means that all signatures are valid and all keys are expired.

@item GPG_ERR_CERT_REVOKED

This status indicates that the signature is valid but the key used to verify the signature has been revoked. For the combined result this status means that all signatures are valid and all keys are revoked.

@item GPG_ERR_BAD_SIGNATURE

This status indicates that the signature is invalid. For the combined result this status means that all signatures are invalid.

@item GPG_ERR_NO_PUBKEY

This status indicates that the signature could not be verified due to a missing key. For the combined result this status means that all signatures could not be checked due to missing keys.

@item GPG_ERR_GENERAL

This status indicates that there was some other error which prevented the signature verification.

@end table

@item gpgme_sig_notation_t notations

This is a linked list with the notation data and policy URLs.

@item unsigned long timestamp

The creation timestamp of this signature.

@item unsigned long exp_timestamp

The expiration timestamp of this signature, or 0 if the signature does not expire.

@item unsigned int wrong_key_usage : 1

This is true if the key was not used according to its policy.

@item unsigned int pka_trust : 2

This is set to the trust information gained by means of the PKA system.

Values are:

@table @code

@item 0

No PKA information available or verification not possible.

@item 1

PKA verification failed.

@item 2

PKA verification succeeded.

@item 3

Reserved for future use.

@end table

Depending on the configuration of the engine, this metric may also be reflected by the validity of the signature.

@item unsigned int chain_model : 1
@since{1.1.6}

This is true if the validity of the signature has been checked using the chain model. In the chain model the time the signature has been created must be within the validity period of the certificate and the time the certificate itself has been created must be within the validity period of the issuing certificate. In contrast the default validation model checks the validity of signature as well at the entire certificate chain at the current time.

@item gpgme_validity_t validity
The validity of the signature.

@item gpgme_error_t validity_reason
If a signature is not valid, this provides a reason why.

@item gpgme_pubkey_algo_t
The public key algorithm used to create this signature.

@item gpgme_hash_algo_t
The hash algorithm used to create this signature.

@item char *pka_address
The mailbox from the PKA information or @code{NULL}.

@item gpgme_key_t key
@since{1.7.0}

An object describing the key used to create the signature. This key object may be incomplete in that it only conveys information available directly with a signature. It may also be @code{NULL} if such information is not readily available.

@end table
@end deftp

@deftp {Data type} {gpgme_verify_result_t}
This is a pointer to a structure used to store the result of a @code{gpgme_op_verify} operation. After verifying a signature, you can retrieve the pointer to the result with @code{gpgme_op_verify_result}. If the operation failed this might be a @code{NULL} pointer. The structure contains the following member:

@table @code
@item gpgme_signature_t signatures

A linked list with information about all signatures for which a verification was attempted.

@item char *file_name

This is the filename of the original plaintext message file if it is known, otherwise this is a null pointer. Warning: The filename is not covered by the signature.

@item unsigned int is_mime : 1;

@since{1.11.0}

The message claims that the content is a MIME object. Warning: This flag is not covered by the signature.

@end table

@end deftp

@deftypefun gpgme_verify_result_t gpgme_op_verify_result (@w{gpgme_ctx_t @var{ctx}})

The function @code{gpgme_op_verify_result} returns a @code{gpgme_verify_result_t} pointer to a structure holding the result of a @code{gpgme_op_verify} operation. The pointer is only valid if the last operation on the context was a @code{gpgme_op_verify}, @code{gpgme_op_verify_start}, @code{gpgme_op_decrypt_verify} or @code{gpgme_op_decrypt_verify_start} operation, and if this operation finished successfully (for @code{gpgme_op_decrypt_verify} and @code{gpgme_op_decrypt_verify_start}, the error code @code{GPG_ERR_NO_DATA} counts as successful in this context). The returned pointer is only valid until the next operation is started on the context.

@end deftypefun

@node Decrypt and Verify

@subsection Decrypt and Verify

@cindex decryption and verification

@cindex verification and decryption

@cindex signature check

@cindex cryptographic operation, decryption and verification

@deftypefun gpgme_error_t gpgme_op_decrypt_verify (@w{gpgme_ctx_t @var{ctx}}, @w{gpgme_data_t @var{cipher}}, @w{gpgme_data_t @var{plain}})

The function @code{gpgme_op_decrypt_verify} decrypts the ciphertext in the data object @var{cipher} and stores it into the data object @var{plain}. If @var{cipher} contains signatures, they will be verified.

After the operation completed, @code{gpgme_op_decrypt_result} and @code{gpgme_op_verify_result} can be used to retrieve more information

about the signatures.

If the error code `GPG_ERR_NO_DATA` is returned, `@var{cipher}` does not contain any data to decrypt. However, it might still be signed. The information about detected signatures is available with `gpgme_op_verify_result` in this case.

The function returns the error code `GPG_ERR_NO_ERROR` if the ciphertext could be decrypted successfully, `GPG_ERR_INV_VALUE` if `@var{ctx}`, `@var{cipher}` or `@var{plain}` is not a valid pointer, `GPG_ERR_NO_DATA` if `@var{cipher}` does not contain any data to decrypt, `GPG_ERR_DECRYPT_FAILED` if `@var{cipher}` is not a valid cipher text, `GPG_ERR_BAD_PASSPHRASE` if the passphrase for the secret key could not be retrieved, and passes through any errors that are reported by the crypto engine support routines.

@end deftypefun

```
@deftypefun gpgme_error_t gpgme_op_decrypt_verify_start (@w{gpgme_ctx_t @var{ctx}}, @w{gpgme_data_t @var{cipher}}, @w{gpgme_data_t @var{plain}})
```

The function `gpgme_op_decrypt_verify_start` initiates a `gpgme_op_decrypt_verify` operation. It can be completed by calling `gpgme_wait` on the context. @xref{Waiting For Completion}.

The function returns the error code `GPG_ERR_NO_ERROR` if the operation could be started successfully, `GPG_ERR_INV_VALUE` if `@var{ctx}`, `@var{cipher}`, `@var{plain}` or `@var{r_stat}` is not a valid pointer, and `GPG_ERR_NO_DATA` if `@var{cipher}` does not contain any data to decrypt.

@end deftypefun

When processing mails it is sometimes useful to extract the actual mail address (the ``addr-spec'') from a string. GPGME provides this helper function which uses the same semantics as the internal functions in GPGME and GnuPG:

```
@deftypefun @w{char *} gpgme_addrspec_from_uid (@w{const char *@var{uid}})
```

@since{1.7.1}

Return the mail address (called ``addr-spec'' in RFC-5322) from the string `@var{uid}` which is assumed to be a user id (called ``address'' in RFC-5322). All plain ASCII characters (i.e. those with bit 7 cleared) in the result are converted to lowercase. Caller must free the result using `gpgme_free`. Returns `NULL` if no valid address was found (in which case `ERRNO` is set to `EINVAL`) or for other errors.

@end deftypefun

@node Sign

@subsection Sign

@cindex signature, creation

@cindex sign

@cindex cryptographic operation, signing

A signature can contain signatures by one or more keys. The set of keys used to create a signatures is contained in a context, and is applied to all following signing operations in this context (until the set is changed).

@menu

* Selecting Signers:: How to choose the keys to sign with.

* Creating a Signature:: How to create a signature.

* Signature Notation Data:: How to add notation data to a signature.

@end menu

@node Selecting Signers

@subsubsection Selecting Signers

@cindex signature, selecting signers

@cindex signers, selecting

The key or the keys used to create a signature are stored in the context. The following functions can be used to manipulate this list. If no signer has been set into the context a default key is used for signing.

@deftypefun void gpgme_signers_clear (@w{gpgme_ctx_t @var{ctx}})

The function @code{gpgme_signers_clear} releases a reference for each key on the signers list and removes the list of signers from the context @var{ctx}.

Every context starts with an empty list.

@end deftypefun

@deftypefun gpgme_error_t gpgme_signers_add (@w{gpgme_ctx_t @var{ctx}}, @w{const gpgme_key_t @var{key}})

The function @code{gpgme_signers_add} adds the key @var{key} to the list of signers in the context @var{ctx}.

Calling this function acquires an additional reference for the key.

@end deftypefun

@deftypefun @w{unsigned int} gpgme_signers_count (@w{const gpgme_ctx_t @var{ctx}})

@since{1.4.3}

The function @code{gpgme_signers_count} returns the number of signer keys in the context @var{ctx}.

@end deftypefun

@deftypefun gpgme_key_t gpgme_signers_enum (@w{const gpgme_ctx_t @var{ctx}}, @w{int @var{seq}})

The function @code{gpgme_signers_enum} returns the @var{seq}th key in the list of signers in the context @var{ctx}. An additional reference is acquired for the user.

If @var{seq} is out of range, @code{NULL} is returned.

@end deftypefun

@node Creating a Signature

@subsubsection Creating a Signature

@deftp {Data type} {enum gpgme_sig_mode_t}

@tindex gpgme_sig_mode_t

The @code{gpgme_sig_mode_t} type is used to specify the desired type of a signature. The following modes are available:

@table @code

@item GPGME_SIG_MODE_NORMAL

A normal signature is made, the output includes the plaintext and the signature.

@item GPGME_SIG_MODE_DETACH

A detached signature is made.

@item GPGME_SIG_MODE_CLEAR

A clear text signature is made. The @acronym{ASCII} armor and text mode settings of the context are ignored.

@end table

@end deftp

@deftypefun gpgme_error_t gpgme_op_sign (@w{gpgme_ctx_t @var{ctx}}, @w{gpgme_data_t @var{plain}},

@w{gpgme_data_t @var{sig}}, @w{gpgme_sig_mode_t @var{mode}})

The function @code{gpgme_op_sign} creates a signature for the text in the data object @var{plain} and returns it in the data object

@var{sig}. The type of the signature created is determined by the

@acronym{ASCII} armor (or, if that is not set, by the encoding specified for @var{sig}), the text mode attributes set for the context

@var{ctx} and the requested signature mode @var{mode}.

After the operation completed successfully, the result can be retrieved with @code{gpgme_op_sign_result}.

If an S/MIME signed message is created using the CMS crypto engine, the number of certificates to include in the message can be specified with `gpgme_set_include_certs`. [Included Certificates](#).

The function returns the error code `GPG_ERR_NO_ERROR` if the signature could be created successfully, `GPG_ERR_INV_VALUE` if `ctx`, `plain` or `sig` is not a valid pointer, `GPG_ERR_NO_DATA` if the signature could not be created, `GPG_ERR_BAD_PASSPHRASE` if the passphrase for the secret key could not be retrieved, `GPG_ERR_UNUSABLE_SECKEY` if there are invalid signers, and passes through any errors that are reported by the crypto engine support routines.

`@end deftypefun`

```
@deftypefun gpgme_error_t gpgme_op_sign_start (@w{gpgme_ctx_t @var{ctx}}, @w{gpgme_data_t @var{plain}}, @w{gpgme_data_t @var{sig}}, @w{gpgme_sig_mode_t @var{mode}})
```

The function `gpgme_op_sign_start` initiates a `gpgme_op_sign` operation. It can be completed by calling `gpgme_wait` on the context. [Waiting For Completion](#).

The function returns the error code `GPG_ERR_NO_ERROR` if the operation could be started successfully, and `GPG_ERR_INV_VALUE` if `ctx`, `plain` or `sig` is not a valid pointer.

`@end deftypefun`

```
@deftp {Data type} {gpgme_new_signature_t}
```

This is a pointer to a structure used to store a part of the result of a `gpgme_op_sign` operation. The structure contains the following members:

```
@table @code
```

```
@item gpgme_new_signature_t next
```

This is a pointer to the next new signature structure in the linked list, or `NULL` if this is the last element.

```
@item gpgme_sig_mode_t type
```

The type of this signature.

```
@item gpgme_pubkey_algo_t pubkey_algo
```

The public key algorithm used to create this signature.

```
@item gpgme_hash_algo_t hash_algo
```

The hash algorithm used to create this signature.

```
@item unsigned int sig_class
```

The signature class of this signature.

@item long int timestamp

The creation timestamp of this signature.

@item char *fpr

The fingerprint of the key which was used to create this signature.

@end table

@end deftp

@deftp {Data type} {gpgme_sign_result_t}

This is a pointer to a structure used to store the result of a

@code{gpgme_op_sign} operation. After successfully generating a signature, you can retrieve the pointer to the result with

@code{gpgme_op_sign_result}. The structure contains the following members:

@table @code

@item gpgme_invalid_key_t invalid_signers

A linked list with information about all invalid keys for which a signature could not be created.

@item gpgme_new_signature_t signatures

A linked list with information about all signatures created.

@end table

@end deftp

@deftypefun gpgme_sign_result_t gpgme_op_sign_result (@w{gpgme_ctx_t @var{ctx}})

The function @code{gpgme_op_sign_result} returns a

@code{gpgme_sign_result_t} pointer to a structure holding the result of a @code{gpgme_op_sign} operation. The pointer is only valid if the last operation on the context was a @code{gpgme_op_sign},

@code{gpgme_op_sign_start}, @code{gpgme_op_encrypt_sign} or

@code{gpgme_op_encrypt_sign_start} operation. If that operation failed, the function might return a @code{NULL} pointer. The returned pointer is only valid until the next operation is started on the context.

@end deftypefun

@node Signature Notation Data

@subsubsection Signature Notation Data

@cindex notation data

@cindex signature notation data

@cindex policy URL

Using the following functions, you can attach arbitrary notation data to a signature. This information is then available to the user when the signature is verified.

```
@deftypefun void gpgme_sig_notation_clear (@w{gpgme_ctx_t @var{ctx}})
@since{1.1.0}
```

The function `gpgme_sig_notation_clear` removes the notation data from the context `@var{ctx}`. Subsequent signing operations from this context will not include any notation data.

Every context starts with an empty notation data list.

```
@end deftypefun
```

```
@deftypefun gpgme_error_t gpgme_sig_notation_add (@w{gpgme_ctx_t @var{ctx}}, @w{const char
*@var{name}}, @w{const char *@var{value}}, @w{gpgme_sig_notation_flags_t @var{flags}})
@since{1.1.0}
```

The function `gpgme_sig_notation_add` adds the notation data with the name `@var{name}` and the value `@var{value}` to the context `@var{ctx}`.

Subsequent signing operations will include this notation data, as well as any other notation data that was added since the creation of the context or the last `gpgme_sig_notation_clear` operation.

The arguments `@var{name}` and `@var{value}` must be `NUL`-terminated strings in human-readable form. The flag `GPGME_SIG_NOTATION_HUMAN_READABLE` is implied (non-human-readable notation data is currently not supported). The strings must be in UTF-8 encoding.

If `@var{name}` is `NULL`, then `@var{value}` should be a policy URL.

The function `gpgme_sig_notation_add` returns the error code `GPG_ERR_NO_ERROR` if the notation data could be added successfully, `GPG_ERR_INV_VALUE` if `@var{ctx}` is not a valid pointer, or if `@var{name}`, `@var{value}` and `@var{flags}` are an invalid combination. The function also passes through any errors that are reported by the crypto engine support routines.

```
@end deftypefun
```

```
@deftypefun gpgme_sig_notation_t gpgme_sig_notation_get (@w{const gpgme_ctx_t @var{ctx}})
@since{1.1.0}
```

The function `gpgme_sig_notation_get` returns the linked list of notation data structures that are contained in the context `@var{ctx}`.

If `@var{ctx}` is not a valid pointer, or there is no notation data added for this context, `NULL` is returned.

```
@end deftypefun
```

@node Encrypt
@subsection Encrypt
@cindex encryption
@cindex cryptographic operation, encryption

One plaintext can be encrypted for several recipients at the same time. The list of recipients is created independently of any context, and then passed to the encryption operation.

@menu
* Encrypting a Plaintext:: How to encrypt a plaintext.
@end menu

@node Encrypting a Plaintext
@subsubsection Encrypting a Plaintext

```
@deftypefun gpgme_error_t gpgme_op_encrypt (@w{gpgme_ctx_t @var{ctx}}, @w{gpgme_key_t  
@var{recp}}[], @w{gpgme_encrypt_flags_t @var{flags}}, @w{gpgme_data_t @var{plain}}, @w{gpgme_data_t  
@var{cipher}})
```

The function `gpgme_op_encrypt` encrypts the plaintext in the data object `@var{plain}` for the recipients `@var{recp}` and stores the ciphertext in the data object `@var{cipher}`. The type of the ciphertext created is determined by the `ASCII` armor (or, if that is not set, by the encoding specified for `@var{cipher}`) and the text mode attributes set for the context `@var{ctx}`.

`@var{recp}` must be a `NULL`-terminated array of keys. The user must keep references for all keys during the whole duration of the call (but see `gpgme_op_encrypt_start` for the requirements with the asynchronous variant).

The value in `@var{flags}` is a bitwise-or combination of one or multiple of the following bit values:

@table @code
@item GPGME_ENCRYPT_ALWAYS_TRUST

The `GPGME_ENCRYPT_ALWAYS_TRUST` symbol specifies that all the recipients in `@var{recp}` should be trusted, even if the keys do not have a high enough validity in the keyring. This flag should be used with care; in general it is not a good idea to use any untrusted keys.

@item GPGME_ENCRYPT_NO_ENCRYPT_TO
@since{1.2.0}

The `GPGME_ENCRYPT_NO_ENCRYPT_TO` symbol specifies that no default or hidden default recipients as configured in the crypto

backend should be included. This can be useful for managing different user profiles.

@item GPGME_ENCRYPT_NO_COMPRESS
@since{1.5.0}

The @code{GPGME_ENCRYPT_NO_COMPRESS} symbol specifies that the plaintext shall not be compressed before it is encrypted. This is in some cases useful if the length of the encrypted message may reveal information about the plaintext.

@item GPGME_ENCRYPT_PREPARE
@itemx GPGME_ENCRYPT_EXPECT_SIGN
The @code{GPGME_ENCRYPT_PREPARE} symbol is used with the UI Server protocol to prepare an encryption (i.e. sending the @code{PREP_ENCRYPT} command). With the @code{GPGME_ENCRYPT_EXPECT_SIGN} symbol the UI Server is advised to also expect a sign command.

@item GPGME_ENCRYPT_SYMMETRIC
@since{1.7.0}

The @code{GPGME_ENCRYPT_SYMMETRIC} symbol specifies that the output should be additionally encrypted symmetrically even if recipients are provided. This feature is only supported for the OpenPGP crypto engine.

@item GPGME_ENCRYPT_THROW_KEYIDS
@since{1.8.0}

The @code{GPGME_ENCRYPT_THROW_KEYIDS} symbols requests that the identifiers for the decryption keys are not included in the ciphertext. On the receiving side, the use of this flag may slow down the decryption process because all available secret keys must be tried. This flag is only honored for OpenPGP encryption.

@item GPGME_ENCRYPT_WRAP
@since{1.8.0}

The @code{GPGME_ENCRYPT_WRAP} symbol specifies that the input is an OpenPGP message and not a plain data. This is the counterpart to @code{GPGME_DECRYPT_UNWRAP}.

@item GPGME_ENCRYPT_WANT_ADDRESS
@since{1.11.0}

The @code{GPGME_ENCRYPT_WANT_ADDRESS} symbol requests that all supplied keys or key specifications include a syntactically valid mail

address. If this is not the case the operation is not even tried and the error code `GPG_ERR_INV_USER_ID` is returned. Only the address part of the key specification is conveyed to the backend. As of now the key must be specified using the `@var{recpstring}` argument of the extended encrypt functions. This feature is currently only supported for the OpenPGP crypto engine.

@end table

If `GPG_ERR_UNUSABLE_PUBKEY` is returned, some recipients in `@var{recp}` are invalid, but not all. In this case the plaintext might be encrypted for all valid recipients and returned in `@var{cipher}` (if this happens depends on the crypto engine). More information about the invalid recipients is available with `gpgme_op_encrypt_result`.

If `@var{recp}` is `NULL`, symmetric rather than public key encryption is performed. Symmetrically encrypted cipher text can be deciphered with `gpgme_op_decrypt`. Note that in this case the crypto backend needs to retrieve a passphrase from the user. Symmetric encryption is currently only supported for the OpenPGP crypto backend.

The function returns the error code `GPG_ERR_NO_ERROR` if the ciphertext could be created successfully, `GPG_ERR_INV_VALUE` if `@var{ctx}`, `@var{recp}`, `@var{plain}` or `@var{cipher}` is not a valid pointer, `GPG_ERR_UNUSABLE_PUBKEY` if `@var{recp}` contains some invalid recipients, `GPG_ERR_BAD_PASSPHRASE` if the passphrase for the symmetric key could not be retrieved, and passes through any errors that are reported by the crypto engine support routines.

@end deftypefun

```
@deftypefun gpgme_error_t gpgme_op_encrypt_start (@w{gpgme_ctx_t @var{ctx}}, @w{gpgme_key_t @var{recp}}[], @w{gpgme_encrypt_flags_t @var{flags}}, @w{gpgme_data_t @var{plain}}, @w{gpgme_data_t @var{cipher}})
```

The function `gpgme_op_encrypt_start` initiates a `gpgme_op_encrypt` operation. It can be completed by calling `gpgme_wait` on the context. @xref{Waiting For Completion}.

References to the keys only need to be held for the duration of this call. The user can release its references to the keys after this function returns, even if the operation is not yet finished.

The function returns the error code `GPG_ERR_NO_ERROR` if the operation could be started successfully, `GPG_ERR_INV_VALUE` if `@var{ctx}`, `@var{rset}`, `@var{plain}` or `@var{cipher}` is not a valid pointer, and `GPG_ERR_UNUSABLE_PUBKEY` if `@var{rset}` does not contain any valid recipients.

@end deftypefun

```
@deftypefun gpgme_error_t gpgme_op_encrypt_ext @
  (@w{gpgme_ctx_t @var{ctx}}, @
   @w{gpgme_key_t @var{recp}[[]], @
   @w{const char *@var{recpstring}}, @
   @w{gpgme_encrypt_flags_t @var{flags}}, @
   @w{gpgme_data_t @var{plain}}, @w{gpgme_data_t @var{cipher}})
```

@since{1.11.0}

This is an extended version of `gpgme_op_encrypt` with `@var{recpstring}` as additional parameter. If `@var{recp}` is NULL and `@var{recpstring}` is not NULL, the latter is expected to be a linefeed delimited string with the set of key specifications. In contrast to `@var{recp}` the keys are given directly as strings and there is no need to first create key objects. Leading and trailing white space is remove from each line in `@var{recpstring}`. The keys are then passed verbatim to the backend engine.

For the OpenPGP backend several special keywords are supported to modify the operation. These keywords are given instead of a key specification. The currently supported keywords are:

```
@table @code
@item --hidden
@itemx --no-hidden
```

These keywords toggle between normal and hidden recipients for all following key specifications. When a hidden recipient is requested the gpg option `@option{-R}` (or `@option{-F}` in file mode) is used instead of `@option{-r}` (`@option{-f}` in file mode).

```
@item --file
@itemx --no-file
```

These keywords toggle between regular and file mode for all following key specification. In file mode the option `@option{-f}` or `@option{-F}` is passed to gpg. At least GnuPG version 2.1.14 is required to handle these options. The `GPGME_ENCRYPT_WANT_ADDRESS` flag is ignored in file mode.

```
@item --
```

This keyword disables all keyword detection up to the end of the string. All keywords are treated as verbatim arguments.

@end table

To create a `@var{recpstring}` it is often useful to employ a `strconcat` style function. For example this function creates a string to encrypt

to two keys:

```
@example
char *
xbuild_recpsstring (const char *key1, const char *key2)
@{
char *result = gpgrt_strconcat ("--\n", key1, "\n", key2, NULL);
if (!result)
    @ { perror ("strconcat failed"); exit (2); @ }
return result;
@}
@end example
```

Note the use of the double dash here; unless you want to specify a keyword, it is a good idea to avoid any possible trouble with key specifications starting with a double dash. The used `strconcat` function is available in `Libgpg-error` 1.28 and later; `Libgpg-error` (aka `Gpgrt`) is a dependency of `GPGME`. The number of arguments to `gpgrt_strconcat` is limited to 47 but that should always be sufficient. In case a larger and non-fixed number of keys are to be supplied the following code can be used:

```
@example
char *
xbuild_long_recpsstring (void)
@{
gpgrt_stream_t memfp;
const char *s;
void *result;

memfp = gpgrt_fopenmem (0, "w+b");
if (!memfp)
    @ { perror ("fopenmem failed"); exit (2); @ }
gpgrt_fputs ("--", memfp);
while ((s = get_next_keyspec ()))
    @ {
        gpgrt_fputc ('\n', memfp);
        gpgrt_fputs (s, memfp);
    @ }
gpgrt_fputc (0, memfp);
if (gpgrt_ferror (memfp))
    @ { perror ("writing to memstream failed"); exit (2); @ }
if (gpgrt_fclose_snatch (memfp, &result, NULL))
    @ { perror ("fclose_snatch failed"); exit (2); @ }
return result;
@}
@end example
```

In this example `get_next_keyspec` is expected to return the next key to be added to the string. Please take care: Encrypting to a large number of recipients is often questionable due to security reasons and also for the technicality that all keys are currently passed on the command line to `gpg` which has as a platform specific length limitation.

`@end deftypefun`

```
@deftypefun gpgme_error_t gpgme_op_encrypt_ext_start @
  (@w{gpgme_ctx_t @var{ctx}}, @
   @w{gpgme_key_t @var{recp}[]}, @
   @w{const char *@var{recpstring}}, @
   @w{gpgme_encrypt_flags_t @var{flags}}, @
   @w{gpgme_data_t @var{plain}}, @w{gpgme_data_t @var{cipher}})
```

`@since{1.11.0}`

This is an extended version of `gpgme_op_encrypt_start` with `recpstring` as additional parameter. If `recp` is NULL and `recpstring` is not NULL, the latter is expected to be a linefeed delimited string with the set of key specifications. In contrast to `recp` the keys are given directly as strings and there is no need to first create key objects. The keys are passed verbatim to the backend engine.

`@end deftypefun`

```
@deftp {Data type} {gpgme_encrypt_result_t}
```

This is a pointer to a structure used to store the result of a `gpgme_op_encrypt` operation. After successfully encrypting data, you can retrieve the pointer to the result with `gpgme_op_encrypt_result`. The structure contains the following members:

```
@table @code
```

```
@item gpgme_invalid_key_t invalid_recipients
```

A linked list with information about all invalid keys for which the data could not be encrypted.

```
@end table
```

```
@end deftp
```

```
@deftypefun gpgme_encrypt_result_t gpgme_op_encrypt_result (@w{gpgme_ctx_t @var{ctx}})
```

The function `gpgme_op_encrypt_result` returns a `gpgme_encrypt_result_t` pointer to a structure holding the result of a `gpgme_op_encrypt` operation. The pointer is only valid if the last operation on the context was a `gpgme_op_encrypt`, `gpgme_op_encrypt_start`,

@code{gpgme_op_sign} or @code{gpgme_op_sign_start} operation. If this operation failed, this might be a @code{NULL} pointer. The returned pointer is only valid until the next operation is started on the context.

@end deftypefun

```
@deftypefun gpgme_error_t gpgme_op_encrypt_sign (@w{gpgme_ctx_t @var{ctx}}, @w{gpgme_key_t @var{recp}}[], @w{gpgme_encrypt_flags_t @var{flags}}, @w{gpgme_data_t @var{plain}}, @w{gpgme_data_t @var{cipher}})
```

The function @code{gpgme_op_encrypt_sign} does a combined encrypt and sign operation. It is used like @code{gpgme_op_encrypt}, but the ciphertext also contains signatures for the signers listed in @var{ctx}.

The combined encrypt and sign operation is currently only available for the OpenPGP crypto engine.

@end deftypefun

```
@deftypefun gpgme_error_t gpgme_op_encrypt_sign_start (@w{gpgme_ctx_t @var{ctx}}, @w{gpgme_key_t @var{recp}}[], @w{gpgme_encrypt_flags_t @var{flags}}, @w{gpgme_data_t @var{plain}}, @w{gpgme_data_t @var{cipher}})
```

The function @code{gpgme_op_encrypt_sign_start} initiates a @code{gpgme_op_encrypt_sign} operation. It can be completed by calling @code{gpgme_wait} on the context. @xref{Waiting For Completion}.

The function returns the error code @code{GPG_ERR_NO_ERROR} if the operation could be started successfully, and @code{GPG_ERR_INV_VALUE} if @var{ctx}, @var{rset}, @var{plain} or @var{cipher} is not a valid pointer.

@end deftypefun

```
@deftypefun gpgme_error_t gpgme_op_encrypt_sign_ext @  
  (@w{gpgme_ctx_t @var{ctx}}, @  
   @w{gpgme_key_t @var{recp}}[], @  
   @w{const char *@var{recpstring}}, @  
   @w{gpgme_encrypt_flags_t @var{flags}}, @  
   @w{gpgme_data_t @var{plain}}, @w{gpgme_data_t @var{cipher}})
```

@since{1.11.0}

This is an extended version of @code{gpgme_op_encrypt_sign} with @var{recpstring} as additional parameter. If @var{recp} is NULL and @var{recpstring} is not NULL, the latter is expected to be a linefeed delimited string with the set of key specifications. In contrast to @var{recp} the keys are given directly as strings and there is no need to first create the key objects. The keys are passed verbatim to the

backend engine.

@end deftypefun

```
@deftypefun gpgme_error_t gpgme_op_encrypt_sign_ext_start @
  (@w{gpgme_ctx_t @var{ctx}}, @
   @w{gpgme_key_t @var{recp}}[], @
   @w{const char *@var{recpstring}}, @
   @w{gpgme_encrypt_flags_t @var{flags}}, @
   @w{gpgme_data_t @var{plain}}, @w{gpgme_data_t @var{cipher}})
```

@since{1.11.0}

This is an extended version of @code{gpgme_op_encrypt_sign_start} with @var{recpstring} as additional parameter. If @var{recp} is NULL and @var{recpstring} is not NULL, the latter is expected to be a linefeed delimited string with the set of key specifications. In contrast to @var{recp} the keys are given directly as strings and there is no need to first create the key objects. The keys are passed verbatim to the backend engine.

@end deftypefun

@node Miscellaneous

@section Miscellaneous operations

Here are some support functions which are sometimes useful.

@menu

- * Running other Programs:: Running other Programs
- * Using the Assuan protocol:: Using the Assuan protocol
- * Checking for updates:: How to check for software updates

@end menu

@node Running other Programs

@subsection Running other Programs

GPGME features an internal subsystem to run the actual backend engines. Along with data abstraction object this subsystem can be used to run arbitrary simple programs which even need not be related to cryptographic features. It may for example be used to run tools which are part of the GnuPG system but are not directly accessible with the GPGME API.

```
@deftypefun gpgme_error_t gpgme_op_spawn @
```

```
(@w{gpgme_ctx_t @var{ctx}}, @w{const char *@var{file}}, @  
@w{const char *@var{argv}[]}, @w{gpgme_data_t @var{datain}}, @  
@w{gpgme_data_t @var{dataout}}, @w{gpgme_data_t @var{dataerr}}, @  
@w{unsigned int @var{flags}})
```

@since{1.5.0}

The function `gpgme_op_spawn` runs the program `@var{file}` with the arguments taken from the NULL terminated array `@var{argv}`. If no arguments are required `@var{argv}` may be given as `NULL`. In the latter case or if `argv[0]` is the empty string, GPGME uses the basename of `@var{file}` for `argv[0]`. The file descriptors `stdin`, `stdout`, and `stderr` are connected to the data objects `@var{datain}`, `@var{dataout}`, and `@var{dataerr}`. If NULL is passed for one of these data objects the corresponding file descriptor is connected to `/dev/null`.

The value in `@var{flags}` is a bitwise-or combination of one or multiple of the following bit values:

```
@table @code  
@item GPGME_SPAWN_DETACHED  
@since{1.5.0}
```

Under Windows this flag inhibits the allocation of a new console for the program. This is useful for a GUI application which needs to call a command line helper tool.

```
@item GPGME_SPAWN_ALLOW_SET_FG  
@since{1.5.0}
```

Under Windows this flag allows the called program to put itself into the foreground.

```
@end table  
@end deftypefun
```

```
@deftypefun gpgme_error_t gpgme_op_spawn_start @  
(@w{gpgme_ctx_t @var{ctx}}, @w{const char *@var{file}}, @  
@w{const char *@var{argv}[]}, @w{gpgme_data_t @var{datain}}, @  
@w{gpgme_data_t @var{dataout}}, @w{gpgme_data_t @var{dataerr}}, @  
@w{unsigned int @var{flags}})
```

@since{1.5.0}

This is the asynchronous variant of `gpgme_op_spawn`.

```
@end deftypefun
```


@node Using the Assuan protocol

@subsection Using the Assuan protocol

The Assuan protocol can be used to talk to arbitrary Assuan servers. By default it is connected to the GnuPG agent, but it may be connected to arbitrary servers by using @code{gpgme_ctx_set_engine_info}, passing the location of the servers socket as @var{file_name} argument, and an empty string as @var{home_dir} argument.

The Assuan protocol functions use three kinds of callbacks to transfer data:

```
@deftp {Data type} {gpgme_error_t (*gpgme_assuan_data_cb_t) @
  (@w{void *@var{opaque}}, @w{const void *@var{data}}, @
  @w{size_t @var{datalen}})}
```

@since{1.2.0}

This callback receives any data sent by the server. @var{opaque} is the pointer passed to @code{gpgme_op_assuan_transact_start}, @var{data} of length @var{datalen} refers to the data sent.
@end deftp

```
@deftp {Data type} {gpgme_error_t (*gpgme_assuan_inquire_cb_t) @
  (@w{void *@var{opaque}}, @w{const char *@var{name}}, @
  @w{const char *@var{args}}, @w{gpgme_data_t *@var{r_data}})}
```

@since{1.2.0}

This callback is used to provide additional data to the Assuan server. @var{opaque} is the pointer passed to @code{gpgme_op_assuan_transact_start}, @var{name} and @var{args} specify what kind of data the server requested, and @var{r_data} is used to return the actual data.

Note: Returning data is currently not implemented in @acronym{GPGME}.

@end deftp

```
@deftp {Data type} {gpgme_error_t (*gpgme_assuan_status_cb_t) @
  (@w{void *@var{opaque}}, @w{const char *@var{status}}, @
  @w{const char *@var{args}})}
```

@since{1.2.0}

This callback receives any status lines sent by the server. @var{opaque} is the pointer passed to @code{gpgme_op_assuan_transact_start}, @var{status} and @var{args} denote the status update sent.

@end deftp

```
@deftypefun gpgme_error_t gpgme_op_assuan_transact_start @
  (@w{gpgme_ctx_t @var{ctx}}, @w{const char *@var{command}}, @
   @w{gpgme_assuan_data_cb_t @var{data_cb}}, @
   @w{void * @var{data_cb_value}}, @
   @w{gpgme_assuan_inquire_cb_t @var{inquire_cb}}, @
   @w{void * @var{inquire_cb_value}}, @
   @w{gpgme_assuan_status_cb_t @var{status_cb}}, @
   @w{void * @var{status_cb_value}})
```

@since{1.2.0}

Send the Assuan @var{command} and return results via the callbacks.
Any callback may be @code{NULL}. The result of the operation may be
retrieved using @code{gpgme_wait_ext}.

Asynchronous variant.

@end deftypefun

```
@deftypefun gpgme_error_t gpgme_op_assuan_transact_ext @
  (@w{gpgme_ctx_t @var{ctx}}, @w{const char *@var{command}}, @
   @w{gpgme_assuan_data_cb_t @var{data_cb}}, @
   @w{void * @var{data_cb_value}}, @
   @w{gpgme_assuan_inquire_cb_t @var{inquire_cb}}, @
   @w{void * @var{inquire_cb_value}}, @
   @w{gpgme_assuan_status_cb_t @var{status_cb}}, @
   @w{void * @var{status_cb_value}}, @
   @w{gpgme_error_t *@var{op_err}})
```

Send the Assuan @var{command} and return results via the callbacks.
The result of the operation is returned in @var{op_err}.

Synchronous variant.

@end deftypefun

@node Checking for updates

@subsection How to check for software updates

The GnuPG Project operates a server to query the current versions of
software packages related to GnuPG. GPGME can be used to
access this online database and check whether a new version of a
software package is available.

```
@deftp {Data type} {gpgme_query_swdb_result_t}
```

@since{1.8.0}

This is a pointer to a structure used to store the result of a `gpgme_op_query_swdb` operation. After success full call to that function, you can retrieve the pointer to the result with `gpgme_op_query_swdb_result`. The structure contains the following member:

`@table @code`

`@item name`

This is the name of the package.

`@item iversion`

The currently installed version or an empty string. This value is either a copy of the argument given to `gpgme_op_query_swdb` or the version of the installed software as figured out by GPGME or GnuPG.

`@item created`

This gives the date the file with the list of version numbers has originally be created by the GnuPG project.

`@item retrieved`

This gives the date the file was downloaded.

`@item warning`

If this flag is set either an error has occurred or some of the information in this structure are not properly set. For example if the version number of the installed software could not be figured out, the `update` flag may not reflect a required update status.

`@item update`

If this flag is set an update of the software is available.

`@item urgent`

If this flag is set an available update is important.

`@item noinfo`

If this flag is set, no valid information could be retrieved.

`@item unknown`

If this flag is set the given `name` is not known.

`@item toold`

If this flag is set the available information is not fresh enough.

`@item error`

If this flag is set some other error has occurred.

`@item version`

The version string of the latest released version.

@item reldate

The release date of the latest released version.

@end table

@end deftp

@deftypefun gpgme_error_t gpgme_op_query_swdb @

(@w{gpgme_ctx_t @var{ctx}}, @

@w{const char *@var{name}}, @

@w{const char *@var{iversion}}, @

@w{gpgme_data_t @var{reserved}})

@since{1.8.0}

Query the software version database for software package @var{name} and check against the installed version given by @var{iversion}. If @var{iversion} is given as @code{NULL} a check is only done if GPGME can figure out the version by itself (for example when using "gpgme" or "gnupg"). If @code{NULL} is used for @var{name} the current gpgme version is checked. @var{reserved} must be set to 0.

@end deftypefun

@deftypefun gpgme_query_swdb_result_t gpgme_op_query_swdb_result @

(@w{gpgme_ctx_t @var{ctx}})

@since{1.8.0}

The function @code{gpgme_op_query_swdb_result} returns a @code{gpgme_query_swdb_result_t} pointer to a structure holding the result of a @code{gpgme_op_query_swdb} operation. The pointer is only valid if the last operation on the context was a successful call to @code{gpgme_op_query_swdb}. If that call failed, the result might be a @code{NULL} pointer. The returned pointer is only valid until the next operation is started on the context @var{ctx}.

@end deftypefun

@noindent

Here is an example on how to check whether GnuPG is current:

@example

```
#include <gpgme.h>
```

```
int
```

```
main (void)
```

```
@{
```

```
    gpg_error_t err;
```

```

gpgme_ctx_t ctx;
gpgme_query_swdb_result_t result;

gpgme_check_version (NULL);
err = gpgme_new (&ctx);
if (err)
    fprintf (stderr, "error creating context: %s\n", gpg_strerror (err));
else
    @{
        gpgme_set_protocol (ctx, GPGME_PROTOCOL_GPGCONF);

        err = gpgme_op_query_swdb (ctx, "gnupg", NULL, 0);
        if (err)
            fprintf (stderr, "error querying swdb: %s\n", gpg_strerror (err));
        else
            @{
                result = gpgme_op_query_swdb_result (ctx);
                if (!result)
                    fprintf (stderr, "error querying swdb\n");
                if (!result->warning && !result->update)
                    printf ("GnuPG version %s is current\n",
                        result->iversion);
                else if (!result->warning && result->update)
                    printf ("GnuPG version %s can be updated to %s\n",
                        result->iversion, result->version);
                else
                    fprintf (stderr, "error finding the update status\n");
            @}
        gpgme_release (ctx);
    @}
return 0;
@}
@end example

```

@node Run Control

@section Run Control

@cindex run control

@cindex cryptographic operation, running

@acronym{GPGME} supports running operations synchronously and asynchronously. You can use asynchronous operation to set up a context up to initiating the desired operation, but delay performing it to a later point.

Furthermore, you can use an external event loop to control exactly when @acronym{GPGME} runs. This ensures that @acronym{GPGME} only runs when necessary and also prevents it from blocking for a long

time.

@menu

- * **Waiting For Completion::** Waiting until an operation is completed.
- * **Using External Event Loops::** Advanced control over what happens when.
- * **Cancellation::** How to end pending operations prematurely.

@end menu

@node Waiting For Completion

@subsection Waiting For Completion

@cindex cryptographic operation, wait for

@cindex wait for completion

```
@deftypefun gpgme_ctx_t gpgme_wait (@w{gpgme_ctx_t @var{ctx}}, @w{gpgme_error_t *@var{status}},  
@w{int @var{hang}})
```

The function `gpgme_wait` continues the pending operation within the context `@var{ctx}`. In particular, it ensures the data exchange between `GPGME` and the crypto backend and watches over the run time status of the backend process.

If `@var{hang}` is true, the function does not return until the operation is completed or cancelled. Otherwise the function will not block for a long time.

The error status of the finished operation is returned in `@var{status}` if `gpgme_wait` does not return `NULL`.

The `@var{ctx}` argument can be `NULL`. In that case, `gpgme_wait` waits for any context to complete its operation.

`gpgme_wait` can be used only in conjunction with any context that has a pending operation initiated with one of the `gpgme_op_*_start` functions except `gpgme_op_keylist_start` and `gpgme_op_trustlist_start` (for which you should use the corresponding `gpgme_op_*_next` functions). If `@var{ctx}` is `NULL`, all of such contexts are waited upon and possibly returned. Synchronous operations running in parallel, as well as key and trust item list operations, do not affect `gpgme_wait`.

In a multi-threaded environment, only one thread should ever call `gpgme_wait` at any time, regardless of whether `@var{ctx}` is specified or not. This means that all calls to this function should be fully synchronized by locking primitives. It is safe to start asynchronous operations while a thread is running in `gpgme_wait`.

The function returns the `@var{ctx}` of the context which has finished the operation. If `@var{hang}` is false, and the timeout expires,

`{NULL}` is returned and `{*status}` will be set to 0. If an error occurs, `{NULL}` is returned and the error is returned in `{*status}`.

@end dectypedefun

@node Using External Event Loops
@subsection Using External Event Loops
@cindex event loop, external

@acronym{GPGME} hides the complexity of the communication between the library and the crypto engine. The price of this convenience is that the calling thread can block arbitrary long waiting for the data returned by the crypto engine. In single-threaded programs, in particular if they are interactive, this is an unwanted side-effect. OTOH, if `{gpgme_wait}` is used without the `{hang}` option being enabled, it might be called unnecessarily often, wasting CPU time that could be used otherwise.

The I/O callback interface described in this section lets the user take control over what happens when. @acronym{GPGME} will provide the user with the file descriptors that should be monitored, and the callback functions that should be invoked when a file descriptor is ready for reading or writing. It is then the user's responsibility to decide when to check the file descriptors and when to invoke the callback functions. Usually this is done in an event loop, that also checks for events in other parts of the program. If the callback functions are only called when the file descriptors are ready, @acronym{GPGME} will never block. This gives the user more control over the program flow, and allows to perform other tasks when @acronym{GPGME} would block otherwise.

By using this advanced mechanism, @acronym{GPGME} can be integrated smoothly into GUI toolkits like GTK+ even for single-threaded programs.

@menu
* I/O Callback Interface:: How I/O callbacks are registered.
* Registering I/O Callbacks:: How to use I/O callbacks for a context.
* I/O Callback Example:: An example how to use I/O callbacks.
* I/O Callback Example GTK+:: How to use @acronym{GPGME} with GTK+.
* I/O Callback Example GDK:: How to use @acronym{GPGME} with GDK.
* I/O Callback Example Qt:: How to use @acronym{GPGME} with Qt.
@end menu

@node I/O Callback Interface
@subsubsection I/O Callback Interface

```
@deftp {Data type} {gpgme_error_t (*gpgme_io_cb_t) (@w{void *@var{data}}, @w{int @var{fd}})}  
@tindex gpgme_io_cb_t
```

The @code{gpgme_io_cb_t} type is the type of functions which @acronym{GPGME} wants to register as I/O callback handlers using the @code{gpgme_register_io_cb_t} functions provided by the user.

@var{data} and @var{fd} are provided by @acronym{GPGME} when the I/O callback handler is registered, and should be passed through to the handler when it is invoked by the user because it noticed activity on the file descriptor @var{fd}.

The callback handler always returns @code{0}, but you should consider the return value to be reserved for later use.

```
@end deftp
```

```
@deftp {Data type} {gpgme_error_t (*gpgme_register_io_cb_t) (@w{void *@var{data}}, @w{int @var{fd}},  
@w{int @var{dir}}, @w{gpgme_io_cb_t @var{fnc}}, @w{void *@var{fnc_data}}, @w{void **@var{tag}})}  
@tindex gpgme_register_io_cb_t
```

The @code{gpgme_register_io_cb_t} type is the type of functions which can be called by @acronym{GPGME} to register an I/O callback function @var{fnc} for the file descriptor @var{fd} with the user.

@var{fnc_data} should be passed as the first argument to @var{fnc} when the handler is invoked (the second argument should be @var{fd}).

If @var{dir} is 0, @var{fnc} should be called by the user when @var{fd} is ready for writing. If @var{dir} is 1, @var{fnc} should be called when @var{fd} is ready for reading.

@var{data} was provided by the user when registering the @code{gpgme_register_io_cb_t} function with @acronym{GPGME} and will always be passed as the first argument when registering a callback function.

For example, the user can use this to determine the event loop to which the file descriptor should be added.

@acronym{GPGME} will call this function when a crypto operation is initiated in a context for which the user has registered I/O callback handler functions with @code{gpgme_set_io_cbs}. It can also call this function when it is in an I/O callback handler for a file descriptor associated to this context.

The user should return a unique handle in @var{tag} identifying this I/O callback registration, which will be passed to the @code{gpgme_register_io_cb_t} function without interpretation when the file descriptor should not be monitored anymore.

```
@end deftp
```

```
@deftp {Data type} {void (*gpgme_remove_io_cb_t) (@w{void *@var{tag}})}
```

The @code{gpgme_remove_io_cb_t} type is the type of functions which can be

called by `@acronym{GPGME}` to remove an I/O callback handler that was registered before. `@var{tag}` is the handle that was returned by the `@code{gpgme_register_io_cb_t}` for this I/O callback.

`@acronym{GPGME}` can call this function when a crypto operation is in an I/O callback. It will also call this function when the context is destroyed while an operation is pending.

`@end deftp`

`@deftp {Data type} {enum gpgme_event_io_t}`

`@tindex gpgme_event_io_t`

The `@code{gpgme_event_io_t}` type specifies the type of an event that is reported to the user by `@acronym{GPGME}` as a consequence of an I/O operation. The following events are defined:

`@table @code`

`@item GPGME_EVENT_START`

The operation is fully initialized now, and you can start to run the registered I/O callback handlers now. Note that registered I/O callback handlers must not be run before this event is signalled.

`@var{type_data}` is `@code{NULL}` and reserved for later use.

`@item GPGME_EVENT_DONE`

The operation is finished, the last I/O callback for this operation was removed. The accompanying `@var{type_data}` points to a `@code{struct gpgme_io_event_done_data}` variable that contains the status of the operation that finished. This event is signalled after the last I/O callback has been removed.

`@item GPGME_EVENT_NEXT_KEY`

In a `@code{gpgme_op_keylist_start}` operation, the next key was received from the crypto engine. The accompanying `@var{type_data}` is a `@code{gpgme_key_t}` variable that contains the key with one reference for the user.

`@item GPGME_EVENT_NEXT_TRUSTITEM`

In a `@code{gpgme_op_trustlist_start}` operation, the next trust item was received from the crypto engine. The accompanying `@var{type_data}` is a `@code{gpgme_trust_item_t}` variable that contains the trust item with one reference for the user.

`@end table`

`@end deftp`

`@deftp {Data type} {void (*gpgme_event_io_cb_t) (@w{void *}@var{data}), @w{gpgme_event_io_t}@var{type}}, @w{void *}@var{type_data}}}`

The `@code{gpgme_event_io_cb_t}` type is the type of functions which can be called by `@acronym{GPGME}` to signal an event for an operation running in a context which has I/O callback functions registered by the user.

@var{data} was provided by the user when registering the @code{gpgme_event_io_cb_t} function with @acronym{GPGME} and will always be passed as the first argument when registering a callback function.

For example, the user can use this to determine the context in which this event has occurred.

@var{type} will specify the type of event that has occurred.

@var{type_data} specifies the event further, as described in the above list of possible @code{gpgme_event_io_t} types.

@acronym{GPGME} can call this function in an I/O callback handler.

@end deftp

@node Registering I/O Callbacks

@subsubsection Registering I/O Callbacks

@deftp {Data type} {struct gpgme_io_cbs}

@tindex gpgme_event_io_t

This structure is used to store the I/O callback interface functions described in the previous section. It has the following members:

@table @code

@item gpgme_register_io_cb_t add

This is the function called by @acronym{GPGME} to register an I/O callback handler. It must be specified.

@item void *add_priv

This is passed as the first argument to the @code{add} function when it is called by @acronym{GPGME}. For example, it can be used to determine the event loop to which the file descriptor should be added.

@item gpgme_remove_io_cb_t remove

This is the function called by @acronym{GPGME} to remove an I/O callback handler. It must be specified.

@item gpgme_event_io_cb_t event

This is the function called by @acronym{GPGME} to signal an event for an operation. It must be specified, because at least the start event must be processed.

@item void *event_priv

This is passed as the first argument to the @code{event} function when it is called by @acronym{GPGME}. For example, it can be used to determine the context in which the event has occurred.

@end table

@end deftp

```
@deftypefun void gpgme_set_io_cbs (@w{gpgme_ctx_t @var{ctx}}, @w{struct gpgme_io_cbs *@var{io_cbs}})
```

The function `gpgme_set_io_cbs` enables the I/O callback interface for the context `@var{ctx}`. The I/O callback functions are specified by `@var{io_cbs}`.

If `@var{io_cbs}->@code{add}` is `NULL`, the I/O callback interface is disabled for the context, and normal operation is restored.

```
@end deftypefun
```

```
@deftypefun void gpgme_get_io_cbs (@w{gpgme_ctx_t @var{ctx}}, @w{struct gpgme_io_cbs *@var{io_cbs}})
```

The function `gpgme_get_io_cbs` returns the I/O callback functions set with `gpgme_set_io_cbs` in `@var{io_cbs}`.

```
@end deftypefun
```

```
@node I/O Callback Example
```

```
@subsubsection I/O Callback Example
```

To actually use an external event loop, you have to implement the I/O callback functions that are used by `GPGME` to register and unregister file descriptors. Furthermore, you have to actually monitor these file descriptors for activity and call the appropriate I/O callbacks.

The following example illustrates how to do that. The example uses locking to show in which way the callbacks and the event loop can run concurrently. For the event loop, we use a fixed array. For a real-world implementation, you should use a dynamically sized structure because the number of file descriptors needed for a crypto operation in `GPGME` is not predictable.

```
@example
```

```
#include <assert.h>
```

```
#include <errno.h>
```

```
#include <stdlib.h>
```

```
#include <pthread.h>
```

```
#include <sys/types.h>
```

```
#include <gpgme.h>
```

```
/* The following structure holds the result of a crypto operation. */
```

```
struct op_result
```

```
{
```

```
  int done;
```

```
  gpgme_error_t err;
```

```
};
```

```
/* The following structure holds the data associated with one I/O
```

```

callback. */
struct one_fd
@{
int fd;
int dir;
gpgme_io_cb_t fnc;
void *fnc_data;
void *loop;
@};

struct event_loop
@{
pthread_mutex_t lock;
#define MAX_FDS 32
/* Unused slots are marked with FD being -1. */
struct one_fd fds[MAX_FDS];
@};
@end example

```

The following functions implement the I/O callback interface.

```

@example
gpgme_error_t
add_io_cb (void *data, int fd, int dir, gpgme_io_cb_t fnc, void *fnc_data,
          void **r_tag)
@{
struct event_loop *loop = data;
struct one_fd *fds = loop->fds;
int i;

pthread_mutex_lock (&loop->lock);
for (i = 0; i < MAX_FDS; i++)
  @{
    if (fds[i].fd == -1)
  @{
    fds[i].fd = fd;
    fds[i].dir = dir;
    fds[i].fnc = fnc;
    fds[i].fnc_data = fnc_data;
    fds[i].loop = loop;
    break;
  @}
  @}
pthread_mutex_unlock (&loop->lock);
if (i == MAX_FDS)
  return gpg_error (GPG_ERR_GENERAL);
*r_tag = &fds[i];
return 0;

```

```

@}

void
remove_io_cb (void *tag)
@{
    struct one_fd *fd = tag;
    struct event_loop *loop = fd->loop;

    pthread_mutex_lock (&loop->lock);
    fd->fd = -1;
    pthread_mutex_unlock (&loop->lock);
@}

void
event_io_cb (void *data, gpgme_event_io_t type, void *type_data)
@{
    struct op_result *result = data;

    /* We don't support list operations here. */
    if (type == GPGME_EVENT_DONE)
        @{
            result->done = 1;
            result->err = *type_data;
        @}
@}
@end example

```

The final missing piece is the event loop, which will be presented next. We only support waiting for the success of a single operation.

```

@example
int
do_select (struct event_loop *loop)
@{
    fd_set rfd;
    fd_set wfd;
    int i, n;
    int any = 0;
    struct timeval tv;
    struct one_fd *fdlist = loop->fds;

    pthread_mutex_lock (&loop->lock);
    FD_ZERO (&rfd);
    FD_ZERO (&wfd);
    for (i = 0; i < MAX_FDS; i++)
        if (fdlist[i].fd != -1)
            FD_SET (fdlist[i].fd, fdlist[i].dir ? &rfd : &wfd);
    pthread_mutex_unlock (&loop->lock);

```

```

tv.tv_sec = 0;
tv.tv_usec = 1000;

do
    @{
        n = select (FD_SETSIZE, &rfd, &wfd, NULL, &tv);
    @}
while (n < 0 && errno == EINTR);

if (n < 0)
    return n; /* Error or timeout. */

pthread_mutex_lock (&loop->lock);
for (i = 0; i < MAX_FDS && n; i++)
    @{
        if (fdlist[i].fd != -1)
            @{
                if (FD_ISSET (fdlist[i].fd, fdlist[i].dir ? &rfd : &wfd))
                    @{
                        assert (n);
                        n--;
                        any = 1;
                        /* The I/O callback handler can register/remove callbacks,
                           so we have to unlock the file descriptor list. */
                        pthread_mutex_unlock (&loop->lock);
                        (*fdlist[i].fnc) (fdlist[i].fnc_data, fdlist[i].fd);
                        pthread_mutex_lock (&loop->lock);
                    @}
                @}
            @}
        pthread_mutex_unlock (&loop->lock);
    @}
return any;
@}

void
wait_for_op (struct event_loop *loop, struct op_result *result)
    @{
int ret;

do
    @{
        ret = do_select (loop);
    @}
while (ret >= 0 && !result->done);
    @}
@end example

```

The main function shows how to put it all together.

```
@example
int
main (int argc, char *argv[])
@{
    struct event_loop loop;
    struct op_result result;
    gpgme_ctx_t ctx;
    gpgme_error_t err;
    gpgme_data_t sig, text;
    int i;
    pthread_mutexattr_t attr;
    struct gpgme_io_cbs io_cbs =
    @{
        add_io_cb,
        &loop,
        remove_io_cb,
        event_io_cb,
        &result
    @};

    init_gpgme ();

    /* Initialize the loop structure. */

    /* The mutex must be recursive, since remove_io_cb (which acquires a
       lock) can be called while holding a lock acquired in do_select. */
    pthread_mutexattr_init (&attr);
    pthread_mutexattr_settype (&attr, PTHREAD_MUTEX_RECURSIVE);
    pthread_mutex_init (&loop.lock, &attr);
    pthread_mutexattr_destroy (&attr);

    for (i = 0; i < MAX_FDS; i++)
        loop.fds[i].fd = -1;

    /* Initialize the result structure. */
    result.done = 0;

    err = gpgme_data_new_from_file (&sig, "signature", 1);
    if (!err)
        err = gpgme_data_new_from_file (&text, "text", 1);
    if (!err)
        err = gpgme_new (&ctx);
    if (!err)
        @{
            gpgme_set_io_cbs (ctx, &io_cbs);
            err = gpgme_op_verify_start (ctx, sig, text, NULL);
```

```

@}
if (err)
@{
    fprintf (stderr, "gpgme error: %s: %s\n",
            gpgme_strerror (err), gpgme_strerror (err));
    exit (1);
@}

wait_for_op (&loop, &result);
if (!result.done)
@{
    fprintf (stderr, "select error\n");
    exit (1);
@}
if (!result.err)
@{
    fprintf (stderr, "verification failed: %s: %s\n",
            gpgme_strerror (result.err), gpgme_strerror (result.err));
    exit (1);
@}
/* Evaluate verify result. */
@dots{}
return 0;
@}
@end example

```

```

@node I/O Callback Example GTK+
@subsection I/O Callback Example GTK+
@cindex GTK+, using @acronym{GPGME} with

```

The I/O callback interface can be used to integrate @acronym{GPGME} with the GTK+ event loop. The following code snippets shows how this can be done using the appropriate register and remove I/O callback functions. In this example, the private data of the register I/O callback function is unused. The event notifications is missing because it does not require any GTK+ specific setup.

```

@example
#include <gtk/gtk.h>

struct my_gpgme_io_cb
@{
    gpgme_io_cb_t fnc;
    void *fnc_data;
    guint input_handler_id
@};

```



```

void
my_gpgme_io_cb (gpointer data, gint source, GdkInputCondition condition)
@{
    struct my_gpgme_io_cb *iocb = data;
    (*(iocb->fnc)) (iocb->data, source);
@}

void
my_gpgme_remove_io_cb (void *data)
@{
    struct my_gpgme_io_cb *iocb = data;
    gtk_input_remove (data->input_handler_id);
@}

void
my_gpgme_register_io_callback (void *data, int fd, int dir, gpgme_io_cb_t fnc,
                               void *fnc_data, void **tag)
@{
    struct my_gpgme_io_cb *iocb = g_malloc (sizeof (struct my_gpgme_io_cb));
    iocb->fnc = fnc;
    iocb->data = fnc_data;
    iocb->input_handler_id = gtk_input_add_full (fd, dir
                                                ? GDK_INPUT_READ
                                                : GDK_INPUT_WRITE,
                                                my_gpgme_io_callback,
                                                0, iocb, NULL);

    *tag = iocb;
    return 0;
@}
@end example

```

```

@node I/O Callback Example GDK
@subsection I/O Callback Example GDK
@cindex GDK, using @acronym{GPGME} with

```

The I/O callback interface can also be used to integrate @acronym{GPGME} with the GDK event loop. The following code snippets shows how this can be done using the appropriate register and remove I/O callback functions. In this example, the private data of the register I/O callback function is unused. The event notifications is missing because it does not require any GDK specific setup.

It is very similar to the GTK+ example in the previous section.

```

@example
#include <gdk/gdk.h>

```

```

struct my_gpgme_io_cb
@{
gpgme_io_cb_t fnc;
void *fnc_data;
gint tag;
@};

void
my_gpgme_io_cb (gpointer data, gint source, GdkInputCondition condition)
@{
struct my_gpgme_io_cb *iocb = data;
(*(iocb->fnc)) (iocb->data, source);
@}

void
my_gpgme_remove_io_cb (void *data)
@{
struct my_gpgme_io_cb *iocb = data;
gdk_input_remove (data->tag);
@}

void
my_gpgme_register_io_callback (void *data, int fd, int dir, gpgme_io_cb_t fnc,
void *fnc_data, void **tag)
@{
struct my_gpgme_io_cb *iocb = g_malloc (sizeof (struct my_gpgme_io_cb));
iocb->fnc = fnc;
iocb->data = fnc_data;
iocb->tag = gtk_input_add_full (fd, dir ? GDK_INPUT_READ : GDK_INPUT_WRITE,
my_gpgme_io_callback, iocb, NULL);
*tag = iocb;
return 0;
@}
@end example

```

```

@node I/O Callback Example Qt
@subsection I/O Callback Example Qt
@cindex Qt, using @acronym{GPGME} with

```

The I/O callback interface can also be used to integrate @acronym{GPGME} with the Qt event loop. The following code snippets show how this can be done using the appropriate register and remove I/O callback functions. In this example, the private data of the register I/O callback function is unused. The event notifications is missing because it does not require any Qt specific setup.

```
@example
```

```

#include <qsocketnotifier.h>
#include <qapplication.h>

struct IOCB @ {
    IOCB( GpgmeIOCb f, void * d, QSocketNotifier * n )
        : func( f ), data( d ), notifier( n ) @ { @ }
    GpgmeIOCb func;
    void * data;
    QSocketNotifier * notifier;
} @ }

class MyApp : public QApplication @ {

// ...

static void registerGpgmeIOCallback( void * data, int fd, int dir,
                                     GpgmeIOCb func, void * func_data,
                                     void ** tag ) @ {
    QSocketNotifier * n =
        new QSocketNotifier( fd, dir ? QSocketNotifier::Read
                             : QSocketNotifier::Write );
    connect( n, SIGNAL(activated(int)),
             qApp, SLOT(slotGpgmeIOCallback(int)) );
    qApp->mIOCBs.push_back( IOCB( func, func_data, n ) );
    *tag = (void*)n;
} @ }

static void removeGpgmeIOCallback( void * tag ) @ {
    if ( !tag ) return;
    QSocketNotifier * n = static_cast<QSocketNotifier*>( tag );
    for ( QValueList<IOCB>::iterator it = qApp->mIOCBs.begin() ;
          it != qApp->mIOCBs.end() ; ++it )
        if ( it->notifier == n ) @ {
            delete it->notifier;
            qApp->mIOCBs.erase( it );
            return;
        } @ }
} @ }

public slots:
void slotGpgmeIOCallback( int fd ) @ {
    for ( QValueList<IOCB>::const_iterator it = mIOCBs.begin() ;
          it != mIOCBs.end() ; ++it )
        if ( it->notifier && it->notifier->socket() == fd )
            (*(it->func))( it->func_data, fd );
} @ }

// ...

```

```
private:
  QList<IOCB> mIOCBs;
  // ...
  @ };
@end example
```

```
@node Cancellation
@subsection Cancellation
@cindex cryptographic operation, aborting
@cindex cryptographic operation, cancelling
@cindex aborting operations
@cindex cancelling operations
```

Sometimes you do not want to wait for an operation to finish. `gpgme_cancel` provides two different functions to achieve that. The function `gpgme_cancel` takes effect immediately. When it returns, the operation is effectively canceled. However, it has some limitations and can not be used with synchronous operations. In contrast, the function `gpgme_cancel_async` can be used with any context and from any thread, but it is not guaranteed to take effect immediately. Instead, cancellation occurs at the next possible time (typically the next time I/O occurs in the target context).

```
@deftypefun gpgme_ctx_t gpgme_cancel (@w{gpgme_ctx_t @var{ctx}})
@since{0.4.5}
```

The function `gpgme_cancel` attempts to cancel a pending operation in the context `ctx`. This only works if you use the global event loop or your own event loop.

If you use the global event loop, you must not call `gpgme_wait` during cancellation. After successful cancellation, you can call `gpgme_wait` (optionally waiting on `ctx`), and the context `ctx` will appear as if it had finished with the error code `GPG_ERR_CANCEL`.

If you use an external event loop, you must ensure that no I/O callbacks are invoked for this context (for example by halting the event loop). On successful cancellation, all registered I/O callbacks for this context will be unregistered, and a `GPGME_EVENT_DONE` event with the error code `GPG_ERR_CANCEL` will be signalled.

The function returns an error code if the cancellation failed (in this case the state of `ctx` is not modified).

```
@end deftypefun
```

```
@deftypefun gpgme_ctx_t gpgme_cancel_async (@w{gpgme_ctx_t @var{ctx}})
@since{1.1.7}
```

The function `gpgme_cancel_async` attempts to cancel a pending operation in the context `ctx`. This can be called by any thread at any time after starting an operation on the context, but will not take effect immediately. The actual cancellation happens at the next time GPGME processes I/O in that context.

The function returns an error code if the cancellation failed (in this case the state of `ctx` is not modified).

```
@end deftypefun
```

```
@c *****
@c ***** Appendices *****
@c *****
```

```
@include uiserver.texi
```

```
@node Debugging
@appendix How to solve problems
@cindex debug
@cindex GPGME_DEBUG
```

Everyone knows that software often does not do what it should do and thus there is a need to track down problems. This is in particular true for applications using a complex library like `GPGME` and of course also for the library itself. Here we give a few hints on how to solve such problems.

First of all you should make sure that the keys you want to use are installed in the GnuPG engine and are usable. Thus the first test is to run the desired operation using `gpg` or `gpgsm` on the command line. If you can't figure out why things don't work, you may use `GPGME`'s built in trace feature. This feature is either enabled using the environment variable `GPGME_DEBUG` or, if this is not possible, by calling the function `gpgme_set_global_flag`. The value is the trace level and an optional file name. If no file name is given the trace output is printed to `stderr`.

```
@noindent
For example
@smallexample
GPGME_DEBUG=9:/home/user/mygpgme.log
@end smallexample
@noindent
```

(Note that under Windows you use a semicolon in place of the colon to separate the fields.)

A trace level of 9 is pretty verbose and thus you may want to start off with a lower level. The exact definition of the trace levels and the output format may change with any release; you need to check the source code for details. In any case the trace log should be helpful to understand what is going on. Warning: The trace log may reveal sensitive details like passphrases or other data you use in your application. If you are asked to send a log file, make sure that you run your tests only with play data.

@node Deprecated Functions

@appendix Deprecated Functions

@cindex deprecated

For backward compatibility @acronym{GPGME} has a number of functions, data types and constants which are deprecated and should not be used anymore. We document here those which are really old to help understanding old code and to allow migration to their modern counterparts.

@strong{Warning:} These interfaces will be removed in a future version of @acronym{GPGME}.

```
@deftypefun void gpgme_key_release (@w{gpgme_key_t @var{key}})
```

The function @code{gpgme_key_release} is equivalent to

```
@code{gpgme_key_unref}.
```

```
@end deftypefun
```

```
@deftypefun void gpgme_trust_item_release (@w{gpgme_trust_item_t @var{item}})
```

The function @code{gpgme_trust_item_release} is an alias for

```
@code{gpgme_trust_item_unref}.
```

```
@end deftypefun
```

```
@deftypefun gpgme_error_t gpgme_op_import_ext (@w{gpgme_ctx_t @var{ctx}}, @w{gpgme_data_t
```

```
@var{keydata}}, @w{int *@var{nr}})
```

```
@since{0.3.9}
```

The function @code{gpgme_op_import_ext} is equivalent to:

```
@example
```

```
gpgme_error_t err = gpgme_op_import (ctx, keydata);
```

```
if (!err)
```

```
@{
```

```
    gpgme_import_result_t result = gpgme_op_import_result (ctx);
```

```

    *nr = result->considered;
    @}
@end example
@end deftypefun

```

```

@defftp {Data type} {gpgme_error_t (*gpgme_edit_cb_t) @
(@w{void *@var{handle}}, @
 @w{gpgme_status_code_t @var{status}}, @
 @w{const char *@var{args}}, @
 @w{int @var{fd}})}
@tindex gpgme_edit_cb_t

```

The `gpgme_edit_cb_t` type is the type of functions which `GPGME` calls if it a key edit operation is on-going. The status code `@var{status}` and the argument line `@var{args}` are passed through by `GPGME` from the crypto engine. The file descriptor `@var{fd}` is -1 for normal status messages. If `@var{status}` indicates a command rather than a status message, the response to the command should be written to `@var{fd}`. The `@var{handle}` is provided by the user at start of operation.

The function should return `GPG_ERR_FALSE` if it did not handle the status code, `0` for success, or any other error value.

```

@end deftp

```

```

@deftypefun gpgme_error_t gpgme_op_edit (@w{gpgme_ctx_t @var{ctx}}, @w{gpgme_key_t @var{key}},
@w{gpgme_edit_cb_t @var{fnc}}, @w{void *@var{handle}}, @w{gpgme_data_t @var{out}})
@since{0.3.9}

```

Note: This function is deprecated, please use `gpgme_op_interact` instead.

The function `gpgme_op_edit` processes the key `KEY` interactively, using the edit callback function `FNC` with the handle `HANDLE`. The callback is invoked for every status and command request from the crypto engine. The output of the crypto engine is written to the data object `@var{out}`.

Note that the protocol between the callback function and the crypto engine is specific to the crypto engine and no further support in implementing this protocol correctly is provided by `GPGME`.

The function returns the error code `GPG_ERR_NO_ERROR` if the edit operation completes successfully, `GPG_ERR_INV_VALUE` if `@var{ctx}` or `@var{key}` is not a valid pointer, and any error returned by the crypto engine or the edit callback handler.

```

@end deftypefun

```

```
@deftypefun gpgme_error_t gpgme_op_edit_start (@w{gpgme_ctx_t @var{ctx}}, @w{gpgme_key_t
@var{key}}, @w{gpgme_edit_cb_t @var{fnc}}, @w{void *@var{handle}}, @w{gpgme_data_t @var{out}})

@since{0.3.9}
```

Note: This function is deprecated, please use
`gpgme_op_interact_start` instead.

The function `gpgme_op_edit_start` initiates a
`gpgme_op_edit` operation. It can be completed by calling
`gpgme_wait` on the context. [Waiting For Completion](#).

The function returns the error code `GPG_ERR_NO_ERROR` if the
operation was started successfully, and `GPG_ERR_INV_VALUE` if
`ctx` or `key` is not a valid pointer.
@end deftypefun

```
@deftypefun gpgme_error_t gpgme_op_card_edit (@w{gpgme_ctx_t @var{ctx}}, @w{gpgme_key_t
@var{key}}, @w{gpgme_edit_cb_t @var{fnc}}, @w{void *@var{handle}}, @w{gpgme_data_t @var{out}})
Note: This function is deprecated, please use gpgme_op_interact
with the flag GPGME_INTERACT_CARD instead.
```

The function `gpgme_op_card_edit` is analogous to
`gpgme_op_edit`, but should be used to process the smart card corresponding to the key `key`.
@end deftypefun

```
@deftypefun gpgme_error_t gpgme_op_card_edit_start (@w{gpgme_ctx_t @var{ctx}}, @w{gpgme_key_t
@var{key}}, @w{gpgme_edit_cb_t @var{fnc}}, @w{void *@var{handle}}, @w{gpgme_data_t @var{out}})
Note: This function is deprecated, please use gpgme_op_interact_start
with the flag GPGME_INTERACT_CARD instead.
```

The function `gpgme_op_card_edit_start` initiates a
`gpgme_op_card_edit` operation. It can be completed by calling
`gpgme_wait` on the context. [Waiting For Completion](#).

The function returns the error code `GPG_ERR_NO_ERROR` if the
operation was started successfully, and `GPG_ERR_INV_VALUE` if
`ctx` or `key` is not a valid pointer.
@end deftypefun

```
@deftypefun gpgme_error_t gpgme_data_new_with_read_cb (@w{gpgme_data_t *@var{dh}}, @w{int
(*@var{readfunc})} (@w{void *@var{hook}}, @w{char *@var{buffer}}, @w{size_t @var{count}}, @w{size_t
*@var{nread}}), @w{void *@var{hook_value}})
```

The function `gpgme_data_new_with_read_cb` creates a new
`gpgme_data_t` object and uses the callback function `readfunc`

to retrieve the data on demand. As the callback function can supply the data in any way it wants, this is the most flexible data type `@acronym{GPGME}` provides. However, it can not be used to write data.

The callback function receives `@var{hook_value}` as its first argument whenever it is invoked. It should return up to `@var{count}` bytes in `@var{buffer}`, and return the number of bytes actually read in `@var{nread}`. It may return `@code{0}` in `@var{nread}` if no data is currently available. To indicate `@code{EOF}` the function should return with an error code of `@code{-1}` and set `@var{nread}` to `@code{0}`. The callback function may support to reset its internal read pointer if it is invoked with `@var{buffer}` and `@var{nread}` being `@code{NULL}` and `@var{count}` being `@code{0}`.

The function returns the error code `@code{GPG_ERR_NO_ERROR}` if the data object was successfully created, `@code{GPG_ERR_INV_VALUE}` if `@var{dh}` or `@var{readfunc}` is not a valid pointer, and `@code{GPG_ERR_ENOMEM}` if not enough memory is available.

`@end deftypefun`

`@deftypefun gpgme_error_t gpgme_data_rewind (@w{gpgme_data_t @var{dh}})`
The function `@code{gpgme_data_rewind}` is equivalent to:

`@example`
`return (gpgme_data_seek (dh, 0, SEEK_SET) == -1)`
`? gpgme_error_from_errno (errno) : 0;`
`@end example`
`@end deftypefun`

`@deftp {Data type} gpgme_attr_t`

The `@code{gpgme_attr_t}` type is used to specify a key or trust item attribute. The following attributes are defined:

`@table @code`

`@item GPGME_ATTR_KEYID`

This is the key ID of a sub key. It is representable as a string.

For trust items, the trust item refers to the key with this ID.

`@item GPGME_ATTR_FPR`

This is the fingerprint of a sub key. It is representable as a string.

`@item GPGME_ATTR_ALGO`

This is the crypto algorithm for which the sub key can be used. It is representable as a string and as a number. The numbers correspond to the `@code{enum gcry_pk_algos}` values in the `gcrypt` library.

`@item GPGME_ATTR_LEN`

This is the key length of a sub key. It is representable as a number.

`@item GPGME_ATTR_CREATED`

This is the timestamp at creation time of a sub key. It is representable as a number.

`@item GPGME_ATTR_EXPIRE`

This is the expiration time of a sub key. It is representable as a number.

`@item GPGME_ATTR_OTRUST`

XXX FIXME (also for trust items)

`@item GPGME_ATTR_USERID`

This is a user ID. There can be more than one user IDs in a `@var{gpgme_key_t}` object. The first one (with index 0) is the primary user ID. The user ID is representable as a number.

For trust items, this is the user ID associated with this trust item.

`@item GPGME_ATTR_NAME`

This is the name belonging to a user ID. It is representable as a string.

`@item GPGME_ATTR_EMAIL`

This is the email address belonging to a user ID. It is representable as a string.

`@item GPGME_ATTR_COMMENT`

This is the comment belonging to a user ID. It is representable as a string.

`@item GPGME_ATTR_VALIDITY`

This is the validity belonging to a user ID. It is representable as a string and as a number. See below for a list of available validities.

For trust items, this is the validity that is associated with this trust item.

`@item GPGME_ATTR_UID_REVOKED`

This specifies if a user ID is revoked. It is representable as a number, and is `@code{1}` if the user ID is revoked, and `@code{0}` otherwise.

`@item GPGME_ATTR_UID_INVALID`

This specifies if a user ID is invalid. It is representable as a

number, and is @code{1} if the user ID is invalid, and @code{0} otherwise.

@item GPGME_ATTR_LEVEL

This is the trust level of a trust item.

@item GPGME_ATTR_TYPE

This returns information about the type of key. For the string function this will either be "PGP" or "X.509". The integer function returns 0 for PGP and 1 for X.509. It is also used for the type of a trust item.

@item GPGME_ATTR_IS_SECRET

This specifies if the key is a secret key. It is representable as a number, and is @code{1} if the key is revoked, and @code{0} otherwise.

@item GPGME_ATTR_KEY_REVOKED

This specifies if a sub key is revoked. It is representable as a number, and is @code{1} if the key is revoked, and @code{0} otherwise.

@item GPGME_ATTR_KEY_INVALID

This specifies if a sub key is invalid. It is representable as a number, and is @code{1} if the key is invalid, and @code{0} otherwise.

@item GPGME_ATTR_KEY_EXPIRED

This specifies if a sub key is expired. It is representable as a number, and is @code{1} if the key is expired, and @code{0} otherwise.

@item GPGME_ATTR_KEY_DISABLED

This specifies if a sub key is disabled. It is representable as a number, and is @code{1} if the key is disabled, and @code{0} otherwise.

@item GPGME_ATTR_KEY_CAPS

This is a description of the capabilities of a sub key. It is representable as a string. The string contains the letter "e" if the key can be used for encryption, "s" if the key can be used for signatures, and "c" if the key can be used for certifications.

@item GPGME_ATTR_CAN_ENCRYPT

This specifies if a sub key can be used for encryption. It is representable as a number, and is @code{1} if the sub key can be used for encryption, and @code{0} otherwise.

@item GPGME_ATTR_CAN_SIGN

This specifies if a sub key can be used to create data signatures. It is representable as a number, and is @code{1} if the sub key can be used for signatures, and @code{0} otherwise.

@item GPGME_ATTR_CAN_CERTIFY

This specifies if a sub key can be used to create key certificates. It is representable as a number, and is `{ 1 }` if the sub key can be used for certifications, and `{ 0 }` otherwise.

@item GPGME_ATTR_SERIAL

The X.509 issuer serial attribute of the key. It is representable as a string.

@item GPGME_ATTR_ISSUE

The X.509 issuer name attribute of the key. It is representable as a string.

@item GPGME_ATTR_CHAINID

The X.509 chain ID can be used to build the certification chain. It is representable as a string.

@end table

@end deftp

```
@deftypefun {const char *} gpgme_key_get_string_attr (@w{gpgme_key_t @var{key}}, @w{gpgme_attr_t @var{what}}, @w{const void *@var{reserved}}, @w{int @var{idx}})
```

The function `{gpgme_key_get_string_attr}` returns the value of the string-representable attribute `{what}` of key `{key}`. If the attribute is an attribute of a sub key or an user ID, `{idx}` specifies the sub key or user ID of which the attribute value is returned. The argument `{reserved}` is reserved for later use and should be `{NULL}`.

The string returned is only valid as long as the key is valid.

The function returns `{0}` if an attribute can't be returned as a string, `{key}` is not a valid pointer, `{idx}` out of range, or `{reserved}` not `{NULL}`.

@end deftypefun

```
@deftypefun {unsigned long} gpgme_key_get_ulong_attr (@w{gpgme_key_t @var{key}}, @w{gpgme_attr_t @var{what}}, @w{const void *@var{reserved}}, @w{int @var{idx}})
```

The function `{gpgme_key_get_ulong_attr}` returns the value of the number-representable attribute `{what}` of key `{key}`. If the attribute is an attribute of a sub key or an user ID, `{idx}` specifies the sub key or user ID of which the attribute value is returned. The argument `{reserved}` is reserved for later use and should be `{NULL}`.

The function returns `{0}` if the attribute can't be returned as a number, `{key}` is not a valid pointer, `{idx}` out of range, or `{reserved}` not `{NULL}`.

@end deftypefun

@c

@c Key Signatures

@c

The signatures on a key are only available if the key was retrieved via a listing operation with the `{GPGME_KEYLIST_MODE_SIGS}` mode enabled, because it is expensive to retrieve all signatures of a key.

So, before using the below interfaces to retrieve the signatures on a key, you have to make sure that the key was listed with signatures enabled. One convenient, but blocking, way to do this is to use the function `{gpgme_get_key}`.

@def `{Data type}` `{gpgme_attr_t}`

The `{gpgme_attr_t}` type is used to specify a key signature attribute. The following attributes are defined:

@table @code

@item GPGME_ATTR_KEYID

This is the key ID of the key which was used for the signature. It is representable as a string.

@item GPGME_ATTR_ALGO

This is the crypto algorithm used to create the signature. It is representable as a string and as a number. The numbers correspond to the `{enum gcry_pk_algos}` values in the gcrypt library.

@item GPGME_ATTR_CREATED

This is the timestamp at creation time of the signature. It is representable as a number.

@item GPGME_ATTR_EXPIRE

This is the expiration time of the signature. It is representable as a number.

@item GPGME_ATTR_USERID

This is the user ID associated with the signing key. The user ID is representable as a number.

@item GPGME_ATTR_NAME

This is the name belonging to a user ID. It is representable as a string.

@item GPGME_ATTR_EMAIL

This is the email address belonging to a user ID. It is representable as a string.

@item GPGME_ATTR_COMMENT

This is the comment belonging to a user ID. It is representable as a

string.

@item GPGME_ATTR_KEY_REVOKED

This specifies if a key signature is a revocation signature. It is representable as a number, and is @code{1} if the key is revoked, and @code{0} otherwise.

@c @item GPGME_ATTR_KEY_EXPIRED

@c This specifies if a key signature is expired. It is representable as a number, and is @code{1} if the key is revoked, and @code{0} otherwise.

@c

@item GPGME_ATTR_SIG_CLASS

This specifies the signature class of a key signature. It is representable as a number. The meaning is specific to the crypto engine.

@item GPGME_ATTR_SIG_CLASS

This specifies the signature class of a key signature. It is representable as a number. The meaning is specific to the crypto engine.

@item GPGME_ATTR_SIG_STATUS

This is the same value as returned by @code{gpgme_get_sig_status}.

@end table

@end deftp

@deftypefun {const char *} gpgme_key_sig_get_string_attr (@w{gpgme_key_t @var{key}}, @w{int @var{uid_idx}}, @w{gpgme_attr_t @var{what}}, @w{const void *@var{reserved}}, @w{int @var{idx}})

The function @code{gpgme_key_sig_get_string_attr} returns the value of the string-representable attribute @var{what} of the signature @var{idx} on the user ID @var{uid_idx} in the key @var{key}. The argument @var{reserved} is reserved for later use and should be @code{NULL}.

The string returned is only valid as long as the key is valid.

The function returns @code{0} if an attribute can't be returned as a string, @var{key} is not a valid pointer, @var{uid_idx} or @var{idx} out of range, or @var{reserved} not @code{NULL}.

@end deftypefun

@deftypefun {unsigned long} gpgme_key_sig_get_ulong_attr (@w{gpgme_key_t @var{key}}, @w{int @var{uid_idx}}, @w{gpgme_attr_t @var{what}}, @w{const void *@var{reserved}}, @w{int @var{idx}})

The function @code{gpgme_key_sig_get_ulong_attr} returns the value of the number-representable attribute @var{what} of the signature @var{idx} on the user ID @var{uid_idx} in the key @var{key}. The argument @var{reserved} is reserved for later use and should be

@code{NULL}.

The function returns @code{0} if an attribute can't be returned as a string, @var{key} is not a valid pointer, @var{uid_idx} or @var{idx} out of range, or @var{reserved} not @code{NULL}.

@end deftypefun

@c node Information About Trust Items

@c subsection Information About Trust Items

@c cindex trust item, information about

@c cindex trust item, attributes

@c cindex attributes, of a trust item

Trust items have attributes which can be queried using the interfaces below. The attribute identifiers are shared with those for key attributes. @xref{Information About Keys}.

```
@deftypefun {const char *} gpgme_trust_item_get_string_attr (@w{gpgme_trust_item_t @var{item}},  
@w{gpgme_attr_t @var{what}}, @w{const void *@var{reserved}}, @w{int @var{idx}})
```

The function @code{gpgme_trust_item_get_string_attr} returns the value of the string-representable attribute @var{what} of trust item @var{item}. The arguments @var{idx} and @var{reserved} are reserved for later use and should be @code{0} and @code{NULL} respectively.

The string returned is only valid as long as the key is valid.

The function returns @code{0} if an attribute can't be returned as a string, @var{key} is not a valid pointer, @var{idx} out of range, or @var{reserved} not @code{NULL}.

@end deftypefun

```
@deftypefun int gpgme_trust_item_get_int_attr (@w{gpgme_trust_item_t @var{item}}, @w{gpgme_attr_t  
@var{what}}, @w{const void *@var{reserved}}, @w{int @var{idx}})
```

The function @code{gpgme_trust_item_get_int_attr} returns the value of the number-representable attribute @var{what} of trust item @var{item}. If the attribute occurs more than once in the trust item, the index is specified by @var{idx}. However, currently no such attribute exists, so @var{idx} should be @code{0}. The argument @var{reserved} is reserved for later use and should be @code{NULL}.

The function returns @code{0} if the attribute can't be returned as a number, @var{key} is not a valid pointer, @var{idx} out of range, or @var{reserved} not @code{NULL}.

@end deftypefun

```
@defftp {Data type} {enum gpgme_sig_stat_t}
```

@tindex gpgme_sig_stat_t

The @code{gpgme_sig_stat_t} type holds the result of a signature check, or the combined result of all signatures. The following results are possible:

@table @code

@item GPGME_SIG_STAT_NONE

This status should not occur in normal operation.

@item GPGME_SIG_STAT_GOOD

This status indicates that the signature is valid. For the combined result this status means that all signatures are valid.

@item GPGME_SIG_STAT_GOOD_EXP

This status indicates that the signature is valid but expired. For the combined result this status means that all signatures are valid and expired.

@item GPGME_SIG_STAT_GOOD_EXPKEY

This status indicates that the signature is valid but the key used to verify the signature has expired. For the combined result this status means that all signatures are valid and all keys are expired.

@item GPGME_SIG_STAT_BAD

This status indicates that the signature is invalid. For the combined result this status means that all signatures are invalid.

@item GPGME_SIG_STAT_NOKEY

This status indicates that the signature could not be verified due to a missing key. For the combined result this status means that all signatures could not be checked due to missing keys.

@item GPGME_SIG_STAT_NOSIG

This status indicates that the signature data provided was not a real signature.

@item GPGME_SIG_STAT_ERROR

This status indicates that there was some other error which prevented the signature verification.

@item GPGME_SIG_STAT_DIFF

For the combined result this status means that at least two signatures have a different status. You can get each key's status with

@code{gpgme_get_sig_status}.

@end table

@end deftp

@deftypedefun {const char *} gpgme_get_sig_status (@w{gpgme_ctx_t @var{ctx}}, @w{int @var{idx}},


```
@w{gpgme_sig_stat_t *@var{r_stat}}, @w{time_t *@var{r_created}})
```

The function `@code{gpgme_get_sig_status}` is equivalent to:

```
@example
```

```
gpgme_verify_result_t result;
```

```
gpgme_signature_t sig;
```

```
result = gpgme_op_verify_result (ctx);
```

```
sig = result->signatures;
```

```
while (sig && idx)
```

```
  @ {
```

```
    sig = sig->next;
```

```
    idx--;
```

```
  @ }
```

```
if (!sig || idx)
```

```
  return NULL;
```

```
if (r_stat)
```

```
  @ {
```

```
    switch (gpg_err_code (sig->status))
```

```
  @ {
```

```
case GPG_ERR_NO_ERROR:
```

```
  *r_stat = GPGME_SIG_STAT_GOOD;
```

```
  break;
```

```
case GPG_ERR_BAD_SIGNATURE:
```

```
  *r_stat = GPGME_SIG_STAT_BAD;
```

```
  break;
```

```
case GPG_ERR_NO_PUBKEY:
```

```
  *r_stat = GPGME_SIG_STAT_NOKEY;
```

```
  break;
```

```
case GPG_ERR_NO_DATA:
```

```
  *r_stat = GPGME_SIG_STAT_NOSIG;
```

```
  break;
```

```
case GPG_ERR_SIG_EXPIRED:
```

```
  *r_stat = GPGME_SIG_STAT_GOOD_EXP;
```

```
  break;
```

```
case GPG_ERR_KEY_EXPIRED:
```

```
  *r_stat = GPGME_SIG_STAT_GOOD_EXPKEY;
```

```
  break;
```

```
default:
```

```
  *r_stat = GPGME_SIG_STAT_ERROR;
```

```

    break;
@}
@}
if (r_created)
    *r_created = sig->timestamp;
return sig->fpr;
@end example
@end deftypefun

```

```

@deftypefun {const char *} gpgme_get_sig_string_attr (@w{gpgme_ctx_t @var{ctx}}, @w{int @var{idx}},
@w{gpgme_attr_t @var{what}}, @w{int @var{whatidx}})

```

The function @code{gpgme_get_sig_string_attr} is equivalent to:

```

@example
gpgme_verify_result_t result;
gpgme_signature_t sig;

result = gpgme_op_verify_result (ctx);
sig = result->signatures;

while (sig && idx)
@{
    sig = sig->next;
    idx--;
@}
if (!sig || idx)
    return NULL;

switch (what)
@{
case GPGME_ATTR_FPR:
    return sig->fpr;

case GPGME_ATTR_ERRTOK:
    if (whatidx == 1)
        return sig->wrong_key_usage ? "Wrong_Key_Usage" : "";
    else
return "";
default:
    break;
@}

return NULL;
@end example
@end deftypefun

```

```

@deftypefun {const char *} gpgme_get_sig_ulong_attr (@w{gpgme_ctx_t @var{ctx}}, @w{int @var{idx}},
@w{gpgme_attr_t @var{what}}, @w{int @var{whatidx}})

```

The function `gpgme_get_sig_ulong_attr` is equivalent to:

```
@example
gpgme_verify_result_t result;
gpgme_signature_t sig;

result = gpgme_op_verify_result (ctx);
sig = result->signatures;

while (sig && idx)
  @ {
    sig = sig->next;
    idx--;
  @ }
if (!sig || idx)
  return 0;

switch (what)
  @ {
case GPGME_ATTR_CREATED:
  return sig->timestamp;

case GPGME_ATTR_EXPIRE:
  return sig->exp_timestamp;

case GPGME_ATTR_VALIDITY:
  return (unsigned long) sig->validity;

case GPGME_ATTR_SIG_STATUS:
  switch (sig->status)
    @ {
case GPG_ERR_NO_ERROR:
  return GPGME_SIG_STAT_GOOD;

case GPG_ERR_BAD_SIGNATURE:
  return GPGME_SIG_STAT_BAD;

case GPG_ERR_NO_PUBKEY:
  return GPGME_SIG_STAT_NOKEY;

case GPG_ERR_NO_DATA:
  return GPGME_SIG_STAT_NOSIG;

case GPG_ERR_SIG_EXPIRED:
  return GPGME_SIG_STAT_GOOD_EXP;

case GPG_ERR_KEY_EXPIRED:
  return GPGME_SIG_STAT_GOOD_EXPKEY;
```

```
default:
    return GPGME_SIG_STAT_ERROR;
@ }
```

```
case GPGME_ATTR_SIG_SUMMARY:
    return sig->summary;
```

```
default:
    break;
@ }
return 0;
@end example
@end deftypefun
```

```
@deftypefun {const char *} gpgme_get_sig_key (@w{gpgme_ctx_t @var{ctx}}, @w{int @var{idx}},
@w{gpgme_key_t *@var{r_key}})
```

The function `gpgme_get_sig_key` is equivalent to:

```
@example
gpgme_verify_result_t result;
gpgme_signature_t sig;

result = gpgme_op_verify_result (ctx);
sig = result->signatures;

while (sig && idx)
@ {
    sig = sig->next;
    idx--;
@ }
if (!sig || idx)
    return gpg_error (GPG_ERR_EOF);

return gpgme_get_key (ctx, sig->fpr, r_key, 0);
@end example
@end deftypefun
```

```
@include lesser.texi
```

```
@include gpl.texi
```

```
@node Concept Index
```

```
@unnumbered Concept Index
```

@printindex cp

@node Function and Data Index

@unnumbered Function and Data Index

@printindex fn

@bye

```
(21:protected-private-key(3:elg(1:p129:|B36I(s7}+ZJ/pvE;"tg7N ca"Gxvnyu&bB#h'7=89&oG
R<hO)(1:g1:)(1:y128:Ji|WU_UP}AQ\YMHAl|2e{ _tcMNDg}{ QnWsK 4pY {$bDCs)(9:protected25:openpgp-s2k3-
sha1-aes-cbc((4:sha18:JcE7:6452224)16: i[Q*vK)192:FJA!O!ZAF
biJ&Tsb!t
&9@R\~V+x>?sedDz-W(yqf?u^e?s1saV8<T0:tC5%ZMh?$,y_e[1D)(12:protected-at15:20130812T105135)))
(private-key
(oid.1.2.840.113549.1.1.1
(n
#00e0ce96f90b6c9e02f3922beada93fe50a875eac6bcc18bb9a9cf2e84965caa2d1ff95a7f542465c6c0c19d276e4526ce
048868a7a914fd343cc3a87dd74291ffc565506d5bbb25cbac6a0e2dd1f8bcaab0d4a29c2f37c950f363484bf269f78914
40464baf79827e03a36e70b814938eebdc63e964247be75dc58b014b7ea251#)
(e #010001#)
(d
#046129F2489D71579BE0A75FE029BD6CDB574EBF57EA8A5B0FDA942CAB943B117D7BB95E5D28875E0F
9FC5FCC06A72F6D502464DABDED78EF6B716177B83D5BDC543DC5D3FED932E59F5897E92E6F58A0F334
24106A3B6FA2CBF877510E4AC21C3EE47851E97D12996222AC3566D4CCB0B83D164074ABF7DE655FC244
6DA1781#)
(p
#00e861b700e17e8afe6837e7512e35b6ca11d0ae47d8b85161c67baf64377213fe52d772f2035b3ca830af41d8a4120e
1c1c70d12cc22f00d28d31dd48a8d424f1#)
(q
#00f7a7ca5367c661f8e62df34f0d05c10c88e5492348dd7bddc942c9a8f369f935a07785d2db805215ed786e4285df16
58eed3ce84f469b81b50d358407b4ad361#)
(u
#304559a9ead56d2309d203811a641bb1a09626bc8eb36ffa23c968ec5bd891eebbafc73ae666e01ba7c8990bae06cc2
bbe10b75e69fcacb353a6473079d8e9b#)
)
)
# libpgme.vers - List of symbols to export.
# Copyright (C) 2002, 2004, 2005, 2009, 2012 g10 Code GmbH
#
# This file is part of GPGME.
#
# GPGME is free software; you can redistribute it and/or modify
# it under the terms of the GNU Lesser general Public License as
# published by the Free Software Foundation; either version 2.1 of
# the License, or (at your option) any later version.
#
```

```
# GPGME is distributed in the hope that it will be useful,  
# but WITHOUT ANY WARRANTY; without even the implied warranty of  
# MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the  
# GNU Lesser General Public License for more details.  
#  
# You should have received a copy of the GNU Lesser General Public  
# License along with this program; if not, see <https://www.gnu.org/licenses/>.
```

```
#-----  
# Please remember to add new functions also to gpgme.def  
#-----
```

```
GPGME_1.1 {  
  global:  
    gpgme_set_engine_info;  
  
    gpgme_ctx_get_engine_info;  
    gpgme_ctx_set_engine_info;  
  
    gpgme_data_set_file_name;  
    gpgme_data_get_file_name;  
    gpgme_data_identify;  
  
    gpgme_sig_notation_clear;  
    gpgme_sig_notation_add;  
    gpgme_sig_notation_get;  
  
    gpgme_free;  
  
    gpgme_op_getauditlog_start;  
    gpgme_op_getauditlog;  
  
    gpgme_conf_release;  
    gpgme_conf_arg_new;  
    gpgme_conf_arg_release;  
    gpgme_conf_opt_change;  
    gpgme_op_conf_load;  
    gpgme_op_conf_save;  
    gpgme_op_conf_dir;  
  
    gpgme_cancel_async;  
  
    gpgme_op_assuan_result;  
    gpgme_op_assuan_transact;  
    gpgme_op_assuan_transact_start;  
  
    gpgme_check_version_internal;
```

gpgme_io_read;
gpgme_io_write;

gpgme_result_ref;
gpgme_result_unref;

gpgme_op_import_keys;
gpgme_op_import_keys_start;
gpgme_op_export_keys;
gpgme_op_export_keys_start;

gpgme_op_assuan_transact_ext;

gpgme_wait_ext;

gpgme_op_vfs_mount_result;
gpgme_op_vfs_mount;
gpgme_op_vfs_create;

gpgme_key_from_uid;
gpgme_set_sub_protocol;
gpgme_get_sub_protocol;

gpgme_op_passwd_start;
gpgme_op_passwd;

gpgme_set_global_flag;

gpgme_io_writen;

gpgme_set_pinentry_mode;
gpgme_get_pinentry_mode;

gpgme_get_dirinfo;

gpgme_op_spawn_start;
gpgme_op_spawn;

gpgme_set_offline;
gpgme_get_offline;

gpgme_set_status_cb;
gpgme_get_status_cb;

gpgme_pubkey_algo_string;
gpgme_set_ctx_flag;
gpgme_get_ctx_flag;
gpgme_data_set_flag;

```
gpgme_op_createkey_start;
gpgme_op_createkey;
gpgme_op_createsubkey_start;
gpgme_op_createsubkey;
gpgme_op_adduid_start;
gpgme_op_adduid;
gpgme_op_revuid_start;
gpgme_op_revuid;
gpgme_op_keysign_start;
gpgme_op_keysign;
gpgme_op_tofu_policy_start;
gpgme_op_tofu_policy;
gpgme_op_interact_start;
gpgme_op_interact;

gpgme_addrspec_from_uid;

gpgme_set_sender;
gpgme_get_sender;

gpgme_op_query_swdb;
gpgme_op_query_swdb_result;

gpgme_op_set_uid_flag_start;
gpgme_op_set_uid_flag;

gpgme_op_decrypt_ext;
gpgme_op_decrypt_ext_start;

gpgme_data_new_from_estream;

};
```

```
GPGME_1.0 {
global:
gpgme_check_version;
gpgme_get_engine_info;
gpgme_engine_check_version;

gpgme_err_code_from_errno;
gpgme_err_code_to_errno;
gpgme_err_make_from_errno;
gpgme_error_from_errno;
gpgme_strerror;
gpgme_strerror_r;
gpgme_strerrorsource;
```


gpgme_data_get_encoding;
gpgme_data_new;
gpgme_data_new_from_cbs;
gpgme_data_new_from_fd;
gpgme_data_new_from_file;
gpgme_data_new_from_filepart;
gpgme_data_new_from_mem;
gpgme_data_new_from_stream;
gpgme_data_read;
gpgme_data_release;
gpgme_data_release_and_get_mem;
gpgme_data_seek;
gpgme_data_set_encoding;
gpgme_data_write;

gpgme_get_protocol_name;
gpgme_hash_algo_name;
gpgme_pubkey_algo_name;

gpgme_new;
gpgme_get_armor;
gpgme_get_include_certs;
gpgme_get_io_cbs;
gpgme_get_keylist_mode;
gpgme_get_passphrase_cb;
gpgme_get_progress_cb;
gpgme_get_protocol;
gpgme_get_textmode;
gpgme_release;
gpgme_set_armor;
gpgme_set_include_certs;
gpgme_set_io_cbs;
gpgme_set_keylist_mode;
gpgme_set_locale;
gpgme_set_passphrase_cb;
gpgme_set_progress_cb;
gpgme_set_protocol;
gpgme_set_textmode;
gpgme_signers_add;
gpgme_signers_clear;
gpgme_signers_count;
gpgme_signers_enum;

gpgme_key_ref;
gpgme_key_unref;
gpgme_key_release;

gpgme_trust_item_ref;
gpgme_trust_item_unref;

gpgme_cancel;
gpgme_op_card_edit;
gpgme_op_card_edit_start;
gpgme_op_decrypt;
gpgme_op_decrypt_result;
gpgme_op_decrypt_start;
gpgme_op_decrypt_verify;
gpgme_op_decrypt_verify_start;
gpgme_op_delete;
gpgme_op_delete_start;
gpgme_op_delete_ext;
gpgme_op_delete_ext_start;
gpgme_op_edit;
gpgme_op_edit_start;
gpgme_op_encrypt;
gpgme_op_encrypt_start;
gpgme_op_encrypt_ext;
gpgme_op_encrypt_ext_start;
gpgme_op_encrypt_sign;
gpgme_op_encrypt_sign_ext;
gpgme_op_encrypt_sign_start;
gpgme_op_encrypt_sign_ext_start;
gpgme_op_encrypt_result;

gpgme_op_export;
gpgme_op_export_ext;
gpgme_op_export_ext_start;
gpgme_op_export_start;
gpgme_op_genkey;
gpgme_op_genkey_result;
gpgme_op_genkey_start;
gpgme_get_key;
gpgme_op_import;
gpgme_op_import_result;
gpgme_op_import_start;
gpgme_op_keylist_end;
gpgme_op_keylist_ext_start;
gpgme_op_keylist_from_data_start;
gpgme_op_keylist_next;
gpgme_op_keylist_result;
gpgme_op_keylist_start;
gpgme_op_sign;
gpgme_op_sign_result;
gpgme_op_sign_start;
gpgme_op_trustlist_end;

```
gpgme_op_trustlist_next;
gpgme_op_trustlist_start;
gpgme_op_verify;
gpgme_op_verify_result;
gpgme_op_verify_start;
gpgme_wait;
```

```
gpgme_data_new_with_read_cb;
gpgme_data_rewind;
gpgme_get_sig_status;
gpgme_get_sig_string_attr;
gpgme_get_sig_ulong_attr;
gpgme_get_sig_key;
gpgme_key_get_string_attr;
gpgme_key_get_ulong_attr;
gpgme_key_sig_get_string_attr;
gpgme_key_sig_get_ulong_attr;
gpgme_op_import_ext;
gpgme_trust_item_get_int_attr;
gpgme_trust_item_get_string_attr;
gpgme_trust_item_release;
```

```
gpgme_err_code_from_syserror;
gpgme_err_set_errno;
```

```
local:
```

```
 *;
```

```
};
```

```
#+TITLE: Stuff To Do
```

```
#+LATEX_COMPILER: xelatex
```

```
#+LATEX_CLASS: article
```

```
#+LATEX_CLASS_OPTIONS: [12pt]
```

```
#+LATEX_HEADER: \usepackage{xltextra}
```

```
#+LATEX_HEADER: \usepackage[margin=1in]{geometry}
```

```
#+LATEX_HEADER: \setmainfont[Ligatures={Common}]{Latin Modern Roman}
```

```
* Project Task List
```

```
:PROPERTIES:
```

```
:CUSTOM_ID: task-list
```

```
:END:
```

```
** DONE Documentation default format
```

```
CLOSED: [2018-02-15 Thu 21:29]
```

```
:PROPERTIES:
```

```
:CUSTOM_ID: todo-docs-default
```

```
:END:
```

Decide on a default file format for documentation. The two main contenders being Org Mode, the default for the GnuPG Project and reStructuredText, the default for Python projects. A third option of DITA XML was considered due to a number of beneficial features it provides.

The decision was made to use Org Mode in order to fully integrate with the rest of the GPGME and GnuPG documentation. It is possible to produce reST versions via Pandoc and DITA XML can be reached through converting to either Markdown or XHTML first.

```
** TODO Documentation build systems
:PROPERTIES:
:CUSTOM_ID: todo-docs-build-systems
:END:
```

Though Org Mode is being used for the default documentation format, it still needs to end up as usable by end users. So the Org Mode files are used to produce the "source" files used by the two main contenders for documenting the bindings: Texinfo and ReStructuredText/Docutils.

```
*** TODO Texinfo documentation
:PROPERTIES:
:CUSTOM_ID: todo-docs-build-texinfo
:END:
```

Need to add all of Texinfo's ... special systems to make it do its things.

```
*** TODO ReStructuredText documentation
:PROPERTIES:
:CUSTOM_ID: todo-docs-build-docutils
:END:
```

Need to run Sphinx's quick start, add it to the requirements and tweak the index page for the rst files to point to the HOWTO and other files.

It might just be easier to do all that in Org Mode and convert the lot, then the Sphinx bits can be automated.

```
** STARTED Documentation HOWTO
:PROPERTIES:
:CUSTOM_ID: todo-docs-howto
:END:
```

- State "STARTED" from "TODO" [2018-03-08 Thu 13:59] \\

Started yesterday.

Write a HOWTO style guide for the current Python bindings.

*** DONE Start python bindings HOWTO

CLOSED: [2018-03-07 Wed 18:14]

:PROPERTIES:

:CUSTOM_ID: howto-start

:END:

*** STARTED Include certain specific instructions in the HOWTO

:PROPERTIES:

:CUSTOM_ID: howto-requests

:END:

Note: moved the S/MIME bits out to their own section of the TODO list and may be served better by separate HOWTO documentation anyway.

- State "STARTED" from "TODO" [2018-03-09 Fri 15:27]

Some functions can be worked out from the handful of examples available, but many more can't and I've already begun receiving requests for certain functions to be explained.

**** DONE Standard scenarios

CLOSED: [2018-03-19 Mon 12:34]

:PROPERTIES:

:CUSTOM_ID: howto-the-basics

:END:

- State "DONE" from "STARTED" [2018-03-19 Mon 12:34] \\

All four of those are done.

- State "STARTED" from "TODO" [2018-03-09 Fri 15:26] \\

Began with the example code, now to add the text.

What everyone expects: encryption, decryption, signing and verifying.

**** STARTED Key control

:PROPERTIES:

:CUSTOM_ID: howto-key-control

:END:

- State "STARTED" from "TODO" [2018-03-19 Mon 12:35] \\

Generating keys and subkeys are done, but revocation is still to be done.

Generating keys, adding subkeys, revoking subkeys (and keeping

the cert key), adding and revoking UIDs, signing/certifying keys.

**** DONE More key control

CLOSED: [2018-03-19 Mon 12:36]

:PROPERTIES:

:CUSTOM_ID: howto-key-selection

:END:

- State "DONE" from "TODO" [2018-03-19 Mon 12:36] \\

Key selection, searching, matching and counting is done.

Selecting keys to encrypt to or manipulate in other ways (e.g. as with key control or the basics).

** TODO Documentation SWIG

:PROPERTIES:

:CUSTOM_ID: todo-docs-swig

:END:

Write documentation for the complete SWIG bindings demonstrating the correspondence with GPGME itself.

Note: it is likely that this will be more in the nature of something to be used in conjunction with the existing GPGME documentation which makes it easier for Python developers to use.

** TODO GUI examples

:PROPERTIES:

:CUSTOM_ID: todo-gui-examples

:END:

Create some examples of using Python bindings in a GUI application to either match or be similar to the old GTK2 examples available with PyME.

** TODO Replace SWIG

:PROPERTIES:

:CUSTOM_ID: todo-replace-swig

:END:

Selecting SWIG for this project in 2002 was understandable and effectively the only viable option. The options available now, however, are significantly improved and some of those would resolve a number of existing problems with using SWIG, particularly when running code on both POSIX compliant and Windows platforms.

The long term goal is to replace SWIG by reimplementing the Python bindings using a more suitable means of interfacing with the GPGME C source code.

*** TODO Replacement for SWIG

```
:PROPERTIES:  
:CUSTOM_ID: todo-replace-swig-replacement  
:END:
```

Decide on a replacement for SWIG. Currently CFFI is looking like the most viable candidate, but some additional testing and checks are yet to be completed.

** TODO API for an API

```
:PROPERTIES:  
:CUSTOM_ID: todo-api-squared  
:END:
```

A C API like GPGME is not what most modern developers think of when they hear the term API. Normally they think of something they can interact with like a RESTful web API. Though RESTful is unlikely given the nature of GPGME and the process of encryption, it may be possible to provide a more familiar interface which can be utilised by developers of other languages for which bindings are not available or for which it is too difficult to create proper bindings.

** TODO S/MIME

```
:PROPERTIES:  
:CUSTOM_ID: s-mime  
:END:
```

Eventually add some of this, but the OpenPGP details are far more important at the moment.

* Project Task Details

```
:PROPERTIES:  
:CUSTOM_ID: detailed-tasks  
:END:
```

** Working examples

```
:PROPERTIES:  
:CUSTOM_ID: working-examples
```

:END:

The old GUI examples were unable to be retained since they depended on GTK2 and Python 2's integration with GTK2.

Current GPGME examples so far only include command line tools or basic Python code for use with either Python 2.7 or Python 3.4 and above.

Future GUI examples ought to utilise available GUI modules and libraries supported by Python 3. This may include Qt frameworks, Tkinter, GTK3 or something else entirely.

** Documentation

:PROPERTIES:

:CUSTOM_ID: documentation

:END:

The legacy documentation which no longer applies to the Python bindings has been removed.

Current and future documentation will adhere to the GnuPG standard of using Org Mode and not use the reStructuredText (reST) format more commonly associated with Python documentation. The reasons for this are that this project is best served as shipping with the rest of GPGME and the documentation ought to match that. There are also aspects of Org Mode's publishing features which are superior to the defaults of reST, including the capacity to generate fully validating strict XHTML output.

If reST files are required at a later point for future inclusion with other Python packages, then that format can be generated from the .org files with Pandoc before being leveraged by either Docutils, Sphinx or something else.

While there are some advanced typesetting features of reST which are not directly available to Org Mode, more often than not those features are best implemented with either HTML and CSS, with LaTeX to produce a PDF or via a number of XML solutions. Both reST and Org Mode have multiple paths by which to achieve all of these.

-----BEGIN PGP PRIVATE KEY BLOCK-----

```
IQOYBFrsKEkBCADKw4Wt8J6M/88qD8PO6lSMCxH1cpwH8iK0uPaFFYsJkkXo7kWf
PTAtrV+REqF/o80dvYcdLvRsV21pvncZz/HXLU1yQ18mC3XObrKokbdgrTTKA5XE
BZkNsqyaMMJauT18H4hYkSg62/tTdO1cu/zWv/LFf7Xyn6+uA74ovXCJIO1s0N2c
PSht98QRzPMf2owgVk37JnDNp4gGVDGHxSZOuUwxgYAZYnA8SFc+c+3ZrQfY870
+O4j3Mz4p7yD13AwP4buQLBsb/icxekeQCqpRjLH9f7MdEcGXa1x36RcEkHdu+M
yJ392eMgD+dKNfRCtyTPhjZTxvbNELIBYICfABEBAAEAB/wLJ0gyMjs2fFfT83wM
```


5Lzz2yQIwV4t3bblBAujdHTqeN5Zmsm/oakFyjSokULK96Kv0R4ej9eoIgMFvxFk
HRkrngxTrbsNJ7I6QcKYHTPeIj318ykNL6fj0WJUcdPIENukXl5jbnYk3/4D2y
TTDySyq6jHTgvMH4K4KJUSpglvSJPntTk9RhuFGHAF+sNR9atygdYctAaERMRTsg
LCoSt/AoX5GRMIQjXT9oqQjwSQoZyF4s8HMC8wdTFIE/E0L4IVdHVP8sz2UszNfT
W/evmCA+KVruKjRH/Fhrq4hHkEamW28+j4L6uAyagONP7BONs+S5Oo2zTT9+tV2R
ILTZBADdgLuAgF6C5Lu9jCF6DfFgaT/uafMyQNkEGNlxOHMWHtGLHe475V2eG9gA
amd4yXKyEFKU1PWnvlGuicQSGdzVcwmq61msvXgYD0FK3LP3yWzKnE4X1tzc9Vp
/uHJxKjewCuyt1f5in919v+T8TbUxBYKC0zX/qWtX+10cTx77QQA6leqhToJ95Yc
u4UBrKMEO+y2v8Svb3LG7yI5oY8tkw0EkJ/kpZ8xTAFZYCe6fXdvVE3PHg2lrxyc
Wv/EU3QY/qA3G82mbXYeJ2jNZaTNYo4MylMrt4Mx25x4ke7JlsE8SVrQ+4CrHkqp
OjSIa7fppLrQ78uW980AtN8NNQGrlTsD/A9aoA60IgxY1Q3K2uSyDCyjLknv57ym
ZSBD3/t7m0l6Q6gdbfhnGosT+Hd4y3actqEqzXZHW2VG4dKZ/wRNkxtSm9adU9vs
EHyzxb6mKIH32zAG5TaFT20hC+NK6lsyHr9UE2ZrS6ma2sLxGW2O40hqNsdD+5m
NrqeBc2I/js1PMK0EHRlc3RAZXhbbXbsZS5vcmeJAVQEEwEIAD4WIQTUFzW5Ejb9
uIIEjFojAWNe7/DLBQUCWuwoSQIbAwUJA8JnAAULCQgHAgYVCgkICwIEFgIDAQIe
AQIXgAAKCRajAWNe7/DLBf9kB/wOQ/S60HGwFq07W9N01HWULyhHkoMmcHL6rfZ6
4oDqLxolPSasz7WAMW1jN4qtWJ0mFzwO83V6kaBe+wF6Kqir6udFSBW9rPcFg6/V
ZXPtT0a6uacIHq6DyQ5iMW4YQWbVy9OR2rNGkYo1JCBR0XdRjYCSX3yB4TWv/eX
nZ37/WjmiTOIzh35rjs+NuU/S5JPDfAp2/k70DevQeBsv+UjVXjWpNTZmPbvDnd9
95uSmC6UY4hzyP84ORYMYn9n1QAR0goxDN6UunOf9Rlp1oMzdxMool/d1MICxg2h
3jheuhv7lgUF4KpvHOuEPXQ7UO417E0TYcDZ1J8Nsv87SZeEnQOYBFrsKEkBCADj
oEBhG/QPqZHg8VyoD1xYRAWGxyDjKX/GrSs6yE+x2hk5FoQCajxKa/d4AVxOnJpd
whAfeXeSNaql5Ejgzax+Tdj9BV6vtGVJVv0pO7bgAiZxkA6RHxtNqhpPnPQoXvUz
kzpRgpuL+Nj4yIgz1ITH6KQH4u5SI9vd+j/8i9Taz67pdZwuJjac8qBuJHjzAo1
bjYctFYUSG5pbmMQyNlySzziNkFa4DajODlt3RuqVGP316Fk+Sy2+60tC/HIX8jg
MyMONfOGBQx6jk8tvAphS/LAqrrNepnagIyLUGKU+L8cB2g1PGGp2biBFWqZbudZ
oyRBet/0yH/zirBdQJw1ABEBAAEAB/4IN3gXOI4OuoOcsvHak4pebx61Mt0YP9cT
qZASIBqxok5x8E28pFh/tYfkYdqRCtdNYZOnxcEoUWh5j6nfwZkEnJ9P/T8GPNk7
pMKnKXmExi05b5uGHD8nU1rSbf/YkvAF0vpbxd4/RDxbbtQhbUwGzusSI+pBLM0w
5TreEB+vRGC2gOvXXOtKLNEa7M9rH2EwbAkP3jOGGwgk6adxbQdBcRqxq4merqhl
YrVz73bCj8TDc0fsNjyIaZZJ++ejfBFYavsF1pvx9z7FNFi8rSXoiB3SBtaWGfhr
bwNamZrDc7TRIq/fGgaL6g/bzcWrr1YaHXZ10Bgx6UymDOIYkCpBADm0Hv46sPw
07SO8+IACcaQliOto1pndOPwTimCeo58/7rf8I2a5uuJloGrnPwAX65bKDnUALp6
X3lnXRNmhnB3Uewx4i00LQmjsxhJfQiGLpMv0j58tn64s7GqQzGVV1JKcQm992RV
jFOydyjZ+K4LGWEOITG/bZrMEVNGCM+OnQQA/Haz8xN0NFSlq7tyfFc0pkx/TiCX
xGfBqbO0wU2b5GMnZbY/06HENpidIzpa231VQaw5/nPTvfhlLKW1iGAKc148cX1q
IL9w2ksXuaHR3LXud2VcfVTIdXU/7h7u1dD/85+c0+7j1GOBd9cXKxIM6OjpIJz1
I5/1h3C5S0TuxHkEAL/3BGihkhNfv1Xx0rWu0/732usX/nE/A9C26hGu41FUf3fp
0ilonKpKZUEwWt5hWSEFCsrznNvekiO0rxvuu3RVegvzThPNU4Pf4JZtJpRVhvUQ
d9ulxJw7V9rs75uNBatTNC0kXuGoXhehw4Bn93xa67gYGd3LfrH+oT0GCDpTSHCJ
ATwEGAEIACYWIQTUFzW5Ejb9uIIEjFojAWNe7/DLBQUCWuwoSQIbDAUJA8JnAAAK
CRAjAWNe7/DLBf0pCACPP5hBuUWngu2Hqvg+tNiujfsiYzId3MffFxek3CbXeHcJ
5F32NDJ9PYCnra4L8wSv+Nzt9gIa8IFwofSFQCjzH7KE86XcV3MhfdJTNb/+9CR7
Jq3e/4Iy0N5ip7PNYMCyakcAsxvsNCJKrSaDuYe/OAoTXRBtgRWE2uyT315em02L
kr+2Cc/Qk6H+vINOHGRgnpI/OZZjnUuUfBUvMGHr1phW+y7aeymC9PnUGdViRdJe
23nntMSDA+0/I7ESO9JsWvJbyBmuiZpu9JjScOjYH9xpQLqRNyw4WHpZriN69F0t
9Mmd7bM1+UyPgbPER0iWMeyctYsuOLEUyQKMscDT
=hkUm

-----END PGP PRIVATE KEY BLOCK-----

\input texinfo @c -* texinfo -*

@c %**start of header

@setfilename maintenance-mode.info

@settitle Maintenance Mode

@documentencoding utf-8

@documentlanguage en

@c %**end of header

@finalout

@titlepage

@title Maintenance Mode

@author Ben McGinnes

@end titlepage

@contents

@ifnottex

@node Top

@top Maintenance Mode

@end ifnottex

@menu

* Maintenance Mode from 2019::

@detailmenu

--- The Detailed Node Listing ---

Maintenance Mode from 2019

* Maintainer from 2019 onward::

* Using the Python Bindings from 2019 and beyond::

* Documentation formats::

Documentation formats

* Cautionary Notes regarding Sphinx and EPUB::

@end detailmenu

@end menu

@node Maintenance Mode from 2019

@chapter Maintenance Mode from 2019

@multitable {aaaaaaaaaaaaaa} {aaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa}

@item Version:

@tab 0.0.1

@item GPGME Version:

@tab 1.13.0
@item Author:
@tab Ben McGinnes <ben@gnupg.org>
@item Author GPG Key:
@tab DB4724E6FA4286C92B4E55C4321E4E2373590E5D
@item Language:
@tab Australian English, British English
@item xml:lang:
@tab en-AU, en-GB, en
@end multitable

From the beginning of 2019 the Python bindings to GPGME will enter maintenance mode, meaning that new features will not be added and only bug fixes and security fixes will be made. This also means that documentation beyond that existing at the end of 2018 will not be developed further except to correct errors.

Though use of these bindings appears to have been quite well received, there has been no indication of what demand there is, if any for either financial backing of the current Python bindings development or support contracts with g10code GmbH citing the necessity of including the bindings.

@menu
* Maintainer from 2019 onward::
* Using the Python Bindings from 2019 and beyond::
* Documentation formats::
@end menu

@node Maintainer from 2019 onward
@section Maintainer from 2019 onward

How does this affect the position of GnuPG Python Bindings Maintainer?

Well, I will remain as maintainer of the bindings; but without funding for that position, the amount of time I will be able to dedicate solely to this task will be limited and reduced to volunteered time. As with all volunteered time and effort in free software projects, this will be subject to numerous external imperatives.

@node Using the Python Bindings from 2019 and beyond
@section Using the Python Bindings from 2019 and beyond

For most, if not all, Python developers using these bindings; they will continue to just work the same as they always have. Expansions of GPGME itself are usually handled by SWIG with the existing code and thus bindings are generated properly when the bindings are installed alongside GPGME and when the latter is built from source.

In the rare circumstances where that is not enough to address some new addition to GPGME, then that is a bug and thus subject to the maintenance mode provisions (i.e. it will be fixed following a bug report being raised and your humble author will need to remember where the timesheet template was filed, depending on how many years off such an event is).

All the GPGME functionality will continue to be accessible via the lower level, dynamically generated methods which match the GPGME C documentation. While the more intuitively Pythonic higher level layer already covers the vast majority of functionality people require with key generation, signatures, certifications (key signing), encryption, decryption, verification, validation, trust levels and so on.

Any wanted features lacking in the Python bindings are usually lacking because they are missing from GPGME itself (e.g. revoking keys via the API) and in such cases they are usually deliberately excluded. More discussion of these issues can be found in the archives of the [@uref{https://lists.gnupg.org/mailman/listinfo/gnupg-devel, gnupg-devel mailing list}](https://lists.gnupg.org/mailman/listinfo/gnupg-devel).

Any features existing in the dynamically generated layer for which people want a specific, higher level function included to make it more Pythonic (e.g. to avoid needing to learn or memorise cryptographic mode values or GnuPG status code numbers), would be a feature request and **not** a bug.

It is still worthwhile requesting it, but the addition of such a feature would not be guaranteed and provided on a purely volunteer basis. Expediting such a request would require funding that request.

Those with a commercial interest in expediting such a feature request already know how to [@uref{https://gnupg.org/cgi-bin/procdonate.cgi?mode=preset, expedite it}](https://gnupg.org/cgi-bin/procdonate.cgi?mode=preset) (use the message field to state what feature is being requested).

@node Documentation formats
@section Documentation formats

The documentation has been written in Org mode for GNU Emacs, with both Texinfo and reStructuredText formats generated from that. The Texinfo files are intended for use with the rest of the GnuPG documentation; while the reStructuredText files are intended for use with Docutils and Sphinx, as with other Python projects.

@menu
* Cautionary Notes regarding Sphinx and EPUB::
@end menu

@node Cautionary Notes regarding Sphinx and EPUB

@subsection Cautionary Notes regarding Sphinx and EPUB

Though Python's Docutils in conjunction with Sphinx is capable of generating some very useful HTML sites, as proven by @uref{https://readthedocs.org/, Read the Docs} and the @uref{https://docs.python.org/, Python documentation}, there are a number of output formats it does not handle well. At the top of the list of things it manages to break so atrociously as to be embarrassing is the @uref{http://idpf.org/epub, EPUB 3} format.

The automatically generated EPUB of the CPython documentation always contains hundreds of validation errors and even the modest amount of documentation here @uref{https://files.au.adversary.org.s3.amazonaws.com/crypto/gpgme-python/rst/epub/GPGMEPythonBindings.epub, produced a file} with approximately thirty validation errors. As the volume of documentation content increases, so does the induced errors. Whereas Texinfo doesn't produce EPUB output at all, nor does Org-mode.

Should there ever be genuine demand for this format, lodge a @uref{https://dev.gnupg.org/maniphest/task/edit/form/4/, feature request} case marked for @uref{https://dev.gnupg.org/p/BenM/, my} attention. The means of generating such files flawlessly is already available, but is not yet part of the GnuPG build system. Nor is it integrated with a means of converting Org mode input files to the relevant base format automatically, as can already be done when converting Org to reStructuredText or Org to Texinfo. As a certain amount of work would be required to get it done, there would need to be clear demand for that work to be done.

@bye

;;; gpgme.lisp

;;; Copyright (C) 2006 g10 Code GmbH

;;;

;;; This file is part of GPGME-CL.

;;;

;;; GPGME-CL is free software; you can redistribute it and/or modify it

;;; under the terms of the GNU General Public License as published by

;;; the Free Software Foundation; either version 2 of the License, or

;;; (at your option) any later version.

;;;

;;; GPGME-CL is distributed in the hope that it will be useful, but

;;; WITHOUT ANY WARRANTY; without even the implied warranty of

;;; MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU

;;; Lesser General Public License for more details.

;;;

;;; You should have received a copy of the GNU General Public License

;;; along with GPGME; if not, write to the Free Software Foundation,

;;; Inc., 59 Temple Place - Suite 330, Boston, MA 02111-1307, USA.

```

;;; TODO

;;; Set up the library.

(in-package :gpgme)

(deftype byte-array ()
  '(simple-array (unsigned-byte 8) (*)))

(deftype character-array ()
  '(simple-array character (*)))

;;; Debugging.

(defvar *debug* nil "If debugging output should be given or not.")

;;; Load the foreign library.

(define-foreign-library libgpgme
  (:unix "libgpgme.so")
  (t (:default "libgpgme")))

(use-foreign-library libgpgme)

;;; System dependencies.

; Access to ERRNO.
(defun ("strerror" c-strerror) :string
  (err :int))

(defun get-errno ()
  *errno*)

(defun set-errno (errno)
  (setf *errno* errno))

(define-condition system-error (error)
  ((:errno :initarg :errno :reader system-error-errno))
  (:report (lambda (c stream)
    (format stream "System error: ~A: ~A"
      (system-error-errno c)
      (c-strerror (system-error-errno c))))))
  (:documentation "Signalled when an errno is encountered.))

; Needed to write passphrases.
(defun ("write" c-write) ssize-t
  (fd :int)

```

(buffer :string) ; Actually :pointer, but we only need string.

(size size-t))

(defun system-write (fd buffer size)

(let ((res (c-write fd buffer size)))

(when (< res 0) (error 'system-error :errno (get-errno)))

res))

;;;

;;; C Interface Definitions

;;;

;;; Data Type Interface

;;; Some new data types used for easier translation.

;;; The number of include certs. Translates to NIL for default.

(defctype cert-int-t

(:wrapper :int

:from-c translate-cert-int-t-from-foreign

:to-c translate-cert-int-t-to-foreign))

;;; A string that may be NIL to indicate a null pointer.

(defctype string-or-nil-t

(:wrapper :string

:to-c translate-string-or-nil-t-to-foreign))

;;; Some opaque data types used by GPGME.

(defctype gpgme-ctx-t

(:wrapper :pointer

:to-c translate-gpgme-ctx-t-to-foreign)

"The GPGME context type.")

(defctype gpgme-data-t

(:wrapper :pointer

:to-c translate-gpgme-data-t-to-foreign)

"The GPGME data object type.")

;;; Wrappers for the libgpg-error library.

(defctype gpgme-error-t

(:wrapper gpg-error::gpg-error-t

:from-c translate-gpgme-error-t-from-foreign

:to-c translate-gpgme-error-t-to-foreign)

"The GPGME error type.")

(defctype gpgme-error-no-signal-t

```

(wrapper gpg-error::gpg-error-t
 :from-c translate-gpgme-error-no-signal-t-from-foreign)
"The GPGME error type (this version does not signal conditions in translation.)"

(defctype gpgme-err-code-t gpg-error::gpg-err-code-t
 "The GPGME error code type.")

(defctype gpgme-err-source-t gpg-error::gpg-err-source-t
 "The GPGME error source type.")

(defun gpgme-err-make (source code)
 "Construct an error value from an error code and source."
 (gpg-err-make source code))

(defun gpgme-error (code)
 "Construct an error value from an error code."
 (gpgme-err-make :gpg-err-source-gpgme code))

(defun gpgme-err-code (err)
 "Retrieve an error code from the error value ERR."
 (gpg-err-code err))

(defun gpgme-err-source (err)
 "Retrieve an error source from the error value ERR."
 (gpg-err-source err))

(defun gpgme-strerror (err)
 "Return a string containing a description of the error code."
 (gpg-strerror err))

(defun gpgme-strsource (err)
 "Return a string containing a description of the error source."
 (gpg-strsource err))

(defun gpgme-err-code-from-errno (err)
 "Retrieve the error code for the system error. If the system error
 is not mapped, :gpg-err-unknown-errno is returned."
 (gpg-err-code-from-errno err))

(defun gpgme-err-code-to-errno (code)
 "Retrieve the system error for the error code. If this is not a
 system error, 0 is returned."
 (gpg-err-code-to-errno code))

(defun gpgme-err-make-from-errno (source err)
 (gpg-err-make-from-errno source err))

(defun gpgme-error-from-errno (err)

```


(gpg-error-from-errno err))

:::

(defcenum gpgme-data-encoding-t

"The possible encoding mode of gpgme-data-t objects."

(:none 0)

(:binary 1)

(:base64 2)

(:armor 3)

(:url 4)

(:urlesc 5)

(:url0 6)

(:mime 7))

:::

(defcenum gpgme-pubkey-algo-t

"Public key algorithms from libgcrypt."

(:rsa 1)

(:rsa-e 2)

(:rsa-s 3)

(:elg-e 16)

(:dsa 17)

(:ecc 18)

(:elg 20)

(:ecdsa 301)

(:ecdh 302)

(:eddsa 303))

(defcenum gpgme-hash-algo-t

"Hash algorithms from libgcrypt."

(:none 0)

(:md5 1)

(:sha1 2)

(:rmd160 3)

(:md2 5)

(:tiger 6)

(:haval 7)

(:sha256 8)

(:sha384 9)

(:sha512 10)

(:sha224 11)

(:md4 301)

(:crc32 302)

(:crc32-rfc1510 303)

(:crc24-rfc2440 304))

;;;

(defcenum gpgme-sig-mode-t
"The available signature modes."
(:none 0)
(:detach 1)
(:clear 2))

;;;

(defcenum gpgme-validity-t
"The available validities for a trust item or key."
(:unknown 0)
(:undefined 1)
(:never 2)
(:marginal 3)
(:full 4)
(:ultimate 5))

;;;

(defcenum gpgme-protocol-t
"The available protocols."
(:openpgp 0)
(:cms 1)
(:gpgconf 2)
(:assuan 3)
(:g13 4)
(:uiserver 5)
(:spawn 6)
(:default 254)
(:unknown 255))

;;;

(defbitfield (gpgme-keylist-mode-t :unsigned-int)
"The available keylist mode flags."
(:local 1)
(:extern 2)
(:sigs 4)
(:sig-notations)
(:with-secret 16)
(:with-tofu 32)
(:ephemeral 128)
(:validate 256))

;;;

```
(defbitfield (gpgme-sig-notation-flags-t :unsigned-int)
  "The available signature notation flags."
  (:human-readable 1)
  (:critical 2))
```

```
(defctype gpgme-sig-notation-t
  (:wrapper :pointer
   :from-c translate-gpgme-sig-notation-t-from-foreign)
  "Signature notation pointer type.")
```

```
::: FIXME: Doesn't this depend on endianness?
```

```
(defbitfield (gpgme-sig-notation-bitfield :unsigned-int)
  (:human-readable 1)
  (:critical 2))
```

```
(defcstruct gpgme-sig-notation
  "Signature notations."
  (next gpgme-sig-notation-t)
  (name :pointer)
  (value :pointer)
  (name-len :int)
  (value-len :int)
  (flags gpgme-sig-notation-flags-t)
  (bitfield gpgme-sig-notation-bitfield))
```

```
:::
```

```
(defcenum gpgme-status-code-t
  "The possible status codes for the edit operation."
  (:eof 0)
  (:enter 1)
  (:leave 2)
  (:abort 3)
  (:goodsig 4)
  (:badsig 5)
  (:errsig 6)
  (:badarmor 7)
  (:rsa-or-idea 8)
  (:keyexpired 9)
  (:keyrevoked 10)
  (:trust-undefined 11)
  (:trust-never 12)
  (:trust-marginal 13)
  (:trust-fully 14)
  (:trust-ultimate 15)
  (:shm-info 16)
  (:shm-get 17)
  (:shm-get-bool 18))
```

(:shm-get-hidden 19)
(:need-passphrase 20)
(:validsig 21)
(:sig-id 22)
(:enc-to 23)
(:nodata 24)
(:bad-passphrase 25)
(:no-pubkey 26)
(:no-seckey 27)
(:need-passphrase-sym 28)
(:decryption-failed 29)
(:decryption-okay 30)
(:missing-passphrase 31)
(:good-passphrase 32)
(:goodmdc 33)
(:badmdc 34)
(:errmdc 35)
(:imported 36)
(:import-ok 37)
(:import-problem 38)
(:import-res 39)
(:file-start 40)
(:file-done 41)
(:file-error 42)
(:begin-decryption 43)
(:end-decryption 44)
(:begin-encryption 45)
(:end-encryption 46)
(:delete-problem 47)
(:get-bool 48)
(:get-line 49)
(:get-hidden 50)
(:got-it 51)
(:progress 52)
(:sig-created 53)
(:session-key 54)
(:notation-name 55)
(:notation-data 56)
(:policy-url 57)
(:begin-stream 58)
(:end-stream 59)
(:key-created 60)
(:userid-hint 61)
(:unexpected 62)
(:inv-recp 63)
(:no-recp 64)
(:already-signed 65)
(:sigexpired 66)

(:expsig 67)
(:expkeysig 68)
(:truncated 69)
(:error 70)
(:newsig 71)
(:revkeysig 72)
(:sig-subpacket 73)
(:need-passphrase-pin 74)
(:sc-op-failure 75)
(:sc-op-success 76)
(:cardctrl 77)
(:backup-key-created 78)
(:pka-trust-bad 79)
(:pka-trust-good 80)
(:plaintext 81)
(:inv-sgnr 82)
(:no-sgnr 83)
(:success 84)
(:decryption-info 85)
(:plaintext-length 86)
(:mountpoint 87)
(:pinentry-launched 88)
(:attribute 89)
(:begin-signing 90)
(:key-not-created 91)
(:inquire-maxlen 92)
(:failure 93)
(:key-considered 94)
(:tofu-user 95)
(:tofu-stats 96)
(:tofu-stats-long 97)
(:notation-flags 98)
(:decryption-compliance-mode 99)
(:verification-compliance-mode 100))

:::

```
(defctype gpgme-engine-info-t
  (:wrapper :pointer
    :from-c translate-gpgme-engine-info-t-to-foreign)
  "The engine information structure pointer type.")
```

```
(defcstruct gpgme-engine-info
  "Engine information."
  (next gpgme-engine-info-t)
  (protocol gpgme-protocol-t)
  (file-name :string)
  (version :string))
```

```
(req-version :string)
(home-dir :string))
```

```
:::
```

```
(defctype gpgme-subkey-t
  (:wrapper :pointer
   :from-c translate-gpgme-subkey-t-from-foreign)
  "A subkey from a key.")
```

```
:: FIXME: Doesn't this depend on endianness?
```

```
(defbitfield (gpgme-subkey-bitfield :unsigned-int)
  "The subkey bitfield."
  (:revoked 1)
  (:expired 2)
  (:disabled 4)
  (:invalid 8)
  (:can-encrypt 16)
  (:can-sign 32)
  (:can-certify 64)
  (:secret 128)
  (:can-authenticate 256)
  (:is-qualified 512)
  (:is-cardkey 1024)
  (:is-de-vs 2048))
```

```
(defcstruct gpgme-subkey
  "Subkey from a key."
  (next gpgme-subkey-t)
  (bitfield gpgme-subkey-bitfield)
  (pubkey-algo gpgme-pubkey-algo-t)
  (length :unsigned-int)
  (keyid :string)
  (-keyid :char :count 17)
  (fpr :string)
  (timestamp :long)
  (expires :long))
```

```
(defctype gpgme-key-sig-t
  (:wrapper :pointer
   :from-c translate-gpgme-key-sig-t-from-foreign)
  "A signature on a user ID.")
```

```
:: FIXME: Doesn't this depend on endianness?
```

```
(defbitfield (gpgme-key-sig-bitfield :unsigned-int)
  "The key signature bitfield."
  (:revoked 1)
```

```
(:expired 2)
(:invalid 4)
(:exportable 16))

(defcstruct gpgme-key-sig
  "A signature on a user ID."
  (next gpgme-key-sig-t)
  (bitfield gpgme-key-sig-bitfield)
  (pubkey-algo gpgme-pubkey-algo-t)
  (keyid :string)
  (-keyid :char :count 17)
  (timestamp :long)
  (expires :long)
  (status gpgme-error-no-signal-t)
  (-class :unsigned-int)
  (uid :string)
  (name :string)
  (email :string)
  (comment :string)
  (sig-class :unsigned-int))
```

```
(defctype gpgme-user-id-t
  (:wrapper :pointer
   :from-c translate-gpgme-user-id-t-from-foreign)
  "A user ID from a key.")
```

```
:: FIXME: Doesn't this depend on endianness?
(defbitfield (gpgme-user-id-bitfield :unsigned-int)
  "The user ID bitfield."
  (:revoked 1)
  (:invalid 2))
```

```
(defcstruct gpgme-user-id
  "A user ID from a key."
  (next gpgme-user-id-t)
  (bitfield gpgme-user-id-bitfield)
  (validity gpgme-validity-t)
  (uid :string)
  (name :string)
  (email :string)
  (comment :string)
  (signatures gpgme-key-sig-t)
  (-last-key-sig gpgme-key-sig-t))
```

```
(defctype gpgme-key-t
  (:wrapper :pointer
```

```

:from-c translate-gpgme-key-t-from-foreign
:to-c translate-gpgme-key-t-to-foreign)
"A key from the keyring.")

;; FIXME: Doesn't this depend on endianness?
(defbitfield (gpgme-key-bitfield :unsigned-int)
"The key bitfield."
(:revoked 1)
(:expired 2)
(:disabled 4)
(:invalid 8)
(:can-encrypt 16)
(:can-sign 32)
(:can-certify 64)
(:secret 128)
(:can-authenticate 256)
(:is-qualified 512))

(defcstruct gpgme-key
"A signature on a user ID."
(-refs :unsigned-int)
(bitfield gpgme-key-bitfield)
(protocol gpgme-protocol-t)
(issuer-serial :string)
(issuer-name :string)
(chain-id :string)
(owner-trust gpgme-validity-t)
(subkeys gpgme-subkey-t)
(uids gpgme-user-id-t)
(-last-subkey gpgme-subkey-t)
(-last-uid gpgme-user-id-t)
(keylist-mode gpgme-keylist-mode-t))

;;;

;;; There is no support in CFFI to define callback C types and have
;;; automatic type checking with the callback definition.

(defctype gpgme-passphrase-cb-t :pointer)

(defctype gpgme-progress-cb-t :pointer)

(defctype gpgme-edit-cb-t :pointer)

;;;
;;; Function Interface
;;;

```


::: Context management functions.

```
(defcfun ("gpgme_new" c-gpgme-new) gpgme-error-t  
  (ctx :pointer))
```

```
(defcfun ("gpgme_release" c-gpgme-release) :void  
  (ctx gpgme-ctx-t))
```

```
(defcfun ("gpgme_set_protocol" c-gpgme-set-protocol) gpgme-error-t  
  (ctx gpgme-ctx-t)  
  (proto gpgme-protocol-t))
```

```
(defcfun ("gpgme_get_protocol" c-gpgme-get-protocol) gpgme-protocol-t  
  (ctx gpgme-ctx-t))
```

```
(defcfun ("gpgme_get_protocol_name" c-gpgme-get-protocol-name) :string  
  (proto gpgme-protocol-t))
```

```
(defcfun ("gpgme_set_armor" c-gpgme-set-armor) :void  
  (ctx gpgme-ctx-t)  
  (yes :boolean))
```

```
(defcfun ("gpgme_get_armor" c-gpgme-get-armor) :boolean  
  (ctx gpgme-ctx-t))
```

```
(defcfun ("gpgme_set_textmode" c-gpgme-set-textmode) :void  
  (ctx gpgme-ctx-t)  
  (yes :boolean))
```

```
(defcfun ("gpgme_get_textmode" c-gpgme-get-textmode) :boolean  
  (ctx gpgme-ctx-t))
```

```
(defconstant +include-certs-default+ -256)
```

```
(defcfun ("gpgme_set_include_certs" c-gpgme-set-include-certs) :void  
  (ctx gpgme-ctx-t)  
  (nr-of-certs cert-int-t))
```

```
(defcfun ("gpgme_get_include_certs" c-gpgme-get-include-certs) cert-int-t  
  (ctx gpgme-ctx-t))
```

```
(defcfun ("gpgme_set_keylist_mode" c-gpgme-set-keylist-mode) gpgme-error-t  
  (ctx gpgme-ctx-t)  
  (mode gpgme-keylist-mode-t))
```

```
(defcfun ("gpgme_get_keylist_mode" c-gpgme-get-keylist-mode)  
  gpgme-keylist-mode-t
```

```

(ctx gpgme-ctx-t))

(defcfun ("gpgme_set_passphrase_cb" c-gpgme-set-passphrase-cb) :void
  (ctx gpgme-ctx-t)
  (cb gpgme-passphrase-cb-t)
  (hook-value :pointer))

(defcfun ("gpgme_get_passphrase_cb" c-gpgme-get-passphrase-cb) :void
  (ctx gpgme-ctx-t)
  (cb-p :pointer)
  (hook-value-p :pointer))

(defcfun ("gpgme_set_progress_cb" c-gpgme-set-progress-cb) :void
  (ctx gpgme-ctx-t)
  (cb gpgme-progress-cb-t)
  (hook-value :pointer))

(defcfun ("gpgme_get_progress_cb" c-gpgme-get-progress-cb) :void
  (ctx gpgme-ctx-t)
  (cb-p :pointer)
  (hook-value-p :pointer))

(defcfun ("gpgme_set_locale" c-gpgme-set-locale) gpgme-error-t
  (ctx gpgme-ctx-t)
  (category :int)
  (value string-or-nil-t))

(defcfun ("gpgme_ctx_get_engine_info" c-gpgme-ctx-get-engine-info)
  gpgme-engine-info-t
  (ctx gpgme-ctx-t))

(defcfun ("gpgme_ctx_set_engine_info" c-gpgme-ctx-set-engine-info)
  gpgme-error-t
  (ctx gpgme-ctx-t)
  (proto gpgme-protocol-t)
  (file-name string-or-nil-t)
  (home-dir string-or-nil-t))

;;;

(defcfun ("gpgme_pubkey_algo_name" c-gpgme-pubkey-algo-name) :string
  (algo gpgme-pubkey-algo-t))

(defcfun ("gpgme_hash_algo_name" c-gpgme-hash-algo-name) :string
  (algo gpgme-hash-algo-t))

;;;

```

```

(defcfun ("gpgme_signers_clear" c-gpgme-signers-clear) :void
  (ctx gpgme-ctx-t))

(defcfun ("gpgme_signers_add" c-gpgme-signers-add) gpgme-error-t
  (ctx gpgme-ctx-t)
  (key gpgme-key-t))

(defcfun ("gpgme_signers_enum" c-gpgme-signers-enum) gpgme-key-t
  (ctx gpgme-ctx-t)
  (seq :int))

;;;

(defcfun ("gpgme_sig_notation_clear" c-gpgme-sig-notation-clear) :void
  (ctx gpgme-ctx-t))

(defcfun ("gpgme_sig_notation_add" c-gpgme-sig-notation-add) gpgme-error-t
  (ctx gpgme-ctx-t)
  (name :string)
  (value string-or-nil-t)
  (flags gpgme-sig-notation-flags-t))

(defcfun ("gpgme_sig_notation_get" c-gpgme-sig-notation-get)
  gpgme-sig-notation-t
  (ctx gpgme-ctx-t))

;;; Run Control.

;;; There is no support in CFFI to define callback C types and have
;;; automatic type checking with the callback definition.

(defctype gpgme-io-cb-t :pointer)

(defctype gpgme-register-io-cb-t :pointer)

(defctype gpgme-remove-io-cb-t :pointer)

(defcenum gpgme-event-io-t
  "The possible events on I/O event callbacks."
  (:start 0)
  (:done 1)
  (:next-key 2)
  (:next-trustitem 3))

(defctype gpgme-event-io-cb-t :pointer)

(defcstruct gpgme-io-cbs
  "I/O callbacks."

```

```

(add gpgme-register-io-cb-t)
(add-priv :pointer)
(remove gpgme-remove-io-cb-t)
(event gpgme-event-io-cb-t)
(event-priv :pointer))

(defctype gpgme-io-cbs-t :pointer)

(defcfun ("gpgme_set_io_cbs" c-gpgme-set-io-cbs) :void
  (ctx gpgme-ctx-t)
  (io-cbs gpgme-io-cbs-t))

(defcfun ("gpgme_get_io_cbs" c-gpgme-get-io-cbs) :void
  (ctx gpgme-ctx-t)
  (io-cbs gpgme-io-cbs-t))

(defcfun ("gpgme_wait" c-gpgme-wait) gpgme-ctx-t
  (ctx gpgme-ctx-t)
  (status-p :pointer)
  (hang :int))

```

;;; Functions to handle data objects.

;;; There is no support in CFFI to define callback C types and have
 ;;; automatic type checking with the callback definition.

```

(defctype gpgme-data-read-cb-t :pointer)
(defctype gpgme-data-write-cb-t :pointer)
(defctype gpgme-data-seek-cb-t :pointer)
(defctype gpgme-data-release-cb-t :pointer)

(defcstruct gpgme-data-cbs
  "Data callbacks."
  (read gpgme-data-read-cb-t)
  (write gpgme-data-write-cb-t)
  (seek gpgme-data-seek-cb-t)
  (release gpgme-data-release-cb-t))

(defctype gpgme-data-cbs-t :pointer
  "Data callbacks pointer.")

(defcfun ("gpgme_data_read" c-gpgme-data-read) ssize-t
  (dh gpgme-data-t)
  (buffer :pointer)
  (size size-t))

(defcfun ("gpgme_data_write" c-gpgme-data-write) ssize-t
  (dh gpgme-data-t)

```

```

(buffer :pointer)
(size size-t)

(defcfun ("gpgme_data_seek" c-gpgme-data-seek) off-t
  (dh gpgme-data-t)
  (offset off-t)
  (whence :int))

(defcfun ("gpgme_data_new" c-gpgme-data-new) gpgme-error-t
  (dh-p :pointer))

(defcfun ("gpgme_data_release" c-gpgme-data-release) :void
  (dh gpgme-data-t))

(defcfun ("gpgme_data_new_from_mem" c-gpgme-data-new-from-mem) gpgme-error-t
  (dh-p :pointer)
  (buffer :pointer)
  (size size-t)
  (copy :int))

(defcfun ("gpgme_data_release_and_get_mem" c-gpgme-data-release-and-get-mem)
  :pointer
  (dh gpgme-data-t)
  (len-p :pointer))

(defcfun ("gpgme_data_new_from_cbs" c-gpgme-data-new-from-cbs) gpgme-error-t
  (dh-p :pointer)
  (cbs gpgme-data-cbs-t)
  (handle :pointer))

(defcfun ("gpgme_data_new_from_fd" c-gpgme-data-new-from-fd) gpgme-error-t
  (dh-p :pointer)
  (fd :int))

(defcfun ("gpgme_data_new_from_stream" c-gpgme-data-new-from-stream)
  gpgme-error-t
  (dh-p :pointer)
  (stream :pointer))

(defcfun ("gpgme_data_get_encoding" c-gpgme-data-get-encoding)
  gpgme-data-encoding-t
  (dh gpgme-data-t))

(defcfun ("gpgme_data_set_encoding" c-gpgme-data-set-encoding)
  gpgme-error-t
  (dh gpgme-data-t)
  (enc gpgme-data-encoding-t))

```

```

(defcfun ("gpgme_data_get_file_name" c-gpgme-data-get-file-name) :string
  (dh gpgme-data-t))

(defcfun ("gpgme_data_set_file_name" c-gpgme-data-set-file-name) gpgme-error-t
  (dh gpgme-data-t)
  (file-name string-or-nil-t))

(defcfun ("gpgme_data_new_from_file" c-gpgme-data-new-from-file) gpgme-error-t
  (dh-p :pointer)
  (fname :string)
  (copy :int))

(defcfun ("gpgme_data_new_from_filepart" c-gpgme-data-new-from-filepart)
  gpgme-error-t
  (dh-p :pointer)
  (fname :string)
  (fp :pointer)
  (offset off-t)
  (length size-t))

;;; Key and trust functions.

(defcfun ("gpgme_get_key" c-gpgme-get-key) gpgme-error-t
  (ctx gpgme-ctx-t)
  (fpr :string)
  (key-p :pointer)
  (secret :boolean))

(defcfun ("gpgme_key_ref" c-gpgme-key-ref) :void
  (key gpgme-key-t))

(defcfun ("gpgme_key_unref" c-gpgme-key-unref) :void
  (key gpgme-key-t))

;;; Crypto operations.

(defcfun ("gpgme_cancel" c-gpgme-cancel) gpgme-error-t
  (ctx gpgme-ctx-t))

;;;

(defctype gpgme-invalid-key-t
  (:wrapper :pointer
   :from-c translate-gpgme-invalid-key-t-from-foreign)
  "An invalid key structure.")

(defcstruct gpgme-invalid-key
  "An invalid key structure."

```

```
(next gpgme-invalid-key-t)
(fpr :string)
(reason gpgme-error-no-signal-t))
```

::: Encryption.

```
(defcstruct gpgme-op-encrypt-result
  "Encryption result structure."
  (invalid-recipients gpgme-invalid-key-t))
```

```
(defctype gpgme-op-encrypt-result-t
  (:wrapper :pointer
   :from-c translate-gpgme-op-encrypt-result-t-from-foreign)
  "An encryption result structure.")
```

```
(defcfun ("gpgme_op_encrypt_result" c-gpgme-op-encrypt-result)
  gpgme-op-encrypt-result-t
  (ctx gpgme-ctx-t))
```

```
(defbitfield gpgme-encrypt-flags-t
  (:always-trust 1)
  (:no-encrypt-to 2)
  (:prepare 4)
  (:expect-sign 8)
  (:no-compress 16)
  (:symmetric 32)
  (:throw-keyids 64)
  (:wrap 128)
  (:want-address 256))
```

```
(defcfun ("gpgme_op_encrypt_start" c-gpgme-op-encrypt-start) gpgme-error-t
  (ctx gpgme-ctx-t)
  (recp :pointer) ; Key array.
  (flags gpgme-encrypt-flags-t)
  (plain gpgme-data-t)
  (cipher gpgme-data-t))
```

```
(defcfun ("gpgme_op_encrypt" c-gpgme-op-encrypt) gpgme-error-t
  (ctx gpgme-ctx-t)
  (recp :pointer) ; Key array.
  (flags gpgme-encrypt-flags-t)
  (plain gpgme-data-t)
  (cipher gpgme-data-t))
```

```
(defcfun ("gpgme_op_encrypt_sign_start" c-gpgme-op-encrypt-sign-start)
  gpgme-error-t
  (ctx gpgme-ctx-t)
  (recp :pointer) ; Key array.
```

```

(flags gpgme-encrypt-flags-t)
(plain gpgme-data-t)
(cipher gpgme-data-t))

(defcfun ("gpgme_op_encrypt_sign" c-gpgme-op-encrypt-sign) gpgme-error-t
  (ctx gpgme-ctx-t)
  (recp :pointer) ; Key array.
  (flags gpgme-encrypt-flags-t)
  (plain gpgme-data-t)
  (cipher gpgme-data-t))

;;; Decryption.

(defctype gpgme-recipient-t
  (:wrapper :pointer
   :from-c translate-gpgme-recipient-t-from-foreign)
  "A recipient structure.")

(defcstruct gpgme-recipient
  "Recipient structure."
  (next gpgme-recipient-t)
  (keyid :string)
  (-keyid :char :count 17)
  (pubkey-algo gpgme-pubkey-algo-t)
  (status gpgme-error-no-signal-t))

(defbitfield gpgme-op-decrypt-result-bitfield
  "Decryption result structure bitfield."
  (:wrong-key-usage 1)
  (:is-de-vs 2)
  (:is-mine 4))

(defcstruct gpgme-op-decrypt-result
  "Decryption result structure."
  (unsupported-algorithm :string)
  (bitfield gpgme-op-decrypt-result-bitfield)
  (recipients gpgme-recipient-t)
  (file-name :string))

(defctype gpgme-op-decrypt-result-t
  (:wrapper :pointer
   :from-c translate-gpgme-op-decrypt-result-t-from-foreign)
  "A decryption result structure.")

(defcfun ("gpgme_op_decrypt_result" c-gpgme-op-decrypt-result)
  gpgme-op-decrypt-result-t
  (ctx gpgme-ctx-t))

```



```

(defcfun ("gpgme_op_decrypt_start" c-gpgme-op-decrypt-start) gpgme-error-t
  (ctx gpgme-ctx-t)
  (cipher gpgme-data-t)
  (plain gpgme-data-t))

(defcfun ("gpgme_op_decrypt" c-gpgme-op-decrypt) gpgme-error-t
  (ctx gpgme-ctx-t)
  (cipher gpgme-data-t)
  (plain gpgme-data-t))

(defcfun ("gpgme_op_decrypt_verify_start" c-gpgme-op-decrypt-verify-start)
  gpgme-error-t
  (ctx gpgme-ctx-t)
  (cipher gpgme-data-t)
  (plain gpgme-data-t))

(defcfun ("gpgme_op_decrypt_verify" c-gpgme-op-decrypt-verify) gpgme-error-t
  (ctx gpgme-ctx-t)
  (cipher gpgme-data-t)
  (plain gpgme-data-t))

```

::: Signing.

```

(defctype gpgme-new-signature-t
  (:wrapper :pointer
   :from-c translate-gpgme-new-signature-t-from-foreign)
  "A new signature structure.")

```

```

(defcstruct gpgme-new-signature
  "New signature structure."
  (next gpgme-new-signature-t)
  (type gpgme-sig-mode-t)
  (pubkey-algo gpgme-pubkey-algo-t)
  (hash-algo gpgme-hash-algo-t)
  (-obsolete-class :unsigned-long)
  (timestamp :long)
  (fpr :string)
  (-obsolete-class-2 :unsigned-int)
  (sig-class :unsigned-int))

```

```

(defcstruct gpgme-op-sign-result
  "Signing result structure."
  (invalid-signers gpgme-invalid-key-t)
  (signatures gpgme-new-signature-t))

```

```

(defctype gpgme-op-sign-result-t
  (:wrapper :pointer
   :from-c translate-gpgme-op-sign-result-t-from-foreign)

```

```

"A signing result structure.")

(defcfun ("gpgme_op_sign_result" c-gpgme-op-sign-result)
  gpgme-op-sign-result-t
  (ctx gpgme-ctx-t))

(defcfun ("gpgme_op_sign_start" c-gpgme-op-sign-start) gpgme-error-t
  (ctx gpgme-ctx-t)
  (plain gpgme-data-t)
  (sig gpgme-data-t)
  (mode gpgme-sig-mode-t))

(defcfun ("gpgme_op_sign" c-gpgme-op-sign) gpgme-error-t
  (ctx gpgme-ctx-t)
  (plain gpgme-data-t)
  (sig gpgme-data-t)
  (mode gpgme-sig-mode-t))

;;; Verify.

(defbitfield (gpgme-sigsum-t :unsigned-int)
  "Flags used for the summary field in a gpgme-signature-t."
  (:valid #x0001)
  (:green #x0002)
  (:red #x0004)
  (:key-revoked #x0010)
  (:key-expired #x0020)
  (:sig-expired #x0040)
  (:key-missing #x0080)
  (:crl-missing #x0100)
  (:crl-too-old #x0200)
  (:bad-policy #x0400)
  (:sys-error #x0800)
  (:tofu-conflict #x1000))

(defctype gpgme-signature-t
  (:wrapper :pointer
   :from-c translate-gpgme-signature-t-from-foreign)
  "A signature structure.")

;;; FIXME: Doesn't this depend on endianness?
(defbitfield (gpgme-signature-bitfield :unsigned-int)
  "The signature bitfield."
  (:wrong-key-usage 1)
  (:pka-trust 2)
  (:chain-model 4)
  (:is-de-vs 8))

```

```

(defcstruct gpgme-signature
  "Signature structure."
  (next gpgme-signature-t)
  (summary gpgme-sigsum-t)
  (fpr :string)
  (status gpgme-error-no-signal-t)
  (notations gpgme-sig-notation-t)
  (timestamp :unsigned-long)
  (exp-timestamp :unsigned-long)
  (bitfield gpgme-signature-bitfield)
  (validity gpgme-validity-t)
  (validity-reason gpgme-error-no-signal-t)
  (pubkey-algo gpgme-pubkey-algo-t)
  (hash-algo gpgme-hash-algo-t))

(defcstruct gpgme-op-verify-result
  "Verify result structure."
  (signatures gpgme-signature-t)
  (file-name :string))

(defctype gpgme-op-verify-result-t
  (:wrapper :pointer
   :from-c translate-gpgme-op-verify-result-t-from-foreign)
  "A verify result structure.")

(defcfun ("gpgme_op_verify_result" c-gpgme-op-verify-result)
  gpgme-op-verify-result-t
  (ctx gpgme-ctx-t))

(defcfun ("gpgme_op_verify_start" c-gpgme-op-verify-start) gpgme-error-t
  (ctx gpgme-ctx-t)
  (sig gpgme-data-t)
  (signed-text gpgme-data-t)
  (plaintext gpgme-data-t))

(defcfun ("gpgme_op_verify" c-gpgme-op-verify) gpgme-error-t
  (ctx gpgme-ctx-t)
  (sig gpgme-data-t)
  (signed-text gpgme-data-t)
  (plaintext gpgme-data-t))

;;; Import.

(defbitfield (gpgme-import-flags-t :unsigned-int)
  "Flags used for the import status field."
  (:new #x0001)
  (:uid #x0002)
  (:sig #x0004))

```

```

(:subkey #x0008)
(:secret #x0010))

(defctype gpgme-import-status-t
  (:wrapper :pointer
   :from-c translate-gpgme-import-status-t-from-foreign)
  "An import status structure.")

(defcstruct gpgme-import-status
  "New import status structure."
  (next gpgme-import-status-t)
  (fpr :string)
  (result gpgme-error-no-signal-t)
  (status :unsigned-int))

(defcstruct gpgme-op-import-result
  "Import result structure."
  (considered :int)
  (no-user-id :int)
  (imported :int)
  (imported-rsa :int)
  (unchanged :int)
  (new-user-ids :int)
  (new-sub-keys :int)
  (new-signatures :int)
  (new-revocations :int)
  (secret-read :int)
  (secret-imported :int)
  (secret-unchanged :int)
  (skipped-new-keys :int)
  (not-imported :int)
  (imports gpgme-import-status-t))

(defctype gpgme-op-import-result-t
  (:wrapper :pointer
   :from-c translate-gpgme-op-import-result-t-from-foreign)
  "An import status result structure.")

(defcfun ("gpgme_op_import_result" c-gpgme-op-import-result)
  gpgme-op-import-result-t
  (ctx gpgme-ctx-t))

(defcfun ("gpgme_op_import_start" c-gpgme-op-import-start) gpgme-error-t
  (ctx gpgme-ctx-t)
  (keydata gpgme-data-t))

(defcfun ("gpgme_op_import" c-gpgme-op-import) gpgme-error-t
  (ctx gpgme-ctx-t))

```

```
(keydata gpgme-data-t))
```

```
::: Export.
```

```
(defcfun ("gpgme_op_export_start" c-gpgme-op-export-start) gpgme-error-t  
  (ctx gpgme-ctx-t)  
  (pattern :string)  
  (reserved :unsigned-int)  
  (keydata gpgme-data-t))
```

```
(defcfun ("gpgme_op_export" c-gpgme-op-export) gpgme-error-t  
  (ctx gpgme-ctx-t)  
  (pattern :string)  
  (reserved :unsigned-int)  
  (keydata gpgme-data-t))
```

```
::: FIXME: Extended export interfaces require array handling.
```

```
::: Key generation.
```

```
(defbitfield (gpgme-genkey-flags-t :unsigned-int)  
  "Flags used for the key generation result bitfield."  
  (:primary #x0001)  
  (:sub #x0002)  
  (:uid #x0004))
```

```
(defcstruct gpgme-op-genkey-result  
  "Key generation result structure."  
  (bitfield gpgme-genkey-flags-t)  
  (fpr :string))
```

```
(defctype gpgme-op-genkey-result-t :pointer  
  "A key generation result structure.")
```

```
(defcfun ("gpgme_op_genkey_result" c-gpgme-op-genkey-result)  
  gpgme-op-genkey-result-t  
  (ctx gpgme-ctx-t))
```

```
(defcfun ("gpgme_op_genkey_start" c-gpgme-op-genkey-start) gpgme-error-t  
  (ctx gpgme-ctx-t)  
  (parms :string)  
  (pubkey gpgme-data-t)  
  (seckey gpgme-data-t))
```

```
(defcfun ("gpgme_op_genkey" c-gpgme-op-genkey) gpgme-error-t  
  (ctx gpgme-ctx-t)  
  (parms :string)  
  (pubkey gpgme-data-t))
```

(seckey gpgme-data-t))

;;; Key deletion.

```
(defcfun ("gpgme_op_delete_start" c-gpgme-op-delete-start) gpgme-error-t
  (ctx gpgme-ctx-t)
  (key gpgme-key-t)
  (allow-secret :int))
```

```
(defcfun ("gpgme_op_delete" c-gpgme-op-delete) gpgme-error-t
  (ctx gpgme-ctx-t)
  (key gpgme-key-t)
  (allow-secret :int))
```

;;; FIXME: Add edit interfaces.

;;; Keylist interface.

```
(defbitfield (gpgme-keylist-flags-t :unsigned-int)
  "Flags used for the key listing result bitfield."
  (:truncated #x0001))
```

```
(defcstruct gpgme-op-keylist-result
  "Key listing result structure."
  (bitfield gpgme-keylist-flags-t))
```

```
(defctype gpgme-op-keylist-result-t :pointer
  "A key listing result structure.")
```

```
(defcfun ("gpgme_op_keylist_result" c-gpgme-op-keylist-result)
  gpgme-op-keylist-result-t
  (ctx gpgme-ctx-t))
```

```
(defcfun ("gpgme_op_keylist_start" c-gpgme-op-keylist-start) gpgme-error-t
  (ctx gpgme-ctx-t)
  (pattern :string)
  (secret_only :boolean))
```

;;; FIXME: Extended keylisting requires array handling.

```
(defcfun ("gpgme_op_keylist_next" c-gpgme-op-keylist-next) gpgme-error-t
  (ctx gpgme-ctx-t)
  (r-key :pointer))
```

```
(defcfun ("gpgme_op_keylist_end" c-gpgme-op-keylist-end) gpgme-error-t
  (ctx gpgme-ctx-t))
```

;;; Various functions.

```

(defun ("gpgme_check_version" c-gpgme-check-version) :string
  (req-version string-or-nil-t))

(defun ("gpgme_get_engine_info" c-gpgme-get-engine-info) gpgme-error-t
  (engine-info-p :pointer))

(defun ("gpgme_set_engine_info" c-gpgme-set-engine-info) gpgme-error-t
  (proto gpgme-protocol-t)
  (file-name string-or-nil-t)
  (home-dir string-or-nil-t))

(defun ("gpgme_engine_check_version" c-gpgme-engine-check-version)
  gpgme-error-t
  (proto gpgme-protocol-t))

;;;
;;; L I S P   I N T E R F A C E
;;;

;;;
;;; Lisp type translators.
;;;

;;; Both directions.

;;; cert-int-t is a helper type that takes care of representing the
;;; default number of certs as NIL.

(defun translate-cert-int-t-from-foreign (value)
  (cond
    ((eql value +include-certs-default+) nil)
    (t value)))

(defun translate-cert-int-t-to-foreign (value)
  (cond
    (value value)
    (t +include-certs-default+)))

;;; string-or-nil-t translates a null pointer to NIL and vice versa.
;;; Translation from foreign null pointer already works as expected.

(defun translate-string-or-nil-t-to-foreign (value)
  (cond
    (value value)
    (t (null-pointer))))

;;; Output only.

```

;;; These type translators only convert from foreign type, because we
;;; never use these types in the other direction.

;;; Convert gpgme-engine-info-t linked lists into a list of property
;;; lists. Note that this converter will automatically be invoked
;;; recursively.

;;;

;;; FIXME: Should we use a hash table (or struct, or clos) instead of
;;; property list, as recommended by the Lisp FAQ?

```
(defun translate-gpgme-engine-info-t-from-foreign (value)
  (cond
    ((null-pointer-p value) nil)
    (t (with-foreign-slots
        ((next protocol file-name version req-version home-dir)
         value (:struct gpgme-engine-info))
        (append (list protocol (list
            :file-name file-name
            :version version
            :req-version req-version
            :home-dir home-dir))
            next))))))
```

```
(defun translate-gpgme-invalid-key-t-from-foreign (value)
  (cond
    ((null-pointer-p value) nil)
    (t (with-foreign-slots
        ((next fpr reason)
         value (:struct gpgme-invalid-key))
        (append (list (list :fpr fpr
            :reason reason))
            next))))))
```

```
(defun translate-gpgme-op-encrypt-result-t-from-foreign (value)
  (cond
    ((null-pointer-p value) nil)
    (t (with-foreign-slots
        ((invalid-recipients)
         value (:struct gpgme-op-encrypt-result))
        (list :encrypt
            (list :invalid-recipients invalid-recipients))))))
```

```
(defun translate-gpgme-recipient-t-from-foreign (value)
  (cond
    ((null-pointer-p value) nil)
    (t (with-foreign-slots
        ((next keyid pubkey-algo status)
```



```

    value (:struct gpgme-recipient))
  (append (list (list :keyid keyid
    :pubkey-algo pubkey-algo
    :status status))
    next))))))

(defun translate-gpgme-op-decrypt-result-t-from-foreign (value)
  (cond
    ((null-pointer-p value) nil)
    (t (with-foreign-slots
      ((unsupported-algorithm bitfield recipients file-name)
       value (:struct gpgme-op-decrypt-result))
      (list :decrypt (list :unsupported-algorithm unsupported-algorithm
        :bitfield bitfield
        :recipients recipients
        :file-name file-name))))))

(defun translate-gpgme-new-signature-t-from-foreign (value)
  (cond
    ((null-pointer-p value) nil)
    (t (with-foreign-slots
      ((next type pubkey-algo hash-algo timestamp fpr sig-class)
       value (:struct gpgme-new-signature))
      (append (list (list :type type
        :pubkey-algo pubkey-algo
        :hash-algo hash-algo
        :timestamp timestamp
        :fpr fpr
        :sig-class sig-class))
        next))))))

(defun translate-gpgme-op-sign-result-t-from-foreign (value)
  (cond
    ((null-pointer-p value) nil)
    (t (with-foreign-slots
      ((invalid-signers signatures)
       value (:struct gpgme-op-sign-result))
      (list :sign (list :invalid-signers invalid-signers
        :signatures signatures))))))

(defun translate-gpgme-signature-t-from-foreign (value)
  (cond
    ((null-pointer-p value) nil)
    (t (with-foreign-slots
      ((next summary fpr status notations timestamp
        exp-timestamp bitfield validity validity-reason
        pubkey-algo hash-algo)
       value (:struct gpgme-signature))
      next))))))

```

```

(append (list (list :summary summary
                  :fpr fpr
                  :status status
                  :notations notations
                  :timestamp timestamp
                  :exp-timestamp exp-timestamp
                  :bitfield bitfield
                  :validity validity
                  :validity-reason validity-reason
                  :pubkey-algo pubkey-algo))
        next))))

```

```

(defun translate-gpgme-op-verify-result-t-from-foreign (value)
  (cond
    ((null-pointer-p value) nil)
    (t (with-foreign-slots
        ((signatures file-name)
         value (:struct gpgme-op-verify-result))
        (list :verify (list :signatures signatures
                           :file-name file-name))))))

```

```

(defun translate-gpgme-import-status-t-from-foreign (value)
  (cond
    ((null-pointer-p value) nil)
    (t (with-foreign-slots
        ((next fpr result status)
         value (:struct gpgme-import-status))
        (append (list (list :fpr fpr
                           :result result
                           :status status))
                next))))

```

```

(defun translate-gpgme-op-import-result-t-from-foreign (value)
  (cond
    ((null-pointer-p value) nil)
    (t (with-foreign-slots
        ((considered no-user-id imported imported-rsa unchanged
                    new-user-ids new-sub-keys new-signatures
                    new-revocations secret-read secret-imported
                    secret-unchanged skipped-new-keys not-imported
                    imports)
         value (:struct gpgme-op-import-result))
        (list :verify (list :considered considered
                           :no-user-id no-user-id
                           :imported imported
                           :imported-rsa imported-rsa
                           :unchanged unchanged
                           :new-user-ids new-user-ids

```

```

:new-sub-keys new-sub-keys
:new-signatures new-signatures
:new-revocations new-revocations
:secret-read secret-read
:secret-imported secret-imported
:secret-unchanged secret-unchanged
:skipped-new-keys skipped-new-keys
:not-imported not-imported
:imports imports))))))

;;; Error handling.

;;; Use gpgme-error-no-signal-t to suppress automatic error handling
;;; at translation time.
;;;
;;; FIXME: Part of this probably should be in gpg-error!

(define-condition gpgme-error (error)
  ((value :initarg :gpgme-error :reader gpgme-error-value))
  (:report (lambda (c stream)
              (format stream "GPGME returned error: ~A (~A)"
                        (gpgme-strerror (gpgme-error-value c))
                        (gpgme-strsource (gpgme-error-value c))))))
  (:documentation "Signalled when a GPGME function returns an error.))

(defun translate-gpgme-error-t-from-foreign (value)
  "Raise a GPGME-ERROR if VALUE is non-zero."
  (when (not (eql (gpgme-err-code value) :gpg-err-no-error))
    (error 'gpgme-error :gpgme-error value))
  (gpg-err-canonicalize value))

(defun translate-gpgme-error-t-to-foreign (value)
  "Canonicalize the error value."
  (if (eql (gpgme-err-code value) :gpg-err-no-error)
      0
      (gpg-err-as-value value)))

(defun translate-gpgme-error-no-signal-t-from-foreign (value)
  "Canonicalize the error value."
  (gpg-err-canonicalize value))

;;; *INTERNAL* Lispy Function Interface that is still close to the C
;;; interface.

;;; Passphrase callback management.

;;; Maybe: Instead, use subclassing, and provide a customizable

```

;;; default implementation for ease-of-use.

```
(defvar *passphrase-handles* (make-hash-table)
  "Hash table with GPGME context address as key and the corresponding
  passphrase callback object as value.")
```

```
(defcallback passphrase-cb gpgme-error-t ((handle :pointer)
  (uid-hint :string)
  (passphrase-info :string)
  (prev-was-bad :boolean)
  (fd :int))
(handler-case
  (let* ((passphrase-cb
    (gethash (pointer-address handle) *passphrase-handles*))
    (passphrase
    (cond
      ((functionp passphrase-cb)
       (concatenate 'string
        (funcall passphrase-cb uid-hint passphrase-info
          prev-was-bad)
        '(\Newline))))
    (t (concatenate 'string passphrase-cb '(\Newline))))
    (passphrase-len (length passphrase))
    ;; FIXME: Could be more robust.
    (res (system-write fd passphrase passphrase-len)))
  (cond
    ((< res passphrase-len) ; FIXME: Blech. A weak attempt to be robust.
     (gpgme-error :gpg-err-ival))
    (t (gpgme-error :gpg-err-no-error)))
  (gpgme-error (err) (gpgme-error-value err))
  (system-error (err) (gpgme-error-from-errno (system-error-errno err)))
  ;; FIXME: The original error gets lost here.
  (condition (err) (progn
    (when *debug*
      (format t "DEBUG: passphrase-cb: Unexpressable: ~A~%"
        err))
    (gpgme-error :gpg-err-general))))))
```

;;; CTX is a C-pointer to the context.

```
(defun gpgme-set-passphrase-cb (ctx cb)
  "Set the passphrase callback for CTX."
  (let ((handle (pointer-address ctx)))
    (cond
      (cb (setf (gethash handle *passphrase-handles*) cb))
      (c-gpgme-set-passphrase-cb ctx (callback passphrase-cb) ctx)
      (t (c-gpgme-set-passphrase-cb ctx (null-pointer) (null-pointer))
        (remhash handle *passphrase-handles*))))))
```

;;; Progress callback management.

;;; Maybe: Instead, use subclassing, and provide a customizable
;;; default implementation for ease-of-use.

```
(defvar *progress-handles* (make-hash-table)
  "Hash table with GPGME context address as key and the corresponding
  progress callback object as value.")
```

```
(defcallback progress-cb :void ((handle :pointer)
  (what :string)
  (type :int)
  (current :int)
  (total :int))
  (handler-case
    (let* ((progress-cb
      (gethash (pointer-address handle) *progress-handles*)))
      (funcall progress-cb what type current total))
    ;; FIXME: The original error gets lost here.
    (condition (err) (when *debug*
      (format t "DEBUG: progress-cb: Unexpressable: ~A~%"
        err))))))
```

;;; CTX is a C-pointer to the context.

```
(defun gpgme-set-progress-cb (ctx cb)
  "Set the progress callback for CTX."
  (let ((handle (pointer-address ctx)))
    (cond
      (cb (setf (gethash handle *progress-handles*) cb)
        (c-gpgme-set-progress-cb ctx (callback progress-cb) ctx)
        (t (c-gpgme-set-progress-cb ctx (null-pointer) (null-pointer))
          (remhash handle *progress-handles*))))))
```

;;; Context management.

```
(defun gpgme-new (&key (protocol :openpgp) armor textmode include-certs
  keylist-mode passphrase progress file-name home-dir)
  "Allocate a new GPGME context."
  (with-foreign-object (ctx-p 'gpgme-ctx-t)
    (c-gpgme-new ctx-p)
    (let ((ctx (mem-ref ctx-p 'gpgme-ctx-t)))
      ;; Set locale?
      (gpgme-set-protocol ctx protocol)
      (gpgme-set-armor ctx armor)
      (gpgme-set-textmode ctx textmode)
      (when include-certs (gpgme-set-include-certs ctx include-certs))
      (when keylist-mode (gpgme-set-keylist-mode ctx keylist-mode))
      (gpgme-set-passphrase-cb ctx passphrase))
```

```

(gpgme-set-progress-cb ctx progress)
(gpgme-set-engine-info ctx protocol
 :file-name file-name :home-dir home-dir)
(when *debug* (format t "DEBUG: gpgme-new: ~A~%" ctx)
 ctx)))

(defun gpgme-release (ctx)
 "Release a GPGME context."
 (when *debug* (format t "DEBUG: gpgme-release: ~A~%" ctx))
 (c-gpgme-release ctx))

(defun gpgme-set-protocol (ctx proto)
 "Set the protocol to be used by CTX to PROTO."
 (c-gpgme-set-protocol ctx proto))

(defun gpgme-get-protocol (ctx)
 "Get the protocol used with CTX."
 (c-gpgme-get-protocol ctx))

;;; FIXME: How to do pretty printing?
;;;
;;; gpgme-get-protocol-name

(defun gpgme-set-armor (ctx armor)
 "If ARMOR is true, enable armor mode in CTX, disable it otherwise."
 (c-gpgme-set-armor ctx armor))

(defun gpgme-armor-p (ctx)
 "Return true if armor mode is set for CTX."
 (c-gpgme-get-armor ctx))

(defun gpgme-set-textmode (ctx textmode)
 "If TEXTMODE is true, enable text mode mode in CTX, disable it otherwise."
 (c-gpgme-set-textmode ctx textmode))

(defun gpgme-textmode-p (ctx)
 "Return true if text mode mode is set for CTX."
 (c-gpgme-get-textmode ctx))

(defun gpgme-set-include-certs (ctx &optional certs)
 "Include up to CERTS certificates in an S/MIME message."
 (c-gpgme-set-include-certs ctx certs))

(defun gpgme-get-include-certs (ctx)
 "Return the number of certs to include in an S/MIME message,
 or NIL if the default is used."
 (c-gpgme-get-include-certs ctx))

```

```

(defun gpgme-get-keylist-mode (ctx)
  "Get the keylist mode in CTX."
  (c-gpgme-get-keylist-mode ctx))

(defun gpgme-set-keylist-mode (ctx mode)
  "Set the keylist mode in CTX."
  (c-gpgme-set-keylist-mode ctx mode))

;;; FIXME: How to handle locale? cffi-grovel?

(defun gpgme-get-engine-info (&optional ctx)
  "Retrieve the engine info for CTX, or the default if CTX is omitted."
  (cond
   (ctx (c-gpgme-ctx-get-engine-info ctx))
   (t (with-foreign-object (info-p 'gpgme-engine-info-t)
        (c-gpgme-get-engine-info info-p)
        (mem-ref info-p 'gpgme-engine-info-t)))))

(defun gpgme-set-engine-info (ctx proto &key file-name home-dir)
  "Set the engine info for CTX, or the default if CTX is NIL."
  (cond
   (ctx (c-gpgme-ctx-set-engine-info ctx proto file-name home-dir))
   (t (c-gpgme-set-engine-info proto file-name home-dir))))

;;; FIXME: How to do pretty printing?
;;;
;;; gpgme_pubkey_algo_name, gpgme_hash_algo_name

(defun gpgme-set-signers (ctx keys)
  "Set the signers for the context CTX."
  (c-gpgme-signers-clear ctx)
  (dolist (key keys) (c-gpgme-signers-add ctx key)))

;;;

(defun gpgme-set-sig-notation (ctx notations)
  "Set the sig notation for the context CTX."
  (c-gpgme-sig-notation-clear ctx)
  (dolist (notation notations)
   (c-gpgme-sig-notation-add
    ctx (first notation) (second notation) (third notation))))

(defun gpgme-get-sig-notation (ctx)
  "Get the signature notation data for the context CTX."
  (c-gpgme-sig-notation-get ctx))

;;; FIXME: Add I/O callback interface, for integration with clg.

```

```

;;; FIXME: Add gpgme_wait?

;;; Streams
;;; -----
;;;
;;; GPGME uses standard streams. You can define your own streams, or
;;; use the existing file or string streams.
;;;
;;; A stream-spec is either a stream, or a list with a stream as its
;;; first argument followed by keyword parameters: encoding,
;;; file-name.
;;;
;;; FIXME: Eventually, we should provide a class that can be mixed
;;; into stream classes and which provides accessors for encoding and
;;; file-names. This interface should be provided in addition to the
;;; above sleazy interface, because the sleazy interface is easier to
;;; use (less typing), and is quite sufficient in a number of cases.
;;;
;;; For best results, streams with element type (unsigned-byte 8)
;;; should be used. Character streams may work if armor mode is used.

;;; Do we need to provide access to GPGME data objects through streams
;;; as well? It seems to me that specific optimizations, like
;;; directly writing to file descriptors, is better done by extending
;;; the sleazy syntax (stream-spec) instead of customized streams.
;;; Customized streams do buffering, and this may mess up things. Mmh.

(defvar *data-handles* (make-hash-table)
  "Hash table with GPGME data user callback handle address as key
  and the corresponding stream as value.")

;;; The release callback removes the stream from the *data-handles*
;;; hash and releases the CBS structure that is used as the key in
;;; that hash. It is implicitly invoked (through GPGME) by
;;; gpgme-data-release.
(defun data-release-cb (handle)
  (unwind-protect (remhash (pointer-address handle) *data-handles*)
    (when (not (null-pointer-p handle)) (foreign-free handle))))

(defun data-read-cb (handle (buffer :pointer) (size :size-t))
  (when *debug* (format t "DEBUG: gpgme-data-read-cb: want ~A~%" size))
  (let ((stream (gethash (pointer-address handle) *data-handles*)))
    (cond
     (stream
      (let* ((stream-type (stream-element-type stream))
              (seq (make-array size :element-type stream-type)))
        (seq (make-array size :element-type stream-type))

```



```

        (read (read-sequence seq stream)))
(cond
  ((equal stream-type '(unsigned-byte 8))
   (dotimes (i read)
    (setf (mem-aref buffer :unsigned-char i)
          (aref (the byte-array seq) i))))
  ((eql stream-type 'character)
   (dotimes (i read)
    (setf (mem-aref buffer :unsigned-char i)
          (char-code (aref (the character-array seq) i)))))
  (t
   (dotimes (i read)
    (setf (mem-aref buffer :unsigned-char i)
          (coerce (aref seq i) '(unsigned-byte 8)))))
  (when *debug* (format t "DEBUG: gpgme-data-read-cb: read ~A~%" read)
   read))
(t
 (set-errno +ebadf+
 -1))))

(defcallback data-write-cb ssize-t ((handle :pointer) (buffer :pointer)
                                   (size size-t)
                                   (size size-t))
  (when *debug* (format t "DEBUG: gpgme-data-write-cb: want ~A~%" size))
  (let ((stream (gethash (pointer-address handle) *data-handles*)))
    (cond
      (stream
       (let* ((stream-type (stream-element-type stream))
              (seq (make-array size :element-type stream-type)))
         (cond
           ((equal stream-type '(unsigned-byte 8))
            (dotimes (i size)
             (setf (aref (the byte-array seq) i)
                   (mem-aref buffer :unsigned-char i))))
           ((eql stream-type 'character)
            (dotimes (i size)
             (setf (aref (the character-array seq) i)
                   (code-char (mem-aref buffer :unsigned-char i)))))
           (t
            (dotimes (i size)
             (setf (aref seq i)
                   (coerce (mem-aref buffer :unsigned-char i) stream-type)))))
         (write-sequence seq stream)
         size))
      (t
       (set-errno +ebadf+
 -1))))

```

;;; This little helper macro allows us to swallow the cbs structure by

```

;;; simply setting it to a null pointer, but still protect against
;;; conditions.
(defmacro with-cbs-swallowed ((cbs) &body body)
  `(let ((,cbs (foreign-alloc '(:struct gpgme-data-cbs))))
    (unwind-protect (progn ,@body)
      (when (not (null-pointer-p ,cbs)) (foreign-free ,cbs))))))

(defun gpgme-data-new (stream &key encoding file-name)
  "Allocate a new GPGME data object for STREAM."
  (with-foreign-object (dh-p 'gpgme-data-t)
    ;; We allocate one CBS structure for each stream we wrap in a
    ;; data object. Although we could also share all these
    ;; structures, as they contain the very same callbacks, we need a
    ;; unique C pointer as handle anyway to look up the stream in the
    ;; callback. This is a convenient one to use.
    (with-cbs-swallowed (cbs)
      (setf (foreign-slot-value cbs '(:struct gpgme-data-cbs) 'read)
            (callback data-read-cb))
      (setf (foreign-slot-value cbs '(:struct gpgme-data-cbs) 'write)
            (callback data-write-cb))
      (setf (foreign-slot-value cbs '(:struct gpgme-data-cbs) 'seek)
            (null-pointer))
      (setf (foreign-slot-value cbs '(:struct gpgme-data-cbs) 'release)
            (callback data-release-cb))
      (c-gpgme-data-new-from-cbs dh-p cbs cbs)
      (let ((dh (mem-ref dh-p 'gpgme-data-t)))
        (when encoding (gpgme-data-set-encoding dh encoding))
        (when file-name (gpgme-data-set-file-name dh file-name))
        ;; Install the stream into the hash table and swallow the cbs
        ;; structure while protecting against any errors.
        (unwind-protect
          (progn
            (setf (gethash (pointer-address cbs) *data-handles*) stream)
              (setf cbs (null-pointer)))
            (when (not (null-pointer-p cbs)) (c-gpgme-data-release dh)))
          (when *debug* (format t "DEBUG: gpgme-data-new: ~A~%" dh)
            dh))))))

;;; This function releases a GPGME data object. It implicitly
;;; invokes the data-release-cb function to clean up associated junk.
(defun gpgme-data-release (dh)
  "Release a GPGME data object."
  (when *debug* (format t "DEBUG: gpgme-data-release: ~A~%" dh))
  (c-gpgme-data-release dh))

(defclass data ()
  (c-data) ; The C data object pointer
  (:documentation "The GPGME data type.))

```

```

(defmethod initialize-instance :after ((data data) &key streamspec
                                     &allow-other-keys)
  (let ((c-data (if (listp streamspec)
                    (apply #'gpgme-data-new streamspec)
                    (gpgme-data-new streamspec))))
    (cleanup t)
    (unwind-protect
      (progn
        (setf (slot-value data 'c-data) c-data)
        (finalize data (lambda () (gpgme-data-release c-data)))
        (setf cleanup nil))
      (if cleanup (gpgme-data-release c-data))))))

(defun translate-gpgme-data-t-to-foreign (value)
  ;; Allow a pointer to be passed directly for the finalizer to work.
  (cond
    ((null value) (null-pointer))
    ((pointerp value) value)
    (t (slot-value value 'c-data))))

(defmacro with-gpgme-data ((dh streamspec) &body body)
  `(let ((,dh (make-instance 'data :streamspec ,streamspec)))
    ,@body))

(defun gpgme-data-get-encoding (dh)
  "Get the encoding associated with the data object DH."
  (c-gpgme-data-get-encoding dh))

(defun gpgme-data-set-encoding (dh encoding)
  "Set the encoding associated with the data object DH to ENCODING."
  (c-gpgme-data-set-encoding dh encoding))

(defun gpgme-data-get-file-name (dh)
  "Get the file name associated with the data object DH."
  (c-gpgme-data-get-file-name dh))

(defun gpgme-data-set-file-name (dh file-name)
  "Set the file name associated with the data object DH to FILE-NAME."
  (c-gpgme-data-set-file-name dh file-name))

;;; FIXME: Add key accessor interfaces.

(defun gpgme-get-key (ctx fpr &optional secret)
  "Get the key with the fingerprint FPR from the context CTX."
  (with-foreign-object (key-p 'gpgme-key-t)
    (c-gpgme-get-key ctx fpr key-p secret)
    (mem-ref key-p 'gpgme-key-t)))

```

```

(defun gpgme-key-ref (key)
  "Acquire an additional reference to the key KEY."
  (when *debug* (format t "DEBUG: gpgme-key-ref: ~A~%" key))
  (c-gpgme-key-ref key))

(defun gpgme-key-unref (key)
  "Release a reference to the key KEY."
  (when *debug* (format t "DEBUG: gpgme-key-unref: ~A~%" key))
  (c-gpgme-key-unref key))

;;; FIXME: We REALLY need pretty printing for keys and all the other
;;; big structs.

;;; Various interfaces.

(defun gpgme-check-version (&optional req-version)
  (c-gpgme-check-version req-version))

;;;
;;; The *EXPORTED* CLOS interface.
;;;

;;; The context type.

;;; We wrap the C context pointer into a class object to be able to
;;; stick a finalizer on it.

(defclass context ()
  (c-ctx ; The C context object pointer.
   signers ; The list of signers.
   sig-notation) ; The list of signers.
  (:documentation "The GPGME context type.))

(defmethod initialize-instance :after ((ctx context) &rest rest
  &key &allow-other-keys)
  (let ((c-ctx (apply #'gpgme-new rest))
        (cleanup t))
    (unwind-protect
      (progn (setf (slot-value ctx 'c-ctx) c-ctx)
             (finalize ctx (lambda () (gpgme-release c-ctx)))
             (setf cleanup nil))
      (if cleanup (gpgme-release c-ctx))))))

(defun translate-gpgme-ctx-t-to-foreign (value)
  ;; Allow a pointer to be passed directly for the finalizer to work.
  (if (pointerp value) value (slot-value value 'c-ctx)))

```

```

(defmacro context (&rest rest)
  "Create a new GPGME context."
  `(make-instance 'context ,@rest))

;;; The context type: Accessor functions.

;;; The context type: Accessor functions: Protocol.

(defgeneric protocol (ctx)
  (:documentation "Get the protocol of CONTEXT."))

(defmethod protocol ((ctx context))
  (gpgme-get-protocol ctx))

(defgeneric (setf protocol) (protocol ctx)
  (:documentation "Set the protocol of CONTEXT to PROTOCOL."))

;;; FIXME: Adjust translator to reject invalid protocols. Currently,
;;; specifying an invalid protocol throws a "NIL is not 32 signed int"
;;; error. This is suboptimal.
(defmethod (setf protocol) (protocol (ctx context))
  (gpgme-set-protocol ctx protocol))

;;; The context type: Accessor functions: Armor.
;;; FIXME: Is it good style to make foop setf-able? Or should it be
;;; foo/foop for set/get?

(defgeneric armorp (ctx)
  (:documentation "Get the armor flag of CONTEXT."))

(defmethod armorp ((ctx context))
  (gpgme-armor-p ctx))

(defgeneric (setf armorp) (armorp ctx)
  (:documentation "Set the armor flag of CONTEXT to ARMOR."))

(defmethod (setf armorp) (armorp (ctx context))
  (gpgme-set-armor ctx armor))

;;; The context type: Accessor functions: Textmode.
;;; FIXME: Is it good style to make foop setf-able? Or should it be
;;; foo/foop for set/get?

(defgeneric textmodep (ctx)
  (:documentation "Get the text mode flag of CONTEXT."))

(defmethod textmodep ((ctx context))
  (gpgme-textmode-p ctx))

```

```
(defgeneric (setf textmodep) (textmode ctx)
 (:documentation "Set the text mode flag of CONTEXT to TEXTMODE."))
```

```
(defmethod (setf textmodep) (textmode (ctx context))
 (gpgme-set-textmode ctx textmode))
```

::: The context type: Accessor functions: Include Certs.

```
(defgeneric include-certs (ctx)
 (:documentation "Get the number of included certificates in an
 S/MIME message, or NIL if the default is used."))
```

```
(defmethod include-certs ((ctx context))
 (gpgme-get-include-certs ctx))
```

```
(defgeneric (setf include-certs) (certs ctx)
 (:documentation "Return the number of certificates to include in an
 S/MIME message, or NIL if the default is used."))
```

```
(defmethod (setf include-certs) (certs (ctx context))
 (gpgme-set-include-certs ctx certs))
```

::: The context type: Accessor functions: Engine info.

```
(defgeneric engine-info (ctx)
 (:documentation "Retrieve the engine info for CTX."))
```

```
(defmethod engine-info ((ctx context))
 (gpgme-get-engine-info ctx))
```

```
(defgeneric (setf engine-info) (info ctx)
 (:documentation "Set the engine info for CTX."))
```

```
(defmethod (setf engine-info) (info (ctx context))
 (dolist (proto '(:openpgp :cms))
 (let ((pinfo (getf info proto)))
 (when pinfo
 (gpgme-set-engine-info ctx proto :file-name (getf pinfo :file-name)
 :home-dir (getf pinfo :home-dir))))))
```

::: The context type: Accessor functions: Keylist mode.

```
(defgeneric keylist-mode (ctx)
 (:documentation "Get the keylist mode of CTX."))
```

```
(defmethod keylist-mode ((ctx context))
 (gpgme-get-keylist-mode ctx))
```

```
(defgeneric (setf keylist-mode) (mode ctx)
 (:documentation "Set the keylist mode of CTX to MODE."))
```

```
(defmethod (setf keylist-mode) (mode (ctx context))
 (gpgme-set-keylist-mode ctx mode))
```

;;; The context type: Accessor functions: Signers.

```
(defgeneric signers (ctx)
 (:documentation "Get the signers of CTX."))
```

```
(defmethod signers ((ctx context))
 (slot-value ctx 'signers))
```

```
(defgeneric (setf signers) (signers ctx)
 (:documentation "Set the signers of CTX to SIGNERS."))
```

```
(defmethod (setf keylist-mode) (signers (ctx context))
 (gpgme-set-signers ctx signers)
 (setf (slot-value ctx 'signers) signers))
```

;;; The context type: Accessor functions: Sig notations.

```
(defgeneric sig-notations (ctx)
 (:documentation "Get the signature notations of CTX."))
```

```
(defmethod sig-notations ((ctx context))
 (slot-value ctx 'signers))
```

```
(defgeneric (setf sig-notations) (notations ctx)
 (:documentation "Set the signatire notations of CTX to NOTATIONS."))
```

```
(defmethod (setf sig-notations) (notations (ctx context))
 (gpgme-set-signers ctx notations)
 (setf (slot-value ctx 'notations) notations))
```

;;; The context type: Support macros.

```
(defmacro with-context ((ctx &rest rest) &body body)
 `(let ((,ctx (make-instance 'context ,@rest)))
 ,@body))
```

;;; The key type.

```
(defclass key ()
 (c-key) ; The C key object pointer.
 (:documentation "The GPGME key type."))
```

```

;;; In the initializer, we swallow the c-key argument.
(defmethod initialize-instance :after ((key key) &key c-key
  &allow-other-keys)
  (setf (slot-value key 'c-key) c-key)
  (finalize key (lambda () (gpgme-key-unref c-key))))

(defun translate-gpgme-key-t-from-foreign (value)
  (when *debug* (format t "DEBUG: import key: ~A~%" value))
  (make-instance 'key :c-key value))

(defun translate-gpgme-key-t-to-foreign (value)
  ;; Allow a pointer to be passed directly for the finalizer to work.
  (if (pointerp value) value (slot-value value 'c-key)))

(defmethod print-object ((key key) stream)
  (print-unreadable-object (key stream :type t :identity t)
    (format stream "~s" (fpr key))))

;;; The key type: Accessor functions.

;;; FIXME: The bitfield and flags contain redundant information at
;;; this point.  FIXME: Deal nicer with zero-length name (policy url)
;;; and zero length value (omit?) and human-readable (convert to string).
;;; FIXME: Turn binary data into sequence or vector or what it should be.
;;; FIXME: Turn the whole thing into a hash?
(defun translate-gpgme-sig-notation-t-from-foreign (value)
  (cond
    ((null-pointer-p value) nil)
    (t (with-foreign-slots
        ((next name value name-len value-len flags bitfield)
         value (:struct gpgme-sig-notation))
      (append (list (list
        :name name
        :value value
        :name-len name-len
        :value-len value-len
        :flags flags
        :bitfield bitfield))
        next))))))

;;; FIXME: Deal nicer with timestamps.  bitfield field name?
(defun translate-gpgme-subkey-t-from-foreign (value)
  (cond
    ((null-pointer-p value) nil)
    (t (with-foreign-slots
        ((next bitfield pubkey-algo length keyid fpr timestamp expires)
         value (:struct gpgme-subkey))
      next))))

```



```
(append (list (list
:bitfield bitfield
:pubkey-algo pubkey-algo
:length length
:keyid keyid
:fpr fpr
:timestamp timestamp
:expires expires))
next))))
```

```
(defun translate-gpgme-key-sig-t-from-foreign (value)
(cond
((null-pointer-p value) nil)
(t (with-foreign-slots
((next bitfield pubkey-algo keyid timestamp expires status
uid name email comment sig-class)
value (:struct gpgme-key-sig))
(append (list (list
:bitfield bitfield
:pubkey-algo pubkey-algo
:keyid keyid
:timestamp timestamp
:expires expires
:status status
:uid uid
:name name
:email email
:comment comment
:sig-class sig-class))
next))))))
```

```
(defun translate-gpgme-user-id-t-from-foreign (value)
(cond
((null-pointer-p value) nil)
(t (with-foreign-slots
((next bitfield validity uid name email comment signatures)
value (:struct gpgme-user-id))
(append (list (list
:bitfield bitfield
:validity validity
:uid uid
:name name
:email email
:comment comment
:signatures signatures))
next))))))
```

```
(defun key-data (key)
```

```

(with-slots (c-key) key
  (with-foreign-slots
    ((bitfield protocol issuer-serial issuer-name chain-id
      owner-trust subkeys uids keylist-mode)
      c-key (:struct gpgme-key))
    (list
      :bitfield bitfield
      :protocol protocol
      :issuer-serial issuer-serial
      :issuer-name issuer-name
      :chain-id chain-id
      :owner-trust owner-trust
      :subkeys subkeys
      :uids uids
      :keylist-mode keylist-mode))
  ))

```

```

(defgeneric fpr (key)
  (:documentation "Get the primary fingerprint of the key."))

```

```

(defmethod fpr ((key key))
  (getf (car (getf (key-data key) :subkeys)) :fpr))

```

::: The context type: Crypto-Operations.

```

(defgeneric get-key (ctx fpr &optional secret)
  (:documentation "Get the (secret) key FPR from CTX."))

```

```

(defmethod get-key ((ctx context) fpr &optional secret)
  (gpgme-get-key ctx fpr secret))

```

::: Encrypt.

```

(defgeneric op-encrypt (ctx recp plain cipher &key always-trust sign)
  (:documentation "Encrypt."))

```

```

(defmethod op-encrypt ((ctx context) recp plain cipher
  &key always-trust sign)
  (with-foreign-object (c-recp :pointer (+ 1 (length recp)))
    (dotimes (i (length recp))
      (setf (mem-aref c-recp 'gpgme-key-t i) (elt recp i)))
      (setf (mem-aref c-recp :pointer (length recp)) (null-pointer))
      (with-gpgme-data (in plain)
        (with-gpgme-data (out cipher)
          (let ((flags))
            (if always-trust (push :always-trust flags))

```

```

(cond
  (sign
    (c-gpgme-op-encrypt-sign ctx c-recp flags in out)
    (append (c-gpgme-op-encrypt-result ctx)
      (c-gpgme-op-sign-result ctx)))
  (t
    (c-gpgme-op-encrypt ctx c-recp flags in out)
    (c-gpgme-op-encrypt-result ctx))))))

```

;;; Decrypt.

```

(defgeneric op-decrypt (ctx cipher plain &key verify)
  (:documentation "Decrypt."))

```

```

(defmethod op-decrypt ((ctx context) cipher plain &key verify)
  (with-gpgme-data (in cipher)
    (with-gpgme-data (out plain)
      (cond
        (verify
          (c-gpgme-op-decrypt-verify ctx in out)
          (append (c-gpgme-op-decrypt-result ctx)
            (c-gpgme-op-verify-result ctx)))
        (t
          (c-gpgme-op-decrypt ctx in out)
          (c-gpgme-op-decrypt-result ctx))))))

```

;;; Signing.

```

(defgeneric op-sign (ctx plain sig &optional mode)
  (:documentation "Sign."))

```

```

(defmethod op-sign ((ctx context) plain sig &optional (mode :none))
  (with-gpgme-data (in plain)
    (with-gpgme-data (out sig)
      (c-gpgme-op-sign ctx in out mode)
      (c-gpgme-op-sign-result ctx)))

```

;;; Verify.

```

(defgeneric op-verify (ctx sig text &key detached)
  (:documentation "Verify."))

```

```

(defmethod op-verify ((ctx context) sig text &key detached)
  (with-gpgme-data (in sig)
    (with-gpgme-data (on text)
      (c-gpgme-op-verify ctx in (if detached on nil)
        (if detached nil on))
      (c-gpgme-op-verify-result ctx)))

```

::: Import.

```
(defgeneric op-import (ctx keydata)
 (:documentation "Import."))
```

```
(defmethod op-import ((ctx context) keydata)
 (with-gpgme-data (in keydata)
 (c-gpgme-op-import ctx in)
 (c-gpgme-op-import-result ctx)))
```

::: Export.

```
(defgeneric op-export (ctx pattern keydata)
 (:documentation "Export public key data matching PATTERN to the
 stream KEYDATA."))
```

```
(defmethod op-export ((ctx context) pattern keydata)
 (with-gpgme-data (dh keydata)
 (c-gpgme-op-export ctx pattern 0 dh)))
```

::: Key generation.

:::

::: Initialization

:::

```
(defun check-version (&optional req-version)
 "Check that the GPGME version requirement is satisfied."
 (gpgme-check-version req-version))
```

```
(defparameter *version* (check-version)
 "The version number of GPGME used.")
(21:protected-private-key(3:elg(1:p193:5*n^f"Q'R0_6<y mec \|=c7S8u[5
ZF'xf5yi9F@T=KhZdU0(k5nZEI/ R]njVITPU$W<xs-Yx)(1:g1:)(1:y192:09GNR{?}Y_W[FD*z uRmk%'R\>>e9pe
eU)uS% VJ!5F)yH*O
]l'7{ @wJmQP^jurx'V2H2j[G{q_ "80(9:protected25:openpgp-s2k3-sha1-aes-cbc((4:sha18:o"%7:5242880)16:Hs* }u
)256:Gzk3%\Kb2=ooO@, )eBBI3F|OQP3eD%n,;~L-6UH^=64i);l
e+sG"(mlH_2sn_BBO7hRcZUt(p6,{5|37C3m8EY9=gQ )(12:protected-at15:20101008T070148)))
00~0
 *H
0k10 UDE10U
Dsseldorf10U
```

```
g10 Code GmbH10UAegypten Project10Utest cert 10
011203093638Z
021203093638Z0k10 UDE10U
```

Dsseldorf10U

g10 Code GmbH10UAegypten Project10Utest cert 100

*H

0l+Pu.\-ZT\$e'nE&h4<}BePm[%j-/7PcHKi@FKy~npcd\${}K~Q00U37Tq8_eK40U#037Tq8_eK4om0k10 UDE10U
Dsseldorf10U

g10 Code GmbH10UAegypten Project10Utest cert 10U00

*H

l8gD Z

wYL,M'j

pk2pf|L ;Rl}#h\$~O!9;3e\A'v&P^\$'Oc.-TS~A>:fQY<

-----BEGIN PGP PUBLIC KEY BLOCK-----

```
mQENBFsMHecBCACqdJgqa+CeNYwPCK+MpOwAV6uFVjDyO2LmOs6+XfDWRBU/Zjtz
8zdYNKSbLjkWN4ujV5aiyA7MtEofszsYLEoKUtlwiDScHMPW8qmEFDv19g26MeAV
rTno9D5KodHvEIs8wnrqBs8ix0WLbh6J1Dtt8HQglbN+v3gaRQrgBFe6z2ZYpHHx
ZfOu3iFKlm2WE/NekRkvvFIo3ApGvRhGIYw6JMmugBlo7s5xosJK0I9dkPGIEEt
aF1RkcMj8sWG9vHAXcjlGgFfXSN9YLppydXpkuZGm4+gjLB2a3rbQCZVFnxCyG4O
ybjkP8Jw6Udm89bK2ucYFfjdrnYn/nJqRxeNABEBAAG0I1Rlc3QgTm9Qcm12S2V5
IDxub2JvZHIAZXhhbXBsZS5vcmc+iQFOBBMBCAA4FiEE4Fmh4IZtMa4TEXCITZou
EzBBU9EFAlsMHecCGwMFCwkIBwIGFQoJCAcCBBYCAwECHgECF4AACgkQTZouEzBB
U9F+qwf/SHj4uRnTWgyJ71FBxQDYCBq3jbi6e7hMkRPbJyJdnPIMAb2p0PJjBgjW
0pp4+kDPZans3UDHbma1u/SFI4/y6isJiK94Bk5xp5YliLGNuUceTjgDFe6lBhfQ1
zVWZC/NF3tPgbziIxXQTNt34nS+9dbV/QFDLW0POcN7C0jR/hgkBjMEH2PezWhSj
mL/yLflUYAoxVpXjfc5aPJKqw0tR7m5ibznjCphE+FUMRg8EOmJcg6soeJ5QspU
k2dPN3+Y0zCTNRgAHEI+yIQbM6pio6v2c+UCtT1QhW4xSI38/kcEG8QiM55r1TUy
FcWAY5n5t1nNZtMxxse3LqEon3rKiLkBDQRbDB3nAQgAqfAjSjengERTM+ZYOWn0
QF2v2FuEuMe8mhju7Met7SN2zGv1LnhTNshEa9IABEfjZirE2Tqx4xCWDwDedK4
u1ToFvcnuAMnq2O47Sh+eTyps6WPFtPBWf6ctKY31hFXjgoyDBULBv143XU/D9C
Mt7nsKDPYHVrrnge/qWPYVcb+cO0sSwNImMcwQSdTQ3VBq7MeNS9ZeBcXi+XCjhN
kjNum2AQqpkHHDQV7871yQ8RIILvZSSfkLb0/SNDU+bGaw2G3lcyKdIfZi2EWWZT
oCbH38I+LV7nAEe4zFpHwW8X0Dkx2aLgxe6UszDH9L3eGhTLpJhOSiaanG+zZKm
+QARAQABiQE2BBgBCAAgFiEE4Fmh4IZtMa4TEXCITZouEzBBU9EFAlsMHecCGwwA
CgkQTZouEzBBU9H5TQgAolWvIsez/WW8N2tmZEnX0LOFNb+1S4L4X983njwNdoVI
w19pbj+8RIHF/H9kcPGi7jK96gvlykQn3uez/95D2AiRfW5KYdOouFisKgHpv8Ay
BrhclHv11yK+X/0iTD0scYaG7np5162xLkaxSO9hsz2fGv20RkaXCWkI69fWw0BR
XII5pZh2YFei2ZhH/tIMIW65h3w0gtgaZBBdpZTOOW4zvghyN+0MSObqkI1BvUJu
caDFI4d6ZTmP5SY+pZyktZ4bg/vMH5VFXdIKgbLx9uVeTvOupvbAW0TNuLYGUBQE
nm+S0zr3W18t64e4sS3oHse8zCqo1iiImpba6F1Oaw==
=y6DD
```

-----END PGP PUBLIC KEY BLOCK-----

```
from __future__ import absolute_import
```

```
import cython
```

```
import gpg
```

```
c = gpg.Context()
```

```

seckey = c.keylist(pattern=None, secret=True)
pubkey = c.keylist(pattern=None, secret=False)

seclist = list(seckey)
secnum = len(seclist)

publist = list(pubkey)
pubnum = len(publist)

if cython.compiled is True:
    cc = "Powered by Cython compiled C code."
else:
    cc = "Powered by Python."

print("""
    Number of secret keys: {0}
    Number of public keys: {1}

    {2}
    """).format(secnum, pubnum, cc)
This is gpgme.info, produced by makeinfo version 6.3 from gpgme.texi.

Copyright 20022008, 2010, 20122018 g10 Code GmbH.

```

Permission is granted to copy, distribute and/or modify this document under the terms of the GNU General Public License as published by the Free Software Foundation; either version 3 of the License, or (at your option) any later version. The text of the license can be found in the section entitled Copying.

This document is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

INFO-DIR-SECTION GNU Libraries

START-INFO-DIR-ENTRY

* GPGME: (gpgme). Adding support for cryptography to your program.

END-INFO-DIR-ENTRY

This file documents the GPGME library.

This is Edition 1.12.1-beta100, last updated 3 December 2018, of The GnuPG Made Easy Reference Manual, for Version 1.12.1-beta100.

Copyright 20022008, 2010, 20122018 g10 Code GmbH.

Permission is granted to copy, distribute and/or modify this document under the terms of the GNU General Public License as

published by the Free Software Foundation; either version 3 of the License, or (at your option) any later version. The text of the license can be found in the section entitled Copying.

This document is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

Indirect:

gpgme.info-1: 1689

gpgme.info-2: 301885

Tag Table:

(Indirect)

Node: Top1689

Node: Introduction9299

Node: Getting Started10089

Node: Features11550

Node: Overview12862

Node: Preparation13971

Node: Header14968

Node: Building the Source15715

Node: Largefile Support (LFS)17859

Node: Using Automake23275

Node: Using Libtool25828

Node: Library Version Check26190

Node: Signal Handling32250

Node: Multi-Threading33520

Ref: Multi-Threading-Footnote-134936

Node: Protocols and Engines35359

Node: Engine Version Check38110

Node: Engine Information40633

Node: Engine Configuration44493

Node: OpenPGP45797

Node: Cryptographic Message Syntax46137

Node: Assuan46450

Node: Algorithms46824

Ref: Algorithms-Footnote-147303

Node: Public Key Algorithms47431

Node: Hash Algorithms50033

Node: Error Handling51247

Node: Error Values53121

Node: Error Sources58324

Node: Error Codes60764

Node: Error Strings65557

Node: Exchanging Data67364

Node: Creating Data Buffers69249
Node: Memory Based Data Buffers69765
Node: File Based Data Buffers73198
Node: Callback Based Data Buffers76311
Node: Destroying Data Buffers80502
Node: Manipulating Data Buffers82009
Node: Data Buffer I/O Operations82501
Node: Data Buffer Meta-Data84874
Node: Data Buffer Convenience89393
Node: Contexts91613
Node: Creating Contexts92799
Node: Destroying Contexts93646
Node: Result Management93985
Node: Context Attributes95566
Node: Protocol Selection96733
Node: Crypto Engine97779
Node: Setting the Sender99668
Node: ASCII Armor101181
Node: Text Mode101810
Node: Offline Mode102744
Node: Pinentry Mode104242
Node: Included Certificates106136
Node: Key Listing Mode107582
Node: Passphrase Callback112323
Node: Progress Meter Callback115885
Node: Status Message Callback117870
Node: Context Flags119635
Node: Locale125684
Node: Additional Logs127276
Node: Key Management129474
Node: Key objects130702
Node: Listing Keys144926
Node: Information About Keys153579
Node: Manipulating Keys154887
Node: Generating Keys155457
Node: Signing Keys173777
Node: Exporting Keys177410
Node: Importing Keys184349
Ref: Importing Keys-Footnote-1191752
Node: Deleting Keys191880
Node: Changing Passphrases194160
Node: Changing TOFU Data195487
Node: Advanced Key Editing197595
Node: Trust Item Management200328
Node: Listing Trust Items201364
Node: Manipulating Trust Items203725
Node: Crypto Operations204368
Node: Decrypt205632

Node: Verify212946
Node: Decrypt and Verify225666
Node: Sign228521
Node: Selecting Signers229085
Node: Creating a Signature230491
Node: Signature Notation Data235261
Node: Encrypt237546
Node: Encrypting a Plaintext237902
Node: Miscellaneous252314
Node: Running other Programs252726
Node: Using the Assuan protocol254889
Node: Checking for updates257687
Node: Run Control262504
Node: Waiting For Completion263248
Node: Using External Event Loops265373
Node: I/O Callback Interface267345
Node: Registering I/O Callbacks272585
Node: I/O Callback Example274624
Node: I/O Callback Example GTK+281249
Node: I/O Callback Example GDK283038
Node: I/O Callback Example Qt284680
Node: Cancellation286968
Node: UI Server Protocol289276
Ref: UI Server Protocol-Footnote-1290711
Node: UI Server Encrypt290830
Node: UI Server Sign296188
Node: UI Server Decrypt298541
Node: UI Server Verify301885
Node: UI Server Set Input Files305457
Node: UI Server Sign/Encrypt Files306527
Node: UI Server Verify/Decrypt Files308335
Node: UI Server Import/Export Keys310211
Node: UI Server Checksum Files311273
Node: Miscellaneous UI Server Commands313491
Ref: command SENDER315422
Node: Debugging317124
Node: Deprecated Functions318873
Node: Library Copying344090
Node: Copying372310
Node: Concept Index410060
Node: Function and Data Index425058

End Tag Table

Local Variables:

coding: utf-8

End:

```
# -*- mode: org -*-
#+TITLE: A Short History of the GPGME bindings for Python
#+LATEX_COMPILER: xelatex
#+LATEX_CLASS: article
#+LATEX_CLASS_OPTIONS: [12pt]
#+LATEX_HEADER: \usepackage{xltextra}
#+LATEX_HEADER: \usepackage[margin=1in]{geometry}
#+LATEX_HEADER: \setmainfont[Ligatures={Common}]{Times New Roman}
```

* Overview

```
:PROPERTIES:
:CUSTOM_ID: overview
:END:
```

```
| Version:      | 0.0.1                |
| GPGME Version: | 1.13.0              |
| Author:       | Ben McGinnes <ben@gnupg.org> |
| Author GPG Key: | DB4724E6FA4286C92B4E55C4321E4E2373590E5D |
| Language:     | Australian English, British English |
| xml:lang:     | en-AU, en-GB, en    |
```

The GPGME Python bindings passed through many hands and numerous phases before, after a fifteen year journey, coming full circle to return to the source. This is a short explanation of that journey.

** In the beginning

```
:PROPERTIES:
:CUSTOM_ID: in-the-beginning
:END:
```

In 2002 John Goerzen released PyME; Python bindings for the GPGME module which utilised the current release of Python of the time and SWIG.^[fn:1] Shortly after creating it and ensuring it worked he stopped supporting it, though he left his work available on his Gopher site.

** Keeping the flame alive

```
:PROPERTIES:
:CUSTOM_ID: keeping-the-flame-alive
:END:
```

A couple of years later the project was picked up by Igor Belyi and actively developed and maintained by him from 2004 to 2008. Igor's whereabouts at the time of this document's creation are unknown, but the current authors do hope he is well. We're assuming (or hoping) that life did what life does and made continuing untenable.

** Passing the torch

```
:PROPERTIES:  
:CUSTOM_ID: passing-the-torch  
:END:
```

In 2014 Martin Albrecht wanted to patch a bug in the PyME code and discovered the absence of Igor. Following a discussion on the PyME mailing list he became the new maintainer for PyME, releasing version 0.9.0 in May of that year. He remains the maintainer of the original PyME release in Python 2.6 and 2.7 (available via PyPI).

** Coming full circle

```
:PROPERTIES:  
:CUSTOM_ID: ouroboros  
:END:
```

In 2015 Ben McGinnes approached Martin about a Python 3 version, while investigating how complex a task this would be the task ended up being completed. A subsequent discussion with Werner Koch led to the decision to fold the Python 3 port back into the original GPGME release in the languages subdirectory for non-C bindings under the module name of `=pyme3=`.

In 2016 this PyME module was integrated back into the GPGME project by Justus Winter. During the course of this work Justus adjusted the port to restore limited support for Python 2, but not as many minor point releases as the original PyME package supports. During the course of this integration the package was renamed to more accurately reflect its status as a component of GPGME. The `=pyme3=` module was renamed to `=gpg=` and adopted by the upstream GnuPG team.

In 2017 Justus departed G10code and the GnuPG team. Following this Ben returned to maintain of `gpgme` Python bindings and continue building them from that point.

* Relics of the past

```
:PROPERTIES:  
:CUSTOM_ID: relics-past  
:END:
```

There are a few things, in addition to code specific factors, such as SWIG itself, which are worth noting here.

** The Annoyances of Git

```
:PROPERTIES:  
:CUSTOM_ID: the-annoyances-of-git  
:END:
```

As anyone who has ever worked with git knows, submodules are horrible way to deal with pretty much anything. In the interests of avoiding migraines, that was skipped with addition of the PyME code to GPGME.

Instead the files were added to a subdirectory of the =lang/= directory, along with a copy of the entire git log up to that point as a separate file within the =lang/python/docs/= directory.[fn:2] As the log for PyME is nearly 100KB and the log for GPGME is approximately 1MB, this would cause considerable bloat, as well as some confusion, should the two be merged.

Hence the unfortunate, but necessary, step to simply move the files. A regular repository version has been maintained should it be possible to implement this better in the future.

** The Perils of PyPI

```
:PROPERTIES:  
:CUSTOM_ID: the-perils-of-pypi  
:END:
```

The early port of the Python 2 =pyme= module as =pyme3= was never added to PyPI while the focus remained on development and testing during 2015 and early 2016. Later in 2016, however, when Justus completed his major integration work and subsequently renamed the module from =pyme3= to =gpg=, some prior releases were also provided through PyPI.

Since these bindings require a matching release of the GPGME libraries in order to function, it was determined that there was little benefit in also providing a copy through PyPI since anyone obtaining the GPGME source code would obtain the Python bindings source code at the same time. Whereas there was the potential to sew confusion amongst Python users installing the module from PyPI, only to discover that without the relevant C files, header files or SWIG compiled binaries, the Python module did them little good.

There are only two files on PyPI which might turn up in a search for this module or a sample of its content:

1. gpg (1.8.0) - Python bindings for GPGME GnuPG cryptography library
2. pyme (0.9.0) - Python support for GPGME GnuPG cryptography library

*** GPG 180 - Python bindings for GPGME GnuPG cryptography library

:PROPERTIES:

:CUSTOM_ID: pypi-gpgme-180

:END:

This is the most recent version to reach PyPI and is the version of the official Python bindings which shipped with GPGME 1.8.0. If you have GPGME 1.8.0 installed and /only/ 1.8.0 installed, then it is probably safe to use this copy from PyPI.

As there have been a lot of changes since the release of GPGME 1.8.0, the GnuPG Project recommends not using this version of the module and instead installing the current version of GPGME along with the Python bindings included with that package.

*** PyME 090 - Python support for GPGME GnuPG cryptography library

:PROPERTIES:

:CUSTOM_ID: pypi-gpgme-90

:END:

This is the last release of the PyME bindings maintained by Martin Albrecht and is only compatible with Python 2, it will not work with Python 3. This is the version of the software from which the port from Python 2 to Python 3 code was made in 2015.

Users of the more recent Python bindings will recognise numerous points of similarity, but also significant differences. It is likely that the more recent official bindings will feel "more pythonic."

For those using Python 2, there is essentially no harm in using this module, but it may lack a number of more recent features added to GPGME.

* Footnotes

[fn:1] In all likelihood this would have been Python 2.2 or possibly Python 2.3.

[fn:2] The entire PyME git log and other preceding VCS logs are located in the =gpgme/lang/python/docs/old-commits.log= file.
2011-12-02 Werner Koch <wk@g10code.com>

NB: ChangeLog files are no longer manually maintained. Starting on December 1st, 2011 we put change information only in the GIT commit log, and generate a top-level ChangeLog file from logs at

"make dist". See doc/HACKING for details.

2008-11-08 Moritz <moritz@gnu.org>

* gpgme.lisp (size-t): Wrong call to defctype: function accepts optional, not keyword argument.

(ssize-t): Likewise.

(off-t): Likewise.

(gpgme-data-t, gpgme-ctx-t): Likewise.

(gpgme-error-t): Likewise.

(gpgme-error-no-signal-t): Likewise.

(gpgme-err-code-t): Likewise.

(gpgme-err-source-t): Likewise.

(gpgme-sig-notation-t, gpgme-engine-info-t): Likewise.

(gpgme-subkey-t): Likewise.

(gpgme-key-sig-t): Likewise.

(gpgme-user-id-t): Likewise.

(gpgme-key-t): Likewise.

(gpgme-data-cbs-t): Likewise.

(gpgme-invalid-key-t): Likewise.

(gpgme-op-encrypt-result-t): Likewise.

(gpgme-recipient-t): Likewise.

(gpgme-op-decrypt-result-t): Likewise.

(gpgme-new-signature-t): Likewise.

(gpgme-op-sign-result-t): Likewise.

(gpgme-signature-t): Likewise.

(gpgme-op-verify-result-t): Likewise.

(gpgme-import-status-t): Likewise.

(gpgme-op-import-result-t): Likewise.

(gpgme-op-genkey-result-t): Likewise.

(gpgme-op-keylist-result-t): Likewise.

2006-07-06 Marcus Brinkmann <marcus@g10code.de>

* Initial release.

Copyright (C) 2006, 2008 g10 Code GmbH

This file is free software; as a special exception the author gives unlimited permission to copy and/or distribute it, with or without modifications, as long as this notice is preserved.

This file is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY, to the extent permitted by law; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.

HACKING

-*- org -*-

#+TITLE: Hacking notes for GPGME

#+STARTUP: showall

- * How to contribute
- ** No more ChangeLog files

Do not modify any of the ChangeLog files in GPGME. Starting on December 1st, 2011 we put change information only in the GIT commit log, and generate a top-level ChangeLog file from logs at "make dist" time. As such, there are strict requirements on the form of the commit log messages. The old ChangeLog files have all be renamed to ChangeLog-2011

** Commit log requirements

Your commit log should always start with a one-line summary, the second line should be blank, and the remaining lines are usually ChangeLog-style entries for all affected files. However, it's fine -- even recommended -- to write a few lines of prose describing the change, when the summary and ChangeLog entries don't give enough of the big picture. Omit the leading TABs that you're used to seeing in a "real" ChangeLog file, but keep the maximum line length at 72 or smaller, so that the generated ChangeLog lines, each with its leading TAB, will not exceed 80 columns. If you want to add text which shall not be copied to the ChangeLog, separate it by a line consisting of two dashes at the begin of a line.

Note that ./autogen.sh installs a git hook to do some basic syntax checking on the commit log message.

Typo fixes and documentation updates don't need a ChangeLog entry; thus you would use a commit message like

```
#+begin_example
Fix typo in a comment

--
#+end_example
```

The marker line here is important; without it the first line would appear in the ChangeLog.

If you exceptionally need to have longer lines in a commit log you may do this after this scissor line:

```
#+begin_example
# ----- >8 -----
#+end_example
```

(hash, blank, 24 dashes, blank, scissor, blank, 24 dashes).

Note that such a comment will be removed if the git commit option

=--cleanup-scissor= is used.

** License policy

GPGME is currently licensed under the LGPLv2.1+ with tools and the manual being under the GPLv3+. We may eventually update to a newer version of the licenses or a combination of them. It is thus important, that all contributed code allows for an update of the license; for example we can't accept code under the LGPLv2(only).

If you want to contribute code or documentation to GPGME you are asked to assert that the contribution is in accordance to the "GPGME Developer's Certificate of Origin" as found in the file "DCO". Except for a slight wording change, this DCO is identical to the one used by the Linux kernel. Please take these simple steps:

- Decide which mail address you want to use. Please have your real name in the address and not a pseudonym. Anonymous contributions can only be done if you find a proxy who certifies for you.
- If your employer or school might claim ownership of code written by you; you need to talk to them to make sure that you have the right to contribute under the DCO.
- Send an OpenPGP signed mail to the gnupg-devel@gnupg.org public mailing list from your mail address. Include a copy of the DCO as found in the official master branch. Insert your name and email address into the DCO in the same way you want to use it later.

Example:

Signed-off-by: Joe R. Hacker <joe@example.org>

If you need it, you may perform simple transformations on the mail address: Replacing "@" by " at " or "." by " dot ".)

- That's it. From now on you only need to add a "Signed-off-by:" line with your name and mail address to the GIT commit message. It is recommended to send the patches using a PGP/MIME signed mail.

** Coding standards

Please follow the GNU coding standards. If you are in doubt consult the existing code as an example. Do no re-indent code without a need. If you really need to do it, use a separate commit for such a change.

- C99 syntax should not be used; stick to C90.

- Please do not use C++ `///
=` style comments.
- Try to fit lines into 80 columns.
- Ignore signed/unsigned pointer mismatches
- No arithmetic on void pointers; cast to `char*` first.

**** Commit log keywords**

- GnuPG-bug-id :: Values are comma or space delimited bug numbers from `bug.gnupg.org` pertaining to this commit.
- Debian-bug-id :: Same as above but from the Debian bug tracker.
- CVE-id :: CVE id number pertaining to this commit.
- Regression-due-to :: Commit id of the regression fixed by this commit.
- Fixes-commit :: Commit id this commit fixes.
- Reported-by :: Value is a name or mail address of a bug reporter.
- Suggested-by :: Value is a name or mail address of someone how suggested this change.
- Co-authored-by :: Name or mail address of a co-author
- Some-comments-by :: Name or mail address of the author of additional comments (commit log or code).
- Proofread-by :: Sometimes used by translation commits.
- Signed-off-by :: Name or mail address of the developer

*** Debug hints**

- Use `gpgme-tool` for manual tests.
- The envvar `GPGME_DEBUG` enables debugging; see `debug.[ch]` for details.

2011-12-02 Werner Koch <wk@g10code.com>

NB: ChangeLog files are no longer manually maintained. Starting on December 1st, 2011 we put change information only in the GIT commit log, and generate a top-level ChangeLog file from logs at "make dist". See `doc/HACKING` for details.

2011-04-06 Werner Koch <wk@g10code.com>

* `gpg-error.m4`: Update from current `libgpg-error` repo.

2010-05-07 Werner Koch <wk@g10code.com>

* `libassuan.m4`: Update from `libassuan` svn.

2009-11-10 Marcus Brinkmann <marcus@g10code.de>

* `libassuan.m4`: Fix `LIBASSUAN_VERSION`.

2006-06-08 Marcus Brinkmann <marcus@g10code.de>

* pth.m4: Add --all to pth-config invocation.

2006-02-22 Marcus Brinkmann <marcus@g10code.de>

* pth.m4: Fix code generation (required for Max OS X).
Submitted by Emanuele Giaquinta <exg@gentoo.org>.

2005-11-17 Marcus Brinkmann <marcus@g10code.de>

* glib-2.0.m4: New file.

2004-12-28 Werner Koch <wk@g10code.com>

* pth.m4: Changed quoting for use with automake 1.9.

2004-09-14 Marcus Brinkmann <marcus@g10code.de>

* pth.m4: Disable _ac_pth_line, and don't fail if Pth is not
found.

* glibc21.m4: New file.

* gpg-error.m4: New file.

* pth.m4: New file.

Copyright (C) 2004, 2005, 2009, 2010, 2011 g10 Code GmbH

This file is free software; as a special exception the author gives
unlimited permission to copy and/or distribute it, with or without
modifications, as long as this notice is preserved.

This file is distributed in the hope that it will be useful, but
WITHOUT ANY WARRANTY, to the extent permitted by law; without even the
implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.
Configuration files may go here. Note that config.h.in is
auto-generated so that this file is not in git.

```
(1:private-key(3:dsa(1:p129:eC_L&$2,6tx.gh1VirlqI9
,^g3.$DveUvX1'oIj)(1:q21: #UfK2z(tuVG)(1:g128:zu^Rab;qeQQA B?/6/aspfE/
gx!Mr0YY*oMrJc2xWG:.r6)(1:y128:Uf]j^@oEn4j#QrRq" RcEa E/}4C[3A
5+~~.#!+
)W&5d)j)(1:x21:` )))
```

GPGME Developer's Certificate of Origin. Version 1.0

=====

By making a contribution to the GPGME project, I certify that:

(a) The contribution was created in whole or in part by me and I
have the right to submit it under the free software license

indicated in the file; or

(b) The contribution is based upon previous work that, to the best of my knowledge, is covered under an appropriate free software license and I have the right under that license to submit that work with modifications, whether created in whole or in part by me, under the same free software license (unless I am permitted to submit under a different license), as indicated in the file; or

(c) The contribution was provided directly to me by some other person who certified (a), (b) or (c) and I have not modified it.

(d) I understand and agree that this project and the contribution are public and that a record of the contribution (including all personal information I submit with it, including my sign-off) is maintained indefinitely and may be redistributed consistent with this project or the free software license(s) involved.

Signed-off-by: [Your name and mail address]

```
\input texinfo @c -*- texinfo -*-
```

```
@c %**start of header
```

```
@setfilename gpgme-python-howto.info
```

```
@settitle GNU Privacy Guard (GnuPG) Made Easy Python Bindings HOWTO (English)
```

```
@documentencoding utf-8
```

```
@documentlanguage en
```

```
@c %**end of header
```

```
@finalout
```

```
@titlepage
```

```
@title GNU Privacy Guard (GnuPG) Made Easy Python Bindings HOWTO (English)
```

```
@author Ben McGinnes
```

```
@end titlepage
```

```
@contents
```

```
@ifnottex
```

```
@node Top
```

```
@top GNU Privacy Guard (GnuPG) Made Easy Python Bindings HOWTO (English)
```

```
@end ifnottex
```

```
@menu
```

```
* Introduction::
```

```
* GPGME Concepts::
```

```
* GPGME Python bindings installation::
```

```
* Fundamentals::
```

- * Working with keys::
- * Basic Functions::
- * Creating keys and subkeys::
- * Advanced or Experimental Use Cases::
- * Miscellaneous extras and work-arounds::
- * Copyright and Licensing::

@detailmenu

--- The Detailed Node Listing ---

Introduction

- * Python 2 versus Python 3::
- * Examples::
- * Unofficial Drafts::
- * What's New::

What's New

- * New in GPGME 1130::
- * New in GPGME 1120::

GPGME Concepts

- * A C API::
- * Python bindings::
- * Difference between the Python bindings and other GnuPG Python packages::

Difference between the Python bindings and other GnuPG Python packages

- * The python-gnupg package maintained by Vinay Sajip::
- * The gnupg package created and maintained by Isis Lovecruft::
- * The PyME package maintained by Martin Albrecht::

GPGME Python bindings installation

- * No PyPI::
- * Requirements::
- * Installation::
- * Known Issues::

Requirements

- * Recommended Additions::

Installation

- * Installing GPGME::

Known Issues

- * Breaking Builds::
- * Reinstalling Responsibly::
- * Multiple installations::
- * Won't Work With Windows::
- * CFFI is the Best and GPGME should use it instead of SWIG::
- * Virtualised Environments::
- * Post installation::

Fundamentals

- * No REST::
- * Context::

Working with keys

- * Key selection::
- * Get key::
- * Importing keys::
- * Exporting keys::

Key selection

- * Counting keys::

Importing keys

- * Working with ProtonMail::
- * Importing with HKP for Python::
- * Importing from ProtonMail with HKP for Python::

Exporting keys

- * Exporting public keys::
- * Exporting secret keys::
- * Sending public keys to the SKS Keyservers::

Basic Functions

- * Encryption::
- * Decryption::
- * Signing text and files::
- * Signature verification::

Encryption

- * Encrypting to one key::
- * Encrypting to multiple keys::

Signing text and files

- * Signing key selection::
- * Normal or default signing messages or files::
- * Detached signing messages and files::
- * Clearsigning messages or text::

Creating keys and subkeys

- * Primary key::
- * Subkeys::
- * User IDs::
- * Key certification::

User IDs

- * Adding User IDs::
- * Revoking User IDs::

Key certification

- * Verifying key certifications::

Advanced or Experimental Use Cases

- * C plus Python plus SWIG plus Cython::

Miscellaneous extras and work-arounds

- * Group lines::
- * Keyserver access for Python::
- * GPGME version checking::

Keyserver access for Python

- * Key import format::

Copyright and Licensing

- * Copyright::
- * Draft Editions of this HOWTO::
- * License GPL compatible::

@end detailmenu

@end menu

@node Introduction
@chapter Introduction

@multitable {aaaaaaaaaaaaaaaa} {aa}
@item Version:
@tab 0.1.5
@item GPGME Version:
@tab 1.13.0
@item Author:
@tab Ben McGinnes <ben@gnupg.org>
@item Author GPG Key:
@tab DB4724E6FA4286C92B4E55C4321E4E2373590E5D
@item Language:
@tab Australian English, British English
@item Language codes:
@tab en-AU, en-GB, en
@end multitable

This document provides basic instruction in how to use the GPGME Python bindings to programmatically leverage the GPGME library.

@menu
* Python 2 versus Python 3::
* Examples::
* Unofficial Drafts::
* What's New::
@end menu

@node Python 2 versus Python 3
@section Python 2 versus Python 3

Though the GPGME Python bindings themselves provide support for both Python 2 and 3, the focus is unequivocally on Python 3 and specifically from Python 3.4 and above. As a consequence all the examples and instructions in this guide use Python 3 code.

Much of it will work with Python 2, but much of it also deals with Python 3 byte literals, particularly when reading and writing data. Developers concentrating on Python 2.7, and possibly even 2.6, will need to make the appropriate modifications to support the older string and unicode types as opposed to bytes.

There are multiple reasons for concentrating on Python 3; some of which relate to the immediate integration of these bindings, some of which relate to longer term plans for both GPGME and the python bindings and some of which relate to the impending EOL period for Python 2.7. Essentially, though, there is little value in tying the

bindings to a version of the language which is a dead end and the advantages offered by Python 3 over Python 2 make handling the data types with which GPGME deals considerably easier.

@node Examples

@section Examples

All of the examples found in this document can be found as Python 3 scripts in the @samp{lang/python/examples/howto} directory.

@node Unofficial Drafts

@section Unofficial Drafts

In addition to shipping with each release of GPGME, there is a section on locations to read or download @ref{Draft Editions of this HOWTO, , draft editions} of this document from at the end of it. These are unofficial versions produced in between major releases.

@node What's New

@section What's New

Full details of what is new are now available in the @uref{what-is-new.org, What's New} file and archives of the preceding @emph{What's New} sections are available in the @uref{what-was-new, What Was New} file.

@menu

* New in GPGME 1130::

* New in GPGME 1120::

@end menu

@node New in GPGME 1130

@subsection New in GPGME 1130

See the @uref{what-is-new#new-stuff-1-13-0, What's New} document for what is new in version 1.13.0.

@node New in GPGME 1120

@subsection New in GPGME 1120

See the @uref{what-was-new#new-stuff-1-12-0, What Was New} document for what was new in version 1.12.0.

@node GPGME Concepts

@chapter GPGME Concepts

@menu

* A C API::

* Python bindings::

* Difference between the Python bindings and other GnuPG Python packages::

@end menu

@node A C API
@section A C API

Unlike many modern APIs with which programmers will be more familiar with these days, the GPGME API is a C API. The API is intended for use by C coders who would be able to access its features by including the @samp{gpgme.h} header file with their own C source code and then access its functions just as they would any other C headers.

This is a very effective method of gaining complete access to the API and in the most efficient manner possible. It does, however, have the drawback that it cannot be directly used by other languages without some means of providing an interface to those languages. This is where the need for bindings in various languages stems.

@node Python bindings
@section Python bindings

The Python bindings for GPGME provide a higher level means of accessing the complete feature set of GPGME itself. It also provides a more pythonic means of calling these API functions.

The bindings are generated dynamically with SWIG and the copy of @samp{gpgme.h} generated when GPGME is compiled.

This means that a version of the Python bindings is fundamentally tied to the exact same version of GPGME used to generate that copy of @samp{gpgme.h}.

@node Difference between the Python bindings and other GnuPG Python packages
@section Difference between the Python bindings and other GnuPG Python packages

There have been numerous attempts to add GnuPG support to Python over the years. Some of the most well known are listed here, along with what differentiates them.

@menu

- * The python-gnupg package maintained by Vinay Sajip::
- * The gnupg package created and maintained by Isis Lovecruft::
- * The PyME package maintained by Martin Albrecht::

@end menu

@node The python-gnupg package maintained by Vinay Sajip
@subsection The python-gnupg package maintained by Vinay Sajip

This is arguably the most popular means of integrating GPG with Python. The package utilises the @samp{subprocess} module to implement

wrappers for the `@samp{gpg}` and `@samp{gpg2}` executables normally invoked on the command line (`@samp{gpg.exe}` and `@samp{gpg2.exe}` on Windows).

The popularity of this package stemmed from its ease of use and capability in providing the most commonly required features.

Unfortunately it has been beset by a number of security issues in the past; most of which stemmed from using unsafe methods of accessing the command line via the `@samp{subprocess}` calls. While some effort has been made over the last two to three years (as of 2018) to mitigate this, particularly by no longer providing shell access through those subprocess calls, the wrapper is still somewhat limited in the scope of its GnuPG features coverage.

The `python-gnupg` package is available under the MIT license.

`@node` The `gnupg` package created and maintained by Isis Lovecruft
`@subsection` The `gnupg` package created and maintained by Isis Lovecruft

In 2015 Isis Lovecruft from the Tor Project forked and then re-implemented the `python-gnupg` package as just `gnupg`. This new package also relied on `subprocess` to call the `@samp{gpg}` or `@samp{gpg2}` binaries, but did so somewhat more securely.

The naming and version numbering selected for this package, however, resulted in conflicts with the original `python-gnupg` and since its functions were called in a different manner to `python-gnupg`, the release of this package also resulted in a great deal of consternation when people installed what they thought was an upgrade that subsequently broke the code relying on it.

The `gnupg` package is available under the GNU General Public License version 3.0 (or any later version).

`@node` The `PyME` package maintained by Martin Albrecht
`@subsection` The `PyME` package maintained by Martin Albrecht

This package is the origin of these bindings, though they are somewhat different now. For details of when and how the `PyME` package was folded back into `GPGME` itself see the `@uref{short-history.org, Short History}` document.`@footnote{ @samp{short-history} and/or @samp{short-history.html} .}`

The `PyME` package was first released in 2002 and was also the first attempt to implement a low level binding to `GPGME`. In doing so it provided access to considerably more functionality than either the `@samp{python-gnupg}` or `@samp{gnupg}` packages.

The `PyME` package is only available for Python 2.6 and 2.7.

Porting the PyME package to Python 3.4 in 2015 is what resulted in it being folded into the GPGME project and the current bindings are the end result of that effort.

The PyME package is available under the same dual licensing as GPGME itself: the GNU General Public License version 2.0 (or any later version) and the GNU Lesser General Public License version 2.1 (or any later version).

@node GPGME Python bindings installation
@chapter GPGME Python bindings installation

@menu
* No PyPI::
* Requirements::
* Installation::
* Known Issues::
@end menu

@node No PyPI
@section No PyPI

Most third-party Python packages and modules are available and distributed through the Python Package Installer, known as PyPI.

Due to the nature of what these bindings are and how they work, it is infeasible to install the GPGME Python bindings in the same way.

This is because the bindings use SWIG to dynamically generate C bindings against @samp{gpgme.h} and @samp{gpgme.h} is generated from @samp{gpgme.h.in} at compile time when GPGME is built from source. Thus to include a package in PyPI which actually built correctly would require either statically built libraries for every architecture bundled with it or a full implementation of C for each architecture.

See the additional notes regarding @ref{CFFI is the Best and GPGME should use it instead of SWIG, , CFFI and SWIG} at the end of this section for further details.

@node Requirements
@section Requirements

The GPGME Python bindings only have three requirements:

@enumerate
@item

A suitable version of Python 2 or Python 3. With Python 2 that

means CPython 2.7 and with Python 3 that means CPython 3.4 or higher.

@item

@uref{https://www.swig.org, SWIG}.

@item

GPGME itself. Which also means that all of GPGME's dependencies must be installed too.

@end enumerate

@menu

* Recommended Additions::

@end menu

@node Recommended Additions

@subsection Recommended Additions

Though none of the following are absolute requirements, they are all recommended for use with the Python bindings. In some cases these recommendations refer to which version(s) of CPython to use the bindings with, while others refer to third party modules which provide a significant advantage in some way.

@enumerate

@item

If possible, use Python 3 instead of 2.

@item

Favour a more recent version of Python since even 3.4 is due to reach EOL soon. In production systems and services, Python 3.6 should be robust enough to be relied on.

@item

If possible add the following Python modules which are not part of the standard library: @uref{http://docs.python-requests.org/en/latest/index.html, Requests}, @uref{https://cython.org/, Cython}, @uref{https://pendulum.eustace.io/, Pendulum} and @uref{https://github.com/Selfnet/hkp4py, hkp4py}.

@end enumerate

Chances are quite high that at least the first one and maybe two of those will already be installed.

Note that, as with Cython, some of advanced use case scenarios will bring with them additional requirements. Most of these will be fairly well known and commonly installed ones, however, which are in many cases likely to have already been installed on many systems or be familiar to Python programmers.

@node Installation

@section Installation

Installing the Python bindings is effectively achieved by compiling and installing GPGME itself.

Once SWIG is installed with Python and all the dependencies for GPGME are installed you only need to confirm that the version(s) of Python you want the bindings installed for are in your `@samp{$PATH}`.

By default GPGME will attempt to install the bindings for the most recent or highest version number of Python 2 and Python 3 it detects in `@samp{$PATH}`. It specifically checks for the `@samp{python}` and `@samp{python3}` executables first and then checks for specific version numbers.

For Python 2 it checks for these executables in this order: `@samp{python}`, `@samp{python2}` and `@samp{python2.7}`.

For Python 3 it checks for these executables in this order: `@samp{python3}`, `@samp{python3.7}`, `@samp{python3.6}`, `@samp{python3.5}` and `@samp{python3.4}`.@footnote{With no issues reported specific to Python 3.7, the release of Python 3.7.1 at around the same time as GPGME 1.12.0 and the testing with Python 3.7.1rc1, there is no reason to delay moving 3.7 ahead of 3.6 now. Production environments with more conservative requirements will always enforce their own policies anyway and installation to each supported minor release is quite possible too.}

On systems where `@samp{python}` is actually `@samp{python3}` and not `@samp{python2}` it may be possible that `@samp{python2}` may be overlooked, but there have been no reports of that actually occurring as yet.

In the three months or so since the release of Python 3.7.0 there has been extensive testing and work with these bindings with no issues specifically relating to the new version of Python or any of the new features of either the language or the bindings. This has also been the case with Python 3.7.1rc1. With that in mind and given the release of Python 3.7.1 is scheduled for around the same time as GPGME 1.12.0, the order of preferred Python versions has been changed to move Python 3.7 ahead of Python 3.6.

@menu

* Installing GPGME::

@end menu

@node Installing GPGME

@subsection Installing GPGME

See the GPGME `@samp{README}` file for details of how to install GPGME from source.

@node Known Issues

@section Known Issues

There are a few known issues with the current build process and the Python bindings. For the most part these are easily addressed should they be encountered.

@menu

- * Breaking Builds::
- * Reinstalling Responsibly::
- * Multiple installations::
- * Won't Work With Windows::
- * CFFI is the Best and GPGME should use it instead of SWIG::
- * Virtualised Environments::
- * Post installation::

@end menu

@node Breaking Builds

@subsection Breaking Builds

Occasionally when installing GPGME with the Python bindings included it may be observed that the @samp{make} portion of that process induces a large very number of warnings and, eventually errors which end that part of the build process. Yet following that with @samp{make check} and @samp{make install} appears to work seamlessly.

The cause of this is related to the way SWIG needs to be called to dynamically generate the C bindings for GPGME in the first place. So the entire process will always produce @samp{lang/python/python2-gpg/} and @samp{lang/python/python3-gpg/} directories. These should contain the build output generated during compilation, including the complete bindings and module installed into @samp{site-packages}.

Occasionally the errors in the early part or some other conflict (e.g. not installing as @strong{@emph{root}} or @strong{@emph{su}}) may result in nothing being installed to the relevant @samp{site-packages} directory and the build directory missing a lot of expected files. Even when this occurs, the solution is actually quite simple and will always work.

That solution is simply to run the following commands as either the @strong{root} user or prepended with @samp{sudo -H}@footnote{Yes, even if you use virtualenv with everything you do in

Python. If you want to install this module as just your user account then you will need to manually configure, compile and install the @emph{entire} GnuPG stack as that user as well. This includes libraries which are not often installed that way. It can be done and there are circumstances under which it is worthwhile, but generally only on POSIX systems which utilise single user mode (some even require it.) in the @samp{lang/python/} directory:

```
@example
/path/to/pythonX.Y setup.py build
/path/to/pythonX.Y setup.py build
/path/to/pythonX.Y setup.py install
@end example
```

Yes, the build command does need to be run twice. Yes, you still need to run the potentially failing or incomplete steps during the @samp{configure}, @samp{make} and @samp{make install} steps with installing GPGME. This is because those steps generate a lot of essential files needed, both by and in order to create, the bindings (including both the @samp{setup.py} and @samp{gpgme.h} files).

```
@enumerate
@item
IMPORTANT Note
```

If specifying a selected number of languages to create bindings for, try to leave Python last. Currently the majority of the other language bindings are also preceding Python of either version when listed alphabetically (not counting the Qt bindings).

If Python is set to precede one of the other languages then it is possible that the errors described here may interrupt the build process before generating bindings for those other languages. In these cases it may be preferable to configure all preferred language bindings separately with alternative @samp{configure} steps for GPGME using the @samp{--enable-languages=\$LANGUAGE} option.

Alternatively @samp{make} (or @samp{gmake}, depending on your platform) may be run with the the @samp{-k} option, which tells make to keep going even if errors are encountered. In that case the failure of one language's set of bindings to build should not hamper another language's bindings to build.

```
@end enumerate
```

```
@node Reinstalling Responsibly
@subsection Reinstalling Responsibly
```

Regardless of whether you're installing for one version of Python or several, there will come a point where reinstallation is required. With most Python module installations, the installed files go into the relevant site-packages directory and are then forgotten about. Then the module is upgraded, the new files are copied over the old and that's the end of the matter.

While the same is true of these bindings, there have been intermittent issues observed on some platforms which have benefited significantly from removing all the previous installations of the bindings before installing the updated versions.

Removing the previous version(s) is simply a matter of changing to the relevant `@samp{site-packages}` directory for the version of Python in question and removing the `@samp{gpg/}` directory and any accompanying egg-info files for that module.

In most cases this will require root or administration privileges on the system, but the same is true of installing the module in the first place.

@node Multiple installations

@subsection Multiple installations

For a variety of reasons it may be either necessary or just preferable to install the bindings to alternative installed Python versions which meet the requirements of these bindings.

On POSIX systems this will generally be most simply achieved by running the manual installation commands (`build`, `build`, `install`) as described in the previous section for each Python installation the bindings need to be installed to.

As per the SWIG documentation: the compilers, libraries and runtime used to build GPGME and the Python Bindings `@strong{must}` match those used to compile Python itself, including the version number(s) (at least going by major version numbers and probably minor numbers too).

On most POSIX systems, including OS X, this will very likely be the case in most, if not all, cases.

Note that from GPGME `@uref{https://dev.gnupg.org/rMff6ff616aea6f59b7f2ce1176492850ecdf3851e, 1.12.1}` the default installation installs to each version of Python it can find first. That is that it will currently install for the first copies of Python versions 2.7, 3.4, 3.5, 3.6, 3.7 and 3.8 (dev branch) that it finds. Usually this will be in the same prefix as GPGME itself, but is dictated by the `@samp{$PATH}` when the installation is performed. The above instructions can still be performed on other python installations which the installer does not find, including alternative prefixes.

@node Won't Work With Windows

@subsection Won't Work With Windows

There are semi-regular reports of Windows users having considerable

difficulty in installing and using the Python bindings at all. Very often, possibly even always, these reports come from Cygwin users and/or MinGW users and/or Msys2 users. Though not all of them have been confirmed, it appears that these reports have also come from people who installed Python using the Windows installer files from the [@uref{https://python.org, Python website}](https://python.org) (i.e. mostly MSI installers, sometimes self-extracting `@samp{.exe}` files).

The Windows versions of Python are not built using Cygwin, MinGW or Msys2; they're built using Microsoft Visual Studio. Furthermore the version used is `@emph{considerably}` more advanced than the version which MinGW obtained a small number of files from many years ago in order to be able to compile anything at all. Not only that, but there are changes to the version of Visual Studio between some micro releases, though that is particularly the case with Python 2.7, since it has been kept around far longer than it should have been.

There are two theoretical solutions to this issue:

`@enumerate`

`@item`

Compile and install the GnuPG stack, including GPGME and the Python bindings using the same version of Microsoft Visual Studio used by the Python Foundation to compile the version of Python installed.

If there are multiple versions of Python then this will need to be done with each different version of Visual Studio used for those versions of Python.

`@item`

Compile and install Python using the same tools used by choice, such as MinGW or Msys2.

`@end enumerate`

Do `@strong{ not}` use the official Windows installer for Python unless following the first method.

In this type of situation it may even be for the best to accept that there are less limitations on permissive software than free software and simply opt to use a recent version of the Community Edition of Microsoft Visual Studio to compile and build all of it, no matter what.

Investigations into the extent or the limitations of this issue are ongoing.

The following table lists the version of Microsoft Visual Studio which

needs to be used when compiling GPGME and the Python bindings with each version of the CPython binary released @uref{<https://www.python.org/downloads/windows/>, for Windows}:

```
@multitable {aaaaaaa} {aaaaaaaaaaaaaaaaaaaaaa} {aaaaaaaaaaaaaaaa}
@item CPython
@tab Microsoft product name
@tab runtime filename
@item 2.7.6
@tab Visual Studio 2008
@tab MSVCR90.DLL
@item 3.4.0
@tab Visual Studio 2010
@tab MSVCR100.DLL
@item 3.5.0
@tab Visual Studio 2015
@tab @strong{see below}
@item 3.6.0
@tab Visual Studio 2015
@tab @strong{see below}
@item 3.7.0
@tab Visual Studio 2017*
@tab @strong{see below}
@end multitable
```

It is important to note that MingW and Msys2 ship with the Visual C runtime from Microsoft Visual Studio 2005 and are thus @strong{incompatible} with all the versions of CPython which can be used with the GPGME Python bindings.

It is also important to note that from CPython 3.5 onwards, the Python Foundation has adopted the reworking of the Visual C runtime which was performed for Visual Studio 2015 and aimed at resolving many of these kinds of issues. Much greater detail on these issues and the correct file(s) to link to are available from Matthew Brett's invaluable page, @uref{https://matthew-brett.github.io/pydagogue/python_msvc.html, Using Microsoft Visual C with Python}. It is also worth reading the Microsoft Developer Network blog post on @uref{<http://blogs.msdn.com/b/vcblog/archive/2015/03/03/introducing-the-universal-crt.aspx>, the universal CRT} and Steve Dower's blog posts on Python extensions (@uref{<http://stevedower.id.au/blog/building-for-python-3-5>, part 1} and @uref{<http://stevedower.id.au/blog/building-for-python-3-5-part-two>, part 2}).

The second of those two posts by Steve Dower contains the details of specific configuration options required for compiling anything to be used with official CPython releases. In addition to those configuration and compiler settings to use, the versions of Visual Studio prior to Visual Studio 2015 did not support 64-bit systems by default. So compiling a 64-bit version of these bindings for a 64-bit version of CPython 2.7 or 3.4 requires additional work.

In addition to the blog posts, the [@uref{https://wiki.python.org/moin/WindowsCompilers, Windows compilers}](https://wiki.python.org/moin/WindowsCompilers) wiki page on the CPython wiki is another essential reference on the relevant versions of Visual Studio to use and the degree of compatibility with CPython releases.

Eventually someone will ask why there isn't an installable binary for Windows, which the GPGME of the licenses do not preclude as long as the source code is available in conjunction with such a release.

The sheer number of versions of Visual Studio in conjunction with differing configuration options depending on the target Windows version and whether the architecture is 64-bit or 32-bit makes it difficult to provide a correct binary installer for Windows users. At the bare minimum doing so would require the GnuPG project compile ten different versions of the bindings with each release; both 32-bit and 64-bit versions for CPython 2.7 and 3.4, with 64-bit versions for both x86-64 (i.e. Intel and AMD) and ARM architectures for CPython 3.5, 3.6, 3.7 and later releases. That's the bare **{ minimum }**, it'd probably be higher.

Additionally, with only a binary installation used in conjunction with the CPython installer from [@samp{python.org}](https://python.org) the advanced options available which utilise [@ref{C plus Python plus SWIG plus Cython, , Cython}](#) will not be able to be used at all. Cython depends on being able to compile the C code it generates and that too would need to utilise a matching runtime to both the installed version of CPython and these bindings in order to work with the bindings.

Considering all of that, what do we recommend?

@enumerate

@item

Use a recent version of CPython; at least 3.5, but ideally 3.6 or later.

@item

Use Visual Studio 2015 or the standalone build tools for Visual Studio 2017 (or later).

@item

Compile both CPython and GPGME with these bindings using the tools selected in step 2.

@item

Ignore MingW, Msys2 and the official CPython binary installers.

@item

Be thankful the answer to this question wasn't simply to say something like, install Linux or install FreeBSD (or even Apple's OS X).
@end enumerate

@node CFFI is the Best and GPGME should use it instead of SWIG
@subsection CFFI is the Best and GPGME should use it instead of SWIG

There are many reasons for favouring [@uref{https://cffi.readthedocs.io/en/latest/overview.html, CFFI}](https://cffi.readthedocs.io/en/latest/overview.html) and proponents of it are quite happy to repeat these things as if all it would take to switch from SWIG to CFFI is repeating that list as if it were a new concept.

The fact is that there are things which Python's CFFI implementation cannot handle in the GPGME C code. Beyond that there are features of SWIG which are simply not available with CFFI at all. SWIG generates the bindings to Python using the `@samp{gpgme.h}` file, but that file is not a single version shipped with each release, it too is generated when GPGME is compiled.

CFFI is currently unable to adapt to such a potentially mutable codebase. If there were some means of applying SWIG's dynamic code generation to produce the Python/CFFI API modes of accessing the GPGME libraries (or the source source code directly), but such a thing does not exist yet either and it currently appears that work is needed in at least one of CFFI's dependencies before any of this can be addressed.

So if you're a massive fan of CFFI; that's great, but if you want this project to switch to CFFI then rather than just insisting that it should, I'd suggest you volunteer to bring CFFI up to the level this project needs.

If you're actually seriously considering doing so, then I'd suggest taking the `@samp{gpgme-tool.c}` file in the GPGME `@samp{src/}` directory and getting that to work with any of the CFFI API methods (not the ABI methods, they'll work with pretty much anything). When you start running into trouble with "ifdefs" then you'll know what sort of things are lacking. That doesn't even take into account the amount of work saved via SWIG's code generation techniques either.

@node Virtualised Environments
@subsection Virtualised Environments

It is fairly common practice amongst Python developers to, as much as possible, use packages like virtualenv to keep various things that are to be installed from interfering with each other. Given how much of the GPGME bindings is often at odds with the usual pythonic way of

doing things, it stands to reason that this would be called into question too.

As it happens the answer as to whether or not the bindings can be used with virtualenv, the answer is both yes and no.

In general we recommend installing to the relevant path and matching prefix of GPGME itself. Which means that when GPGME, and ideally the rest of the GnuPG stack, is installed to a prefix like `@samp{/usr/local}` or `@samp{/opt/local}` then the bindings would need to be installed to the main Python installation and not a virtualised abstraction. Attempts to separate the two in the past have been known to cause weird and intermittent errors ranging from minor annoyances to complete failures in the build process.

As a consequence we only recommend building with and installing to the main Python installations within the same prefix as GPGME is installed to or which are found by GPGME's configuration stage immediately prior to running the make commands. Which is exactly what the compiling and installing process of GPGME does by default.

Once that is done, however, it appears that a copy of the compiled module may be installed into a virtualenv of the same major and minor version matching the build. Alternatively it is possible to utilise a `@samp{sites.pth}` file in the `@samp{site-packages/}` directory of a virtualenv installation, which links back to the system installations corresponding directory in order to import anything installed system wide. This may or may not be appropriate on a case by case basis.

Though extensive testing of either of these options is not yet complete, preliminary testing of them indicates that both are viable as long as the main installation is complete. Which means that certain other options normally restricted to virtual environments are also available, including integration with pythonic test suites (e.g. [@uref{https://docs.pytest.org/en/latest/index.html}](https://docs.pytest.org/en/latest/index.html), `pytest`) and other large projects.

That said, it is worth reiterating the warning regarding non-standard installations. If one were to attempt to install the bindings only to a virtual environment without somehow also including the full GnuPG stack (or enough of it as to include GPGME) then it is highly likely that errors would be encountered at some point and more than a little likely that the build process itself would break.

If a degree of separation from the main operating system is still required in spite of these warnings, then consider other forms of virtualisation. Either a virtual machine (e.g. [@uref{https://www.virtualbox.org/}](https://www.virtualbox.org/), `VirtualBox`), a hardware emulation layer (e.g. [@uref{https://www.qemu.org/}](https://www.qemu.org/), `QEMU`) or an application container (e.g. [@uref{https://www.docker.com/why-docker}](https://www.docker.com/why-docker), `Docker`).

Finally it should be noted that the limited tests conducted thus far have been using the `@samp{virtualenv}` command in a new directory to create the virtual python environment. As opposed to the standard `@samp{python3 -m venv}` and it is possible that this will make a difference depending on the system and version of Python in use. Another option is to run the command `@samp{python3 -m virtualenv /path/to/install/virtual/thingy}` instead.

@node Post installation

@subsection Post installation

Following installation it is recommended to move the `@samp{post_installer.py}` script from the `@samp{lang/python/examples/howto/}` directory to the `@samp{lang/python/}` directory and run it. This will fix or restore files needed by Sphinx which may be removed during a distribution build for release. It will also generate reST files from Org mode files with Pandoc and generate Texinfo files from Org mode files with GNU Emacs and Org mode (in batch mode). Additionally it will fix the UTF-8 declaration line in the Texinfo files (Emacs expects "UTF-8" to be "utf-8").

@node Fundamentals

@chapter Fundamentals

Before we can get to the fun stuff, there are a few matters regarding GPGME's design which hold true whether you're dealing with the C code directly or these Python bindings.

@menu

* No REST::

* Context::

@end menu

@node No REST

@section No REST

The first part of which is or will be fairly blatantly obvious upon viewing the first example, but it's worth reiterating anyway. That being that this API is `@emph{@strong{not}}` a REST API. Nor indeed could it ever be one.

Most, if not all, Python programmers (and not just Python programmers) know how easy it is to work with a RESTful API. In fact they've become so popular that many other APIs attempt to emulate REST-like behaviour as much as they are able. Right down to the use of JSON formatted output to facilitate the use of their API without having to retrain developers.

This API does not do that. It would not be able to do that and also provide access to the entire C API on which it's built. It does, however, provide a very pythonic interface on top of the direct bindings and it's this pythonic layer that this HOWTO deals with.

@node Context
@section Context

One of the reasons which prevents this API from being RESTful is that most operations require more than one instruction to the API to perform the task. Sure, there are certain functions which can be performed simultaneously, particularly if the result known or strongly anticipated (e.g. selecting and encrypting to a key known to be in the public keybox).

There are many more, however, which cannot be manipulated so readily: they must be performed in a specific sequence and the result of one operation has a direct bearing on the outcome of subsequent operations. Not merely by generating an error either.

When dealing with this type of persistent state on the web, full of both the RESTful and REST-like, it's most commonly referred to as a session. In GPGME, however, it is called a context and every operation type has one.

@node Working with keys
@chapter Working with keys

@menu
* Key selection::
* Get key::
* Importing keys::
* Exporting keys::
@end menu

@node Key selection
@section Key selection

Selecting keys to encrypt to or to sign with will be a common occurrence when working with GPGMe and the means available for doing so are quite simple.

They do depend on utilising a Context; however once the data is recorded in another variable, that Context does not need to be the same one which subsequent operations are performed.

The easiest way to select a specific key is by searching for that

key's key ID or fingerprint, preferably the full fingerprint without any spaces in it. A long key ID will probably be okay, but is not advised and short key IDs are already a problem with some being generated to match specific patterns. It does not matter whether the pattern is upper or lower case.

So this is the best method:

```
@example
import gpg

k = gpg.Context().keylist(pattern="258E88DCBD3CD44D8E7AB43F6ECB6AF0DEADBEEF")
keys = list(k)
@end example
```

This is passable and very likely to be common:

```
@example
import gpg

k = gpg.Context().keylist(pattern="0x6ECB6AF0DEADBEEF")
keys = list(k)
@end example
```

And this is a really bad idea:

```
@example
import gpg

k = gpg.Context().keylist(pattern="0xDEADBEEF")
keys = list(k)
@end example
```

Alternatively it may be that the intention is to create a list of keys which all match a particular search string. For instance all the addresses at a particular domain, like this:

```
@example
import gpg

ncsc = gpg.Context().keylist(pattern="ncsc.mil")
nsa = list(ncsc)
@end example
```

```
@menu
* Counting keys::
@end menu
```


@node Counting keys
@subsection Counting keys

Counting the number of keys in your public keybox (`@samp{pubring.kbx}`), the format which has superseded the old keyring format (`@samp{pubring.gpg}`) and `@samp{secring.gpg}`), or the number of secret keys is a very simple task.

```
@example
import gpg

c = gpg.Context()
seckeys = c.keylist(pattern=None, secret=True)
pubkeys = c.keylist(pattern=None, secret=False)

seclist = list(seckeys)
secnum = len(seclist)

publist = list(pubkeys)
pubnum = len(publist)

print("""
Number of secret keys: @ {0@}
Number of public keys: @ {1@}
""".format(secnum, pubnum))
@end example
```

NOTE: The [@ref{C plus Python plus SWIG plus Cython, , Cython}](#) introduction in the [@ref{Advanced or Experimental Use Cases, , Advanced and Experimental}](#) section uses this same key counting code with Cython to demonstrate some areas where Cython can improve performance even with the bindings. Users with large public keyrings or keyboxes, for instance, should consider these options if they are comfortable with using Cython.

@node Get key
@section Get key

An alternative method of getting a single key via its fingerprint is available directly within a Context with `@samp{Context().get_key}`. This is the preferred method of selecting a key in order to modify it, sign or certify it and for obtaining relevant data about a single key as a part of other functions; when verifying a signature made by that key, for instance.

By default this method will select public keys, but it can select secret keys as well.

This first example demonstrates selecting the current key of Werner

Koch, which is due to expire at the end of 2018:

```
@example
import gpg

fingerprint = "80615870F5BAD690333686D0F2AD85AC1E42B367"
key = gpg.Context().get_key(fingerprint)
@end example
```

Whereas this example demonstrates selecting the author's current key with the `@samp{secret}` key word argument set to `@samp{True}`:

```
@example
import gpg

fingerprint = "DB4724E6FA4286C92B4E55C4321E4E2373590E5D"
key = gpg.Context().get_key(fingerprint, secret=True)
@end example
```

It is, of course, quite possible to select expired, disabled and revoked keys with this function, but only to effectively display information about those keys.

It is also possible to use both unicode or string literals and byte literals with the fingerprint when getting a key in this way.

```
@node Importing keys
@section Importing keys
```

Importing keys is possible with the `@samp{key_import()}` method and takes one argument which is a bytes literal object containing either the binary or ASCII armoured key data for one or more keys.

The following example retrieves one or more keys from the SKS key servers via the web using the `requests` module. Since `requests` returns the content as a bytes literal object, we can then use that directly to import the resulting data into our keybox.

```
@example
import gpg
import os.path
import requests

c = gpg.Context()
url = "https://sks-keyservers.net/pks/lookup"
pattern = input("Enter the pattern to search for key or user IDs: ")
payload = @{"op": "get", "search": pattern@}
```

```

r = requests.get(url, verify=True, params=payload)
result = c.key_import(r.content)

if result is not None and hasattr(result, "considered") is False:
    print(result)
elif result is not None and hasattr(result, "considered") is True:
    num_keys = len(result.imports)
    new_revs = result.new_revocations
    new_sigs = result.new_signatures
    new_subs = result.new_sub_keys
    new_uids = result.new_user_ids
    new_sctr = result.secret_imported
    nochange = result.unchanged
    print("""
The total number of keys considered for import was: @ {0@ }

    Number of keys revoked: @ {1@ }
    Number of new signatures: @ {2@ }
    Number of new subkeys: @ {3@ }
    Number of new user IDs: @ {4@ }
    Number of new secret keys: @ {5@ }
    Number of unchanged keys: @ {6@ }

The key IDs for all considered keys were:
""").format(num_keys, new_revs, new_sigs, new_subs, new_uids, new_sctr,
            nochange))
    for i in range(num_keys):
        print("@ {0@ }\n".format(result.imports[i].fpr))
else:
    pass
@end example

```

NOTE: When searching for a key ID of any length or a fingerprint (without spaces), the SKS servers require the the leading @samp{0x} indicative of hexadecimal be included. Also note that the old short key IDs (e.g. @samp{0xDEADBEEF}) should no longer be used due to the relative ease by which such key IDs can be reproduced, as demonstrated by the Evil32 Project in 2014 (which was subsequently exploited in 2016).

Testing for whether a string in any given search is or may be a hexadecimal value which may be missing the leading @samp{0x} is a simple matter of using a try/except statement which attempts to convert the string as hex to an integer and then back to hex; then using that to search with. Raising a ValueError simply results in treating the string as a string. This is the method and logic utilised in the @samp{import-keys-hkp.py} script (see below).

```
@menu
* Working with ProtonMail::
* Importing with HKP for Python::
* Importing from ProtonMail with HKP for Python::
@end menu
```

```
@node Working with ProtonMail
@subsection Working with ProtonMail
```

Here is a variation on the example above which checks the constrained ProtonMail keyserver for ProtonMail public keys.

```
@example
import gpg
import requests
import sys

print("""
This script searches the ProtonMail key server for the specified key and
imports it.
""")

c = gpg.Context(armor=True)
url = "https://api.protonmail.ch/pks/lookup"
ksearch = []

if len(sys.argv) >= 2:
    keyterm = sys.argv[1]
else:
    keyterm = input("Enter the key ID, UID or search string: ")

if keyterm.count("@@") == 2 and keyterm.startswith("@@") is True:
    ksearch.append(keyterm[1:])
    ksearch.append(keyterm[1:])
    ksearch.append(keyterm[1:])
elif keyterm.count("@@") == 1 and keyterm.startswith("@@") is True:
    ksearch.append("@{0@}@@protonmail.com".format(keyterm[1:]))
    ksearch.append("@{0@}@@protonmail.ch".format(keyterm[1:]))
    ksearch.append("@{0@}@@pm.me".format(keyterm[1:]))
elif keyterm.count("@@") == 0:
    ksearch.append("@{0@}@@protonmail.com".format(keyterm))
    ksearch.append("@{0@}@@protonmail.ch".format(keyterm))
    ksearch.append("@{0@}@@pm.me".format(keyterm))
elif keyterm.count("@@") == 2 and keyterm.startswith("@@") is False:
    uidlist = keyterm.split("@@")
    for uid in uidlist:
        ksearch.append("@{0@}@@protonmail.com".format(uid))
        ksearch.append("@{0@}@@protonmail.ch".format(uid))
```

```

    ksearch.append("@{0@}@@pm.me".format(uid))
elif keyterm.count("@@") > 2:
    uidlist = keyterm.split("@@")
    for uid in uidlist:
        ksearch.append("@{0@}@@protonmail.com".format(uid))
        ksearch.append("@{0@}@@protonmail.ch".format(uid))
        ksearch.append("@{0@}@@pm.me".format(uid))
else:
    ksearch.append(keyterm)

for k in ksearch:
    payload = @{"op": "get", "search": k@}
    try:
        r = requests.get(url, verify=True, params=payload)
        if r.ok is True:
            result = c.key_import(r.content)
        elif r.ok is False:
            result = r.content
    except Exception as e:
        result = None

    if result is not None and hasattr(result, "considered") is False:
        print("@{0@} for @{1@}".format(result.decode(), k))
    elif result is not None and hasattr(result, "considered") is True:
        num_keys = len(result.imports)
        new_revs = result.new_revocations
        new_sigs = result.new_signatures
        new_subs = result.new_sub_keys
        new_uids = result.new_user_ids
        new_scr = result.secret_imported
        nochange = result.unchanged
        print("""
The total number of keys considered for import was: @{0@}

With UIDs wholly or partially matching the following string:

@{1@}

Number of keys revoked: @{2@}
Number of new signatures: @{3@}
Number of new subkeys: @{4@}
Number of new user IDs: @{5@}
Number of new secret keys: @{6@}
Number of unchanged keys: @{7@}

The key IDs for all considered keys were:
""".format(num_keys, k, new_revs, new_sigs, new_subs, new_uids, new_scr,
nochange))

```

```

    for i in range(num_keys):
        print(result.imports[i].fpr)
    print("")
elif result is None:
    print(e)
@end example

```

Both the above example, [@uref{../examples/howto/pmkey-import.py, pmkey-import.py}](#), and a version which prompts for an alternative GnuPG home directory, [@uref{../examples/howto/pmkey-import-alt.py, pmkey-import-alt.py}](#), are available with the other examples and are executable scripts.

Note that while the ProtonMail servers are based on the SKS servers, their server is related more to their API and is not feature complete by comparison to the servers in the SKS pool. One notable difference being that the ProtonMail server does not permit non ProtonMail users to update their own keys, which could be a vector for attacking ProtonMail users who may not receive a key's revocation if it had been compromised.

```

@node Importing with HKP for Python
@subsection Importing with HKP for Python

```

Performing the same tasks with the [@uref{https://github.com/Selfnet/hkp4py, hkp4py module}](https://github.com/Selfnet/hkp4py) (available via PyPI) is not too much different, but does provide a number of options of benefit to end users. Not least of which being the ability to perform some checks on a key before importing it or not. For instance it may be the policy of a site or project to only import keys which have not been revoked. The hkp4py module permits such checks prior to the importing of the keys found.

```

@example
import gpg
import hkp4py
import sys

c = gpg.Context()
server = hkp4py.KeyServer("hkps://hkps.pool.sks-keyservers.net")
results = []
keys = []

if len(sys.argv) > 2:
    pattern = " ".join(sys.argv[1:])
elif len(sys.argv) == 2:
    pattern = sys.argv[1]
else:
    pattern = input("Enter the pattern to search for keys or user IDs: ")

```

```

if pattern is not None:
    try:
        key = server.search(hex(int(pattern, 16)))
        keyed = True
    except ValueError as ve:
        key = server.search(pattern)
        keyed = False

if key is not None:
    keys.append(key[0])
    if keyed is True:
        try:
            fob = server.search(pattern)
        except:
            fob = None
        if fob is not None:
            keys.append(fob[0])
    else:
        pass
else:
    pass

for logrus in pattern.split():
    try:
        key = server.search(hex(int(logrus, 16)))
        hexed = True
    except ValueError as ve:
        key = server.search(logrus)
        hexed = False

if key is not None:
    keys.append(key[0])
    if hexed is True:
        try:
            fob = server.search(logrus)
        except:
            fob = None
        if fob is not None:
            keys.append(fob[0])
    else:
        pass
else:
    pass

if len(keys) > 0:

```

```

for key in keys:
    import_result = c.key_import(key.key_blob)
    results.append(import_result)

for result in results:
    if result is not None and hasattr(result, "considered") is False:
        print(result)
    elif result is not None and hasattr(result, "considered") is True:
        num_keys = len(result.imports)
        new_revs = result.new_revocations
        new_sigs = result.new_signatures
        new_subs = result.new_sub_keys
        new_uids = result.new_user_ids
        new_s crt = result.secret_imported
        nochange = result.unchanged
        print("""
The total number of keys considered for import was: @ {0@ }

        Number of keys revoked: @ {1@ }
        Number of new signatures: @ {2@ }
        Number of new subkeys: @ {3@ }
        Number of new user IDs: @ {4@ }
        Number of new secret keys: @ {5@ }
        Number of unchanged keys: @ {6@ }

The key IDs for all considered keys were:
""").format(num_keys, new_revs, new_sigs, new_subs, new_uids, new_s crt,
            nochange))
        for i in range(num_keys):
            print(result.imports[i].fpr)
        print("")
    else:
        pass
@end example

```

Since the hkp4py module handles multiple keys just as effectively as one (@samp{keys} is a list of responses per matching key), the example above is able to do a little bit more with the returned data before anything is actually imported.

@node Importing from ProtonMail with HKP for Python
@subsection Importing from ProtonMail with HKP for Python

Though this can provide certain benefits even when working with ProtonMail, the scope is somewhat constrained there due to the limitations of the ProtonMail keyserver.

For instance, searching the SKS keyserver pool for the term "gnupg"

produces hundreds of results from any time the word appears in any part of a user ID. Performing the same search on the ProtonMail keyserver returns zero results, even though there are at least two test accounts which include it as part of the username.

The cause of this discrepancy is the deliberate configuration of that server by ProtonMail to require an exact match of the full email address of the ProtonMail user whose key is being requested. Presumably this is intended to reduce breaches of privacy of their users as an email address must already be known before a key for that address can be obtained.

```
@enumerate
```

```
@item
```

```
Import from ProtonMail via HKP for Python Example no. 1
```

The following script is available with the rest of the examples under the somewhat less than original name, @samp{pmkey-import-hkp.py}.

```
@example
```

```
import gpg
```

```
import hkp4py
```

```
import os.path
```

```
import sys
```

```
print("""
```

```
This script searches the ProtonMail key server for the specified key and imports it.
```

```
Usage: pmkey-import-hkp.py [search strings]
```

```
""")
```

```
c = gpg.Context(armor=True)
```

```
server = hkp4py.KeyServer("hkps://api.protonmail.ch")
```

```
keyterms = []
```

```
ksearch = []
```

```
allkeys = []
```

```
results = []
```

```
paradox = []
```

```
homeless = None
```

```
if len(sys.argv) > 2:
```

```
    keyterms = sys.argv[1:]
```

```
elif len(sys.argv) == 2:
```

```
    keyterm = sys.argv[1]
```

```
    keyterms.append(keyterm)
```

```
else:
```

```

key_term = input("Enter the key ID, UID or search string: ")
keyterms = key_term.split()

for keyterm in keyterms:
    if keyterm.count("@@") == 2 and keyterm.startswith("@@") is True:
        ksearch.append(keyterm[1:])
        ksearch.append(keyterm[1:])
        ksearch.append(keyterm[1:])
    elif keyterm.count("@@") == 1 and keyterm.startswith("@@") is True:
        ksearch.append("@{0@}@@protonmail.com".format(keyterm[1:]))
        ksearch.append("@{0@}@@protonmail.ch".format(keyterm[1:]))
        ksearch.append("@{0@}@@pm.me".format(keyterm[1:]))
    elif keyterm.count("@@") == 0:
        ksearch.append("@{0@}@@protonmail.com".format(keyterm))
        ksearch.append("@{0@}@@protonmail.ch".format(keyterm))
        ksearch.append("@{0@}@@pm.me".format(keyterm))
    elif keyterm.count("@@") == 2 and keyterm.startswith("@@") is False:
        uidlist = keyterm.split("@@")
        for uid in uidlist:
            ksearch.append("@{0@}@@protonmail.com".format(uid))
            ksearch.append("@{0@}@@protonmail.ch".format(uid))
            ksearch.append("@{0@}@@pm.me".format(uid))
        elif keyterm.count("@@") > 2:
            uidlist = keyterm.split("@@")
            for uid in uidlist:
                ksearch.append("@{0@}@@protonmail.com".format(uid))
                ksearch.append("@{0@}@@protonmail.ch".format(uid))
                ksearch.append("@{0@}@@pm.me".format(uid))
    else:
        ksearch.append(keyterm)

for k in ksearch:
    print("Checking for key for: @{0@}".format(k))
    try:
        keys = server.search(k)
        if isinstance(keys, list) is True:
            for key in keys:
                allkeys.append(key)
                try:
                    import_result = c.key_import(key.key_blob)
                except Exception as e:
                    import_result = c.key_import(key.key)
            else:
                paradox.append(keys)
                import_result = None
    except Exception as e:
        import_result = None
    results.append(import_result)

```

for result in results:

```
if result is not None and hasattr(result, "considered") is False:
    print("@{0@} for @{1@}".format(result.decode(), k))
elif result is not None and hasattr(result, "considered") is True:
    num_keys = len(result.imports)
    new_revs = result.new_revocations
    new_sigs = result.new_signatures
    new_subs = result.new_sub_keys
    new_uids = result.new_user_ids
    new_scert = result.secret_imported
    nochange = result.unchanged
    print("""
```

The total number of keys considered for import was: @{0@}

With UIDs wholly or partially matching the following string:

```
@{1@}
```

```
Number of keys revoked: @{2@}
Number of new signatures: @{3@}
Number of new subkeys: @{4@}
Number of new user IDs: @{5@}
Number of new secret keys: @{6@}
Number of unchanged keys: @{7@}
```

The key IDs for all considered keys were:

```
"".format(num_keys, k, new_revs, new_sigs, new_subs, new_uids, new_scert,
    nochange))
for i in range(num_keys):
    print(result.imports[i].fpr)
print("")
elif result is None:
    pass
@end example
```

@item

Import from ProtonMail via HKP for Python Example no. 2

Like its counterpart above, this script can also be found with the rest of the examples, by the name pmkey-import-hkp-alt.py.

With this script a modicum of effort has been made to treat anything passed as a @samp{homedir} which either does not exist or which is not a directory, as also being a possible user ID to check for. It's not guaranteed to pick up on all such cases, but it should cover most of them.

```

@example
import gpg
import hkp4py
import os.path
import sys

print("""
This script searches the ProtonMail key server for the specified key and
imports it. Optionally enables specifying a different GnuPG home directory.

```

```

Usage: pmkey-import-hkp.py [homedir] [search string]
or: pmkey-import-hkp.py [search string]
""")

```

```

c = gpg.Context(armor=True)
server = hkp4py.KeyServer("hkps://api.protonmail.ch")
keyterms = []
ksearch = []
allkeys = []
results = []
paradox = []
homeless = None

if len(sys.argv) > 3:
    homedir = sys.argv[1]
    keyterms = sys.argv[2:]
elif len(sys.argv) == 3:
    homedir = sys.argv[1]
    keyterm = sys.argv[2]
    keyterms.append(keyterm)
elif len(sys.argv) == 2:
    homedir = ""
    keyterm = sys.argv[1]
    keyterms.append(keyterm)
else:
    keyterm = input("Enter the key ID, UID or search string: ")
    homedir = input("Enter the GPG configuration directory path (optional): ")
    keyterms.append(keyterm)

if len(homedir) == 0:
    homedir = None
    homeless = False

if homedir is not None:
    if homedir.startswith("~"):
        if os.path.exists(os.path.expanduser(homedir)) is True:
            if os.path.isdir(os.path.expanduser(homedir)) is True:

```

```

        c.home_dir = os.path.realpath(os.path.expanduser(homedir))
    else:
        homeless = True
    else:
        homeless = True
elif os.path.exists(os.path.realpath(homedir)) is True:
    if os.path.isdir(os.path.realpath(homedir)) is True:
        c.home_dir = os.path.realpath(homedir)
    else:
        homeless = True
else:
    homeless = True

# First check to see if the homedir really is a homedir and if not, treat it as
# a search string.
if homeless is True:
    keyterms.append(homedir)
    c.home_dir = None
else:
    pass

for keyterm in keyterms:
    if keyterm.count("@@") == 2 and keyterm.startswith("@@") is True:
        ksearch.append(keyterm[1:])
        ksearch.append(keyterm[1:])
        ksearch.append(keyterm[1:])
    elif keyterm.count("@@") == 1 and keyterm.startswith("@@") is True:
        ksearch.append("@{0@}@@protonmail.com".format(keyterm[1:]))
        ksearch.append("@{0@}@@protonmail.ch".format(keyterm[1:]))
        ksearch.append("@{0@}@@pm.me".format(keyterm[1:]))
    elif keyterm.count("@@") == 0:
        ksearch.append("@{0@}@@protonmail.com".format(keyterm))
        ksearch.append("@{0@}@@protonmail.ch".format(keyterm))
        ksearch.append("@{0@}@@pm.me".format(keyterm))
    elif keyterm.count("@@") == 2 and keyterm.startswith("@@") is False:
        uidlist = keyterm.split("@@")
        for uid in uidlist:
            ksearch.append("@{0@}@@protonmail.com".format(uid))
            ksearch.append("@{0@}@@protonmail.ch".format(uid))
            ksearch.append("@{0@}@@pm.me".format(uid))
    elif keyterm.count("@@") > 2:
        uidlist = keyterm.split("@@")
        for uid in uidlist:
            ksearch.append("@{0@}@@protonmail.com".format(uid))
            ksearch.append("@{0@}@@protonmail.ch".format(uid))
            ksearch.append("@{0@}@@pm.me".format(uid))
    else:
        ksearch.append(keyterm)

```

```

for k in ksearch:
    print("Checking for key for: @ {0@ }".format(k))
    try:
        keys = server.search(k)
        if isinstance(keys, list) is True:
            for key in keys:
                allkeys.append(key)
                try:
                    import_result = c.key_import(key.key_blob)
                except Exception as e:
                    import_result = c.key_import(key.key)
            else:
                paradox.append(keys)
                import_result = None
    except Exception as e:
        import_result = None
    results.append(import_result)

```

```

for result in results:
    if result is not None and hasattr(result, "considered") is False:
        print("@ {0@ } for @ {1@ }".format(result.decode(), k))
    elif result is not None and hasattr(result, "considered") is True:
        num_keys = len(result.imports)
        new_revs = result.new_revocations
        new_sigs = result.new_signatures
        new_subs = result.new_sub_keys
        new_uids = result.new_user_ids
        new_scert = result.secret_imported
        nochange = result.unchanged
        print("""

```

The total number of keys considered for import was: @ {0@ }

With UIDs wholly or partially matching the following string:

@ {1@ }

Number of keys revoked: @ {2@ }
 Number of new signatures: @ {3@ }
 Number of new subkeys: @ {4@ }
 Number of new user IDs: @ {5@ }
 Number of new secret keys: @ {6@ }
 Number of unchanged keys: @ {7@ }

The key IDs for all considered keys were:

```

""").format(num_keys, k, new_revs, new_sigs, new_subs, new_uids, new_scert,
            nochange))
    for i in range(num_keys):

```

```

        print(result.imports[i].fpr)
    print("")
    elif result is None:
        pass
@end example
@end enumerate

```

```

@node Exporting keys
@section Exporting keys

```

Exporting keys remains a reasonably simple task, but has been separated into three different functions for the OpenPGP cryptographic engine. Two of those functions are for exporting public keys and the third is for exporting secret keys.

```

@menu
* Exporting public keys::
* Exporting secret keys::
* Sending public keys to the SKS Keyservers::
@end menu

```

```

@node Exporting public keys
@subsection Exporting public keys

```

There are two methods of exporting public keys, both of which are very similar to the other. The default method, `@samp{key_export()}`, will export a public key or keys matching a specified pattern as normal. The alternative, the `@samp{key_export_minimal()}` method, will do the same thing except producing a minimised output with extra signatures and third party signatures or certifications removed.

```

@example
import gpg
import os.path
import sys

print("""
This script exports one or more public keys.
""")

```

```

c = gpg.Context(armor=True)

```

```

if len(sys.argv) >= 4:
    keyfile = sys.argv[1]
    logrus = sys.argv[2]
    homedir = sys.argv[3]
elif len(sys.argv) == 3:
    keyfile = sys.argv[1]

```

```

logrus = sys.argv[2]
homedir = input("Enter the GPG configuration directory path (optional): ")
elif len(sys.argv) == 2:
    keyfile = sys.argv[1]
    logrus = input("Enter the UID matching the key(s) to export: ")
    homedir = input("Enter the GPG configuration directory path (optional): ")
else:
    keyfile = input("Enter the path and filename to save the secret key to: ")
    logrus = input("Enter the UID matching the key(s) to export: ")
    homedir = input("Enter the GPG configuration directory path (optional): ")

if homedir.startswith("~"):
    if os.path.exists(os.path.expanduser(homedir)) is True:
        c.home_dir = os.path.expanduser(homedir)
    else:
        pass
elif os.path.exists(homedir) is True:
    c.home_dir = homedir
else:
    pass

try:
    result = c.key_export(pattern=logrus)
except:
    result = c.key_export(pattern=None)

if result is not None:
    with open(keyfile, "wb") as f:
        f.write(result)
else:
    pass
@end example

```

It should be noted that the result will only return @samp{None} when a search pattern has been entered, but has not matched any keys. When the search pattern itself is set to @samp{None} this triggers the exporting of the entire public keybox.

```

@example
import gpg
import os.path
import sys

print("""
This script exports one or more public keys in minimised form.
""")

c = gpg.Context(armor=True)

```



```

if len(sys.argv) >= 4:
    keyfile = sys.argv[1]
    logrus = sys.argv[2]
    homedir = sys.argv[3]
elif len(sys.argv) == 3:
    keyfile = sys.argv[1]
    logrus = sys.argv[2]
    homedir = input("Enter the GPG configuration directory path (optional): ")
elif len(sys.argv) == 2:
    keyfile = sys.argv[1]
    logrus = input("Enter the UID matching the key(s) to export: ")
    homedir = input("Enter the GPG configuration directory path (optional): ")
else:
    keyfile = input("Enter the path and filename to save the secret key to: ")
    logrus = input("Enter the UID matching the key(s) to export: ")
    homedir = input("Enter the GPG configuration directory path (optional): ")

if homedir.startswith("~"):
    if os.path.exists(os.path.expanduser(homedir)) is True:
        c.home_dir = os.path.expanduser(homedir)
    else:
        pass
elif os.path.exists(homedir) is True:
    c.home_dir = homedir
else:
    pass

try:
    result = c.key_export_minimal(pattern=logrus)
except:
    result = c.key_export_minimal(pattern=None)

if result is not None:
    with open(keyfile, "wb") as f:
        f.write(result)
else:
    pass
@end example

```

@node Exporting secret keys

@subsection Exporting secret keys

Exporting secret keys is, functionally, very similar to exporting public keys; save for the invocation of @samp{pinentry} via @samp{gpg-agent} in order to securely enter the key's passphrase and authorise the export.

The following example exports the secret key to a file which is then

set with the same permissions as the output files created by the command line secret key export options.

@example

```
import gpg
import os
import os.path
import sys
```

```
print("""
This script exports one or more secret keys.
```

```
The gpg-agent and pinentry are invoked to authorise the export.
""")
```

```
c = gpg.Context(armor=True)
```

```
if len(sys.argv) >= 4:
    keyfile = sys.argv[1]
    logrus = sys.argv[2]
    homedir = sys.argv[3]
elif len(sys.argv) == 3:
    keyfile = sys.argv[1]
    logrus = sys.argv[2]
    homedir = input("Enter the GPG configuration directory path (optional): ")
elif len(sys.argv) == 2:
    keyfile = sys.argv[1]
    logrus = input("Enter the UID matching the secret key(s) to export: ")
    homedir = input("Enter the GPG configuration directory path (optional): ")
else:
    keyfile = input("Enter the path and filename to save the secret key to: ")
    logrus = input("Enter the UID matching the secret key(s) to export: ")
    homedir = input("Enter the GPG configuration directory path (optional): ")
```

```
if len(homedir) == 0:
    homedir = None
elif homedir.startswith("~"):
    userdir = os.path.expanduser(homedir)
    if os.path.exists(userdir) is True:
        homedir = os.path.realpath(userdir)
    else:
        homedir = None
else:
    homedir = os.path.realpath(homedir)
```

```
if os.path.exists(homedir) is False:
    homedir = None
else:
```

```

if os.path.isdir(homedir) is False:
    homedir = None
else:
    pass

if homedir is not None:
    c.home_dir = homedir
else:
    pass

try:
    result = c.key_export_secret(pattern=logrus)
except:
    result = c.key_export_secret(pattern=None)

if result is not None:
    with open(keyfile, "wb") as f:
        f.write(result)
    os.chmod(keyfile, 0o600)
else:
    pass
@end example

```

Alternatively the approach of the following script can be used. This longer example saves the exported secret key(s) in files in the GnuPG home directory, in addition to setting the file permissions as only readable and writable by the user. It also exports the secret key(s) twice in order to output both GPG binary (@samp{.gpg}) and ASCII armoured (@samp{.asc}) files.

```

@example
import gpg
import os
import os.path
import subprocess
import sys

print("""
This script exports one or more secret keys as both ASCII armored and binary
file formats, saved in files within the user's GPG home directory.

The gpg-agent and pinentry are invoked to authorise the export.
""")

if sys.platform == "win32":
    gpgconfcmd = "gpgconf.exe --list-dirs homedir"
else:
    gpgconfcmd = "gpgconf --list-dirs homedir"

```

```

a = gpg.Context(armor=True)
b = gpg.Context()
c = gpg.Context()

if len(sys.argv) >= 4:
    keyfile = sys.argv[1]
    logrus = sys.argv[2]
    homedir = sys.argv[3]
elif len(sys.argv) == 3:
    keyfile = sys.argv[1]
    logrus = sys.argv[2]
    homedir = input("Enter the GPG configuration directory path (optional): ")
elif len(sys.argv) == 2:
    keyfile = sys.argv[1]
    logrus = input("Enter the UID matching the secret key(s) to export: ")
    homedir = input("Enter the GPG configuration directory path (optional): ")
else:
    keyfile = input("Enter the filename to save the secret key to: ")
    logrus = input("Enter the UID matching the secret key(s) to export: ")
    homedir = input("Enter the GPG configuration directory path (optional): ")

if len(homedir) == 0:
    homedir = None
elif homedir.startswith("~"):
    userdir = os.path.expanduser(homedir)
    if os.path.exists(userdir) is True:
        homedir = os.path.realpath(userdir)
    else:
        homedir = None
else:
    homedir = os.path.realpath(homedir)

if os.path.exists(homedir) is False:
    homedir = None
else:
    if os.path.isdir(homedir) is False:
        homedir = None
    else:
        pass

if homedir is not None:
    c.home_dir = homedir
else:
    pass

if c.home_dir is not None:
    if c.home_dir.endswith("/"):

```

```

    gpgfile = "@{0@}/{1@}.gpg".format(c.home_dir, keyfile)
    ascfile = "@{0@}/{1@}.asc".format(c.home_dir, keyfile)
else:
    gpgfile = "@{0@}/@{1@}.gpg".format(c.home_dir, keyfile)
    ascfile = "@{0@}/@{1@}.asc".format(c.home_dir, keyfile)
else:
    if os.path.exists(os.environ["GNUPGHOME"]) is True:
        hd = os.environ["GNUPGHOME"]
    else:
        try:
            hd = subprocess.getoutput(gpgconfcmd)
        except:
            process = subprocess.Popen(gpgconfcmd.split(),
                                       stdout=subprocess.PIPE)
            procom = process.communicate()
            if sys.version_info[0] == 2:
                hd = procom[0].strip()
            else:
                hd = procom[0].decode().strip()
            gpgfile = "@{0@}/@{1@}.gpg".format(hd, keyfile)
            ascfile = "@{0@}/@{1@}.asc".format(hd, keyfile)

try:
    a_result = a.key_export_secret(pattern=logrus)
    b_result = b.key_export_secret(pattern=logrus)
except:
    a_result = a.key_export_secret(pattern=None)
    b_result = b.key_export_secret(pattern=None)

if a_result is not None:
    with open(ascfile, "wb") as f:
        f.write(a_result)
    os.chmod(ascfile, 0o600)
else:
    pass

if b_result is not None:
    with open(gpgfile, "wb") as f:
        f.write(b_result)
    os.chmod(gpgfile, 0o600)
else:
    pass
@end example

```

@node Sending public keys to the SKS Keyservers

@subsection Sending public keys to the SKS Keyservers

As with the previous section on importing keys, the @samp{hkp4py} module

adds another option with exporting keys in order to send them to the public key servers.

The following example demonstrates how this may be done.

```
@example
import gpg
import hkp4py
import os.path
import sys

print("""
This script sends one or more public keys to the SKS key servers and is
essentially a slight variation on the export-key.py script.
""")

c = gpg.Context(armor=True)
server = hkp4py.KeyServer("hkps://hkps.pool.sks-key servers.net")

if len(sys.argv) > 2:
    logrus = " ".join(sys.argv[1:])
elif len(sys.argv) == 2:
    logrus = sys.argv[1]
else:
    logrus = input("Enter the UID matching the key(s) to send: ")

if len(logrus) > 0:
    try:
        export_result = c.key_export(pattern=logrus)
    except Exception as e:
        print(e)
        export_result = None
    else:
        export_result = c.key_export(pattern=None)

if export_result is not None:
    try:
        try:
            send_result = server.add(export_result)
        except:
            send_result = server.add(export_result.decode())
        if send_result is not None:
            print(send_result)
        else:
            pass
    except Exception as e:
        print(e)
    else:
```

```
pass
@end example
```

An expanded version of this script with additional functions for specifying an alternative homedir location is in the examples directory as @samp{send-key-to-keyserver.py}.

The @samp{hkp4py} module appears to handle both string and byte literal text data equally well, but the GPGME bindings deal primarily with byte literal data only and so this script sends in that format first, then tries the string literal form.

```
@node Basic Functions
@chapter Basic Functions
```

The most frequently called features of any cryptographic library will be the most fundamental tasks for encryption software. In this section we will look at how to programmatically encrypt data, decrypt it, sign it and verify signatures.

```
@menu
* Encryption::
* Decryption::
* Signing text and files::
* Signature verification::
@end menu
```

```
@node Encryption
@section Encryption
```

Encrypting is very straight forward. In the first example below the message, @samp{text}, is encrypted to a single recipient's key. In the second example the message will be encrypted to multiple recipients.

```
@menu
* Encrypting to one key::
* Encrypting to multiple keys::
@end menu
```

```
@node Encrypting to one key
@subsection Encrypting to one key
```

Once the the Context is set the main issues with encrypting data is essentially reduced to key selection and the keyword arguments specified in the @samp{gpg.Context().encrypt()} method.

Those keyword arguments are: @samp{recipients}, a list of keys encrypted to (covered in greater detail in the following section); @samp{sign}, whether

or not to sign the plaintext data, see subsequent sections on signing and verifying signatures below (defaults to `@samp{True}`); `@samp{sink}`, to write results or partial results to a secure sink instead of returning it (defaults to `@samp{None}`); `@samp{passphrase}`, only used when utilising symmetric encryption (defaults to `@samp{None}`); `@samp{always_trust}`, used to override the trust model settings for recipient keys (defaults to `@samp{False}`); `@samp{add_encrypt_to}`, utilises any preconfigured `@samp{encrypt-to}` or `@samp{default-key}` settings in the user's `@samp{gpg.conf}` file (defaults to `@samp{False}`); `@samp{prepare}`, prepare for encryption (defaults to `@samp{False}`); `@samp{expect_sign}`, prepare for signing (defaults to `@samp{False}`); `@samp{compress}`, compresses the plaintext prior to encryption (defaults to `@samp{True}`).

@example

```
import gpg
```

```
a_key = "0x12345678DEADBEEF"  
text = b""Some text to test with.
```

Since the text in this case must be bytes, it is most likely that the input form will be a separate file which is opened with "rb" as this is the simplest method of obtaining the correct data format.

```
"""  
  
c = gpg.Context(armor=True)  
rkey = list(c.keylist(pattern=a_key, secret=False))  
ciphertext, result, sign_result = c.encrypt(text, recipients=rkey, sign=False)
```

```
with open("secret_plans.txt.asc", "wb") as afile:
```

```
    afile.write(ciphertext)
```

```
@end example
```

Though this is even more likely to be used like this; with the plaintext input read from a file, the recipient keys used for encryption regardless of key trust status and the encrypted output also encrypted to any preconfigured keys set in the `@samp{gpg.conf}` file:

@example

```
import gpg
```

```
a_key = "0x12345678DEADBEEF"
```

```
with open("secret_plans.txt", "rb") as afile:
```

```
    text = afile.read()
```

```
c = gpg.Context(armor=True)  
rkey = list(c.keylist(pattern=a_key, secret=False))  
ciphertext, result, sign_result = c.encrypt(text, recipients=rkey, sign=True,  
                                           always_trust=True,
```



```
add_encrypt_to=True)
```

```
with open("secret_plans.txt.asc", "wb") as afile:  
    afile.write(ciphertext)  
@end example
```

If the @samp{recipients} parameter is empty then the plaintext is encrypted symmetrically. If no @samp{passphrase} is supplied as a parameter or via a callback registered with the @samp{Context()} then an out-of-band prompt for the passphrase via pinentry will be invoked.

```
@node Encrypting to multiple keys  
@subsection Encrypting to multiple keys
```

Encrypting to multiple keys essentially just expands upon the key selection process and the recipients from the previous examples.

The following example encrypts a message (@samp{text}) to everyone with an email address on the @samp{gnupg.org} domain, @footnote{You probably don't really want to do this. Searching the
key servers for "gnupg.org" produces over 400 results, the majority of which aren't actually at the gnupg.org domain, but just included a comment regarding the project in their key somewhere.} but does @emph{not} encrypt to a default key or other key which is configured to normally encrypt to.

```
@example  
import gpg
```

```
text = b"""Oh look, another test message.
```

The same rules apply as with the previous example and more likely than not, the message will actually be drawn from reading the contents of a file or, maybe, from entering data at an input() prompt.

Since the text in this case must be bytes, it is most likely that the input form will be a separate file which is opened with "rb" as this is the simplest method of obtaining the correct data format.

```
"""
```

```
c = gpg.Context(armor=True)  
rpattern = list(c.keylist(pattern="@gnupg.org", secret=False))  
logrus = []
```

```
for i in range(len(rpattern)):  
    if rpattern[i].can_encrypt == 1:
```

```

logrus.append(rpattern[i])

ciphertext, result, sign_result = c.encrypt(text, recipients=logrus,
                                           sign=False, always_trust=True)

with open("secret_plans.txt.asc", "wb") as afile:
    afile.write(ciphertext)
@end example

```

All it would take to change the above example to sign the message and also encrypt the message to any configured default keys would be to change the @samp{c.encrypt} line to this:

```

@example
ciphertext, result, sign_result = c.encrypt(text, recipients=logrus,
                                           always_trust=True,
                                           add_encrypt_to=True)
@end example

```

The only keyword arguments requiring modification are those for which the default values are changing. The default value of @samp{sign} is @samp{True}, the default of @samp{always_trust} is @samp{False}, the default of @samp{add_encrypt_to} is @samp{False}.

If @samp{always_trust} is not set to @samp{True} and any of the recipient keys are not trusted (e.g. not signed or locally signed) then the encryption will raise an error. It is possible to mitigate this somewhat with something more like this:

```

@example
import gpg

with open("secret_plans.txt.asc", "rb") as afile:
    text = afile.read()

c = gpg.Context(armor=True)
rpattern = list(c.keylist(pattern="@gnupg.org", secret=False))
logrus = []

for i in range(len(rpattern)):
    if rpattern[i].can_encrypt == 1:
        logrus.append(rpattern[i])

try:
    ciphertext, result, sign_result = c.encrypt(text, recipients=logrus,
                                                add_encrypt_to=True)
except gpg.errors.InvalidRecipients as e:
    for i in range(len(e.recipients)):

```

```

    for n in range(len(logrus)):
        if logrus[n].fpr == e.recipients[i].fpr:
            logrus.remove(logrus[n])
        else:
            pass
    try:
        ciphertext, result, sign_result = c.encrypt(text,
                                                    recipients=logrus,
                                                    add_encrypt_to=True)
        with open("secret_plans.txt.asc", "wb") as afile:
            afile.write(ciphertext)
    except:
        pass
@end example

```

This will attempt to encrypt to all the keys searched for, then remove invalid recipients if it fails and try again.

```

@node Decryption
@section Decryption

```

Decrypting something encrypted to a key in one's secret keyring is fairly straight forward.

In this example code, however, preconfiguring either `@samp{gpg.Context()}` or `@samp{gpg.core.Context()}` as `@samp{c}` is unnecessary because there is no need to modify the Context prior to conducting the decryption and since the Context is only used once, setting it to `@samp{c}` simply adds lines for no gain.

```

@example
import gpg

ciphertext = input("Enter path and filename of encrypted file: ")
newfile = input("Enter path and filename of file to save decrypted data to: ")

with open(ciphertext, "rb") as cfile:
    try:
        plaintext, result, verify_result = gpg.Context().decrypt(cfile)
    except gpg.errors.GPGMEError as e:
        plaintext = None
        print(e)

if plaintext is not None:
    with open(newfile, "wb") as nfile:
        nfile.write(plaintext)
    else:
        pass

```

@end example

The data available in @samp{plaintext} in this example is the decrypted content as a byte object, the recipient key IDs and algorithms in @samp{result} and the results of verifying any signatures of the data in @samp{verify_result}.

If @samp{pgp.Context().decrypt(cfile, verify=False)} is called instead, then @samp{verify_result} will be returned as @samp{None} and the rest remains as described here.

@node Signing text and files
@section Signing text and files

The following sections demonstrate how to specify keys to sign with.

@menu
* Signing key selection::
* Normal or default signing messages or files::
* Detached signing messages and files::
* Clearsigning messages or text::
@end menu

@node Signing key selection
@subsection Signing key selection

By default GPGME and the Python bindings will use the default key configured for the user invoking the GPGME API. If there is no default key specified and there is more than one secret key available it may be necessary to specify the key or keys with which to sign messages and files.

@example
import pgp

```
logrus = input("Enter the email address or string to match signing keys to: ")  
hancock = pgp.Context().keylist(pattern=logrus, secret=True)  
sig_src = list(hancock)  
@end example
```

The signing examples in the following sections include the explicitly designated @samp{signers} parameter in two of the five examples; once where the resulting signature would be ASCII armoured and once where it would not be armoured.

While it would be possible to enter a key ID or fingerprint here to match a specific key, it is not possible to enter two fingerprints and match two keys since the patten expects a string, bytes or None and

not a list. A string with two fingerprints won't match any single key.

@node Normal or default signing messages or files

@subsection Normal or default signing messages or files

The normal or default signing process is essentially the same as is most often invoked when also encrypting a message or file. So when the encryption component is not utilised, the result is to produce an encoded and signed output which may or may not be ASCII armoured and which may or may not also be compressed.

By default compression will be used unless GnuPG detects that the plaintext is already compressed. ASCII armouring will be determined according to the value of @samp{gpg.Context().armor}.

The compression algorithm is selected in much the same way as the symmetric encryption algorithm or the hash digest algorithm is when multiple keys are involved; from the preferences saved into the key itself or by comparison with the preferences with all other keys involved.

@example

```
import gpg
```

```
text0 = """Declaration of ... something.
```

```
"""
```

```
text = text0.encode()
```

```
c = gpg.Context(armor=True, signers=sig_src)
```

```
signed_data, result = c.sign(text, mode=gpg.constants.sig.mode.NORMAL)
```

```
with open("/path/to/statement.txt.asc", "w") as afile:
```

```
    afile.write(signed_data.decode())
```

```
@end example
```

Though everything in this example is accurate, it is more likely that reading the input data from another file and writing the result to a new file will be performed more like the way it is done in the next example. Even if the output format is ASCII armoured.

@example

```
import gpg
```

```
with open("/path/to/statement.txt", "rb") as tfile:
```

```
    text = tfile.read()
```

```
c = gpg.Context()
signed_data, result = c.sign(text, mode=gpg.constants.sig.mode.NORMAL)
```

```
with open("/path/to/statement.txt.sig", "wb") as afile:
    afile.write(signed_data)
@end example
```

```
@node Detached signing messages and files
@subsection Detached signing messages and files
```

Detached signatures will often be needed in programmatic uses of GPGME, either for signing files (e.g. tarballs of code releases) or as a component of message signing (e.g. PGP/MIME encoded email).

```
@example
import gpg
```

```
text0 = """Declaration of ... something.
```

```
"""
```

```
text = text0.encode()
```

```
c = gpg.Context(armor=True)
signed_data, result = c.sign(text, mode=gpg.constants.sig.mode.DETACH)
```

```
with open("/path/to/statement.txt.asc", "w") as afile:
    afile.write(signed_data.decode())
@end example
```

As with normal signatures, detached signatures are best handled as byte literals, even when the output is ASCII armoured.

```
@example
import gpg
```

```
with open("/path/to/statement.txt", "rb") as tfile:
    text = tfile.read()
```

```
c = gpg.Context(signers=sig_src)
signed_data, result = c.sign(text, mode=gpg.constants.sig.mode.DETACH)
```

```
with open("/path/to/statement.txt.sig", "wb") as afile:
    afile.write(signed_data)
@end example
```

```
@node Clearsigning messages or text
@subsection Clearsigning messages or text
```

Though PGP/in-line messages are no longer encouraged in favour of PGP/MIME, there is still sometimes value in utilising in-line signatures. This is where clear-signed messages or text is of value.

@example

```
import gpg
```

```
text0 = """Declaration of ... something.
```

```
"""
```

```
text = text0.encode()
```

```
c = gpg.Context()
```

```
signed_data, result = c.sign(text, mode=gpg.constants.sig.mode.CLEAR)
```

```
with open("/path/to/statement.txt.asc", "w") as afile:
```

```
    afile.write(signed_data.decode())
```

@end example

In spite of the appearance of a clear-signed message, the data handled by GPGME in signing it must still be byte literals.

@example

```
import gpg
```

```
with open("/path/to/statement.txt", "rb") as tfile:
```

```
    text = tfile.read()
```

```
c = gpg.Context()
```

```
signed_data, result = c.sign(text, mode=gpg.constants.sig.mode.CLEAR)
```

```
with open("/path/to/statement.txt.asc", "wb") as afile:
```

```
    afile.write(signed_data)
```

@end example

@node Signature verification

@section Signature verification

Essentially there are two principal methods of verification of a signature. The first of these is for use with the normal or default signing method and for clear-signed messages. The second is for use with files and data with detached signatures.

The following example is intended for use with the default signing method where the file was not ASCII armoured:

@example

```
import gpg
```

```

import time

filename = "statement.txt"
gpg_file = "statement.txt.gpg"

c = gpg.Context()

try:
    data, result = c.verify(open(gpg_file))
    verified = True
except gpg.errors.BadSignatures as e:
    verified = False
    print(e)

if verified is True:
    for i in range(len(result.signatures)):
        sign = result.signatures[i]
        print("""Good signature from:
@{0@ }
with key @{1@ }
made at @{2@ }
""".format(c.get_key(sign.fpr).uids[0].uid, sign.fpr,
            time.ctime(sign.timestamp)))
    else:
        pass
@end example

```

Whereas this next example, which is almost identical would work with normal ASCII armoured files and with clear-signed files:

```

@example
import gpg
import time

filename = "statement.txt"
asc_file = "statement.txt.asc"

c = gpg.Context()

try:
    data, result = c.verify(open(asc_file))
    verified = True
except gpg.errors.BadSignatures as e:
    verified = False
    print(e)

if verified is True:
    for i in range(len(result.signatures)):

```



```

        sign = result.signatures[i]
        print("""Good signature from:
@{0@}
with key @{1@}
made at @{2@}
""".format(c.get_key(sign.fpr).uids[0].uid, sign.fpr,
            time.ctime(sign.timestamp)))
else:
    pass
@end example

```

In both of the previous examples it is also possible to compare the original data that was signed against the signed data in `@samp{data}` to see if it matches with something like this:

```

@example
with open(filename, "rb") as afile:
    text = afile.read()

if text == data:
    print("Good signature.")
else:
    pass
@end example

```

The following two examples, however, deal with detached signatures. With his method of verification the data that was signed does not get returned since it is already being explicitly referenced in the first argument of `@samp{c.verify}`. So `@samp{data}` is `@samp{None}` and only the information in `@samp{result}` is available.

```

@example
import gpg
import time

filename = "statement.txt"
sig_file = "statement.txt.sig"

c = gpg.Context()

try:
    data, result = c.verify(open(filename), open(sig_file))
    verified = True
except gpg.errors.BadSignatures as e:
    verified = False
    print(e)

if verified is True:

```

```

    for i in range(len(result.signatures)):
        sign = result.signatures[i]
        print("""Good signature from:
@{0@}
with key @{1@}
made at @{2@}
""".format(c.get_key(sign.fpr).uids[0].uid, sign.fpr,
            time.ctime(sign.timestamp)))
    else:
        pass
@end example

```

```

@example
import gpg
import time

```

```

filename = "statement.txt"
asc_file = "statement.txt.asc"

```

```

c = gpg.Context()

```

```

try:
    data, result = c.verify(open(filename), open(asc_file))
    verified = True
except gpg.errors.BadSignatures as e:
    verified = False
    print(e)

```

```

if verified is True:
    for i in range(len(result.signatures)):
        sign = result.signatures[i]
        print("""Good signature from:
@{0@}
with key @{1@}
made at @{2@}
""".format(c.get_key(sign.fpr).uids[0].uid, sign.fpr,
            time.ctime(sign.timestamp)))
    else:
        pass
@end example

```

```

@node Creating keys and subkeys
@chapter Creating keys and subkeys

```

The one thing, aside from GnuPG itself, that GPGME depends on, of course, is the keys themselves. So it is necessary to be able to generate them and modify them by adding subkeys, revoking or disabling them, sometimes deleting them and doing the same for user IDs.

In the following examples a key will be created for the world's greatest secret agent, Danger Mouse. Since Danger Mouse is a secret agent he needs to be able to protect information to @samp{SECRET} level clearance, so his keys will be 3072-bit keys.

The pre-configured @samp{gpg.conf} file which sets cipher, digest and other preferences contains the following configuration parameters:

```
@example
expert
allow-freeform-uid
allow-secret-key-import
trust-model tofu+pgp
tofu-default-policy unknown
enable-large-rsa
enable-dsa2
cert-digest-algo SHA512
default-preference-list TWOFISH CAMELLIA256 AES256 CAMELLIA192 AES192 CAMELLIA128 AES
BLOWFISH IDEA CAST5 3DES SHA512 SHA384 SHA256 SHA224 RIPEMD160 SHA1 ZLIB BZIP2 ZIP
Uncompressed
personal-cipher-preferences TWOFISH CAMELLIA256 AES256 CAMELLIA192 AES192 CAMELLIA128 AES
BLOWFISH IDEA CAST5 3DES
personal-digest-preferences SHA512 SHA384 SHA256 SHA224 RIPEMD160 SHA1
personal-compress-preferences ZLIB BZIP2 ZIP Uncompressed
@end example
```

```
@menu
* Primary key::
* Subkeys::
* User IDs::
* Key certification::
@end menu
```

```
@node Primary key
@section Primary key
```

Generating a primary key uses the @samp{create_key} method in a Context.

It contains multiple arguments and keyword arguments, including:

@samp{userid}, @samp{algorithm}, @samp{expires_in}, @samp{expires}, @samp{sign}, @samp{encrypt}, @samp{certify}, @samp{authenticate}, @samp{passphrase} and @samp{force}. The defaults for all of those except @samp{userid}, @samp{algorithm}, @samp{expires_in}, @samp{expires} and @samp{passphrase} is @samp{False}. The defaults for @samp{algorithm} and @samp{passphrase} is @samp{None}. The default for @samp{expires_in} is @samp{0}. The default for @samp{expires} is @samp{True}. There is no default for @samp{userid}.

If @samp{passphrase} is left as @samp{None} then the key will not be generated with a passphrase, if @samp{passphrase} is set to a string then that will

be the passphrase and if `@samp{passphrase}` is set to `@samp{True}` then `gpg-agent` will launch `pinentry` to prompt for a passphrase. For the sake of convenience, these examples will keep `@samp{passphrase}` set to `@samp{None}`.

```
@example
import gpg

c = gpg.Context()

c.home_dir = "~/gnupg-dm"
userid = "Danger Mouse <dm@secret.example.net>"

dmkey = c.create_key(userid, algorithm="rsa3072", expires_in=31536000,
                    sign=True, certify=True)
@end example
```

One thing to note here is the use of setting the `@samp{c.home_dir}` parameter. This enables generating the key or keys in a different location. In this case to keep the new key data created for this example in a separate location rather than adding it to existing and active key store data. As with the default directory, `@samp{~/gnupg}`, any temporary or separate directory needs the permissions set to only permit access by the directory owner. On posix systems this means setting the directory permissions to 700.

The `@samp{temp-homedir-config.py}` script in the HOWTO examples directory will create an alternative homedir with these configuration options already set and the correct directory and file permissions.

The successful generation of the key can be confirmed via the returned `@samp{GenkeyResult}` object, which includes the following data:

```
@example
print("""
Fingerprint: @ {0@ }
Primary Key: @ {1@ }
Public Key: @ {2@ }
Secret Key: @ {3@ }
Sub Key: @ {4@ }
User IDs: @ {5@ }
""").format(dmkey.fpr, dmkey.primary, dmkey.pubkey, dmkey.seckey, dmkey.sub,
            dmkey.uid)
@end example
```

Alternatively the information can be confirmed using the command line program:

```
@example
```

```
bash-4.4$ gpg --homedir ~/.gnupg-dm -K
~/.gnupg-dm/pubring.kbx
-----
sec  rsa3072 2018-03-15 [SC] [expires: 2019-03-15]
    177B7C25DB99745EE2EE13ED026D2F19E99E63AA
uid    [ultimate] Danger Mouse <dm@@secret.example.net>
```

```
bash-4.4$
@end example
```

As with generating keys manually, to preconfigure expanded preferences for the cipher, digest and compression algorithms, the @samp{gpg.conf} file must contain those details in the home directory in which the new key is being generated. I used a cut down version of my own @samp{gpg.conf} file in order to be able to generate this:

```
@example
bash-4.4$ gpg --homedir ~/.gnupg-dm --edit-key 177B7C25DB99745EE2EE13ED026D2F19E99E63AA showpref
quit
Secret key is available.
```

```
sec  rsa3072/026D2F19E99E63AA
    created: 2018-03-15  expires: 2019-03-15  usage: SC
    trust: ultimate    validity: ultimate
[ultimate] (1). Danger Mouse <dm@@secret.example.net>
```

```
[ultimate] (1). Danger Mouse <dm@@secret.example.net>
    Cipher: TWOFISH, CAMELLIA256, AES256, CAMELLIA192, AES192, CAMELLIA128, AES, BLOWFISH,
    IDEA, CAST5, 3DES
    Digest: SHA512, SHA384, SHA256, SHA224, RIPEMD160, SHA1
    Compression: ZLIB, BZIP2, ZIP, Uncompressed
    Features: MDC, Keyserver no-modify
```

```
bash-4.4$
@end example
```

```
@node Subkeys
@section Subkeys
```

Adding subkeys to a primary key is fairly similar to creating the primary key with the @samp{create_subkey} method. Most of the arguments are the same, but not quite all. Instead of the @samp{userid} argument there is now a @samp{key} argument for selecting which primary key to add the subkey to.

In the following example an encryption subkey will be added to the primary key. Since Danger Mouse is a security conscious secret agent, this subkey will only be valid for about six months, half the length

of the primary key.

```
@example
import gpg

c = gpg.Context()
c.home_dir = "~/gnupg-dm"

key = c.get_key(dmkey.fpr, secret=True)
dmsub = c.create_subkey(key, algorithm="rsa3072", expires_in=15768000,
                        encrypt=True)
@end example
```

As with the primary key, the results here can be checked with:

```
@example
print("""
Fingerprint: @ {0@ }
Primary Key: @ {1@ }
Public Key: @ {2@ }
Secret Key: @ {3@ }
Sub Key: @ {4@ }
User IDs: @ {5@ }
""").format(dmsub.fpr, dmsub.primary, dmsub.pubkey, dmsub.seckey, dmsub.sub,
            dmsub.uid)
@end example
```

As well as on the command line with:

```
@example
bash-4.4$ gpg --homedir ~/.gnupg-dm -K
~/gnupg-dm/pubring.kbx
-----
sec  rsa3072 2018-03-15 [SC] [expires: 2019-03-15]
    177B7C25DB99745EE2EE13ED026D2F19E99E63AA
uid      [ultimate] Danger Mouse <dm@@secret.example.net>
ssb  rsa3072 2018-03-15 [E] [expires: 2018-09-13]
```

```
bash-4.4$
@end example
```

```
@node User IDs
@section User IDs
```

```
@menu
* Adding User IDs::
* Revoking User IDs::
@end menu
```

@node Adding User IDs

@subsection Adding User IDs

By comparison to creating primary keys and subkeys, adding a new user ID to an existing key is much simpler. The method used to do this is `@samp{key_add_uid}` and the only arguments it takes are for the `@samp{key}` and the new `@samp{uid}`.

@example

```
import gpg
```

```
c = gpg.Context()
```

```
c.home_dir = "~/gnupg-dm"
```

```
dmfpr = "177B7C25DB99745EE2EE13ED026D2F19E99E63AA"
```

```
key = c.get_key(dmfpr, secret=True)
```

```
uid = "Danger Mouse <danger.mouse@@secret.example.net>"
```

```
c.key_add_uid(key, uid)
```

@end example

Unsurprisingly the result of this is:

@example

```
bash-4.4$ gpg --homedir ~/.gnupg-dm -K
```

```
~/.gnupg-dm/pubring.kbx
```

```
-----
```

```
sec  rsa3072 2018-03-15 [SC] [expires: 2019-03-15]
```

```
    177B7C25DB99745EE2EE13ED026D2F19E99E63AA
```

```
uid    [ultimate] Danger Mouse <danger.mouse@@secret.example.net>
```

```
uid    [ultimate] Danger Mouse <dm@@secret.example.net>
```

```
ssb  rsa3072 2018-03-15 [E] [expires: 2018-09-13]
```

```
bash-4.4$
```

@end example

@node Revoking User IDs

@subsection Revoking User IDs

Revoking a user ID is a fairly similar process, except that it uses the `@samp{key_revoke_uid}` method.

@example

```
import gpg
```

```
c = gpg.Context()
```

```
c.home_dir = "~/gnupg-dm"
```

```
dmfpr = "177B7C25DB99745EE2EE13ED026D2F19E99E63AA"  
key = c.get_key(dmfpr, secret=True)  
uid = "Danger Mouse <danger.mouse@@secret.example.net>"
```

```
c.key_revoke_uid(key, uid)  
@end example
```

```
@node Key certification  
@section Key certification
```

Since key certification is more frequently referred to as key signing, the method used to perform this function is `@samp{key_sign}`.

The `@samp{key_sign}` method takes four arguments: `@samp{key}`, `@samp{uids}`, `@samp{expires_in}` and `@samp{local}`. The default value of `@samp{uids}` is `@samp{None}` and which results in all user IDs being selected. The default value of both `@samp{expires_in}` and `@samp{local}` is `@samp{False}`; which results in the signature never expiring and being able to be exported.

The `@samp{key}` is the key being signed rather than the key doing the signing. To change the key doing the signing refer to the signing key selection above for signing messages and files.

If the `@samp{uids}` value is not `@samp{None}` then it must either be a string to match a single user ID or a list of strings to match multiple user IDs. In this case the matching of those strings must be precise and it is case sensitive.

To sign Danger Mouse's key for just the initial user ID with a signature which will last a little over a month, do this:

```
@example  
import gpg  
  
c = gpg.Context()  
uid = "Danger Mouse <dm@@secret.example.net>"  
  
dmfpr = "177B7C25DB99745EE2EE13ED026D2F19E99E63AA"  
key = c.get_key(dmfpr, secret=True)  
c.key_sign(key, uids=uid, expires_in=2764800)  
@end example  
  
@menu  
* Verifying key certifications::  
@end menu  
  
@node Verifying key certifications
```


@subsection Verifying key certifications

@example

```
import gpg
import time
```

```
c = gpg.Context()
dmfpr = "177B7C25DB99745EE2EE13ED026D2F19E99E63AA"
keys = list(c.keylist(pattern=dmuid, mode=gpg.constants.keylist.mode.SIGS))
key = keys[0]
```

```
for user in key.uids:
```

```
    for sig in user.signatures:
```

```
        print("0x@{0@}".format(sig.keyid), "", time.ctime(sig.timestamp), "",
              sig.uid)
```

```
@end example
```

Which for Danger Mouse displays the following:

@example

```
0x92E3F6115435C65A Thu Mar 15 13:17:44 2018 Danger Mouse <dm@@secret.example.net>
0x321E4E2373590E5D Mon Nov 26 12:46:05 2018 Ben McGinnes <ben@@adversary.org>
@end example
```

The two key signatures listed are for the self-certification of Danger Mouse's key made when the key was created in March, 2018; and the second is a signature made by the author and set to expire at the end of the year. Note that the second signature was made with the following code (including the preceding code to display the output of the certifications or key signatures):

@example

```
import gpg
import math
import pendulum
import time
```

```
hd = "/home/dm/.gnupg"
c = gpg.Context()
d = gpg.Context(home_dir=hd)
dmfpr = "177B7C25DB99745EE2EE13ED026D2F19E99E63AA"
dmuid = "Danger Mouse <dm@@secret.example.net>"
dkeys = list(c.keylist(pattern=dmuid))
dmkey = dkeys[0]

c.key_import(d.key_export(pattern=None))

tp = pendulum.period(pendulum.now(tz="local"), pendulum.datetime(2019, 1, 1))
```

```

ts = tp.total_seconds()
total_secs = math.ceil(ts)
c.key_sign(dmkey, uids=dmuid, expires_in=total_secs)

d.key_import(c.key_export(pattern=dmuid))
keys = list(c.keylist(pattern=dmuid, mode=gpg.constants.keylist.mode.SIGS))
key = keys[0]

for user in key.uids:
    for sig in user.signatures:
        print("0x@{0@}".format(sig.keyid), "", time.ctime(sig.timestamp), "",
              sig.uid)
@end example

```

Note that this final code block includes the use of a module which is **not** part of Python's standard library, the <https://pendulum.eustace.io/>, pendulum module}. Unlike the standard datetime module, pendulum makes working with dates and times significantly easier in Python; just as the requests module makes working with HTTP and HTTPS easier than the builtin modules do.

Though neither requests nor pendulum are required modules for using the GPGME Python bindings, they are both highly recommended more generally.

@node Advanced or Experimental Use Cases
@chapter Advanced or Experimental Use Cases

@menu
* C plus Python plus SWIG plus Cython::
@end menu

@node C plus Python plus SWIG plus Cython
@section C plus Python plus SWIG plus Cython

In spite of the apparent incongruence of using Python bindings to a C interface only to generate more C from the Python; it is in fact quite possible to use the GPGME bindings with <http://docs.cython.org/en/latest/index.html>, Cython}. Though in many cases the benefits may not be obvious since the most computationally intensive work never leaves the level of the C code with which GPGME itself is interacting with.

Nevertheless, there are some situations where the benefits are demonstrable. One of the better and easier examples being the one of the early examples in this HOWTO, the [Counting keys, , key counting](#) code. Running that example as an executable Python script, `keycount.py` (available in the `examples/howto/` directory), will take a noticeable amount of time to run on most systems where the public keybox or keyring contains a

few thousand public keys.

Earlier in the evening, prior to starting this section, I ran that script on my laptop; as I tend to do periodically and timed it using @samp{time} utility, with the following results:

```
@example
bash-4.4$ time keycount.py
```

```
Number of secret keys: 23
Number of public keys: 12112
```

```
real    11m52.945s
user    0m0.913s
sys     0m0.752s
```

```
bash-4.4$
@end example
```

Sometime after that I imported another key and followed it with a little test of Cython. This test was kept fairly basic, essentially lifting the material from the @uref{http://docs.cython.org/en/latest/src/tutorial/cython_tutorial.html, Cython Basic Tutorial} to demonstrate compiling Python code to C. The first step was to take the example key counting code quoted previously, essentially from the importing of the @samp{gpg} module to the end of the script:

```
@example
import gpg

c = gpg.Context()
seckeys = c.keylist(pattern=None, secret=True)
pubkeys = c.keylist(pattern=None, secret=False)

seclist = list(seckeys)
secnum = len(seclist)

publist = list(pubkeys)
pubnum = len(publist)

print("""
  Number of secret keys: @ {0@ }
  Number of public keys: @ {1@ }

""").format(secnum, pubnum)
@end example
```

Save that into a file called `@samp{keycount.pyx}` and then create a `@samp{setup.py}` file which contains this:

```
@example
from distutils.core import setup
from Cython.Build import cythonize

setup(
    ext_modules = cythonize("keycount.pyx")
)
@end example
```

Compile it:

```
@example
bash-4.4$ python setup.py build_ext --inplace
bash-4.4$
@end example
```

Then run it in a similar manner to `@samp{keycount.py}`:

```
@example
bash-4.4$ time python3.7 -c "import keycount"
```

```
Number of secret keys: 23
Number of public keys: 12113
```

```
real    6m47.905s
user    0m0.785s
sys     0m0.331s
```

```
bash-4.4$
@end example
```

Cython turned `@samp{keycount.pyx}` into an 81KB `@samp{keycount.o}` file in the `@samp{build/}` directory, a 24KB `@samp{keycount.cpython-37m-darwin.so}` file to be imported into Python 3.7 and a 113KB `@samp{keycount.c}` generated C source code file of nearly three thousand lines. Quite a bit bigger than the 314 bytes of the `@samp{keycount.pyx}` file or the full 1,452 bytes of the full executable `@samp{keycount.py}` example script.

On the other hand it ran in nearly half the time; taking 6 minutes and 47.905 seconds to run. As opposed to the 11 minutes and 52.945 seconds which the CPython script alone took.

The `@samp{keycount.pyx}` and `@samp{setup.py}` files used to generate this example have been added to the `@samp{examples/howto/advanced/cython/}` directory

The example versions include some additional options to annotate the existing code and to detect Cython's use. The latter comes from the [@uref{http://docs.cython.org/en/latest/src/tutorial/pure.html#magic-attributes-within-the-pxd}](http://docs.cython.org/en/latest/src/tutorial/pure.html#magic-attributes-within-the-pxd), Magic Attributes} section of the Cython documentation.

```
@node Miscellaneous extras and work-arounds
@chapter Miscellaneous extras and work-arounds
```

Most of the things in the following sections are here simply because there was no better place to put them, even though some are only peripherally related to the GPGME Python bindings. Some are also workarounds for functions not integrated with GPGME as yet. This is especially true of the first of these, dealing with [@ref{Group lines, , group lines}](#).

```
@menu
* Group lines::
* Keyserver access for Python::
* GPGME version checking::
@end menu
```

```
@node Group lines
@section Group lines
```

There is not yet an easy way to access groups configured in the `gpg.conf` file from within GPGME. As a consequence these central groupings of keys cannot be shared amongst multiple programs, such as MUAs readily.

The following code, however, provides a work-around for obtaining this information in Python.

```
@example
import subprocess
import sys

if sys.platform == "win32":
    gpgconfcmd = "gpgconf.exe --list-options gpg"
else:
    gpgconfcmd = "gpgconf --list-options gpg"

process = subprocess.Popen(gpgconfcmd.split(), stdout=subprocess.PIPE)
procom = process.communicate()

if sys.version_info[0] == 2:
    lines = procom[0].splitlines()
else:
    lines = procom[0].decode().splitlines()
```

```

for line in lines:
    if line.startswith("group") is True:
        break

groups = line.split(":-1].replace("", ").split(',')

group_lines = []
group_lists = []

for group in groups:
    group_lines.append(group.split("="))
    group_lists.append(group.split("="))

for glist in group_lists:
    glist[1] = glist[1].split()
@end example

```

The result of that code is that `@samp{group_lines}` is a list of lists where `@samp{group_lines[i][0]}` is the name of the group and `@samp{group_lines[i][1]}` is the key IDs of the group as a string.

The `@samp{group_lists}` result is very similar in that it is a list of lists. The first part, `@samp{group_lists[i][0]}` matches `@samp{group_lines[i][0]}` as the name of the group, but `@samp{group_lists[i][1]}` is the key IDs of the group as a list.

A demonstration of using the `@samp{groups.py}` module is also available in the form of the executable `@samp{mutt-groups.py}` script. This second script reads all the group entries in a user's `@samp{gpg.conf}` file and converts them into crypt-hooks suitable for use with the Mutt and Neomutt mail clients.

```

@node Keyserver access for Python
@section Keyserver access for Python

```

The `@uref{https://github.com/Selfnet/hkp4py, hkp4py}` module by Marcel Fest was originally a port of the old `@uref{https://github.com/dgladkov/python-hkp, python-hkp}` module from Python 2 to Python 3 and updated to use the `@uref{http://docs.python-requests.org/en/latest/index.html, requests}` module instead. It has since been modified to provide support for Python 2.7 as well and is available via PyPI.

Since it rewrites the `@samp{hkp}` protocol prefix as `@samp{http}` and `@samp{hkps}` as `@samp{https}`, the module is able to be used even with servers which do not support the full scope of keyserver functions.^{@footnote{Such as with ProtonMail servers. This also means that restricted servers which only advertise either HTTP or HTTPS end points and not HKP or HKPS end points must still be identified as HKP or HKPS within the Python Code. The `@samp{hkp4py}` module will rewrite}

these appropriately when the connection is made to the server.} It also works quite readily when incorporated into a @ref{C plus Python plus SWIG plus Cython, , Cython} generated and compiled version of any code.

@menu

* Key import format::

@end menu

@node Key import format

@subsection Key import format

The hkp4py module returns key data via requests as string literals (@samp{r.text}) instead of byte literals (@samp{r.content}). This means that the returned key data must be encoded to UTF-8 when importing that key material using a @samp{gpg.Context().key_import()} method.

For this reason an alternative method has been added to the @samp{search} function of @samp{hkp4py.KeyServer()} which returns the key in the correct format as expected by @samp{key_import}. When importing using this module, it is now possible to import with this:

@example

for key in keys:

 if key.revoked is False:

 gpg.Context().key_import(key.key_blob)

 else:

 pass

@end example

Without that recent addition it would have been necessary to encode the contents of each @samp{hkp4py.KeyServer().search()[i].key} in @samp{hkp4py.KeyServer().search()} before trying to import it.

An example of this is included in the @ref{Importing keys, , Importing Keys} section of this HOWTO and the corresponding executable version of that example is available in the @samp{lang/python/examples/howto} directory as normal; the executable version is the @samp{import-keys-hkp.py} file.

@node GPGME version checking

@section GPGME version checking

For various reasons it may be necessary to check which version of GPGME the bindings have been built against; including whether a minimum required version of GPGME is in use.

For the most part the @samp{gpg.version.versionstr} and

@samp{gpg.version.versionlist} methods have been quite sufficient. The

former returns the same string as `@samp{gpgme-config --version}`, while the latter returns the major, minor and patch values in a list.

To check if the installed bindings have actually been built against the current installed libgpgme version, this check can be performed:

```
@example
import gpg
import subprocess
import sys

gpgme_version_call = subprocess.Popen(["gpgme-config", "--version"],
                                       stdout=subprocess.PIPE,
                                       stderr=subprocess.PIPE)
gpgme_version_str = gpgme_version_call.communicate()

if sys.version_info[0] == 2:
    gpgme_version = gpgme_version_str[0].strip()
elif sys.version_info[0] >= 3:
    gpgme_version = gpgme_version_str[0].decode().strip()
else:
    gpgme_version = None

if gpgme_version is not None:
    if gpgme_version == gpg.version.versionstr:
        print("The GPGME Python bindings match libgpgme.")
    else:
        print("The GPGME Python bindings do NOT match libgpgme.")
else:
    print("Upgrade Python and reinstall the GPGME Python bindings.")
@end example
```

For many developers, however, the preferred checking means checking for a minimum version or point release. This is now readily available via the `@samp{gpg.version.versionintlist}` method (added in version `@samp{1.12.1-beta79}`). It is also now possible to easily check whether the installed GPGME Python bindings were built from a development or beta branch of the GPGME source code.

The following code demonstrates how both of those methods may be used:

```
@example
import gpg

try:
    if gpg.version.is_beta is True:
        print("The installed GPGME Python bindings were built from beta code.")
    else:
```



```

    print("The installed GPGME Python bindings are a released version.")
except Exception as e:
    print(e)

try:
    if gpg.version.versionintlist[0] == 1:
        if gpg.version.versionintlist[1] == 12:
            if gpg.version.versionintlist[2] == 1:
                print("This is the minimum version for using versionintlist.")
            elif gpg.version.versionintlist[2] > 1:
                print("The versionintlist method is available.")
            else:
                pass
        elif gpg.version.versionintlist[1] > 12:
            print("The versionintlist method is available.")
        else:
            pass
    elif gpg.version.versionintlist[0] > 1:
        print("The versionintlist method is available.")
    else:
        pass
except Exception as e:
    print(e)
@end example

```

The points where `@samp{pass}` is used in the above example will most likely also produce an `@samp{Exception}` error since those results should only occur in versions which do not have the `@samp{gpgme.version.is_beta}` and `@samp{gpgme.version.versionintlist}` methods available.

```

@node Copyright and Licensing
@chapter Copyright and Licensing

```

```

@menu
* Copyright::
* Draft Editions of this HOWTO::
* License GPL compatible::
@end menu

```

```

@node Copyright
@section Copyright

```

Copyright The GnuPG Project, 2018.

```

@node Draft Editions of this HOWTO
@section Draft Editions of this HOWTO

```

Draft editions of this HOWTO may be periodically available directly

from the author at any of the following URLs:

```
@itemize
@item
@uref{https://files.au.adversary.org/crypto/gpgme-python-howto.html, GPGME Python Bindings HOWTO draft
(HTML single file, AWS S3 SSL)}
@item
@uref{http://files.au.adversary.org/crypto/gpgme-python-howto.html, GPGME Python Bindings HOWTO draft
(HTML single file, AWS S3 no SSL)}
@item
@uref{https://files.au.adversary.org/crypto/gpgme-python-howto-split/index.html, GPGME Python Bindings
HOWTO draft (HTML multiple files, AWS S3 SSL)}
@item
@uref{http://files.au.adversary.org/crypto/gpgme-python-howto/index.html, GPGME Python Bindings HOWTO
draft (HTML multiple files, AWS S3 no SSL)}
@end itemize
```

These draft versions have been generated from this document via GNU Emacs @uref{https://orgmode.org/, Org mode} to @samp{.texi} and @uref{https://www.gnu.org/software/texinfo/, GNU Texinfo} to HTML. Though it is likely that the specific @uref{https://files.au.adversary.org/crypto/gpgme-python-howto, file} @uref{http://files.au.adversary.org/crypto/gpgme-python-howto.org, version} used will be on the same server with the generated output formats. Occasionally I may include the Org mode generated XHTML versions:

```
@itemize
@item
@uref{https://files.au.adversary.org/crypto/gpgme-python-howto.xhtml, GPGME Python Bindings HOWTO draft
(HTML single file, AWS S3 SSL)}
@item
@uref{http://files.au.adversary.org/crypto/gpgme-python-howto.xhtml, GPGME Python Bindings HOWTO draft
(HTML single file, AWS S3 no SSL)}
@end itemize
```

That XHTML version, however, is exported in a way which inherits a colour scheme from @uref{https://github.com/holomorph/emacs-zenburn, the author's Emacs theme} (which is a higher contrast version of @uref{http://kippura.org/zenburnpage/, Zenburn} ported by @uref{https://github.com/holomorph, Holomorph}). So it's fine for people who prefer dark themed web pages, but not so great for everyone else.

The GNU Texinfo and reStructured Text versions ship with the software, while the GNU Emacs Info version is generated from the Texinfo version using GNU Texinfo or GNU Makeinfo. The Texinfo format is generated from the original Org mode source file in Org mode itself either within GNU Emacs or via the command line by invoking Emacs in batch mode:

```
@example
emacs gpgme-python-howto.org --batch -f org-texinfo-export-to-texinfo --kill
emacs gpgme-python-howto --batch -f org-texinfo-export-to-texinfo --kill
@end example
```

The reStructuredText format is also generated from the Org mode source file, except it is generated using `@uref{https://pandoc.org, Pandoc}` with either of the following commands (depending on the filename):

```
@example
pandoc -f org -t rst+smart -o gpgme-python-howto.rst gpgme-python-howto.org
pandoc -f org -t rst+smart -o gpgme-python-howto.rst gpgme-python-howto
@end example
```

Note that the Org mode source files are identified as such via a mode line at the top of each file and have had their `@samp{.org}` file extensions dropped in order to make scripted generation of output formats easier and not require renaming files post-conversion.

Due to a bug in Org mode's texinfo conversion method, the recommended steps for generating the Texinfo files for all the files in the `@samp{lang/python/doc/src/}` directory are as follows:

```
@example
for x in * ; do
  emacs $x --batch -f org-texinfo-export-to-texinfo --kill
  cat $x.texi | sed -e 's/@@documentencoding UTF-8/@@documentencoding utf-8/g' > ../texinfo/$x.texi
  pandoc -f org -t rst+smart -o ../rst/$x.rst $x
done ;
rm -fv *.texi
cd ../texinfo
mkdir info
mkdir html
for x in *.texi ; do
  makeinfo -v $x
  makeinfo --html --no-split $x
done ;
mv *.info info/
mv *.html html/
@end example
```

This code snippet includes the generation of the reStructuredText files and would be expected to be run from the `@samp{doc/src/}` directory containing the Org mode source files. It also assumes that the commands are being run on POSIX compliant systems with basic tools like sed, the Bourne shell and GNU Emacs^{@footnote{Okay, Emacs might not necessarily qualify as a basic tool, but it is common enough that having it installed on a system isn't too great an expectation, nor is it difficult to add to most POSIX}

systems, even if the users of those systems do not personally use it.) available. The code snippet also includes the steps for generating the Emacs Info files and HTML files from the Texinfo files. Using reStructuredText files with Sphinx is best left for the documentation of that project.

In addition to these there is a significantly less frequently updated version as a HTML [@uref{https://files.au.adversary.org/crypto/gpgme-python/dita/webhelp/index.html}](https://files.au.adversary.org/crypto/gpgme-python/dita/webhelp/index.html), WebHelp site (AWS S3 SSL); generated from DITA XML source files, which can be found in [@uref{https://dev.gnupg.org/source/gpgme/browse/ben%252Fhowto-dita/}](https://dev.gnupg.org/source/gpgme/browse/ben%252Fhowto-dita/), an alternative branch of the GPGME git repository.

Various generated output formats may occasionally be found in subdirectories of the [@uref{https://s3.amazonaws.com/files.au.adversary.org/crypto/gpgme-python}](https://s3.amazonaws.com/files.au.adversary.org/crypto/gpgme-python), [gpgme-python](https://s3.amazonaws.com/files.au.adversary.org/crypto/gpgme-python/dita) directory. In particular within the [@uref{https://s3.amazonaws.com/files.au.adversary.org/crypto/gpgme-python/dita}](https://s3.amazonaws.com/files.au.adversary.org/crypto/gpgme-python/dita), DITA, [@uref{https://s3.amazonaws.com/files.au.adversary.org/crypto/gpgme-python/rst}](https://s3.amazonaws.com/files.au.adversary.org/crypto/gpgme-python/rst), reStructuredText and [@uref{https://s3.amazonaws.com/files.au.adversary.org/crypto/gpgme-python/texinfo}](https://s3.amazonaws.com/files.au.adversary.org/crypto/gpgme-python/texinfo), Texinfo subdirectories. The `@samp{rst}` directory contains output files generated with Sphinx and may include a considerable number of its possible output formats, but there are no guarantees as to how recent these are or even if they are present.

These draft editions are not official documents and the version of documentation in the master branch or which ships with released versions is the only official documentation. Nevertheless, these draft editions may occasionally be of use by providing more accessible web versions which are updated between releases. They are provided on the understanding that they may contain errors or may contain content subject to change prior to an official release.

`@node License GPL compatible`
`@section License GPL compatible`

This file is free software; as a special exception the author gives unlimited permission to copy and/or distribute it, with or without modifications, as long as this notice is preserved.

This file is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY, to the extent permitted by law; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.

`@bye`
`# -*- mode: org -*-`
`#+TITLE: What Was New in the GPGME Python Bindings and Documentation`
`#+AUTHOR: Ben McGinnes`
`#+LATEX_COMPILER: xelatex`

```
#+LATEX_CLASS: article
#+LATEX_CLASS_OPTIONS: [12pt]
#+LATEX_HEADER: \usepackage{xltextra}
#+LATEX_HEADER: \usepackage[margin=1in]{geometry}
#+LATEX_HEADER: \setmainfont[Ligatures={Common}]{Times New Roman}
#+LATEX_HEADER: \author{Ben McGinnes <ben@gnupg.org>}
```

* What Was New

:PROPERTIES:

:CUSTOM_ID: new-stuff

:END:

```
| Version:      | 0.0.1          |
| GPGME Version: | 1.13.0         |
| Author:       | Ben McGinnes <ben@gnupg.org> |
| Author GPG Key: | DB4724E6FA4286C92B4E55C4321E4E2373590E5D |
| Language:     | Australian English, British English |
| xml:lang:     | en-AU, en-GB, en |
```

The following are all the past /What's New/ sections for the Python Bindings HOWTO and other documentation.

** What Was New in GPGME 1120

:PROPERTIES:

:CUSTOM_ID: gpgme-1-12-0

:END:

The most obviously new point for those reading this guide is this section on other new things, but that's hardly important. Not given all the other things which spurred the need for adding this section and its subsections.

*** New in GPGME 1120

:PROPERTIES:

:CUSTOM_ID: new-stuff-1-12-0

:END:

There have been quite a number of additions to GPGME and the Python bindings to it since the last release of GPGME with versions 1.11.0 and 1.11.1 in April, 2018.

The bullet points of new additions are:

- an expanded section on [\[\[file:gpgme-python-howto#installation\]\[installing\]\]](#) and [\[\[file:gpgme-python-howto#snafu\]\[troubleshooting\]\]](#) the Python

bindings.

- The release of Python 3.7.0; which appears to be working just fine with our bindings, in spite of intermittent reports of problems for many other Python projects with that new release.
- Python 3.7 has been moved to the head of the specified python versions list in the build process.
- In order to fix some other issues, there are certain underlying functions which are more exposed through the `[[file:gpgme-python-howto#howto-get-context]][gpg.Context()]`, but ongoing documentation ought to clarify that or otherwise provide the best means of using the bindings. Some additions to `=gpg.core=` and the `=Context()=`, however, were intended (see below).
- Continuing work in identifying and confirming the cause of oft-reported `[[file:gpgme-python-howto#snafu-runtime-not-funtime]][problems installing the Python bindings on Windows]`.
- GSOC: Google's Surreptitiously Ordered Conscription ... erm ... oh, right; Google's Summer of Code. Though there were two hopeful candidates this year; only one ended up involved with the GnuPG Project directly, the other concentrated on an unrelated third party project with closer ties to one of the GNU/Linux distributions than to the GnuPG Project. Thus the Python bindings benefited from GSOC participant Jacob Adams, who added the `key_import` function; building on prior work by Tobias Mueller.
- Several new methods functions were added to the `gpg.Context()`, including: `[[file:gpgme-python-howto#howto-import-key]][key_import]`, `[[file:gpgme-python-howto#howto-export-key]][key_export]`, `[[file:gpgme-python-howto#howto-export-public-key]][key_export_minimal]` and `[[file:gpgme-python-howto#howto-export-secret-key]][key_export_secret]`.
- Importing and exporting examples include versions integrated with Marcel Fest's recently released `[[https://github.com/Selfnet/hkp4py]][HKP for Python]` module. Some `[[file:gpgme-python-howto#hkp4py]][additional notes on this module]` are included at the end of the HOWTO.
- Instructions for dealing with semi-walled garden implementations like ProtonMail are also included. This is intended to make things a little easier when communicating with users of ProtonMail's services and should not be construed as an endorsement of said service. The GnuPG Project neither favours, nor disfavors ProtonMail and the majority of this deals with interacting with the ProtonMail keyserver.
- Semi-formalised the location where `[[file:gpgme-python-howto#draft-editions]][draft versions]` of this HOWTO may periodically be accessible. This is both for the reference of others and testing the publishing of the document itself. Renamed this file at around the same time.
- The Texinfo documentation build configuration has been replicated from the parent project in order to make to maintain consistency with that project (and actually ship with each release).
- a reStructuredText (`=.rst=`) version is also generated for Python developers more used to and comfortable with that format as it is the standard Python documentation format and Python developers may wish to use it with Sphinx. Please note that there has been no

testing of the reStructuredText version with Sphinx at all. The reST file was generated by the simple expedient of using [\[\[https://pandoc.org/\]\]](https://pandoc.org/)[Pandoc]].

- Added a new section for [\[\[file:gpgme-python-howto#advanced-use\]\]](file:gpgme-python-howto#advanced-use)[advanced or experimental use]].
- Began the advanced use cases with [\[\[file:gpgme-python-howto#cython\]\]](file:gpgme-python-howto#cython)[a section]] on using the module with [\[\[https://cython.org/\]\]](https://cython.org/)[Cython]].
- Added a number of new scripts to the =example/howto/= directory; some of which may be in advance of their planned sections of the HOWTO (and some are just there because it seemed like a good idea at the time).
- Cleaned up a lot of things under the hood.

000

*H

010 UDE1!0U

Deutsches Forschungsnetz10UDFN-PCA1.0,U%DFN Top Level Certification Authority1!0 *H
certify@pca.dfn.de0

981029180310Z

011231180310Z010 UDE1!0U

Deutsches Forschungsnetz10UDFN-PCA1.0,U%DFN Top Level Certification Authority1!0 *H
certify@pca.dfn.de0"0

*H

0

nskvS2r#iA4H|*/

:Sd;v

tD}L+~IWWD|eP&qH)

!l\p%,1.tlsmnQ,g-W)@\t<kvm5j(d)9M_KGQJ0:qTE 00 `HB0) `HBhttps://mystic.pca.dfn.de/0A

`HB42http://www.pca.dfn.de/dfnpca/policy/wwwpolicy.html08 `HB

+)The DFN Top Level Certification Authority0! `HBcgi/check-rev.cgi?0 `HB

dfnpca.crl0U00U0

*H

^[8\e7*%QC?:/JVgWPUB

OgGqjGVxl50%< Pb18 z;t~r0U<A%3#l'8b"<iX"V!k"*Q8&hAPI"3 00KU&Qq'46_{D[JZ!i<=T
/OF

1.13.1

Wenn Sie dies lesen knnen, ist es wohl nicht
geheim genug.

1.7 dijit 1.10.4

1.7.1 Available under license :

Dojo is available under *either* the terms of the modified BSD license *or* the Academic Free License version 2.1. As a recipient of Dojo, you may choose which license to receive this code under (except as noted in per-module LICENSE files). Some modules may not be the copyright of the Dojo Foundation. These modules contain explicit declarations of copyright in both the LICENSE files in the directories in which they reside and in the code itself. No external contributions are allowed under licenses which are fundamentally incompatible with the AFL or BSD licenses that Dojo is distributed under.

The text of the AFL and BSD licenses is reproduced below.

The "New" BSD License:

Copyright (c) 2005-2014, The Dojo Foundation

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of the Dojo Foundation nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The Academic Free License, v. 2.1:

This Academic Free License (the "License") applies to any original work of authorship (the "Original Work") whose owner (the "Licensor") has placed the following notice immediately following the copyright notice for the Original Work:

Licensed under the Academic Free License version 2.1

1) Grant of Copyright License. Licensor hereby grants You a world-wide, royalty-free, non-exclusive, perpetual, sublicenseable license to do the following:

- a) to reproduce the Original Work in copies;
- b) to prepare derivative works ("Derivative Works") based upon the Original Work;
- c) to distribute copies of the Original Work and Derivative Works to the public;
- d) to perform the Original Work publicly; and
- e) to display the Original Work publicly.

2) Grant of Patent License. Licensor hereby grants You a world-wide, royalty-free, non-exclusive, perpetual, sublicenseable license, under patent claims owned or controlled by the Licensor that are embodied in the Original Work as furnished by the Licensor, to make, use, sell and offer for sale the Original Work and Derivative Works.

3) Grant of Source Code License. The term "Source Code" means the preferred form of the Original Work for making modifications to it and all available documentation describing how to modify the Original Work. Licensor hereby agrees to provide a machine-readable copy of the Source Code of the Original Work along with each copy of the Original Work that Licensor distributes. Licensor reserves the right to satisfy this obligation by placing a machine-readable copy of the Source Code in an information repository reasonably calculated to permit inexpensive and convenient access by You for as long as Licensor continues to distribute the Original Work, and by publishing the address of that information repository in a notice immediately following the copyright notice that applies to the Original Work.

4) Exclusions From License Grant. Neither the names of Licensor, nor the names of any contributors to the Original Work, nor any of their trademarks or service marks, may be used to endorse or promote products derived from this Original Work without express prior written permission of the Licensor. Nothing in this License shall be deemed to grant any rights to trademarks, copyrights, patents, trade secrets or any other intellectual property of Licensor except as expressly stated herein. No patent license is granted to make, use, sell or offer to sell embodiments of any patent claims other than the licensed claims defined in Section 2. No right is granted to the trademarks of Licensor even if such marks are included in the Original Work. Nothing in this License shall be interpreted to prohibit Licensor from licensing under different terms from this License any Original Work that Licensor otherwise would have a right to license.

5) This section intentionally omitted.

6) Attribution Rights. You must retain, in the Source Code of any Derivative Works that You create, all copyright, patent or trademark notices from the

Source Code of the Original Work, as well as any notices of licensing and any descriptive text identified therein as an "Attribution Notice." You must cause the Source Code for any Derivative Works that You create to carry a prominent Attribution Notice reasonably calculated to inform recipients that You have modified the Original Work.

7) Warranty of Provenance and Disclaimer of Warranty. Licensor warrants that the copyright in and to the Original Work and the patent rights granted herein by Licensor are owned by the Licensor or are sublicensed to You under the terms of this License with the permission of the contributor(s) of those copyrights and patent rights. Except as expressly stated in the immediately preceding sentence, the Original Work is provided under this License on an "AS IS" BASIS and WITHOUT WARRANTY, either express or implied, including, without limitation, the warranties of NON-INFRINGEMENT, MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY OF THE ORIGINAL WORK IS WITH YOU. This DISCLAIMER OF WARRANTY constitutes an essential part of this License. No license to Original Work is granted hereunder except under this disclaimer.

8) Limitation of Liability. Under no circumstances and under no legal theory, whether in tort (including negligence), contract, or otherwise, shall the Licensor be liable to any person for any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or the use of the Original Work including, without limitation, damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses. This limitation of liability shall not apply to liability for death or personal injury resulting from Licensor's negligence to the extent applicable law prohibits such limitation. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so this exclusion and limitation may not apply to You.

9) Acceptance and Termination. If You distribute copies of the Original Work or a Derivative Work, You must make a reasonable effort under the circumstances to obtain the express assent of recipients to the terms of this License. Nothing else but this License (or another written agreement between Licensor and You) grants You permission to create Derivative Works based upon the Original Work or to exercise any of the rights granted in Section 1 herein, and any attempt to do so except under the terms of this License (or another written agreement between Licensor and You) is expressly prohibited by U.S. copyright law, the equivalent laws of other countries, and by international treaty. Therefore, by exercising any of the rights granted to You in Section 1 herein, You indicate Your acceptance of this License and all of its terms and conditions.

10) Termination for Patent Action. This License shall terminate automatically and You may no longer exercise any of the rights granted to You by this License as of the date You commence an action, including a cross-claim or counterclaim, against Licensor or any licensee alleging that the Original Work infringes a patent. This termination provision shall not apply for an action alleging patent infringement by combinations of the Original Work with other software or

hardware.

11) Jurisdiction, Venue and Governing Law. Any action or suit relating to this License may be brought only in the courts of a jurisdiction wherein the Licensor resides or in which Licensor conducts its primary business, and under the laws of that jurisdiction excluding its conflict-of-law provisions. The application of the United Nations Convention on Contracts for the International Sale of Goods is expressly excluded. Any use of the Original Work outside the scope of this License or after its termination shall be subject to the requirements and penalties of the U.S. Copyright Act, 17 U.S.C. 101 et seq., the equivalent laws of other countries, and international treaty. This section shall survive the termination of this License.

12) Attorneys Fees. In any action to enforce the terms of this License or seeking damages relating thereto, the prevailing party shall be entitled to recover its costs and expenses, including, without limitation, reasonable attorneys' fees and costs incurred in connection with such action, including any appeal of such action. This section shall survive the termination of this License.

13) Miscellaneous. This License represents the complete agreement concerning the subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable.

14) Definition of "You" in This License. "You" throughout this License, whether in upper or lower case, means an individual or a legal entity exercising rights under, and complying with all of the terms of, this License. For legal entities, "You" includes any entity that controls, is controlled by, or is under common control with you. For purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

15) Right to Use. You may use the Original Work in all ways not otherwise restricted or conditioned by this License or by law, and Licensor promises not to interfere with or be responsible for such uses by You.

This license is Copyright (C) 2003-2004 Lawrence E. Rosen. All rights reserved. Permission is hereby granted to copy and distribute this license without modification. This license may not be modified without the express written permission of its copyright owner.

1.8 tzdata 2022e-1.el8

1.8.1 Available under license :

Unless specified below, all files in the tz code and data (including this LICENSE file) are in the public domain.

If the files date.c, newstrftime.3, and strftime.c are present, they contain material derived from BSD and use the BSD 3-clause license.

1.9 libpsl 0.20.2 6.el8

1.9.1 Available under license :

Copyright (C) 2014-2015 Tim Rhsen

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (C) 2014-2018 Tim Rhsen

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

DEALINGS IN THE SOFTWARE.

* The following License is for the source code files

psl-make-dafsa and lookup_string_in_fixed_set.c.

```
// Copyright 2015 The Chromium Authors. All rights reserved.
//
// Redistribution and use in source and binary forms, with or without
// modification, are permitted provided that the following conditions are
// met:
//
// * Redistributions of source code must retain the above copyright
// notice, this list of conditions and the following disclaimer.
// * Redistributions in binary form must reproduce the above
// copyright notice, this list of conditions and the following disclaimer
// in the documentation and/or other materials provided with the
// distribution.
// * Neither the name of Google Inc. nor the names of its
// contributors may be used to endorse or promote products derived from
// this software without specific prior written permission.
//
// THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
// "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
// LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
// A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
// OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
// SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
// LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
// DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
// THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
// (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
// OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
```

1.10 systemd 239-58.el8_6.7

1.10.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your
freedom to share and change it. By contrast, the GNU General Public

License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under

these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source

code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent

license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free

Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
GNU General Public License for more details.

You should have received a copy of the GNU General Public License along
with this program; if not, write to the Free Software Foundation, Inc.,
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this
when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands ``show w'` and ``show c'` should show the appropriate
parts of the General Public License. Of course, the commands you use may
be called something other than ``show w'` and ``show c'`; they could even be
mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the program, if
necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into
proprietary programs. If your program is a subroutine library, you may
consider it more useful to permit linking proprietary applications with the
library. If this is what you want to do, use the GNU Lesser General
Public License instead of this License.

1.11 commons-pool 2.10.0

1.11.1 Available under license :

Apache Commons Pool
Copyright 2001-2021 The Apache Software Foundation

This product includes software developed at

The Apache Software Foundation (<https://www.apache.org/>).

Apache License
Version 2.0, January 2004
<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or

Derivative Works a copy of this License; and

- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software
distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License.

APACHE COMMONS POOL DERIVATIVE WORKS:

The LinkedBlockingDeque implementation is based on an implementation written by
Doug Lea with assistance from members of JCP JSR-166 Expert Group and released
to the public domain, as explained at
<http://creativecommons.org/licenses/publicdomain>

1.12 commons-cli 1.2

1.12.1 Available under license :

Apache Commons CLI
Copyright 2001-2009 The Apache Software Foundation

This product includes software developed by
The Apache Software Foundation (<http://www.apache.org/>).

Apache License
Version 2.0, January 2004
<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction,
and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by
the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all
other entities that control, are controlled by, or are under common
control with that entity. For the purposes of this definition,
"control" means (i) the power, direct or indirect, to cause the
direction or management of such entity, whether by contract or
otherwise, or (ii) ownership of fifty percent (50%) or more of the

outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable

copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and

do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

1.13 libusb 1.0.23-4.el8

1.13.1 Available under license :

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies

of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know

that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's

complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote

it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library

creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the

Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the

Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW.

EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public

License along with this library; if not, write to the Free Software
Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the library, if
necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the
library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990
Ty Coon, President of Vice

That's all there is to it!

1.14 zookeeper-jute 3.6.3

1.14.1 Available under license :

No license file was found, but licenses were detected in source scan.

/**

* Licensed to the Apache Software Foundation (ASF) under one
* or more contributor license agreements. See the NOTICE file
* distributed with this work for additional information
* regarding copyright ownership. The ASF licenses this file
* to you under the Apache License, Version 2.0 (the
* "License"); you may not use this file except in compliance
* with the License. You may obtain a copy of the License at
*
* <http://www.apache.org/licenses/LICENSE>

2.0

*

* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.

*/

Found in path(s):

* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-jar/META-
INF/maven/org.apache.zookeeper/zookeeper-jute/pom.xml

No license file was found, but licenses were detected in source scan.

/*

* Licensed to the Apache Software Foundation (ASF) under one
* or more contributor license agreements. See the NOTICE file
* distributed with this work for additional information
* regarding copyright ownership. The ASF licenses this file
* to you under the Apache License, Version 2.0 (the
* "License"); you may not use this file except in compliance
* with the License. You may obtain a copy of the License at
*
* <http://www.apache.org/licenses/LICENSE-2.0>
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/

Found in path(s):

* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-jar/org/apache/jute/compiler/JavaGenerator.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-jar/org/apache/jute/compiler/JLong.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-jar/org/apache/jute/compiler/JCompType.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-jar/org/apache/jute/compiler/JFloat.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-jar/org/apache/jute/Utils.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-jar/org/apache/jute/compiler/CGenerator.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-jar/org/apache/jute/compiler/CppGenerator.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-jar/org/apache/jute/compiler/JType.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-jar/org/apache/jute/RecordReader.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-jar/org/apache/jute/BinaryInputArchive.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-jar/org/apache/jute/BinaryOutputArchive.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-jar/org/apache/jute/compiler/JMap.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-jar/org/apache/jute/compiler/JVector.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-jar/org/apache/jute/Record.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-jar/org/apache/jute/compiler/JBuffer.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-jar/org/apache/jute/compiler/JField.java

* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-jar/org/apache/jute/compiler/JFile.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-jar/org/apache/jute/compiler/JBoolean.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-jar/org/apache/jute/compiler/JByte.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-jar/org/apache/jute/compiler/CSharpGenerator.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-jar/org/apache/jute/compiler/JInt.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-jar/org/apache/jute/compiler/JDouble.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-jar/org/apache/jute/InputArchive.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-jar/org/apache/jute/compiler/JString.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-jar/org/apache/jute/Index.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-jar/org/apache/jute/RecordWriter.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-jar/org/apache/jute/compiler/JRecord.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-jar/org/apache/jute/OutputArchive.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-jar/org/apache/jute/ToStringOutputArchive.java

No license file was found, but licenses were detected in source scan.

/**

* Licensed to the Apache Software Foundation (ASF) under one
* or more contributor license agreements. See the NOTICE file
* distributed with this work for additional information
* regarding copyright ownership. The ASF licenses this file
* to you under the Apache License, Version 2.0 (the
* "License"); you may not use this file except in compliance
* with the License. You may obtain a copy of the License at
*
* <http://www.apache.org/licenses/LICENSE-2.0>
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/

Found in path(s):

* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-jar/org/apache/jute/compiler/generated/RccTokenManager.java

* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-jar/org/apache/jute/compiler/generated/ParseException.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-jar/org/apache/jute/compiler/generated/Token.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-jar/org/apache/jute/compiler/generated/Rcc.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-jar/org/apache/jute/compiler/generated/TokenMgrError.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-jar/org/apache/jute/compiler/generated/RccConstants.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-jar/org/apache/jute/compiler/generated/SimpleCharStream.java
No license file was found, but licenses were detected in source scan.

/**

* Licensed to the Apache Software Foundation (ASF) under one
* or more contributor license agreements. See the NOTICE file
* distributed with this work for additional information
* regarding copyright ownership. The ASF licenses this file
* to you under the Apache License, Version 2.0 (the
* "License"); you may not use this file except in compliance
* with the License. You may obtain a copy of the License at
*
* <http://www.apache.org/licenses/LICENSE-2.0>
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/

Found in path(s):

* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-jar/org/apache/zookeeper/proto/SetSASLResponse.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-jar/org/apache/zookeeper/server/quorum/QuorumPacket.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-jar/org/apache/zookeeper/txn/ErrorTxn.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-jar/org/apache/zookeeper/proto/CreateTTLRequest.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-jar/org/apache/zookeeper/proto/GetMaxChildrenResponse.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-jar/org/apache/zookeeper/proto/SyncResponse.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-jar/org/apache/zookeeper/txn/DeleteTxn.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-

jar/org/apache/zookeeper/txn/MultiTxn.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/data/Stat.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/proto/GetEphemeralsResponse.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/txn/SetDataTxn.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/txn/TxnDigest.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/proto/ErrorResponse.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/proto/GetChildrenResponse.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/proto/ReplyHeader.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/proto/SetACLRequest.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/proto/SetWatches.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/proto/RequestHeader.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/proto/SetDataResponse.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/proto/GetEphemeralsRequest.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/proto/CreateRequest.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/proto/GetDataResponse.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/txn/Txn.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/txn/CreateContainerTxn.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/txn/CloseSessionTxn.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/proto/ReconfigRequest.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/proto/GetACLResponse.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/data/StatPersisted.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/server/quorum/QuorumAuthPacket.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/proto/ConnectResponse.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/txn/SetACLTxn.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-

jar/org/apache/zookeeper/txn/TxnHeader.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/data/ACL.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/proto/SetMaxChildrenRequest.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/proto/WatcherEvent.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/proto/GetDataRequest.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/proto/CheckWatchesRequest.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/server/persistence/FileHeader.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/proto/ExistsResponse.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/proto/RemoveWatchesRequest.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/proto/SetSASLRequest.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/proto/CreateResponse.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/txn/CreateSessionTxn.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/proto/SetDataRequest.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/proto/SetACLResponse.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/data/Id.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/proto/GetChildren2Response.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/proto/GetACLRequest.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/proto/GetChildren2Request.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/proto/DeleteRequest.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/proto/AddWatchRequest.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/proto/ConnectRequest.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/proto/GetSASLRequest.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/server/quorum/LearnerInfo.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/proto/GetChildrenRequest.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-

jar/org/apache/zookeeper/proto/CheckVersionRequest.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/txn/SetMaxChildrenTxn.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/proto/GetMaxChildrenRequest.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/proto/ExistsRequest.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/proto/AuthPacket.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/proto/GetAllChildrenNumberRequest.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/txn/CheckVersionTxn.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/proto/Create2Response.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/proto/SetWatches2.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/proto/SyncRequest.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/txn/CreateTxnV0.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/proto/GetAllChildrenNumberResponse.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/proto/MultiHeader.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/txn/CreateTxn.java
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/zookeeper/txn/CreateTTLTxn.java
No license file was found, but licenses were detected in source scan.

Licensed to the Apache Software Foundation (ASF) under one or more contributor license agreements. See the NOTICE file distributed with this work for additional information regarding copyright ownership. The ASF licenses this file to You under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE>

2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Found in path(s):

```
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/jute/compiler/generated/package.html
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-
jar/org/apache/jute/compiler/package.html
* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-jar/org/apache/jute/package.html
No license file was found, but licenses were detected in source scan.
```

```
options {
STATIC=false;
}
```

```
PARSER_BEGIN(Rcc)
```

```
/**
```

```
* Licensed to the Apache Software Foundation (ASF) under one
* or more contributor license agreements. See the NOTICE file
* distributed with this work for additional information
* regarding copyright ownership. The ASF licenses this file
* to you under the Apache License, Version 2.0 (the
* "License"); you may not use this file except in compliance
* with the License. You may obtain a copy of the License at
*
* http://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
```

```
package org.apache.jute.compiler.generated;
```

```
import org.apache.jute.compiler.*;
import java.util.ArrayList;
import java.util.Hashtable;
import java.io.File;
import java.io.FileReader;
import java.io.FileNotFoundException;
import java.io.IOException;
```

```
@SuppressWarnings("unused")
```

```
public class Rcc {
    private static Hashtable<String, JRecord> recTab = new Hashtable<String, JRecord>();
    private static String curDir = System.getProperty("user.dir");
    private static String curFileName;
    private static String curModuleName;

    public static void main(String args[]) {
```

```

String language = "java";
ArrayList<String> recFiles = new ArrayList<String>();
JFile curFile=null;

for (int i=0; i<args.length; i++) {
    if ("-l".equalsIgnoreCase(args[i]) ||
        "--language".equalsIgnoreCase(args[i])) {
        language = args[i+1].toLowerCase();
        i++;
    } else {
        recFiles.add(args[i]);
    }
}
if (!"c++".equals(language) && !"java".equals(language) && !"c".equals(language)) {
    System.out.println("Cannot recognize language:" + language);
    System.exit(1);
}
if (recFiles.size() == 0) {
    System.out.println("No record files specified. Exiting.");
    System.exit(1);
}
for (int i=0; i<recFiles.size(); i++) {
    curFileName = recFiles.get(i);
    File file = new File(curFileName);
    try {
        curFile = parseFile(file);
    } catch (FileNotFoundException e) {
        System.out.println("File " + recFiles.get(i) + " Not found.");
        System.exit(1);
    } catch (ParseException e) {
        System.out.println(e.toString());
        System.exit(1);
    }
    System.out.println(recFiles.get(i) + " Parsed Successfully");
    try {
        curFile.genCode(language, new File("."));
    } catch (IOException e) {
        System.out.println(e.toString());
        System.exit(1);
    }
}
}

public static JFile parseFile(File file) throws FileNotFoundException, ParseException {
    curDir = file.getParent();
    curFileName = file.getName();
    FileReader reader = new FileReader(file);
    try {

```



```

    Rcc parser = new Rcc(reader);
    recTab = new Hashtable<String, JRecord>();
    return parser.Input();
} finally {
    try {
        reader.close();
    } catch (IOException e) {
    }
}
}
}
}

```

PARSER_END(Rcc)

SKIP :

```

{
    " "
| "\t"
| "\n"
| "\r"
}

```

SPECIAL_TOKEN :

```

{
    "/" : WithinOneLineComment
}

```

<WithinOneLineComment> SPECIAL_TOKEN :

```

{
    <("\n" | "\r" | "\r\n" )> : DEFAULT
}

```

<WithinOneLineComment> MORE :

```

{
    <~[]>
}

```

SPECIAL_TOKEN :

```

{
    "/*" : WithinMultiLineComment
}

```

<WithinMultiLineComment> SPECIAL_TOKEN :

```

{
    "*/" : DEFAULT
}

```

<WithinMultiLineComment> MORE :

```
{
<~[]>
}
```

TOKEN :

```
{
  <MODULE_TKN: "module">
| <RECORD_TKN: "class">
| <INCLUDE_TKN: "include">
| <BYTE_TKN: "byte">
| <BOOLEAN_TKN: "boolean">
| <INT_TKN: "int">
| <LONG_TKN: "long">
| <FLOAT_TKN: "float">
| <DOUBLE_TKN: "double">
| <USTRING_TKN: "ustring">
| <BUFFER_TKN: "buffer">
| <VECTOR_TKN: "vector">
| <MAP_TKN: "map">
| <LBRACE_TKN: "{">
| <RBRACE_TKN: "}">
| <LT_TKN: "<">
| <GT_TKN: ">">
| <SEMICOLON_TKN: ";">
| <COMMA_TKN: ",">
| <DOT_TKN: ".">
| <CSTRING_TKN: "\"" ( ~["\""] )+ "\"">
| <IDENT_TKN: ["A"- "Z", "a"- "z"] (["a"- "z", "A"- "Z", "0"- "9", "_"])*>
}
```

JFile Input() :

```
{
  ArrayList<JFile>  ilist = new ArrayList<JFile>();
  ArrayList<JRecord> rlist = new ArrayList<JRecord>();
  JFile i;
  ArrayList <JRecord>l;
}
{
  (
    i = Include()
    { ilist.add(i); }
  | l = Module()
    { rlist.addAll(l); }
  )+
  <EOF>
  { return new JFile(curFileName, ilist, rlist); }
}
```

```

JFile Include() :
{
    String fname;
    Token t;
}
{
    <INCLUDE_TKN>
    t = <CSTRING_TKN>
    {
        JFile ret = null;
        fname = t.image.replaceAll("^\\\"", "").replaceAll("\\\"$", "");
        File file = new File(curDir, fname);
        String tmpDir = curDir;
        String tmpFile = curFileName;
        curDir = file.getParent();
        curFileName = file.getName();
        try {
            FileReader reader = new FileReader(file);
            Rcc parser = new Rcc(reader);
            try {
                ret = parser.Input();
                System.out.println(fname + " Parsed Successfully");
            } catch (ParseException e) {
                System.out.println(e.toString());
                System.exit(1);
            }
            try {
                reader.close();
            } catch (IOException e) {
            }
        } catch (FileNotFoundException e) {
            System.out.println("File " + fname +
                " Not found.");
            System.exit(1);
        }
        curDir = tmpDir;
        curFileName = tmpFile;
        return ret;
    }
}

```

```

ArrayList<JRecord> Module() :

```

```

{
    String mName;
    ArrayList<JRecord> rlist;
}
{
    <MODULE_TKN>

```

```

mName = ModuleName()
{ curModuleName = mName; }
<LBRACE_TKN>
rlist = RecordList()
<RBRACE_TKN>
{ return rlist; }
}

```

String ModuleName() :

```

{
String name = "";
Token t;
}
{
t = <IDENT_TKN>
{ name += t.image; }
(
<DOT_TKN>
t = <IDENT_TKN>
{ name += "." + t.image; }
)*
{ return name; }
}

```

ArrayList<JRecord> RecordList() :

```

{
ArrayList<JRecord> rlist = new ArrayList<JRecord>();
JRecord r;
}
{
(
r = Record()
{ rlist.add(r); }
)+
{ return rlist; }
}

```

JRecord Record() :

```

{
String rname;
ArrayList<JField> flist = new ArrayList<JField>();
Token t;
JField f;
}
{
<RECORD_TKN>
t = <IDENT_TKN>
{ rname = t.image; }
}

```

```

<LBRACE_TKN>
(
  f = Field()
  { flist.add(f); }
  <SEMICOLON_TKN>
)+
<RBRACE_TKN>
{
  String fqcn = curModuleName + "." + rname;
  JRecord r = new JRecord(fqcn, flist);
  recTab.put(fqcn, r);
  return r;
}
}

```

```

JField Field() :
{
  JType jt;
  Token t;
}
{
  jt = Type()
  t = <IDENT_TKN>
  { return new JField(jt, t.image); }
}

```

```

JType Type() :
{
  JType jt;
  Token t;
  String rname;
}
{
  jt = Map()
  { return jt; }
| jt = Vector()
  { return jt; }
| <BYTE_TKN>
  { return new JByte(); }
| <BOOLEAN_TKN>
  { return new JBoolean(); }
| <INT_TKN>
  { return new JInt(); }
| <LONG_TKN>
  { return new JLong(); }
| <FLOAT_TKN>
  { return new JFloat(); }
| <DOUBLE_TKN>

```

```

    { return new JDouble(); }
| <USTRING_TKN>
    { return new JString(); }
| <BUFFER_TKN>
    { return new JBuffer(); }
| rname = ModuleName()
    {
        if (rname.indexOf('.', 0) < 0) {
            rname = curModuleName + "." + rname;
        }
        JRecord r = recTab.get(rname);
        if (r == null) {
            System.out.println("Type " + rname + " not known. Exiting.");
            System.exit(1);
        }
        return r;
    }
}

```

JMap Map() :

```

{
    JType jt1;
    JType jt2;
}
{
    <MAP_TKN>
    <LT_TKN>
    jt1 = Type()
    <COMMA_TKN>
    jt2 = Type()
    <GT_TKN>
    { return new JMap(jt1, jt2); }
}

```

JVector Vector() :

```

{
    JType jt;
}
{
    <VECTOR_TKN>
    <LT_TKN>
    jt = Type()
    <GT_TKN>
    { return new JVector(jt); }
}

```

Found in path(s):

* /opt/cola/permits/1204625930_1631958758.34/0/zookeeper-jute-3-6-3-sources-

1.15 berkeley-db 5.3.28-42.el8_4

1.15.1 Available under license :

Copyright (c) 1996, 2013 Oracle and/or its affiliates. All rights reserved.

See the file LICENSE for redistribution information.

This software is copyrighted by Christian Werner <chw@ch-werner.de> and other authors. The following terms apply to all files associated with the software unless explicitly disclaimed in individual files.

The authors hereby grant permission to use, copy, modify, distribute, and license this software and its documentation for any purpose, provided that existing copyright notices are retained in all copies and that this notice is included verbatim in any distributions. No written agreement, license, or royalty fee is required for any of the authorized uses.

Modifications to this software may be copyrighted by their authors and need not follow the licensing terms described here, provided that the new terms are clearly indicated on the first page of each file where they apply.

IN NO EVENT SHALL THE AUTHORS OR DISTRIBUTORS BE LIABLE TO ANY PARTY FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OF THIS SOFTWARE, ITS DOCUMENTATION, OR ANY DERIVATIVES THEREOF, EVEN IF THE AUTHORS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

THE AUTHORS AND DISTRIBUTORS SPECIFICALLY DISCLAIM ANY WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, AND NON-INFRINGEMENT. THIS SOFTWARE IS PROVIDED ON AN "AS IS" BASIS, AND THE AUTHORS AND DISTRIBUTORS HAVE NO OBLIGATION TO PROVIDE MAINTENANCE, SUPPORT, UPDATES, ENHANCEMENTS, OR MODIFICATIONS.

This software is copyrighted by Christian Werner <chw@ch-werner.de> and others.

The following terms apply to all files associated with the software unless explicitly disclaimed in individual files.

The authors hereby grant permission to use, copy, modify, distribute, and license this software and its documentation for any purpose, provided that existing copyright notices are retained in all copies and that this notice is included verbatim in any distributions. No written agreement, license, or royalty fee is required for any of the authorized uses.

Modifications to this software may be copyrighted by their authors and need not follow the licensing terms described here, provided that the new terms are clearly indicated on the first page of each file where they apply.

IN NO EVENT SHALL THE AUTHORS OR DISTRIBUTORS BE LIABLE TO ANY PARTY FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OF THIS SOFTWARE, ITS DOCUMENTATION, OR ANY DERIVATIVES THEREOF, EVEN IF THE AUTHORS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

THE AUTHORS AND DISTRIBUTORS SPECIFICALLY DISCLAIM ANY WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, AND NON-INFRINGEMENT. THIS SOFTWARE IS PROVIDED ON AN "AS IS" BASIS, AND THE AUTHORS AND DISTRIBUTORS HAVE NO OBLIGATION TO PROVIDE MAINTENANCE, SUPPORT, UPDATES, ENHANCEMENTS, OR MODIFICATIONS.

NOTE

The license is based on the zlib/libpng license. For more details see <http://www.opensource.org/licenses/zlib-license.html>. The intent of the license is to:

- keep the license as simple as possible
- encourage the use of CuTest in both free and commercial applications and libraries
- keep the source code together
- give credit to the CuTest contributors for their work

If you ship CuTest in source form with your source distribution, the following license document must be included with it in unaltered form. If you find CuTest useful we would like to hear about it.

LICENSE

Copyright (c) 2003 Asim Jalis

This software is provided 'as-is', without any express or implied warranty. In no event will the authors be held liable for any damages arising from the use of this software.

Permission is granted to anyone to use this software for any purpose, including commercial applications, and to alter it and redistribute it freely, subject to the following restrictions:

1. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated but is not required.
2. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.

3. This notice may not be removed or altered from any source distribution.

```
/*_  
* $Id$  
*/
```

The following is the license that applies to this copy of the Berkeley DB software. For a license to use the Berkeley DB software under conditions other than those described here, or to purchase support for this software, please contact Oracle at berkeleydb-info_us@oracle.com.

```
-----
```

```
/*  
* Copyright (c) 1990, 2013 Oracle and/or its affiliates. All rights reserved.
```

```
*  
* Redistribution and use in source and binary forms, with or without  
* modification, are permitted provided that the following conditions  
* are met:
```

- * 1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * 2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * 3. Redistributions in any form must be accompanied by information on how to obtain complete source code for the DB software and any accompanying software that uses the DB software. The source code must either be included in the distribution or be available for no more than the cost of distribution plus a nominal fee, and must be freely redistributable under reasonable conditions. For an executable file, complete source code means the source code for all modules it contains. It does not include source code for modules or files that typically accompany the major components of the operating system on which the executable file runs.

```
* THIS SOFTWARE IS PROVIDED BY ORACLE ``AS IS" AND ANY EXPRESS OR  
* IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED  
* WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR  
* NON-INFRINGEMENT, ARE DISCLAIMED. IN NO EVENT SHALL ORACLE BE LIABLE  
* FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR  
* CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF  
* SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR  
* BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY,  
* WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE  
* OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN  
* IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
```

```
*/  
/*  
* Copyright (c) 1990, 1993, 1994, 1995
```

* The Regents of the University of California. All rights reserved.

*

* Redistribution and use in source and binary forms, with or without
* modification, are permitted provided that the following conditions
* are met:

* 1. Redistributions of source code must retain the above copyright

* notice, this list of conditions and the following disclaimer.

* 2. Redistributions in binary form must reproduce the above copyright

* notice, this list of conditions and the following disclaimer in the

* documentation and/or other materials provided with the distribution.

* 3. Neither the name of the University nor the names of its contributors

* may be used to endorse or promote products derived from this software

* without specific prior written permission.

*

* THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS" AND

* ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE

* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE

* ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE

* FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL

* DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS

* OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)

* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT

* LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY

* OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF

* SUCH DAMAGE.

*/

/*

* Copyright (c) 1995, 1996

* The President and Fellows of Harvard University. All rights reserved.

*

* Redistribution and use in source and binary forms, with or without

* modification, are permitted provided that the following conditions

* are met:

* 1. Redistributions of source code must retain the above copyright

* notice, this list of conditions and the following disclaimer.

* 2. Redistributions in binary form must reproduce the above copyright

* notice, this list of conditions and the following disclaimer in the

* documentation and/or other materials provided with the distribution.

* 3. Neither the name of the University nor the names of its contributors

* may be used to endorse or promote products derived from this software

* without specific prior written permission.

*

* THIS SOFTWARE IS PROVIDED BY HARVARD AND ITS CONTRIBUTORS ``AS IS" AND

* ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE

* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE

* ARE DISCLAIMED. IN NO EVENT SHALL HARVARD OR ITS CONTRIBUTORS BE LIABLE

* FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL

* DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS

* OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
* LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
* OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
* SUCH DAMAGE.

*/

/**

* ASM: a very small and fast Java bytecode manipulation framework

* Copyright (c) 2000-2005 INRIA, France Telecom

* All rights reserved.

*

* Redistribution and use in source and binary forms, with or without

* modification, are permitted provided that the following conditions

* are met:

* 1. Redistributions of source code must retain the above copyright

* notice, this list of conditions and the following disclaimer.

* 2. Redistributions in binary form must reproduce the above copyright

* notice, this list of conditions and the following disclaimer in the

* documentation and/or other materials provided with the distribution.

* 3. Neither the name of the copyright holders nor the names of its

* contributors may be used to endorse or promote products derived from

* this software without specific prior written permission.

*

* THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"

* AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE

* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE

* ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE

* LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR

* CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF

* SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS

* INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN

* CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)

* ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF

* THE POSSIBILITY OF SUCH DAMAGE.

*/

This package was debianized by Sam Clegg <samo@debian.org> on

Tue, 25 Jul 2006 11:43:45 +0100.

It was downloaded from <<http://www.ch-werner.de/sqliteodbc/>>

Upstream Author: Christian Werner <chw@ch-werner.de>

Copyright: Copyright (c) 2001-2011 Christian Werner <chw@ch-werner.de>

OS/2 Port Copyright (c) 2004 Lorne R. Sunley <lsunley@mb.sympatico.ca>

License:

This software is copyrighted by Christian Werner <chw@ch-werner.de> and other authors. The following terms apply to all files associated with the software unless explicitly disclaimed in individual files.

The authors hereby grant permission to use, copy, modify, distribute, and license this software and its documentation for any purpose, provided that existing copyright notices are retained in all copies and that this notice is included verbatim in any distributions. No written agreement, license, or royalty fee is required for any of the authorized uses. Modifications to this software may be copyrighted by their authors and need not follow the licensing terms described here, provided that the new terms are clearly indicated on the first page of each file where they apply.

IN NO EVENT SHALL THE AUTHORS OR DISTRIBUTORS BE LIABLE TO ANY PARTY FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OF THIS SOFTWARE, ITS DOCUMENTATION, OR ANY DERIVATIVES THEREOF, EVEN IF THE AUTHORS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

THE AUTHORS AND DISTRIBUTORS SPECIFICALLY DISCLAIM ANY WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, AND NON-INFRINGEMENT. THIS SOFTWARE IS PROVIDED ON AN "AS IS" BASIS, AND THE AUTHORS AND DISTRIBUTORS HAVE NO OBLIGATION TO PROVIDE MAINTENANCE, SUPPORT, UPDATES, ENHANCEMENTS, OR MODIFICATIONS.

The Debian packaging is (C) 2006, Sam Clegg <samo@debian.org> and is licensed under the GPL-3, see `~/usr/share/common-licenses/GPL-3`.

1.16 jaxb-runtime 2.3.4

1.16.1 Available under license :

Copyright (c) 2017 Oracle and/or its affiliates. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

- Neither the name of the Eclipse Foundation, Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Notices for Eclipse Implementation of JAXB

This content is produced and maintained by the Eclipse Implementation of JAXB project.

* Project home: <https://projects.eclipse.org/projects/ee4j.jaxb-impl>

Trademarks

Eclipse Implementation of JAXB is a trademark of the Eclipse Foundation.

Copyright

All content is the property of the respective authors or their employers. For more information regarding authorship of content, please consult the listed source code repository logs.

Declared Project Licenses

This program and the accompanying materials are made available under the terms of the Eclipse Distribution License v. 1.0 which is available at <http://www.eclipse.org/org/documents/edl-v10.php>.

SPDX-License-Identifier: BSD-3-Clause

Source Code

The project maintains the following source code repositories:

- * <https://github.com/eclipse-ee4j/jaxb-ri>
- * <https://github.com/eclipse-ee4j/jaxb-istack-commons>
- * <https://github.com/eclipse-ee4j/jaxb-dtd-parser>
- * <https://github.com/eclipse-ee4j/jaxb-fi>

* <https://github.com/eclipse-ee4j/jaxb-stax-ex>

* <https://github.com/eclipse-ee4j/jax-rpc-ri>

Third-party Content

This project leverages the following third party content.

Apache Ant (1.10.2)

* License: Apache-2.0 AND W3C AND LicenseRef-Public-Domain

Apache Ant (1.10.2)

* License: Apache-2.0 AND W3C AND LicenseRef-Public-Domain

Apache Felix (1.2.0)

* License: Apache License, 2.0

args4j (2.33)

* License: MIT License

dom4j (1.6.1)

* License: Custom license based on Apache 1.1

file-management (3.0.0)

* License: Apache-2.0

* Project: <https://maven.apache.org/shared/file-management/>

* Source:

<https://svn.apache.org/viewvc/maven/shared/tags/file-management-3.0.0/>

JUnit (4.12)

* License: Eclipse Public License

JUnit (4.12)

* License: Eclipse Public License

maven-compat (3.5.2)

* License: Apache-2.0

* Project: <https://maven.apache.org/ref/3.5.2/maven-compat/>

* Source:

<https://mvnrepository.com/artifact/org.apache.maven/maven-compat/3.5.2>

maven-core (3.5.2)

* License: Apache-2.0

* Project: <https://maven.apache.org/ref/3.5.2/maven-core/index.html>

* Source: <https://mvnrepository.com/artifact/org.apache.maven/maven-core/3.5.2>

maven-plugin-annotations (3.5)

* License: Apache-2.0

* Project: <https://maven.apache.org/plugin-tools/maven-plugin-annotations/>

* Source:

<https://github.com/apache/maven-plugin-tools/tree/master/maven-plugin-annotations>

maven-plugin-api (3.5.2)

* License: Apache-2.0

maven-resolver-api (1.1.1)

* License: Apache-2.0

maven-resolver-api (1.1.1)

* License: Apache-2.0

maven-resolver-connector-basic (1.1.1)

* License: Apache-2.0

maven-resolver-impl (1.1.1)

* License: Apache-2.0

maven-resolver-spi (1.1.1)

* License: Apache-2.0

maven-resolver-transport-file (1.1.1)

* License: Apache-2.0

* Project: <https://maven.apache.org/resolver/maven-resolver-transport-file/>

* Source:

<https://github.com/apache/maven-resolver/tree/master/maven-resolver-transport-file>

maven-resolver-util (1.1.1)

* License: Apache-2.0

maven-settings (3.5.2)

* License: Apache-2.0

* Source:

<https://mvnrepository.com/artifact/org.apache.maven/maven-settings/3.5.2>

OSGi Service Platform Core Companion Code (6.0)

* License: Apache License, 2.0

plexus-archiver (3.5)

* License: Apache-2.0

* Project: <https://codehaus-plexus.github.io/plexus-archiver/>

* Source: <https://github.com/codehaus-plexus/plexus-archiver>

plexus-io (3.0.0)

* License: Apache-2.0

plexus-utils (3.1.0)

* License: Apache- 2.0 or Apache- 1.1 or BSD or Public Domain or Indiana University Extreme! Lab Software License V1.1.1 (Apache 1.1 style)

relaxng-datatype (1.0)

* License: New BSD license

Sax (0.2)

* License: SAX-PD

* Project: <http://www.megginson.com/downloads/SAX/>

* Source: http://sourceforge.net/project/showfiles.php?group_id=29449

testng (6.14.2)

* License: Apache-2.0 AND (MIT OR GPL-1.0+)

* Project: <https://testng.org/doc/index.html>

* Source: <https://github.com/cbeust/testng>

wagon-http-lightweight (3.0.0)

* License: Pending

* Project: <https://maven.apache.org/wagon/>

* Source:

<https://mvnrepository.com/artifact/org.apache.maven.wagon/wagon-http-lightweight/3.0.0>

xz for java (1.8)

* License: LicenseRef-Public-Domain

Cryptography

Content may contain encryption software. The country in which you are currently may have restrictions on the import, possession, and use, and/or re-export to another country, of encryption software. BEFORE using any encryption software, please check the country's laws, regulations and policies concerning the import, possession, or use, and re-export of encryption software, to see if this is permitted.

1.17 gnutls 3.6.16-4.el8

1.17.1 Available under license :

The "inih" library is distributed under the New BSD license:

Copyright (c) 2009, Ben Hoyt
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of Ben Hoyt nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY BEN HOYT "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL BEN HOYT BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.

51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in

non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does

and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based

on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and

therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License.

Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the

user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any

particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU

Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990
Ty Coon, President of Vice

That's all there is to it!

GNU LESSER GENERAL PUBLIC LICENSE
Version 3, 29 June 2007

Copyright (C) 1992-2015 by Bruce Korb - all rights reserved
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

This version of the GNU Lesser General Public License incorporates the terms and conditions of version 3 of the GNU General Public License, supplemented by the additional permissions listed below.

0. Additional Definitions.

As used herein, "this License" refers to version 3 of the GNU Lesser General Public License, and the "GNU GPL" refers to version 3 of the GNU General Public License.

"The Library" refers to a covered work governed by this License, other than an Application or a Combined Work as defined below.

An "Application" is any work that makes use of an interface provided by the Library, but which is not otherwise based on the Library. Defining a subclass of a class defined by the Library is deemed a mode of using an interface provided by the Library.

A "Combined Work" is a work produced by combining or linking an Application with the Library. The particular version of the Library with which the Combined Work was made is also called the "Linked

Version".

The "Minimal Corresponding Source" for a Combined Work means the Corresponding Source for the Combined Work, excluding any source code for portions of the Combined Work that, considered in isolation, are based on the Application, and not on the Linked Version.

The "Corresponding Application Code" for a Combined Work means the object code and/or source code for the Application, including any data and utility programs needed for reproducing the Combined Work from the Application, but excluding the System Libraries of the Combined Work.

1. Exception to Section 3 of the GNU GPL.

You may convey a covered work under sections 3 and 4 of this License without being bound by section 3 of the GNU GPL.

2. Conveying Modified Versions.

If you modify a copy of the Library, and, in your modifications, a facility refers to a function or data to be supplied by an Application that uses the facility (other than as an argument passed when the facility is invoked), then you may convey a copy of the modified version:

- a) under this License, provided that you make a good faith effort to ensure that, in the event an Application does not supply the function or data, the facility still operates, and performs whatever part of its purpose remains meaningful, or
- b) under the GNU GPL, with none of the additional permissions of this License applicable to that copy.

3. Object Code Incorporating Material from Library Header Files.

The object code form of an Application may incorporate material from a header file that is part of the Library. You may convey such object code under terms of your choice, provided that, if the incorporated material is not limited to numerical parameters, data structure layouts and accessors, or small macros, inline functions and templates (ten or fewer lines in length), you do both of the following:

- a) Give prominent notice with each copy of the object code that the Library is used in it and that the Library and its use are covered by this License.
- b) Accompany the object code with a copy of the GNU GPL and this license document.

4. Combined Works.

You may convey a Combined Work under terms of your choice that, taken together, effectively do not restrict modification of the portions of the Library contained in the Combined Work and reverse engineering for debugging such modifications, if you also do each of the following:

- a) Give prominent notice with each copy of the Combined Work that the Library is used in it and that the Library and its use are covered by this License.
- b) Accompany the Combined Work with a copy of the GNU GPL and this license document.
- c) For a Combined Work that displays copyright notices during execution, include the copyright notice for the Library among these notices, as well as a reference directing the user to the copies of the GNU GPL and this license document.
- d) Do one of the following:
 - 0) Convey the Minimal Corresponding Source under the terms of this License, and the Corresponding Application Code in a form suitable for, and under terms that permit, the user to recombine or relink the Application with a modified version of the Linked Version to produce a modified Combined Work, in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.
 - 1) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (a) uses at run time a copy of the Library already present on the user's computer system, and (b) will operate properly with a modified version of the Library that is interface-compatible with the Linked Version.
- e) Provide Installation Information, but only if you would otherwise be required to provide such information under section 6 of the GNU GPL, and only to the extent that such information is necessary to install and execute a modified version of the Combined Work produced by recombining or relinking the Application with a modified version of the Linked Version. (If you use option 4d0, the Installation Information must accompany the Minimal Corresponding Source and Corresponding Application Code. If you use option 4d1, you must provide the Installation Information in the manner specified by section 6 of the GNU GPL

for conveying Corresponding Source.)

5. Combined Libraries.

You may place library facilities that are a work based on the Library side by side in a single library together with other library facilities that are not Applications and are not covered by this License, and convey such a combined library under terms of your choice, if you do both of the following:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities, conveyed under the terms of this License.
- b) Give prominent notice with the combined library that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

6. Revised Versions of the GNU Lesser General Public License.

The Free Software Foundation may publish revised and/or new versions of the GNU Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library as you received it specifies that a certain numbered version of the GNU Lesser General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that published version or of any later version published by the Free Software Foundation. If the Library as you received it does not specify a version number of the GNU Lesser General Public License, you may choose any version of the GNU Lesser General Public License ever published by the Free Software Foundation.

If the Library as you received it specifies that a proxy can decide whether future versions of the GNU Lesser General Public License shall apply, that proxy's public statement of acceptance of any version is permanent authorization for you to choose that version for the Library.

Copyright (C) 1992-2015 by Bruce Korb - all rights reserved
Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above

copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

=====
Written by Andy Polyakov <appro@fy.chalmers.se> for the OpenSSL project. The module is, however, dual licensed under OpenSSL and CRYPTOGAMS licenses depending on where you obtain it. For further details see <https://www.openssl.org/~appro/cryptogams/>.
=====

Copyright (c) 2006-2012, CRYPTOGAMS by <appro@openssl.org>
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain copyright notices, this list of conditions and the following disclaimer.

- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

- * Neither the name of the CRYPTOGAMS nor the names of its copyright holder and contributors may be used to endorse or promote products derived from this software without specific prior written permission.

ALTERNATIVELY, provided that this notice is retained in full, this product may be distributed under the terms of the GNU General Public

License (GPL), in which case the provisions of the GPL apply INSTEAD OF those given above.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDER AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

```
#####  
## Constant-time SSSE3 AES core implementation.  
## version 0.1  
##  
## By Mike Hamburg (Stanford University), 2009  
## Public domain.  
##  
## For details see https://shiftright.org/papers/vector\_aes/ and  
## https://crypto.stanford.edu/vpaes/.
```

GNU GENERAL PUBLIC LICENSE
Version 3, 29 June 2007

Copyright (C) 1992-2015 by Bruce Korb - all rights reserved
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you

have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS

0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of

interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you

with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.

b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".

c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.

d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical

medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install

and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered

work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so

available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) by Bruce Korb - all rights reserved
```

```
This program is free software: you can redistribute it and/or modify  
it under the terms of the GNU General Public License as published by  
the Free Software Foundation, either version 3 of the License, or  
(at your option) any later version.
```

```
This program is distributed in the hope that it will be useful,  
but WITHOUT ANY WARRANTY; without even the implied warranty of  
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the  
GNU General Public License for more details.
```

```
You should have received a copy of the GNU General Public License
```

along with this program. If not, see <<https://www.gnu.org/licenses/>>.

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program> Copyright (C) by Bruce Korb - all rights reserved
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <<https://www.gnu.org/licenses/>>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <<https://www.gnu.org/philosophy/why-not-lgpl.html>>.

LICENSING

=====

Since GnuTLS version 3.1.10, the core library is released under the GNU Lesser General Public License (LGPL) version 2.1 or later (see doc/COPYING.LESSER for the license terms).

The GNU LGPL applies to the main GnuTLS library, while the included applications as well as gnutls-openssl library are under the GNU GPL version 3. The gnutls library is located in the lib/ and libdane/ directories, while the applications in src/ and, the gnutls-openssl library is at extra/.

The documentation in doc/ is under the GNU FDL license 1.3.

Note, however, that the nettle and the gmp libraries which are GnuTLS dependencies, they are distributed under a LGPLv3+ or GPLv2+ dual license. As such binaries linking to them need to adhere to either LGPLv3+ or the GPLv2+ license.

For any copyright year range specified as YYYY-ZZZZ in this package note that the range specifies every single year in that closed interval.

The MIT License (MIT)

Copyright (c) 2016 Wrymouth Innovation Ltd

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Statement of Purpose

The laws of most jurisdictions throughout the world automatically confer exclusive Copyright and Related Rights (defined below) upon the creator and subsequent owner(s) (each and all, an "owner") of an original work of authorship and/or a database (each, a "Work").

Certain owners wish to permanently relinquish those rights to a Work for the purpose of contributing to a commons of creative, cultural and scientific works ("Commons") that the public can reliably and without fear of later claims of infringement build upon, modify, incorporate in other works, reuse and redistribute as freely as possible in any form whatsoever and for any purposes, including without limitation commercial purposes. These owners may contribute to the Commons to promote the ideal of a free culture and the further production of creative, cultural and scientific works, or to gain reputation or greater distribution for their Work in part through the use and efforts of others.

For these and/or other purposes and motivations, and without any expectation of additional consideration or compensation, the person associating CC0 with a Work (the "Affirmer"), to the extent that he or she is an owner of Copyright and Related Rights in the Work, voluntarily elects to apply CC0 to the Work and publicly distribute the Work under its terms, with knowledge of his or her Copyright and Related Rights in the Work and the meaning and intended legal effect of CC0 on those rights.

1. Copyright and Related Rights. A Work made available under CC0 may be protected by copyright and related or neighboring rights ("Copyright and Related Rights"). Copyright and Related Rights include, but are not limited to, the following:

the right to reproduce, adapt, distribute, perform, display, communicate, and translate a Work;
moral rights retained by the original author(s) and/or performer(s);

publicity and privacy rights pertaining to a person's image or likeness depicted in a Work;
rights protecting against unfair competition in regards to a Work, subject to the limitations in paragraph 4(a),
below;

rights protecting the extraction, dissemination, use and reuse of data in a Work;
database rights (such as those arising under Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996 on the legal protection of databases, and under any national implementation thereof, including any amended or successor version of such directive); and
other similar, equivalent or corresponding rights throughout the world based on applicable law or treaty, and any national implementations thereof.

2. Waiver. To the greatest extent permitted by, but not in contravention of, applicable law, Affirmer hereby overtly, fully, permanently, irrevocably and unconditionally waives, abandons, and surrenders all of Affirmer's Copyright and Related Rights and associated claims and causes of action, whether now known or unknown (including existing as well as future claims and causes of action), in the Work (i) in all territories worldwide, (ii) for the maximum duration provided by applicable law or treaty (including future time extensions), (iii) in any current or future medium and for any number of copies, and (iv) for any purpose whatsoever, including without limitation commercial, advertising or promotional purposes (the "Waiver"). Affirmer makes the Waiver for the benefit of each member of the public at large and to the detriment of Affirmer's heirs and successors, fully intending that such Waiver shall not be subject to revocation, rescission, cancellation, termination, or any other legal or equitable action to disrupt the quiet enjoyment of the Work by the public as contemplated by Affirmer's express Statement of Purpose.

3. Public License Fallback. Should any part of the Waiver for any reason be judged legally invalid or ineffective under applicable law, then the Waiver shall be preserved to the maximum extent permitted taking into account Affirmer's express Statement of Purpose. In addition, to the extent the Waiver is so judged Affirmer hereby grants to each affected person a royalty-free, non transferable, non sublicensable, non exclusive, irrevocable and unconditional license to exercise Affirmer's Copyright and Related Rights in the Work (i) in all territories worldwide, (ii) for the maximum duration provided by applicable law or treaty (including future time extensions), (iii) in any current or future medium and for any number of copies, and (iv) for any purpose whatsoever, including without limitation commercial, advertising or promotional purposes (the "License"). The License shall be deemed effective as of the date CC0 was applied by Affirmer to the Work. Should any part of the License for any reason be judged legally invalid or ineffective under applicable law, such partial invalidity or ineffectiveness shall not invalidate the remainder of the License, and in such case Affirmer hereby affirms that he or she will not (i) exercise any of his or her remaining Copyright and Related Rights in the Work or (ii) assert any associated claims and causes of action with respect to the Work, in either case contrary to Affirmer's express Statement of Purpose.

4. Limitations and Disclaimers.

No trademark or patent rights held by Affirmer are waived, abandoned, surrendered, licensed or otherwise affected by this document.

Affirmer offers the Work as-is and makes no representations or warranties of any kind concerning the Work, express, implied, statutory or otherwise, including without limitation warranties of title, merchantability, fitness for a particular purpose, non infringement, or the absence of latent or other defects, accuracy, or the present or absence of errors, whether or not discoverable, all to the greatest extent permissible under applicable law.

Affirmer disclaims responsibility for clearing rights of other persons that may apply to the Work or any use thereof, including without limitation any person's Copyright and Related Rights in the Work. Further, Affirmer disclaims responsibility for obtaining any necessary consents, permissions or other rights required for any use of the Work.

Affirmer understands and acknowledges that Creative Commons is not a party to this document and has no duty or obligation with respect to this CC0 or use of the Work.

GNU GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<https://fsf.org/>>

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as

changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS

0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a

computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically

linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or

modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.
- b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".
- c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.
- d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an

"aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and

protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that

material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under

this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or

hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment

to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software

Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see <https://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program> Copyright (C) <year> <name of author>  
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.  
This is free software, and you are welcome to redistribute it  
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <https://www.gnu.org/licenses/>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you

may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <<https://www.gnu.org/philosophy/why-not-lgpl.html>>.

1.18 springfox-schema 3.0.0

1.18.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/*
 *
 * Copyright 2016 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 *     http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 *
 *
 */
```

Found in path(s):

```
* /opt/ws_local/PERMITS_SQL/1082518454_1597956193.64/0/springfox-schema-3-0-0-sources-
jar/springfox/documentation/schema/property/SimpleMethodSignatureEquality.java
```

No license file was found, but licenses were detected in source scan.

```
/*
 *
 * Copyright 2015 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 *     http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
```


- * See the License for the specific language governing permissions and
- * limitations under the License.
- *
- *
- */

Found in path(s):

- * /opt/ws_local/PERMITS_SQL/1082518454_1597956193.64/0/springfox-schema-3-0-0-sources-jar/springfox/documentation/schema/ModelDependencyProvider.java
- * /opt/ws_local/PERMITS_SQL/1082518454_1597956193.64/0/springfox-schema-3-0-0-sources-jar/springfox/documentation/schema/ModelProvider.java
- * /opt/ws_local/PERMITS_SQL/1082518454_1597956193.64/0/springfox-schema-3-0-0-sources-jar/springfox/documentation/schema/Maps.java
- * /opt/ws_local/PERMITS_SQL/1082518454_1597956193.64/0/springfox-schema-3-0-0-sources-jar/springfox/documentation/schema/CodeGenGenericTypeNamingStrategy.java
- * /opt/ws_local/PERMITS_SQL/1082518454_1597956193.64/0/springfox-schema-3-0-0-sources-jar/springfox/documentation/schema/Collections.java
- * /opt/ws_local/PERMITS_SQL/1082518454_1597956193.64/0/springfox-schema-3-0-0-sources-jar/springfox/documentation/schema/property/PojoPropertyBuilderFactory.java
- * /opt/ws_local/PERMITS_SQL/1082518454_1597956193.64/0/springfox-schema-3-0-0-sources-jar/springfox/documentation/schema/DefaultTypeNameProvider.java
- * /opt/ws_local/PERMITS_SQL/1082518454_1597956193.64/0/springfox-schema-3-0-0-sources-jar/springfox/documentation/schema/property/BeanPropertyDefinitions.java
- * /opt/ws_local/PERMITS_SQL/1082518454_1597956193.64/0/springfox-schema-3-0-0-sources-jar/springfox/documentation/schema/property/field/FieldModelProperty.java
- * /opt/ws_local/PERMITS_SQL/1082518454_1597956193.64/0/springfox-schema-3-0-0-sources-jar/springfox/documentation/schema/configuration/ObjectMapperConfigured.java
- * /opt/ws_local/PERMITS_SQL/1082518454_1597956193.64/0/springfox-schema-3-0-0-sources-jar/springfox/documentation/schema/ModelSpecificationProvider.java
- * /opt/ws_local/PERMITS_SQL/1082518454_1597956193.64/0/springfox-schema-3-0-0-sources-jar/springfox/documentation/schema/property/bean/ParameterModelProperty.java
- * /opt/ws_local/PERMITS_SQL/1082518454_1597956193.64/0/springfox-schema-3-0-0-sources-jar/springfox/documentation/schema/property/ModelProperty.java
- * /opt/ws_local/PERMITS_SQL/1082518454_1597956193.64/0/springfox-schema-3-0-0-sources-jar/springfox/documentation/schema/property/BeanPropertyNamingStrategy.java
- * /opt/ws_local/PERMITS_SQL/1082518454_1597956193.64/0/springfox-schema-3-0-0-sources-jar/springfox/documentation/schema/plugins/SchemaPluginsManager.java
- * /opt/ws_local/PERMITS_SQL/1082518454_1597956193.64/0/springfox-schema-3-0-0-sources-jar/springfox/documentation/schema/DefaultGenericTypeNamingStrategy.java
- * /opt/ws_local/PERMITS_SQL/1082518454_1597956193.64/0/springfox-schema-3-0-0-sources-jar/springfox/documentation/schema/configuration/ModelsConfiguration.java
- * /opt/ws_local/PERMITS_SQL/1082518454_1597956193.64/0/springfox-schema-3-0-0-sources-jar/springfox/documentation/schema/property/ModelPropertyProvider.java

No license file was found, but licenses were detected in source scan.

- /*
- *
- * Copyright 2015-2019 the original author or authors.

*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* <http://www.apache.org/licenses/LICENSE-2.0>
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*
*
*/

Found in path(s):

* /opt/ws_local/PERMITS_SQL/1082518454_1597956193.64/0/springfox-schema-3-0-0-sources-jar/springfox/documentation/schema/property/BaseModelProperty.java
* /opt/ws_local/PERMITS_SQL/1082518454_1597956193.64/0/springfox-schema-3-0-0-sources-jar/springfox/documentation/schema/property/CachingModelPropertyProvider.java
* /opt/ws_local/PERMITS_SQL/1082518454_1597956193.64/0/springfox-schema-3-0-0-sources-jar/springfox/documentation/schema/property/bean/Accessors.java
* /opt/ws_local/PERMITS_SQL/1082518454_1597956193.64/0/springfox-schema-3-0-0-sources-jar/springfox/documentation/schema/ModelReferenceProvider.java
* /opt/ws_local/PERMITS_SQL/1082518454_1597956193.64/0/springfox-schema-3-0-0-sources-jar/springfox/documentation/schema/property/bean/BeanModelProperty.java
* /opt/ws_local/PERMITS_SQL/1082518454_1597956193.64/0/springfox-schema-3-0-0-sources-jar/springfox/documentation/schema/ResolvedTypes.java
* /opt/ws_local/PERMITS_SQL/1082518454_1597956193.64/0/springfox-schema-3-0-0-sources-jar/springfox/documentation/schema/property/bean/AccessorsProvider.java
* /opt/ws_local/PERMITS_SQL/1082518454_1597956193.64/0/springfox-schema-3-0-0-sources-jar/springfox/documentation/schema/property/FactoryMethodProvider.java
* /opt/ws_local/PERMITS_SQL/1082518454_1597956193.64/0/springfox-schema-3-0-0-sources-jar/springfox/documentation/schema/property/field/FieldProvider.java
* /opt/ws_local/PERMITS_SQL/1082518454_1597956193.64/0/springfox-schema-3-0-0-sources-jar/springfox/documentation/schema/Annotations.java
* /opt/ws_local/PERMITS_SQL/1082518454_1597956193.64/0/springfox-schema-3-0-0-sources-jar/springfox/documentation/schema/DefaultModelSpecificationProvider.java
* /opt/ws_local/PERMITS_SQL/1082518454_1597956193.64/0/springfox-schema-3-0-0-sources-jar/springfox/documentation/schema/DefaultModelProvider.java
* /opt/ws_local/PERMITS_SQL/1082518454_1597956193.64/0/springfox-schema-3-0-0-sources-jar/springfox/documentation/schema/DefaultModelDependencyProvider.java
* /opt/ws_local/PERMITS_SQL/1082518454_1597956193.64/0/springfox-schema-3-0-0-sources-jar/springfox/documentation/schema/property/OptimizedModelPropertyProvider.java
* /opt/ws_local/PERMITS_SQL/1082518454_1597956193.64/0/springfox-schema-3-0-0-sources-jar/springfox/documentation/schema/TypeNameExtractor.java
* /opt/ws_local/PERMITS_SQL/1082518454_1597956193.64/0/springfox-schema-3-0-0-sources-

jar/springfox/documentation/schema/CachingModelProvider.java
* /opt/ws_local/PERMITS_SQL/1082518454_1597956193.64/0/springfox-schema-3-0-0-sources-
jar/springfox/documentation/schema/CachingModelDependencyProvider.java
* /opt/ws_local/PERMITS_SQL/1082518454_1597956193.64/0/springfox-schema-3-0-0-sources-
jar/springfox/documentation/schema/property/ObjectMapperBeanPropertyNamingStrategy.java
No license file was found, but licenses were detected in source scan.

```
/*  
*  
* Copyright 2015-2016 the original author or authors.  
*  
* Licensed under the Apache License, Version 2.0 (the "License");  
* you may not use this file except in compliance with the License.  
* You may obtain a copy of the License at  
*  
* http://www.apache.org/licenses/LICENSE-2.0  
*  
* Unless required by applicable law or agreed to in writing, software  
* distributed under the License is distributed on an "AS IS" BASIS,  
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
* See the License for the specific language governing permissions and  
* limitations under the License.  
*  
*  
*/
```

Found in path(s):

* /opt/ws_local/PERMITS_SQL/1082518454_1597956193.64/0/springfox-schema-3-0-0-sources-
jar/springfox/documentation/schema/Types.java
* /opt/ws_local/PERMITS_SQL/1082518454_1597956193.64/0/springfox-schema-3-0-0-sources-
jar/springfox/documentation/schema/JacksonEnumTypeDeterminer.java
No license file was found, but licenses were detected in source scan.

```
/*  
*  
* Copyright 2017-2019 the original author or authors.  
*  
* Licensed under the Apache License, Version 2.0 (the "License");  
* you may not use this file except in compliance with the License.  
* You may obtain a copy of the License at  
*  
* http://www.apache.org/licenses/LICENSE-2.0  
*  
* Unless required by applicable law or agreed to in writing, software  
* distributed under the License is distributed on an "AS IS" BASIS,  
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
* See the License for the specific language governing permissions and  
* limitations under the License.
```

*
*
*/

Found in path(s):

* /opt/ws_local/PERMITS_SQL/1082518454_1597956193.64/0/springfox-schema-3-0-0-sources-jar/springfox/documentation/schema/JaxbPresentInClassPathCondition.java
* /opt/ws_local/PERMITS_SQL/1082518454_1597956193.64/0/springfox-schema-3-0-0-sources-jar/springfox/documentation/schema/plugins/XmlModelPlugin.java
* /opt/ws_local/PERMITS_SQL/1082518454_1597956193.64/0/springfox-schema-3-0-0-sources-jar/springfox/documentation/schema/plugins/PropertyDiscriminatorBasedInheritancePlugin.java
* /opt/ws_local/PERMITS_SQL/1082518454_1597956193.64/0/springfox-schema-3-0-0-sources-jar/springfox/documentation/schema/property/XmlPropertyPlugin.java
* /opt/ws_local/PERMITS_SQL/1082518454_1597956193.64/0/springfox-schema-3-0-0-sources-jar/springfox/documentation/schema/plugins/JacksonXmlModelPlugin.java
* /opt/ws_local/PERMITS_SQL/1082518454_1597956193.64/0/springfox-schema-3-0-0-sources-jar/springfox/documentation/schema/plugins/JsonIgnorePropertiesModelPlugin.java
* /opt/ws_local/PERMITS_SQL/1082518454_1597956193.64/0/springfox-schema-3-0-0-sources-jar/springfox/documentation/schema/property/JacksonXmlPropertyPlugin.java

No license file was found, but licenses were detected in source scan.

/*

*

* Copyright 2017 the original author or authors.

*

* Licensed under the Apache License, Version 2.0 (the "License");

* you may not use this file except in compliance with the License.

* You may obtain a copy of the License at

*

* <http://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software

* distributed under the License is distributed on an "AS IS" BASIS,

* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

* See the License for the specific language governing permissions and

* limitations under the License.

*

*

*/

Found in path(s):

* /opt/ws_local/PERMITS_SQL/1082518454_1597956193.64/0/springfox-schema-3-0-0-sources-jar/springfox/documentation/schema/JacksonJsonViewProvider.java
* /opt/ws_local/PERMITS_SQL/1082518454_1597956193.64/0/springfox-schema-3-0-0-sources-jar/springfox/documentation/schema/TypeNameIndexingAdapter.java

1.19 html5lib 1.0b10

1.19.1 Available under license :

Copyright (c) 2006-2013 James Graham and other contributors

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2006-2013 James Graham, Geoffrey Sneddon, and other contributors

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

1.20 audit 3.0.7-2.el8.2

1.20.1 Available under license :

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.

51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source

code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

^L

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it

becomes

a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

^L

GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means

all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the

application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

^L

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

^L

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work

during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally

accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

^L

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

^L

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or

otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by

the Free Software Foundation.

^L

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

^L

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full

notice is found.

<one line to give the library's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990
Ty Coon, President of Vice

That's all there is to it!

GNU LESSER GENERAL PUBLIC LICENSE
Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of

any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the

Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or

collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a

copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made

generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE

LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990
Ty Coon, President of Vice

That's all there is to it!

GNU GENERAL PUBLIC LICENSE
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.
59 Temple Place, Suite 330, Boston, MA 02111-1307 USA
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or

distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in

certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE

POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author  
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.  
This is free software, and you are welcome to redistribute it  
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program `Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

1.21 args4j 2.0.16

1.21.1 Available under license :

The MIT License (MIT)

Copyright (c) 2014-2016, Jon Schlinkert

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

1.22 spring-web 5.3.21

1.22.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
# Copyright 2002-2021 the original author or authors.  
#  
# Licensed under the Apache License, Version 2.0 (the "License");  
# you may not use this file except in compliance with the License.  
# You may obtain a copy of the License at  
#  
# https://www.apache.org/licenses/LICENSE-2.0  
#  
# Unless required by applicable law or agreed to in writing, software  
# distributed under the License is distributed on an "AS IS" BASIS,  
# WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
# See the License for the specific language governing permissions and  
# limitations under the License.
```

org.springframework.web.server.adapter.WebHttpHandlerBuilder\$SpringWebBlockHoundIntegration

Found in path(s):

```
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/META-INF/services/reactor.blockhound.integration.BlockHoundIntegration  
No license file was found, but licenses were detected in source scan.
```

```
/*
```

```
* Copyright 2002-2019 the original author or authors.  
*  
* Licensed under the Apache License, Version 2.0 (the "License");  
* you may not use this file except in compliance with the License.  
* You may obtain a copy of the License at  
*  
* https://www.apache.org/licenses/LICENSE-2.0  
*  
* Unless required by applicable law or agreed to in writing, software  
* distributed under the License is distributed on an "AS IS" BASIS,  
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
* See the License for the specific language governing permissions and  
* limitations under the License.  
*/
```

Found in path(s):

```
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/converter/ByteArrayHttpMessageConverter.java  
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/codec/FormHttpMessageReader.java  
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/client/UnknownHttpStatusCodeException.java  
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
```

jar/org/springframework/http/codec/FormHttpMessageWriter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/client/RestOperationsExtensions.kt
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/context/support/RequestHandledEvent.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/server/adapter/DefaultServerWebExchange.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/converter/xml/AbstractJaxb2HttpMessageConverter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/client/support/BasicAuthenticationInterceptor.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/codec/cbor/Jackson2CborEncoder.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/server/handler/WebHandlerDecorator.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/codec/ClientCodecConfigurer.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/codec/xml/XmlEventDecoder.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/client/HttpServerErrorException.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/server/reactive/ChannelSendOperator.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/client/HttpStatusCodeException.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/client/InterceptingClientHttpRequest.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/filter/reactive/ServerWebExchangeContextFilter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/cors/reactive/CorsWebFilter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/server/ServerWebExchangeDecorator.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/client/HttpClientErrorException.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/bind/annotation/RestControllerAdvice.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/method/support/AsyncHandlerMethodReturnValueHandler.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/codec/cbor/Jackson2CborDecoder.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/codec/protobuf/ProtobufEncoder.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/codec/xml/JaxbContextContainer.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/CacheControl.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-

jar/org/springframework/web/accept/MediaTypeFileExtensionResolver.java
 * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
 jar/org/springframework/http/converter/xml/Jaxb2RootElementHttpMessageConverter.java
 * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
 jar/org/springframework/web/util/ContentCachingResponseWrapper.java
 * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
 jar/org/springframework/http/codec/support/DefaultServerCodecConfigurer.java
 * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
 jar/org/springframework/web/accept/FixedContentNegotiationStrategy.java
 * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
 jar/org/springframework/http/client/SimpleClientHttpResponse.java
 * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
 jar/org/springframework/http/client/OkHttp3ClientHttpRequestFactory.java
 * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
 jar/org/springframework/web/util/pattern/PathPatternRouteMatcher.java
 * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
 jar/org/springframework/http/codec/ServerCodecConfigurer.java
 * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
 jar/org/springframework/http/client/support/HttpAccessor.java
 * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
 jar/org/springframework/http/client/ClientHttpRequestInitializer.java
 * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
 jar/org/springframework/http/server/ServerHttpRequest.java
 * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
 jar/org/springframework/web/client/RestClientResponseException.java
 * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
 jar/org/springframework/web/util/pattern/InternalPathPatternParser.java
 * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
 jar/org/springframework/web/method/annotation/AbstractWebArgumentResolverAdapter.java
 * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
 jar/org/springframework/http/converter/protobuf/ProtobufHttpMessageConverter.java
 * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
 jar/org/springframework/web/server/handler/DefaultWebFilterChain.java
 * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
 jar/org/springframework/http/codec/support/DefaultClientCodecConfigurer.java
 * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
 jar/org/springframework/web/bind/annotation/ControllerAdvice.java
 * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
 jar/org/springframework/http/HttpRange.java
 * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
 jar/org/springframework/web/context/support/ServletContextScope.java
 * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
 jar/org/springframework/web/context/request/ServletRequestAttributes.java
 * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
 jar/org/springframework/web/context/ContextCleanupListener.java
 No license file was found, but licenses were detected in source scan.

/*

* Copyright 2002-2015 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* <https://www.apache.org/licenses/LICENSE-2.0>
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/

Found in path(s):

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/server/WebFilterChain.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/bind/support/SpringWebConstraintValidatorFactory.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/multipart/MultipartResolver.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/filter/RequestContextFilter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/context/request/RequestContextListener.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/HttpMessage.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/converter/HttpMessageConversionException.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/context/request/DestructionCallbackBindingListener.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/filter/CommonsRequestLoggingFilter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/bind/annotation/SessionAttributes.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/converter/HttpMessageNotWritableException.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/server/WebFilter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/util/HttpSessionMutexListener.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/client/AbstractClientHttpRequestFactoryWrapper.java
No license file was found, but licenses were detected in source scan.

/*

* Copyright 2002-2009 the original author or authors.

*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* <https://www.apache.org/licenses/LICENSE-2.0>
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/

Found in path(s):

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/bind/annotation/Mapping.java
No license file was found, but licenses were detected in source scan.

/*
* Copyright 2002-2016 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* <https://www.apache.org/licenses/LICENSE-2.0>
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/

Found in path(s):

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/bind/annotation/RequestAttribute.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/bind/support/WebBindingInitializer.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/bind/annotation/PatchMapping.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/bind/annotation/SessionAttribute.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/converter/json/HandlerInstantiator.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/HttpRequestHandler.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/context/request/FacesWebRequest.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/context/request/SessionScope.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/client/ClientHttpRequestFactory.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/context/request/RequestScope.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/util/WebAppRootListener.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/remoting/httpinvoker/HttpInvokerRequestExecutor.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/bind/annotation/DeleteMapping.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/context/annotation/RequestScope.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/bind/annotation/PostMapping.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/bind/annotation/GetMapping.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/multipart/MultipartRequest.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/context/annotation/ApplicationScope.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/client/ClientHttpRequestExecution.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/server/WebExceptionHandler.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/context/WebApplicationContext.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/bind/annotation/PutMapping.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/cors/reactive/CorsConfigurationSource.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/ReactiveHttpOutputMessage.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/ReactiveHttpInputMessage.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/context/request/WebRequestInterceptor.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/filter/CompositeFilter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/method/annotation/RequestHeaderMapMethodArgumentResolver.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/context/request/async/TimeoutDeferredResultProcessingInterceptor.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/cors/CorsConfigurationSource.java


```
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/context/request/async/AsyncRequestTimeoutException.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/server/WebHandler.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/context/request/RequestContextHolder.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/context/annotation/SessionScope.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/server/session/WebSessionManager.java
No license file was found, but licenses were detected in source scan.
```

```
/*
* Copyright 2002-2018 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
```

Found in path(s):

```
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/context/support/XmlWebApplicationContext.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/converter/protobuf/ExtensionRegistryInitializer.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/context/request/async/WebAsyncUtils.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/jsf/el/WebApplicationContextFacesELResolver.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/multipart/support/AbstractMultipartHttpServletRequest.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/bind/annotation/RequestParam.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/context/support/AbstractRefreshableWebApplicationContext.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/jsf/DelegatingNavigationHandlerProxy.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/context/request/async/WebAsyncTask.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
```

jar/org/springframework/web/server/i18n/FixedLocaleContextResolver.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/converter/GenericHttpMessageConverter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/remoting/jaxws/SimpleJaxWsServiceExporter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/context/ContextLoader.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/bind/annotation/RequestBody.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/server/adapters/AbstractReactiveWebInitializer.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/StreamingHttpOutputMessage.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/InvalidMediaTypeException.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/WebApplicationInitializer.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/bind/annotation/MatrixVariable.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/cors/CorsProcessor.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/bind/ServletRequestParamPropertyValues.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/filter/HttpPutFormContentFilter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/codec/HttpMessageDecoder.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/HttpSessionRequiredException.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/client/Netty4ClientHttpRequest.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/client/HttpComponentsClientHttpResponse.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/context/request/async/CallableInterceptorChain.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/multipart/support/MultipartFilter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/client/support/RestGatewaySupport.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/server/WebSession.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/util/OpaqueUriComponents.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/context/ContextLoaderListener.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/client/reactive/ClientHttpConnector.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-

jar/org/springframework/web/context/support/GroovyWebApplicationContext.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/bind/annotation/ResponseBody.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/filter/CharacterEncodingFilter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/multipart/support/DefaultMultipartHttpServletRequest.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/codec/CodecConfigurerFactory.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/ZeroCopyHttpOutputMessage.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/multipart/commons/CommonsFileUploadSupport.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/client/InterceptingAsyncClientHttpRequest.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/util/CookieGenerator.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/converter/ObjectToStringHttpMessageConverter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/server/handler/FilteringWebHandler.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/accept/ContentNegotiationStrategy.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/util/TagUtils.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/util/UriTemplateHandler.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/bind/support/ConfigurableWebBindingInitializer.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/server/DefaultServerWebExchangeBuilder.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/bind/annotation/RequestHeader.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/context/request/AbstractRequestAttributes.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/context/support/ServletRequestHandledEvent.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/codec/protobuf/ProtobufCodecSupport.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/server/reactive/SslInfo.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/remoting/httpinvoker/SimpleHttpInvokerRequestExecutor.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/context/request/FacesRequestAttributes.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/accept/AbstractMappingContentNegotiationStrategy.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-

jar/org/springframework/remoting/jaxws/LocalJaxWsServiceFactory.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/client/BufferingClientHttpRequestFactory.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/util/DefaultUriTemplateHandler.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/client/ClientHttpRequestInterceptor.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/filter/FormContentFilter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/method/annotation/ExpressionValueMethodArgumentResolver.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/converter/xml/MarshallingHttpMessageConverter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/filter/reactive/HiddenHttpMethodFilter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/client/HttpComponentsClientHttpRequest.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/client/ResponseErrorHandler.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/remoting/jaxws/AbstractJaxWsServiceExporter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/util/NestedServletException.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/codec/protobuf/ProtobufHttpMessageWriter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/client/InterceptingAsyncClientHttpRequestFactory.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/context/AbstractContextLoaderInitializer.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/client/HttpComponentsAsyncClientHttpRequestFactory.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/remoting/httpinvoker/HttpComponentsHttpInvokerRequestExecutor.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/method/annotation/InitBinderDataBinderFactory.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/client/Netty4ClientHttpRequestFactory.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/client/support/BasicAuthorizationInterceptor.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/codec/LoggingCodecSupport.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/server/reactive/ReactorHttpHandlerAdapter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/method/annotation/SessionAttributesHandler.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/server/reactive/HttpHandler.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-

jar/org/springframework/http/codec/HttpMessageEncoder.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/filter/HiddenHttpMethodFilter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/context/ServletContextAware.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/context/support/ServletContextAttributeExporter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/method/annotation/ErrorsMethodArgumentResolver.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/client/AsyncRestTemplate.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/filter/RelativeRedirectFilter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/converter/AbstractGenericHttpMessageConverter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/util/HtmlCharacterEntityReferences.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/context/request/ServletWebRequest.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/client/reactive/JettyResourceFactory.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/client/SimpleBufferingClientHttpRequest.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/codec/json/Jackson2SmileDecoder.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/client/support/AsyncHttpAccessor.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/util/pattern/PathElement.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/client/ResponseExtractor.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/server/reactive/ContextPathCompositeHandler.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/remoting/caucho/SimpleHessianServiceExporter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/HttpLogging.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/HttpOutputMessage.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/context/request/async/DeferredResultInterceptorChain.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/client/SimpleStreamingClientHttpRequest.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/converter/HttpMessageNotReadableException.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/HttpInputMessage.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-

jar/org/springframework/web/filter/RelativeRedirectResponseWrapper.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/bind/annotation/PathVariable.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/remoting/caucho/HessianServiceExporter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/remoting/httpinvoker/SimpleHttpInvokerServiceExporter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/server/ServerErrorException.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/multipart/support/StandardMultipartHttpServletRequest.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/bind/annotation/RequestPart.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/util/JavaScriptUtils.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/HttpRequest.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/accept/HeaderContentNegotiationStrategy.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/remoting/caucho/HessianExporter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/server/reactive/DefaultSslInfo.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/context/ServletConfigAware.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/client/ExtractingResponseErrorHandler.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/remoting/jaxws/SimpleHttpServerJaxWsServiceExporter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/context/support/ServletContextResource.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/client/InterceptingClientHttpRequestFactory.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/accept/ParameterContentNegotiationStrategy.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/converter/json/MappingJacksonValue.java
No license file was found, but licenses were detected in source scan.

/*

* Copyright 2002-2021 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* <https://www.apache.org/licenses/LICENSE-2.0>
*

- * Unless required by applicable law or agreed to in writing, software
- * distributed under the License is distributed on an "AS IS" BASIS,
- * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- * See the License for the specific language governing permissions and
- * limitations under the License.
- */

Found in path(s):

- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/server/reactive/AbstractListenerServerHttpResponse.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/multipart/MultipartFileResource.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/util/UrlPathHelper.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/util/HtmlCharacterEntityDecoder.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/client/reactive/JettyClientHttpConnector.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/codec/support/ServerDefaultCodecsImpl.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/converter/json/Jackson2ObjectMapperBuilder.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/method/annotation/AbstractCookieValueMethodArgumentResolver.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/codec/ServerSentEvent.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/server/reactive/ServletServerHttpResponse.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/server/reactive/UndertowServerHttpRequest.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/client/reactive/ReactorClientHttpResponse.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/bind/annotation/CookieValue.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/bind/support/WebExchangeBindException.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/cors/reactive/PreFlightRequestWebFilter.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/ResponseEntity.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/server/reactive/ServletHttpHandlerAdapter.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/method/support/InvocableHandlerMethod.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/util/UriBuilder.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/util/pattern/PatternParseException.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/server/adapters/HttpWebHandlerAdapter.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/client/RestOperations.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/converter/HttpMessageConverter.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/method/support/ModelAndViewContainer.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/codec/json/AbstractJackson2Decoder.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/util/pattern/LiteralPathElement.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/method/annotation/ExceptionHandlerMethodResolver.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/client/reactive/ClientHttpResponseDecorator.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/client/reactive/ClientHttpResponse.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/util/HtmlUtils.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/client/RequestCallback.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/server/reactive/WriteResultPublisher.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/filter/ForwardedHeaderFilter.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/client/SimpleBufferingAsyncClientHttpRequest.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/codec/multipart/FilePart.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/method/annotation/RequestParamMethodArgumentResolver.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/codec/EncoderHttpMessageWriter.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/multipart/commons/CommonsMultipartResolver.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/util/UriComponents.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/bind/MethodArgumentNotValidException.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/server/UnsupportedMediaTypeStatusException.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/codec/multipart/SynchronossPartHttpMessageReader.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/cors/reactive/PreFlightRequestHandler.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/codec/json/Jackson2CodecSupport.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/client/DefaultResponseErrorHandler.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/multipart/MultipartFile.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/util/pattern/PathPattern.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/bind/MissingMatrixVariableException.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/ResponseCookie.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/filter/DelegatingFilterProxy.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/util/pattern/WildcardTheRestPathElement.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/codec/support/BaseDefaultCodecs.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/server/MediaTypeNotSupportedStatusException.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/client/MessageBodyClientHttpResponseWrapper.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/server/reactive/TomcatHeadersAdapter.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/server/reactive/DefaultServerHttpRequestBuilder.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/util/UriTemplate.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/server/reactive/JettyHttpHandlerAdapter.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/server/reactive/UndertowHeadersAdapter.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/util/pattern/CaptureVariablePathElement.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/RequestEntity.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/client/RestTemplate.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/server/handler/ResponseStatusExceptionHandler.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/converter/json/Jackson2ObjectMapperFactoryBean.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/server/ResponseStatusException.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/codec/xml/Jaxb2XmlEncoder.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/server/DefaultPathContainer.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/codec/HttpMessageWriter.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/codec/multipart/FileStorage.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/client/reactive/JettyClientHttpResponse.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/bind/MissingRequestHeaderException.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/codec/HttpMessageReader.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/method/annotation/ModelAttributeMethodProcessor.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/bind/UnsatisfiedServletRequestParameterException.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/util/pattern/CaptureTheRestPathElement.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/codec/protobuf/ProtobufDecoder.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/util/pattern/SingleCharWildcardedPathElement.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/codec/support/ClientDefaultCodecsImpl.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/bind/annotation/ResponseStatus.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/bind/MissingPathVariableException.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/converter/json/KotlinSerializationJsonHttpMessageConverter.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/HttpEntity.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/server/PathContainer.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/codec/json/KotlinSerializationJsonDecoder.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/util/UriComponentsBuilder.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/context/support/SpringBeanAutowiringSupport.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/client/reactive/JettyHeadersAdapter.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/multipart/support/StandardServletMultipartResolver.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/method/support/CompositeUriComponentsContributor.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/context/support/StandardServletEnvironment.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/method/annotation/RequestHeaderMethodArgumentResolver.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/client/MultipartBodyBuilder.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/bind/MissingServletRequestParameterException.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/method/annotation/AbstractNamedValueMethodArgumentResolver.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/server/session/InMemoryWebSessionStore.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/codec/multipart/DefaultPartHttpMessageReader.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/bind/annotation/CrossOrigin.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/util/pattern/RegexPathElement.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/util/pattern/WildcardPathElement.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/util/pattern/SeparatorPathElement.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/server/reactive/HttpHandlerDecoratorFactory.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/filter/AbstractRequestLoggingFilter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/client/reactive/ReactorClientHttpConnector.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/codec/DecoderHttpMessageReader.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/server/adapters/WebHttpHandlerBuilder.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/server/reactive/ReactorServerHttpResponse.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/server/reactive/AbstractListenerWriteFlushProcessor.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/codec/ServerSentEventHttpMessageWriter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/HttpStatus.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/server/reactive/JettyHeadersAdapter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/bind/MissingRequestValueException.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/util/ContentCachingRequestWrapper.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/server/reactive/UndertowServerHttpResponse.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/filter/ServletRequestPathFilter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/client/AsyncRequestCallback.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/MediaType.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/cors/CorsConfiguration.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/server/reactive/NettyHeadersAdapter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/bind/annotation/ExceptionHandler.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/client/reactive/NettyHeadersAdapter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/server/reactive/AbstractListenerWriteProcessor.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/HttpHeaders.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/codec/json/Jackson2SmileEncoder.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/MediaTypeFactory.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/codec/CodecConfigurer.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/server/reactive/ServerHttpRequestDecorator.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/filter/reactive/ForwardedHeaderFilter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/ContentDisposition.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/filter/OncePerRequestFilter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/server/reactive/ServerHttpRequest.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/bind/MissingRequestCookieException.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/method/HandlerTypePredicate.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/codec/json/KotlinSerializationJsonEncoder.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/multipart/MultipartHttpServletRequest.java

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2002-2019 the original author or authors.

*

* Licensed under the Apache License, Version 2.0 (the "License");

* you may not use this file except in compliance with the License.

* You may obtain a copy of the License at

*

* <https://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software

* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.

*/

/**

* Return the web session for the current request. Always guaranteed to
* return an instance either matching to the session id requested by the
* client, or with a new session id either because the client did not
* specify one or because the underlying session had expired. Use of this
* method does not automatically create a session. See {@link WebSession}
* for more details.

*/

Found in path(s):

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/server/ServerWebExchange.java

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2002-2010 the original author or authors.

*

* Licensed under the Apache License, Version 2.0 (the "License");

* you may not use this file except in compliance with the License.

* You may obtain a copy of the License at

*

* <https://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software

* distributed under the License is distributed on an "AS IS" BASIS,

* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

* See the License for the specific language governing permissions and

* limitations under the License.

*/

Found in path(s):

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/context/support/ServletContextResourceLoader.java

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2002-2020 the original author or authors.

*

* Licensed under the Apache License, Version 2.0 (the "License");

* you may not use this file except in compliance with the License.

* You may obtain a copy of the License at

*

* <https://www.apache.org/licenses/LICENSE-2.0>

- * Unless required by applicable law or agreed to in writing, software
- * distributed under the License is distributed on an "AS IS" BASIS,
- * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- * See the License for the specific language governing permissions and
- * limitations under the License.
- */

Found in path(s):

- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/server/DelegatingServerHttpResponse.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/multipart/support/MultipartResolutionDelegate.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/codec/json/Jackson2JsonEncoder.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/accept/ServletPathExtensionContentNegotiationStrategy.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/client/ClientHttpResponse.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/converter/json/AbstractJsonHttpMessageConverter.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/multipart/support/StandardServletPartUtils.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/converter/FormHttpMessageConverter.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/client/reactive/ClientHttpRequest.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/server/i18n/AcceptHeaderLocaleContextResolver.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/multipart/support/MissingServletRequestPartException.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/method/support/HandlerMethodReturnValueHandlerComposite.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/client/reactive/HttpComponentsClientHttpConnector.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/multipart/support/RequestPartServletServerHttpRequest.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/server/reactive/TomcatHttpHandlerAdapter.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/client/support/InterceptingHttpAccessor.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/context/request/async/DeferredResult.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/multipart/commons/CommonsMultipartFile.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/converter/cbor/MappingJackson2CborHttpMessageConverter.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-

jar/org/springframework/http/codec/ResourceHttpMessageWriter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/server/DefaultRequestPath.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/server/NotAcceptableStatusException.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/method/annotation/ModelMethodProcessor.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/accept/ContentNegotiationManagerFactoryBean.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/cors/reactive/CorsUtils.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/server/ServletServerHttpAsyncRequestControl.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/server/adapter/ForwardedHeaderTransformer.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/codec/ResourceHttpMessageReader.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/client/UnknownContentTypeException.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/context/request/async/WebAsyncManager.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/server/reactive/ServerHttpResponse.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/context/support/ServletContextLiveBeansView.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/server/reactive/HttpHeadResponseDecorator.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/client/SimpleStreamingAsyncClientHttpRequest.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/util/ServletContextPropertyUtils.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/util/UriBuilderFactory.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/SpringServletContainerInitializer.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/server/MethodNotAllowedException.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/codec/json/Jackson2JsonDecoder.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/accept/MappingMediaTypeFileExtensionResolver.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/client/AbstractClientHttpRequest.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/client/HttpMessageConverterExtractor.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/bind/annotation/RequestMapping.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-

jar/org/springframework/http/codec/multipart/MultipartHttpMessageReader.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/accept/ContentNegotiationManager.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/codec/support/BaseCodecConfigurer.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/codec/multipart/PartHttpMessageWriter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/method/annotation/ModelFactory.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/method/annotation/RequestParamMapMethodArgumentResolver.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/server/session/DefaultWebSessionManager.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/cors/DefaultCorsProcessor.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/context/support/ServletContextResourcePatternResolver.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/converter/json/MappingJackson2HttpMessageConverter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/converter/protobuf/ProtobufJsonFormatHttpMessageConverter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/context/support/WebApplicationContextUtils.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/method/annotation/MapMethodProcessor.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/util/WebUtils.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/remoting/httpinvoker/AbstractHttpInvokerRequestExecutor.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/converter/support/AllEncompassingFormHttpMessageConverter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/remoting/httpinvoker/HttpInvokerServiceExporter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/cors/reactive/UrlBasedCorsConfigurationSource.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/HttpRequestMethodNotSupportedException.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/server/handler/ExceptionHandlerWebHandler.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/server/ServletServerHttpResponse.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/context/request/WebRequest.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/client/reactive/ReactorResourceFactory.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/converter/smile/MappingJackson2SmileHttpMessageConverter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-

jar/org/springframework/http/converter/AbstractHttpMessageConverter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/ReadOnlyHttpHeaders.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/cors/CorsUtils.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/util/pattern/PathPatternParser.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/filter/CorsFilter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/accept/PathExtensionContentNegotiationStrategy.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/client/HttpComponentsClientHttpRequestFactory.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/codec/multipart/MultipartUtils.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/method/ControllerAdviceBean.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/cors/UrlBasedCorsConfigurationSource.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/client/reactive/HttpComponentsClientHttpResponse.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/server/reactive/AbstractServerHttpResponse.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/codec/multipart/MultipartHttpMessageWriter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/util/DefaultUriBuilderFactory.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/client/reactive/ClientHttpRequestDecorator.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/converter/StringHttpMessageConverter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/context/support/LiveBeansViewServlet.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/context/request/async/StandardServletAsyncWebRequest.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/codec/multipart/MultipartWriterSupport.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/filter/ShallowEtagHeaderFilter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/client/RestClientException.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/client/SimpleClientHttpRequestFactory.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/util/UriUtils.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/server/RequestPath.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-

jar/org/springframework/remoting/httpinvoker/HttpInvokerClientInterceptor.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/converter/xml/MappingJackson2XmlHttpMessageConverter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/converter/json/GsonHttpMessageConverter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/converter/json/JsonbHttpMessageConverter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/codec/json/Jackson2Tokenizer.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/cors/reactive/DefaultCorsProcessor.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/client/reactive/HttpComponentsHeadersAdapter.java
No license file was found, but licenses were detected in source scan.

```
/*  
* Copyright 2002-2012 the original author or authors.  
*  
* Licensed under the Apache License, Version 2.0 (the "License");  
* you may not use this file except in compliance with the License.  
* You may obtain a copy of the License at  
*  
* https://www.apache.org/licenses/LICENSE-2.0  
*  
* Unless required by applicable law or agreed to in writing, software  
* distributed under the License is distributed on an "AS IS" BASIS,  
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
* See the License for the specific language governing permissions and  
* limitations under the License.  
*/
```

Found in path(s):

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/bind/annotation/ValueConstants.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/jsf/DecoratingNavigationHandler.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/client/ResourceAccessException.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/jsf/DelegatingPhaseListenerMulticaster.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/client/AbstractClientHttpResponse.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/MediaTypeEditor.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/HttpMediaTypeNotAcceptableException.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/bind/support/SimpleSessionStatus.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/bind/ServletRequestBindingException.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/util/IntrospectorCleanupListener.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/context/ConfigurableWebEnvironment.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/remoting/jaxws/JaxWsSoapFaultException.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/remoting/httpinvoker/HttpInvokerClientConfiguration.java
No license file was found, but licenses were detected in source scan.

/*

* Copyright 2002-2022 the original author or authors.

*

* Licensed under the Apache License, Version 2.0 (the "License");

* you may not use this file except in compliance with the License.

* You may obtain a copy of the License at

*

* <https://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software

* distributed under the License is distributed on an "AS IS" BASIS,

* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

* See the License for the specific language governing permissions and

* limitations under the License.

*/

Found in path(s):

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/server/reactive/ServerHttpResponseDecorator.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/bind/ServletRequestDataBinder.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/client/reactive/ReactorClientHttpRequest.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/converter/BufferedImageHttpMessageConverter.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/server/session/CookieWebSessionIdResolver.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/HttpMethod.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/bind/annotation/ModelAttribute.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/util/HierarchicalUriComponents.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/bind/support/WebRequestDataBinder.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-

jar/org/springframework/http/codec/xml/Jaxb2XmlDecoder.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/codec/multipart/PartGenerator.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/converter/feed/AbstractWireFeedHttpMessageConverter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/converter/xml/Jaxb2CollectionHttpMessageConverter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/codec/ServerSentEventHttpMessageReader.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/context/support/GenericWebApplicationContext.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/converter/ResourceRegionHttpMessageConverter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/codec/multipart/DefaultParts.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/codec/multipart/MultipartParser.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/server/reactive/ServletServerHttpRequest.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/server/session/HeaderWebSessionIdResolver.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/server/ServletServerHttpRequest.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/converter/ResourceHttpMessageConverter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/server/session/WebSessionIdResolver.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/bind/support/WebExchangeDataBinder.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/client/reactive/AbstractClientHttpRequest.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/client/reactive/HttpComponentsClientHttpRequest.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/server/reactive/UndertowHttpHandlerAdapter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/server/reactive/ReactorServerHttpRequest.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/server/reactive/AbstractServerHttpRequest.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/method/support/HandlerMethodArgumentResolverComposite.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/server/reactive/AbstractListenerReadPublisher.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/bind/WebDataBinder.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/util/ServletRequestPathUtils.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-

jar/org/springframework/http/converter/json/AbstractJackson2HttpMessageConverter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/context/support/AnnotationConfigWebApplicationContext.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/filter/GenericFilterBean.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/bind/annotation/InitBinder.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/bind/annotation/RequestMethod.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/converter/xml/AbstractXmlHttpMessageConverter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/method/HandlerMethod.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/converter/xml/SourceHttpMessageConverter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/client/reactive/JettyClientHttpRequest.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/codec/json/AbstractJackson2Encoder.java
No license file was found, but licenses were detected in source scan.

```
/*  
* Copyright 2002-2017 the original author or authors.  
*  
* Licensed under the Apache License, Version 2.0 (the "License");  
* you may not use this file except in compliance with the License.  
* You may obtain a copy of the License at  
*  
* https://www.apache.org/licenses/LICENSE-2.0  
*  
* Unless required by applicable law or agreed to in writing, software  
* distributed under the License is distributed on an "AS IS" BASIS,  
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
* See the License for the specific language governing permissions and  
* limitations under the License.  
*/
```

Found in path(s):

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/client/OkHttp3AsyncClientHttpRequest.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/converter/json/GsonBuilderUtils.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/util/AbstractUriTemplateHandler.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/context/support/ServletContextAwareProcessor.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/remoting/jaxws/JaxWsPortProxyFactoryBean.java

- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/context/request/async/AsyncWebRequest.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/client/AbstractBufferingAsyncClientHttpRequest.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/client/support/HttpRequestWrapper.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/converter/json/GsonFactoryBean.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/server/ServerWebInputException.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/server/session/WebSessionStore.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/context/support/ServletContextAttributeFactoryBean.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/server/i18n/LocaleContextResolver.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/remoting/caucho/HessianProxyFactoryBean.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/remoting/jaxws/JaxWsPortClientInterceptor.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/context/support/HttpRequestHandlerServlet.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/context/request/NativeWebRequest.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/context/support/WebApplicationObjectSupport.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/bind/EscapedErrors.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/client/AsyncClientHttpRequestInterceptor.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/context/request/AbstractRequestAttributesScope.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/context/request/async/DeferredResultProcessingInterceptor.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/context/request/async/DeferredResultProcessingInterceptorAdapter.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/client/OkHttp3ClientHttpResponse.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/client/HttpComponentsAsyncClientHttpRequest.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/client/AsyncClientHttpRequestExecution.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/bind/annotation/RestController.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/bind/support/DefaultSessionAttributeStore.java
- * /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/bind/support/SessionAttributeStore.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/client/AsyncRestOperations.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/client/support/ProxyFactoryBean.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/context/request/async/CallableProcessingInterceptor.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/converter/feed/RssChannelHttpMessageConverter.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/codec/multipart/Part.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/remoting/jaxws/LocalJaxWsServiceFactoryBean.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/cors/reactive/CorsProcessor.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/client/support/InterceptingAsyncHttpAccessor.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/method/support/HandlerMethodReturnValueHandler.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/context/request/async/TimeoutCallableProcessingInterceptor.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/client/HttpComponentsStreamingClientHttpRequest.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/jsf/el/SpringBeanFacesELResolver.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/context/support/ContextExposingHttpServletRequest.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/context/support/StaticWebApplicationContext.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/converter/json/MappingJacksonInputMessage.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/context/request/RequestAttributes.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/HttpMediaTypeNotSupportedException.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/bind/support/WebArgumentResolver.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/client/AsyncClientHttpRequestFactory.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/context/request/async/CallableProcessingInterceptorAdapter.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/method/annotation/MethodArgumentConversionNotSupportedException.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/HttpCookie.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/client/Netty4ClientHttpResponse.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/method/annotation/MethodArgumentTypeMismatchException.java

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/multipart/support/ByteArrayMultipartFileEditor.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/client/BufferingClientHttpResponseWrapper.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/bind/support/DefaultDataBinderFactory.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/client/AbstractAsyncClientHttpRequest.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/client/OkHttp3ClientHttpRequest.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/remoting/httpinvoker/HttpInvokerProxyFactoryBean.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/context/request/AsyncWebRequestInterceptor.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/client/AbstractBufferingClientHttpRequest.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/multipart/support/StringMultipartFileEditor.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/client/AsyncClientHttpRequest.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/remoting/caucho/HessianClientInterceptor.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/method/support/UriComponentsContributor.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/codec/multipart/FormFieldPart.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/multipart/MultipartException.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/client/HttpComponentsAsyncClientHttpResponse.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/method/annotation/SessionStatusMethodArgumentResolver.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/client/BufferingClientHttpRequestWrapper.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/context/support/ServletContextParameterFactoryBean.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/bind/ServletRequestUtils.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/multipart/MaxUploadSizeExceededException.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/web/bind/support/WebDataBinderFactory.java

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2002-2013 the original author or authors.

*

* Licensed under the Apache License, Version 2.0 (the "License");

* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* <https://www.apache.org/licenses/LICENSE-2.0>
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/

Found in path(s):

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/HttpMediaTypeException.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/server/ServerHttpResponse.java
No license file was found, but licenses were detected in source scan.

/*
* Copyright 2002-2007 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* <https://www.apache.org/licenses/LICENSE-2.0>
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/

Found in path(s):

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/bind/support/SessionStatus.java
No license file was found, but licenses were detected in source scan.

This file maps Internet media types to unique file extension(s).
Although created for httpd, this file is used by many software systems
and has been placed in the public domain for unlimited redistribution.

The table below contains both registered and (common) unregistered types.
A type that has no unique extension can be ignored -- they are listed
here to guide configurations toward known types and to make it easier to
identify "new" types. File extensions are also commonly used to indicate

```

# content languages and encodings, so choose them carefully.
#
# Internet media types should be registered as described in RFC 4288.
# The registry is at <https://www.iana.org/assignments/media-types/>.
#
# This file was retrieved from
https://svn.apache.org/viewvc/httpd/httpd/trunk/docs/conf/mime.types?revision=1752884&view=co
#
# MIME type (lowercased) Extensions
# =====
# application/1d-interleaved-parityfec
# application/3gpdash-qoe-report+xml
# application/3gpp-ims+xml
# application/a2l
# application/activemessage
# application/alto-costmap+json
# application/alto-costmapfilter+json
# application/alto-directory+json
# application/alto-endpointcost+json
# application/alto-endpointcostparams+json
# application/alto-endpointprop+json
# application/alto-endpointpropparams+json
# application/alto-error+json
# application/alto-networkmap+json
# application/alto-networkmapfilter+json
# application/aml
application/andrew-inset ez
# application/applefile
application/applixware aw
# application/atf
# application/atfx
application/atom+xml atom
application/atomcat+xml atomcat
# application/atomdeleted+xml
# application/atomicmail
application/atomsvc+xml atomsvc
# application/atxml
# application/auth-policy+xml
# application/bacnet-xdd+zip
# application/batch-smtp
# application/beep+xml
# application/calendar+json
# application/calendar+xml
# application/call-completion
# application/cals-1840
# application/cbor
# application/ccmp+xml
application/ccxml+xml ccxml

```

application/cdfx+xml
application/cdmi-capability cdmia
application/cdmi-container cdmic
application/cdmi-domain cdmid
application/cdmi-object cdmio
application/cdmi-queue cdmiq
application/cdni
application/cea
application/cea-2018+xml
application/cellml+xml
application/cfw
application/cms
application/cnrx+xml
application/coap-group+json
application/commonground
application/conference-info+xml
application/cpl+xml
application/csrattrs
application/csta+xml
application/cstadata+xml
application/csvm+json
application/cu-seeme cu
application/cybercash
application/dash+xml
application/dashdelta
application/davmount+xml davmount
application/dca-rft
application/dcd
application/dec-dx
application/dialog-info+xml
application/dicom
application/dii
application/dit
application/dns
application/docbook+xml dbk
application/dskpp+xml
application/dssc+der dssc
application/dssc+xml xdssc
application/dvcs
application/ecascript ecma
application/edi-consent
application/edi-x12
application/edifact
application/efi
application/emergencycalldata.comment+xml
application/emergencycalldata.deviceinfo+xml
application/emergencycalldata.providerinfo+xml
application/emergencycalldata.serviceinfo+xml

application/emergencycalldata.subscriberinfo+xml
application/emma+xml emma
application/emotionml+xml
application/encaprtsp
application/epp+xml
application/epub+zip epub
application/eshop
application/example
application/exi exi
application/fastinfoset
application/fastsoap
application/fdt+xml
application/fits
application/font-sfnt
application/font-tdpfr pfr
application/font-woff woff
application/framework-attributes+xml
application/geo+json
application/gml+xml gml
application/gpx+xml gpx
application/gxf gxf
application/gzip
application/h224
application/held+xml
application/http
application/hyperstudio stk
application/ibe-key-request+xml
application/ibe-pkg-reply+xml
application/ibe-pp-data
application/iges
application/im-iscomposing+xml
application/index
application/index.cmd
application/index.obj
application/index.response
application/index.vnd
application/inkml+xml ink inkml
application/iotp
application/ipfix ipfix
application/ipp
application/isup
application/its+xml
application/java-archive jar
application/java-serialized-object ser
application/java-vm class
application/javascript js
application/jose
application/jose+json

application/jrd+json
application/json json
application/json-patch+json
application/json-seq
application/jsonml+json jsonml
application/jwk+json
application/jwk-set+json
application/jwt
application/kpml-request+xml
application/kpml-response+xml
application/ld+json
application/lgr+xml
application/link-format
application/load-control+xml
application/lost+xml lostxml
application/lostsync+xml
application/lxf
application/mac-binhex40 hqx
application/mac-compactpro cpt
application/macwriteii
application/mads+xml mads
application/marc mrc
application/marcxml+xml mrcx
application/mathematica ma nb mb
application/mathml+xml mathml
application/mathml-content+xml
application/mathml-presentation+xml
application/mbms-associated-procedure-description+xml
application/mbms-deregister+xml
application/mbms-envelope+xml
application/mbms-msk+xml
application/mbms-msk-response+xml
application/mbms-protection-description+xml
application/mbms-reception-report+xml
application/mbms-register+xml
application/mbms-register-response+xml
application/mbms-schedule+xml
application/mbms-user-service-description+xml
application/mbox mbox
application/media-policy-dataset+xml
application/media_control+xml
application/mediaservercontrol+xml mscml
application/merge-patch+json
application/metalink+xml metalink
application/metalink4+xml meta4
application/mets+xml mets
application/mf4
application/mikey

application/mods+xml mods
application/moss-keys
application/moss-signature
application/mosskey-data
application/mosskey-request
application/mp21 m21 mp21
application/mp4 mp4s
application/mpeg4-generic
application/mpeg4-iod
application/mpeg4-iod-xmt
application/mrb-consumer+xml
application/mrb-publish+xml
application/msc-ivr+xml
application/msc-mixer+xml
application/msword doc dot
application/mxf mxf
application/nasdata
application/news-checkgroups
application/news-groupinfo
application/news-transmission
application/nlsml+xml
application/nss
application/ocsp-request
application/ocsp-response
application/octet-stream bin dms lrf mar so dist distz pkg bpk dump elc deploy
application/oda oda
application/odx
application/oebps-package+xml opf
application/ogg ogx
application/omdoc+xml omdoc
application/onenote onetoc onetoc2 onetmp onepkg
application/oxps oxps
application/p2p-overlay+xml
application/parityfec
application/patch-ops-error+xml xer
application/pdf pdf
application/pdx
application/pgp-encrypted pgp
application/pgp-keys
application/pgp-signature asc sig
application/pics-rules prf
application/pidf+xml
application/pidf-diff+xml
application/pkcs10 p10
application/pkcs12
application/pkcs7-mime p7m p7c
application/pkcs7-signature p7s
application/pkcs8 p8

application/pkix-attr-cert ac
application/pkix-cert cer
application/pkix-crl crl
application/pkix-pkipath pkipath
application/pkixcmp pki
application/pls+xml pls
application/poc-settings+xml
application/postscript ai eps ps
application/ppsp-tracker+json
application/problem+json
application/problem+xml
application/provenance+xml
application/prs.alvestrand.titrax-sheet
application/prs.cww cww
application/prs.hpub+zip
application/prs.nprend
application/prs.plucker
application/prs.rdf+xml-crypt
application/prs.xsf+xml
application/pskc+xml pskcxml
application/qsig
application/raptorfec
application/rdap+json
application/rdf+xml rdf
application/reginfo+xml rif
application/relax-ng-compact-syntax rnc
application/remote-printing
application/reputon+json
application/resource-lists+xml rl
application/resource-lists-diff+xml rld
application/rfc+xml
application/riscos
application/rlmi+xml
application/rls-services+xml rs
application/rpki-ghostbusters gbr
application/rpki-manifest mft
application/rpki-roa roa
application/rpki-updown
application/rsd+xml rsd
application/rss+xml rss
application/rtf rtf
application/rtploopback
application/rtx
application/samlassertion+xml
application/samlmetadata+xml
application/sbml+xml sbml
application/scaip+xml
application/scim+json

application/scvp-cv-request scq
application/scvp-cv-response scs
application/scvp-vp-request spq
application/scvp-vp-response spp
application/sdp sdp
application/sep+xml
application/sep-exi
application/session-info
application/set-payment
application/set-payment-initiation setpay
application/set-registration
application/set-registration-initiation setreg
application/sgml
application/sgml-open-catalog
application/shf+xml shf
application/sieve
application/simple-filter+xml
application/simple-message-summary
application/simplesymbolcontainer
application/slate
application/smil
application/smil+xml smi smil
application/smpite336m
application/soap+fastinfoset
application/soap+xml
application/sparql-query rq
application/sparql-results+xml srx
application/spirits-event+xml
application/sql
application/srgs gram
application/srgs+xml grxml
application/sru+xml sru
application/ssdl+xml ssdl
application/ssml+xml ssml
application/tamp-apex-update
application/tamp-apex-update-confirm
application/tamp-community-update
application/tamp-community-update-confirm
application/tamp-error
application/tamp-sequence-adjust
application/tamp-sequence-adjust-confirm
application/tamp-status-query
application/tamp-status-response
application/tamp-update
application/tamp-update-confirm
application/tei+xml tei teicorpus
application/thraud+xml tfi
application/timestamp-query


```

# application/timestamp-reply
application/timestamped-data tsd
# application/ttml+xml
# application/tve-trigger
# application/ulpfec
# application/urc-grpsheet+xml
# application/urc-ressheet+xml
# application/urc-targetdesc+xml
# application/urc-uisocketdesc+xml
# application/vcard+json
# application/vcard+xml
# application/vemmi
# application/vividence.scriptfile
# application/vnd.3gpp-prose+xml
# application/vnd.3gpp-prose-pc3ch+xml
# application/vnd.3gpp.access-transfer-events+xml
# application/vnd.3gpp.bsf+xml
# application/vnd.3gpp.mid-call+xml
application/vnd.3gpp.pic-bw-large plb
application/vnd.3gpp.pic-bw-small psb
application/vnd.3gpp.pic-bw-var pvb
# application/vnd.3gpp.sms
# application/vnd.3gpp.sms+xml
# application/vnd.3gpp.srvcc-ext+xml
# application/vnd.3gpp.srvcc-info+xml
# application/vnd.3gpp.state-and-event-info+xml
# application/vnd.3gpp.ussd+xml
# application/vnd.3gpp2.bcsmcinfo+xml
# application/vnd.3gpp2.sms
application/vnd.3gpp2.tcap tcap
# application/vnd.3lightssoftware.imagescal
application/vnd.3m.post-it-notes pwn
application/vnd.accpac.simply.aso aso
application/vnd.accpac.simply.imp imp
application/vnd.acucobol acu
application/vnd.acucorp atc acutc
application/vnd.adobe.air-application-installer-package+zip air
# application/vnd.adobe.flash.movie
application/vnd.adobe.formscentral.fcdt fcdt
application/vnd.adobe.fxp fxp fxpl
# application/vnd.adobe.partial-upload
application/vnd.adobe.xdp+xml xdp
application/vnd.adobe.xfdf xfdf
# application/vnd.aether.imp
# application/vnd.ah-barcode
application/vnd.ahead.space ahead
application/vnd.airzip.filesecure.azf azf
application/vnd.airzip.filesecure.azs azs

```

application/vnd.amazon.ebook azw
application/vnd.amazon.mobi8-ebook
application/vnd.americandynamics.acc acc
application/vnd.amiga.ami ami
application/vnd.amundsen.maze+xml
application/vnd.android.package-archive apk
application/vnd.anki
application/vnd.anser-web-certificate-issue-initiation cii
application/vnd.anser-web-funds-transfer-initiation fti
application/vnd.antix.game-component atx
application/vnd.apache.thrift.binary
application/vnd.apache.thrift.compact
application/vnd.apache.thrift.json
application/vnd.api+json
application/vnd.apple.installer+xml mpkg
application/vnd.apple.mpegurl m3u8
application/vnd.arastra.swi
application/vnd.aristanetworks.swi swi
application/vnd.artsquare
application/vnd.astraea-software.iota iota
application/vnd.audiograph aep
application/vnd.autopackage
application/vnd.avistar+xml
application/vnd.balsamiq.bmml+xml
application/vnd.balsamiq.bmpr
application/vnd.bekitzur-stech+json
application/vnd.biopax.rdf+xml
application/vnd.blueice.multipass mpm
application/vnd.bluetooth.ep.oob
application/vnd.bluetooth.le.oob
application/vnd.bmi bmi
application/vnd.businessobjects rep
application/vnd.cab-jscript
application/vnd.canon-cpdl
application/vnd.canon-lips
application/vnd.cendio.thinlinc.clientconf
application/vnd.century-systems.tcp_stream
application/vnd.chemdraw+xml cdxml
application/vnd.chess-pgn
application/vnd.chipnuts.karaoke-mmd mmd
application/vnd.cinderella cdy
application/vnd.cirpack.isdn-ext
application/vnd.citationstyles.style+xml
application/vnd.claymore cla
application/vnd.cloanto.rp9 rp9
application/vnd.clonk.c4group c4g c4d c4f c4p c4u
application/vnd.cluetrust.cartomobile-config c11amc
application/vnd.cluetrust.cartomobile-config-pkg c11amz

application/vnd.coffeescript
application/vnd.collection+json
application/vnd.collection.doc+json
application/vnd.collection.next+json
application/vnd.comicbook+zip
application/vnd.commerce-battelle
application/vnd.commonspace csp
application/vnd.contact.cmsg cdbmsg
application/vnd.coreos.ignition+json
application/vnd.cosmocaller cmc
application/vnd.crick.clicker clkx
application/vnd.crick.clicker.keyboard clkk
application/vnd.crick.clicker.palette clkp
application/vnd.crick.clicker.template clkt
application/vnd.crick.clicker.wordbank clkw
application/vnd.criticaltools.wbs+xml wbs
application/vnd.ctc-posml pml
application/vnd.ctct.ws+xml
application/vnd.cups-pdf
application/vnd.cups-postscript
application/vnd.cups-ppd ppd
application/vnd.cups-raster
application/vnd.cups-raw
application/vnd.curl
application/vnd.curl.car car
application/vnd.curl.pcurl pcurl
application/vnd.cyan.dean.root+xml
application/vnd.cybank
application/vnd.dart dart
application/vnd.data-vision.rdz rdz
application/vnd.debian.binary-package
application/vnd.dece.data uvf uvvf uvd uvvd
application/vnd.dece.ttml+xml uvt uvvt
application/vnd.dece.unsigned uvx uvvx
application/vnd.dece.zip uvz uvvz
application/vnd.denovo.fcselayout-link fe_launch
application/vnd.desmume.movie
application/vnd.dir-bi.plate-dl-nosuffix
application/vnd.dm.delegation+xml
application/vnd.dna dna
application/vnd.document+json
application/vnd.dolby.mlp mlp
application/vnd.dolby.mobile.1
application/vnd.dolby.mobile.2
application/vnd.doremir.scorecloud-binary-document
application/vnd.dpgraph dpg
application/vnd.dreamfactory dfac
application/vnd.drive+json

application/vnd.ds-keypoint kpxx
application/vnd.dtg.local
application/vnd.dtg.local.flash
application/vnd.dtg.local.html
application/vnd.dvb.ait ait
application/vnd.dvb.dvbj
application/vnd.dvb.esgcontainer
application/vnd.dvb.ipdcdfnotifaccess
application/vnd.dvb.ipdcesgaccess
application/vnd.dvb.ipdcesgaccess2
application/vnd.dvb.ipdcesgpdd
application/vnd.dvb.ipdcroaming
application/vnd.dvb.iptv.alfec-base
application/vnd.dvb.iptv.alfec-enhancement
application/vnd.dvb.notif-aggregate-root+xml
application/vnd.dvb.notif-container+xml
application/vnd.dvb.notif-generic+xml
application/vnd.dvb.notif-ia-msglist+xml
application/vnd.dvb.notif-ia-registration-request+xml
application/vnd.dvb.notif-ia-registration-response+xml
application/vnd.dvb.notif-init+xml
application/vnd.dvb.pfr
application/vnd.dvb.service svc
application/vnd.dxr
application/vnd.dynageo geo
application/vnd.dzr
application/vnd.easykaraoke.cdgdownload
application/vnd.ecdis-update
application/vnd.ecowin.chart mag
application/vnd.ecowin.filerequest
application/vnd.ecowin.fileupdate
application/vnd.ecowin.series
application/vnd.ecowin.seriesrequest
application/vnd.ecowin.seriesupdate
application/vnd.emclient.accessrequest+xml
application/vnd.enliven nml
application/vnd.enphase.envoy
application/vnd.eprints.data+xml
application/vnd.epson.esf esf
application/vnd.epson.msf msf
application/vnd.epson.quickanime qam
application/vnd.epson.salt slt
application/vnd.epson.ssf ssf
application/vnd.ericsson.quickcall
application/vnd.eszigno3+xml es3 et3
application/vnd.etsi.aoc+xml
application/vnd.etsi.asic-e+zip
application/vnd.etsi.asic-s+zip

application/vnd.etsi.cug+xml
application/vnd.etsi.iptvcommand+xml
application/vnd.etsi.iptvdiscovery+xml
application/vnd.etsi.iptvprofile+xml
application/vnd.etsi.iptvsad-bc+xml
application/vnd.etsi.iptvsad-cod+xml
application/vnd.etsi.iptvsad-npvr+xml
application/vnd.etsi.iptvservice+xml
application/vnd.etsi.iptvsync+xml
application/vnd.etsi.iptvueprofile+xml
application/vnd.etsi.mcid+xml
application/vnd.etsi.mheg5
application/vnd.etsi.overload-control-policy-dataset+xml
application/vnd.etsi.pstn+xml
application/vnd.etsi.sci+xml
application/vnd.etsi.simservs+xml
application/vnd.etsi.timestamp-token
application/vnd.etsi.tsl+xml
application/vnd.etsi.tsl.der
application/vnd.eudora.data
application/vnd.ezpix-album ez2
application/vnd.ezpix-package ez3
application/vnd.f-secure.mobile
application/vnd.fastcopy-disk-image
application/vnd.fdf fdf
application/vnd.fdsn.mseed mseed
application/vnd.fdsn.seed seed dataless
application/vnd.ffsns
application/vnd.filmit.zfc
application/vnd.fints
application/vnd.firemonkeys.cloudcell
application/vnd.flographit gph
application/vnd.fluxtime.clip ftc
application/vnd.font-fontforge-sfd
application/vnd.frameMaker fm frame maker book
application/vnd.frogans.fnc fnc
application/vnd.frogans.ltf ltf
application/vnd.fsc.weblaunch fsc
application/vnd.fujitsu.oasys oas
application/vnd.fujitsu.oasys2 oa2
application/vnd.fujitsu.oasys3 oa3
application/vnd.fujitsu.oasysgp fg5
application/vnd.fujitsu.oasysprs bh2
application/vnd.fujixerox.art-ex
application/vnd.fujixerox.art4
application/vnd.fujixerox.ddd ddd
application/vnd.fujixerox.docuworks xdw
application/vnd.fujixerox.docuworks.binder xbd

application/vnd.fujixerox.docuworks.container
application/vnd.fujixerox.hbpl
application/vnd.fut-misnet
application/vnd.fuzzysheet fzs
application/vnd.genomatix.tuxedo txd
application/vnd.geo+json
application/vnd.geocube+xml
application/vnd.geogebra.file ggb
application/vnd.geogebra.tool ggt
application/vnd.geometry-explorer gex gre
application/vnd.geonext gxt
application/vnd.geoplan g2w
application/vnd.geospace g3w
application/vnd.gerber
application/vnd.globalplatform.card-content-mgt
application/vnd.globalplatform.card-content-mgt-response
application/vnd.gmx gmx
application/vnd.google-earth.kml+xml kml
application/vnd.google-earth.kmz kmz
application/vnd.gov.sk.e-form+xml
application/vnd.gov.sk.e-form+zip
application/vnd.gov.sk.xmldatacontainer+xml
application/vnd.grafeq gqf gqs
application/vnd.gridmp
application/vnd.groove-account gac
application/vnd.groove-help ghf
application/vnd.groove-identity-message gim
application/vnd.groove-injector grv
application/vnd.groove-tool-message gtm
application/vnd.groove-tool-template tpl
application/vnd.groove-vcard vcg
application/vnd.hal+json
application/vnd.hal+xml hal
application/vnd.handheld-entertainment+xml zmm
application/vnd.hbci hbci
application/vnd.hcl-bireports
application/vnd.hdt
application/vnd.heroku+json
application/vnd.hhe.lesson-player les
application/vnd.hp-hpgl hpgl
application/vnd.hp-hpid hpid
application/vnd.hp-hps hps
application/vnd.hp-jlyt jlt
application/vnd.hp-pcl pcl
application/vnd.hp-pclxl pclxl
application/vnd.httpphone
application/vnd.hydrostatix.sof-data sfd-hdstx
application/vnd.hyperdrive+json

application/vnd.hzn-3d-crossword
application/vnd.ibm.afplinedata
application/vnd.ibm.electronic-media
application/vnd.ibm.minipay mpy
application/vnd.ibm.modcap afp listafp list3820
application/vnd.ibm.rights-management irm
application/vnd.ibm.secure-container sc
application/vnd.iccprofile icc icm
application/vnd.ieee.1905
application/vnd.igloader igl
application/vnd.immervision-ivp ivp
application/vnd.immervision-ivu ivu
application/vnd.ims.imsccv1p1
application/vnd.ims.imsccv1p2
application/vnd.ims.imsccv1p3
application/vnd.ims.lis.v2.result+json
application/vnd.ims.lti.v2.toolconsumerprofile+json
application/vnd.ims.lti.v2.toolproxy+json
application/vnd.ims.lti.v2.toolproxy.id+json
application/vnd.ims.lti.v2.toolsettings+json
application/vnd.ims.lti.v2.toolsettings.simple+json
application/vnd.informedcontrol.rms+xml
application/vnd.informix-visionary
application/vnd.infotech.project
application/vnd.infotech.project+xml
application/vnd.innopath.wamp.notification
application/vnd.insors.igm igm
application/vnd.intercon.formnet xpw xpx
application/vnd.intergeo i2g
application/vnd.intertrust.digibox
application/vnd.intertrust.nncp
application/vnd.intu.qbo qbo
application/vnd.intu.qfx qfx
application/vnd.iptc.g2.catalogitem+xml
application/vnd.iptc.g2.conceptitem+xml
application/vnd.iptc.g2.knowledgeitem+xml
application/vnd.iptc.g2.newsitem+xml
application/vnd.iptc.g2.newsmessage+xml
application/vnd.iptc.g2.packageitem+xml
application/vnd.iptc.g2.planningitem+xml
application/vnd.ipunplugged.rcprofile rcprofile
application/vnd.irepository.package+xml irp
application/vnd.is-xpr xpr
application/vnd.isac.fcs fcs
application/vnd.jam jam
application/vnd.japannet-directory-service
application/vnd.japannet-jpnstore-wakeup
application/vnd.japannet-payment-wakeup

```
# application/vnd.japannet-registration
# application/vnd.japannet-registration-wakeup
# application/vnd.japannet-setstore-wakeup
# application/vnd.japannet-verification
# application/vnd.japannet-verification-wakeup
application/vnd.jcp.javame.midlet-rms rms
application/vnd.jsp jisp
application/vnd.joost.joda-archive joda
# application/vnd.jsk.isdn-ngn
application/vnd.kahootz ktz ktr
application/vnd.kde.karbon karbon
application/vnd.kde.kchart chrt
application/vnd.kde.kformula kfo
application/vnd.kde.kivio flw
application/vnd.kde.kontour kon
application/vnd.kde.kpresenter kpr kpt
application/vnd.kde.kspread ksp
application/vnd.kde.kword kwd kwt
application/vnd.kenameaapp htke
application/vnd.kidspiration kia
application/vnd.kinar kne knp
application/vnd.koan skp skd skt skm
application/vnd.kodak-descriptor sse
application/vnd.las.las+xml lasxml
# application/vnd.liberty-request+xml
application/vnd.llamagraphics.life-balance.desktop lbd
application/vnd.llamagraphics.life-balance.exchange+xml lbe
application/vnd.lotus-1-2-3 123
application/vnd.lotus-approach apr
application/vnd.lotus-freelance pre
application/vnd.lotus-notes nsf
application/vnd.lotus-organizer org
application/vnd.lotus-screencam scm
application/vnd.lotus-wordpro lwp
application/vnd.macports.portpkg portpkg
# application/vnd.mapbox-vector-tile
# application/vnd.marlin.drm.actiontoken+xml
# application/vnd.marlin.drm.conftoken+xml
# application/vnd.marlin.drm.license+xml
# application/vnd.marlin.drm.mdcf
# application/vnd.mason+json
# application/vnd.maxmind.maxmind-db
application/vnd.mcd mcd
application/vnd.medcalldata mc1
application/vnd.mediastation.cdkey cdkey
# application/vnd.meridian-slideshow
application/vnd.mfer mwf
application/vnd.mfmp mfm
```


application/vnd.micro+json
application/vnd.microgfx.flo flo
application/vnd.microgfx.igx igx
application/vnd.microsoft.portable-executable
application/vnd.miele+json
application/vnd.mif mif
application/vnd.minisoft-hp3000-save
application/vnd.mitsubishi.misty-guard.trustweb
application/vnd.mobius.daf daf
application/vnd.mobius.dis dis
application/vnd.mobius.mbk mbk
application/vnd.mobius.mqy mqy
application/vnd.mobius.msl msl
application/vnd.mobius.plc plc
application/vnd.mobius.txf txf
application/vnd.mophun.application mpn
application/vnd.mophun.certificate mpc
application/vnd.motorola.flexsuite
application/vnd.motorola.flexsuite.adi
application/vnd.motorola.flexsuite.fis
application/vnd.motorola.flexsuite.gotap
application/vnd.motorola.flexsuite.kmr
application/vnd.motorola.flexsuite.ttc
application/vnd.motorola.flexsuite.wem
application/vnd.motorola.iprm
application/vnd.mozilla.xul+xml xul
application/vnd.ms-3mfdocument
application/vnd.ms-artgalry cil
application/vnd.ms-asf
application/vnd.ms-cab-compressed cab
application/vnd.ms-color.iccprofile
application/vnd.ms-excel xls xlm xla xlc xlt xlw
application/vnd.ms-excel.addin.macroenabled.12 xlam
application/vnd.ms-excel.sheet.binary.macroenabled.12 xlsb
application/vnd.ms-excel.sheet.macroenabled.12 xlsm
application/vnd.ms-excel.template.macroenabled.12 xltm
application/vnd.ms-fontobject eot
application/vnd.ms-htmlhelp chm
application/vnd.ms-ims ims
application/vnd.ms-lrm lrm
application/vnd.ms-office.activex+xml
application/vnd.ms-officetheme thmx
application/vnd.ms-opentype
application/vnd.ms-package.obfuscated-opentype
application/vnd.ms-pki.seccat cat
application/vnd.ms-pki.stl stl
application/vnd.ms-playready.initiator+xml
application/vnd.ms-powerpoint ppt pps pot

application/vnd.ms-powerpoint.addin.macroenabled.12 ppam
application/vnd.ms-powerpoint.presentation.macroenabled.12 pptm
application/vnd.ms-powerpoint.slide.macroenabled.12 sldm
application/vnd.ms-powerpoint.slideshow.macroenabled.12 ppsm
application/vnd.ms-powerpoint.template.macroenabled.12 potm
application/vnd.ms-printdevicecapabilities+xml
application/vnd.ms-printing.printticket+xml
application/vnd.ms-printschematicket+xml
application/vnd.ms-project mpp mpt
application/vnd.ms-tnef
application/vnd.ms-windows.devicepairing
application/vnd.ms-windows.nwprinting.oob
application/vnd.ms-windows.printerpairing
application/vnd.ms-windows.wsd.oob
application/vnd.ms-wmdrm.lic-chlg-req
application/vnd.ms-wmdrm.lic-resp
application/vnd.ms-wmdrm.meter-chlg-req
application/vnd.ms-wmdrm.meter-resp
application/vnd.ms-word.document.macroenabled.12 docm
application/vnd.ms-word.template.macroenabled.12 dotm
application/vnd.ms-works wps wks wcm wdb
application/vnd.ms-wpl wpl
application/vnd.ms-xpsdocument xps
application/vnd.msa-disk-image
application/vnd.mseq mseq
application/vnd.msign
application/vnd.multiad.creator
application/vnd.multiad.creator.cif
application/vnd.music-niff
application/vnd.musician mus
application/vnd.muvee.style msty
application/vnd.mynfc taglet
application/vnd.ncd.control
application/vnd.ncd.reference
application/vnd.nervana
application/vnd.netfpx
application/vnd.neurolanguage.nlu nlu
application/vnd.nintendo.nitro.rom
application/vnd.nintendo.snes.rom
application/vnd.nitf nitf nitf
application/vnd.noblenet-directory nnd
application/vnd.noblenet-sealer nns
application/vnd.noblenet-web nnw
application/vnd.nokia.catalogs
application/vnd.nokia.conml+wxml
application/vnd.nokia.conml+xml
application/vnd.nokia.iptv.config+xml
application/vnd.nokia.isds-radio-presets

```
# application/vnd.nokia.landmark+wbxml
# application/vnd.nokia.landmark+xml
# application/vnd.nokia.landmarkcollection+xml
# application/vnd.nokia.n-gage.ac+xml
application/vnd.nokia.n-gage.data ngdat
application/vnd.nokia.n-gage.symbian.install n-gage
# application/vnd.nokia.ncd
# application/vnd.nokia.pcd+wbxml
# application/vnd.nokia.pcd+xml
application/vnd.nokia.radio-preset rpst
application/vnd.nokia.radio-presets rpss
application/vnd.novadigm.edm edm
application/vnd.novadigm.edx edx
application/vnd.novadigm.ext ext
# application/vnd.ntt-local.content-share
# application/vnd.ntt-local.file-transfer
# application/vnd.ntt-local.ogw_remote-access
# application/vnd.ntt-local.sip-ta_remote
# application/vnd.ntt-local.sip-ta_tcp_stream
application/vnd.oasis.opendocument.chart odc
application/vnd.oasis.opendocument.chart-template otc
application/vnd.oasis.opendocument.database odb
application/vnd.oasis.opendocument.formula odf
application/vnd.oasis.opendocument.formula-template odft
application/vnd.oasis.opendocument.graphics odg
application/vnd.oasis.opendocument.graphics-template otg
application/vnd.oasis.opendocument.image odi
application/vnd.oasis.opendocument.image-template oti
application/vnd.oasis.opendocument.presentation odp
application/vnd.oasis.opendocument.presentation-template otp
application/vnd.oasis.opendocument.spreadsheet ods
application/vnd.oasis.opendocument.spreadsheet-template ots
application/vnd.oasis.opendocument.text odt
application/vnd.oasis.opendocument.text-master odm
application/vnd.oasis.opendocument.text-template ott
application/vnd.oasis.opendocument.text-web oth
# application/vnd.obn
# application/vnd.oftn.110n+json
# application/vnd.oipf.contentaccessdownload+xml
# application/vnd.oipf.contentaccessstreaming+xml
# application/vnd.oipf.cspg-hexbinary
# application/vnd.oipf.dae.svg+xml
# application/vnd.oipf.dae.xhtml+xml
# application/vnd.oipf.mippvcontrolmessage+xml
# application/vnd.oipf.pae.gem
# application/vnd.oipf.spdiscovery+xml
# application/vnd.oipf.spdlist+xml
# application/vnd.oipf.ueprofile+xml
```

application/vnd.oipf.userprofile+xml
application/vnd.olpc-sugar xo
application/vnd.oma-scws-config
application/vnd.oma-scws-http-request
application/vnd.oma-scws-http-response
application/vnd.oma.bcast.associated-procedure-parameter+xml
application/vnd.oma.bcast.drm-trigger+xml
application/vnd.oma.bcast.imd+xml
application/vnd.oma.bcast.ltkm
application/vnd.oma.bcast.notification+xml
application/vnd.oma.bcast.provisioningtrigger
application/vnd.oma.bcast.sgboot
application/vnd.oma.bcast.sgdd+xml
application/vnd.oma.bcast.sgdu
application/vnd.oma.bcast.simple-symbol-container
application/vnd.oma.bcast.smartcard-trigger+xml
application/vnd.oma.bcast.sprov+xml
application/vnd.oma.bcast.stkm
application/vnd.oma.cab-address-book+xml
application/vnd.oma.cab-feature-handler+xml
application/vnd.oma.cab-pcc+xml
application/vnd.oma.cab-subs-invite+xml
application/vnd.oma.cab-user-prefs+xml
application/vnd.oma.dcd
application/vnd.oma.dcdc
application/vnd.oma.dd2+xml dd2
application/vnd.oma.drm.risd+xml
application/vnd.oma.group-usage-list+xml
application/vnd.oma.lwm2m+json
application/vnd.oma.lwm2m+tlv
application/vnd.oma.pal+xml
application/vnd.oma.poc.detailed-progress-report+xml
application/vnd.oma.poc.final-report+xml
application/vnd.oma.poc.groups+xml
application/vnd.oma.poc.invocation-descriptor+xml
application/vnd.oma.poc.optimized-progress-report+xml
application/vnd.oma.push
application/vnd.oma.scidm.messages+xml
application/vnd.oma.xcap-directory+xml
application/vnd.omads-email+xml
application/vnd.omads-file+xml
application/vnd.omads-folder+xml
application/vnd.omaloc-supl-init
application/vnd.onepager
application/vnd.openblox.game+xml
application/vnd.openblox.game-binary
application/vnd.openeye.oeb
application/vnd.openofficeorg.extension oxt

```

# application/vnd.openxmlformats-officedocument.custom-properties+xml
# application/vnd.openxmlformats-officedocument.customxmlproperties+xml
# application/vnd.openxmlformats-officedocument.drawing+xml
# application/vnd.openxmlformats-officedocument.drawingml.chart+xml
# application/vnd.openxmlformats-officedocument.drawingml.chartshapes+xml
# application/vnd.openxmlformats-officedocument.drawingml.diagramcolors+xml
# application/vnd.openxmlformats-officedocument.drawingml.diagramdata+xml
# application/vnd.openxmlformats-officedocument.drawingml.diagramlayout+xml
# application/vnd.openxmlformats-officedocument.drawingml.diagramstyle+xml
# application/vnd.openxmlformats-officedocument.extended-properties+xml
# application/vnd.openxmlformats-officedocument.presentationml.commentauthors+xml
# application/vnd.openxmlformats-officedocument.presentationml.comments+xml
# application/vnd.openxmlformats-officedocument.presentationml.handoutmaster+xml
# application/vnd.openxmlformats-officedocument.presentationml.notesmaster+xml
# application/vnd.openxmlformats-officedocument.presentationml.noteslide+xml
application/vnd.openxmlformats-officedocument.presentationml.presentation pptx
# application/vnd.openxmlformats-officedocument.presentationml.presentation.main+xml
# application/vnd.openxmlformats-officedocument.presentationml.presprops+xml
application/vnd.openxmlformats-officedocument.presentationml.slide sldx
# application/vnd.openxmlformats-officedocument.presentationml.slide+xml
# application/vnd.openxmlformats-officedocument.presentationml.slidelayout+xml
# application/vnd.openxmlformats-officedocument.presentationml.slidemaster+xml
application/vnd.openxmlformats-officedocument.presentationml.slideshow ppsx
# application/vnd.openxmlformats-officedocument.presentationml.slideshow.main+xml
# application/vnd.openxmlformats-officedocument.presentationml.slideupdateinfo+xml
# application/vnd.openxmlformats-officedocument.presentationml.tablestyles+xml
# application/vnd.openxmlformats-officedocument.presentationml.tags+xml
application/vnd.openxmlformats-officedocument.presentationml.template potx
# application/vnd.openxmlformats-officedocument.presentationml.template.main+xml
# application/vnd.openxmlformats-officedocument.presentationml.viewprops+xml
# application/vnd.openxmlformats-officedocument.spreadsheetml.calcchain+xml
# application/vnd.openxmlformats-officedocument.spreadsheetml.chartsheet+xml
# application/vnd.openxmlformats-officedocument.spreadsheetml.comments+xml
# application/vnd.openxmlformats-officedocument.spreadsheetml.connections+xml
# application/vnd.openxmlformats-officedocument.spreadsheetml.dialogsheet+xml
# application/vnd.openxmlformats-officedocument.spreadsheetml.externallink+xml
# application/vnd.openxmlformats-officedocument.spreadsheetml.pivotcachedefinition+xml
# application/vnd.openxmlformats-officedocument.spreadsheetml.pivotcacherecords+xml
# application/vnd.openxmlformats-officedocument.spreadsheetml.pivottable+xml
# application/vnd.openxmlformats-officedocument.spreadsheetml.querytable+xml
# application/vnd.openxmlformats-officedocument.spreadsheetml.revisionheaders+xml
# application/vnd.openxmlformats-officedocument.spreadsheetml.revisionlog+xml
# application/vnd.openxmlformats-officedocument.spreadsheetml.sharedstrings+xml
application/vnd.openxmlformats-officedocument.spreadsheetml.sheet xltx
# application/vnd.openxmlformats-officedocument.spreadsheetml.sheet.main+xml
# application/vnd.openxmlformats-officedocument.spreadsheetml.sheetmetadata+xml
# application/vnd.openxmlformats-officedocument.spreadsheetml.styles+xml
# application/vnd.openxmlformats-officedocument.spreadsheetml.table+xml

```

application/vnd.openxmlformats-officedocument.spreadsheetml.tablesinglecells+xml
 application/vnd.openxmlformats-officedocument.spreadsheetml.template xltx
 # application/vnd.openxmlformats-officedocument.spreadsheetml.template.main+xml
 # application/vnd.openxmlformats-officedocument.spreadsheetml.usernames+xml
 # application/vnd.openxmlformats-officedocument.spreadsheetml.volatiledependencies+xml
 # application/vnd.openxmlformats-officedocument.spreadsheetml.worksheet+xml
 # application/vnd.openxmlformats-officedocument.theme+xml
 # application/vnd.openxmlformats-officedocument.themeoverride+xml
 # application/vnd.openxmlformats-officedocument.vmldrawing
 # application/vnd.openxmlformats-officedocument.wordprocessingml.comments+xml
 application/vnd.openxmlformats-officedocument.wordprocessingml.document docx
 # application/vnd.openxmlformats-officedocument.wordprocessingml.document.glossary+xml
 # application/vnd.openxmlformats-officedocument.wordprocessingml.document.main+xml
 # application/vnd.openxmlformats-officedocument.wordprocessingml.endnotes+xml
 # application/vnd.openxmlformats-officedocument.wordprocessingml.fonttable+xml
 # application/vnd.openxmlformats-officedocument.wordprocessingml.footer+xml
 # application/vnd.openxmlformats-officedocument.wordprocessingml.footnotes+xml
 # application/vnd.openxmlformats-officedocument.wordprocessingml.numbering+xml
 # application/vnd.openxmlformats-officedocument.wordprocessingml.settings+xml
 # application/vnd.openxmlformats-officedocument.wordprocessingml.styles+xml
 application/vnd.openxmlformats-officedocument.wordprocessingml.template dotx
 # application/vnd.openxmlformats-officedocument.wordprocessingml.template.main+xml
 # application/vnd.openxmlformats-officedocument.wordprocessingml.websettings+xml
 # application/vnd.openxmlformats-package.core-properties+xml
 # application/vnd.openxmlformats-package.digital-signature-xmlsignature+xml
 # application/vnd.openxmlformats-package.relationships+xml
 # application/vnd.oracle.resource+json
 # application/vnd.orange.indata
 # application/vnd.osa.netdeploy
 application/vnd.osgeo.mapguide.package mgp
 # application/vnd.osgi.bundle
 application/vnd.osgi.dp dp
 application/vnd.osgi.subsystem esa
 # application/vnd.otp.ct-kip+xml
 # application/vnd.oxli.countgraph
 # application/vnd.pagerduty+json
 application/vnd.palm pdb pqa oprc
 # application/vnd.panoply
 # application/vnd.paos.xml
 application/vnd.pawaafile paw
 # application/vnd.pcos
 application/vnd.pg.format str
 application/vnd.pg.asasli ei6
 # application/vnd.piacess.application-licence
 application/vnd.picsel efif
 application/vnd.pmi.widget wg
 # application/vnd.poc.group-advertisement+xml
 application/vnd.pocketlearn plf

application/vnd.powerbuilder6 pbd
application/vnd.powerbuilder6-s
application/vnd.powerbuilder7
application/vnd.powerbuilder7-s
application/vnd.powerbuilder75
application/vnd.powerbuilder75-s
application/vnd.preminet
application/vnd.previewsystems.box box
application/vnd.proteus.magazine mgz
application/vnd.publishare-delta-tree qps
application/vnd.pvi.ptid1 ptid
application/vnd.pwg-multiplexed
application/vnd.pwg-xhtml-print+xml
application/vnd.qualcomm.brew-app-res
application/vnd.quarantainenet
application/vnd.quark.quarkxpress qxd qxt qwd qwt qxl qxb
application/vnd.quobject-quoxdocument
application/vnd.radisys.moml+xml
application/vnd.radisys.msml+xml
application/vnd.radisys.msml-audit+xml
application/vnd.radisys.msml-audit-conf+xml
application/vnd.radisys.msml-audit-conn+xml
application/vnd.radisys.msml-audit-dialog+xml
application/vnd.radisys.msml-audit-stream+xml
application/vnd.radisys.msml-conf+xml
application/vnd.radisys.msml-dialog+xml
application/vnd.radisys.msml-dialog-base+xml
application/vnd.radisys.msml-dialog-fax-detect+xml
application/vnd.radisys.msml-dialog-fax-sendrecv+xml
application/vnd.radisys.msml-dialog-group+xml
application/vnd.radisys.msml-dialog-speech+xml
application/vnd.radisys.msml-dialog-transform+xml
application/vnd.rainstor.data
application/vnd.rapid
application/vnd.rar
application/vnd.realvnc.bed bed
application/vnd.recordare.musicxml mxl
application/vnd.recordare.musicxml+xml musicxml
application/vnd.renlearn.rlprint
application/vnd.rig.cryptonote cryptonote
application/vnd.rim.cod cod
application/vnd.rn-realmedia rm
application/vnd.rn-realmedia-vbr rmvb
application/vnd.route66.link66+xml link66
application/vnd.rs-274x
application/vnd.ruckus.download
application/vnd.s3sms
application/vnd.sailingtracker.track st

application/vnd.sbm.cid
application/vnd.sbm.mid2
application/vnd.scribus
application/vnd.sealed.3df
application/vnd.sealed.csf
application/vnd.sealed.doc
application/vnd.sealed.eml
application/vnd.sealed.mht
application/vnd.sealed.net
application/vnd.sealed.ppt
application/vnd.sealed.tiff
application/vnd.sealed.xls
application/vnd.sealedmedia.softseal.html
application/vnd.sealedmedia.softseal.pdf
application/vnd.seemail see
application/vnd.sema sema
application/vnd.semd semd
application/vnd.semf semf
application/vnd.shana.informed.formdata ifm
application/vnd.shana.informed.formtemplate itp
application/vnd.shana.informed.interchange iif
application/vnd.shana.informed.package ipk
application/vnd.simtech-mindmapper twd twds
application/vnd.siren+json
application/vnd.smf mmf
application/vnd.smart.notebook
application/vnd.smart.teacher teacher
application/vnd.software602.filler.form+xml
application/vnd.software602.filler.form+xml-zip
application/vnd.solent.sdkm+xml sdkm sdkd
application/vnd.spotfire.dxp dxp
application/vnd.spotfire.sfs sfs
application/vnd.sss-cod
application/vnd.sss-dtf
application/vnd.sss-ntf
application/vnd.stardivision.calc sdc
application/vnd.stardivision.draw sda
application/vnd.stardivision.impress sdd
application/vnd.stardivision.math smf
application/vnd.stardivision.writer sdw vor
application/vnd.stardivision.writer-global sgl
application/vnd.stepmania.package smzip
application/vnd.stepmania.stepchart sm
application/vnd.street-stream
application/vnd.sun.wadl+xml
application/vnd.sun.xml.calc sxc
application/vnd.sun.xml.calc.template stc
application/vnd.sun.xml.draw sxd

application/vnd.sun.xml.draw.template std
application/vnd.sun.xml.impress sxi
application/vnd.sun.xml.impress.template sti
application/vnd.sun.xml.math sxm
application/vnd.sun.xml.writer sxw
application/vnd.sun.xml.writer.global sxc
application/vnd.sun.xml.writer.template stw
application/vnd.sus-calendar sus susp
application/vnd.svd svd
application/vnd.swiftview-ics
application/vnd.symbian.install sis six
application/vnd.syncml+xml xsm
application/vnd.syncml.dm+wbxml bdm
application/vnd.syncml.dm+xml xdm
application/vnd.syncml.dm.notification
application/vnd.syncml.dmddf+wbxml
application/vnd.syncml.dmddf+xml
application/vnd.syncml.dmtnds+wbxml
application/vnd.syncml.dmtnds+xml
application/vnd.syncml.ds.notification
application/vnd.tao.intent-module-archive tao
application/vnd.tcpdump.pcap pcap cap dmp
application/vnd.tmd.mediaflex.api+xml
application/vnd.tml
application/vnd.tmobile-livetv tmo
application/vnd.trid.tpt tpt
application/vnd.triscape.mxs mxs
application/vnd.trueapp tra
application/vnd.truedoc
application/vnd.ubisoft.webplayer
application/vnd.ufdl ufd ufdl
application/vnd.uiq.theme utz
application/vnd.umajin umj
application/vnd.unity unityweb
application/vnd.uoml+xml uoml
application/vnd.uplanet.alert
application/vnd.uplanet.alert-wbxml
application/vnd.uplanet.bearer-choice
application/vnd.uplanet.bearer-choice-wbxml
application/vnd.uplanet.cacheop
application/vnd.uplanet.cacheop-wbxml
application/vnd.uplanet.channel
application/vnd.uplanet.channel-wbxml
application/vnd.uplanet.list
application/vnd.uplanet.list-wbxml
application/vnd.uplanet.listcmd
application/vnd.uplanet.listcmd-wbxml
application/vnd.uplanet.signal

application/vnd.uri-map
application/vnd.valve.source.material
application/vnd.vcx vcx
application/vnd.vd-study
application/vnd.vectorworks
application/vnd.vel+json
application/vnd.verimatrix.vcas
application/vnd.vidsoft.vidconference
application/vnd.visio vsd vst vss vsw
application/vnd.visionary vis
application/vnd.vividence.scriptfile
application/vnd.vsf vsf
application/vnd.wap.sic
application/vnd.wap.slc
application/vnd.wap.wbxml wbxml
application/vnd.wap.wmlc wmlc
application/vnd.wap.wmlscriptc wmlsc
application/vnd.webturbo wtb
application/vnd.wfa.p2p
application/vnd.wfa.wsc
application/vnd.windows.devicepairing
application/vnd.wmc
application/vnd.wmf.bootstrap
application/vnd.wolfram.mathematica
application/vnd.wolfram.mathematica.package
application/vnd.wolfram.player nbp
application/vnd.wordperfect wpd
application/vnd.wqd wqd
application/vnd.wrq-hp3000-labelled
application/vnd.wt.stf stf
application/vnd.wv.csp+wbxml
application/vnd.wv.csp+xml
application/vnd.wv.ssp+xml
application/vnd.xacml+json
application/vnd.xara xar
application/vnd.xfdl xfdl
application/vnd.xfdl.webform
application/vnd.xmi+xml
application/vnd.xmpie.cpkg
application/vnd.xmpie.dpkg
application/vnd.xmpie.plan
application/vnd.xmpie.ppkg
application/vnd.xmpie.xlim
application/vnd.yamaha.hv-dic hvd
application/vnd.yamaha.hv-script hvs
application/vnd.yamaha.hv-voice hvp
application/vnd.yamaha.openscoreformat osf
application/vnd.yamaha.openscoreformat.osfpvg+xml osfpvg

application/vnd.yamaha.remote-setup
application/vnd.yamaha.smaf-audio saf
application/vnd.yamaha.smaf-phrase spf
application/vnd.yamaha.through-ngn
application/vnd.yamaha.tunnel-udpencap
application/vnd.yaoweme
application/vnd.yellowriver-custom-menu cmp
application/vnd.zul zir zirz
application/vnd.zzazz.deck+xml zaz
application/voicexml+xml vxml
application/vq-rtcp
application/watcherinfo+xml
application/whoispp-query
application/whoispp-response
application/widget wgt
application/winhelp hlp
application/wita
application/wordperfect5.1
application/wsdl+xml wsdl
application/wspolicy+xml wspolicy
application/x-7z-compressed 7z
application/x-abiword abw
application/x-ace-compressed ace
application/x-amf
application/x-apple-diskimage dmg
application/x-authorware-bin aab x32 u32 vox
application/x-authorware-map aam
application/x-authorware-seg aas
application/x-bcpio bcpio
application/x-bittorrent torrent
application/x-blorb blb blorb
application/x-bzip bz
application/x-bzip2 bz2 boz
application/x-cbr cbr cba cbt cbz cb7
application/x-cdlink vcd
application/x-cfs-compressed cfs
application/x-chat chat
application/x-chess-pgn pgn
application/x-compress
application/x-conference nsc
application/x-cpio cpio
application/x-csh csh
application/x-debian-package deb udeb
application/x-dgc-compressed dgc
application/x-director dir dcr dxr cst cct cxt w3d fgd swa
application/x-doom wad
application/x-dtbncx+xml ncx
application/x-dtbook+xml dtb

application/x-dtbresource+xml res
application/x-dvi dvi
application/x-envoy evy
application/x-eva eva
application/x-font-bdf bdf
application/x-font-dos
application/x-font-framemaker
application/x-font-ghostscript gsf
application/x-font-libgrx
application/x-font-linux-psf psf
application/x-font-otf otf
application/x-font-pcf pcf
application/x-font-snf snf
application/x-font-speedo
application/x-font-sunos-news
application/x-font-ttf ttf ttc
application/x-font-type1 pfa pfb pfm afm
application/x-font-vfont
application/x-freearc arc
application/x-futuresplash spl
application/x-gca-compressed gca
application/x-glulx ulx
application/x-gnumeric gnumeric
application/x-gramps-xml gramps
application/x-gtar gtar
application/x-gzip
application/x-hdf hdf
application/x-install-instructions install
application/x-iso9660-image iso
application/x-java-jnlp-file jnlp
application/x-latex latex
application/x-lzh-compressed lzh lha
application/x-mie mie
application/x-mobipocket-ebook prc mobi
application/x-ms-application application
application/x-ms-shortcut lnk
application/x-ms-wmd wmd
application/x-ms-wmz wmz
application/x-ms-xbap xbap
application/x-msaccess mdb
application/x-msbinder obd
application/x-mscardfile crd
application/x-msclip clp
application/x-msdownload exe dll com bat msi
application/x-msmediaview mvb m13 m14
application/x-msmetafile wmf wmz emf emz
application/x-msmoney mny
application/x-mspublisher pub

application/x-msschedule scd
application/x-msterminal trm
application/x-mswrite wri
application/x-netcdf nc cdf
application/x-nzb nzb
application/x-pkcs12 p12 pfx
application/x-pkcs7-certificates p7b spc
application/x-pkcs7-certreqresp p7r
application/x-rar-compressed rar
application/x-research-info-systems ris
application/x-sh sh
application/x-shar shar
application/x-shockwave-flash swf
application/x-silverlight-app xap
application/x-sql sql
application/x-stuffit sit
application/x-stuffitx sitx
application/x-subrip srt
application/x-sv4cpio sv4cpio
application/x-sv4crc sv4crc
application/x-t3vm-image t3
application/x-tads gam
application/x-tar tar
application/x-tcl tcl
application/x-tex tex
application/x-tex-tfm tfm
application/x-texinfo texinfo texi
application/x-tgif obj
application/x-ustar ustar
application/x-wais-source src
application/x-www-form-urlencoded
application/x-x509-ca-cert der crt
application/x-xfig fig
application/x-xliff+xml xlf
application/x-xpinstall xpi
application/x-xz xz
application/x-zmachine z1 z2 z3 z4 z5 z6 z7 z8
application/x400-bp
application/xacml+xml
application/xaml+xml xaml
application/xcap-att+xml
application/xcap-caps+xml
application/xcap-diff+xml xdf
application/xcap-el+xml
application/xcap-error+xml
application/xcap-ns+xml
application/xcon-conference-info+xml
application/xcon-conference-info-diff+xml

application/xenc+xml xenc
application/xhtml+xml xhtml xht
application/xhtml-voice+xml
application/xml xml xsl
application/xml-dtd dtd
application/xml-external-parsed-entity
application/xml-patch+xml
application/xmpp+xml
application/xop+xml xop
application/xproc+xml xpl
application/xslt+xml xslt
application/xspf+xml xspf
application/xv+xml mxml xhvm xvm xvm
application/yang yang
application/yin+xml yin
application/zip zip
application/zlib
audio/1d-interleaved-parityfec
audio/32kadpcm
audio/3gpp
audio/3gpp2
audio/ac3
audio/adpcm adp
audio/amr
audio/amr-wb
audio/amr-wb+
audio/aptx
audio/asc
audio/atrac-advanced-lossless
audio/atrac-x
audio/atrac3
audio/basic au snd
audio/bv16
audio/bv32
audio/clearmode
audio/cn
audio/dat12
audio/dls
audio/dsr-es201108
audio/dsr-es202050
audio/dsr-es202211
audio/dsr-es202212
audio/dv
audio/dvi4
audio/eac3
audio/encaprtmp
audio/evrc
audio/evrc-qcp

audio/evrc0
audio/evrc1
audio/evrcb
audio/evrcb0
audio/evrcb1
audio/evrcnw
audio/evrcnw0
audio/evrcnw1
audio/evrcwb
audio/evrcwb0
audio/evrcwb1
audio/evs
audio/example
audio/fwdred
audio/g711-0
audio/g719
audio/g722
audio/g7221
audio/g723
audio/g726-16
audio/g726-24
audio/g726-32
audio/g726-40
audio/g728
audio/g729
audio/g7291
audio/g729d
audio/g729e
audio/gsm
audio/gsm-efr
audio/gsm-hr-08
audio/ilbc
audio/ip-mr_v2.5
audio/isac
audio/l16
audio/l20
audio/l24
audio/l8
audio/lpc
audio/midi mid midi kar rmi
audio/mobile-xmf
audio/mp4 m4a mp4a
audio/mp4a-latm
audio/mpa
audio/mpa-robust
audio/mpeg mpga mp2 mp2a mp3 m2a m3a
audio/mpeg4-generic
audio/musepack

audio/ogg oga ogg spx
audio/opus
audio/parityfec
audio/pcma
audio/pcma-wb
audio/pcmu
audio/pcmu-wb
audio/prs.sid
audio/qcelp
audio/raptorfec
audio/red
audio/rtp-enc-aescm128
audio/rtp-midi
audio/rtploopback
audio/rtx
audio/s3m s3m
audio/silk sil
audio/smv
audio/smv-qcp
audio/smv0
audio/sp-midi
audio/speex
audio/t140c
audio/t38
audio/telephone-event
audio/tone
audio/uemclip
audio/ulpfec
audio/vdvi
audio/vmr-wb
audio/vnd.3gpp.iufp
audio/vnd.4sb
audio/vnd.audiokoz
audio/vnd.celp
audio/vnd.cisco.nse
audio/vnd.cmles.radio-events
audio/vnd.cns.anp1
audio/vnd.cns.infl
audio/vnd.dece.audio uva uvva
audio/vnd.digital-winds eol
audio/vnd.dlna.adts
audio/vnd.dolby.heaac.1
audio/vnd.dolby.heaac.2
audio/vnd.dolby.mlp
audio/vnd.dolby.mps
audio/vnd.dolby.pl2
audio/vnd.dolby.pl2x
audio/vnd.dolby.pl2z

audio/vnd.dolby.pulse.1
audio/vnd.dra dra
audio/vnd.dts dts
audio/vnd.dts.hd dtshd
audio/vnd.dvb.file
audio/vnd.everad.plj
audio/vnd.hns.audio
audio/vnd.lucent.voice lvp
audio/vnd.ms-playready.media.pya pya
audio/vnd.nokia.mobile-xmf
audio/vnd.nortel.vbk
audio/vnd.nuera.ecelp4800 ecelp4800
audio/vnd.nuera.ecelp7470 ecelp7470
audio/vnd.nuera.ecelp9600 ecelp9600
audio/vnd.octel.sbc
audio/vnd.qcelp
audio/vnd.rhetorex.32kadpcm
audio/vnd.rip rip
audio/vnd.sealedmedia.softseal.mpeg
audio/vnd.vmx.cvsd
audio/vorbis
audio/vorbis-config
audio/webm weba
audio/x-aac aac
audio/x-aiff aif aiff aifc
audio/x-caf caf
audio/x-flac flac
audio/x-matroska mka
audio/x-mpegurl m3u
audio/x-ms-wax wax
audio/x-ms-wma wma
audio/x-pn-realaudio ram ra
audio/x-pn-realaudio-plugin rmp
audio/x-tta
audio/x-wav wav
audio/xm xm
chemical/x-cdx cdx
chemical/x-cif cif
chemical/x-cmdf cmdf
chemical/x-cml cml
chemical/x-csml csml
chemical/x-pdb
chemical/x-xyz xyz
image/bmp bmp
image/cgm cgm
image/dicom-rle
image/emf
image/example

image/fits
image/g3fax g3
image/gif gif
image/ief ief
image/jls
image/jp2
image/jpeg jpeg jpg jpe
image/jpm
image/jpx
image/ktx ktx
image/naplps
image/png png
image/prs.btif btif
image/prs.pti
image/pwg-raster
image/sgi sgi
image/svg+xml svg svgz
image/t38
image/tiff tiff tif
image/tiff-fx
image/vnd.adobe.photoshop psd
image/vnd.airzip.accelerator.azv
image/vnd.cns.inf2
image/vnd.dece.graphic uvi uvvi uvg uvvg
image/vnd.djvu djvu djv
image/vnd.dvb.subtitle sub
image/vnd.dwg dwg
image/vnd.dxf dxf
image/vnd.fastbidsheet fbs
image/vnd.fpx fpx
image/vnd.fst fst
image/vnd.fujixerox.edmics-mmr mmr
image/vnd.fujixerox.edmics-rlc rlc
image/vnd.globalgraphics.pgb
image/vnd.microsoft.icon
image/vnd.mix
image/vnd.mozilla.apng
image/vnd.ms-modi mdi
image/vnd.ms-photo wdp
image/vnd.net-fpx npx
image/vnd.radiance
image/vnd.sealed.png
image/vnd.sealedmedia.softseal.gif
image/vnd.sealedmedia.softseal.jpg
image/vnd.svf
image/vnd.tencent.tap
image/vnd.valve.source.texture
image/vnd.wap.wbmp wbmp

image/vnd.xiff xif
image/vnd.zbrush.pcx
image/webp webp
image/wmf
image/x-3ds 3ds
image/x-cmu-raster ras
image/x-cmx cmx
image/x-freehand fh fhc fh4 fh5 fh7
image/x-icon ico
image/x-mrsid-image sid
image/x-pcx pcx
image/x-pict pic pct
image/x-portable-anymap pnm
image/x-portable-bitmap pbm
image/x-portable-graymap pgm
image/x-portable-pixmap ppm
image/x-rgb rgb
image/x-tga tga
image/x-xbitmap xbm
image/x-xpixmap xpm
image/x-xwindowdump xwd
message/cpim
message/delivery-status
message/disposition-notification
message/example
message/external-body
message/feedback-report
message/global
message/global-delivery-status
message/global-disposition-notification
message/global-headers
message/http
message/imdn+xml
message/news
message/partial
message/rfc822 eml mime
message/s-http
message/sip
message/sipfrag
message/tracking-status
message/vnd.si.simp
message/vnd.wfa.wsc
model/example
model/gltf+json
model/iges igs iges
model/mesh msh mesh silo
model/vnd.collada+xml dae
model/vnd.dwf dwf

model/vnd.flatland.3dml
model/vnd.gdl gdl
model/vnd.gs-gdl
model/vnd.gs.gdl
model/vnd.gtw gtw
model/vnd.moml+xml
model/vnd.mts mts
model/vnd.opengex
model/vnd.parasolid.transmit.binary
model/vnd.parasolid.transmit.text
model/vnd.rosette.annotated-data-model
model/vnd.valve.source.compiled-map
model/vnd.vtu vtu
model/vrml wrl vrml
model/x3d+binary x3db x3dbz
model/x3d+fastinfoset
model/x3d+vrml x3dv x3dvz
model/x3d+xml x3d x3dz
model/x3d-vrml
multipart/alternative
multipart/appledouble
multipart/byteranges
multipart/digest
multipart/encrypted
multipart/example
multipart/form-data
multipart/header-set
multipart/mixed
multipart/parallel
multipart/related
multipart/report
multipart/signed
multipart/voice-message
multipart/x-mixed-replace
text/1d-interleaved-parityfec
text/cache-manifest appcache
text/calendar ics ifb
text/css css
text/csv csv
text/csv-schema
text/directory
text/dns
text/ecmascript
text/encaprtpt
text/enriched
text/example
text/fwdred
text/grammar-ref-list

text/html html htm
text/javascript
text/jcr-cnd
text/markdown
text/mizar
text/n3 n3
text/parameters
text/parityfec
text/plain txt text conf def list log in
text/provenance-notation
text/prs.fallenstein.rst
text/prs.lines.tag dsc
text/prs.prop.logic
text/raptorfec
text/red
text/rfc822-headers
text/richtext rtx
text/rtf
text/rtp-enc-aescm128
text/rtploopback
text/rtx
text/sgml sgml sgm
text/t140
text/tab-separated-values tsv
text/troff t tr roff man me ms
text/turtle ttl
text/ulpfec
text/uri-list uri uris urls
text/vcard vcard
text/vnd.a
text/vnd.abc
text/vnd.curl curl
text/vnd.curl.dcurl dcurl
text/vnd.curl.mcurl mcurl
text/vnd.curl.scurl scurl
text/vnd.debian.copyright
text/vnd.dmclientscript
text/vnd.dvb.subtitle sub
text/vnd.esmertec.theme-descriptor
text/vnd.fly fly
text/vnd.fmi.flexstor flx
text/vnd.graphviz gv
text/vnd.in3d.3dml 3dml
text/vnd.in3d.spot spot
text/vnd.ipdc.newsml
text/vnd.ipdc.nitf
text/vnd.latex-z
text/vnd.motorola.reflex

```
# text/vnd.ms-mediapackage
# text/vnd.net2phone.commcenter.command
# text/vnd.radisys.msml-basic-layout
# text/vnd.si.uricatalogue
text/vnd.sun.j2me.app-descriptor jad
# text/vnd.trolltech.linguist
# text/vnd.wap.si
# text/vnd.wap.sl
text/vnd.wap.wml wml
text/vnd.wap.wmlscript wmls
text/x-asm s asm
text/x-c c cc cxx cpp h hh dic
text/x-fortran f for f77 f90
text/x-java-source java
text/x-nfo nfo
text/x-opml opml
text/x-pascal p pas
text/x-setext etx
text/x-sfv sfv
text/x-uuencode uu
text/x-vcalendar vcs
text/x-vcard vcf
# text/xml
# text/xml-external-parsed-entity
# video/1d-interleaved-parityfec
video/3gpp 3gp
# video/3gpp-tt
video/3gpp2 3g2
# video/bmpeg
# video/bt656
# video/celb
# video/dv
# video/encaprtsp
# video/example
video/h261 h261
video/h263 h263
# video/h263-1998
# video/h263-2000
video/h264 h264
# video/h264-rcdo
# video/h264-svc
# video/h265
# video/iso.segment
video/jpeg jpgv
# video/jpeg2000
video/jpm jpm jpgm
video/mj2 mj2 mjp2
# video/mp1s
```

video/mp2p
video/mp2t
video/mp4 mp4 mp4v mpg4
video/mp4v-es
video/mpeg mpeg mpg mpe m1v m2v
video/mpeg4-generic
video/mpv
video/nv
video/ogg ogv
video/parityfec
video/pointer
video/quicktime qt mov
video/raptorfec
video/raw
video/rtp-enc-aescm128
video/rtploopback
video/rtx
video/smp292m
video/ulpfec
video/vc1
video/vnd.cctv
video/vnd.dece.hd uvh uvvh
video/vnd.dece.mobile uvm uvvm
video/vnd.dece.mp4
video/vnd.dece.pd uvp uvvp
video/vnd.dece.sd uvs uvvs
video/vnd.dece.video uvv uvvv
video/vnd.directv.mpeg
video/vnd.directv.mpeg-tts
video/vnd.dlna.mpeg-tts
video/vnd.dvb.file dvb
video/vnd.fvt fvt
video/vnd.hns.video
video/vnd.iptvforum.1dparityfec-1010
video/vnd.iptvforum.1dparityfec-2005
video/vnd.iptvforum.2dparityfec-1010
video/vnd.iptvforum.2dparityfec-2005
video/vnd.iptvforum.ttsavc
video/vnd.iptvforum.ttsmpeg2
video/vnd.motorola.video
video/vnd.motorola.videop
video/vnd.mpegurl mxu m4u
video/vnd.ms-playready.media.pyv pyv
video/vnd.nokia.interleaved-multimedia
video/vnd.nokia.videovoip
video/vnd.objectvideo
video/vnd.radgamettools.bink
video/vnd.radgamettools.smacker

video/vnd.sealed.mpeg1
video/vnd.sealed.mpeg4
video/vnd.sealed.swf
video/vnd.sealedmedia.softseal.mov
video/vnd.uvu.mp4 uvu uvvu
video/vnd.vivo viv
video/vp8
video/webm webm
video/x-f4v f4v
video/x-fli fli
video/x-flv flv
video/x-m4v m4v
video/x-matroska mkv mk3d mks
video/x-mng mng
video/x-ms-asf asf asx
video/x-ms-vob vob
video/x-ms-wm wm
video/x-ms-wmv wmv
video/x-ms-wmx wmx
video/x-ms-wvx wvx
video/x-msvideo avi
video/x-sgi-movie movie
video/x-smv smv
x-conference/x-cooltalk ice

Found in path(s):

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-jar/org/springframework/http/mime.types

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2002-2005 the original author or authors.

*

* Licensed under the Apache License, Version 2.0 (the "License");

* you may not use this file except in compliance with the License.

* You may obtain a copy of the License at

*

* <https://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software

* distributed under the License is distributed on an "AS IS" BASIS,

* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

* See the License for the specific language governing permissions and

* limitations under the License.

*/

Found in path(s):

* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-

jar/org/springframework/web/filter/ServletContextRequestLoggingFilter.java

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2002-2014 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 *     https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/server/ServerHttpAsyncRequestControl.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/method/support/HandlerMethodArgumentResolver.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/context/support/ServletConfigPropertySource.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/context/support/ServletContextPropertySource.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/context/ConfigurableWebApplicationContext.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/web/jsf/FacesContextUtils.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/converter/feed/AtomFeedHttpMessageConverter.java
* /opt/cola/permits/1346931645_1655514399.2231686/0/spring-web-5-3-21-sources-
jar/org/springframework/http/client/ClientHttpRequest.java
```

1.23 postgresql-jdbc 42.2.24

1.23.1 Available under license :

Copyright 2017, OnGres.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 1997, PostgreSQL Global Development Group
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Additional License files can be found in the 'licenses' folder located in the same directory as the LICENSE file (i.e. this file)

- Software produced outside the ASF which is available under other licenses (not Apache-2.0)

BSD-2-Clause

* com.ongres.scram:client:2.1

* com.ongres.scram:common:2.1

* com.ongres.stringprep:saslprep:1.1

* com.ongres.stringprep:stringprep:1.1

Copyright 2019, OnGres.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

1.24 openssl 1.1.1k-7.el8_6

1.24.1 Available under license :

LICENSE ISSUES

=====

The OpenSSL toolkit stays under a double license, i.e. both the conditions of the OpenSSL License and the original SSLeay license apply to the toolkit. See below for the actual license texts.

OpenSSL License

/* =====

* Copyright (c) 1998-2019 The OpenSSL Project. All rights reserved.

*

* Redistribution and use in source and binary forms, with or without
* modification, are permitted provided that the following conditions
* are met:

*

* 1. Redistributions of source code must retain the above copyright
* notice, this list of conditions and the following disclaimer.

*
 * 2. Redistributions in binary form must reproduce the above copyright
 * notice, this list of conditions and the following disclaimer in
 * the documentation and/or other materials provided with the
 * distribution.
 *
 * 3. All advertising materials mentioning features or use of this
 * software must display the following acknowledgment:
 * "This product includes software developed by the OpenSSL Project
 * for use in the OpenSSL Toolkit. (<http://www.openssl.org/>)"
 *
 * 4. The names "OpenSSL Toolkit" and "OpenSSL Project" must not be used to
 * endorse or promote products derived from this software without
 * prior written permission. For written permission, please contact
 * openssl-core@openssl.org.
 *
 * 5. Products derived from this software may not be called "OpenSSL"
 * nor may "OpenSSL" appear in their names without prior written
 * permission of the OpenSSL Project.
 *
 * 6. Redistributions of any form whatsoever must retain the following
 * acknowledgment:
 * "This product includes software developed by the OpenSSL Project
 * for use in the OpenSSL Toolkit (<http://www.openssl.org/>)"
 *
 * THIS SOFTWARE IS PROVIDED BY THE OpenSSL PROJECT ``AS IS" AND ANY
 * EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
 * IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
 * PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE OpenSSL PROJECT OR
 * ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
 * SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT
 * NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
 * LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
 * HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,
 * STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
 * ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED
 * OF THE POSSIBILITY OF SUCH DAMAGE.
 * =====
 *
 * This product includes cryptographic software written by Eric Young
 * (eay@cryptsoft.com). This product includes software written by Tim
 * Hudson (tjh@cryptsoft.com).
 *
 */

Original SSLeay License

/* Copyright (C) 1995-1998 Eric Young (eay@cryptsoft.com)
* All rights reserved.
*
* This package is an SSL implementation written
* by Eric Young (eay@cryptsoft.com).
* The implementation was written so as to conform with Netscapes SSL.
*
* This library is free for commercial and non-commercial use as long as
* the following conditions are aheared to. The following conditions
* apply to all code found in this distribution, be it the RC4, RSA,
* lhash, DES, etc., code; not just the SSL code. The SSL documentation
* included with this distribution is covered by the same copyright terms
* except that the holder is Tim Hudson (tjh@cryptsoft.com).
*
* Copyright remains Eric Young's, and as such any Copyright notices in
* the code are not to be removed.
* If this package is used in a product, Eric Young should be given attribution
* as the author of the parts of the library used.
* This can be in the form of a textual message at program startup or
* in documentation (online or textual) provided with the package.
*
* Redistribution and use in source and binary forms, with or without
* modification, are permitted provided that the following conditions
* are met:
* 1. Redistributions of source code must retain the copyright
* notice, this list of conditions and the following disclaimer.
* 2. Redistributions in binary form must reproduce the above copyright
* notice, this list of conditions and the following disclaimer in the
* documentation and/or other materials provided with the distribution.
* 3. All advertising materials mentioning features or use of this software
* must display the following acknowledgement:
* "This product includes cryptographic software written by
* Eric Young (eay@cryptsoft.com)"
* The word 'cryptographic' can be left out if the rouines from the library
* being used are not cryptographic related :-).
* 4. If you include any Windows specific code (or a derivative thereof) from
* the apps directory (application code) you must include an acknowledgement:
* "This product includes software written by Tim Hudson (tjh@cryptsoft.com)"
*
* THIS SOFTWARE IS PROVIDED BY ERIC YOUNG ``AS IS" AND
* ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
* ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE
* FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
* DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS
* OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
* LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY

- * OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
- * SUCH DAMAGE.
- *
- * The licence and distribution terms for any publically available version or
- * derivative of this code cannot be changed. i.e. this code cannot simply be
- * copied and put under another distribution licence
- * [including the GNU Public Licence.]
- */

GNU GENERAL PUBLIC LICENSE
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.
59 Temple Place - Suite 330, Boston, MA
02111-1307, USA.

Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and

(2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and

you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of

Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by

modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License

may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

Appendix: How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) 19yy <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place - Suite 330, Boston, MA 02111-1307, USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) 19yy name of author  
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.  
This is free software, and you are welcome to redistribute it  
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program
'Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice

This General Public License does not permit incorporating your program into
proprietary programs. If your program is a subroutine library, you may
consider it more useful to permit linking proprietary applications with the
library. If this is what you want to do, use the GNU Library General
Public License instead of this License.

The "Artistic License"

Preamble

The intent of this document is to state the conditions under which a
Package may be copied, such that the Copyright Holder maintains some
semblance of artistic control over the development of the package,
while giving the users of the package the right to use and distribute
the Package in a more-or-less customary fashion, plus the right to make
reasonable modifications.

Definitions:

"Package" refers to the collection of files distributed by the
Copyright Holder, and derivatives of that collection of files
created through textual modification.

"Standard Version" refers to such a Package if it has not been
modified, or has been modified in accordance with the wishes
of the Copyright Holder as specified below.

"Copyright Holder" is whoever is named in the copyright or
copyrights for the package.

"You" is you, if you're thinking about copying or distributing
this Package.

"Reasonable copying fee" is whatever you can justify on the
basis of media cost, duplication charges, time of people involved,
and so on. (You will not be required to justify it to the
Copyright Holder, but only to the computing community at large
as a market that must bear the fee.)

"Freely Available" means that no fee is charged for the item itself, though there may be fees involved in handling the item. It also means that recipients of the item may redistribute it under the same conditions they received it.

1. You may make and give away verbatim copies of the source form of the Standard Version of this Package without restriction, provided that you duplicate all of the original copyright notices and associated disclaimers.
2. You may apply bug fixes, portability fixes and other modifications derived from the Public Domain or from the Copyright Holder. A Package modified in such a way shall still be considered the Standard Version.
3. You may otherwise modify your copy of this Package in any way, provided that you insert a prominent notice in each changed file stating how and when you changed that file, and provided that you do at least ONE of the following:
 - a) place your modifications in the Public Domain or otherwise make them Freely Available, such as by posting said modifications to Usenet or an equivalent medium, or placing the modifications on a major archive site such as uunet.uu.net, or by allowing the Copyright Holder to include your modifications in the Standard Version of the Package.
 - b) use the modified Package only within your corporation or organization.
 - c) rename any non-standard executables so the names do not conflict with standard executables, which must also be provided, and provide a separate manual page for each non-standard executable that clearly documents how it differs from the Standard Version.
 - d) make other distribution arrangements with the Copyright Holder.
4. You may distribute the programs of this Package in object code or executable form, provided that you do at least ONE of the following:
 - a) distribute a Standard Version of the executables and library files, together with instructions (in the manual page or equivalent) on where to get the Standard Version.
 - b) accompany the distribution with the machine-readable source of the Package with your modifications.
 - c) give non-standard executables non-standard names, and clearly document the differences in manual pages (or equivalent), together with instructions on where to get the Standard Version.

d) make other distribution arrangements with the Copyright Holder.

5. You may charge a reasonable copying fee for any distribution of this Package. You may charge any fee you choose for support of this Package. You may not charge a fee for this Package itself. However, you may distribute this Package in aggregate with other (possibly commercial) programs as part of a larger (possibly commercial) software distribution provided that you do not advertise this Package as a product of your own. You may embed this Package's interpreter within an executable of yours (by linking); this shall be construed as a mere form of aggregation, provided that the complete Standard Version of the interpreter is so embedded.

6. The scripts and library files supplied as input to or produced as output from the programs of this Package do not automatically fall under the copyright of this Package, but belong to whoever generated them, and may be sold commercially, and may be aggregated with this Package. If such scripts or library files are aggregated with this Package via the so-called "undump" or "unexec" methods of producing a binary executable image, then distribution of such an image shall neither be construed as a distribution of this Package nor shall it fall under the restrictions of Paragraphs 3 and 4, provided that you do not represent such an executable image as a Standard Version of this Package.

7. C subroutines (or comparably compiled subroutines in other languages) supplied by you and linked into this Package in order to emulate subroutines and variables of the language defined by this Package shall not be considered part of this Package, but are the equivalent of input as in Paragraph 6, provided these subroutines do not change the language in any way that would cause it to fail the regression tests for the language.

8. Aggregation of this Package with a commercial distribution is always permitted provided that the use of this Package is embedded; that is, when no overt attempt is made to make this Package's interfaces visible to the end user of the commercial distribution. Such use shall not be construed as a distribution of this Package.

9. The name of the Copyright Holder may not be used to endorse or promote products derived from this software without specific prior written permission.

10. THIS PACKAGE IS PROVIDED "AS IS" AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

The End

1.25 saaj 1.2

1.25.1 Available under license :

Found license 'Common Development and Distribution License (CDDL) 1.1' in '* The contents of this file are subject to the terms * of the Common Development and Distribution License * (the License). You may not use this file except in * Copyright 2006 Sun Microsystems Inc. All Rights Reserved * for more details. * for more details. * for more details.'

Found license 'Common Development and Distribution License (CDDL) 1.1' in '* The contents of this file are subject to the terms * of the Common Development and Distribution License * (the License). You may not use this file except in * Copyright 2006 Sun Microsystems Inc. All Rights Reserved'

1.26 fdisk 2.32.1

1.26.1 Available under license :

/*

- * Copyright (c) 1989 The Regents of the University of California.
- * All rights reserved.
- *
- * Redistribution and use in source and binary forms, with or without
- * modification, are permitted provided that the following conditions
- * are met:
- * 1. Redistributions of source code must retain the above copyright
- * notice, this list of conditions and the following disclaimer.
- * 2. Redistributions in binary form must reproduce the above copyright
- * notice, this list of conditions and the following disclaimer in the
- * documentation and/or other materials provided with the distribution.
- * 3. All advertising materials mentioning features or use of this software
- * must display the following acknowledgement:
- * This product includes software developed by the University of
- * California, Berkeley and its contributors.
- * 4. Neither the name of the University nor the names of its contributors
- * may be used to endorse or promote products derived from this software
- * without specific prior written permission.

*

* THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS" AND
* ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
* ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE
* FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
* DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS
* OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
* LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
* OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
* SUCH DAMAGE.

*/

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

The complete text of the license is available in the `../Documentation/licenses/COPYING.LGPLv2.1` file.

```
7zXZF!t/5]oK3&K6Y^
CP#vMOoYL?6]2z({ CLYj0
LFIU<>Q& }7!C}e6]e`M,J}.dE,4hVmp
RsTk!|r!Quo1OE|FfP+A}XBT9 \<
0<P9{>s\36R)m.S(bCb7S<DP(`ka")^oy`r)7I%tU6@AS.SMoOfF3whA!!WIMcK')e/eJ1F
g\BI'W|j>jf_{ JPP}oMd3rfQ+_3<%<6jx{)11D5eg;NtD+~R]w[xiue@F#Em0hu;,x{R7V2!Vq~AG{EX -
"0h*5x)*x\n)#!$*w!:499X1il:"P+=22cmr3J}/0o9nlB?N&(q=$pPc!ab,6f&v/RS>O./OW[INy(BM~]-uf$Ng|"_W[0;
OXy[aB*"/_U~fQHO(3[b%o )+lq#+_d<QdLd=$!p!h0h6nfN=I+GNRk gKOL3\N3"uGxfIC
zCTJtjSN:$gE11QQ$7*5++V=4Xt9V?r3_Vd2o8h"F8~qM,ZI6=Qgtw|1np#_(+?)zp(;H!E2Nz'WW_WmA,
FSYZE*-exTWFt#|
rd>k|R>aXrvXS~"9=U$puaqQb;\k,RD5(fu&#
?)w!nz>SbvY[R+t[ BS=)d ;*!;_>KfBqxY(F|0.Ve%S61opMG
1%QsS|11np#_(~*'uM%S61opMG`YfRXvY[R+t[ BS=)d ;*!;_>KfBqxY(F|0.Ve%S61opMG`YfRXvY[R+t[
BS=)d ;*!;_>KfB }&ea)F~H#@|DExb
Fw=|
;}8SPT"_p;27 *,D-sS|11np#_(~*'uM%S61opMG`B=gD7-`rFTvDY(F|0.Ve%S61opMG`YfRXvY[R+t[ BS=)d
;*!;_>KfBqxY(F|0.Ve%S61opMG`YfRXx+sS|11np#_(~*'uM%S61opMG`YfRXvY[R+t[ BS=)d
;*!;_>KfBqxY(F|0.Ve%S61opMG`YfRXvY[R+t[ BS=)d ;*!;_>KfBqxY(F|0.Ve%Q?f_+T@Uo)2fgYZ
```

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not

price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in

the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those

sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN

OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands ``show w'` and ``show c'` should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than ``show w'` and ``show c'`; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, and the entire permission notice in its entirety, including the disclaimer of warranties.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ALL OF WHICH ARE HEREBY DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR

CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF NOT ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

7zXZF!t/]o."w[7gp<G

H:Oed 18uyMQ9|FO6

87I8.mhGl^eb_X/UQKuB

)Cdk!B_M/tw|11np#_(~*uM%S61opMG`YfRXvY[R+t[BS=)d

;*!;_>KfBqxY(F|0.Ve%S61opMG`YfRXvY[R+t[BS=)d

;*!;_>KfBqxYm+sS|11np#_(~*uM%S61opMG`YfRXvY[R+t[BS=)d

;*!;_>KfBqxY(F|0.Ve%S61opMG`YfRXvY[R+t[BS=)d ;*!;_>KfBqxY(F|0.Ve%Q?

*sS|11np#_(~*u7gi){IgYZ

This library is free software; you can redistribute it and/or modify it under the terms of the Modified BSD License.

The complete text of the license is available in the
../Documentation/licenses/COPYING.BSD-3 file.

Permission to use, copy, modify, and/or distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS" AND THE AUTHOR DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

1.27 open-ldap 2.4.46-18.el8

1.27.1 Available under license :

Copyright 1998-2018 The OpenLDAP Foundation. All rights reserved.

COPYING RESTRICTIONS APPLY.

See COPYRIGHT and LICENSE files in the top-level directory of this distribution (i.e., ../COPYRIGHT and ../LICENSE, respectively).

OpenLDAP Public License

The OpenLDAP Public License

Version 2.8.1, 25 November 2003

Redistribution and use of this software and associated documentation

("Software"), with or without modification, are permitted provided that the following conditions are met:

1. Redistributions in source form must retain copyright statements and notices,
2. Redistributions in binary form must reproduce applicable copyright statements and notices, this list of conditions, and the following disclaimer in the documentation and/or other materials provided with the distribution, and
3. Redistributions must contain a verbatim copy of this document.

The OpenLDAP Foundation may revise this license from time to time. Each revision is distinguished by a version number. You may use this Software under terms of this license revision or under the terms of any subsequent revision of the license.

THIS SOFTWARE IS PROVIDED BY THE OPENLDAP FOUNDATION AND ITS CONTRIBUTORS ``AS IS" AND ANY EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE OPENLDAP FOUNDATION, ITS CONTRIBUTORS, OR THE AUTHOR(S) OR OWNER(S) OF THE SOFTWARE BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The names of the authors and copyright holders must not be used in advertising or otherwise to promote the sale, use or other dealing in this Software without specific, written prior permission. Title to copyright in this Software shall at all times remain with copyright holders.

OpenLDAP is a registered trademark of the OpenLDAP Foundation.

Copyright 1999-2003 The OpenLDAP Foundation, Redwood City, California, USA. All rights reserved. Permission to copy and distribute verbatim copies of this document is granted.

/*****

*

* Copyright (C) 2000 Pierangelo Masarati, <ando@sys-net.it>

* All rights reserved.

*

* Permission is granted to anyone to use this software for any purpose
* on any computer system, and to alter it and redistribute it, subject
* to the following restrictions:

*

* 1. The author is not responsible for the consequences of use of this
* software, no matter how awful, even if they arise from flaws in it.

*

* 2. The origin of this software must not be misrepresented, either by
* explicit claim or by omission. Since few users ever read sources,
* credits should appear in the documentation.

*

* 3. Altered versions must be plainly marked as such, and must not be
* misrepresented as being the original software. Since few users
* ever read sources, credits should appear in the documentation.

*

* 4. This notice may not be removed or altered.

*

*****/

Copyright 1998-2018 The OpenLDAP Foundation

All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted only as authorized by the OpenLDAP
Public License.

A copy of this license is available in the file LICENSE in the
top-level directory of the distribution or, alternatively, at
<<http://www.OpenLDAP.org/license.html>>.

OpenLDAP is a registered trademark of the OpenLDAP Foundation.

Individual files and/or contributed packages may be copyright by
other parties and/or subject to additional restrictions.

This work is derived from the University of Michigan LDAP v3.3
distribution. Information concerning this software is available
at <<http://www.umich.edu/~dirsvcs/ldap/ldap.html>>.

This work also contains materials derived from public sources.

Additional information about OpenLDAP can be obtained at
<<http://www.openldap.org/>>.

Portions Copyright 1998-2012 Kurt D. Zeilenga.

Portions Copyright 1998-2006 Net Boolean Incorporated.

Portions Copyright 2001-2006 IBM Corporation.

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted only as authorized by the OpenLDAP Public License.

Portions Copyright 1999-2008 Howard Y.H. Chu.
Portions Copyright 1999-2008 Symas Corporation.
Portions Copyright 1998-2003 Hallvard B. Furuseth.
Portions Copyright 2007-2011 Gavin Henry.
Portions Copyright 2007-2011 Suretec Systems Ltd.
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that this notice is preserved. The names of the copyright holders may not be used to endorse or promote products derived from this software without their specific prior written permission. This software is provided ``as is" without express or implied warranty.

Portions Copyright (c) 1992-1996 Regents of the University of Michigan.
All rights reserved.

Redistribution and use in source and binary forms are permitted provided that this notice is preserved and that due credit is given to the University of Michigan at Ann Arbor. The name of the University may not be used to endorse or promote products derived from this software without specific prior written permission. This software is provided ``as is" without express or implied warranty.
Copyright 1998-2018 The OpenLDAP Foundation. All rights reserved.

COPYING RESTRICTIONS APPLY.

See COPYRIGHT and LICENSE files in the top-level directory of this distribution (i.e., ../COPYRIGHT and ../LICENSE, respectively).

NeoSoft Tcl client extensions to Lightweight Directory Access Protocol.

Copyright (c) 1998-1999 NeoSoft, Inc.
All Rights Reserved.

This software may be used, modified, copied, distributed, and sold, in both source and binary form provided that these copyrights are

retained and their terms are followed.

Under no circumstances are the authors or NeoSoft Inc. responsible for the proper functioning of this software, nor do the authors assume any liability for damages incurred with its use.

Redistribution and use in source and binary forms are permitted provided that this notice is preserved and that due credit is given to NeoSoft, Inc.

NeoSoft, Inc. may not be used to endorse or promote products derived from this software without specific prior written permission. This software is provided ``as is" without express or implied warranty.

Requests for permission may be sent to NeoSoft Inc, 1770 St. James Place, Suite 500, Houston, TX, 77056.

Copyright 2011-2018 Howard Chu, Symas Corp.

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted only as authorized by the OpenLDAP Public License.

A copy of this license is available in the file LICENSE in the top-level directory of the distribution or, alternatively, at <http://www.OpenLDAP.org/license.html>.

OpenLDAP is a registered trademark of the OpenLDAP Foundation.

Individual files and/or contributed packages may be copyright by other parties and/or subject to additional restrictions.

This work also contains materials derived from public sources.

Additional information about OpenLDAP can be obtained at <http://www.openldap.org/>.

The OpenLDAP Public License

Version 2.8, 17 August 2003

Redistribution and use of this software and associated documentation ("Software"), with or without modification, are permitted provided that the following conditions are met:

1. Redistributions in source form must retain copyright statements and notices,
2. Redistributions in binary form must reproduce applicable copyright statements and notices, this list of conditions, and the following

disclaimer in the documentation and/or other materials provided with the distribution, and

3. Redistributions must contain a verbatim copy of this document.

The OpenLDAP Foundation may revise this license from time to time. Each revision is distinguished by a version number. You may use this Software under terms of this license revision or under the terms of any subsequent revision of the license.

THIS SOFTWARE IS PROVIDED BY THE OPENLDAP FOUNDATION AND ITS CONTRIBUTORS ``AS IS" AND ANY EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE OPENLDAP FOUNDATION, ITS CONTRIBUTORS, OR THE AUTHOR(S) OR OWNER(S) OF THE SOFTWARE BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The names of the authors and copyright holders must not be used in advertising or otherwise to promote the sale, use or other dealing in this Software without specific, written prior permission. Title to copyright in this Software shall at all times remain with copyright holders.

OpenLDAP is a registered trademark of the OpenLDAP Foundation.

Copyright 1999-2003 The OpenLDAP Foundation, Redwood City, California, USA. All Rights Reserved. Permission to copy and distribute verbatim copies of this document is granted.

1.28 python-dateutil 2.6.1-1.ph1

1.28.1 Available under license :

dateutil - Extensions to the standard Python datetime module.

Copyright (c) 2003-2011 - Gustavo Niemeyer <gustavo@niemeyer.net>

Copyright (c) 2012-2014 - Tomi Pievilinen <tomi.pievilainen@iki.fi>

Copyright (c) 2014-2016 - Yaron de Leeuw <me@jarondl.net>

Copyright (c) 2015- - Paul Ganssle <paul@ganssle.io>

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of the copyright holder nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

1.29 json-smart 2.3.1

1.29.1 Available under license :

No license file was found, but licenses were detected in source scan.

Manifest-Version: 1.0

Bnd-LastModified: 1619958065632

Build-Jdk: 11.0.11

Built-By: uriel

Bundle-Description: JSON (JavaScript Object Notation) is a lightweight data-interchange format. It is easy for humans to read and write. It is easy for machines to parse and generate. It is based on a subset of the JavaScript Programming Language, Standard ECMA-262 3rd Edition - December 1999. JSON is a text format that is completely language independent but uses conventions that are familiar to programmers of the C-family of languages, including C, C++, C#, Java, JavaScript, Perl, Python, and many others. These properties make JSON an ideal data-interchange language.

Bundle-DocURL: <https://urielch.github.io/>

Bundle-License: <http://www.apache.org/licenses/LICENSE-2.0.txt>

Bundle-ManifestVersion: 2

Bundle-Name: json-smart

Bundle-SymbolicName: net.minidev.json-smart
Bundle-Vendor: Chemouni Uriel
Bundle-Version: 2.3.1
Created-By: Apache Maven Bundle Plugin
Export-Package: net.minidev.json;uses:="net.minidev.asm,net.minidev.js
on.parser,net.minidev.json.reader,net.minidev.json.writer";version="2
.3.1",net.minidev.json.annotate;version="2.3.1",net.minidev.json.pars
er;uses:="net.minidev.json.writer";version="2.3.1",net.minidev.json.r
eader;uses:="net.minidev.json";version="2.3.1",net.minidev.json.write
r;uses:="net.minidev.json,net.minidev.json.parser";version="2.3.1"
Import-Package: net.minidev.asm;version="[2.3,3)",net.minidev.json,net
.minidev.json.annotate,net.minidev.json.parser,net.minidev.json.reade
r,net.minidev.json.writer
Require-Capability: osgi.ee;filter="(&(osgi.ee=JavaSE)(version=1.8))"
Tool: Bnd-5.1.1.202006162103

Found in path(s):

* /opt/cola/permits/1199743798_1630577652.3/0/json-smart-2-3-1-jar/META-INF/MANIFEST.MF

No license file was found, but licenses were detected in source scan.

<!-- this POM is released under an Apache 2.0 license -->

<url><http://www.apache.org/licenses/LICENSE-2.0.txt></url>

Found in path(s):

* /opt/cola/permits/1199743798_1630577652.3/0/json-smart-2-3-1-jar/META-INF/maven/net.minidev/json-smart/pom.xml

1.30 npth 1.5 4.e18

1.30.1 Available under license :

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.

51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public

Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be

consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The

former contains code derived from the library, whereas the latter must be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a

fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of

a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be

linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is

interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or

distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing

to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the library's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or

your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990
Ty Coon, President of Vice

That's all there is to it!

1.31 cxf-rt-bindings-xml 3.4.5

1.31.1 Available under license :

Apache CXF
Copyright 2006-2021 The Apache Software Foundation

This product includes software developed at
The Apache Software Foundation (<http://www.apache.org/>).

Apache License
Version 2.0, January 2004
<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of

this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only

on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

1.32 e2fsprogs 1.45.6-4.el8

1.32.1 Available under license :

This is the Debian GNU/Linux prepackaged version of the static EXT2 file system consistency checker (e2fsck.static). The EXT2 utilities were written by Theodore Ts'o <tytso@mit.edu> and Remy Card <card@masi.ibp.fr>.

Sources were obtained from <http://sourceforge.net/projects/e2fsprogs>

Packaging is Copyright (c) 2003-2006 Theodore Ts'o <tytso@mit.edu>

Copyright (c) 1997-2003 Yann Dirson <dirson@debian.org>

Copyright (c) 2001 Alcove <<http://www.alcove.com/>>

Copyright (c) 1997 Klee Dienes

Copyright (c) 1995-1996 Michael Nonweiler <mrn20@cam.ac.uk>

Upstream Author: Theodore Ts'o <tytso@mit.edu>

Copyright notice:

This package, the EXT2 filesystem utilities, is protected by the GNU General Public License.

Copyright (c) 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008 by Theodore Ts'o

On Debian GNU systems, the complete text of the GNU General Public License can be found in ``usr/share/common-licenses/GPL-2'`.

```
#
# This is a Makefile stub which handles the creation of BSD shared
# libraries.
#
# In order to use this stub, the following makefile variables must be defined.
#
# BSDLIB_VERSION = 1.0
# BSDLIB_IMAGE = libce
# BSDLIB_MYDIR = et
# BSDLIB_INSTALL_DIR = $(SHLIBDIR)
#
```

```
all:: image
```

```
real-subdirs:: Makefile
```

```
@echo " MKDIR pic"
```

```
@mkdir -p pic
```

```
BSD_LIB = $(BSDLIB_IMAGE).so.$(BSDLIB_VERSION)
```

```
BSDLIB_PIC_FLAG = -fpic
```

```
image: $(BSD_LIB)
```

```
$(BSD_LIB): $(OBJS)
```

```
(cd pic; ld -Bshareable -o $(BSD_LIB) $(LDFLAGS_SHLIB) $(OBJS))
```

```
$(MV) pic/$(BSD_LIB) .
```

```
$(RM) -f ../$(BSD_LIB)
```

```
(cd ..; $(LN) $(LINK_BUILD_FLAGS) \
```

```
`echo $(my_dir) | sed -e 's;lib/;;' /$(BSD_LIB) $(BSD_LIB))
```

```
install-shlibs install:: $(BSD_LIB)
```

```
@echo " INSTALL_PROGRAM $(BSDLIB_INSTALL_DIR)/$(BSD_LIB)"
```

```
@$(INSTALL_PROGRAM) $(BSD_LIB) \
```

```
$(DESTDIR)$$(BSDLIB_INSTALL_DIR)/$(BSD_LIB)
```


@-\$(LDCONFIG)

install-strip: install

install-shlibs-strip:: install-shlibs

uninstall-shlibs uninstall::

\$(RM) -f \$(DESTDIR)\$(BSDLIB_INSTALL_DIR)/\$(BSD_LIB)

clean::

\$(RM) -rf pic

\$(RM) -f \$(BSD_LIB)

\$(RM) -f ../\$(BSD_LIB)

This package was added to the e2fsprogs debian source package by Theodore Ts'o <tytso@mit.edu> on Sat Mar 15 15:33:37 EST 2003

It is part of the main e2fsprogs distribution, which can be found at:

<http://sourceforge.net/projects/e2fsprogs>

Upstream Author: Theodore Ts'o <tytso@mit.edu>

Copyright:

Copyright (C) 1999, 2001 by Andries Brouwer

Copyright (C) 1999, 2000, 2003 by Theodore Ts'o

You are free to distribute this software under the terms of the GNU Lesser (Library) General Public License.

On Debian systems, the complete text of the GNU Lesser (Library) General Public License can be found in /usr/share/common-licenses/LGPL-2.

This package was added to the e2fsprogs debian source package by Theodore Ts'o <tytso@mit.edu> on Fri Dec 14 22:24:35 EST 2007

It is part of the main e2fsprogs distribution, which can be found at:

<http://sourceforge.net/projects/e2fsprogs>

Upstream Author: Theodore Ts'o <tytso@mit.edu>

Copyright:

Copyright (C) 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007 by Theodore Ts'o

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions

are met:

1. Redistributions of source code must retain the above copyright notice, and the entire permission notice in its entirety, including the disclaimer of warranties.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ALL OF WHICH ARE HEREBY DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF NOT ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, and the entire permission notice in its entirety, including the disclaimer of warranties.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ALL OF WHICH ARE HEREBY DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF NOT ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

This is the Debian GNU/Linux prepackaged version of the translation files of the EXT2 file system utilities. The EXT2 utilities were written by Theodore Ts'o <tytso@mit.edu> and Remy Card <card@masi.ibp.fr>.

Sources were obtained from <http://sourceforge.net/projects/e2fsprogs>

Packaging is Copyright (c) 2003-2006 Theodore Ts'o <tytso@mit.edu>
Copyright (c) 1997-2003 Yann Dirson <dirson@debian.org>
Copyright (c) 2001 Alcove <<http://www.alcove.com/>>
Copyright (c) 1997 Klee Dienes
Copyright (c) 1995-1996 Michael Nonweiler <mrn20@cam.ac.uk>

Upstream Author: Theodore Ts'o <tytso@mit.edu>

Copyright notice:

This package, the EXT2 filesystem utilities, is protected by the GNU General Public License.

Copyright (c) 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008 by Theodore Ts'o

On Debian GNU systems, the complete text of the GNU General Public License can be found in `~/usr/share/common-licenses/GPL-2'`.

Index: tdbsa/tdb.c

=====

--- tdbsa.orig/tdb.c

+++ tdbsa/tdb.c

@@ -4,11 +4,11 @@ Rev: 23371

Last Changed Date: 2007-06-06 20:14:06 -0400 (Wed, 06 Jun 2007)

*/

/*

- Unix SMB/CIFS implementation.
+ trivial database library - standalone version

- trivial database library - private includes

-

- Copyright (C) Andrew Tridgell 2005
+ Copyright (C) Andrew Tridgell 1999-2005
+ Copyright (C) Jeremy Allison 2000-2006
+ Copyright (C) Paul 'Rusty' Russell 2000

** NOTE! The following LGPL license applies to the tdb
** library. This does NOT imply that all of Samba is released
This is the Debian GNU/Linux prepackaged version of the EXT2 file system utilities (e2fsck, mke2fs, etc.). The EXT2 utilities were written by Theodore Ts'o <tytso@mit.edu> and Remy Card <card@masi.ibp.fr>.

Sources were obtained from <http://sourceforge.net/projects/e2fsprogs>

Packaging is Copyright (c) 2003-2007 Theodore Ts'o <tytso@mit.edu>

Copyright (c) 1997-2003 Yann Dirson <dirson@debian.org>

Copyright (c) 2001 Alcove <<http://www.alcove.com/>>

Copyright (c) 1997 Klee Dienes

Copyright (c) 1995-1996 Michael Nonweiler <mrn20@cam.ac.uk>

Upstream Author: Theodore Ts'o <tytso@mit.edu>

Copyright notice:

This package, the EXT2 filesystem utilities, are made available under the GNU General Public License version 2, with the exception of the lib/ext2fs and lib/e2p libraries, which are made available under the GNU Library General Public License Version 2, the lib/uuid library which is made available under a BSD-style license and the lib/et and lib/ss libraries which are made available under an MIT-style license.

Copyright (c) 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008 by Theodore Ts'o

On Debian GNU systems, the complete text of the GNU General Public License can be found in `"/usr/share/common-licenses/GPL-2"`. The complete text of the GNU Library General Public License can be found in `"/usr/share/common-licenses/LGPL-2"`.

The license used for lib/et and lib/ss libraries is:

Copyright 1987 by the Student Information Processing Board
of the Massachusetts Institute of Technology

Permission to use, copy, modify, and distribute this software and its documentation for any purpose is hereby granted, provided that the names of M.I.T. and the M.I.T. S.I.P.B. not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission. M.I.T. and the M.I.T. S.I.P.B. make no representations about the suitability of this software for any purpose. It is provided "as is" without express or implied warranty.

The license used for lib/uuid is:

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, and the entire permission notice in its entirety, including the disclaimer of warranties.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ALL OF WHICH ARE HEREBY DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF NOT ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

This package, the EXT2 filesystem utilities, are made available under the GNU Public License version 2, with the exception of the lib/ext2fs and lib/e2p libraries, which are made available under the GNU Library General Public License Version 2, the lib/uuid library which is made available under a BSD-style license and the lib/et and lib/ss libraries which are made available under an MIT-style license. Please see lib/uuid/COPYING for more details for the license for the files comprising the libuuid library, and the source file headers of the libet and libss libraries for more information.

The most recent officially distributed version can be found at <http://e2fsprogs.sourceforge.net>. If you need to make a distribution, that's the one you should use. If there is some reason why you'd like a more recent version that is still in ALPHA testing (i.e., either using the "WIP" test distributions or one from the hg or git repository from the development branch, please contact me (tytso@mit.edu) before you ship. The release schedules for this package are flexible, if you give me enough lead time.

Theodore Ts'o
23-June-2007

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be

distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein.

You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively

convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author  
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.  
This is free software, and you are welcome to redistribute it  
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program  
'Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989  
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may

consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

GNU LIBRARY GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1991 Free Software Foundation, Inc.

51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the library GPL. It is numbered 2 because it goes with version 2 of the ordinary GPL.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Library General Public License, applies to some specially designated Free Software Foundation software, and to any other libraries whose authors decide to use it. You can use it for your libraries, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library, or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link a program with the library, you must provide complete object files to the recipients so that they can relink them with the library, after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

Our method of protecting your rights has two steps: (1) copyright the library, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the library.

Also, for each distributor's protection, we want to make certain that everyone understands that there is no warranty for this free library. If the library is modified by someone else and passed on, we want its recipients to know that what they have is not the original version, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that companies distributing free software will individually obtain patent licenses, thus in effect transforming the program into proprietary software. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License, which was designed for utility programs. This license, the GNU Library General Public License, applies to certain designated libraries. This license is quite different from the ordinary one; be sure to read it in full, and don't assume that anything in it is the same as in the ordinary license.

The reason we have a separate public license for some libraries is that they blur the distinction we usually make between modifying or adding to a program and simply using it. Linking a program with a library, without changing the library, is in some sense simply using the library, and is analogous to running a utility program or application program. However, in a textual and legal sense, the linked executable is a combined work, a derivative of the original library, and the ordinary General Public License treats it as such.

Because of this blurred distinction, using the ordinary General Public License for libraries did not effectively promote software sharing, because most developers did not use the libraries. We concluded that weaker conditions might promote sharing better.

However, unrestricted linking of non-free programs would deprive the users of those programs of all benefit from the free status of the libraries themselves. This Library General Public License is intended to permit developers of non-free programs to use free libraries, while preserving your freedom as a user of such programs to change the free libraries that are incorporated in them. (We have not seen how to achieve this as regards changes in header files, but we have achieved it as regards changes in the actual functions of the Library.) The hope is that this

will lead to faster development of free libraries.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, while the latter only works together with the library.

Note that it is possible for a library to be covered by the ordinary General Public License rather than by this special one.

GNU LIBRARY GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Library General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that

you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it

contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also compile or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application

to use the modified definitions.)

b) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

c) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

d) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or

distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot

impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Library General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN

WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Library General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Library General Public License for more details.

You should have received a copy of the GNU Library General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990
Ty Coon, President of Vice

That's all there is to it!

This package was added to the e2fsprogs debian source package by Theodore Ts'o <tytso@mit.edu> on Sat Mar 15 15:33:37 EST 2003

It is part of the main e2fsprogs distribution, which can be found at:

<http://sourceforge.net/projects/e2fsprogs>

Upstream Author: Theodore Ts'o <tytso@mit.edu>

Copyright:

Copyright (C) 1999, 2000, 2003, 2004 by Theodore Ts'o

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, and the entire permission notice in its entirety, including the disclaimer of warranties.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ALL OF WHICH ARE HEREBY DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF NOT ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

This is the Debian GNU/Linux prepackaged version of the ss command-line interface parsing library. It is currently distributed together with the EXT2 file system utilities, which are

otherwise packaged as "e2fsprogs".

This package was put together by Yann Dirson <dirson@debian.org>, from sources obtained from a mirror of:
tsx-11.mit.edu:/pub/linux/packages/ext2fs/

From the original distribution:

Copyright 1987, 1988 by the Student Information Processing Board of the Massachusetts Institute of Technology

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the names of M.I.T. and the M.I.T. S.I.P.B. not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission. M.I.T. and the M.I.T. S.I.P.B. make no representations about the suitability of this software for any purpose. It is provided "as is" without express or implied warranty. This is the Debian GNU/Linux prepackaged version of the Common Error Description library. It is currently distributed together with the EXT2 file system utilities, which are otherwise packaged as "e2fsprogs".

This package was put together by Yann Dirson <dirson@debian.org>, from sources obtained from a mirror of:
tsx-11.mit.edu:/pub/linux/packages/ext2fs/

From the original distribution:

Copyright 1987, 1988 by the Student Information Processing Board of the Massachusetts Institute of Technology

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the names of M.I.T. and the M.I.T. S.I.P.B. not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission. M.I.T. and the M.I.T. S.I.P.B. make no representations about the suitability of this software for any purpose. It is provided "as is" without express or implied warranty. EXT2ED is hereby placed under the terms of the GNU General Public License. Follows the GNU license.

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

675 Mass Ave, Cambridge, MA 02139, USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain

that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and

distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections

1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

Appendix: How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) 19yy <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 675 Mass Ave, Cambridge, MA 02139, USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) 19yy name of author  
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.  
This is free software, and you are welcome to redistribute it  
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program  
'Gnomovision' (which makes passes at compilers) written by James Hacker.
```

<signature of Ty Coon>, 1 April 1989

Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

1.33 curl 7.61.1-22.el8_6.4

1.33.1 Available under license :

License Mixing

=====

libcurl can be built to use a fair amount of various third party libraries, libraries that are written and provided by other parties that are distributed using their own licenses. Even libcurl itself contains code that may cause problems to some. This document attempts to describe what licenses libcurl and the other libraries use and what possible dilemmas linking and mixing them all can lead to for end users.

I am not a lawyer and this is not legal advice!

One common dilemma is that [GPL](<https://www.gnu.org/licenses/gpl.html>) licensed code is not allowed to be linked with code licensed under the [Original BSD license](<https://spdx.org/licenses/BSD-4-Clause.html>) (with the announcement clause). You may still build your own copies that use them all, but distributing them as binaries would be to violate the GPL license - unless you accompany your license with an [exception](<https://www.gnu.org/licenses/gpl-faq.html#GPLIncompatibleLibs>). This particular problem was addressed when the [Modified BSD license](<https://opensource.org/licenses/BSD-3-Clause>) was created, which does not have the announcement clause that collides with GPL.

libcurl

Uses an [MIT style license](<https://curl.haxx.se/docs/copyright.html>) that is very liberal.

OpenSSL

(May be used for SSL/TLS support) Uses an Original BSD-style license with an announcement clause that makes it "incompatible" with GPL. You are not allowed to ship binaries that link with OpenSSL that includes GPL code (unless that specific GPL code includes an exception for OpenSSL - a habit that is growing more and more common). If OpenSSL's licensing is a problem

for you, consider using another TLS library.

GnuTLS

(May be used for SSL/TLS support) Uses the [LGPL](<https://www.gnu.org/licenses/lgpl.html>) license. If this is a problem for you, consider using another TLS library. Also note that GnuTLS itself depends on and uses other libs (libgcrypt and libgpg-error) and they too are LGPL- or GPL-licensed.

WolfSSL

(May be used for SSL/TLS support) Uses the GPL license or a proprietary license. If this is a problem for you, consider using another TLS library.

NSS

(May be used for SSL/TLS support) Is covered by the [MPL](<https://www.mozilla.org/MPL/>) license, the GPL license and the LGPL license. You may choose to license the code under MPL terms, GPL terms, or LGPL terms. These licenses grant you different permissions and impose different obligations. You should select the license that best meets your needs.

axTLS

(May be used for SSL/TLS support) Uses a Modified BSD-style license.

mbedTLS

(May be used for SSL/TLS support) Uses the [Apache 2.0 license](<https://opensource.org/licenses/Apache-2.0>) or the GPL license. You may choose to license the code under Apache 2.0 terms or GPL terms. These licenses grant you different permissions and impose different obligations. You should select the license that best meets your needs.

BoringSSL

(May be used for SSL/TLS support) As an OpenSSL fork, it has the same license as that.

libressl

(May be used for SSL/TLS support) As an OpenSSL fork, it has the same license as that.

c-ares

(Used for asynchronous name resolves) Uses an MIT license that is very liberal and imposes no restrictions on any other library or part you may link with.

zlib

(Used for compressed Transfer-Encoding support) Uses an MIT-style license that shouldn't collide with any other library.

MIT Kerberos

(May be used for GSS support) MIT licensed, that shouldn't collide with any other parts.

Heimdal

(May be used for GSS support) Heimdal is Original BSD licensed with the announcement clause.

GNU GSS

(May be used for GSS support) GNU GSS is GPL licensed. Note that you may not distribute binary curl packages that uses this if you build curl to also link and use any Original BSD licensed libraries!

libidn

(Used for IDNA support) Uses the GNU Lesser General Public License [3]. LGPL is a variation of GPL with slightly less aggressive "copyleft". This license requires more requirements to be met when distributing binaries, see the license for details. Also note that if you distribute a binary that includes this library, you must also include the full LGPL license text. Please properly point out what parts of the distributed package that the license addresses.

OpenLDAP

(Used for LDAP support) Uses a Modified BSD-style license. Since libcurl uses OpenLDAP as a shared library only, I have not heard of anyone that ships OpenLDAP linked with libcurl in an app.

libssh2

(Used for scp and sftp support) libssh2 uses a Modified BSD-style license.
COPYRIGHT AND PERMISSION NOTICE

Copyright (c) 1996 - 2018, Daniel Stenberg, <daniel@haxx.se>, and many contributors, see the THANKS file.

All rights reserved.

Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF THIRD PARTY RIGHTS. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Except as contained in this notice, the name of a copyright holder shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization of the copyright holder.

1.34 txw2 2.3.4

1.34.1 Available under license :

Copyright (c) 2018 Oracle and/or its affiliates. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- Neither the name of the Eclipse Foundation, Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF

LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Notices for Eclipse Implementation of JAXB

This content is produced and maintained by the Eclipse Implementation of JAXB project.

* Project home: <https://projects.eclipse.org/projects/ee4j.jaxb-impl>

Trademarks

Eclipse Implementation of JAXB is a trademark of the Eclipse Foundation.

Copyright

All content is the property of the respective authors or their employers. For more information regarding authorship of content, please consult the listed source code repository logs.

Declared Project Licenses

This program and the accompanying materials are made available under the terms of the Eclipse Distribution License v. 1.0 which is available at <http://www.eclipse.org/org/documents/edl-v10.php>.

SPDX-License-Identifier: BSD-3-Clause

Source Code

The project maintains the following source code repositories:

- * <https://github.com/eclipse-ee4j/jaxb-ri>
- * <https://github.com/eclipse-ee4j/jaxb-istack-commons>
- * <https://github.com/eclipse-ee4j/jaxb-dtd-parser>
- * <https://github.com/eclipse-ee4j/jaxb-fi>
- * <https://github.com/eclipse-ee4j/jaxb-stax-ex>
- * <https://github.com/eclipse-ee4j/jax-rpc-ri>

Third-party Content

This project leverages the following third party content.

Apache Ant (1.10.2)

* License: Apache-2.0 AND W3C AND LicenseRef-Public-Domain

Apache Ant (1.10.2)

* License: Apache-2.0 AND W3C AND LicenseRef-Public-Domain

Apache Felix (1.2.0)

* License: Apache License, 2.0

args4j (2.33)

* License: MIT License

dom4j (1.6.1)

* License: Custom license based on Apache 1.1

file-management (3.0.0)

* License: Apache-2.0

* Project: <https://maven.apache.org/shared/file-management/>

* Source:

<https://svn.apache.org/viewvc/maven/shared/tags/file-management-3.0.0/>

JUnit (4.12)

* License: Eclipse Public License

JUnit (4.12)

* License: Eclipse Public License

maven-compat (3.5.2)

* License: Apache-2.0

* Project: <https://maven.apache.org/ref/3.5.2/maven-compat/>

* Source:

<https://mvnrepository.com/artifact/org.apache.maven/maven-compat/3.5.2>

maven-core (3.5.2)

* License: Apache-2.0

* Project: <https://maven.apache.org/ref/3.5.2/maven-core/index.html>

* Source: <https://mvnrepository.com/artifact/org.apache.maven/maven-core/3.5.2>

maven-plugin-annotations (3.5)

* License: Apache-2.0

* Project: <https://maven.apache.org/plugin-tools/maven-plugin-annotations/>

* Source:

<https://github.com/apache/maven-plugin-tools/tree/master/maven-plugin-annotations>

maven-plugin-api (3.5.2)

* License: Apache-2.0

maven-resolver-api (1.1.1)

* License: Apache-2.0

maven-resolver-api (1.1.1)

* License: Apache-2.0

maven-resolver-connector-basic (1.1.1)

* License: Apache-2.0

maven-resolver-impl (1.1.1)

* License: Apache-2.0

maven-resolver-spi (1.1.1)

* License: Apache-2.0

maven-resolver-transport-file (1.1.1)

* License: Apache-2.0

* Project: <https://maven.apache.org/resolver/maven-resolver-transport-file/>

* Source:

<https://github.com/apache/maven-resolver/tree/master/maven-resolver-transport-file>

maven-resolver-util (1.1.1)

* License: Apache-2.0

maven-settings (3.5.2)

* License: Apache-2.0

* Source:

<https://mvnrepository.com/artifact/org.apache.maven/maven-settings/3.5.2>

OSGi Service Platform Core Companion Code (6.0)

* License: Apache License, 2.0

plexus-archiver (3.5)

- * License: Apache-2.0
- * Project: <https://codehaus-plexus.github.io/plexus-archiver/>
- * Source: <https://github.com/codehaus-plexus/plexus-archiver>

plexus-io (3.0.0)

- * License: Apache-2.0

plexus-utils (3.1.0)

- * License: Apache- 2.0 or Apache- 1.1 or BSD or Public Domain or Indiana University Extreme! Lab Software License V1.1.1 (Apache 1.1 style)

relaxng-datatype (1.0)

- * License: New BSD license

Sax (0.2)

- * License: SAX-PD
- * Project: <http://www.megginson.com/downloads/SAX/>
- * Source: http://sourceforge.net/project/showfiles.php?group_id=29449

testng (6.14.2)

- * License: Apache-2.0 AND (MIT OR GPL-1.0+)
- * Project: <https://testng.org/doc/index.html>
- * Source: <https://github.com/cbeust/testng>

wagon-http-lightweight (3.0.0)

- * License: Pending
- * Project: <https://maven.apache.org/wagon/>
- * Source:
<https://mvnrepository.com/artifact/org.apache.maven.wagon/wagon-http-lightweight/3.0.0>

xz for java (1.8)

- * License: LicenseRef-Public-Domain

Cryptography

Content may contain encryption software. The country in which you are currently may have restrictions on the import, possession, and use, and/or re-export to another country, of encryption software. BEFORE using any encryption software, please check the country's laws, regulations and policies concerning the import, possession, or use, and re-export of encryption software, to see if this is

permitted.

1.35 slf4j 1.7.21

1.35.1 Available under license :

Copyright (c) 2004-2014 QOS.ch
All rights reserved.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

1.36 libverto 0.3.0 5.el8

1.36.1 Available under license :

Copyright 2011 Red Hat, Inc.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND

NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

1.37 libxml2 2.9.7-13.el8_6.1

1.37.1 Available under license :

Except where otherwise noted in the source code (e.g. the files hash.c, list.c and the trio files, which are covered by a similar licence but with different Copyright notices) all the files are:

Copyright (C) 1998-2012 Daniel Veillard. All Rights Reserved.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

1.38 tomcat-jdbc 8.5.82

1.38.1 Available under license :

Apache Tomcat JDBC Pool
Copyright 2008-2022 The Apache Software Foundation

This product includes software developed at
The Apache Software Foundation (<http://www.apache.org/>).

Apache License
Version 2.0, January 2004
<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted"

means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
 - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and

 - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and

 - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and

attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the

appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software

distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License.

1.39 which 2.21-17.e18

1.39.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>

Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The GNU General Public License is a free, copyleft license for
software and other kinds of works.

The licenses for most software and other practical works are designed
to take away your freedom to share and change the works. By contrast,
the GNU General Public License is intended to guarantee your freedom to
share and change all versions of a program--to make sure it remains free
software for all its users. We, the Free Software Foundation, use the
GNU General Public License for most of our software; it applies also to
any other work released this way by its authors. You can apply it to
your programs, too.

When we speak of free software, we are referring to freedom, not
price. Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
them if you wish), that you receive source code or can get it if you
want it, that you can change the software or use pieces of it in new
free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you
these rights or asking you to surrender the rights. Therefore, you have
certain responsibilities if you distribute copies of the software, or if
you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether
gratis or for a fee, you must pass on to the recipients the same
freedoms that you received. You must make sure that they, too, receive
or can get the source code. And you must show them these terms so they
know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS

0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable

work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or

similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.
- b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".
- c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.
- d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive

interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

- a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.
- b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.
- c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.
- d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to

copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or

- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or

- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or

- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the

violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to

address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms,

reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

```
This program is free software: you can redistribute it and/or modify  
it under the terms of the GNU General Public License as published by  
the Free Software Foundation, either version 3 of the License, or  
(at your option) any later version.
```

```
This program is distributed in the hope that it will be useful,  
but WITHOUT ANY WARRANTY; without even the implied warranty of  
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the  
GNU General Public License for more details.
```

```
You should have received a copy of the GNU General Public License  
along with this program. If not, see <http://www.gnu.org/licenses/>.
```

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program> Copyright (C) <year> <name of author>  
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.  
This is free software, and you are welcome to redistribute it  
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <<http://www.gnu.org/licenses/>>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <<http://www.gnu.org/philosophy/why-not-lgpl.html>>.

1.40 pythonurllib 1.24.2-5.el8

1.40.1 Available under license :

This is the MIT license: <http://www.opensource.org/licenses/mit-license.php>

Copyright 2008-2016 Andrey Petrov and contributors (see CONTRIBUTORS.txt)

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Contributions to the urllib3 project

Creator & Maintainer

* Andrey Petrov <andrey.petrov@shazow.net>

Contributors

In chronological order:

- * victor.vde <<http://code.google.com/u/victor.vde/>>
 - * HTTPS patch (which inspired HTTPSConnectionPool)

- * erikcederstrand <<http://code.google.com/u/erikcederstrand/>>
 - * NTLM-authenticated HTTPSConnectionPool
 - * Basic-authenticated HTTPSConnectionPool (merged into make_headers)

- * niphlod <niphlod@gmail.com>
 - * Client-verified SSL certificates for HTTPSConnectionPool
 - * Response gzip and deflate encoding support
 - * Better unicode support for filepost using StringIO buffers

- * btoconnor <brian@btoconnor.net>
 - * Non-multipart encoding for POST requests

- * p.dobrogost <<http://code.google.com/u/@WBRSRIBZDhBFXQB6/>>
 - * Code review, PEP8 compliance, benchmark fix

- * kennethreitz <me@kennethreitz.com>
 - * Bugfixes, suggestions, Requests integration

- * georgemarshall <<https://github.com/georgemarshall>>
 - * Bugfixes, Improvements and Test coverage

- * Thomas Kluyver <thomas@kluyver.me.uk>
 - * Python 3 support

- * brandon-rhodes <<http://rhodesmill.org/brandon>>
 - * Design review, bugfixes, test coverage.

- * studer <theo.studer@gmail.com>
 - * IPv6 url support and test coverage

- * Shivaram Lingamneni <slingamn@cs.stanford.edu>
 - * Support for explicitly closing pooled connections

- * hartator <hartator@gmail.com>
 - * Corrected multipart behavior for params

- * Thomas Weischuh <thomas@t-8ch.de>
 - * Support for TLS SNI
 - * API unification of ssl_version/cert_reqs
 - * SSL fingerprint and alternative hostname verification
 - * Bugfixes in testsuite

- * Sune Kirkeby <mig@ibofobi.dk>

- * Optional SNI-support for Python 2 via PyOpenSSL.

- * Marc Schlaich <marc.schlaich@gmail.com>
- * Various bugfixes and test improvements.

- * Bryce Boe <bbzbryce@gmail.com>
- * Correct six.moves conflict
- * Fixed pickle support of some exceptions

- * Boris Figovsky <boris.figovsky@ravellosystems.com>
- * Allowed to skip SSL hostname verification

- * Cory Benfield <<https://lukasa.co.uk/about/>>
- * Stream method for Response objects.
- * Return native strings in header values.
- * Generate 'Host' header when using proxies.

- * Jason Robinson <jaywink@basshero.org>
- * Add missing WrappedSocket.fileno method in PyOpenSSL

- * Audrius Butkevicius <audrius.butkevicius@elastichosts.com>
- * Fixed a race condition

- * Stanislav Vitkovskiy <stas.vitkovsky@gmail.com>
- * Added HTTPS (CONNECT) proxy support

- * Stephen Holsapple <sholsapp@gmail.com>
- * Added abstraction for granular control of request fields

- * Martin von Gagern <Martin.vGagern@gmx.net>
- * Support for non-ASCII header parameters

- * Kevin Burke <kev@inburke.com> and Pavel Kirichenko <juanych@yandex-team.ru>
- * Support for separate connect and request timeouts

- * Peter Waller <p@pwaller.net>
- * HTTPResponse.tell() for determining amount received over the wire

- * Nipunn Koorapati <nipunn1313@gmail.com>
- * Ignore default ports when comparing hosts for equality

- * Danilo @dbrgn <<https://dbrgn.ch/>>
- * Disabled TLS compression by default on Python 3.2+
- * Disabled TLS compression in pyopenssl contrib module
- * Configurable cipher suites in pyopenssl contrib module

- * Roman Bogorodskiy <roman.bogorodskiy@ericsson.com>
- * Account retries on proxy errors

- * Nicolas Delaby <nicolas.delaby@ezeep.com>
- * Use the platform-specific CA certificate locations

- * Josh Schneier <https://github.com/jschneier>
- * HTTPHeaderDict and associated tests and docs
- * Bugfixes, docs, test coverage

- * Tahia Khan <http://tahia.tk/>
- * Added Timeout examples in docs

- * Arthur Grunseid <https://grunseid.com>
- * source_address support and tests (with https://github.com/bui)

- * Ian Cordasco <graffatcolmingov@gmail.com>
- * PEP8 Compliance and Linting
- * Add ability to pass socket options to an HTTP Connection

- * Erik Tollerud <erik.tollerud@gmail.com>
- * Support for standard library io module.

- * Krishna Prasad <kprasad.iitd@gmail.com>
- * Google App Engine documentation

- * Aaron Meurer <asmeurer@gmail.com>
- * Added Url.url, which unparses a Url

- * Evgeny Kapun <abacabadabacaba@gmail.com>
- * Bugfixes

- * Benjamin Meyer <bm_witness@yahoo.com>
- * Security Warning Documentation update for proper capture

- * Shivan Sornarajah <github@sornars.com>
- * Support for using ConnectionPool and PoolManager as context managers.

- * Alex Gaynor <alex.gaynor@gmail.com>
- * Updates to the default SSL configuration

- * Tomas Tomecek <ttomecek@redhat.com>
- * Implemented generator for getting chunks from chunked responses.

- * tlynn <https://github.com/tlynn>
- * Respect the warning preferences at import.

- * David D. Riddle <ddriddle@illinois.edu>
- * IPv6 bugfixes in testsuite

- * Thea Flowers <magicalgirl@google.com>
- * App Engine environment tests.
- * Documentation re-write.

- * John Krauss <https://github.com/talos>
- * Clues to debugging problems with `cryptography` dependency in docs

- * Disassem <https://github.com/Disassem>
- * Fix pool-default headers not applying for url-encoded requests like GET.

- * James Atherfold <jlatherfold@hotmail.com>
- * Bugfixes relating to cleanup of connections during errors.

- * Christian Pedersen <https://github.com/chripede>
- * IPv6 HTTPS proxy bugfix

- * Jordan Moldow <https://github.com/jmoldow>
- * Fix low-level exceptions leaking from ``HTTPResponse.stream()``.
- * Bugfix for ``ConnectionPool.urlopen(release_conn=False)``.
- * Creation of ``HTTPConnectionPool.ResponseCls``.

- * Predrag Gruevski <https://github.com/obi1kenobi>
- * Made cert digest comparison use a constant-time algorithm.

- * Adam Talsma <https://github.com/a-tal>
- * Bugfix to ca_cert file paths.

- * Evan Meagher <https://evanmeagher.net>
- * Bugfix related to `memoryview` usage in PyOpenSSL adapter

- * John Vandenberg <jayvdb@gmail.com>
- * Python 2.6 fixes; pyflakes and pep8 compliance

- * Andy Caldwell <andy.m.caldwell@googlemail.com>
- * Bugfix related to reusing connections in indeterminate states.

- * Ville Skytt <ville.skytta@iki.fi>
- * Logging efficiency improvements, spelling fixes, Travis config.

- * Shige Takeda <smtakeda@gmail.com>
- * Started Recipes documentation and added a recipe about handling concatenated gzip data in HTTP response

- * Jesse Shapiro <jesse@jesseshapiro.net>
- * Various character-encoding fixes/tweaks
- * Disabling IPv6 DNS when IPv6 connections not supported

- * David Foster <http://dafoster.net/>
- * Ensure order of request and response headers are preserved.

- * Jeremy Cline <jeremy@jcline.org>
- * Added connection pool keys by scheme

- * Aviv Palivoda <palaviv@gmail.com>
- * History list to Retry object.
- * HTTPResponse contains the last Retry object.

- * Nate Prewitt <nate.prewitt@gmail.com>
- * Ensure timeouts are not booleans and greater than zero.
- * Fixed infinite loop in ``stream`` when amt=None.
- * Added length_remaining to determine remaining data to be read.
- * Added enforce_content_length to raise exception when incorrect content-length received.

- * Seth Michael Larson <sethmichaellarson@protonmail.com>
- * Created selectors backport that supports PEP 475.

- * Alexandre Dias <alex.dias@smarkets.com>
- * Don't retry on timeout if method not in whitelist

- * Moinuddin Quadri <moin18@gmail.com>
- * Lazily load idna package

- * Tom White <s6yg1ez3@mail2tor.com>
- * Made SOCKS handler differentiate socks5h from socks5 and socks4a from socks4.

- * Tim Burke <tim.burke@gmail.com>
- * Stop buffering entire deflate-encoded responses.

- * Tuukka Mustonen <tuukka.mustonen@gmail.com>
- * Add counter for status_forcelist retries.

- * Erik Rose <erik@mozilla.com>
- * Bugfix to pyopenssl vendoring

- * Wolfgang Richter <wolfgang.richter@gmail.com>
- * Bugfix related to loading full certificate chains with PyOpenSSL backend.

- * Mike Miller <github@mikeage.net>
- * Logging improvements to include the HTTP(S) port when opening a new connection

- * Ioannis Tziakos <mail@itziakos.gr>
- * Fix ``util.selectors._fileobj_to_fd`` to accept ``long``.
- * Update appveyor tox setup to use the 64bit python.

- * Akamai (through Jesse Shapiro) <jshapiro@akamai.com>
- * Ongoing maintenance

- * Dominique Leuenberger <dimstar@opensuse.org>
- * Minor fixes in the test suite

- * Will Bond <will@wbond.net>
- * Add Python 2.6 support to ``contrib.securetransport``

- * Aleksei Alekseev <alekseev.yeskela@gmail.com>
- * using auth info for socks proxy

- * Chris Wilcox <git@crwilcox.com>
- * Improve contribution guide
- * Add ``HTTPResponse.geturl`` method to provide ``urllib2.urlopen().geturl()`` behavior

- * Bruce Merry <<https://www.brucemerry.org.za>>
- * Fix leaking exceptions when system calls are interrupted with zero timeout

- * Hugo van Kemenade <<https://github.com/hugovk>>
- * Drop support for EOL Python 2.6

- * Tim Bell <<https://github.com/timb07>>
- * Bugfix for responses with Content-Type: message/* logging warnings

- * Justin Bramley <<https://github.com/jbramleycl>>
- * Add ability to handle multiple Content-Encodings

- * Katsuhiko YOSHIDA <<https://github.com/kyoshidajp>>
- * Remove Authorization header regardless of case when redirecting to cross-site

- * [Your name or handle] <[email or website]>
- * [Brief summary of your changes]

1.41 cxf-rt-management 3.4.5

1.41.1 Available under license :

Apache CXF
 Copyright 2006-2021 The Apache Software Foundation

This product includes software developed at
 The Apache Software Foundation (<http://www.apache.org/>).

Apache License
 Version 2.0, January 2004
<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent

to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. **Grant of Copyright License.** Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. **Grant of Patent License.** Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. **Redistribution.** You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
 - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
 - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
 - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work,

excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any

risks associated with Your exercise of permissions under this License.

8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS,

WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License.

1.42 libseccomp 2.5.2-1.el8

1.42.1 Available under license :

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts
as the successor of the GNU Library Public License, version 2, hence
the version number 2.1.]

Preamble

The licenses for most software are designed to take away your
freedom to share and change it. By contrast, the GNU General Public
Licenses are intended to guarantee your freedom to share and change
free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some
specially designated software packages--typically libraries--of the
Free Software Foundation and other authors who decide to use it. You
can use it too, but we suggest you first think carefully about whether
this license or the ordinary General Public License is the better
strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use,
not price. Our General Public Licenses are designed to make sure that
you have the freedom to distribute copies of free software (and charge
for this service if you wish); that you receive source code or can get
it if you want it; that you can change the software and use pieces of
it in new free programs; and that you are informed that you can do
these things.

To protect your rights, we need to make restrictions that forbid
distributors to deny you these rights or to ask you to surrender these
rights. These restrictions translate to certain responsibilities for
you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis

or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for

making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the

application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work

during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally

accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or

otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

1.43 xalan 2.7.1

1.43.1 Available under license :

```
=====
== NOTICE file corresponding to section 4(d) of the Apache License, ==
== Version 2.0, in this case for the Apache Xerces Java distribution. ==
=====
```

Apache Xerces Java
Copyright 1999-2006 The Apache Software Foundation

This product includes software developed at
The Apache Software Foundation (<http://www.apache.org/>).

form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

which the code is derived.)

THIS SOFTWARE AND DOCUMENTATION IS PROVIDED "AS IS," AND COPYRIGHT HOLDERS MAKE NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF THE SOFTWARE OR DOCUMENTATION WILL NOT INFRINGE ANY THIRD PARTY PATENTS, COPYRIGHTS, TRADEMARKS OR OTHER RIGHTS.

COPYRIGHT HOLDERS WILL NOT BE LIABLE FOR ANY DIRECT, INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF ANY USE OF THE SOFTWARE OR DOCUMENTATION.

The name and trademarks of copyright holders may NOT be used in advertising or publicity pertaining to the software without specific, written prior permission.

Title to copyright in this software and any associated documentation will at all times remain with copyright holders.

This formulation of W3C's notice and license became active on December 31 2002.

This version removes the copyright ownership notice such that this license can be used with materials other than those owned by the W3C, reflects that ERCIM is now a host of the W3C, includes references to this specific dated version of the license, and removes the ambiguous grant of "use". Otherwise, this version is the same as the previous version and is written so as to preserve the Free Software Foundation's assessment of GPL compatibility and OSI's certification under the Open Source Definition. Please see our Copyright FAQ for common questions about using materials from our site, including specific terms and conditions for packages like libwww, Amaya, and Jigsaw. Other questions about this notice can be directed to site-policy@w3.org.

Joseph Reagle <site-policy@w3.org>

Last revised by Reagle \$Date: 2005-06-03 18:49:13 -0400 (Fri, 03 Jun 2005) \$
xml-commons/java/external/LICENSE.dom-software.txt \$Id: LICENSE.dom-software.txt,v 1.2 2005/06/03 22:49:13 mrglavas Exp \$

This license came from: <http://www.w3.org/Consortium/Legal/copyright-software-20021231>

W3C SOFTWARE NOTICE AND LICENSE

<http://www.w3.org/Consortium/Legal/2002/copyright-software-20021231>

This work (and included software, documentation such as READMEs, or other related items) is being provided by the copyright holders under the following license. By obtaining, using and/or copying this work, you (the licensee) agree that you have read, understood, and will comply with the following terms and conditions.

Permission to copy, modify, and distribute this software and its documentation, with or without modification, for any purpose and without fee or royalty is hereby granted, provided that you include the following on ALL copies of the software and documentation or portions thereof, including modifications:

1. The full text of this NOTICE in a location viewable to users of the redistributed or derivative work.
2. Any pre-existing intellectual property disclaimers, notices, or terms and conditions. If none exist, the W3C Software Short Notice should be included (hypertext is preferred, text is permitted) within the body of any redistributed or derivative code.
3. Notice of any changes or modifications to the files, including the date changes were made. (We recommend you provide URIs to the location from which the code is derived.)

THIS SOFTWARE AND DOCUMENTATION IS PROVIDED "AS IS," AND COPYRIGHT HOLDERS MAKE NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF THE SOFTWARE OR DOCUMENTATION WILL NOT INFRINGE ANY THIRD PARTY PATENTS, COPYRIGHTS, TRADEMARKS OR OTHER RIGHTS.

COPYRIGHT HOLDERS WILL NOT BE LIABLE FOR ANY DIRECT, INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF ANY USE OF THE SOFTWARE OR DOCUMENTATION.

The name and trademarks of copyright holders may NOT be used in advertising or publicity pertaining to the software without specific, written prior permission. Title to copyright in this software and any associated documentation will at all times remain with copyright holders.

This formulation of W3C's notice and license became active on December 31 2002. This version removes the copyright ownership notice such that this license can be used with materials other than those owned by the W3C, reflects that ERCIM is now a host of the W3C, includes references to this specific dated version of the license, and removes the ambiguous grant of "use". Otherwise, this version is the same as the previous version and is written so as to preserve the Free Software Foundation's assessment of GPL compatibility and OSI's certification under the Open Source Definition. Please see our Copyright FAQ for common questions about using materials from our site, including specific terms and conditions for packages like libwww, Amaya, and Jigsaw. Other questions about this notice can be directed to site-policy@w3.org.

Joseph Reagle <site-policy@w3.org>

Last revised by Reagle \$Date: 2005/06/03 22:49:13 \$

=====
== NOTICE file corresponding to section 4(d) of the Apache License, ==
== Version 2.0, in this case for the Apache Xalan Java distribution. ==
=====

Apache Xalan (Xalan XSLT processor)
Copyright 1999-2006 The Apache Software Foundation

Apache Xalan (Xalan serializer)
Copyright 1999-2006 The Apache Software Foundation

This product includes software developed at
The Apache Software Foundation (<http://www.apache.org/>).

=====
Portions of this software was originally based on the following:

- software copyright (c) 1999-2002, Lotus Development Corporation.,
<http://www.lotus.com>.
- software copyright (c) 2001-2002, Sun Microsystems.,
<http://www.sun.com>.
- software copyright (c) 2003, IBM Corporation.,
<http://www.ibm.com>.

=====
The binary distribution package (ie. jars, samples and documentation) of
this product includes software developed by the following:

- The Apache Software Foundation
 - Xerces Java - see LICENSE.txt
 - JAXP 1.3 APIs - see LICENSE.txt
 - Bytecode Engineering Library - see LICENSE.txt
 - Regular Expression - see LICENSE.txt
- Scott Hudson, Frank Flannery, C. Scott Ananian
 - CUP Parser Generator runtime (javacup\runtime) - see LICENSE.txt

=====
The source distribution package (ie. all source and tools required to build
Xalan Java) of this product includes software developed by the following:

- The Apache Software Foundation
 - Xerces Java - see LICENSE.txt
 - JAXP 1.3 APIs - see LICENSE.txt
 - Bytecode Engineering Library - see LICENSE.txt
 - Regular Expression - see LICENSE.txt
 - Ant - see LICENSE.txt
 - Stylebook doc tool - see LICENSE.txt

- Elliot Joel Berk and C. Scott Ananian
- Lexical Analyzer Generator (JLex) - see LICENSE.txt

Apache Xerces Java
Copyright 1999-2006 The Apache Software Foundation

This product includes software developed at
The Apache Software Foundation (<http://www.apache.org/>).

Portions of Apache Xerces Java in xercesImpl.jar and xml-apis.jar
were originally based on the following:

- software copyright (c) 1999, IBM Corporation., <http://www.ibm.com>.
- software copyright (c) 1999, Sun Microsystems., <http://www.sun.com>.
- voluntary contributions made by Paul Eng on behalf of the
Apache Software Foundation that were originally developed at iClick, Inc.,
software copyright (c) 1999.

Apache xml-commons xml-apis (redistribution of xml-apis.jar)

Apache XML Commons
Copyright 2001-2003,2006 The Apache Software Foundation.

This product includes software developed at
The Apache Software Foundation (<http://www.apache.org/>).

Portions of this software were originally based on the following:

- software copyright (c) 1999, IBM Corporation., <http://www.ibm.com>.
- software copyright (c) 1999, Sun Microsystems., <http://www.sun.com>.
- software copyright (c) 2000 World Wide Web Consortium, <http://www.w3.org>

xml-commons/java/external/LICENSE.dom-documentation.txt \$Id: LICENSE.dom-documentation.txt,v 1.2
2005/06/03 22:49:13 mrglavas Exp \$

This license came from: <http://www.w3.org/Consortium/Legal/copyright-documents-20021231>

W3C DOCUMENT LICENSE

<http://www.w3.org/Consortium/Legal/2002/copyright-documents-20021231>

Public documents on the W3C site are provided by the copyright holders under
the following license. By using and/or copying this document, or the W3C
document from which this statement is linked, you (the licensee) agree that
you have read, understood, and will comply with the following terms and
conditions:

Permission to copy, and distribute the contents of this document, or the W3C

document from which this statement is linked, in any medium for any purpose and without fee or royalty is hereby granted, provided that you include the following on ALL copies of the document, or portions thereof, that you use:

1. A link or URL to the original W3C document.
2. The pre-existing copyright notice of the original author, or if it doesn't exist, a notice (hypertext is preferred, but a textual representation is permitted) of the form: "Copyright [date-of-document] World Wide Web Consortium, (Massachusetts Institute of Technology, European Research Consortium for Informatics and Mathematics, Keio University). All Rights Reserved.
<http://www.w3.org/Consortium/Legal/2002/copyright-documents-20021231>"
3. If it exists, the STATUS of the W3C document.

When space permits, inclusion of the full text of this NOTICE should be provided. We request that authorship attribution be provided in any software, documents, or other items or products that you create pursuant to the implementation of the contents of this document, or any portion thereof.

No right to create modifications or derivatives of W3C documents is granted pursuant to this license. However, if additional requirements (documented in the Copyright FAQ) are satisfied, the right to create modifications or derivatives is sometimes granted by the W3C to individuals complying with those requirements.

THIS DOCUMENT IS PROVIDED "AS IS," AND COPYRIGHT HOLDERS MAKE NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NON-INFRINGEMENT, OR TITLE; THAT THE CONTENTS OF THE DOCUMENT ARE SUITABLE FOR ANY PURPOSE; NOR THAT THE IMPLEMENTATION OF SUCH CONTENTS WILL NOT INFRINGE ANY THIRD PARTY PATENTS, COPYRIGHTS, TRADEMARKS OR OTHER RIGHTS.

COPYRIGHT HOLDERS WILL NOT BE LIABLE FOR ANY DIRECT, INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF ANY USE OF THE DOCUMENT OR THE PERFORMANCE OR IMPLEMENTATION OF THE CONTENTS THEREOF.

The name and trademarks of copyright holders may NOT be used in advertising or publicity pertaining to this document or its contents without specific, written prior permission. Title to copyright in this document will at all times remain with copyright holders.

This formulation of W3C's notice and license became active on December 31 2002. This version removes the copyright ownership notice such that this license can be used with materials other than those owned by the W3C, moves information on style sheets, DTDs, and schemas to the Copyright FAQ, reflects that ERCIM is now a host of the W3C, includes references to this specific dated version of

the license, and removes the ambiguous grant of "use". See the older formulation for the policy prior to this date. Please see our Copyright FAQ for common questions about using materials from our site, such as the translating or annotating specifications. Other questions about this notice can be directed to site-policy@w3.org.

Joseph Reagle <site-policy@w3.org>

Last revised by Reagle \$Date: 2005/06/03 22:49:13 \$

xml-commons/java/external/LICENSE.sax.txt \$Id: LICENSE.sax.txt,v 1.1 2002/01/31 23:26:48 curcuru Exp \$

This license came from: <http://www.megginson.com/SAX/copying.html>

However please note future versions of SAX may be covered

under <http://saxproject.org/?selected=pd>

This page is now out of date -- see the new SAX site at

<http://www.saxproject.org/> for more up-to-date

releases and other information. Please change your bookmarks.

SAX2 is Free!

I hereby abandon any property rights to SAX 2.0 (the Simple API for XML), and release all of the SAX 2.0 source code, compiled code, and documentation contained in this distribution into the Public Domain. SAX comes with NO WARRANTY or guarantee of fitness for any purpose.

David Megginson, david@megginson.com

2000-05-05

```
=====
== NOTICE file corresponding to section 4(d) of the Apache License, ==
== Version 2.0, in this case for the Apache xml-commons xml-apis ==
== distribution. ==
=====
```

This product includes software developed by

The Apache Software Foundation (<http://www.apache.org/>).

Portions of this software were originally based on the following:

- software copyright (c) 1999, IBM Corporation., <http://www.ibm.com>.

- software copyright (c) 1999, Sun Microsystems., <http://www.sun.com>.

- software copyright (c) 2000 World Wide Web Consortium, <http://www.w3.org>

xml-commons/java/external/LICENSE.sax.txt \$Id: LICENSE.sax.txt 225954 2002-01-31 23:26:48Z curcuru \$

This license came from: <http://www.megginson.com/SAX/copying.html>

However please note future versions of SAX may be covered

under <http://saxproject.org/?selected=pd>

This page is now out of date -- see the new SAX site at

<http://www.saxproject.org/> for more up-to-date

releases and other information. Please change your bookmarks.

SAX2 is Free!

I hereby abandon any property rights to SAX 2.0 (the Simple API for XML), and release all of the SAX 2.0 source code, compiled code, and documentation contained in this distribution into the Public Domain.

SAX comes with NO WARRANTY or guarantee of fitness for any purpose.

David Megginson, david@megginson.com

2000-05-05

/*

* =====

* The Apache Software License, Version 1.1

* =====

*

* Copyright (C) 2000-2002 The Apache Software Foundation. All
* rights reserved.

*

* Redistribution and use in source and binary forms, with or without modifica-
* tion, are permitted provided that the following conditions are met:

*

* 1. Redistributions of source code must retain the above copyright notice,
* this list of conditions and the following disclaimer.

*

* 2. Redistributions in binary form must reproduce the above copyright notice,
* this list of conditions and the following disclaimer in the documentation
* and/or other materials provided with the distribution.

*

* 3. The end-user documentation included with the redistribution, if any, must
* include the following acknowledgment: "This product includes software
* developed by the Apache Software Foundation (<http://www.apache.org/>)."
* Alternately, this acknowledgment may appear in the software itself, if
* and wherever such third-party acknowledgments normally appear.

*

* 4. The names "Ant" and "Apache Software Foundation" must not be used to
* endorse or promote products derived from this software without prior
* written permission. For written permission, please contact

* apache@apache.org.

*
 * 5. Products derived from this software may not be called "Apache", nor may
 * "Apache" appear in their name, without prior written permission of the
 * Apache Software Foundation.
 *
 * THIS SOFTWARE IS PROVIDED ``AS IS" AND ANY EXPRESSED OR IMPLIED WARRANTIES,
 * INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND
 * FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE
 * APACHE SOFTWARE FOUNDATION OR ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT,
 * INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLU-
 * DING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS
 * OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON
 * ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
 * (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF
 * THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
 *
 * This software consists of voluntary contributions made by many individuals
 * on behalf of the Apache Software Foundation. For more information on the
 * Apache Software Foundation, please see <<http://www.apache.org/>>.
 *
 */

```
=====
== NOTICE file corresponding to section 4(d) of the Apache License, ==
== Version 2.0, in this case for the Apache xml-commons xml-apis ==
== distribution. ==
=====
```

Apache XML Commons XML APIs
 Copyright 2006 The Apache Software Foundation.

This product includes software developed at
 The Apache Software Foundation (<http://www.apache.org/>).

Portions of this software were originally based on the following:
 - software copyright (c) 1999, IBM Corporation., <http://www.ibm.com>.
 - software copyright (c) 1999, Sun Microsystems., <http://www.sun.com>.
 - software copyright (c) 2000 World Wide Web Consortium, <http://www.w3.org>
 xml-commons/java/external/LICENSE.dom-documentation.txt \$Id: LICENSE.dom-documentation.txt 226215
 2005-06-03 22:49:13Z mrglavas \$

This license came from: <http://www.w3.org/Consortium/Legal/copyright-documents-20021231>

W3C DOCUMENT LICENSE
<http://www.w3.org/Consortium/Legal/2002/copyright-documents-20021231>

Public documents on the W3C site are provided by the copyright holders under

the following license. By using and/or copying this document, or the W3C document from which this statement is linked, you (the licensee) agree that you have read, understood, and will comply with the following terms and conditions:

Permission to copy, and distribute the contents of this document, or the W3C document from which this statement is linked, in any medium for any purpose and without fee or royalty is hereby granted, provided that you include the following on ALL copies of the document, or portions thereof, that you use:

1. A link or URL to the original W3C document.
2. The pre-existing copyright notice of the original author, or if it doesn't exist, a notice (hypertext is preferred, but a textual representation is permitted) of the form: "Copyright [date-of-document] World Wide Web Consortium, (Massachusetts Institute of Technology, European Research Consortium for Informatics and Mathematics, Keio University). All Rights Reserved.
<http://www.w3.org/Consortium/Legal/2002/copyright-documents-20021231>"
3. If it exists, the STATUS of the W3C document.

When space permits, inclusion of the full text of this NOTICE should be provided. We request that authorship attribution be provided in any software, documents, or other items or products that you create pursuant to the implementation of the contents of this document, or any portion thereof.

No right to create modifications or derivatives of W3C documents is granted pursuant to this license. However, if additional requirements (documented in the Copyright FAQ) are satisfied, the right to create modifications or derivatives is sometimes granted by the W3C to individuals complying with those requirements.

THIS DOCUMENT IS PROVIDED "AS IS," AND COPYRIGHT HOLDERS MAKE NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NON-INFRINGEMENT, OR TITLE; THAT THE CONTENTS OF THE DOCUMENT ARE SUITABLE FOR ANY PURPOSE; NOR THAT THE IMPLEMENTATION OF SUCH CONTENTS WILL NOT INFRINGE ANY THIRD PARTY PATENTS, COPYRIGHTS, TRADEMARKS OR OTHER RIGHTS.

COPYRIGHT HOLDERS WILL NOT BE LIABLE FOR ANY DIRECT, INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF ANY USE OF THE DOCUMENT OR THE PERFORMANCE OR IMPLEMENTATION OF THE CONTENTS THEREOF.

The name and trademarks of copyright holders may NOT be used in advertising or publicity pertaining to this document or its contents without specific, written prior permission. Title to copyright in this document will at all times remain with copyright holders.

This formulation of W3C's notice and license became active on December 31 2002. This version removes the copyright ownership notice such that this license can be used with materials other than those owned by the W3C, moves information on style sheets, DTDs, and schemas to the Copyright FAQ, reflects that ERCIM is now a host of the W3C, includes references to this specific dated version of the license, and removes the ambiguous grant of "use". See the older formulation for the policy prior to this date. Please see our Copyright FAQ for common questions about using materials from our site, such as the translating or annotating specifications. Other questions about this notice can be directed to site-policy@w3.org.

Joseph Reagle <site-policy@w3.org>

Last revised by Reagle \$Date: 2005-06-03 18:49:13 -0400 (Fri, 03 Jun 2005) \$

Apache License
Version 2.0, January 2004
<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation,

and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s)

with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.
Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

1.44 less 1.3.3

1.44.1 Available under license :

Apache License
Version 2.0, January 2004
<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition,

"control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or,

within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all

other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright (c) 2009-2010 Alexis Sellier

1.45 gmp 6.1.2 10.el8

1.45.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE

TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program

is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is

implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE

PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program
'Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

GNU GENERAL PUBLIC LICENSE
Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you

have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS

0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of

interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you

with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.

b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".

c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.

d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical

medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install

and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered

work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so

available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

```
This program is free software: you can redistribute it and/or modify  
it under the terms of the GNU General Public License as published by  
the Free Software Foundation, either version 3 of the License, or  
(at your option) any later version.
```

```
This program is distributed in the hope that it will be useful,  
but WITHOUT ANY WARRANTY; without even the implied warranty of  
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the  
GNU General Public License for more details.
```

You should have received a copy of the GNU General Public License

along with this program. If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program> Copyright (C) <year> <name of author>  
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.  
This is free software, and you are welcome to redistribute it  
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <http://www.gnu.org/licenses/>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <http://www.gnu.org/philosophy/why-not-lgpl.html>.

GNU LESSER GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

This version of the GNU Lesser General Public License incorporates the terms and conditions of version 3 of the GNU General Public License, supplemented by the additional permissions listed below.

0. Additional Definitions.

As used herein, "this License" refers to version 3 of the GNU Lesser General Public License, and the "GNU GPL" refers to version 3 of the GNU General Public License.

"The Library" refers to a covered work governed by this License, other than an Application or a Combined Work as defined below.

An "Application" is any work that makes use of an interface provided by the Library, but which is not otherwise based on the Library. Defining a subclass of a class defined by the Library is deemed a mode of using an interface provided by the Library.

A "Combined Work" is a work produced by combining or linking an Application with the Library. The particular version of the Library with which the Combined Work was made is also called the "Linked Version".

The "Minimal Corresponding Source" for a Combined Work means the Corresponding Source for the Combined Work, excluding any source code for portions of the Combined Work that, considered in isolation, are based on the Application, and not on the Linked Version.

The "Corresponding Application Code" for a Combined Work means the object code and/or source code for the Application, including any data and utility programs needed for reproducing the Combined Work from the Application, but excluding the System Libraries of the Combined Work.

1. Exception to Section 3 of the GNU GPL.

You may convey a covered work under sections 3 and 4 of this License without being bound by section 3 of the GNU GPL.

2. Conveying Modified Versions.

If you modify a copy of the Library, and, in your modifications, a facility refers to a function or data to be supplied by an Application that uses the facility (other than as an argument passed when the facility is invoked), then you may convey a copy of the modified version:

- a) under this License, provided that you make a good faith effort to ensure that, in the event an Application does not supply the function or data, the facility still operates, and performs whatever part of its purpose remains meaningful, or
- b) under the GNU GPL, with none of the additional permissions of this License applicable to that copy.

3. Object Code Incorporating Material from Library Header Files.

The object code form of an Application may incorporate material from a header file that is part of the Library. You may convey such object code under terms of your choice, provided that, if the incorporated material is not limited to numerical parameters, data structure layouts and accessors, or small macros, inline functions and templates

(ten or fewer lines in length), you do both of the following:

- a) Give prominent notice with each copy of the object code that the Library is used in it and that the Library and its use are covered by this License.
- b) Accompany the object code with a copy of the GNU GPL and this license document.

4. Combined Works.

You may convey a Combined Work under terms of your choice that, taken together, effectively do not restrict modification of the portions of the Library contained in the Combined Work and reverse engineering for debugging such modifications, if you also do each of the following:

- a) Give prominent notice with each copy of the Combined Work that the Library is used in it and that the Library and its use are covered by this License.
- b) Accompany the Combined Work with a copy of the GNU GPL and this license document.
- c) For a Combined Work that displays copyright notices during execution, include the copyright notice for the Library among these notices, as well as a reference directing the user to the copies of the GNU GPL and this license document.

d) Do one of the following:

- 0) Convey the Minimal Corresponding Source under the terms of this License, and the Corresponding Application Code in a form suitable for, and under terms that permit, the user to recombine or relink the Application with a modified version of the Linked Version to produce a modified Combined Work, in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.

- 1) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (a) uses at run time a copy of the Library already present on the user's computer system, and (b) will operate properly with a modified version of the Library that is interface-compatible with the Linked Version.

- e) Provide Installation Information, but only if you would otherwise be required to provide such information under section 6 of the

GNU GPL, and only to the extent that such information is necessary to install and execute a modified version of the Combined Work produced by recombining or relinking the Application with a modified version of the Linked Version. (If you use option 4d0, the Installation Information must accompany the Minimal Corresponding Source and Corresponding Application Code. If you use option 4d1, you must provide the Installation Information in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.)

5. Combined Libraries.

You may place library facilities that are a work based on the Library side by side in a single library together with other library facilities that are not Applications and are not covered by this License, and convey such a combined library under terms of your choice, if you do both of the following:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities, conveyed under the terms of this License.
- b) Give prominent notice with the combined library that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

6. Revised Versions of the GNU Lesser General Public License.

The Free Software Foundation may publish revised and/or new versions of the GNU Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library as you received it specifies that a certain numbered version of the GNU Lesser General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that published version or of any later version published by the Free Software Foundation. If the Library as you received it does not specify a version number of the GNU Lesser General Public License, you may choose any version of the GNU Lesser General Public License ever published by the Free Software Foundation.

If the Library as you received it specifies that a proxy can decide whether future versions of the GNU Lesser General Public License shall apply, that proxy's public statement of acceptance of any version is permanent authorization for you to choose that version for the Library.

GNU GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS

0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the

public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those

subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of

technological measures.

4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.
- b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".
- c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.
- d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users

beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

- a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.
- b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.
- c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.
- d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.
- e) Convey the object code using peer-to-peer transmission, provided

you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for

any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same

material under section 10.

9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version,

but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the

parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published

by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see <https://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program> Copyright (C) <year> <name of author>  
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.  
This is free software, and you are welcome to redistribute it  
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <https://www.gnu.org/licenses/>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General

Public License instead of this License. But first, please read
<<https://www.gnu.org/philosophy/why-not-lgpl.html>>.

1.46 python-setuptools 39.2.0

1.46.1 Available under license :

Copyright (C) 2016 Jason R Coombs <jaraco@jaraco.com>

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

1.47 librepo 1.14.2-1.el8

1.47.1 Available under license :

GNU LESSER GENERAL PUBLIC LICENSE
Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts
as the successor of the GNU Library Public License, version 2, hence
the version number 2.1.]

Preamble

The licenses for most software are designed to take away your
freedom to share and change it. By contrast, the GNU General Public
Licenses are intended to guarantee your freedom to share and change

free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License").

Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies,

or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU

FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990

Ty Coon, President of Vice

That's all there is to it!

1.48 stax 4.2.1

1.48.1 Available under license :

This copy of Stax2 API is licensed under the Simplified BSD License (also known as "2-clause BSD", or "FreeBSD License") See the License for details about distribution rights, and the specific rights regarding derivate works.

You may obtain a copy of the License at:

<http://www.opensource.org/licenses/bsd-license.php>

with details of:

<COPYRIGHT HOLDER> = FasterXML.com

<YEAR> = 2010-

1.49 gobject-introspection 1.56.1 1.e18

1.49.1 Available under license :

GNU LIBRARY GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1991 Free Software Foundation, Inc.

59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the library GPL. It is numbered 2 because it goes with version 2 of the ordinary GPL.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Library General Public License, applies to some specially designated Free Software Foundation software, and to any

other libraries whose authors decide to use it. You can use it for your libraries, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library, or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link a program with the library, you must provide complete object files to the recipients so that they can relink them with the library, after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

Our method of protecting your rights has two steps: (1) copyright the library, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the library.

Also, for each distributor's protection, we want to make certain that everyone understands that there is no warranty for this free library. If the library is modified by someone else and passed on, we want its recipients to know that what they have is not the original version, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that companies distributing free software will individually obtain patent licenses, thus in effect transforming the program into proprietary software. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License, which was designed for utility programs. This license, the GNU Library General Public License, applies to certain designated libraries. This license is quite different from the ordinary one; be sure to read it in full, and don't assume that anything in it is the same as in the ordinary license.

The reason we have a separate public license for some libraries is that they blur the distinction we usually make between modifying or adding to a program and simply using it. Linking a program with a library, without changing the library, is in some sense simply using the library, and is analogous to running a utility program or application program. However, in a textual and legal sense, the linked executable is a combined work, a derivative of the original library, and the ordinary General Public License treats it as such.

Because of this blurred distinction, using the ordinary General Public License for libraries did not effectively promote software sharing, because most developers did not use the libraries. We concluded that weaker conditions might promote sharing better.

However, unrestricted linking of non-free programs would deprive the users of those programs of all benefit from the free status of the libraries themselves. This Library General Public License is intended to permit developers of non-free programs to use free libraries, while preserving your freedom as a user of such programs to change the free libraries that are incorporated in them. (We have not seen how to achieve this as regards changes in header files, but we have achieved it as regards changes in the actual functions of the Library.) The hope is that this will lead to faster development of free libraries.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, while the latter only works together with the library.

Note that it is possible for a library to be covered by the ordinary General Public License rather than by this special one.

GNU LIBRARY GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Library General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the

Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility

is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also compile or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work

under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)
- b) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.
- c) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.
- d) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot

use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not

excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Library General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Library General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Library General Public License for more details.

You should have received a copy of the GNU Library General Public License along with this library; if not, write to the Free Software Foundation, Inc., 59 Temple Place - Suite 330, Boston, MA 02111-1307 USA.

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990
Ty Coon, President of Vice

That's all there is to it!

Adam Sampson
Adel Gadllah
Alan Knowles
Alexey Zakhlestin
Andreas Rottmann
Bastien Nocera
Brian Cameron
Chris Rivera
Christian Persch
Christophe Fergeau
Colin Walters
C. Scott Ananian
Damien Lespiau
Danielle Madeley
Dan Winship
David Ignacio
David Zeuthen
Didier 'Ptitjes

dyfet@gnutelephony.org
Eduardo Lima Mitev
Emmanuele Bassi
Florian Mllner
Funda Wang
Gustavo J. A. M. Carneiro
Gustavo Noronha Silva
Halton Huo
Havoc Pennington
Holger Hans Peter Freyther
Iain Nicol
Jani Monoses
Jasper Lievisse Adriaanse
Javier Jardn
Joe Marcus Clarke
Johan Bilien
Johan Dahlin
John (J5) Palmieri
John Ehresman
Jonathan Matthew
Josselin Mouette
Jrg Billeter
Kedar Sovani
Luca Bruno
Lucas Rocha
Maciej Katafiasz
Marc-Andre Lureau
Marco Pesenti Gritti
Marina Zhurakhinskaya
Mark Doffman
Mark Lee
Matthias Clasen
Maxim Ermilov
Michael Meeks
Owen Taylor
Pavel Holejsovsky
Philip Van Hoof
Richard Hult
Robert Ansell
Robert Carr
Rob Taylor
Ryan Lortie
Saikiran Madugula
Saleem Abdulrasool
Saleem Ansari
Simon McVittie
Simon van der Linden
Simm Pena

Stefan Kost
Steve Frcinaux
Theppitak Karoonboonyanan
Tim Horton
Tobias Mueller
Tomeu Vizoso
Tommi Komulainen
Tor Lillqvist
Torsten Schnfeld
Tristan Van Berkom
Xan Lopez
Zachary Goldberg

GNU GENERAL PUBLIC LICENSE
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.
59 Temple Place, Suite 330, Boston, MA 02111-1307 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their

rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License

along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not

signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER

PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author  
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.  
This is free software, and you are welcome to redistribute it  
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program `Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

gobject-introspection has two licenses; one for the typelib library, and one for the tools.

The scanner (giscanner/) and typelib libraries (girepository/) are licensed under the LGPLv2+. See the file COPYING.LGPL.

The tools (tools/) are licensed under the GPLv2+. See the file COPYING.GPL.

There is also some MIT code in giscanner/. In general where applicable files should have headers denoting their license status; if they do not, please file a bug at <https://gitlab.gnome.org/GNOME/gobject-introspection/issues>.

1.50 chkconfig 1.19.1-1.el8

1.50.1 Available under license :

GNU GENERAL PUBLIC LICENSE
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to

using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below,

refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include

anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands ``show w'` and ``show c'` should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than ``show w'` and ``show c'`; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

1.51 p11-kit 0.23.22-1.el8

1.51.1 Available under license :

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the

above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

* The names of contributors to this software may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

1.52 libnsl 1.2.0-2.20180605git4a062cf.el8

1.52.1 Available under license :

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better

strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of

this Lesser General Public License (also called "this License").

Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

a) The modified work must itself be a software library.

b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.

c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify

that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above

specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by

modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries,

so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990
Ty Coon, President of Vice

That's all there is to it!

1.53 commons-io 2.11.0

1.53.1 Available under license :

Apache Commons IO
Copyright 2002-2021 The Apache Software Foundation

This product includes software developed at
The Apache Software Foundation (<https://www.apache.org/>).

Apache License
Version 2.0, January 2004
<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate

as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify

the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include

the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

1.54 lz4 1.9.3

1.54.1 Available under license :

This repository uses 2 different licenses :

- all files in the `lib` directory use a BSD 2-Clause license
- all other files use a GPLv2 license, unless explicitly stated otherwise

Relevant license is reminded at the top of each source file,
and with presence of COPYING or LICENSE file in associated directories.

This model is selected to emphasize that files in the `lib` directory are designed to be included into 3rd party applications, while all other files, in `programs`, `tests` or `examples`, receive more limited attention and support for such scenario.

LZ4 Library

Copyright (c) 2011-2016, Yann Collet

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or

distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in

certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE

POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author  
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.  
This is free software, and you are welcome to redistribute it  
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your

school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program
'Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989

Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

Copyright (c) 2014, Ipsantil

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Format: <http://www.debian.org/doc/packaging-manuals/copyright-format/1.0/>

Upstream-Name: liblz4

Upstream-Contact: Yann Collet <Cyan4973@github.com>

Source: <https://github.com/lz4/lz4>

Files: *

Copyright: (C) 2011-2020 Yann Collet

License: GPL-2+

The full text of license: <https://github.com/lz4/lz4/blob/dev/lib/LICENSE>

1.55 simpleclient 0.12.0

1.55.1 Available under license :

No license file was found, but licenses were detected in source scan.

/*

* Written by Doug Lea with assistance from members of JCP JSR-166
* Expert Group and released to the public domain, as explained at
* <http://creativecommons.org/publicdomain/zero/1.0/>
*
* Source: <http://gee.cs.oswego.edu/cgi-bin/viewcvs.cgi/jsr166/src/jsr166e/DoubleAdder.java?revision=1.12>
*/

Found in path(s):

* /opt/cola/permits/1234671730_1638286966.29/0/simpleclient-0-12-0-sources-jar/io/prometheus/client/DoubleAdder.java

No license file was found, but licenses were detected in source scan.

/*

* Written by Doug Lea with assistance from members of JCP JSR-166
* Expert Group and released to the public domain, as explained at
* <http://creativecommons.org/publicdomain/zero/1.0/>
*
* Source: <http://gee.cs.oswego.edu/cgi-bin/viewcvs.cgi/jsr166/src/jsr166e/Striped64.java?revision=1.10>
*/

Found in path(s):

* /opt/cola/permits/1234671730_1638286966.29/0/simpleclient-0-12-0-sources-jar/io/prometheus/client/Striped64.java

No license file was found, but licenses were detected in source scan.

/*

Copyright 2012 Andrew Wang (andrew@umbrant.com)

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software
distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License.

*/

Found in path(s):

* /opt/cola/permits/1234671730_1638286966.29/0/simpleclient-0-12-0-sources-jar/io/prometheus/client/CKMSQuantiles.java

No license file was found, but licenses were detected in source scan.

<url><http://www.apache.org/licenses/LICENSE-2.0.txt></url>

Found in path(s):

* /opt/cola/permits/1234671730_1638286966.29/0/simpleclient-0-12-0-sources-jar/META-INF/maven/io.prometheus/simpleclient/pom.xml

1.56 libpwquality 1.4.4-3.el8

1.56.1 Available under license :

Unless otherwise *explicitly* stated the following text describes the licensed conditions under which the contents of this libpwquality release may be distributed:

Redistribution and use in source and binary forms of libpwquality, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain any existing copyright notice, and this entire permission notice in its entirety, including the disclaimer of warranties.
2. Redistributions in binary form must reproduce all prior and current copyright notices, this list of conditions, and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of any author may not be used to endorse or promote products derived from this software without their specific prior written permission.

ALTERNATIVELY, this product may be distributed under the terms of the GNU General Public License version 2 or later, in which case the provisions of the GNU GPL are required INSTEAD OF the above restrictions.

THIS SOFTWARE IS PROVIDED ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR(S) BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND

ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The full text of the GNU GENERAL PUBLIC LICENSE Version 2 is included below.

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it,

under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are

prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the

original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your

school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program
'Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

1.57 paranamer 2.8

1.57.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/**
```

```
*
```

```
* Copyright (c) 2007 Paul Hammant
```

```
* All rights reserved.
```

```
*
```

```
* Redistribution and use in source and binary forms, with or without  
* modification, are permitted provided that the following conditions  
* are met:
```

```
* 1. Redistributions of source code must retain the above copyright  
* notice, this list of conditions and the following disclaimer.
```

```
* 2. Redistributions in binary form must reproduce the above copyright  
* notice, this list of conditions and the following disclaimer in the  
* documentation and/or other materials provided with the distribution.
```

```
* 3. Neither the name of the copyright holders nor the names of its  
* contributors may be used to endorse or promote products derived from  
* this software without specific prior written permission.
```

```
*
```

```
* THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"  
* AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE  
* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE  
* ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE  
* LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR  
* CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF  
* SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS  
* INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN  
* CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)  
* ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF
```

* THE POSSIBILITY OF SUCH DAMAGE.

*

*/

Found in path(s):

* /opt/cola/permits/1150909240_1617718312.14/0/paranamer-2-8-sources-5-jar/com/thoughtworks/paranamer/Paranamer.java

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2007 Paul Hammant

* Copyright 2013 Samuel Halliday

*

* Redistribution and use in source and binary forms, with or without
* modification, are permitted provided that the following conditions
* are met:

*

* 1. Redistributions of source code must retain the above copyright
* notice, this list of conditions and the following disclaimer.

* 2. Redistributions in binary form must reproduce the above copyright
* notice, this list of conditions and the following disclaimer in the
* documentation and/or other materials provided with the distribution.

* 3. Neither the name of the copyright holders nor the names of its
* contributors may be used to endorse or promote products derived from
* this software without specific prior written permission.

*

* THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
* AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
* ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE
* LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
* CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
* SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
* INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN
* CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
* ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF
* THE POSSIBILITY OF SUCH DAMAGE.

*/

Found in path(s):

* /opt/cola/permits/1150909240_1617718312.14/0/paranamer-2-8-sources-5-jar/com/thoughtworks/paranamer/JavadocParanamer.java

No license file was found, but licenses were detected in source scan.

/**

*

* Copyright (c) 2013 Stefan Fleiter

* All rights reserved.


```
*
* Redistribution and use in source and binary forms, with or without
* modification, are permitted provided that the following conditions
* are met:
* 1. Redistributions of source code must retain the above copyright
* notice, this list of conditions and the following disclaimer.
* 2. Redistributions in binary form must reproduce the above copyright
* notice, this list of conditions and the following disclaimer in the
* documentation and/or other materials provided with the distribution.
* 3. Neither the name of the copyright holders nor the names of its
* contributors may be used to endorse or promote products derived from
* this software without specific prior written permission.
*
* THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
* AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
* ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE
* LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
* CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
* SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
* INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN
* CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
* ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF
* THE POSSIBILITY OF SUCH DAMAGE.
*/
```

Found in path(s):

```
*/opt/cola/permits/1150909240_1617718312.14/0/paranamer-2-8-sources-5-
jar/com/thoughtworks/paranamer/PositionalParanamer.java
No license file was found, but licenses were detected in source scan.
```

```
/**
*
* Copyright (c) 2009 Paul Hammant
* All rights reserved.
*
* Redistribution and use in source and binary forms, with or without
* modification, are permitted provided that the following conditions
* are met:
* 1. Redistributions of source code must retain the above copyright
* notice, this list of conditions and the following disclaimer.
* 2. Redistributions in binary form must reproduce the above copyright
* notice, this list of conditions and the following disclaimer in the
* documentation and/or other materials provided with the distribution.
* 3. Neither the name of the copyright holders nor the names of its
* contributors may be used to endorse or promote products derived from
* this software without specific prior written permission.
*
*/
```

* THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
* AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
* ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE
* LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
* CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
* SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
* INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN
* CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
* ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF
* THE POSSIBILITY OF SUCH DAMAGE.
*/

Found in path(s):

*/opt/cola/permits/1150909240_1617718312.14/0/paranamer-2-8-sources-5-
jar/com/thoughtworks/paranamer/AnnotationParanamer.java

No license file was found, but licenses were detected in source scan.

/**

*

* Portions Copyright (c) 2007 Paul Hammant
* Portions copyright (c) 2000-2007 INRIA, France Telecom
* All rights reserved.

*

* Redistribution and use in source and binary forms, with or without
* modification, are permitted provided that the following conditions
* are met:

- * 1. Redistributions of source code must retain the above copyright
* notice, this list of conditions and the following disclaimer.
- * 2. Redistributions in binary form must reproduce the above copyright
* notice, this list of conditions and the following disclaimer in the
* documentation and/or other materials provided with the distribution.
- * 3. Neither the name of the copyright holders nor the names of its
* contributors may be used to endorse or promote products derived from
* this software without specific prior written permission.

*

* THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
* AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
* ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE
* LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
* CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
* SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
* INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN
* CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
* ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF
* THE POSSIBILITY OF SUCH DAMAGE.

*/

Found in path(s):

* /opt/cola/permits/1150909240_1617718312.14/0/paranamer-2-8-sources-5-jar/com/thoughtworks/paranamer/BytecodeReadingParanamer.java
No license file was found, but licenses were detected in source scan.

/**

*

* Copyright (c) 2007 Paul Hammant

* All rights reserved.

*

* Redistribution and use in source and binary forms, with or without
* modification, are permitted provided that the following conditions
* are met:

* 1. Redistributions of source code must retain the above copyright

* notice, this list of conditions and the following disclaimer.

* 2. Redistributions in binary form must reproduce the above copyright

* notice, this list of conditions and the following disclaimer in the

* documentation and/or other materials provided with the distribution.

* 3. Neither the name of the copyright holders nor the names of its

* contributors may be used to endorse or promote products derived from

* this software without specific prior written permission.

*

* THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"

* AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE

* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE

* ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE

* LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR

* CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF

* SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS

* INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN

* CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)

* ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF

* THE POSSIBILITY OF SUCH DAMAGE.

*/

Found in path(s):

* /opt/cola/permits/1150909240_1617718312.14/0/paranamer-2-8-sources-5-jar/com/thoughtworks/paranamer/DefaultParanamer.java

* /opt/cola/permits/1150909240_1617718312.14/0/paranamer-2-8-sources-5-jar/com/thoughtworks/paranamer/ParameterNamesNotFoundException.java

* /opt/cola/permits/1150909240_1617718312.14/0/paranamer-2-8-sources-5-jar/com/thoughtworks/paranamer/AdaptiveParanamer.java

* /opt/cola/permits/1150909240_1617718312.14/0/paranamer-2-8-sources-5-jar/com/thoughtworks/paranamer/CachingParanamer.java

* /opt/cola/permits/1150909240_1617718312.14/0/paranamer-2-8-sources-5-jar/com/thoughtworks/paranamer/NullParanamer.java

1.58 cxf-rt-bindings-soap 3.4.5

1.58.1 Available under license :

Apache CXF

Copyright 2006-2021 The Apache Software Foundation

This product includes software developed at
The Apache Software Foundation (<http://www.apache.org/>).

Apache License
Version 2.0, January 2004
<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a

copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct

or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of

this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following

boilerplate notice, with the fields enclosed by brackets "[]"
replaced with your own identifying information. (Don't include
the brackets!) The text should be enclosed in the appropriate
comment syntax for the file format. We also recommend that a
file or class name and description of purpose be included on the
same "printed page" as the copyright notice for easier
identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software
distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License.

1.59 jackson 2.12.5

1.59.1 Available under license :

Jackson JSON processor

Jackson is a high-performance, Free/Open Source JSON processing library.
It was originally written by Tatu Saloranta (tatu.saloranta@iki.fi), and has
been in development since 2007.
It is currently developed by a community of developers.

Licensing

Jackson 2.x core and extension components are licensed under Apache License 2.0
To find the details that apply to this artifact see the accompanying LICENSE file.

Credits

A list of contributors may be found from CREDITS(-2.x) file, which is included
in some artifacts (usually source distributions); but is always available
from the source code management (SCM) system project uses.

Apache License
Version 2.0, January 2004
<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of

the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
 - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
 - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
 - (c) You must retain, in the Source form of any Derivative Works

that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A

PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

1.60 crimson 1.1

1.60.1 Available under license :

Apache ServiceMix :: Bundles :: crimson
Copyright 2005-2013 The Apache Software Foundation

This product includes software developed at
The Apache Software Foundation (<http://www.apache.org/>).

Apache License
Version 2.0, January 2004
<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but

not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their

Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with

the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.
Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

1.61 cxf-rt-databinding-jaxb 3.4.5

1.61.1 Available under license :

Apache CXF
Copyright 2006-2021 The Apache Software Foundation

This product includes software developed at
The Apache Software Foundation (<http://www.apache.org/>).

Apache License
Version 2.0, January 2004
<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but

excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. **Grant of Copyright License.** Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. **Grant of Patent License.** Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. **Redistribution.** You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
 - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
 - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
 - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
 - (d) If the Work includes a "NOTICE" text file as part of its

distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise,

unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

1.62 jsp 2.3.FR

1.62.1 Available under license :

COMMON DEVELOPMENT AND DISTRIBUTION LICENSE (CDDL)

Version 1.0

*

1. Definitions.

o

1.1. "Contributor" means each individual or entity that creates or contributes to the creation of Modifications.

o

1.2. "Contributor Version" means the combination of the Original Software, prior Modifications used by a Contributor (if any), and the Modifications made by that particular Contributor.

o

1.3. "Covered Software" means (a) the Original Software, or (b) Modifications, or (c) the combination of files containing Original Software with files containing Modifications, in each case including portions thereof.

o

1.4. "Executable" means the Covered Software in any form other than Source Code.

o

1.5. "Initial Developer" means the individual or entity that first makes Original Software available under this License.

o

1.6. "Larger Work" means a work which combines Covered Software or portions thereof with code not governed by the terms of this License.

o

1.7. "License" means this document.

o

1.8. "Licensable" means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently acquired, any and all of the rights conveyed herein.

o

1.9. "Modifications" means the Source Code and Executable form of any of the following:

+

A. Any file that results from an addition to, deletion from or modification of the contents of a file containing Original Software or previous Modifications;

+

B. Any new file that contains any part of the Original Software or previous Modification; or

+

C. Any new file that is contributed or otherwise made available under the terms of this License.

o

1.10. "Original Software" means the Source Code and Executable form of computer software code that is originally released under this License.

o

1.11. "Patent Claims" means any patent claim(s), now owned or hereafter acquired, including without limitation, method, process, and apparatus claims, in any patent Licensable by grantor.

o

1.12. "Source Code" means (a) the common form of computer software code in which modifications are made and (b) associated documentation included in or with such code.

o

1.13. "You" (or "Your") means an individual or a legal entity exercising rights under, and complying with all of the terms of, this License. For legal entities, "You" includes any entity which controls, is controlled by, or is under common control with You. For purposes of this definition, "control" means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

*

2. License Grants.

o

2.1. The Initial Developer Grant.

Conditioned upon Your compliance with Section 3.1 below and subject to third party intellectual property claims, the Initial Developer hereby grants You a world-wide, royalty-free, non-exclusive license:

+

(a) under intellectual property rights (other than patent or trademark) Licensable by Initial Developer, to use, reproduce, modify, display, perform, sublicense and distribute the Original Software (or portions thereof), with or without Modifications, and/or as part of a Larger Work; and

+

(b) under Patent Claims infringed by the making, using or selling of Original Software, to make, have made, use, practice, sell, and offer for sale, and/or otherwise dispose of the Original Software (or portions thereof).

+

(c) The licenses granted in Sections 2.1(a) and (b) are effective on the date Initial Developer first distributes or otherwise makes the Original Software available to a third party under the terms of this License.

+

(d) Notwithstanding Section 2.1(b) above, no patent license is granted: (1) for code that You delete from the Original Software, or (2) for infringements caused by: (i) the modification of the Original Software, or (ii) the combination of the Original Software with other software or devices.

o

2.2. Contributor Grant.

Conditioned upon Your compliance with Section 3.1 below and subject to third party intellectual property claims, each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:

+

(a) under intellectual property rights (other than patent or trademark) Licensable by Contributor to use, reproduce, modify, display, perform, sublicense and distribute the Modifications created by such Contributor (or portions thereof), either on an unmodified basis, with other Modifications, as Covered Software and/or as part of a Larger Work; and

+

(b) under Patent Claims infringed by the making, using, or selling of Modifications made by that Contributor either alone and/or in combination with its Contributor Version (or portions of such combination), to make, use, sell, offer for sale, have made, and/or otherwise dispose of: (1) Modifications made by that Contributor (or portions thereof); and (2) the combination of Modifications made by that Contributor with its Contributor Version (or portions of such combination).

+

(c) The licenses granted in Sections 2.2(a) and 2.2(b) are effective on the date Contributor first distributes or otherwise makes the Modifications available to a third party.

+

(d) Notwithstanding Section 2.2(b) above, no patent license is granted: (1) for any code that Contributor has deleted from the Contributor Version; (2) for infringements caused by: (i) third party modifications of Contributor Version, or (ii) the combination of Modifications made by that Contributor with other software (except as part of the Contributor Version) or other devices; or (3) under Patent Claims infringed by Covered Software in the absence of Modifications made by that Contributor.

*

3. Distribution Obligations.

o

3.1. Availability of Source Code.

Any Covered Software that You distribute or otherwise make available in Executable form must also be made available in Source Code form and that Source Code form must be distributed only under the terms of this License. You must include a copy of this License with every copy of the Source Code form of the Covered Software You distribute or otherwise make available. You must inform recipients of any such Covered Software in Executable form as to how they can obtain such Covered Software in Source Code form in a reasonable manner on or through a medium customarily used for software exchange.

o

3.2. Modifications.

The Modifications that You create or to which You contribute are governed by the terms of this License. You represent that You believe Your Modifications are Your original creation(s) and/or You have sufficient rights to grant the rights conveyed by this License.

o

3.3. Required Notices.

You must include a notice in each of Your Modifications that identifies You as the Contributor of the Modification. You may not remove or alter any copyright, patent or trademark notices contained within the Covered Software, or any notices of licensing or any descriptive text giving attribution to any Contributor or the Initial Developer.

o

3.4. Application of Additional Terms.

You may not offer or impose any terms on any Covered Software in Source Code form that alters or restricts the applicable version of this License or the recipients' rights hereunder. You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Software. However, you may do so only on Your own behalf, and not on behalf of the Initial Developer or any Contributor. You must make it absolutely clear that any such warranty, support, indemnity or liability obligation is offered by You alone, and You hereby agree to indemnify the Initial Developer and every Contributor for any liability incurred by the Initial Developer or such Contributor as a result of warranty, support, indemnity or liability terms You offer.

o

3.5. Distribution of Executable Versions.

You may distribute the Executable form of the Covered Software under the terms of this License or under the terms of a license of Your choice, which may contain terms different from this License, provided that You are in compliance with the terms of this License and that the license for the Executable form does not attempt to limit or alter the recipient's rights in the Source Code form from the rights set forth in this License. If You distribute the Covered Software in Executable form under a different license, You must make it absolutely clear that any terms which differ from this License are offered by You alone, not by the Initial Developer or Contributor. You hereby agree to indemnify the Initial Developer and every Contributor for any liability incurred by the Initial Developer or such Contributor as a result of any such terms You offer.

o

3.6. Larger Works.

You may create a Larger Work by combining Covered Software with other code not governed by the terms of this License and distribute the Larger Work as a single product. In such a case, You must make sure the requirements of this License are fulfilled for the Covered Software.

*

4. Versions of the License.

o

4.1. New Versions.

Sun Microsystems, Inc. is the initial license steward and may publish revised and/or new versions of this License from time to time. Each version will be given a distinguishing version number. Except as provided in Section 4.3, no one other than the license steward has the right to modify this License.

o

4.2. Effect of New Versions.

You may always continue to use, distribute or otherwise make the Covered Software available under the terms of the version of the License under which You originally received the Covered Software. If the Initial Developer includes a notice in the Original Software prohibiting it from being distributed or otherwise made available under any subsequent version of the License, You must distribute and make the Covered Software available under the terms of the version of the License under which You originally received the Covered Software. Otherwise, You may also choose to use, distribute or otherwise make the Covered Software available under the terms of any subsequent version of the License published by the license steward.

o

4.3. Modified Versions.

When You are an Initial Developer and You want to create a new license for Your Original Software, You may create and use a modified version of this License if You: (a) rename the license and remove any references to the name of the license steward (except to note that the license differs from this License); and (b) otherwise make it clear that the license contains terms which differ from this License.

*

5. DISCLAIMER OF WARRANTY.

COVERED SOFTWARE IS PROVIDED UNDER THIS LICENSE ON AN "AS IS" BASIS, WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTIES THAT THE COVERED SOFTWARE IS FREE OF DEFECTS, MERCHANTABILITY, FIT FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE COVERED SOFTWARE IS WITH YOU. SHOULD ANY COVERED SOFTWARE PROVE DEFECTIVE IN ANY RESPECT, YOU (NOT THE INITIAL DEVELOPER OR ANY OTHER CONTRIBUTOR) ASSUME THE COST OF ANY NECESSARY SERVICING, REPAIR OR CORRECTION. THIS DISCLAIMER OF WARRANTY CONSTITUTES AN ESSENTIAL PART OF THIS LICENSE. NO USE OF ANY COVERED SOFTWARE IS AUTHORIZED HEREUNDER EXCEPT UNDER THIS DISCLAIMER.

*

6. TERMINATION.

o

6.1. This License and the rights granted hereunder will terminate automatically if You fail to comply with terms herein and fail to cure such breach within 30 days of becoming aware of the breach. Provisions which, by their nature, must remain in effect beyond the termination of this License shall survive.

o

6.2. If You assert a patent infringement claim (excluding declaratory judgment actions) against Initial Developer or a Contributor (the Initial Developer or Contributor against whom You assert such claim is referred to as "Participant") alleging that the Participant Software (meaning the Contributor Version where the Participant is a Contributor or the Original Software where the Participant is the Initial Developer) directly or indirectly infringes any patent, then any and all rights granted directly or indirectly to You by such Participant, the Initial Developer (if the Initial Developer is not the Participant) and all Contributors under Sections 2.1 and/or 2.2 of this License shall, upon 60 days notice from Participant terminate prospectively and automatically at the expiration of such 60 day notice period, unless if within such 60 day period You withdraw Your claim with respect to the Participant Software against such Participant either unilaterally or pursuant to a written agreement with Participant.

o

6.3. In the event of termination under Sections 6.1 or 6.2 above, all end user licenses that have been validly granted by You or any distributor hereunder prior to termination (excluding licenses granted to You by any distributor) shall survive termination.

*

7. LIMITATION OF LIABILITY.

UNDER NO CIRCUMSTANCES AND UNDER NO LEGAL THEORY, WHETHER TORT (INCLUDING NEGLIGENCE), CONTRACT, OR OTHERWISE, SHALL YOU, THE INITIAL DEVELOPER, ANY OTHER CONTRIBUTOR, OR ANY DISTRIBUTOR OF COVERED SOFTWARE, OR ANY SUPPLIER OF ANY OF SUCH PARTIES, BE LIABLE TO ANY PERSON FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES OF ANY CHARACTER INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOST PROFITS, LOSS OF GOODWILL, WORK STOPPAGE, COMPUTER FAILURE OR MALFUNCTION, OR ANY AND ALL OTHER COMMERCIAL DAMAGES OR LOSSES, EVEN IF SUCH PARTY SHALL HAVE BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. THIS LIMITATION OF LIABILITY SHALL NOT APPLY TO LIABILITY FOR DEATH OR PERSONAL INJURY RESULTING FROM SUCH PARTY'S NEGLIGENCE TO THE EXTENT APPLICABLE LAW PROHIBITS SUCH LIMITATION. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THIS EXCLUSION AND LIMITATION MAY NOT APPLY TO YOU.

*

8. U.S. GOVERNMENT END USERS.

The Covered Software is a "commercial item," as that term is defined in 48 C.F.R. 2.101 (Oct. 1995), consisting of "commercial computer software" (as that term is defined at 48 C.F.R. 252.227-7014(a)(1)) and "commercial computer software documentation" as such terms are used in 48 C.F.R. 12.212 (Sept. 1995). Consistent with 48 C.F.R. 12.212 and 48 C.F.R. 227.7202-1 through 227.7202-4 (June 1995), all U.S. Government End Users acquire Covered Software with only those rights set forth herein. This U.S. Government Rights clause is in lieu of, and supersedes, any other FAR, DFAR, or other clause or provision that addresses Government rights in computer software under this License.

*

9. MISCELLANEOUS.

This License represents the complete agreement concerning subject matter hereof. If any provision of this

License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable. This License shall be governed by the law of the jurisdiction specified in a notice contained within the Original Software (except to the extent applicable law, if any, provides otherwise), excluding such jurisdiction's conflict-of-law provisions. Any litigation relating to this License shall be subject to the jurisdiction of the courts located in the jurisdiction and venue specified in a notice contained within the Original Software, with the losing party responsible for costs, including, without limitation, court costs and reasonable attorneys' fees and expenses. The application of the United Nations Convention on Contracts for the International Sale of Goods is expressly excluded. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not apply to this License. You agree that You alone are responsible for compliance with the United States export administration regulations (and the export control laws and regulation of any other countries) when You use, distribute or otherwise make available any Covered Software.

*

10. RESPONSIBILITY FOR CLAIMS.

As between Initial Developer and the Contributors, each party is responsible for claims and damages arising, directly or indirectly, out of its utilization of rights under this License and You agree to work with Initial Developer and Contributors to distribute such responsibility on an equitable basis. Nothing herein is intended or shall be deemed to constitute any admission of liability.

1.63 xerces-j 2.0.1

1.63.1 Available under license :

No license file was found, but licenses were detected in source scan.

UniqueParticleAttribution = Error: cos-nonambig: ({0}) and ({1}) violate the "Unique Particle Attribution" rule.
cos-nonambig = cos-nonambig: {0} and {1} (or elements from their substitution group) violate "Unique Particle Attribution".

Found in path(s):

* /opt/cola/permits/1125307741_1611289983.78/0/xercesimpl-24-jar/org/apache/xerces/impl/msg/XMLSchemaMessages.properties

1.64 cxf-rt-wsdl 3.4.5

1.64.1 Available under license :

Apache CXF

Copyright 2006-2021 The Apache Software Foundation

This product includes software developed at
The Apache Software Foundation (<http://www.apache.org/>).

Apache License
Version 2.0, January 2004
<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner

or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. **Grant of Copyright License.** Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. **Grant of Patent License.** Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. **Redistribution.** You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
 - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
 - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and

- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions

of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

1.65 snappy-java 1.1.8.4

1.65.1 Available under license :

This product includes software developed by Google
Snappy: <http://code.google.com/p/snappy/> (New BSD License)

This product includes software developed by Apache
PureJavaCrc32C from apache-hadoop-common <http://hadoop.apache.org/>
(Apache 2.0 license)

This library contained statically linked libstdc++. This inclusion is allowed by
"GCC Runtime Library Exception"
<http://gcc.gnu.org/onlinedocs/libstdc++/manual/license.html>

== Contributors ==

- * Tatu Saloranta
- * Providing benchmark suite
- * Alec Wysoker
- * Performance and memory usage improvement

Apache License
Version 2.0, January 2004
<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the

outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable

copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and

do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

1.66 openjdk 1.8.0u352

1.66.1 Available under license :

Copyright (c) 1999-2003 David Corcoran <corcoran@musclecard.com>
Copyright (c) 2001-2011 Ludovic Rousseau <ludovic.rousseau@free.fr>
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions

are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Some files are under GNU GPL v3 or any later version

- doc/example/pcsc_demo.c
- the files in src/spy/
- the files in UnitaryTests/

Copyright (C) 2003-2014 Ludovic Rousseau

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see <<http://www.gnu.org/licenses/>>.

Files src/auth.c and src/auth.h are:

- * Copyright (C) 2013 Red Hat
- *
- * All rights reserved.
- * Redistribution and use in source and binary forms, with or without

* modification, are permitted provided that the following conditions

* are met:

*

* 1. Redistributions of source code must retain the above copyright

* notice, this list of conditions and the following disclaimer.

*

* 2. Redistributions in binary form must reproduce the above copyright

* notice, this list of conditions and the following disclaimer in the

* documentation and/or other materials provided with the distribution.

*

* THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS

* "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT

* LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS

* FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE

* COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT,

* INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING,

* BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS

* OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED

* AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,

* OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF

* THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH

* DAMAGE.

*

* Author: Nikos Mavrogiannopoulos <nmav@redhat.com>

Files src/simclist.c and src/simclist.h are:

* Copyright (c) 2007,2008,2009,2010,2011 Mij <mij@bitchx.it>

*

* Permission to use, copy, modify, and distribute this software for any

* purpose with or without fee is hereby granted, provided that the above

* copyright notice and this permission notice appear in all copies.

*

* THE SOFTWARE IS PROVIDED "AS IS" AND THE AUTHOR DISCLAIMS ALL WARRANTIES

* WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF

* MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR

* ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES

* WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN

* ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF

* OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

The GIFLIB distribution is Copyright (c) 1997 Eric S. Raymond

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Within this directory, each of the file listed below is licensed under the terms given in the file LICENSE-MPL, also in this directory.

PRIMES

Copyright (c) %YEARS%, Oracle and/or its affiliates. All rights reserved.

DO NOT ALTER OR REMOVE COPYRIGHT NOTICES OR THIS FILE HEADER.

This code is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License version 2 only, as published by the Free Software Foundation.

This code is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License version 2 for more details (a copy is included in the LICENSE file that accompanied this code).

You should have received a copy of the GNU General Public License version 2 along with this work; if not, write to the Free Software Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA.

Please contact Oracle, 500 Oracle Parkway, Redwood Shores, CA 94065 USA or visit www.oracle.com if you need additional information or have any questions.

COPYRIGHT NOTICE, DISCLAIMER, and LICENSE

=====

PNG Reference Library License version 2

- * Copyright (c) 1995-2019 The PNG Reference Library Authors.
- * Copyright (c) 2018-2019 Cosmin Truta.
- * Copyright (c) 2000-2002, 2004, 2006-2018 Glenn Randers-Pehrson.
- * Copyright (c) 1996-1997 Andreas Dilger.
- * Copyright (c) 1995-1996 Guy Eric Schalnat, Group 42, Inc.

The software is supplied "as is", without warranty of any kind,

express or implied, including, without limitation, the warranties of merchantability, fitness for a particular purpose, title, and non-infringement. In no event shall the Copyright owners, or anyone distributing the software, be liable for any damages or other liability, whether in contract, tort or otherwise, arising from, out of, or in connection with the software, or the use or other dealings in the software, even if advised of the possibility of such damage.

Permission is hereby granted to use, copy, modify, and distribute this software, or portions hereof, for any purpose, without fee, subject to the following restrictions:

1. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated, but is not required.
2. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
3. This Copyright notice may not be removed or altered from any source or altered source distribution.

PNG Reference Library License version 1 (for libpng 0.5 through 1.6.35)

libpng versions 1.0.7, July 1, 2000, through 1.6.35, July 15, 2018 are Copyright (c) 2000-2002, 2004, 2006-2018 Glenn Randers-Pehrson, are derived from libpng-1.0.6, and are distributed according to the same disclaimer and license as libpng-1.0.6 with the following individuals added to the list of Contributing Authors:

Simon-Pierre Cadieux
Eric S. Raymond
Mans Rullgard
Cosmin Truta
Gilles Vollant
James Yu
Mandar Sahastrabudhe
Google Inc.
Vadim Barkov

and with the following additions to the disclaimer:

There is no warranty against interference with your enjoyment of the library or against infringement. There is no warranty that our

efforts or the library will fulfill any of your particular purposes or needs. This library is provided with all faults, and the entire risk of satisfactory quality, performance, accuracy, and effort is with the user.

Some files in the "contrib" directory and some configure-generated files that are distributed with libpng have other copyright owners, and are released under other open source licenses.

libpng versions 0.97, January 1998, through 1.0.6, March 20, 2000, are Copyright (c) 1998-2000 Glenn Randers-Pehrson, are derived from libpng-0.96, and are distributed according to the same disclaimer and license as libpng-0.96, with the following individuals added to the list of Contributing Authors:

Tom Lane
Glenn Randers-Pehrson
Willem van Schaik

libpng versions 0.89, June 1996, through 0.96, May 1997, are Copyright (c) 1996-1997 Andreas Dilger, are derived from libpng-0.88, and are distributed according to the same disclaimer and license as libpng-0.88, with the following individuals added to the list of Contributing Authors:

John Bowler
Kevin Bracey
Sam Bushell
Magnus Holmgren
Greg Roelofs
Tom Tanner

Some files in the "scripts" directory have other copyright owners, but are released under this license.

libpng versions 0.5, May 1995, through 0.88, January 1996, are Copyright (c) 1995-1996 Guy Eric Schalnat, Group 42, Inc.

For the purposes of this copyright and license, "Contributing Authors" is defined as the following set of individuals:

Andreas Dilger
Dave Martindale
Guy Eric Schalnat
Paul Schmidt
Tim Wegner

The PNG Reference Library is supplied "AS IS". The Contributing

Authors and Group 42, Inc. disclaim all warranties, expressed or implied, including, without limitation, the warranties of merchantability and of fitness for any purpose. The Contributing Authors and Group 42, Inc. assume no liability for direct, indirect, incidental, special, exemplary, or consequential damages, which may result from the use of the PNG Reference Library, even if advised of the possibility of such damage.

Permission is hereby granted to use, copy, modify, and distribute this source code, or portions hereof, for any purpose, without fee, subject to the following restrictions:

1. The origin of this source code must not be misrepresented.
2. Altered versions must be plainly marked as such and must not be misrepresented as being the original source.
3. This Copyright notice may not be removed or altered from any source or altered source distribution.

The Contributing Authors and Group 42, Inc. specifically permit, without fee, and encourage the use of this source code as a component to supporting the PNG file format in commercial products. If you use this source code in a product, acknowledgment is not required but would be appreciated.

Within this directory, each of the file listed below is licensed under the terms given in the file LICENSE-MPL, also in this directory.

basecvt.pod

gcd.pod

invmod.pod

isprime.pod

lap.pod

mpi-test.pod

prime.txt

prng.pod

This is the copyright file

The GNU General Public License (GPL)

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component

itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software

distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

One line to give the program's name and a brief idea of what it does.

Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

Gnomovision version 69, Copyright (C) year name of author Gnomovision comes

with ABSOLUTELY NO WARRANTY; for details type 'show w'. This is free software, and you are welcome to redistribute it under certain conditions; type 'show c' for details.

The hypothetical commands 'show w' and 'show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than 'show w' and 'show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program 'Gnomovision' (which makes passes at compilers) written by James Hacker.

signature of Ty Coon, 1 April 1989

Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

"CLASSPATH" EXCEPTION TO THE GPL

Certain source files distributed by Oracle America and/or its affiliates are subject to the following clarification and special exception to the GPL, but only where Oracle has expressly included in the particular source file's header the words "Oracle designates this particular file as subject to the "Classpath" exception as provided by Oracle in the LICENSE file that accompanied this code."

Linking this library statically or dynamically with other modules is making a combined work based on this library. Thus, the terms and conditions of the GNU General Public License cover the whole combination.

As a special exception, the copyright holders of this library give you permission to link this library with independent modules to produce an executable, regardless of the license terms of these independent modules, and to copy and distribute the resulting executable under terms of your choice, provided that you also meet, for each linked independent module, the terms and conditions of the license of that module. An independent module is a module which is not derived from or based on this library. If you modify this library, you may extend this exception to your version of the library, but you are not obligated to do so. If you do not wish to do

so, delete this exception statement from your version.
NSS is available under the Mozilla Public License, version 2, a copy of which is below.

Note on GPL Compatibility

The MPL 2, section 3.3, permits you to combine NSS with code under the GNU General Public License (GPL) version 2, or any later version of that license, to make a Larger Work, and distribute the result under the GPL. The only condition is that you must also make NSS, and any changes you have made to it, available to recipients under the terms of the MPL 2 also.

Anyone who receives the combined code from you does not have to continue to dual licence in this way, and may, if they wish, distribute under the terms of either of the two licences - either the MPL alone or the GPL alone. However, we discourage people from distributing copies of NSS under the GPL alone, because it means that any improvements they make cannot be reincorporated into the main version of NSS. There is never a need to do this for license compatibility reasons.

Note on LGPL Compatibility

The above also applies to combining MPLed code in a single library with code under the GNU Lesser General Public License (LGPL) version 2.1, or any later version of that license. If the LGPLed code and the MPLed code are not in the same library, then the copyleft coverage of the two licences does not overlap, so no issues arise.

Mozilla Public License Version 2.0

=====

1. Definitions

1.1. "Contributor"

means each individual or legal entity that creates, contributes to the creation of, or owns Covered Software.

1.2. "Contributor Version"

means the combination of the Contributions of others (if any) used by a Contributor and that particular Contributor's Contribution.

1.3. "Contribution"

means Covered Software of a particular Contributor.

1.4. "Covered Software"

means Source Code Form to which the initial Contributor has attached the notice in Exhibit A, the Executable Form of such Source Code Form, and Modifications of such Source Code Form, in each case including portions thereof.

1.5. "Incompatible With Secondary Licenses"

means

(a) that the initial Contributor has attached the notice described in Exhibit B to the Covered Software; or

(b) that the Covered Software was made available under the terms of version 1.1 or earlier of the License, but not also under the terms of a Secondary License.

1.6. "Executable Form"

means any form of the work other than Source Code Form.

1.7. "Larger Work"

means a work that combines Covered Software with other material, in a separate file or files, that is not Covered Software.

1.8. "License"

means this document.

1.9. "Licensable"

means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently, any and all of the rights conveyed by this License.

1.10. "Modifications"

means any of the following:

(a) any file in Source Code Form that results from an addition to, deletion from, or modification of the contents of Covered Software; or

(b) any new file in Source Code Form that contains any Covered Software.

1.11. "Patent Claims" of a Contributor

means any patent claim(s), including without limitation, method, process, and apparatus claims, in any patent Licensable by such Contributor that would be infringed, but for the grant of the License, by the making, using, selling, offering for sale, having made, import, or transfer of either its Contributions or its Contributor Version.

1.12. "Secondary License"

means either the GNU General Public License, Version 2.0, the GNU Lesser General Public License, Version 2.1, the GNU Affero General Public License, Version 3.0, or any later versions of those licenses.

1.13. "Source Code Form"

means the form of the work preferred for making modifications.

1.14. "You" (or "Your")

means an individual or a legal entity exercising rights under this License. For legal entities, "You" includes any entity that controls, is controlled by, or is under common control with You. For purposes of this definition, "control" means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

2. License Grants and Conditions

2.1. Grants

Each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:

- (a) under intellectual property rights (other than patent or trademark) Licensable by such Contributor to use, reproduce, make available, modify, display, perform, distribute, and otherwise exploit its Contributions, either on an unmodified basis, with Modifications, or as part of a Larger Work; and
- (b) under Patent Claims of such Contributor to make, use, sell, offer for sale, have made, import, and otherwise transfer either its Contributions or its Contributor Version.

2.2. Effective Date

The licenses granted in Section 2.1 with respect to any Contribution become effective for each Contribution on the date the Contributor first distributes such Contribution.

2.3. Limitations on Grant Scope

The licenses granted in this Section 2 are the only rights granted under this License. No additional rights or licenses will be implied from the

distribution or licensing of Covered Software under this License.
Notwithstanding Section 2.1(b) above, no patent license is granted by a Contributor:

- (a) for any code that a Contributor has removed from Covered Software;
or
- (b) for infringements caused by: (i) Your and any other third party's modifications of Covered Software, or (ii) the combination of its Contributions with other software (except as part of its Contributor Version); or
- (c) under Patent Claims infringed by Covered Software in the absence of its Contributions.

This License does not grant any rights in the trademarks, service marks, or logos of any Contributor (except as may be necessary to comply with the notice requirements in Section 3.4).

2.4. Subsequent Licenses

No Contributor makes additional grants as a result of Your choice to distribute the Covered Software under a subsequent version of this License (see Section 10.2) or under the terms of a Secondary License (if permitted under the terms of Section 3.3).

2.5. Representation

Each Contributor represents that the Contributor believes its Contributions are its original creation(s) or it has sufficient rights to grant the rights to its Contributions conveyed by this License.

2.6. Fair Use

This License is not intended to limit any rights You have under applicable copyright doctrines of fair use, fair dealing, or other equivalents.

2.7. Conditions

Sections 3.1, 3.2, 3.3, and 3.4 are conditions of the licenses granted in Section 2.1.

3. Responsibilities

3.1. Distribution of Source Form

All distribution of Covered Software in Source Code Form, including any Modifications that You create or to which You contribute, must be under the terms of this License. You must inform recipients that the Source Code Form of the Covered Software is governed by the terms of this License, and how they can obtain a copy of this License. You may not attempt to alter or restrict the recipients' rights in the Source Code Form.

3.2. Distribution of Executable Form

If You distribute Covered Software in Executable Form then:

- (a) such Covered Software must also be made available in Source Code Form, as described in Section 3.1, and You must inform recipients of the Executable Form how they can obtain a copy of such Source Code Form by reasonable means in a timely manner, at a charge no more than the cost of distribution to the recipient; and
- (b) You may distribute such Executable Form under the terms of this License, or sublicense it under different terms, provided that the license for the Executable Form does not attempt to limit or alter the recipients' rights in the Source Code Form under this License.

3.3. Distribution of a Larger Work

You may create and distribute a Larger Work under terms of Your choice, provided that You also comply with the requirements of this License for the Covered Software. If the Larger Work is a combination of Covered Software with a work governed by one or more Secondary Licenses, and the Covered Software is not Incompatible With Secondary Licenses, this License permits You to additionally distribute such Covered Software under the terms of such Secondary License(s), so that the recipient of the Larger Work may, at their option, further distribute the Covered Software under the terms of either this License or such Secondary License(s).

3.4. Notices

You may not remove or alter the substance of any license notices (including copyright notices, patent notices, disclaimers of warranty, or limitations of liability) contained within the Source Code Form of the Covered Software, except that You may alter any license notices to the extent required to remedy known factual inaccuracies.

3.5. Application of Additional Terms

You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered

Software. However, You may do so only on Your own behalf, and not on behalf of any Contributor. You must make it absolutely clear that any such warranty, support, indemnity, or liability obligation is offered by You alone, and You hereby agree to indemnify every Contributor for any liability incurred by such Contributor as a result of warranty, support, indemnity or liability terms You offer. You may include additional disclaimers of warranty and limitations of liability specific to any jurisdiction.

4. Inability to Comply Due to Statute or Regulation

If it is impossible for You to comply with any of the terms of this License with respect to some or all of the Covered Software due to statute, judicial order, or regulation then You must: (a) comply with the terms of this License to the maximum extent possible; and (b) describe the limitations and the code they affect. Such description must be placed in a text file included with all distributions of the Covered Software under this License. Except to the extent prohibited by statute or regulation, such description must be sufficiently detailed for a recipient of ordinary skill to be able to understand it.

5. Termination

5.1. The rights granted under this License will terminate automatically if You fail to comply with any of its terms. However, if You become compliant, then the rights granted under this License from a particular Contributor are reinstated (a) provisionally, unless and until such Contributor explicitly and finally terminates Your grants, and (b) on an ongoing basis, if such Contributor fails to notify You of the non-compliance by some reasonable means prior to 60 days after You have come back into compliance. Moreover, Your grants from a particular Contributor are reinstated on an ongoing basis if such Contributor notifies You of the non-compliance by some reasonable means, this is the first time You have received notice of non-compliance with this License from such Contributor, and You become compliant prior to 30 days after Your receipt of the notice.

5.2. If You initiate litigation against any entity by asserting a patent infringement claim (excluding declaratory judgment actions, counter-claims, and cross-claims) alleging that a Contributor Version directly or indirectly infringes any patent, then the rights granted to You by any and all Contributors for the Covered Software under Section 2.1 of this License shall terminate.

5.3. In the event of termination under Sections 5.1 or 5.2 above, all end user license agreements (excluding distributors and resellers) which

have been validly granted by You or Your distributors under this License prior to termination shall survive termination.

* * * * *

* 6. Disclaimer of Warranty * * *

* ----- * * *

* * * * *

* Covered Software is provided under this License on an "as is" * * *

* basis, without warranty of any kind, either expressed, implied, or * * *

* statutory, including, without limitation, warranties that the * * *

* Covered Software is free of defects, merchantable, fit for a * * *

* particular purpose or non-infringing. The entire risk as to the * * *

* quality and performance of the Covered Software is with You. * * *

* Should any Covered Software prove defective in any respect, You * * *

* (not any Contributor) assume the cost of any necessary servicing, * * *

* repair, or correction. This disclaimer of warranty constitutes an * * *

* essential part of this License. No use of any Covered Software is * * *

* authorized under this License except under this disclaimer. * * *

* * * * *

* * * * *

* 7. Limitation of Liability * * *

* ----- * * *

* * * * *

* Under no circumstances and under no legal theory, whether tort * * *

* (including negligence), contract, or otherwise, shall any * * *

* Contributor, or anyone who distributes Covered Software as * * *

* permitted above, be liable to You for any direct, indirect, * * *

* special, incidental, or consequential damages of any character * * *

* including, without limitation, damages for lost profits, loss of * * *

* goodwill, work stoppage, computer failure or malfunction, or any * * *

* and all other commercial damages or losses, even if such party * * *

* shall have been informed of the possibility of such damages. This * * *

* limitation of liability shall not apply to liability for death or * * *

* personal injury resulting from such party's negligence to the * * *

* extent applicable law prohibits such limitation. Some * * *

* jurisdictions do not allow the exclusion or limitation of * * *

* incidental or consequential damages, so this exclusion and * * *

* limitation may not apply to You. * * *

* * * * *

8. Litigation

Any litigation relating to this License may be brought only in the courts of a jurisdiction where the defendant maintains its principal place of business and such litigation shall be governed by laws of that jurisdiction, without reference to its conflict-of-law provisions. Nothing in this Section shall prevent a party's ability to bring cross-claims or counter-claims.

9. Miscellaneous

This License represents the complete agreement concerning the subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not be used to construe this License against a Contributor.

10. Versions of the License

10.1. New Versions

Mozilla Foundation is the license steward. Except as provided in Section 10.3, no one other than the license steward has the right to modify or publish new versions of this License. Each version will be given a distinguishing version number.

10.2. Effect of New Versions

You may distribute the Covered Software under the terms of the version of the License under which You originally received the Covered Software, or under the terms of any subsequent version published by the license steward.

10.3. Modified Versions

If you create software not governed by this License, and you want to create a new license for such software, you may create and use a modified version of this License if you rename the license and remove any references to the name of the license steward (except to note that such modified license differs from this License).

10.4. Distributing Source Code Form that is Incompatible With Secondary Licenses

If You choose to distribute Source Code Form that is Incompatible With Secondary Licenses under the terms of this version of the License, the notice described in Exhibit B of this License must be attached.

Exhibit A - Source Code Form License Notice

This Source Code Form is subject to the terms of the Mozilla Public License, v. 2.0. If a copy of the MPL was not distributed with this file, You can obtain one at <http://mozilla.org/MPL/2.0/>.

If it is not possible or desirable to put the notice in a particular file, then You may include the notice in a location (such as a LICENSE file in a relevant directory) where a recipient would be likely to look for such a notice.

You may add additional accurate notices of copyright ownership.

Exhibit B - "Incompatible With Secondary Licenses" Notice

This Source Code Form is "Incompatible With Secondary Licenses", as defined by the Mozilla Public License, v. 2.0.

Copyright 2005 Sun Microsystems, Inc. All rights reserved.

Use is subject to license terms.

This Source Code Form is subject to the terms of the Mozilla Public License, v. 2.0. If a copy of the MPL was not distributed with this file, You can obtain one at <http://mozilla.org/MPL/2.0/>.

Copyright (c) %YEARS% Oracle and/or its affiliates. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- Neither the name of Oracle nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,

EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Mozilla Public License Version 2.0

=====

1. Definitions

1.1. "Contributor"

means each individual or legal entity that creates, contributes to the creation of, or owns Covered Software.

1.2. "Contributor Version"

means the combination of the Contributions of others (if any) used by a Contributor and that particular Contributor's Contribution.

1.3. "Contribution"

means Covered Software of a particular Contributor.

1.4. "Covered Software"

means Source Code Form to which the initial Contributor has attached the notice in Exhibit A, the Executable Form of such Source Code Form, and Modifications of such Source Code Form, in each case including portions thereof.

1.5. "Incompatible With Secondary Licenses"

means

(a) that the initial Contributor has attached the notice described in Exhibit B to the Covered Software; or

(b) that the Covered Software was made available under the terms of version 1.1 or earlier of the License, but not also under the terms of a Secondary License.

1.6. "Executable Form"

means any form of the work other than Source Code Form.

1.7. "Larger Work"

means a work that combines Covered Software with other material, in a separate file or files, that is not Covered Software.

1.8. "License"

means this document.

1.9. "Licensable"

means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently, any and all of the rights conveyed by this License.

1.10. "Modifications"

means any of the following:

(a) any file in Source Code Form that results from an addition to, deletion from, or modification of the contents of Covered Software; or

(b) any new file in Source Code Form that contains any Covered Software.

1.11. "Patent Claims" of a Contributor

means any patent claim(s), including without limitation, method, process, and apparatus claims, in any patent Licensable by such Contributor that would be infringed, but for the grant of the License, by the making, using, selling, offering for sale, having made, import, or transfer of either its Contributions or its Contributor Version.

1.12. "Secondary License"

means either the GNU General Public License, Version 2.0, the GNU Lesser General Public License, Version 2.1, the GNU Affero General Public License, Version 3.0, or any later versions of those licenses.

1.13. "Source Code Form"

means the form of the work preferred for making modifications.

1.14. "You" (or "Your")

means an individual or a legal entity exercising rights under this License. For legal entities, "You" includes any entity that controls, is controlled by, or is under common control with You. For purposes of this definition, "control" means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

2. License Grants and Conditions

2.1. Grants

Each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:

- (a) under intellectual property rights (other than patent or trademark) Licensable by such Contributor to use, reproduce, make available, modify, display, perform, distribute, and otherwise exploit its Contributions, either on an unmodified basis, with Modifications, or as part of a Larger Work; and
- (b) under Patent Claims of such Contributor to make, use, sell, offer for sale, have made, import, and otherwise transfer either its Contributions or its Contributor Version.

2.2. Effective Date

The licenses granted in Section 2.1 with respect to any Contribution become effective for each Contribution on the date the Contributor first distributes such Contribution.

2.3. Limitations on Grant Scope

The licenses granted in this Section 2 are the only rights granted under this License. No additional rights or licenses will be implied from the distribution or licensing of Covered Software under this License. Notwithstanding Section 2.1(b) above, no patent license is granted by a Contributor:

- (a) for any code that a Contributor has removed from Covered Software; or
- (b) for infringements caused by: (i) Your and any other third party's modifications of Covered Software, or (ii) the combination of its Contributions with other software (except as part of its Contributor Version); or
- (c) under Patent Claims infringed by Covered Software in the absence of its Contributions.

This License does not grant any rights in the trademarks, service marks, or logos of any Contributor (except as may be necessary to comply with the notice requirements in Section 3.4).

2.4. Subsequent Licenses

No Contributor makes additional grants as a result of Your choice to distribute the Covered Software under a subsequent version of this License (see Section 10.2) or under the terms of a Secondary License (if permitted under the terms of Section 3.3).

2.5. Representation

Each Contributor represents that the Contributor believes its Contributions are its original creation(s) or it has sufficient rights to grant the rights to its Contributions conveyed by this License.

2.6. Fair Use

This License is not intended to limit any rights You have under applicable copyright doctrines of fair use, fair dealing, or other equivalents.

2.7. Conditions

Sections 3.1, 3.2, 3.3, and 3.4 are conditions of the licenses granted in Section 2.1.

3. Responsibilities

3.1. Distribution of Source Form

All distribution of Covered Software in Source Code Form, including any Modifications that You create or to which You contribute, must be under the terms of this License. You must inform recipients that the Source Code Form of the Covered Software is governed by the terms of this License, and how they can obtain a copy of this License. You may not attempt to alter or restrict the recipients' rights in the Source Code Form.

3.2. Distribution of Executable Form

If You distribute Covered Software in Executable Form then:

- (a) such Covered Software must also be made available in Source Code Form, as described in Section 3.1, and You must inform recipients of the Executable Form how they can obtain a copy of such Source Code Form by reasonable means in a timely manner, at a charge no more than the cost of distribution to the recipient; and
- (b) You may distribute such Executable Form under the terms of this License, or sublicense it under different terms, provided that the license for the Executable Form does not attempt to limit or alter the recipients' rights in the Source Code Form under this License.

3.3. Distribution of a Larger Work

You may create and distribute a Larger Work under terms of Your choice, provided that You also comply with the requirements of this License for the Covered Software. If the Larger Work is a combination of Covered Software with a work governed by one or more Secondary Licenses, and the Covered Software is not Incompatible With Secondary Licenses, this License permits You to additionally distribute such Covered Software under the terms of such Secondary License(s), so that the recipient of the Larger Work may, at their option, further distribute the Covered Software under the terms of either this License or such Secondary License(s).

3.4. Notices

You may not remove or alter the substance of any license notices (including copyright notices, patent notices, disclaimers of warranty, or limitations of liability) contained within the Source Code Form of the Covered Software, except that You may alter any license notices to the extent required to remedy known factual inaccuracies.

3.5. Application of Additional Terms

You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Software. However, You may do so only on Your own behalf, and not on behalf of any Contributor. You must make it absolutely clear that any such warranty, support, indemnity, or liability obligation is offered by You alone, and You hereby agree to indemnify every Contributor for any liability incurred by such Contributor as a result of warranty, support, indemnity or liability terms You offer. You may include additional disclaimers of warranty and limitations of liability specific to any jurisdiction.

4. Inability to Comply Due to Statute or Regulation

If it is impossible for You to comply with any of the terms of this License with respect to some or all of the Covered Software due to statute, judicial order, or regulation then You must: (a) comply with the terms of this License to the maximum extent possible; and (b) describe the limitations and the code they affect. Such description must be placed in a text file included with all distributions of the Covered Software under this License. Except to the extent prohibited by statute or regulation, such description must be sufficiently detailed for a recipient of ordinary skill to be able to understand it.

5. Termination

5.1. The rights granted under this License will terminate automatically if You fail to comply with any of its terms. However, if You become compliant, then the rights granted under this License from a particular Contributor are reinstated (a) provisionally, unless and until such Contributor explicitly and finally terminates Your grants, and (b) on an ongoing basis, if such Contributor fails to notify You of the non-compliance by some reasonable means prior to 60 days after You have come back into compliance. Moreover, Your grants from a particular Contributor are reinstated on an ongoing basis if such Contributor notifies You of the non-compliance by some reasonable means, this is the first time You have received notice of non-compliance with this License from such Contributor, and You become compliant prior to 30 days after Your receipt of the notice.

5.2. If You initiate litigation against any entity by asserting a patent infringement claim (excluding declaratory judgment actions, counter-claims, and cross-claims) alleging that a Contributor Version directly or indirectly infringes any patent, then the rights granted to You by any and all Contributors for the Covered Software under Section 2.1 of this License shall terminate.

5.3. In the event of termination under Sections 5.1 or 5.2 above, all end user license agreements (excluding distributors and resellers) which have been validly granted by You or Your distributors under this License prior to termination shall survive termination.

```
*
*
* 6. Disclaimer of Warranty
* -----
*
* Covered Software is provided under this License on an "as is"
* basis, without warranty of any kind, either expressed, implied, or
* statutory, including, without limitation, warranties that the
* Covered Software is free of defects, merchantable, fit for a
* particular purpose or non-infringing. The entire risk as to the
* quality and performance of the Covered Software is with You.
* Should any Covered Software prove defective in any respect, You
* (not any Contributor) assume the cost of any necessary servicing,
* repair, or correction. This disclaimer of warranty constitutes an
* essential part of this License. No use of any Covered Software is
* authorized under this License except under this disclaimer.
*
```

```
*
*
* 7. Limitation of Liability
*
```

* ----- *

* *

* Under no circumstances and under no legal theory, whether tort *

* (including negligence), contract, or otherwise, shall any *

* Contributor, or anyone who distributes Covered Software as *

* permitted above, be liable to You for any direct, indirect, *

* special, incidental, or consequential damages of any character *

* including, without limitation, damages for lost profits, loss of *

* goodwill, work stoppage, computer failure or malfunction, or any *

* and all other commercial damages or losses, even if such party *

* shall have been informed of the possibility of such damages. This *

* limitation of liability shall not apply to liability for death or *

* personal injury resulting from such party's negligence to the *

* extent applicable law prohibits such limitation. Some *

* jurisdictions do not allow the exclusion or limitation of *

* incidental or consequential damages, so this exclusion and *

* limitation may not apply to You. *

* *

8. Litigation

Any litigation relating to this License may be brought only in the courts of a jurisdiction where the defendant maintains its principal place of business and such litigation shall be governed by laws of that jurisdiction, without reference to its conflict-of-law provisions. Nothing in this Section shall prevent a party's ability to bring cross-claims or counter-claims.

9. Miscellaneous

This License represents the complete agreement concerning the subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not be used to construe this License against a Contributor.

10. Versions of the License

10.1. New Versions

Mozilla Foundation is the license steward. Except as provided in Section 10.3, no one other than the license steward has the right to modify or publish new versions of this License. Each version will be given a

distinguishing version number.

10.2. Effect of New Versions

You may distribute the Covered Software under the terms of the version of the License under which You originally received the Covered Software, or under the terms of any subsequent version published by the license steward.

10.3. Modified Versions

If you create software not governed by this License, and you want to create a new license for such software, you may create and use a modified version of this License if you rename the license and remove any references to the name of the license steward (except to note that such modified license differs from this License).

10.4. Distributing Source Code Form that is Incompatible With Secondary Licenses

If You choose to distribute Source Code Form that is Incompatible With Secondary Licenses under the terms of this version of the License, the notice described in Exhibit B of this License must be attached.

Exhibit A - Source Code Form License Notice

This Source Code Form is subject to the terms of the Mozilla Public License, v. 2.0. If a copy of the MPL was not distributed with this file, You can obtain one at <http://mozilla.org/MPL/2.0/>.

If it is not possible or desirable to put the notice in a particular file, then You may include the notice in a location (such as a LICENSE file in a relevant directory) where a recipient would be likely to look for such a notice.

You may add additional accurate notices of copyright ownership.

Exhibit B - "Incompatible With Secondary Licenses" Notice

This Source Code Form is "Incompatible With Secondary Licenses", as defined by the Mozilla Public License, v. 2.0.

Copyright (c) %YEARS% Oracle and/or its affiliates. All rights reserved.

DO NOT ALTER OR REMOVE COPYRIGHT NOTICES OR THIS FILE HEADER.

This code is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License version 2 only, as

published by the Free Software Foundation.

This code is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License version 2 for more details (a copy is included in the LICENSE file that accompanied this code).

You should have received a copy of the GNU General Public License version 2 along with this work; if not, write to the Free Software Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA.

Please contact Oracle, 500 Oracle Parkway, Redwood Shores, CA 94065 USA or visit www.oracle.com if you need additional information or have any questions.

Copyright (c) %YEARS%, Oracle and/or its affiliates. All rights reserved.
DO NOT ALTER OR REMOVE COPYRIGHT NOTICES OR THIS FILE HEADER.

This code is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License version 2 only, as published by the Free Software Foundation. Oracle designates this particular file as subject to the "Classpath" exception as provided by Oracle in the LICENSE file that accompanied this code.

This code is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License version 2 for more details (a copy is included in the LICENSE file that accompanied this code).

You should have received a copy of the GNU General Public License version 2 along with this work; if not, write to the Free Software Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA.

Please contact Oracle, 500 Oracle Parkway, Redwood Shores, CA 94065 USA or visit www.oracle.com if you need additional information or have any questions.

SAX COPYRIGHT STATUS

Version 1.0 of the Simple API for XML (SAX), created collectively by the membership of the XML-DEV mailing list, is hereby released into the public domain.

No one owns SAX: you may use it freely in both commercial and non-commercial applications, bundle it with your software distribution, include it on a CD-ROM, list the source code in a book, mirror the documentation at your own web site, or use it in any other way you see fit.

NO WARRANTY

Because SAX is released to the public domain, there is no warranty for the design or for the software implementation, to the extent permitted by applicable law. Except when otherwise stated in writing the copyright holders and/or other parties provide SAX "as is" without warranty of any kind, either expressed or implied, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. The entire risk as to the quality and performance of SAX is with you. Should SAX prove defective, you assume the cost of all necessary servicing, repair or correction.

In no event unless required by applicable law or agreed to in writing will any copyright holder, or any other party who may modify and/or redistribute SAX, be liable to you for damages, including any general, special, incidental or consequential damages arising out of the use or inability to use SAX (including but not limited to loss of data or data being rendered inaccurate or losses sustained by you or third parties or a failure of the SAX to operate with any other programs), even if such holder or other party has been advised of the possibility of such damages.

David Megginson <sax@megginson.com>

1998-05-11

***** BEGIN LICENSE BLOCK *****

Version: MPL 1.1/GPL 2.0/LGPL 2.1

The contents of this file are subject to the Mozilla Public License Version 1.1 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at <http://www.mozilla.org/MPL/>

Software distributed under the License is distributed on an "AS IS" basis, WITHOUT WARRANTY OF ANY KIND, either express or implied. See the License for the specific language governing rights and limitations under the License.

The Original Code is the Netscape security libraries.

The Initial Developer of the Original Code is Netscape Communications Corporation. Portions created by Netscape are Copyright (C) 1994-2000 Netscape Communications Corporation. All Rights Reserved.

Contributor(s):

Alternatively, the contents of this file may be used under the terms of either the GNU General Public License Version 2 or later (the "GPL"), or the GNU Lesser General Public License Version 2.1 or later (the "LGPL"), in which case the provisions of the GPL or the LGPL are applicable instead of those above. If you wish to allow use of your version of this file only under the terms of either the GPL or the LGPL, and not to allow others to use your version of this file under the terms of the MPL, indicate your decision by deleting the provisions above and replace them with the notice and other provisions required by the GPL or the LGPL. If you do not delete the provisions above, a recipient may use your version of this file under the terms of any one of the MPL, the GPL or the LGPL.

***** END LICENSE BLOCK *****

UNICODE, INC. LICENSE AGREEMENT - DATA FILES AND SOFTWARE

Unicode Data Files include all data files under the directories <http://www.unicode.org/Public/>, <http://www.unicode.org/reports/>, and <http://www.unicode.org/cldr/data/>. Unicode Data Files do not include PDF online code charts under the directory <http://www.unicode.org/Public/>. Software includes any source code published in the Unicode Standard or under the directories <http://www.unicode.org/Public/>, <http://www.unicode.org/reports/>, and <http://www.unicode.org/cldr/data/>.

NOTICE TO USER: Carefully read the following legal agreement. BY DOWNLOADING, INSTALLING, COPYING OR OTHERWISE USING UNICODE INC.'S DATA FILES ("DATA FILES"), AND/OR SOFTWARE ("SOFTWARE"), YOU UNEQUIVOCALLY ACCEPT, AND AGREE TO BE BOUND BY, ALL OF THE TERMS AND CONDITIONS OF THIS AGREEMENT. IF YOU DO NOT AGREE, DO NOT DOWNLOAD, INSTALL, COPY, DISTRIBUTE OR USE THE DATA FILES OR SOFTWARE.

COPYRIGHT AND PERMISSION NOTICE

Copyright 1991-2012 Unicode, Inc. All rights reserved. Distributed under the Terms of Use in <http://www.unicode.org/copyright.html>.

Permission is hereby granted, free of charge, to any person obtaining a copy of the Unicode data files and any associated documentation (the "Data Files") or Unicode software and any associated documentation (the "Software") to deal in the Data Files or Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, and/or sell copies of the Data Files or Software, and to permit persons to whom the Data Files or Software are furnished to do so, provided that (a) the above copyright notice(s) and this permission notice appear with all copies of the Data Files or Software, (b) both the above copyright notice(s) and this permission notice appear in associated documentation, and (c) there is clear notice in each modified Data File or in the Software as well as in the documentation associated with the Data File(s) or Software that the data or software has been

modified.

THE DATA FILES AND SOFTWARE ARE PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NON-INFRINGEMENT OF THIRD PARTY RIGHTS. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR HOLDERS INCLUDED IN THIS NOTICE BE LIABLE FOR ANY CLAIM, OR ANY SPECIAL INDIRECT OR CONSEQUENTIAL DAMAGES, OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THE DATA FILES OR SOFTWARE.

Except as contained in this notice, the name of a copyright holder shall not be used in advertising or otherwise to promote the sale, use or other dealings in these Data Files or Software without prior written authorization of the copyright holder.

Copyright 2005 Sun Microsystems, Inc. All rights reserved.

Use is subject to license terms.

***** BEGIN LICENSE BLOCK *****

Version: MPL 1.1/GPL 2.0/LGPL 2.1

The contents of this package are subject to the Mozilla Public License Version 1.1 (the "License"); you may not use this package except in compliance with the License. You may obtain a copy of the License at <http://www.mozilla.org/MPL/>

Software distributed under the License is distributed on an "AS IS" basis, WITHOUT WARRANTY OF ANY KIND, either express or implied. See the License for the specific language governing rights and limitations under the License.

The Original Code is the Netscape Portable Runtime (NSPR).

The Initial Developer of the Original Code is
Netscape Communications Corporation.

Portions created by the Initial Developer are Copyright (C) 1998-2000
the Initial Developer. All Rights Reserved.

Contributor(s):

Alternatively, the contents of this file may be used under the terms of either the GNU General Public License Version 2 or later (the "GPL"), or the GNU Lesser General Public License Version 2.1 or later (the "LGPL"), in which case the provisions of the GPL or the LGPL are applicable instead of those above. If you wish to allow use of your version of this file only under the terms of either the GPL or the LGPL, and not to allow others to use your version of this file under the terms of the MPL, indicate your

decision by deleting the provisions above and replace them with the notice and other provisions required by the GPL or the LGPL. If you do not delete the provisions above, a recipient may use your version of this file under the terms of any one of the MPL, the GPL or the LGPL.

***** END LICENSE BLOCK *****

COMMON DEVELOPMENT AND DISTRIBUTION LICENSE (CDDL) Version 1.0

1. Definitions.

1.1. Contributor. means each individual or entity that creates or contributes to the creation of Modifications.

1.2. Contributor Version. means the combination of the Original Software, prior Modifications used by a Contributor (if any), and the Modifications made by that particular Contributor.

1.3. Covered Software. means (a) the Original Software, or (b) Modifications, or (c) the combination of files containing Original Software with files containing Modifications, in each case including portions thereof.

1.4. Executable. means the Covered Software in any form other than Source Code.

1.5. Initial Developer. means the individual or entity that first makes Original Software available under this License.

1.6. Larger Work. means a work which combines Covered Software or portions thereof with code not governed by the terms of this License.

1.7. License. means this document.

1.8. Licensable. means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently acquired, any and all of the rights conveyed herein.

1.9. Modifications. means the Source Code and Executable form of any of the following:

A. Any file that results from an addition to, deletion from or modification of the contents of a file containing Original Software or previous Modifications;

B. Any new file that contains any part of the Original Software or previous Modification; or

C. Any new file that is contributed or otherwise made available under the terms of this License.

1.10. Original Software. means the Source Code and Executable form of computer software code that is originally released under this License.

1.11. Patent Claims. means any patent claim(s), now owned or hereafter acquired, including without limitation, method, process, and apparatus claims, in any patent Licensable by grantor.

1.12. Source Code. means (a) the common form of computer software code in which modifications are made and (b) associated documentation included in or with such code.

1.13. You. (or .Your.) means an individual or a legal entity exercising rights under, and complying with all of the terms of, this License. For legal entities, .You. includes any entity which controls, is controlled by, or is under common control with You. For purposes of this definition, .control. means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

2. License Grants.

2.1. The Initial Developer Grant.

Conditioned upon Your compliance with Section 3.1 below and subject to third party intellectual property claims, the Initial Developer hereby grants You a world-wide, royalty-free, non-exclusive license:

(a) under intellectual property rights (other than patent or trademark) Licensable by Initial Developer, to use, reproduce, modify, display, perform, sublicense and distribute the Original Software (or portions thereof), with or without Modifications, and/or as part of a Larger Work; and

(b) under Patent Claims infringed by the making, using or selling of Original Software, to make, have made, use, practice, sell, and offer for sale, and/or otherwise dispose of the Original Software (or portions thereof).

(c) The licenses granted in Sections 2.1(a) and (b) are effective on the date Initial Developer first distributes or otherwise makes the Original Software available to a third party under the terms of this License.

(d) Notwithstanding Section 2.1(b) above, no patent license is granted: (1) for code that You delete from the Original Software, or (2) for infringements caused by: (i) the modification of the Original Software, or (ii) the combination of the Original Software with other software or devices.

2.2. Contributor Grant.

Conditioned upon Your compliance with Section 3.1 below and subject to third party intellectual property claims, each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:

(a) under intellectual property rights (other than patent or trademark) Licensable by Contributor to use, reproduce, modify, display, perform, sublicense and distribute the Modifications created by such Contributor (or portions thereof), either on an unmodified basis, with other Modifications, as Covered Software and/or as part of a Larger Work; and

(b) under Patent Claims infringed by the making, using, or selling of Modifications made by that Contributor either alone and/or in combination with its Contributor Version (or portions of such combination), to make, use, sell, offer for sale, have made, and/or otherwise dispose of: (1) Modifications made by that Contributor (or portions thereof); and (2) the combination of Modifications made by that Contributor with its Contributor Version (or portions of such combination).

(c) The licenses granted in Sections 2.2(a) and 2.2(b) are effective on the date Contributor first distributes or otherwise makes the Modifications available to a third party.

(d) Notwithstanding Section 2.2(b) above, no patent license is granted: (1) for any code that Contributor has

deleted from the Contributor Version; (2) for infringements caused by: (i) third party modifications of Contributor Version, or (ii) the combination of Modifications made by that Contributor with other software (except as part of the Contributor Version) or other devices; or (3) under Patent Claims infringed by Covered Software in the absence of Modifications made by that Contributor.

3. Distribution Obligations.

3.1. Availability of Source Code.

Any Covered Software that You distribute or otherwise make available in Executable form must also be made available in Source Code form and that Source Code form must be distributed only under the terms of this License. You must include a copy of this License with every copy of the Source Code form of the Covered Software You distribute or otherwise make available. You must inform recipients of any such Covered Software in Executable form as to how they can obtain such Covered Software in Source Code form in a reasonable manner on or through a medium customarily used for software exchange.

3.2. Modifications.

The Modifications that You create or to which You contribute are governed by the terms of this License. You represent that You believe Your Modifications are Your original creation(s) and/or You have sufficient rights to grant the rights conveyed by this License.

3.3. Required Notices.

You must include a notice in each of Your Modifications that identifies You as the Contributor of the Modification. You may not remove or alter any copyright, patent or trademark notices contained within the Covered Software, or any notices of licensing or any descriptive text giving attribution to any Contributor or the Initial Developer.

3.4. Application of Additional Terms.

You may not offer or impose any terms on any Covered Software in Source Code form that alters or restricts the applicable version of this License or the recipients' rights hereunder. You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Software. However, you may do so only on Your own behalf, and not on behalf of the Initial Developer or any Contributor. You must make it absolutely clear that any such warranty, support, indemnity or liability obligation is offered by You alone, and You hereby agree to indemnify the Initial Developer and every Contributor for any liability incurred by the Initial Developer or such Contributor as a result of warranty, support, indemnity or liability terms You offer.

3.5. Distribution of Executable Versions.

You may distribute the Executable form of the Covered Software under the terms of this License or under the terms of a license of Your choice, which may contain terms different from this License, provided that You are in compliance with the terms of this License and that the license for the Executable form does not attempt to limit or alter the recipient's rights in the Source Code form from the rights set forth in this License. If You distribute the Covered Software in Executable form under a different license, You must make it absolutely clear that any terms which differ from this License are offered by You alone, not by the Initial Developer or Contributor. You hereby agree to indemnify the Initial Developer and every Contributor for any liability incurred by the Initial Developer or such Contributor as a result of any such terms You offer.

3.6. Larger Works.

You may create a Larger Work by combining Covered Software with other code not governed by the terms of this License and distribute the Larger Work as a single product. In such a case, You must make sure the

requirements of this License are fulfilled for the Covered Software.

4. Versions of the License.

4.1. New Versions.

Sun Microsystems, Inc. is the initial license steward and may publish revised and/or new versions of this License from time to time. Each version will be given a distinguishing version number. Except as provided in Section 4.3, no one other than the license steward has the right to modify this License.

4.2. Effect of New Versions.

You may always continue to use, distribute or otherwise make the Covered Software available under the terms of the version of the License under which You originally received the Covered Software. If the Initial Developer includes a notice in the Original Software prohibiting it from being distributed or otherwise made available under any subsequent version of the License, You must distribute and make the Covered Software available under the terms of the version of the License under which You originally received the Covered Software. Otherwise, You may also choose to use, distribute or otherwise make the Covered Software available under the terms of any subsequent version of the License published by the license steward.

4.3. Modified Versions.

When You are an Initial Developer and You want to create a new license for Your Original Software, You may create and use a modified version of this License if You: (a) rename the license and remove any references to the name of the license steward (except to note that the license differs from this License); and (b) otherwise make it clear that the license contains terms which differ from this License.

5. DISCLAIMER OF WARRANTY.

COVERED SOFTWARE IS PROVIDED UNDER THIS LICENSE ON AN .AS IS. BASIS, WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTIES THAT THE COVERED SOFTWARE IS FREE OF DEFECTS, MERCHANTABLE, FIT FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE COVERED SOFTWARE IS WITH YOU. SHOULD ANY COVERED SOFTWARE PROVE DEFECTIVE IN ANY RESPECT, YOU (NOT THE INITIAL DEVELOPER OR ANY OTHER CONTRIBUTOR) ASSUME THE COST OF ANY NECESSARY SERVICING, REPAIR OR CORRECTION. THIS DISCLAIMER OF WARRANTY CONSTITUTES AN ESSENTIAL PART OF THIS LICENSE. NO USE OF ANY COVERED SOFTWARE IS AUTHORIZED HEREUNDER EXCEPT UNDER THIS DISCLAIMER.

6. TERMINATION.

6.1. This License and the rights granted hereunder will terminate automatically if You fail to comply with terms herein and fail to cure such breach within 30 days of becoming aware of the breach. Provisions which, by their nature, must remain in effect beyond the termination of this License shall survive.

6.2. If You assert a patent infringement claim (excluding declaratory judgment actions) against Initial Developer or a Contributor (the Initial Developer or Contributor against whom You assert such claim is referred to as .Participant.) alleging that the Participant Software (meaning the Contributor Version where the Participant is a Contributor or the Original Software where the Participant is the Initial Developer) directly or indirectly infringes any patent, then any and all rights granted directly or indirectly to You by such Participant, the Initial Developer (if the Initial Developer is not the Participant) and all Contributors under Sections 2.1 and/or 2.2 of this License shall,

upon 60 days notice from Participant terminate prospectively and automatically at the expiration of such 60 day notice period, unless if within such 60 day period You withdraw Your claim with respect to the Participant Software against such Participant either unilaterally or pursuant to a written agreement with Participant.

6.3. In the event of termination under Sections 6.1 or 6.2 above, all end user licenses that have been validly granted by You or any distributor hereunder prior to termination (excluding licenses granted to You by any distributor) shall survive termination.

7. LIMITATION OF LIABILITY.

UNDER NO CIRCUMSTANCES AND UNDER NO LEGAL THEORY, WHETHER TORT (INCLUDING NEGLIGENCE), CONTRACT, OR OTHERWISE, SHALL YOU, THE INITIAL DEVELOPER, ANY OTHER CONTRIBUTOR, OR ANY DISTRIBUTOR OF COVERED SOFTWARE, OR ANY SUPPLIER OF ANY OF SUCH PARTIES, BE LIABLE TO ANY PERSON FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES OF ANY CHARACTER INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOST PROFITS, LOSS OF GOODWILL, WORK STOPPAGE, COMPUTER FAILURE OR MALFUNCTION, OR ANY AND ALL OTHER COMMERCIAL DAMAGES OR LOSSES, EVEN IF SUCH PARTY SHALL HAVE BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. THIS LIMITATION OF LIABILITY SHALL NOT APPLY TO LIABILITY FOR DEATH OR PERSONAL INJURY RESULTING FROM SUCH PARTY'S NEGLIGENCE TO THE EXTENT APPLICABLE LAW PROHIBITS SUCH LIMITATION. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THIS EXCLUSION AND LIMITATION MAY NOT APPLY TO YOU.

8. U.S. GOVERNMENT END USERS.

The Covered Software is a .commercial item., as that term is defined in 48 C.F.R. 2.101 (Oct. 1995), consisting of .commercial computer software. (as that term is defined at 48 C.F.R. 252.227-7014(a)(1)) and .commercial computer software documentation. as such terms are used in 48 C.F.R. 12.212 (Sept. 1995). Consistent with 48 C.F.R. 12.212 and 48 C.F.R. 227.7202-1 through 227.7202-4 (June 1995), all U.S. Government End Users acquire Covered Software with only those rights set forth herein. This U.S. Government Rights clause is in lieu of, and supersedes, any other FAR, DFAR, or other clause or provision that addresses Government rights in computer software under this License.

9. MISCELLANEOUS.

This License represents the complete agreement concerning subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable. This License shall be governed by the law of the jurisdiction specified in a notice contained within the Original Software (except to the extent applicable law, if any, provides otherwise), excluding such jurisdiction's conflict-of-law provisions. Any litigation relating to this License shall be subject to the jurisdiction of the courts located in the jurisdiction and venue specified in a notice contained within the Original Software, with the losing party responsible for costs, including, without limitation, court costs and reasonable attorneys' fees and expenses. The application of the United Nations Convention on Contracts for the International Sale of Goods is expressly excluded. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not apply to this License. You agree that You alone are responsible for compliance with the United States export administration regulations (and the export control laws and regulation of any other countries) when You use, distribute or otherwise make available any Covered Software.

10. RESPONSIBILITY FOR CLAIMS.

As between Initial Developer and the Contributors, each party is responsible for claims and damages arising, directly or indirectly, out of its utilization of rights under this License and You agree to work with Initial Developer and Contributors to distribute such responsibility on an equitable basis. Nothing herein is intended or shall be deemed to constitute any admission of liability.

NOTICE PURSUANT TO SECTION 9 OF THE COMMON DEVELOPMENT AND DISTRIBUTION LICENSE (CDDL)

The code released under the CDDL shall be governed by the laws of the State of California (excluding conflict-of-law provisions). Any litigation relating to this License shall be subject to the jurisdiction of the Federal Courts of the Northern District of California and the state courts of the State of California, with venue lying in Santa Clara County, California.

The GNU General Public License (GPL) Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc. 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you

legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started

running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically

terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

One line to give the program's name and a brief idea of what it does.

Copyright (C)

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the

implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
```

```
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'. This is free software, and you are welcome to redistribute it under certain conditions; type `show c' for details.
```

The hypothetical commands ``show w'` and ``show c'` should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than ``show w'` and ``show c'`; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program `Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
signature of Ty Coon, 1 April 1989
```

```
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

"CLASSPATH" EXCEPTION TO THE GPL VERSION 2

Certain source files distributed by Sun Microsystems, Inc. are subject to the following clarification and special exception to the GPL Version 2, but only where Sun has expressly included in the particular source file's header the words

```
"Sun designates this particular file as subject to the "Classpath" exception as provided by Sun in the License file that accompanied this code."
```

Linking this library statically or dynamically with other modules is making a combined work based on this library. Thus, the terms and conditions of the GNU General Public License Version 2 cover the whole combination.

As a special exception, the copyright holders of this library give you permission to link this library with independent modules to produce an executable, regardless of the license terms of these independent modules, and to copy and distribute the resulting executable under terms of your choice, provided that you also meet, for each linked independent module, the terms and conditions of the license of that module. An independent module is a module

which is not derived from or based on this library.? If you modify this library, you may extend this exception to your version of the library, but you are not obligated to do so.? If you do not wish to do so, delete this exception statement from your version.

Copyright (c) %YEARS% Oracle and/or its affiliates. All rights reserved.

DO NOT ALTER OR REMOVE COPYRIGHT NOTICES OR THIS FILE HEADER.

This code is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License version 2 only, as published by the Free Software Foundation. Oracle designates this particular file as subject to the "Classpath" exception as provided by Oracle in the LICENSE file that accompanied this code.

This code is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License version 2 for more details (a copy is included in the LICENSE file that accompanied this code).

You should have received a copy of the GNU General Public License version 2 along with this work; if not, write to the Free Software Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA.

Please contact Oracle, 500 Oracle Parkway, Redwood Shores, CA 94065 USA or visit www.oracle.com if you need additional information or have any questions.

SAX IS FREE

I hereby abandon any property rights to SAX 2.0 (the Simple API for XML), and release all of the SAX 2.0 source code, compiled code, and documentation contained in this distribution into the Public Domain. SAX comes with NO WARRANTY or guarantee of fitness for any purpose.

David Megginson
david@megginson.com
2000-01-14

1.67 spring-security-config 5.2.15.RELEASE

1.67.1 Available under license :

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2009-2013 the original author or authors.

*

* Licensed under the Apache License, Version 2.0 (the "License");

* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* <https://www.apache.org/licenses/LICENSE-2.0>
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/

Found in path(s):

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/SecurityNamespaceHandler.java

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2002-2019 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* <https://www.apache.org/licenses/LICENSE-2.0>
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/

Found in path(s):

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/web/configurers/HeadersConfigurer.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/web/configuration/WebMvcSecurityConfiguration.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/web/socket/AbstractSecurityWebSocketMessageBrokerConfigurer.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/web/reactive/ServerHttpSecurityConfiguration.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/web/servlet/configuration/WebMvcSecurityConfiguration.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/ldap/LdapServerBeanDefinitionParser.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-

jar/org/springframework/security/config/annotation/method/configuration/ReactiveMethodSecurityConfiguration.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/configuration/ObjectPostProcessorConfiguration.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/web/configurers/openid/OpenIDLoginConfigurer.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/web/configurers/SessionManagementConfigurer.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/web/reactive/ReactiveOAuth2ClientImportSelector.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/web/configuration/OAuth2ImportSelector.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/crypto/RsaKeyConversionServicePostProcessor.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/method/configuration/GlobalMethodSecurityConfiguration.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/web/configurers/LogoutConfigurer.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/web/configuration/WebSecurityConfiguration.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/web/configurers/CsrfConfigurer.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/authentication/configuration/AuthenticationConfiguration.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/web/reactive/WebFluxSecurityConfiguration.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/web/configurers/AbstractAuthenticationFilterConfigurer.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/web/configuration/OAuth2ClientConfiguration.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/web/configurers/saml2/Saml2LoginConfigurer.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/authentication/configuration/InitializeUserDetailsBeanManagerConfigurer.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/web/AbstractRequestMatcherRegistry.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/http/LogoutBeanDefinitionParser.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/method/configuration/Jsrs250MetadataSourceConfiguration.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/web/builders/HttpSecurity.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/Customizer.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/web/configurers/HttpBasicConfigurer.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-

jar/org/springframework/security/config/http/HeadersBeanDefinitionParser.java
* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-
jar/org/springframework/security/config/annotation/web/configurers/oauth2/client/OAuth2ClientConfigurer.java
No license file was found, but licenses were detected in source scan.

```
/*  
* Copyright 2002-2012 the original author or authors.  
*  
* Licensed under the Apache License, Version 2.0 (the "License");  
* you may not use this file except in compliance with the License.  
* You may obtain a copy of the License at  
*  
* https://www.apache.org/licenses/LICENSE-2.0  
*  
* Unless required by applicable law or agreed to in writing, software  
* distributed under the License is distributed on an "AS IS" BASIS,  
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
* See the License for the specific language governing permissions and  
* limitations under the License.  
*/
```

Found in path(s):

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-
jar/org/springframework/security/config/http/CsrfBeanDefinitionParser.java
* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-
jar/org/springframework/security/config/http/WebConfigUtils.java
* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-
jar/org/springframework/security/config/method/MethodConfigUtils.java
* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-
jar/org/springframework/security/config/http/HttpSecurityBeanDefinitionParser.java
No license file was found, but licenses were detected in source scan.

```
/*  
* Copyright 2002-2016 the original author or authors.  
*  
* Licensed under the Apache License, Version 2.0 (the "License");  
* you may not use this file except in compliance with the License.  
* You may obtain a copy of the License at  
*  
* https://www.apache.org/licenses/LICENSE-2.0  
*  
* Unless required by applicable law or agreed to in writing, software  
* distributed under the License is distributed on an "AS IS" BASIS,  
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
* See the License for the specific language governing permissions and  
* limitations under the License.  
*/
```

Found in path(s):

- * /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/http/FilterInvocationSecurityMetadataSourceParser.java
- * /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/http/UserDetailsServiceFactoryBean.java
- * /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/http/SessionCreationPolicy.java
- * /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/core/GrantedAuthorityDefaults.java
- * /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/authentication/UserServiceBeanDefinitionParser.java
- * /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/authentication/AuthenticationProviderBeanDefinitionParser.java
- * /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/ldap/LdapProviderBeanDefinitionParser.java
- * /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/http/DefaultFilterChainValidator.java
- * /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/ldap/LdapUserServiceBeanDefinitionParser.java
- * /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/authentication/JdbcUserServiceBeanDefinitionParser.java
- * /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/ldap/ContextSourceSettingPostProcessor.java
- * /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/method/ProtectPointcutPostProcessor.java
- * /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/http/HttpFirewallBeanDefinitionParser.java
- * /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/authentication/AbstractUserDetailsServiceBeanDefinitionParser.java
- * /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/http/ChannelAttributeFactory.java
- * /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/http/MatcherType.java
- * /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/http/FilterChainMapBeanDefinitionDecorator.java
- * /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/http/SecurityFilters.java
- * /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/http/package-info.java
- * /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/package-info.java
- * /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/authentication/package-info.java
- * /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/method/package-info.java
- * /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/authentication/PasswordEncoderParser.java
- * /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-

jar/org/springframework/security/config/method/InterceptMethodsBeanDefinitionDecorator.java
* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-
jar/org/springframework/security/config/DebugBeanDefinitionParser.java
* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-
jar/org/springframework/security/config/method/MethodSecurityMetadataSourceBeanDefinitionParser.java
* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-
jar/org/springframework/security/config/annotation/web/messaging/MessageSecurityMetadataSourceRegistry.java
* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-
jar/org/springframework/security/config/Elements.java
* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-
jar/org/springframework/security/config/http/FilterChainBeanDefinitionParser.java
* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-
jar/org/springframework/security/config/BeanIds.java
* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-
jar/org/springframework/security/config/ldap/package-info.java
* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-
jar/org/springframework/security/config/http/PortMappingsBeanDefinitionParser.java
No license file was found, but licenses were detected in source scan.

/*

* Copyright 2002-2017 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* <https://www.apache.org/licenses/LICENSE-2.0>
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/

Found in path(s):

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-
jar/org/springframework/security/config/annotation/web/reactive/EnableWebFluxSecurity.java
* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-
jar/org/springframework/security/config/core/userdetails/ReactiveUserDetailsServiceResourceFactoryBean.java
* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-
jar/org/springframework/security/config/annotation/web/configurers/oauth2/client/ImplicitGrantConfigurer.java
* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-
jar/org/springframework/security/config/web/server/SecurityWebFiltersOrder.java
* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-
jar/org/springframework/security/config/annotation/method/configuration/ReactiveMethodSecuritySelector.java
* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-
jar/org/springframework/security/config/annotation/authentication/configuration/GlobalAuthenticationConfigurerAd

apter.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/core/userdetails/UserDetailsMapFactoryBean.java
* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/method/configuration/EnableReactiveMethodSecurity.java
* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/provisioning/UserDetailsManagerResourceFactoryBean.java
* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/web/server/AbstractServerWebExchangeMatcherRegistry.java
No license file was found, but licenses were detected in source scan.

/*

* Copyright 2019 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* <https://www.apache.org/licenses/LICENSE-2.0>
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/

Found in path(s):

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/rsocket/SecuritySocketAcceptorInterceptorConfiguration.java
* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/rsocket/RSocketSecurity.java
* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/rsocket/RSocketSecurityConfiguration.java
* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/rsocket/EnableRSocketSecurity.java
* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/rsocket/PayloadInterceptorOrder.java
No license file was found, but licenses were detected in source scan.

/*

* Copyright 2002-2020 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* <https://www.apache.org/licenses/LICENSE-2.0>

*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/

Found in path(s):

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/web/configurers/oauth2/server/resource/OAuth2ResourceServerConfigurer.java
* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/web/builders/WebSecurity.java
* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/web/configuration/SecurityReactorContextConfiguration.java
No license file was found, but licenses were detected in source scan.

/*
* Copyright 2002-2015 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* <https://www.apache.org/licenses/LICENSE-2.0>
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/

Found in path(s):

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/http/RememberMeBeanDefinitionParser.java
* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/web/configurers/RememberMeConfigurer.java
* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/authentication/configuration/InitializeAuthenticationProviderBeanManagerConfigurer.java
No license file was found, but licenses were detected in source scan.

/*
* Copyright 2002-2011 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");

* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* <https://www.apache.org/licenses/LICENSE-2.0>
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/

Found in path(s):

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/debug/SecurityDebugBeanFactoryPostProcessor.java

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2002-2013 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* <https://www.apache.org/licenses/LICENSE-2.0>
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/

Found in path(s):

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/web/WebSecurityConfigurer.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/AlreadyBuiltException.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/AbstractSecurityBuilder.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/authentication/configurers/userdetails/UserDetailsAwareConfigurer.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/AbstractConfiguredSecurityBuilder.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/authentication/configuration/EnableGlobalAuthentication.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-

jar/org/springframework/security/config/annotation/web/configurers/AbstractConfigAttributeRequestMatcherRegistry.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/web/configurers/ChannelSecurityConfigurer.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/authentication/configurers/userdetails/AbstractDaoAuthenticationConfigurer.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/web/configurers/FormLoginConfigurer.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/method/configuration/GlobalMethodSecurityAspectJAutoProxyRegistrar.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/web/configurers/PortMapperConfigurer.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/ObjectPostProcessor.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/web/configurers/RequestCacheConfigurer.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/authentication/configurers/userdetails/UserDetailsServiceConfigurer.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/web/configuration/SpringWebMvcImportSelector.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/web/HttpSecurityBuilder.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/authentication/configurers/provisioning/InMemoryUserDetailsManagerConfigurer.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/authentication/configurers/provisioning/JdbcUserDetailsManagerConfigurer.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/SecurityConfigurer.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/web/servlet/configuration/EnableWebMvcSecurity.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/web/configurers/AnonymousConfigurer.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/web/configurers/AbstractHttpConfigurer.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/method/configuration/EnableGlobalMethodSecurity.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/web/configurers/AbstractInterceptUrlConfigurer.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/authentication/builders/AuthenticationManagerBuilder.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/authentication/configurers/provisioning/UserDetailsManagerConfigurer.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/authentication/configurers/userdetails/DaoAuthenticationConfigurer.java
* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/SecurityBuilder.java
* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/web/configuration/AutowiredWebSecurityConfigurersIgnoreParents.java
* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/web/configurers/JeeConfigurer.java
* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/web/configurers/PermitAllSupport.java
* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/authentication/ProviderManagerBuilder.java
* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/SecurityConfigurerAdapter.java

No license file was found, but licenses were detected in source scan.

/*

* Copyright 2002-2021 the original author or authors.

*

* Licensed under the Apache License, Version 2.0 (the "License");

* you may not use this file except in compliance with the License.

* You may obtain a copy of the License at

*

* <https://www.apache.org/licenses/LICENSE-2.0>

*

* Unless required by applicable law or agreed to in writing, software

* distributed under the License is distributed on an "AS IS" BASIS,

* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

* See the License for the specific language governing permissions and

* limitations under the License.

*/

Found in path(s):

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/web/configurers/DefaultLoginPageConfigurer.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/web/server/ServerHttpSecurity.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/web/configurers/oauth2/client/OAuth2LoginConfigurer.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/authentication/AuthenticationManagerBeanDefinitionParser.java

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/web/builders/FilterOrderRegistration.java

No license file was found, but licenses were detected in source scan.

/*

- * Copyright 2002-2018 the original author or authors.
- *
- * Licensed under the Apache License, Version 2.0 (the "License");
- * you may not use this file except in compliance with the License.
- * You may obtain a copy of the License at
- *
- * <https://www.apache.org/licenses/LICENSE-2.0>
- *
- * Unless required by applicable law or agreed to in writing, software
- * distributed under the License is distributed on an "AS IS" BASIS,
- * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- * See the License for the specific language governing permissions and
- * limitations under the License.
- */

Found in path(s):

- * /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/web/configurers/oauth2/client/OAuth2ClientConfigurerUtils.java
- * /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/core/userdetails/UserDetailsResourceFactoryBean.java
- * /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/method/GlobalMethodSecurityBeanDefinitionParser.java
- * /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/web/configurers/UrlAuthorizationConfigurer.java
- * /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/oauth2/client/CommonOAuth2Provider.java
- * /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/web/configurers/CorsConfigurer.java
- * /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/http/CorsBeanDefinitionParser.java
- * /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/method/configuration/MethodSecurityMetadataSourceAdvisorRegistrar.java
- * /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/http/FormLoginBeanDefinitionParser.java
- * /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/web/configuration/EnableWebSecurity.java
- * /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/web/configuration/WebSecurityConfigurerAdapter.java
- * /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/web/configurers/SecurityContextConfigurer.java
- * /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/authentication/AuthenticationManagerFactoryBean.java
- * /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/web/configurers/ExceptionHandlerConfigurer.java
- * /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-jar/org/springframework/security/config/annotation/web/configurers/ServletApiConfigurer.java

```

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-
jar/org/springframework/security/config/http/AuthenticationConfigBuilder.java
* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-
jar/org/springframework/security/config/websocket/WebSocketMessageBrokerSecurityBeanDefinitionParser.java
* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-
jar/org/springframework/security/config/annotation/web/configurers/X509Configurer.java
* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-
jar/org/springframework/security/config/annotation/web/configurers/ExpressionUrlAuthorizationConfigurer.java
* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-
jar/org/springframework/security/config/annotation/authentication/configurers/ldap/LdapAuthenticationProviderCon-
figurer.java
* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-
jar/org/springframework/security/config/annotation/method/configuration/GlobalMethodSecuritySelector.java
* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-
jar/org/springframework/security/config/annotation/configuration/AutowiredBeanFactoryObjectPostProcessor.java
* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-
jar/org/springframework/security/config/http/HttpConfigurationBuilder.java
No license file was found, but licenses were detected in source scan.

```

```

/*
* Copyright 2012-2018 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/

```

Found in path(s):

```

* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-
jar/org/springframework/security/config/http/HandlerMappingIntrospectorFactoryBean.java
* /opt/cola/permits/1348346168_1655814078.540984/0/spring-security-config-5-2-15-release-sources-
jar/org/springframework/security/config/http/GrantedAuthorityDefaultsParserUtils.java

```

1.68 webencodings 0.5.1

1.68.1 Available under license :

No license file was found, but licenses were detected in source scan.

:license: BSD, see LICENSE for details.

Found in path(s):

```
* /opt/cola/permits/1401468445_1661617535.3616152/0/webencodings-0-5-1-1-tar-gz/webencodings-0.5.1/webencodings/labels.py
* /opt/cola/permits/1401468445_1661617535.3616152/0/webencodings-0-5-1-1-tar-gz/webencodings-0.5.1/webencodings/__init__.py
* /opt/cola/permits/1401468445_1661617535.3616152/0/webencodings-0-5-1-1-tar-gz/webencodings-0.5.1/webencodings/tests.py
* /opt/cola/permits/1401468445_1661617535.3616152/0/webencodings-0-5-1-1-tar-gz/webencodings-0.5.1/webencodings/x_user_defined.py
```

No license file was found, but licenses were detected in source scan.

```
from setuptools import setup, find_packages
import io
from os import path
import re
```

```
VERSION = re.search("VERSION = '([^\n]+)'", io.open(
    path.join(path.dirname(__file__), 'webencodings', '__init__.py'),
    encoding='utf-8'
).read().strip()).group(1)
```

```
LONG_DESCRIPTION = io.open(
    path.join(path.dirname(__file__), 'README.rst'),
    encoding='utf-8'
).read()
```

```
setup(
    name='webencodings',
    version=VERSION,
    url='https://github.com/SimonSapin/python-webencodings',
    license='BSD',
    author='Simon Sapin',
    author_email='simon.sapin@exyr.org',
    maintainer='Geoffrey Sneddon',
    maintainer_email='me@gsnedders.com',
    description='Character encoding aliases for legacy web content',
    long_description=LONG_DESCRIPTION,
    classifiers=[
        'Development Status :: 4 - Beta',
        'Intended Audience :: Developers',
        'License :: OSI Approved :: BSD License',
        'Programming Language :: Python',
        'Programming Language :: Python :: 2',
        'Programming Language :: Python :: 2.6',
        'Programming Language :: Python :: 2.7',
```



```
'Programming Language :: Python :: 3',
'Programming Language :: Python :: 3.3',
'Programming Language :: Python :: 3.4',
'Programming Language :: Python :: 3.5',
'Programming Language :: Python :: 3.6',
'Programming Language :: Python :: Implementation :: CPython',
'Programming Language :: Python :: Implementation :: PyPy',
'Topic :: Internet :: WWW/HTTP',
],
packages=find_packages(),
)
```

Found in path(s):

```
* /opt/cola/permits/1401468445_1661617535.3616152/0/webencodings-0-5-1-1-tar-gz/webencodings-0.5.1/setup.py
```

No license file was found, but licenses were detected in source scan.

Metadata-Version: 1.1

Name: webencodings

Version: 0.5.1

Summary: Character encoding aliases for legacy web content

Home-page: <https://github.com/SimonSapin/python-webencodings>

Author: Geoffrey Sneddon

Author-email: me@gsnedders.com

License: BSD

Description: python-webencodings

=====

This is a Python implementation of the `WHATWG Encoding standard`
<<http://encoding.spec.whatwg.org/>>`_.

* Latest documentation: <http://packages.python.org/webencodings/>

* Source code and issue tracker:

<https://github.com/gsnedders/python-webencodings>

* PyPI releases: <http://pypi.python.org/pypi/webencodings>

* License: BSD

* Python 2.6+ and 3.3+

In order to be compatible with legacy web content

when interpreting something like ``Content-Type: text/html; charset=latin1``,

tools need to use a particular set of aliases for encoding labels

as well as some overriding rules.

For example, ``US-ASCII`` and ``iso-8859-1`` on the web are actually

aliases for ``windows-1252``, and an UTF-8 or UTF-16 BOM takes precedence

over any other encoding declaration.

The Encoding standard defines all such details so that implementations do

not have to reverse-engineer each other.

This module has encoding labels and BOM detection,
but the actual implementation for encoders and decoders is Python's.

Platform: UNKNOWN
Classifier: Development Status :: 4 - Beta
Classifier: Intended Audience :: Developers
Classifier: License :: OSI Approved :: BSD License
Classifier: Programming Language :: Python
Classifier: Programming Language :: Python :: 2
Classifier: Programming Language :: Python :: 2.6
Classifier: Programming Language :: Python :: 2.7
Classifier: Programming Language :: Python :: 3
Classifier: Programming Language :: Python :: 3.3
Classifier: Programming Language :: Python :: 3.4
Classifier: Programming Language :: Python :: 3.5
Classifier: Programming Language :: Python :: 3.6
Classifier: Programming Language :: Python :: Implementation :: CPython
Classifier: Programming Language :: Python :: Implementation :: PyPy
Classifier: Topic :: Internet :: WWW/HTTP

Found in path(s):

* /opt/cola/permits/1401468445_1661617535.3616152/0/webencodings-0-5-1-1-tar-gz/webencodings-0.5.1/webencodings.egg-info/PKG-INFO

* /opt/cola/permits/1401468445_1661617535.3616152/0/webencodings-0-5-1-1-tar-gz/webencodings-0.5.1/PKG-INFO

No license file was found, but licenses were detected in source scan.

"""

webencodings.mklabels

~~~~~

Regenerate the webencodings.labels module.

:copyright: Copyright 2012 by Simon Sapin

:license: BSD, see LICENSE for details.

"""

```
import json
```

```
try:
```

```
    from urllib import urlopen
```

```
except ImportError:
```

```
    from urllib.request import urlopen
```

```
def assert_lower(string):
```

```
    assert string == string.lower()
```

```

return string

def generate(url):
    parts = ["\
"""

webencodings.labels
~~~~~

Map encoding labels to their name.

:copyright: Copyright 2012 by Simon Sapin
:license: BSD, see LICENSE for details.

"""

XXX Do not edit!
This file is automatically generated by mklabels.py

LABELS = {
 ""
 labels = [
 (repr(assert_lower(label)).rstrip('u'),
 repr(encoding['name']).rstrip('u'))
 for category in json.loads(urlopen(url).read().decode('ascii'))
 for encoding in category['encodings']
 for label in encoding['labels'])
 max_len = max(len(label) for label, name in labels)
 parts.extend(
 ' %s:%s %s,\n' % (label, ' '* (max_len - len(label)), name)
 for label, name in labels)
 parts.append('}')
 return ".join(parts)

if __name__ == '__main__':
 print(generate('http://encoding.spec.whatwg.org/encodings.json'))

Found in path(s):
* /opt/cola/permits/1401468445_1661617535.3616152/0/webencodings-0-5-1-1-tar-gz/webencodings-0.5.1/webencodings/mklabels.py
No license file was found, but licenses were detected in source scan.

python-webencodings
=====

This is a Python implementation of the `WHATWG Encoding standard

```

<<http://encoding.spec.whatwg.org/>>`\_.

- \* Latest documentation: <http://packages.python.org/webencodings/>
- \* Source code and issue tracker:  
<https://github.com/gsnedders/python-webencodings>
- \* PyPI releases: <http://pypi.python.org/pypi/webencodings>
- \* License: BSD
- \* Python 2.6+ and 3.3+

In order to be compatible with legacy web content when interpreting something like `Content-Type: text/html; charset=latin1``, tools need to use a particular set of aliases for encoding labels as well as some overriding rules. For example, `US-ASCII`` and `iso-8859-1`` on the web are actually aliases for `windows-1252``, and an UTF-8 or UTF-16 BOM takes precedence over any other encoding declaration. The Encoding standard defines all such details so that implementations do not have to reverse-engineer each other.

This module has encoding labels and BOM detection, but the actual implementation for encoders and decoders is Python's.

Found in path(s):

\* `/opt/cola/permits/1401468445_1661617535.3616152/0/webencodings-0-5-1-1-tar-gz/webencodings-0.5.1/README.rst`

## 1.69 simpleclient-common 0.12.0

### 1.69.1 Available under license :

No license file was found, but licenses were detected in source scan.

<url><http://www.apache.org/licenses/LICENSE-2.0.txt></url>

Found in path(s):

\* `/opt/cola/permits/1234671779_1638286971.0/0/simpleclient-common-0-12-0-sources-jar/META-INF/maven/io.prometheus/simpleclient_common/pom.xml`

## 1.70 libmodulemd 2.13.0-1.el8

### 1.70.1 Available under license :

MIT License

Copyright (c) 2017-2018 Stephen Gallagher <[sgallagh@redhat.com](mailto:sgallagh@redhat.com)>

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the

rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

## 1.71 kerberos 1.18.2-14.el8

### 1.71.1 Available under license :

[ NOTE: MIT has only incorporated the mechglue and spnego change, and not the incremental propagation changes. The filenames are different between the Sun and MIT sources. The actual MIT filenames appear in the top-level README file. Original text of Sun's LICENSE file follows. ]

Subject to the license set forth below, Sun Microsystems, Inc. donates the attached files to MIT for the purpose of including these modifications and additions in future versions of the Kerberos system.

Many of the files attached are subject to licenses issued by other entities, including OpenVision, MIT, and FundsXpress. See the individual files, and/or related Readme files, for these licenses.

In addition Sun requires that the license set forth below be incorporated into any future version of the Kerberos system which contains portions of the files attached. The following files must be listed, in the top level Readme file, as being provided subject to such license:

```
cmd/krb5/ipropl/ipropl.x
cmd/krb5/ipropl/ipropl_hdr.h
cmd/krb5/kadmin/server/ipropl_svc.c
cmd/krb5/kproplog/kproplog.c
cmd/krb5/slave/kpropd_rpc.c
lib/gss_mechs/mech_krb5/et/kdb5_err.c
lib/gss_mechs/mech_spnego/mech/gssapiP_spnego.h
lib/gss_mechs/mech_spnego/mech/spnego_mech.c
lib/krb5/kadm5/kadm_host_srv_names.c
lib/krb5/kdb/kdb_convert.c
lib/krb5/kdb/kdb_hdr.h
```

lib/krb5/kdb/kdb\_log.c  
lib/krb5/kdb/kdb\_log.h  
lib/libgss/g\_accept\_sec\_context.c  
lib/libgss/g\_acquire\_cred.c  
lib/libgss/g\_canon\_name.c  
lib/libgss/g\_compare\_name.c  
lib/libgss/g\_context\_time.c  
lib/libgss/g\_delete\_sec\_context.c  
lib/libgss/g\_dsp\_name.c  
lib/libgss/g\_dsp\_status.c  
lib/libgss/g\_dup\_name.c  
lib/libgss/g\_exp\_sec\_context.c  
lib/libgss/g\_export\_name.c  
lib/libgss/g\_glue.c  
lib/libgss/g\_imp\_name.c  
lib/libgss/g\_imp\_sec\_context.c  
lib/libgss/g\_init\_sec\_context.c  
lib/libgss/g\_initialize.c  
lib/libgss/g\_inquire\_context.c  
lib/libgss/g\_inquire\_cred.c  
lib/libgss/g\_inquire\_names.c  
lib/libgss/g\_process\_context.c  
lib/libgss/g\_rel\_buffer.c  
lib/libgss/g\_rel\_cred.c  
lib/libgss/g\_rel\_name.c  
lib/libgss/g\_rel\_oid\_set.c  
lib/libgss/g\_seal.c  
lib/libgss/g\_sign.c  
lib/libgss/g\_store\_cred.c  
lib/libgss/g\_unseal.c  
lib/libgss/g\_userok.c  
lib/libgss/g\_utils.c  
lib/libgss/g\_verify.c  
lib/libgss/gssd\_pname\_to\_uid.c  
uts/common/gssapi/include/gssapi\_err\_generic.h  
uts/common/gssapi/include/mechglueP.h

Sun's License is as follows:

Copyright (c) 2004 Sun Microsystems, Inc.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright

=====

Copyright |copy| 1985-2020 by the Massachusetts Institute of Technology and its contributors. All rights reserved.

See :ref:`mitK5license` for additional copyright and license information.

Copyright (C) 1985-2020 by the Massachusetts Institute of Technology.

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Downloading of this software may constitute an export of cryptographic software from the United States of America that is subject to the

United States Export Administration Regulations (EAR), 15 CFR 730-774. Additional laws or regulations may apply. It is the responsibility of the person or entity contemplating export to comply with all applicable export laws and regulations, including obtaining any required license from the U.S. government.

The U.S. government prohibits export of encryption source code to certain countries and individuals, including, but not limited to, the countries of Cuba, Iran, North Korea, Sudan, Syria, and residents and nationals of those countries.

Documentation components of this software distribution are licensed under a Creative Commons Attribution-ShareAlike 3.0 Unported License. (<https://creativecommons.org/licenses/by-sa/3.0/>)

Individual source code files are copyright MIT, Cygnus Support, Novell, OpenVision Technologies, Oracle, Red Hat, Sun Microsystems, FundsXpress, and others.

Project Athena, Athena, Athena MUSE, Discuss, Hesiod, Kerberos, Moira, and Zephyr are trademarks of the Massachusetts Institute of Technology (MIT). No commercial use of these trademarks may be made without prior written permission of MIT.

"Commercial use" means use of a name in a product or other for-profit manner. It does NOT prevent a commercial firm from referring to the MIT trademarks in order to convey information (although in doing so, recognition of their trademark status should be given).

=====

The following copyright and permission notice applies to the OpenVision Kerberos Administration system located in "kadmin/create", "kadmin/dbutil", "kadmin/passwd", "kadmin/server", "lib/kadm5", and portions of "lib/rpc":

Copyright, OpenVision Technologies, Inc., 1993-1996, All Rights Reserved

WARNING: Retrieving the OpenVision Kerberos Administration system source code, as described below, indicates your acceptance of the following terms. If you do not agree to the following terms, do not retrieve the OpenVision Kerberos administration system.

You may freely use and distribute the Source Code and Object Code compiled from it, with or without modification, but this Source Code is provided to you "AS IS" EXCLUSIVE OF ANY WARRANTY, INCLUDING, WITHOUT LIMITATION, ANY WARRANTIES OF MERCHANTABILITY OR



FITNESS FOR A PARTICULAR PURPOSE, OR ANY OTHER WARRANTY, WHETHER EXPRESS OR IMPLIED. IN NO EVENT WILL OPENVISION HAVE ANY LIABILITY FOR ANY LOST PROFITS, LOSS OF DATA OR COSTS OF PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES, OR FOR ANY SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES ARISING OUT OF THIS AGREEMENT, INCLUDING, WITHOUT LIMITATION, THOSE RESULTING FROM THE USE OF THE SOURCE CODE, OR THE FAILURE OF THE SOURCE CODE TO PERFORM, OR FOR ANY OTHER REASON.

OpenVision retains all copyrights in the donated Source Code. OpenVision also retains copyright to derivative works of the Source Code, whether created by OpenVision or by a third party. The OpenVision copyright notice must be preserved if derivative works are made based on the donated Source Code.

OpenVision Technologies, Inc. has donated this Kerberos Administration system to MIT for inclusion in the standard Kerberos 5 distribution. This donation underscores our commitment to continuing Kerberos technology development and our gratitude for the valuable work which has been performed by MIT and the Kerberos community.

=====

Portions contributed by Matt Crawford "crawd@fnal.gov" were work performed at Fermi National Accelerator Laboratory, which is operated by Universities Research Association, Inc., under contract DE-AC02-76CHO3000 with the U.S. Department of Energy.

=====

Portions of "src/lib/crypto" have the following copyright:

Copyright (C) 1998 by the FundsXpress, INC.

All rights reserved.

Export of this software from the United States of America may require a specific license from the United States Government. It is the responsibility of any person or organization contemplating export to obtain such a license before exporting.

WITHIN THAT CONSTRAINT, permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of FundsXpress. not be used in advertising or publicity

pertaining to distribution of the software without specific, written prior permission. FundsXpress makes no representations about the suitability of this software for any purpose. It is provided "as is" without express or implied warranty.

THIS SOFTWARE IS PROVIDED "AS IS" AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

=====

The implementation of the AES encryption algorithm in "src/lib/crypto/builtin/aes" has the following copyright:

Copyright (C) 2001, Dr Brian Gladman "brg@gladman.uk.net",  
Worcester, UK.  
All rights reserved.

#### LICENSE TERMS

The free distribution and use of this software in both source and binary form is allowed (with or without changes) provided that:

1. distributions of this source code include the above copyright notice, this list of conditions and the following disclaimer;
2. distributions in binary form include the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other associated materials;
3. the copyright holder's name is not used to endorse products built using this software without specific written permission.

#### DISCLAIMER

This software is provided 'as is' with no explicit or implied warranties in respect of any properties, including, but not limited to, correctness and fitness for purpose.

=====

Portions contributed by Red Hat, including the pre-authentication plug-in framework and the NSS crypto implementation, contain the following copyright:

Copyright (C) 2006 Red Hat, Inc.  
Portions copyright (C) 2006 Massachusetts Institute of Technology  
All Rights Reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Red Hat, Inc., nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

=====

The bundled verto source code is subject to the following license:

Copyright 2011 Red Hat, Inc.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,

EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

---

The MS-KKDCP client implementation has the following copyright:

Copyright 2013,2014 Red Hat, Inc.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---

The implementations of GSSAPI mechglue in GSSAPI-SPNEGO in "src/lib/gssapi", including the following files:

lib/gssapi/generic/gssapi\_err\_generic.et  
lib/gssapi/mechglue/g\_accept\_sec\_context.c  
lib/gssapi/mechglue/g\_acquire\_cred.c

lib/gssapi/mechglue/g\_canon\_name.c  
lib/gssapi/mechglue/g\_compare\_name.c  
lib/gssapi/mechglue/g\_context\_time.c  
lib/gssapi/mechglue/g\_delete\_sec\_context.c  
lib/gssapi/mechglue/g\_dsp\_name.c  
lib/gssapi/mechglue/g\_dsp\_status.c  
lib/gssapi/mechglue/g\_dup\_name.c  
lib/gssapi/mechglue/g\_exp\_sec\_context.c  
lib/gssapi/mechglue/g\_export\_name.c  
lib/gssapi/mechglue/g\_glue.c  
lib/gssapi/mechglue/g\_imp\_name.c  
lib/gssapi/mechglue/g\_imp\_sec\_context.c  
lib/gssapi/mechglue/g\_init\_sec\_context.c  
lib/gssapi/mechglue/g\_initialize.c  
lib/gssapi/mechglue/g\_inquire\_context.c  
lib/gssapi/mechglue/g\_inquire\_cred.c  
lib/gssapi/mechglue/g\_inquire\_names.c  
lib/gssapi/mechglue/g\_process\_context.c  
lib/gssapi/mechglue/g\_rel\_buffer.c  
lib/gssapi/mechglue/g\_rel\_cred.c  
lib/gssapi/mechglue/g\_rel\_name.c  
lib/gssapi/mechglue/g\_rel\_oid\_set.c  
lib/gssapi/mechglue/g\_seal.c  
lib/gssapi/mechglue/g\_sign.c  
lib/gssapi/mechglue/g\_store\_cred.c  
lib/gssapi/mechglue/g\_unseal.c  
lib/gssapi/mechglue/g\_userok.c  
lib/gssapi/mechglue/g\_utils.c  
lib/gssapi/mechglue/g\_verify.c  
lib/gssapi/mechglue/gssd\_pname\_to\_uid.c  
lib/gssapi/mechglue/mglueP.h  
lib/gssapi/mechglue/oid\_ops.c  
lib/gssapi/spnego/gssapiP\_spnego.h  
lib/gssapi/spnego/spnego\_mech.c

and the initial implementation of incremental propagation, including the following new or changed files:

include/ipropr\_hdr.h  
kadmin/server/ipropr\_svc.c  
lib/kdb/ipropr.x  
lib/kdb/kdb\_convert.c  
lib/kdb/kdb\_log.c  
lib/kdb/kdb\_log.h  
lib/krb5/error\_tables/kdb5\_err.et  
kprop/kpropd\_rpc.c  
kprop/kproplog.c

are subject to the following license:

Copyright (C) 2004 Sun Microsystems, Inc.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

=====  
Kerberos V5 includes documentation and software developed at the University of California at Berkeley, which includes this copyright notice:

Copyright (C) 1983 Regents of the University of California.  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the University nor the names of its contributors may be used to endorse or promote products derived

from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

=====

Portions contributed by Novell, Inc., including the LDAP database backend, are subject to the following license:

Copyright (C) 2004-2005, Novell, Inc.  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* The copyright holder's name is not used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,

STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)  
ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED  
OF THE POSSIBILITY OF SUCH DAMAGE.

---

Portions funded by Sandia National Laboratory and developed by the  
University of Michigan's Center for Information Technology  
Integration, including the PKINIT implementation, are subject to the  
following license:

COPYRIGHT (C) 2006-2007  
THE REGENTS OF THE UNIVERSITY OF MICHIGAN  
ALL RIGHTS RESERVED

Permission is granted to use, copy, create derivative works and  
redistribute this software and such derivative works for any  
purpose, so long as the name of The University of Michigan is not  
used in any advertising or publicity pertaining to the use of  
distribution of this software without specific, written prior  
authorization. If the above copyright notice or any other  
identification of the University of Michigan is included in any  
copy of any portion of this software, then the disclaimer below  
must also be included.

THIS SOFTWARE IS PROVIDED AS IS, WITHOUT REPRESENTATION FROM THE  
UNIVERSITY OF MICHIGAN AS TO ITS FITNESS FOR ANY PURPOSE, AND  
WITHOUT WARRANTY BY THE UNIVERSITY OF MICHIGAN OF ANY KIND, EITHER  
EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION THE IMPLIED  
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.  
THE REGENTS OF THE UNIVERSITY OF MICHIGAN SHALL NOT BE LIABLE FOR  
ANY DAMAGES, INCLUDING SPECIAL, INDIRECT, INCIDENTAL, OR  
CONSEQUENTIAL DAMAGES, WITH RESPECT TO ANY CLAIM ARISING OUT OF OR  
IN CONNECTION WITH THE USE OF THE SOFTWARE, EVEN IF IT HAS BEEN OR  
IS HEREAFTER ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

---

The pkcs11.h file included in the PKINIT code has the following  
license:

Copyright 2006 g10 Code GmbH  
Copyright 2006 Andreas Jellinghaus

This file is free software; as a special exception the author gives  
unlimited permission to copy and/or distribute it, with or without  
modifications, as long as this notice is preserved.



This file is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY, to the extent permitted by law; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.

=====  
Portions contributed by Apple Inc. are subject to the following license:

Copyright 2004-2008 Apple Inc. All Rights Reserved.

Export of this software from the United States of America may require a specific license from the United States Government. It is the responsibility of any person or organization contemplating export to obtain such a license before exporting.

WITHIN THAT CONSTRAINT, permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of Apple Inc. not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission. Apple Inc. makes no representations about the suitability of this software for any purpose. It is provided "as is" without express or implied warranty.

THIS SOFTWARE IS PROVIDED "AS IS" AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

=====  
The implementations of UTF-8 string handling in src/util/support and src/lib/krb5/unicode are subject to the following copyright and permission notice:

The OpenLDAP Public License  
Version 2.8, 17 August 2003

Redistribution and use of this software and associated documentation ("Software"), with or without modification, are permitted provided that the following conditions are met:

1. Redistributions in source form must retain copyright statements and notices,

2. Redistributions in binary form must reproduce applicable copyright statements and notices, this list of conditions, and the following disclaimer in the documentation and/or other materials provided with the distribution, and

3. Redistributions must contain a verbatim copy of this document.

The OpenLDAP Foundation may revise this license from time to time. Each revision is distinguished by a version number. You may use this Software under terms of this license revision or under the terms of any subsequent revision of the license.

THIS SOFTWARE IS PROVIDED BY THE OPENLDAP FOUNDATION AND ITS CONTRIBUTORS "AS IS" AND ANY EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE OPENLDAP FOUNDATION, ITS CONTRIBUTORS, OR THE AUTHOR(S) OR OWNER(S) OF THE SOFTWARE BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The names of the authors and copyright holders must not be used in advertising or otherwise to promote the sale, use or other dealing in this Software without specific, written prior permission. Title to copyright in this Software shall at all times remain with copyright holders.

OpenLDAP is a registered trademark of the OpenLDAP Foundation.

Copyright 1999-2003 The OpenLDAP Foundation, Redwood City, California, USA. All Rights Reserved. Permission to copy and distribute verbatim copies of this document is granted.

=====

Marked test programs in src/lib/krb5/krb have the following copyright:

Copyright (C) 2006 Kungliga Tekniska Hgskola  
(Royal Institute of Technology, Stockholm, Sweden).  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of KTH nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY KTH AND ITS CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL KTH OR ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

=====

The KCM Mach RPC definition file used on macOS has the following copyright:

Copyright (C) 2009 Kungliga Tekniska Hgskola  
(Royal Institute of Technology, Stockholm, Sweden).  
All rights reserved.

Portions Copyright (C) 2009 Apple Inc. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

3. Neither the name of the Institute nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE INSTITUTE AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE INSTITUTE OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

=====

Portions of the RPC implementation in src/lib/rpc and src/include/gssrpc have the following copyright and permission notice:

Copyright (C) 2010, Oracle America, Inc.

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

3. Neither the name of the "Oracle America, Inc." nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written

permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

=====  
Copyright (C) 2006,2007,2009 NTT (Nippon Telegraph and Telephone Corporation). All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer as the first lines of this file unmodified.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY NTT "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL NTT BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

=====  
Copyright 2000 by Carnegie Mellon University

All Rights Reserved

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of Carnegie Mellon University not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission.

CARNEGIE MELLON UNIVERSITY DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS, IN NO EVENT SHALL CARNEGIE MELLON UNIVERSITY BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

=====  
Copyright (C) 2002 Naval Research Laboratory (NRL/CCS)

Permission to use, copy, modify and distribute this software and its documentation is hereby granted, provided that both the copyright notice and this permission notice appear in all copies of the software, derivative works or modified versions, and any portions thereof.

NRL ALLOWS FREE USE OF THIS SOFTWARE IN ITS "AS IS" CONDITION AND DISCLAIMS ANY LIABILITY OF ANY KIND FOR ANY DAMAGES WHATSOEVER RESULTING FROM THE USE OF THIS SOFTWARE.

=====  
Copyright (C) 1991, 1992, 1994 by Cygnus Support.

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation. Cygnus Support makes no representations about the suitability of this software for any purpose. It is provided "as is" without express or implied warranty.

---

Copyright (C) 2006 Secure Endpoints Inc.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

---

Portions of the implementation of the Fortuna-like PRNG are subject to the following notice:

Copyright (C) 2005 Marko Kreen  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A

PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (C) 1994 by the University of Southern California

EXPORT OF THIS SOFTWARE from the United States of America may require a specific license from the United States Government. It is the responsibility of any person or organization contemplating export to obtain such a license before exporting.

WITHIN THAT CONSTRAINT, permission to copy, modify, and distribute this software and its documentation in source and binary forms is hereby granted, provided that any documentation or other materials related to such distribution or use acknowledge that the software was developed by the University of Southern California.

DISCLAIMER OF WARRANTY. THIS SOFTWARE IS PROVIDED "AS IS". The University of Southern California MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. By way of example, but not limitation, the University of Southern California MAKES NO REPRESENTATIONS OR WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE. The University of Southern California shall not be held liable for any liability nor for any direct, indirect, or consequential damages with respect to any claim by the user or distributor of the ksu software.

=====

Copyright (C) 1995  
The President and Fellows of Harvard University

This code is derived from software contributed to Harvard by Jeremy Rassen.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.



2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

3. All advertising materials mentioning features or use of this software must display the following acknowledgement:

This product includes software developed by the University of California, Berkeley and its contributors.

4. Neither the name of the University nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

=====

Copyright (C) 2008 by the Massachusetts Institute of Technology.  
Copyright 1995 by Richard P. Basch. All Rights Reserved.  
Copyright 1995 by Lehman Brothers, Inc. All Rights Reserved.

Export of this software from the United States of America may require a specific license from the United States Government. It is the responsibility of any person or organization contemplating export to obtain such a license before exporting.

WITHIN THAT CONSTRAINT, permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of Richard P. Basch, Lehman Brothers and M.I.T. not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission. Richard P.

Basch, Lehman Brothers and M.I.T. make no representations about the suitability of this software for any purpose. It is provided "as is" without express or implied warranty.

---

The following notice applies to "src/lib/krb5/krb/strptime.c" and "src/include/k5-queue.h".

Copyright (C) 1997, 1998 The NetBSD Foundation, Inc.  
All rights reserved.

This code was contributed to The NetBSD Foundation by Klaus Klein.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. All advertising materials mentioning features or use of this software must display the following acknowledgement:

This product includes software developed by the NetBSD Foundation, Inc. and its contributors.

4. Neither the name of The NetBSD Foundation nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE NETBSD FOUNDATION, INC. AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE FOUNDATION OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT

(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

=====  
The following notice applies to Unicode library files in "src/lib/krb5/unicode":

Copyright 1997, 1998, 1999 Computing Research Labs,  
New Mexico State University

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE COMPUTING RESEARCH LAB OR NEW MEXICO STATE UNIVERSITY BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

=====  
The following notice applies to "src/util/support/strncpy.c":

Copyright (C) 1998 Todd C. Miller "Todd.Miller@courtesan.com"

Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS" AND THE AUTHOR DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS

OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT,  
NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN  
CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

=====  
The following notice applies to "src/util/profile/argv\_parse.c" and  
"src/util/profile/argv\_parse.h":

Copyright 1999 by Theodore Ts'o.

Permission to use, copy, modify, and distribute this software for  
any purpose with or without fee is hereby granted, provided that  
the above copyright notice and this permission notice appear in all  
copies. THE SOFTWARE IS PROVIDED "AS IS" AND THEODORE TS'O (THE  
AUTHOR) DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE,  
INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN  
NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY SPECIAL, DIRECT,  
INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER  
RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION  
OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR  
IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE. (Isn't  
it sick that the U.S. culture of lawsuit-happy lawyers requires  
this kind of disclaimer?)

=====  
The following notice applies to SWIG-generated code in  
"src/util/profile/profile\_tcl.c":

Copyright (C) 1999-2000, The University of Chicago

This file may be freely redistributed without license or fee  
provided this copyright message remains intact.

=====  
The following notice applies to portions of "src/lib/rpc" and  
"src/include/gssrpc":

Copyright (C) 2000 The Regents of the University of Michigan. All  
rights reserved.

Copyright (C) 2000 Dug Song "dugsong@UMICH.EDU". All rights  
reserved, all wrongs reversed.

Redistribution and use in source and binary forms, with or without  
modification, are permitted provided that the following conditions

are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the University nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

=====

Implementations of the MD4 algorithm are subject to the following notice:

Copyright (C) 1990, RSA Data Security, Inc. All rights reserved.

License to copy and use this software is granted provided that it is identified as the "RSA Data Security, Inc. MD4 Message Digest Algorithm" in all material mentioning or referencing this software or this function.

License is also granted to make and use derivative works provided that such works are identified as "derived from the RSA Data Security, Inc. MD4 Message Digest Algorithm" in all material mentioning or referencing the derived work.

RSA Data Security, Inc. makes no representations concerning either the merchantability of this software or the suitability of this software for any particular purpose. It is provided "as is"

without express or implied warranty of any kind.

These notices must be retained in any copies of any part of this documentation and/or software.

=====

Implementations of the MD5 algorithm are subject to the following notice:

Copyright (C) 1990, RSA Data Security, Inc. All rights reserved.

License to copy and use this software is granted provided that it is identified as the "RSA Data Security, Inc. MD5 Message-Digest Algorithm" in all material mentioning or referencing this software or this function.

License is also granted to make and use derivative works provided that such works are identified as "derived from the RSA Data Security, Inc. MD5 Message-Digest Algorithm" in all material mentioning or referencing the derived work.

RSA Data Security, Inc. makes no representations concerning either the merchantability of this software or the suitability of this software for any particular purpose. It is provided "as is" without express or implied warranty of any kind.

These notices must be retained in any copies of any part of this documentation and/or software.

=====

The following notice applies to  
"src/lib/crypto/crypto\_tests/t\_md driver.c":

Copyright (C) 1990-2, RSA Data Security, Inc. Created 1990. All rights reserved.

RSA Data Security, Inc. makes no representations concerning either the merchantability of this software or the suitability of this software for any particular purpose. It is provided "as is" without express or implied warranty of any kind.

These notices must be retained in any copies of any part of this documentation and/or software.

=====

Portions of "src/lib/krb5" are subject to the following notice:

Copyright (C) 1994 CyberSAFE Corporation.  
Copyright 1990,1991,2007,2008 by the Massachusetts  
Institute of Technology.  
All Rights Reserved.

Export of this software from the United States of America may  
require a specific license from the United States Government. It  
is the responsibility of any person or organization  
contemplating export to obtain such a license before exporting.

WITHIN THAT CONSTRAINT, permission to use, copy, modify, and  
distribute this software and its documentation for any purpose and  
without fee is hereby granted, provided that the above copyright  
notice appear in all copies and that both that copyright notice and  
this permission notice appear in supporting documentation, and that  
the name of M.I.T. not be used in advertising or publicity  
pertaining to distribution of the software without specific,  
written prior permission. Furthermore if you modify this software  
you must label your software as modified software and not  
distribute it in such a fashion that it might be confused with the  
original M.I.T. software. Neither M.I.T., the Open Computing  
Security Group, nor CyberSAFE Corporation make any representations  
about the suitability of this software for any purpose. It is  
provided "as is" without express or implied warranty.

=====

Portions contributed by PADL Software are subject to the following  
license:

Copyright (c) 2011, PADL Software Pty Ltd. All rights reserved.

Redistribution and use in source and binary forms, with or without  
modification, are permitted provided that the following conditions  
are met:

1. Redistributions of source code must retain the above  
copyright notice, this list of conditions and the following  
disclaimer.
2. Redistributions in binary form must reproduce the above  
copyright notice, this list of conditions and the following  
disclaimer in the documentation and/or other materials provided  
with the distribution.
3. Neither the name of PADL Software nor the names of its

contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY PADL SOFTWARE AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL PADL SOFTWARE OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

=====

The bundled libev source code is subject to the following license:

All files in libev are Copyright (C)2007,2008,2009 Marc Alexander Lehmann.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.



Alternatively, the contents of this package may be used under the terms of the GNU General Public License ("GPL") version 2 or any later version, in which case the provisions of the GPL are applicable instead of the above. If you wish to allow the use of your version of this package only under the terms of the GPL and not to allow others to use your version of this file under the BSD license, indicate your decision by deleting the provisions above and replace them with the notice and other provisions required by the GPL in this and the other files of this package. If you do not delete the provisions above, a recipient may use your version of this file under either the BSD or the GPL.

=====

Files copied from the Intel AESNI Sample Library are subject to the following license:

Copyright (C) 2010, Intel Corporation All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Intel Corporation nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED

OF THE POSSIBILITY OF SUCH DAMAGE.

=====

The following notice applies to

"src/ccapi/common/win/OldCC/autolock.hxx":

Copyright (C) 1998 by Danilo Almeida. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

=====

The following notice applies to portions of

"src/plugins/preauth/spake/edwards25519.c" and

"src/plugins/preauth/spake/edwards25519\_tables.h":

The MIT License (MIT)

Copyright (c) 2015-2016 the fiat-crypto authors (see the AUTHORS file).

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including

without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

=====  
The following notice applies to portions of  
"src/plugins/preauth/spake/edwards25519.c":

Copyright (c) 2015-2016, Google Inc.

Permission to use, copy, modify, and/or distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS" AND THE AUTHOR DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

.. \_mitK5license:

MIT Kerberos License information

=====  
.. toctree::  
   :hidden:

   copyright.rst

.. include:: notice.rst

# 1.72 python-requests 2.20.0

## 1.72.1 Available under license :

Copyright 2018 Kenneth Reitz

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

Modifications:

Copyright (c) 2011 Kenneth Reitz.

Original Project:

Copyright (c) 2010 by Armin Ronacher.

Some rights reserved.

Redistribution and use in source and binary forms of the theme, with or  
without modification, are permitted provided that the following conditions  
are met:

- \* Redistributions of source code must retain the above copyright  
notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above  
copyright notice, this list of conditions and the following  
disclaimer in the documentation and/or other materials provided  
with the distribution.
- \* The names of the contributors may not be used to endorse or  
promote products derived from this software without specific  
prior written permission.

We kindly ask you to only use these themes in an unmodified manner just  
for Flask and Flask-related products, not for unrelated projects. If you

like the visual style and want to use it for your own projects, please consider making some larger changes to the themes (such as changing font faces, sizes, colors or margins).

THIS THEME IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS THEME, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## 1.73 jradius-client 2.0.0

### 1.73.1 Available under license :

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.

59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that

you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the

entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

## GNU LESSER GENERAL PUBLIC LICENSE

### TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data

prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no



charge to all third parties under the terms of this License.

d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for

that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6,

whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
- b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

```
This library is free software; you can redistribute it and/or
modify it under the terms of the GNU Lesser General Public
License as published by the Free Software Foundation; either
version 2.1 of the License, or (at your option) any later version.
```

```
This library is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU
Lesser General Public License for more details.
```

```
You should have received a copy of the GNU Lesser General Public
License along with this library; if not, write to the Free Software
Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA
```

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the
library `Frob' (a library for tweaking knobs) written by James Random Hacker.
```

```
<signature of Ty Coon>, 1 April 1990
Ty Coon, President of Vice
```

That's all there is to it!

## 1.74 json-simple 1.1.1

## 1.74.1 Available under license :

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.



"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and

- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or

agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");

you may not use this file except in compliance with the License.

You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

## 1.75 rootfiles 8.1-22.el8

### 1.75.1 Available under license :

No license file was found, but licenses were detected in source scan.

License: Public Domain

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1009541302\_1591901904.49/0/rootfiles-8.1-22.el8.src.rpm-cosi-expand-archive-8uQKwO6W/rootfiles.spec

## 1.76 cxf 3.4.5

### 1.76.1 Available under license :

Apache CXF

Copyright 2006-2021 The Apache Software Foundation

This product includes software developed at  
The Apache Software Foundation (<http://www.apache.org/>).

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

##### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity

on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one

of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a

result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

#### APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

## 1.77 woodstox-core 6.2.6



## 1.77.1 Available under license :

This copy of Jackson JSON processor databind module is licensed under the Apache (Software) License, version 2.0 ("the License").  
See the License for details about distribution rights, and the specific rights regarding derivate works.

You may obtain a copy of the License at:

<http://www.apache.org/licenses/LICENSE-2.0>

## 1.78 dbus-glib 0.110 2.e18

### 1.78.1 Available under license :

The D-Bus glib bindings are licensed to you under your choice of the Academic Free License version 2.1, or the GNU General Public License version 2. Both licenses are included here. Some of the standalone binaries are under the GPL only; in particular, but not limited to, tests/decode-gcov.c. Each source code file is marked with the proper copyright information.

The Academic Free License  
v. 2.1

This Academic Free License (the "License") applies to any original work of authorship (the "Original Work") whose owner (the "Licensor") has placed the following notice immediately following the copyright notice for the Original Work:

Licensed under the Academic Free License version 2.1

- 1) Grant of Copyright License. Licensor hereby grants You a world-wide, royalty-free, non-exclusive, perpetual, sublicenseable license to do the following:
  - a) to reproduce the Original Work in copies;
  - b) to prepare derivative works ("Derivative Works") based upon the Original Work;
  - c) to distribute copies of the Original Work and Derivative Works to the public;
  - d) to perform the Original Work publicly; and
  - e) to display the Original Work publicly.
- 2) Grant of Patent License. Licensor hereby grants You a world-wide, royalty-free, non-exclusive, perpetual, sublicenseable license, under patent claims owned or controlled by the Licensor that are embodied in

the Original Work as furnished by the Licensor, to make, use, sell and offer for sale the Original Work and Derivative Works.

3) Grant of Source Code License. The term "Source Code" means the preferred form of the Original Work for making modifications to it and all available documentation describing how to modify the Original Work. Licensor hereby agrees to provide a machine-readable copy of the Source Code of the Original Work along with each copy of the Original Work that Licensor distributes. Licensor reserves the right to satisfy this obligation by placing a machine-readable copy of the Source Code in an information repository reasonably calculated to permit inexpensive and convenient access by You for as long as Licensor continues to distribute the Original Work, and by publishing the address of that information repository in a notice immediately following the copyright notice that applies to the Original Work.

4) Exclusions From License Grant. Neither the names of Licensor, nor the names of any contributors to the Original Work, nor any of their trademarks or service marks, may be used to endorse or promote products derived from this Original Work without express prior written permission of the Licensor. Nothing in this License shall be deemed to grant any rights to trademarks, copyrights, patents, trade secrets or any other intellectual property of Licensor except as expressly stated herein. No patent license is granted to make, use, sell or offer to sell embodiments of any patent claims other than the licensed claims defined in Section 2. No right is granted to the trademarks of Licensor even if such marks are included in the Original Work. Nothing in this License shall be interpreted to prohibit Licensor from licensing under different terms from this License any Original Work that Licensor otherwise would have a right to license.

5) This section intentionally omitted.

6) Attribution Rights. You must retain, in the Source Code of any Derivative Works that You create, all copyright, patent or trademark notices from the Source Code of the Original Work, as well as any notices of licensing and any descriptive text identified therein as an "Attribution Notice." You must cause the Source Code for any Derivative Works that You create to carry a prominent Attribution Notice reasonably calculated to inform recipients that You have modified the Original Work.

7) Warranty of Provenance and Disclaimer of Warranty. Licensor warrants that the copyright in and to the Original Work and the patent rights granted herein by Licensor are owned by the Licensor or are sublicensed to You under the terms of this License with the permission of the contributor(s) of those copyrights and patent rights. Except as expressly stated in the immediately preceding sentence, the Original

Work is provided under this License on an "AS IS" BASIS and WITHOUT WARRANTY, either express or implied, including, without limitation, the warranties of NON-INFRINGEMENT, MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY OF THE ORIGINAL WORK IS WITH YOU. This DISCLAIMER OF WARRANTY constitutes an essential part of this License. No license to Original Work is granted hereunder except under this disclaimer.

8) Limitation of Liability. Under no circumstances and under no legal theory, whether in tort (including negligence), contract, or otherwise, shall the Licensor be liable to any person for any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or the use of the Original Work including, without limitation, damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses. This limitation of liability shall not apply to liability for death or personal injury resulting from Licensor's negligence to the extent applicable law prohibits such limitation. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so this exclusion and limitation may not apply to You.

9) Acceptance and Termination. If You distribute copies of the Original Work or a Derivative Work, You must make a reasonable effort under the circumstances to obtain the express assent of recipients to the terms of this License. Nothing else but this License (or another written agreement between Licensor and You) grants You permission to create Derivative Works based upon the Original Work or to exercise any of the rights granted in Section 1 herein, and any attempt to do so except under the terms of this License (or another written agreement between Licensor and You) is expressly prohibited by U.S. copyright law, the equivalent laws of other countries, and by international treaty. Therefore, by exercising any of the rights granted to You in Section 1 herein, You indicate Your acceptance of this License and all of its terms and conditions.

10) Termination for Patent Action. This License shall terminate automatically and You may no longer exercise any of the rights granted to You by this License as of the date You commence an action, including a cross-claim or counterclaim, against Licensor or any licensee alleging that the Original Work infringes a patent. This termination provision shall not apply for an action alleging patent infringement by combinations of the Original Work with other software or hardware.

11) Jurisdiction, Venue and Governing Law. Any action or suit relating to this License may be brought only in the courts of a jurisdiction wherein the Licensor resides or in which Licensor conducts its primary

business, and under the laws of that jurisdiction excluding its conflict-of-law provisions. The application of the United Nations Convention on Contracts for the International Sale of Goods is expressly excluded. Any use of the Original Work outside the scope of this License or after its termination shall be subject to the requirements and penalties of the U.S. Copyright Act, 17 U.S.C. 101 et seq., the equivalent laws of other countries, and international treaty. This section shall survive the termination of this License.

12) Attorneys Fees. In any action to enforce the terms of this License or seeking damages relating thereto, the prevailing party shall be entitled to recover its costs and expenses, including, without limitation, reasonable attorneys' fees and costs incurred in connection with such action, including any appeal of such action. This section shall survive the termination of this License.

13) Miscellaneous. This License represents the complete agreement concerning the subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable.

14) Definition of "You" in This License. "You" throughout this License, whether in upper or lower case, means an individual or a legal entity exercising rights under, and complying with all of the terms of, this License. For legal entities, "You" includes any entity that controls, is controlled by, or is under common control with you. For purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

15) Right to Use. You may use the Original Work in all ways not otherwise restricted or conditioned by this License or by law, and Licensor promises not to interfere with or be responsible for such uses by You.

This license is Copyright (C) 2003-2004 Lawrence E. Rosen. All rights reserved. Permission is hereby granted to copy and distribute this license without modification. This license may not be modified without the express written permission of its copyright owner.

--

END OF ACADEMIC FREE LICENSE. The following is intended to describe the essential differences between the Academic Free License (AFL) version 1.0 and other open source licenses:

The Academic Free License is similar to the BSD, MIT, UoI/NCSA and Apache licenses in many respects but it is intended to solve a few problems with those licenses.

\* The AFL is written so as to make it clear what software is being licensed (by the inclusion of a statement following the copyright notice in the software). This way, the license functions better than a template license. The BSD, MIT and UoI/NCSA licenses apply to unidentified software.

\* The AFL contains a complete copyright grant to the software. The BSD and Apache licenses are vague and incomplete in that respect.

\* The AFL contains a complete patent grant to the software. The BSD, MIT, UoI/NCSA and Apache licenses rely on an implied patent license and contain no explicit patent grant.

\* The AFL makes it clear that no trademark rights are granted to the licensor's trademarks. The Apache license contains such a provision, but the BSD, MIT and UoI/NCSA licenses do not.

\* The AFL includes the warranty by the licensor that it either owns the copyright or that it is distributing the software under a license. None of the other licenses contain that warranty. All other warranties are disclaimed, as is the case for the other licenses.

\* The AFL is itself copyrighted (with the right granted to copy and distribute without modification). This ensures that the owner of the copyright to the license will control changes. The Apache license contains a copyright notice, but the BSD, MIT and UoI/NCSA licenses do not.

--

START OF GNU GENERAL PUBLIC LICENSE

--

## GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This

General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE  
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains

a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but

does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to



control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then

the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals

of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

## NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

```
This program is free software; you can redistribute it and/or modify
it under the terms of the GNU General Public License as published by
the Free Software Foundation; either version 2 of the License, or
(at your option) any later version.
```

```
This program is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
```

MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands ``show w'` and ``show c'` should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than ``show w'` and ``show c'`; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

The D-Bus GLib main loop bindings are licensed to you under your choice of the Academic Free License version 2.1, or the GNU General Public License version 2. Both licenses are included here. Each source code file is marked with the proper copyright information.

-----  
The Academic Free License  
v. 2.1

This Academic Free License (the "License") applies to any original work of authorship (the "Original Work") whose owner (the "Licensor") has placed the following notice immediately following the copyright notice for the Original Work:

Licensed under the Academic Free License version 2.1

1) Grant of Copyright License. Licensor hereby grants You a world-wide, royalty-free, non-exclusive, perpetual, sublicenseable license to do the following:

- a) to reproduce the Original Work in copies;
- b) to prepare derivative works ("Derivative Works") based upon the Original Work;
- c) to distribute copies of the Original Work and Derivative Works to the public;
- d) to perform the Original Work publicly; and
- e) to display the Original Work publicly.

2) Grant of Patent License. Licensor hereby grants You a world-wide, royalty-free, non-exclusive, perpetual, sublicenseable license, under patent claims owned or controlled by the Licensor that are embodied in the Original Work as furnished by the Licensor, to make, use, sell and offer for sale the Original Work and Derivative Works.

3) Grant of Source Code License. The term "Source Code" means the preferred form of the Original Work for making modifications to it and all available documentation describing how to modify the Original Work. Licensor hereby agrees to provide a machine-readable copy of the Source Code of the Original Work along with each copy of the Original Work that Licensor distributes. Licensor reserves the right to satisfy this obligation by placing a machine-readable copy of the Source Code in an information repository reasonably calculated to permit inexpensive and convenient access by You for as long as Licensor continues to distribute the Original Work, and by publishing the address of that information repository in a notice immediately following the copyright notice that applies to the Original Work.

4) Exclusions From License Grant. Neither the names of Licensor, nor the names of any contributors to the Original Work, nor any of their trademarks or service marks, may be used to endorse or promote products derived from this Original Work without express prior written permission of the Licensor. Nothing in this License shall be deemed to grant any rights to trademarks, copyrights, patents, trade secrets or any other intellectual property of Licensor except as expressly stated herein. No patent license is granted to make, use, sell or offer to sell embodiments of any patent claims other than the licensed claims

defined in Section 2. No right is granted to the trademarks of Licensor even if such marks are included in the Original Work. Nothing in this License shall be interpreted to prohibit Licensor from licensing under different terms from this License any Original Work that Licensor otherwise would have a right to license.

5) This section intentionally omitted.

6) Attribution Rights. You must retain, in the Source Code of any Derivative Works that You create, all copyright, patent or trademark notices from the Source Code of the Original Work, as well as any notices of licensing and any descriptive text identified therein as an "Attribution Notice." You must cause the Source Code for any Derivative Works that You create to carry a prominent Attribution Notice reasonably calculated to inform recipients that You have modified the Original Work.

7) Warranty of Provenance and Disclaimer of Warranty. Licensor warrants that the copyright in and to the Original Work and the patent rights granted herein by Licensor are owned by the Licensor or are sublicensed to You under the terms of this License with the permission of the contributor(s) of those copyrights and patent rights. Except as expressly stated in the immediately preceding sentence, the Original Work is provided under this License on an "AS IS" BASIS and WITHOUT WARRANTY, either express or implied, including, without limitation, the warranties of NON-INFRINGEMENT, MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY OF THE ORIGINAL WORK IS WITH YOU. This DISCLAIMER OF WARRANTY constitutes an essential part of this License. No license to Original Work is granted hereunder except under this disclaimer.

8) Limitation of Liability. Under no circumstances and under no legal theory, whether in tort (including negligence), contract, or otherwise, shall the Licensor be liable to any person for any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or the use of the Original Work including, without limitation, damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses. This limitation of liability shall not apply to liability for death or personal injury resulting from Licensor's negligence to the extent applicable law prohibits such limitation. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so this exclusion and limitation may not apply to You.

9) Acceptance and Termination. If You distribute copies of the Original Work or a Derivative Work, You must make a reasonable effort under the circumstances to obtain the express assent of recipients to

the terms of this License. Nothing else but this License (or another written agreement between Licensor and You) grants You permission to create Derivative Works based upon the Original Work or to exercise any of the rights granted in Section 1 herein, and any attempt to do so except under the terms of this License (or another written agreement between Licensor and You) is expressly prohibited by U.S. copyright law, the equivalent laws of other countries, and by international treaty. Therefore, by exercising any of the rights granted to You in Section 1 herein, You indicate Your acceptance of this License and all of its terms and conditions.

10) Termination for Patent Action. This License shall terminate automatically and You may no longer exercise any of the rights granted to You by this License as of the date You commence an action, including a cross-claim or counterclaim, against Licensor or any licensee alleging that the Original Work infringes a patent. This termination provision shall not apply for an action alleging patent infringement by combinations of the Original Work with other software or hardware.

11) Jurisdiction, Venue and Governing Law. Any action or suit relating to this License may be brought only in the courts of a jurisdiction wherein the Licensor resides or in which Licensor conducts its primary business, and under the laws of that jurisdiction excluding its conflict-of-law provisions. The application of the United Nations Convention on Contracts for the International Sale of Goods is expressly excluded. Any use of the Original Work outside the scope of this License or after its termination shall be subject to the requirements and penalties of the U.S. Copyright Act, 17 U.S.C. 101 et seq., the equivalent laws of other countries, and international treaty. This section shall survive the termination of this License.

12) Attorneys Fees. In any action to enforce the terms of this License or seeking damages relating thereto, the prevailing party shall be entitled to recover its costs and expenses, including, without limitation, reasonable attorneys' fees and costs incurred in connection with such action, including any appeal of such action. This section shall survive the termination of this License.

13) Miscellaneous. This License represents the complete agreement concerning the subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable.

14) Definition of "You" in This License. "You" throughout this License, whether in upper or lower case, means an individual or a legal entity exercising rights under, and complying with all of the terms of, this License. For legal entities, "You" includes any entity

that controls, is controlled by, or is under common control with you. For purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

15) Right to Use. You may use the Original Work in all ways not otherwise restricted or conditioned by this License or by law, and Licensor promises not to interfere with or be responsible for such uses by You.

This license is Copyright (C) 2003-2004 Lawrence E. Rosen. All rights reserved. Permission is hereby granted to copy and distribute this license without modification. This license may not be modified without the express written permission of its copyright owner.

--

END OF ACADEMIC FREE LICENSE. The following is intended to describe the essential differences between the Academic Free License (AFL) version 1.0 and other open source licenses:

The Academic Free License is similar to the BSD, MIT, UoI/NCSA and Apache licenses in many respects but it is intended to solve a few problems with those licenses.

\* The AFL is written so as to make it clear what software is being licensed (by the inclusion of a statement following the copyright notice in the software). This way, the license functions better than a template license. The BSD, MIT and UoI/NCSA licenses apply to unidentified software.

\* The AFL contains a complete copyright grant to the software. The BSD and Apache licenses are vague and incomplete in that respect.

\* The AFL contains a complete patent grant to the software. The BSD, MIT, UoI/NCSA and Apache licenses rely on an implied patent license and contain no explicit patent grant.

\* The AFL makes it clear that no trademark rights are granted to the licensor's trademarks. The Apache license contains such a provision, but the BSD, MIT and UoI/NCSA licenses do not.

\* The AFL includes the warranty by the licensor that it either owns the copyright or that it is distributing the software under a license. None of the other licenses contain that warranty. All other warranties are disclaimed, as is the case for the other licenses.



\* The AFL is itself copyrighted (with the right granted to copy and distribute without modification). This ensures that the owner of the copyright to the license will control changes. The Apache license contains a copyright notice, but the BSD, MIT and UoI/NCSA licenses do not.

---

## GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy,

distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the

Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding

those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

## How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program  
'Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989  
Ty Coon, President of Vice

This General Public License does not permit incorporating your program into  
proprietary programs. If your program is a subroutine library, you may  
consider it more useful to permit linking proprietary applications with the  
library. If this is what you want to do, use the GNU Library General  
Public License instead of this License.

## 1.79 tomcat 8.5.x-dev

### 1.79.1 Available under license :

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

##### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction,  
and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by  
the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all  
other entities that control, are controlled by, or are under common  
control with that entity. For the purposes of this definition,  
"control" means (i) the power, direct or indirect, to cause the  
direction or management of such entity, whether by contract or  
otherwise, or (ii) ownership of fifty percent (50%) or more of the  
outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity  
exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications,  
including but not limited to software source code, documentation  
source, and configuration files.

"Object" form shall mean any form resulting from mechanical



transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable

by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use,

reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.  
Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

### APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

### APACHE TOMCAT SUBCOMPONENTS:

Apache Tomcat includes a number of subcomponents with separate copyright notices and license terms. Your use of these subcomponents is subject to the terms and conditions of the following licenses.

For the Eclipse JDT Core Batch Compiler (ecj-x.x.x.jar) component:

Eclipse Public License - v 1.0

THE ACCOMPANYING PROGRAM IS PROVIDED UNDER THE TERMS OF THIS ECLIPSE PUBLIC LICENSE ("AGREEMENT"). ANY USE, REPRODUCTION OR DISTRIBUTION OF THE PROGRAM CONSTITUTES RECIPIENT'S ACCEPTANCE OF THIS AGREEMENT.

#### 1. DEFINITIONS

"Contribution" means:

a) in the case of the initial Contributor, the initial code and documentation distributed under this Agreement, and

b) in the case of each subsequent Contributor:

i) changes to the Program, and

ii) additions to the Program;

where such changes and/or additions to the Program originate from and are distributed by that particular Contributor. A Contribution 'originates' from a Contributor if it was added to the Program by such Contributor itself or anyone acting on such Contributor's behalf. Contributions do not include additions to the Program which: (i) are separate modules of software distributed in conjunction with the Program under their own license agreement, and (ii) are not derivative works of the Program.

"Contributor" means any person or entity that distributes the Program.

"Licensed Patents" mean patent claims licensable by a Contributor which are necessarily infringed by the use or sale of its Contribution alone or when combined with the Program.

"Program" means the Contributions distributed in accordance with this Agreement.

"Recipient" means anyone who receives the Program under this Agreement, including all Contributors.

## 2. GRANT OF RIGHTS

a) Subject to the terms of this Agreement, each Contributor hereby grants Recipient a non-exclusive, worldwide, royalty-free copyright license to reproduce, prepare derivative works of, publicly display, publicly perform, distribute and sublicense the Contribution of such Contributor, if any, and such derivative works, in source code and object code form.

b) Subject to the terms of this Agreement, each Contributor hereby grants Recipient a non-exclusive, worldwide, royalty-free patent license under Licensed Patents to make, use, sell, offer to sell, import and otherwise transfer the Contribution of such Contributor, if any, in source code and object code form. This patent license shall apply to the combination of the Contribution and the Program if, at the time the Contribution is added by the Contributor, such addition of the Contribution causes such combination to be covered by the Licensed Patents. The patent license shall not apply to any other combinations which include the Contribution. No hardware per se is licensed hereunder.

c) Recipient understands that although each Contributor grants the licenses to

its Contributions set forth herein, no assurances are provided by any Contributor that the Program does not infringe the patent or other intellectual property rights of any other entity. Each Contributor disclaims any liability to Recipient for claims brought by any other entity based on infringement of intellectual property rights or otherwise. As a condition to exercising the rights and licenses granted hereunder, each Recipient hereby assumes sole responsibility to secure any other intellectual property rights needed, if any. For example, if a third party patent license is required to allow Recipient to distribute the Program, it is Recipient's responsibility to acquire that license before distributing the Program.

d) Each Contributor represents that to its knowledge it has sufficient copyright rights in its Contribution, if any, to grant the copyright license set forth in this Agreement.

### 3. REQUIREMENTS

A Contributor may choose to distribute the Program in object code form under its own license agreement, provided that:

- a) it complies with the terms and conditions of this Agreement; and
- b) its license agreement:
  - i) effectively disclaims on behalf of all Contributors all warranties and conditions, express and implied, including warranties or conditions of title and non-infringement, and implied warranties or conditions of merchantability and fitness for a particular purpose;
  - ii) effectively excludes on behalf of all Contributors all liability for damages, including direct, indirect, special, incidental and consequential damages, such as lost profits;
  - iii) states that any provisions which differ from this Agreement are offered by that Contributor alone and not by any other party; and
  - iv) states that source code for the Program is available from such Contributor, and informs licensees how to obtain it in a reasonable manner on or through a medium customarily used for software exchange.

When the Program is made available in source code form:

- a) it must be made available under this Agreement; and
- b) a copy of this Agreement must be included with each copy of the Program.

Contributors may not remove or alter any copyright notices contained within the Program.

Each Contributor must identify itself as the originator of its Contribution, if any, in a manner that reasonably allows subsequent Recipients to identify the originator of the Contribution.

#### 4. COMMERCIAL DISTRIBUTION

Commercial distributors of software may accept certain responsibilities with respect to end users, business partners and the like. While this license is intended to facilitate the commercial use of the Program, the Contributor who includes the Program in a commercial product offering should do so in a manner which does not create potential liability for other Contributors. Therefore, if a Contributor includes the Program in a commercial product offering, such Contributor ("Commercial Contributor") hereby agrees to defend and indemnify every other Contributor ("Indemnified Contributor") against any losses, damages and costs (collectively "Losses") arising from claims, lawsuits and other legal actions brought by a third party against the Indemnified Contributor to the extent caused by the acts or omissions of such Commercial Contributor in connection with its distribution of the Program in a commercial product offering. The obligations in this section do not apply to any claims or Losses relating to any actual or alleged intellectual property infringement. In order to qualify, an Indemnified Contributor must: a) promptly notify the Commercial Contributor in writing of such claim, and b) allow the Commercial Contributor to control, and cooperate with the Commercial Contributor in, the defense and any related settlement negotiations. The Indemnified Contributor may participate in any such claim at its own expense.

For example, a Contributor might include the Program in a commercial product offering, Product X. That Contributor is then a Commercial Contributor. If that Commercial Contributor then makes performance claims, or offers warranties related to Product X, those performance claims and warranties are such Commercial Contributor's responsibility alone. Under this section, the Commercial Contributor would have to defend claims against the other Contributors related to those performance claims and warranties, and if a court requires any other Contributor to pay any damages as a result, the Commercial Contributor must pay those damages.

#### 5. NO WARRANTY

EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, THE PROGRAM IS PROVIDED ON AN "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, EITHER EXPRESS OR IMPLIED INCLUDING, WITHOUT LIMITATION, ANY WARRANTIES OR CONDITIONS OF TITLE, NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Each Recipient is solely responsible for determining the appropriateness of using and distributing the Program and assumes all risks associated with its exercise of rights under this Agreement, including but not limited to the risks and costs of program errors, compliance with applicable laws, damage to or loss of data, programs or equipment, and unavailability or interruption of operations.

## 6. DISCLAIMER OF LIABILITY

EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, NEITHER RECIPIENT NOR ANY CONTRIBUTORS SHALL HAVE ANY LIABILITY FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING WITHOUT LIMITATION LOST PROFITS), HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OR DISTRIBUTION OF THE PROGRAM OR THE EXERCISE OF ANY RIGHTS GRANTED HEREUNDER, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## 7. GENERAL

If any provision of this Agreement is invalid or unenforceable under applicable law, it shall not affect the validity or enforceability of the remainder of the terms of this Agreement, and without further action by the parties hereto, such provision shall be reformed to the minimum extent necessary to make such provision valid and enforceable.

If Recipient institutes patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Program itself (excluding combinations of the Program with other software or hardware) infringes such Recipient's patent(s), then such Recipient's rights granted under Section 2(b) shall terminate as of the date such litigation is filed.

All Recipient's rights under this Agreement shall terminate if it fails to comply with any of the material terms or conditions of this Agreement and does not cure such failure in a reasonable period of time after becoming aware of such noncompliance. If all Recipient's rights under this Agreement terminate, Recipient agrees to cease use and distribution of the Program as soon as reasonably practicable. However, Recipient's obligations under this Agreement and any licenses granted by Recipient relating to the Program shall continue and survive.

Everyone is permitted to copy and distribute copies of this Agreement, but in order to avoid inconsistency the Agreement is copyrighted and may only be modified in the following manner. The Agreement Steward reserves the right to publish new versions (including revisions) of this Agreement from time to time. No one other than the Agreement Steward has the right to modify this Agreement. The Eclipse Foundation is the initial Agreement Steward. The Eclipse Foundation may assign the responsibility to serve as the Agreement Steward to a suitable separate entity. Each new version of the Agreement will be given a distinguishing version number. The Program (including Contributions) may always be distributed subject to the version of the Agreement under which it was received. In addition, after a new version of the Agreement is published, Contributor may elect to distribute the Program (including its Contributions) under the new version. Except as expressly stated in Sections 2(a) and 2(b) above, Recipient receives no rights or licenses to the intellectual property of



any Contributor under this Agreement, whether expressly, by implication, estoppel or otherwise. All rights in the Program not expressly granted under this Agreement are reserved.

This Agreement is governed by the laws of the State of New York and the intellectual property laws of the United States of America. No party to this Agreement will bring a legal action under this Agreement more than one year after the cause of action arose. Each party waives its rights to a jury trial in any resulting litigation.

For the Windows Installer component:

- \* All NSIS source code, plug-ins, documentation, examples, header files and graphics, with the exception of the compression modules and where otherwise noted, are licensed under the zlib/libpng license.
- \* The zlib compression module for NSIS is licensed under the zlib/libpng license.
- \* The bzip2 compression module for NSIS is licensed under the bzip2 license.
- \* The lzma compression module for NSIS is licensed under the Common Public License version 1.0.

zlib/libpng license

This software is provided 'as-is', without any express or implied warranty. In no event will the authors be held liable for any damages arising from the use of this software.

Permission is granted to anyone to use this software for any purpose, including commercial applications, and to alter it and redistribute it freely, subject to the following restrictions:

1. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated but is not required.
2. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
3. This notice may not be removed or altered from any source distribution.

bzip2 license

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. The origin of this software must not be misrepresented; you must not claim

that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated but is not required.

3. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
4. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Julian Seward, Cambridge, UK.

[jseward@acm.org](mailto:jseward@acm.org)

Common Public License version 1.0

THE ACCOMPANYING PROGRAM IS PROVIDED UNDER THE TERMS OF THIS COMMON PUBLIC LICENSE ("AGREEMENT"). ANY USE, REPRODUCTION OR DISTRIBUTION OF THE PROGRAM CONSTITUTES RECIPIENT'S ACCEPTANCE OF THIS AGREEMENT.

## 1. DEFINITIONS

"Contribution" means:

a) in the case of the initial Contributor, the initial code and documentation distributed under this Agreement, and b) in the case of each subsequent Contributor:

i) changes to the Program, and

ii) additions to the Program;

where such changes and/or additions to the Program originate from and are distributed by that particular Contributor. A Contribution 'originates' from a Contributor if it was added to the Program by such Contributor itself or anyone acting on such Contributor's behalf. Contributions do not include additions to the Program which: (i) are separate modules of software distributed in conjunction with the Program under their own license agreement, and (ii) are not derivative works of the Program.

"Contributor" means any person or entity that distributes the Program.

"Licensed Patents " mean patent claims licensable by a Contributor which are necessarily infringed by the use or sale of its Contribution alone or when combined with the Program.

"Program" means the Contributions distributed in accordance with this Agreement.

"Recipient" means anyone who receives the Program under this Agreement, including all Contributors.

## 2. GRANT OF RIGHTS

a) Subject to the terms of this Agreement, each Contributor hereby grants Recipient a non-exclusive, worldwide, royalty-free copyright license to reproduce, prepare derivative works of, publicly display, publicly perform, distribute and sublicense the Contribution of such Contributor, if any, and such derivative works, in source code and object code form.

b) Subject to the terms of this Agreement, each Contributor hereby grants Recipient a non-exclusive, worldwide, royalty-free patent license under Licensed Patents to make, use, sell, offer to sell, import and otherwise transfer the Contribution of such Contributor, if any, in source code and object code form. This patent license shall apply to the combination of the Contribution and the Program if, at the time the Contribution is added by the Contributor, such addition of the Contribution causes such combination to be covered by the Licensed Patents. The patent license shall not apply to any other combinations which include the Contribution. No hardware per se is licensed hereunder.

c) Recipient understands that although each Contributor grants the licenses to its Contributions set forth herein, no assurances are provided by any Contributor that the Program does not infringe the patent or other intellectual property rights of any other entity. Each Contributor disclaims any liability to Recipient for claims brought by any other entity based on infringement of intellectual property rights or otherwise. As a condition to exercising the rights and licenses granted hereunder, each Recipient hereby assumes sole responsibility to secure any other intellectual property rights needed, if any. For example, if a third party patent license is required to allow Recipient to distribute the Program, it is Recipient's responsibility to acquire that license before distributing the Program.

d) Each Contributor represents that to its knowledge it has sufficient copyright rights in its Contribution, if any, to grant the copyright license set forth in this Agreement.

## 3. REQUIREMENTS

A Contributor may choose to distribute the Program in object code form under its

own license agreement, provided that:

- a) it complies with the terms and conditions of this Agreement; and
- b) its license agreement:
  - i) effectively disclaims on behalf of all Contributors all warranties and conditions, express and implied, including warranties or conditions of title and non-infringement, and implied warranties or conditions of merchantability and fitness for a particular purpose;
  - ii) effectively excludes on behalf of all Contributors all liability for damages, including direct, indirect, special, incidental and consequential damages, such as lost profits;
  - iii) states that any provisions which differ from this Agreement are offered by that Contributor alone and not by any other party; and
  - iv) states that source code for the Program is available from such Contributor, and informs licensees how to obtain it in a reasonable manner on or through a medium customarily used for software exchange.

When the Program is made available in source code form:

- a) it must be made available under this Agreement; and
- b) a copy of this Agreement must be included with each copy of the Program.

Contributors may not remove or alter any copyright notices contained within the Program.

Each Contributor must identify itself as the originator of its Contribution, if any, in a manner that reasonably allows subsequent Recipients to identify the originator of the Contribution.

#### 4. COMMERCIAL DISTRIBUTION

Commercial distributors of software may accept certain responsibilities with respect to end users, business partners and the like. While this license is intended to facilitate the commercial use of the Program, the Contributor who includes the Program in a commercial product offering should do so in a manner which does not create potential liability for other Contributors. Therefore, if a Contributor includes the Program in a commercial product offering, such Contributor ("Commercial Contributor") hereby agrees to defend and indemnify every other Contributor ("Indemnified Contributor") against any losses, damages and costs (collectively "Losses") arising from claims, lawsuits and other legal actions brought by a third party against the Indemnified Contributor to the extent caused by the acts or omissions of such Commercial Contributor in

connection with its distribution of the Program in a commercial product offering. The obligations in this section do not apply to any claims or Losses relating to any actual or alleged intellectual property infringement. In order to qualify, an Indemnified Contributor must: a) promptly notify the Commercial Contributor in writing of such claim, and b) allow the Commercial Contributor to control, and cooperate with the Commercial Contributor in, the defense and any related settlement negotiations. The Indemnified Contributor may participate in any such claim at its own expense.

For example, a Contributor might include the Program in a commercial product offering, Product X. That Contributor is then a Commercial Contributor. If that Commercial Contributor then makes performance claims, or offers warranties related to Product X, those performance claims and warranties are such Commercial Contributor's responsibility alone. Under this section, the Commercial Contributor would have to defend claims against the other Contributors related to those performance claims and warranties, and if a court requires any other Contributor to pay any damages as a result, the Commercial Contributor must pay those damages.

## 5. NO WARRANTY

EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, THE PROGRAM IS PROVIDED ON AN "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, EITHER EXPRESS OR IMPLIED INCLUDING, WITHOUT LIMITATION, ANY WARRANTIES OR CONDITIONS OF TITLE, NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Each Recipient is solely responsible for determining the appropriateness of using and distributing the Program and assumes all risks associated with its exercise of rights under this Agreement, including but not limited to the risks and costs of program errors, compliance with applicable laws, damage to or loss of data, programs or equipment, and unavailability or interruption of operations.

## 6. DISCLAIMER OF LIABILITY

EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, NEITHER RECIPIENT NOR ANY CONTRIBUTORS SHALL HAVE ANY LIABILITY FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING WITHOUT LIMITATION LOST PROFITS), HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OR DISTRIBUTION OF THE PROGRAM OR THE EXERCISE OF ANY RIGHTS GRANTED HEREUNDER, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## 7. GENERAL

If any provision of this Agreement is invalid or unenforceable under applicable law, it shall not affect the validity or enforceability of the remainder of the terms of this Agreement, and without further action by the parties hereto, such provision shall be reformed to the minimum extent necessary to make such provision valid and enforceable.

If Recipient institutes patent litigation against a Contributor with respect to a patent applicable to software (including a cross-claim or counterclaim in a lawsuit), then any patent licenses granted by that Contributor to such Recipient under this Agreement shall terminate as of the date such litigation is filed. In addition, if Recipient institutes patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Program itself (excluding combinations of the Program with other software or hardware) infringes such Recipient's patent(s), then such Recipient's rights granted under Section 2(b) shall terminate as of the date such litigation is filed.

All Recipient's rights under this Agreement shall terminate if it fails to comply with any of the material terms or conditions of this Agreement and does not cure such failure in a reasonable period of time after becoming aware of such noncompliance. If all Recipient's rights under this Agreement terminate, Recipient agrees to cease use and distribution of the Program as soon as reasonably practicable. However, Recipient's obligations under this Agreement and any licenses granted by Recipient relating to the Program shall continue and survive.

Everyone is permitted to copy and distribute copies of this Agreement, but in order to avoid inconsistency the Agreement is copyrighted and may only be modified in the following manner. The Agreement Steward reserves the right to publish new versions (including revisions) of this Agreement from time to time. No one other than the Agreement Steward has the right to modify this Agreement. IBM is the initial Agreement Steward. IBM may assign the responsibility to serve as the Agreement Steward to a suitable separate entity. Each new version of the Agreement will be given a distinguishing version number. The Program (including Contributions) may always be distributed subject to the version of the Agreement under which it was received. In addition, after a new version of the Agreement is published, Contributor may elect to distribute the Program (including its Contributions) under the new version. Except as expressly stated in Sections 2(a) and 2(b) above, Recipient receives no rights or licenses to the intellectual property of any Contributor under this Agreement, whether expressly, by implication, estoppel or otherwise. All rights in the Program not expressly granted under this Agreement are reserved.

This Agreement is governed by the laws of the State of New York and the intellectual property laws of the United States of America. No party to this Agreement will bring a legal action under this Agreement more than one year after the cause of action arose. Each party waives its rights to a jury trial in any resulting litigation.

Special exception for LZMA compression module

Igor Pavlov and Amir Szekely, the authors of the LZMA compression module for NSIS, expressly permit you to statically or dynamically link your code (or bind by name) to the files from the LZMA compression module for NSIS without

subjecting your linked code to the terms of the Common Public license version 1.0. Any modifications or additions to files from the LZMA compression module for NSIS, however, are subject to the terms of the Common Public License version 1.0.

For the following XML Schemas for Java EE Deployment Descriptors:

- javaee\_5.xsd
- javaee\_web\_services\_1\_2.xsd
- javaee\_web\_services\_client\_1\_2.xsd
- javaee\_6.xsd
- javaee\_web\_services\_1\_3.xsd
- javaee\_web\_services\_client\_1\_3.xsd
- jsp\_2\_2.xsd
- web-app\_3\_0.xsd
- web-common\_3\_0.xsd
- web-fragment\_3\_0.xsd
- javaee\_7.xsd
- javaee\_web\_services\_1\_4.xsd
- javaee\_web\_services\_client\_1\_4.xsd
- jsp\_2\_3.xsd
- web-app\_3\_1.xsd
- web-common\_3\_1.xsd
- web-fragment\_3\_1.xsd

## COMMON DEVELOPMENT AND DISTRIBUTION LICENSE (CDDL) Version 1.0

### 1. Definitions.

1.1. Contributor. means each individual or entity that creates or contributes to the creation of Modifications.

1.2. Contributor Version. means the combination of the Original Software, prior Modifications used by a Contributor (if any), and the Modifications made by that particular Contributor.

1.3. Covered Software. means (a) the Original Software, or (b) Modifications, or (c) the combination of files containing Original Software with files containing Modifications, in each case including portions thereof.

1.4. Executable. means the Covered Software in any form other than Source Code.

1.5. Initial Developer. means the individual or entity that first makes Original Software available under this License.

1.6. Larger Work. means a work which combines Covered Software or portions thereof with code not governed by the terms of this License.

- 1.7. License. means this document.
- 1.8. Licensable. means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently acquired, any and all of the rights conveyed herein.
- 1.9. Modifications. means the Source Code and Executable form of any of the following:
- A. Any file that results from an addition to, deletion from or modification of the contents of a file containing Original Software or previous Modifications;
  - B. Any new file that contains any part of the Original Software or previous Modification; or
  - C. Any new file that is contributed or otherwise made available under the terms of this License.
- 1.10. Original Software. means the Source Code and Executable form of computer software code that is originally released under this License.
- 1.11. Patent Claims. means any patent claim(s), now owned or hereafter acquired, including without limitation, method, process, and apparatus claims, in any patent Licensable by grantor.
- 1.12. Source Code. means (a) the common form of computer software code in which modifications are made and (b) associated documentation included in or with such code.
- 1.13. You. (or .Your.) means an individual or a legal entity exercising rights under, and complying with all of the terms of, this License. For legal entities, .You. includes any entity which controls, is controlled by, or is under common control with You. For purposes of this definition, .control. means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

## 2. License Grants.

### 2.1. The Initial Developer Grant.

Conditioned upon Your compliance with Section 3.1 below and subject to third party intellectual property claims, the Initial Developer hereby grants You a world-wide, royalty-free, non-exclusive license:



- (a) under intellectual property rights (other than patent or trademark) Licensable by Initial Developer, to use, reproduce, modify, display, perform, sublicense and distribute the Original Software (or portions thereof), with or without Modifications, and/or as part of a Larger Work; and
- (b) under Patent Claims infringed by the making, using or selling of Original Software, to make, have made, use, practice, sell, and offer for sale, and/or otherwise dispose of the Original Software (or portions thereof).
- (c) The licenses granted in Sections 2.1(a) and (b) are effective on the date Initial Developer first distributes or otherwise makes the Original Software available to a third party under the terms of this License.
- (d) Notwithstanding Section 2.1(b) above, no patent license is granted:
  - (1) for code that You delete from the Original Software, or (2) for infringements caused by: (i) the modification of the Original Software, or (ii) the combination of the Original Software with other software or devices.

## 2.2. Contributor Grant.

Conditioned upon Your compliance with Section 3.1 below and subject to third party intellectual property claims, each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:

- (a) under intellectual property rights (other than patent or trademark) Licensable by Contributor to use, reproduce, modify, display, perform, sublicense and distribute the Modifications created by such Contributor (or portions thereof), either on an unmodified basis, with other Modifications, as Covered Software and/or as part of a Larger Work; and
- (b) under Patent Claims infringed by the making, using, or selling of Modifications made by that Contributor either alone and/or in combination with its Contributor Version (or portions of such combination), to make, use, sell, offer for sale, have made, and/or otherwise dispose of: (1) Modifications made by that Contributor (or portions thereof); and (2) the combination of Modifications made by that Contributor with its Contributor Version (or portions of such combination).
- (c) The licenses granted in Sections 2.2(a) and 2.2(b) are effective on the date Contributor first distributes or otherwise makes the Modifications available to a third party.

(d) Notwithstanding Section 2.2(b) above, no patent license is granted:

(1) for any code that Contributor has deleted from the Contributor Version; (2) for infringements caused by: (i) third party modifications of Contributor Version, or (ii) the combination of Modifications made by that Contributor with other software (except as part of the Contributor Version) or other devices; or (3) under Patent Claims infringed by Covered Software in the absence of Modifications made by that Contributor.

### 3. Distribution Obligations.

#### 3.1. Availability of Source Code.

Any Covered Software that You distribute or otherwise make available in Executable form must also be made available in Source Code form and that Source Code form must be distributed only under the terms of this License. You must include a copy of this License with every copy of the Source Code form of the Covered Software You distribute or otherwise make available. You must inform recipients of any such Covered Software in Executable form as to how they can obtain such Covered Software in Source Code form in a reasonable manner on or through a medium customarily used for software exchange.

#### 3.2. Modifications.

The Modifications that You create or to which You contribute are governed by the terms of this License. You represent that You believe Your Modifications are Your original creation(s) and/or You have sufficient rights to grant the rights conveyed by this License.

#### 3.3. Required Notices.

You must include a notice in each of Your Modifications that identifies You as the Contributor of the Modification. You may not remove or alter any copyright, patent or trademark notices contained within the Covered Software, or any notices of licensing or any descriptive text giving attribution to any Contributor or the Initial Developer.

#### 3.4. Application of Additional Terms.

You may not offer or impose any terms on any Covered Software in Source Code form that alters or restricts the applicable version of this License or the recipients' rights hereunder. You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Software. However, you may do so only on Your own behalf, and not on behalf of the Initial Developer or any Contributor. You must make it absolutely clear that any such warranty, support, indemnity or liability obligation is offered by You alone, and You hereby agree to indemnify the Initial Developer and every Contributor for any liability incurred by the Initial Developer or such Contributor as a result of warranty, support, indemnity or liability terms You offer.

### 3.5. Distribution of Executable Versions.

You may distribute the Executable form of the Covered Software under the terms of this License or under the terms of a license of Your choice, which may contain terms different from this License, provided that You are in compliance with the terms of this License and that the license for the Executable form does not attempt to limit or alter the recipient's rights in the Source Code form from the rights set forth in this License. If You distribute the Covered Software in Executable form under a different license, You must make it absolutely clear that any terms which differ from this License are offered by You alone, not by the Initial Developer or Contributor. You hereby agree to indemnify the Initial Developer and every Contributor for any liability incurred by the Initial Developer or such Contributor as a result of any such terms You offer.

### 3.6. Larger Works.

You may create a Larger Work by combining Covered Software with other code not governed by the terms of this License and distribute the Larger Work as a single product. In such a case, You must make sure the requirements of this License are fulfilled for the Covered Software.

## 4. Versions of the License.

### 4.1. New Versions.

Sun Microsystems, Inc. is the initial license steward and may publish revised and/or new versions of this License from time to time. Each version will be given a distinguishing version number. Except as provided in Section 4.3, no one other than the license steward has the right to modify this License.

### 4.2. Effect of New Versions.

You may always continue to use, distribute or otherwise make the Covered Software available under the terms of the version of the License under which You originally received the Covered Software. If the Initial Developer includes a notice in the Original Software prohibiting it from being distributed or otherwise made available under any subsequent version of the License, You must distribute and make the Covered Software available under the terms of the version of the License under which You originally received the Covered Software. Otherwise, You may also choose to use, distribute or otherwise make the Covered Software available under the terms of any subsequent version of the License published by the license steward.

### 4.3. Modified Versions.

When You are an Initial Developer and You want to create a new license for Your Original Software, You may create and use a modified version of this License if You: (a) rename the license and remove any references to the name of the license steward (except to note that the license differs from this License); and (b) otherwise make it clear that the license contains

terms which differ from this License.

## 5. DISCLAIMER OF WARRANTY.

COVERED SOFTWARE IS PROVIDED UNDER THIS LICENSE ON AN .AS IS. BASIS, WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTIES THAT THE COVERED SOFTWARE IS FREE OF DEFECTS, MERCHANTABILITY, FIT FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE COVERED SOFTWARE IS WITH YOU. SHOULD ANY COVERED SOFTWARE PROVE DEFECTIVE IN ANY RESPECT, YOU (NOT THE INITIAL DEVELOPER OR ANY OTHER CONTRIBUTOR) ASSUME THE COST OF ANY NECESSARY SERVICING, REPAIR OR CORRECTION. THIS DISCLAIMER OF WARRANTY CONSTITUTES AN ESSENTIAL PART OF THIS LICENSE. NO USE OF ANY COVERED SOFTWARE IS AUTHORIZED HEREUNDER EXCEPT UNDER THIS DISCLAIMER.

## 6. TERMINATION.

- 6.1. This License and the rights granted hereunder will terminate automatically if You fail to comply with terms herein and fail to cure such breach within 30 days of becoming aware of the breach. Provisions which, by their nature, must remain in effect beyond the termination of this License shall survive.
- 6.2. If You assert a patent infringement claim (excluding declaratory judgment actions) against Initial Developer or a Contributor (the Initial Developer or Contributor against whom You assert such claim is referred to as .Participant.) alleging that the Participant Software (meaning the Contributor Version where the Participant is a Contributor or the Original Software where the Participant is the Initial Developer) directly or indirectly infringes any patent, then any and all rights granted directly or indirectly to You by such Participant, the Initial Developer (if the Initial Developer is not the Participant) and all Contributors under Sections 2.1 and/or 2.2 of this License shall, upon 60 days notice from Participant terminate prospectively and automatically at the expiration of such 60 day notice period, unless if within such 60 day period You withdraw Your claim with respect to the Participant Software against such Participant either unilaterally or pursuant to a written agreement with Participant.
- 6.3. In the event of termination under Sections 6.1 or 6.2 above, all end user licenses that have been validly granted by You or any distributor hereunder prior to termination (excluding licenses granted to You by any distributor) shall survive termination.

## 7. LIMITATION OF LIABILITY.

UNDER NO CIRCUMSTANCES AND UNDER NO LEGAL THEORY, WHETHER TORT (INCLUDING

NEGLIGENCE), CONTRACT, OR OTHERWISE, SHALL YOU, THE INITIAL DEVELOPER, ANY OTHER CONTRIBUTOR, OR ANY DISTRIBUTOR OF COVERED SOFTWARE, OR ANY SUPPLIER OF ANY OF SUCH PARTIES, BE LIABLE TO ANY PERSON FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES OF ANY CHARACTER INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOST PROFITS, LOSS OF GOODWILL, WORK STOPPAGE, COMPUTER FAILURE OR MALFUNCTION, OR ANY AND ALL OTHER COMMERCIAL DAMAGES OR LOSSES, EVEN IF SUCH PARTY SHALL HAVE BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. THIS LIMITATION OF LIABILITY SHALL NOT APPLY TO LIABILITY FOR DEATH OR PERSONAL INJURY RESULTING FROM SUCH PARTY'S NEGLIGENCE TO THE EXTENT APPLICABLE LAW PROHIBITS SUCH LIMITATION. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THIS EXCLUSION AND LIMITATION MAY NOT APPLY TO YOU.

#### 8. U.S. GOVERNMENT END USERS.

The Covered Software is a .commercial item., as that term is defined in 48 C.F.R. 2.101 (Oct. 1995), consisting of .commercial computer software. (as that term is defined at 48 C.F.R. ? 252.227-7014(a)(1)) and commercial computer software documentation. as such terms are used in 48 C.F.R. 12.212 (Sept. 1995). Consistent with 48 C.F.R. 12.212 and 48 C.F.R. 227.7202-1 through 227.7202-4 (June 1995), all U.S. Government End Users acquire Covered Software with only those rights set forth herein. This U.S. Government Rights clause is in lieu of, and supersedes, any other FAR, DFAR, or other clause or provision that addresses Government rights in computer software under this License.

#### 9. MISCELLANEOUS.

This License represents the complete agreement concerning subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable. This License shall be governed by the law of the jurisdiction specified in a notice contained within the Original Software (except to the extent applicable law, if any, provides otherwise), excluding such jurisdiction's conflict-of-law provisions. Any litigation relating to this License shall be subject to the jurisdiction of the courts located in the jurisdiction and venue specified in a notice contained within the Original Software, with the losing party responsible for costs, including, without limitation, court costs and reasonable attorneys' fees and expenses. The application of the United Nations Convention on Contracts for the International Sale of Goods is expressly excluded. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not apply to this License. You agree that You alone are responsible for compliance with the United States export administration regulations (and the export control laws and regulation of any other countries) when You use, distribute or otherwise make available any Covered Software.

## 10. RESPONSIBILITY FOR CLAIMS.

As between Initial Developer and the Contributors, each party is responsible for claims and damages arising, directly or indirectly, out of its utilization of rights under this License and You agree to work with Initial Developer and Contributors to distribute such responsibility on an equitable basis. Nothing herein is intended or shall be deemed to constitute any admission of liability.

### NOTICE PURSUANT TO SECTION 9 OF THE COMMON DEVELOPMENT AND DISTRIBUTION LICENSE (CDDL)

The code released under the CDDL shall be governed by the laws of the State of California (excluding conflict-of-law provisions). Any litigation relating to this License shall be subject to the jurisdiction of the Federal Courts of the Northern District of California and the state courts of the State of California, with venue lying in Santa Clara County, California.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical

transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable

by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use,



reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.  
Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

### APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

### APACHE TOMCAT SUBCOMPONENTS:

Apache Tomcat includes a number of subcomponents with separate copyright notices and license terms. Your use of these subcomponents is subject to the terms and conditions of the following licenses.

For the ecj-x.x.x.jar component and the EnclosingMethod and LocalVariableTypeTable classes in the org.apache.tomcat.util.bcel.classfile package:

Eclipse Public License - v 1.0

THE ACCOMPANYING PROGRAM IS PROVIDED UNDER THE TERMS OF THIS ECLIPSE PUBLIC LICENSE ("AGREEMENT"). ANY USE, REPRODUCTION OR DISTRIBUTION OF THE PROGRAM CONSTITUTES RECIPIENT'S ACCEPTANCE OF THIS AGREEMENT.

### 1. DEFINITIONS

"Contribution" means:

a) in the case of the initial Contributor, the initial code and documentation distributed under this Agreement, and

b) in the case of each subsequent Contributor:

i) changes to the Program, and

ii) additions to the Program;

where such changes and/or additions to the Program originate from and are distributed by that particular Contributor. A Contribution 'originates' from a Contributor if it was added to the Program by such Contributor itself or anyone acting on such Contributor's behalf. Contributions do not include additions to the Program which: (i) are separate modules of software distributed in conjunction with the Program under their own license agreement, and (ii) are not derivative works of the Program.

"Contributor" means any person or entity that distributes the Program.

"Licensed Patents" mean patent claims licensable by a Contributor which are necessarily infringed by the use or sale of its Contribution alone or when combined with the Program.

"Program" means the Contributions distributed in accordance with this Agreement.

"Recipient" means anyone who receives the Program under this Agreement, including all Contributors.

## 2. GRANT OF RIGHTS

a) Subject to the terms of this Agreement, each Contributor hereby grants Recipient a non-exclusive, worldwide, royalty-free copyright license to reproduce, prepare derivative works of, publicly display, publicly perform, distribute and sublicense the Contribution of such Contributor, if any, and such derivative works, in source code and object code form.

b) Subject to the terms of this Agreement, each Contributor hereby grants Recipient a non-exclusive, worldwide, royalty-free patent license under Licensed Patents to make, use, sell, offer to sell, import and otherwise transfer the Contribution of such Contributor, if any, in source code and object code form. This patent license shall apply to the combination of the Contribution and the Program if, at the time the Contribution is added by the Contributor, such addition of the Contribution causes such combination to be covered by the Licensed Patents. The patent license shall not apply to any other combinations which include the Contribution. No hardware per se is licensed hereunder.

c) Recipient understands that although each Contributor grants the licenses to its Contributions set forth herein, no assurances are provided by any Contributor that the Program does not infringe the patent or other intellectual property rights of any other entity. Each Contributor disclaims any liability to Recipient for claims brought by any other entity based on infringement of intellectual property rights or otherwise. As a condition to exercising the rights and licenses granted hereunder, each Recipient hereby assumes sole responsibility to secure any other intellectual property rights needed, if any. For example, if a third party patent license is required to allow Recipient to distribute the Program, it is Recipient's responsibility to acquire that license before distributing the Program.

d) Each Contributor represents that to its knowledge it has sufficient copyright rights in its Contribution, if any, to grant the copyright license set forth in this Agreement.

### 3. REQUIREMENTS

A Contributor may choose to distribute the Program in object code form under its own license agreement, provided that:

a) it complies with the terms and conditions of this Agreement; and

b) its license agreement:

i) effectively disclaims on behalf of all Contributors all warranties and conditions, express and implied, including warranties or conditions of title and non-infringement, and implied warranties or conditions of merchantability and fitness for a particular purpose;

ii) effectively excludes on behalf of all Contributors all liability for damages, including direct, indirect, special, incidental and consequential damages, such as lost profits;

iii) states that any provisions which differ from this Agreement are offered by that Contributor alone and not by any other party; and

iv) states that source code for the Program is available from such Contributor, and informs licensees how to obtain it in a reasonable manner on or through a medium customarily used for software exchange.

When the Program is made available in source code form:

a) it must be made available under this Agreement; and

b) a copy of this Agreement must be included with each copy of the Program.

Contributors may not remove or alter any copyright notices contained within the Program.

Each Contributor must identify itself as the originator of its Contribution, if any, in a manner that reasonably allows subsequent Recipients to identify the originator of the Contribution.

#### 4. COMMERCIAL DISTRIBUTION

Commercial distributors of software may accept certain responsibilities with respect to end users, business partners and the like. While this license is intended to facilitate the commercial use of the Program, the Contributor who includes the Program in a commercial product offering should do so in a manner which does not create potential liability for other Contributors. Therefore, if a Contributor includes the Program in a commercial product offering, such Contributor ("Commercial Contributor") hereby agrees to defend and indemnify every other Contributor ("Indemnified Contributor") against any losses, damages and costs (collectively "Losses") arising from claims, lawsuits and other legal actions brought by a third party against the Indemnified Contributor to the extent caused by the acts or omissions of such Commercial Contributor in connection with its distribution of the Program in a commercial product offering. The obligations in this section do not apply to any claims or Losses relating to any actual or alleged intellectual property infringement. In order to qualify, an Indemnified Contributor must: a) promptly notify the Commercial Contributor in writing of such claim, and b) allow the Commercial Contributor to control, and cooperate with the Commercial Contributor in, the defense and any related settlement negotiations. The Indemnified Contributor may participate in any such claim at its own expense.

For example, a Contributor might include the Program in a commercial product offering, Product X. That Contributor is then a Commercial Contributor. If that Commercial Contributor then makes performance claims, or offers warranties related to Product X, those performance claims and warranties are such Commercial Contributor's responsibility alone. Under this section, the Commercial Contributor would have to defend claims against the other Contributors related to those performance claims and warranties, and if a court requires any other Contributor to pay any damages as a result, the Commercial Contributor must pay those damages.

#### 5. NO WARRANTY

EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, THE PROGRAM IS PROVIDED ON AN "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, EITHER EXPRESS OR IMPLIED INCLUDING, WITHOUT LIMITATION, ANY WARRANTIES OR CONDITIONS OF TITLE, NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Each Recipient is solely responsible for determining the appropriateness of using and distributing the Program and assumes all risks associated with its exercise of rights under this Agreement, including but not limited to the risks and costs

of program errors, compliance with applicable laws, damage to or loss of data, programs or equipment, and unavailability or interruption of operations.

## 6. DISCLAIMER OF LIABILITY

EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, NEITHER RECIPIENT NOR ANY CONTRIBUTORS SHALL HAVE ANY LIABILITY FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING WITHOUT LIMITATION LOST PROFITS), HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OR DISTRIBUTION OF THE PROGRAM OR THE EXERCISE OF ANY RIGHTS GRANTED HEREUNDER, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## 7. GENERAL

If any provision of this Agreement is invalid or unenforceable under applicable law, it shall not affect the validity or enforceability of the remainder of the terms of this Agreement, and without further action by the parties hereto, such provision shall be reformed to the minimum extent necessary to make such provision valid and enforceable.

If Recipient institutes patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Program itself (excluding combinations of the Program with other software or hardware) infringes such Recipient's patent(s), then such Recipient's rights granted under Section 2(b) shall terminate as of the date such litigation is filed.

All Recipient's rights under this Agreement shall terminate if it fails to comply with any of the material terms or conditions of this Agreement and does not cure such failure in a reasonable period of time after becoming aware of such noncompliance. If all Recipient's rights under this Agreement terminate, Recipient agrees to cease use and distribution of the Program as soon as reasonably practicable. However, Recipient's obligations under this Agreement and any licenses granted by Recipient relating to the Program shall continue and survive.

Everyone is permitted to copy and distribute copies of this Agreement, but in order to avoid inconsistency the Agreement is copyrighted and may only be modified in the following manner. The Agreement Steward reserves the right to publish new versions (including revisions) of this Agreement from time to time. No one other than the Agreement Steward has the right to modify this Agreement. The Eclipse Foundation is the initial Agreement Steward. The Eclipse Foundation may assign the responsibility to serve as the Agreement Steward to a suitable separate entity. Each new version of the Agreement will be given a distinguishing version number. The Program (including Contributions) may always be distributed subject to the version of the Agreement under which it was received. In addition, after a new version of the Agreement is published, Contributor may elect to distribute the Program (including its Contributions)

under the new version. Except as expressly stated in Sections 2(a) and 2(b) above, Recipient receives no rights or licenses to the intellectual property of any Contributor under this Agreement, whether expressly, by implication, estoppel or otherwise. All rights in the Program not expressly granted under this Agreement are reserved.

This Agreement is governed by the laws of the State of New York and the intellectual property laws of the United States of America. No party to this Agreement will bring a legal action under this Agreement more than one year after the cause of action arose. Each party waives its rights to a jury trial in any resulting litigation.

For the Windows Installer component:

- \* All NSIS source code, plug-ins, documentation, examples, header files and graphics, with the exception of the compression modules and where otherwise noted, are licensed under the zlib/libpng license.
- \* The zlib compression module for NSIS is licensed under the zlib/libpng license.
- \* The bzip2 compression module for NSIS is licensed under the bzip2 license.
- \* The lzma compression module for NSIS is licensed under the Common Public License version 1.0.

zlib/libpng license

This software is provided 'as-is', without any express or implied warranty. In no event will the authors be held liable for any damages arising from the use of this software.

Permission is granted to anyone to use this software for any purpose, including commercial applications, and to alter it and redistribute it freely, subject to the following restrictions:

1. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated but is not required.
2. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
3. This notice may not be removed or altered from any source distribution.

bzip2 license

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice,

this list of conditions and the following disclaimer.

2. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated but is not required.
3. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
4. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Julian Seward, Cambridge, UK.

[jseward@acm.org](mailto:jseward@acm.org)

Common Public License version 1.0

THE ACCOMPANYING PROGRAM IS PROVIDED UNDER THE TERMS OF THIS COMMON PUBLIC LICENSE ("AGREEMENT"). ANY USE, REPRODUCTION OR DISTRIBUTION OF THE PROGRAM CONSTITUTES RECIPIENT'S ACCEPTANCE OF THIS AGREEMENT.

## 1. DEFINITIONS

"Contribution" means:

a) in the case of the initial Contributor, the initial code and documentation distributed under this Agreement, and b) in the case of each subsequent Contributor:

i) changes to the Program, and

ii) additions to the Program;

where such changes and/or additions to the Program originate from and are distributed by that particular Contributor. A Contribution 'originates' from a Contributor if it was added to the Program by such Contributor itself or anyone acting on such Contributor's behalf. Contributions do not include additions to the Program which: (i) are separate modules of software distributed in conjunction with the Program under their own license agreement, and (ii) are not



derivative works of the Program.

"Contributor" means any person or entity that distributes the Program.

"Licensed Patents " mean patent claims licensable by a Contributor which are necessarily infringed by the use or sale of its Contribution alone or when combined with the Program.

"Program" means the Contributions distributed in accordance with this Agreement.

"Recipient" means anyone who receives the Program under this Agreement, including all Contributors.

## 2. GRANT OF RIGHTS

a) Subject to the terms of this Agreement, each Contributor hereby grants Recipient a non-exclusive, worldwide, royalty-free copyright license to reproduce, prepare derivative works of, publicly display, publicly perform, distribute and sublicense the Contribution of such Contributor, if any, and such derivative works, in source code and object code form.

b) Subject to the terms of this Agreement, each Contributor hereby grants Recipient a non-exclusive, worldwide, royalty-free patent license under Licensed Patents to make, use, sell, offer to sell, import and otherwise transfer the Contribution of such Contributor, if any, in source code and object code form. This patent license shall apply to the combination of the Contribution and the Program if, at the time the Contribution is added by the Contributor, such addition of the Contribution causes such combination to be covered by the Licensed Patents. The patent license shall not apply to any other combinations which include the Contribution. No hardware per se is licensed hereunder.

c) Recipient understands that although each Contributor grants the licenses to its Contributions set forth herein, no assurances are provided by any Contributor that the Program does not infringe the patent or other intellectual property rights of any other entity. Each Contributor disclaims any liability to Recipient for claims brought by any other entity based on infringement of intellectual property rights or otherwise. As a condition to exercising the rights and licenses granted hereunder, each Recipient hereby assumes sole responsibility to secure any other intellectual property rights needed, if any. For example, if a third party patent license is required to allow Recipient to distribute the Program, it is Recipient's responsibility to acquire that license before distributing the Program.

d) Each Contributor represents that to its knowledge it has sufficient copyright rights in its Contribution, if any, to grant the copyright license set forth in this Agreement.

## 3. REQUIREMENTS

A Contributor may choose to distribute the Program in object code form under its own license agreement, provided that:

- a) it complies with the terms and conditions of this Agreement; and
- b) its license agreement:
  - i) effectively disclaims on behalf of all Contributors all warranties and conditions, express and implied, including warranties or conditions of title and non-infringement, and implied warranties or conditions of merchantability and fitness for a particular purpose;
  - ii) effectively excludes on behalf of all Contributors all liability for damages, including direct, indirect, special, incidental and consequential damages, such as lost profits;
  - iii) states that any provisions which differ from this Agreement are offered by that Contributor alone and not by any other party; and
  - iv) states that source code for the Program is available from such Contributor, and informs licensees how to obtain it in a reasonable manner on or through a medium customarily used for software exchange.

When the Program is made available in source code form:

- a) it must be made available under this Agreement; and
- b) a copy of this Agreement must be included with each copy of the Program.

Contributors may not remove or alter any copyright notices contained within the Program.

Each Contributor must identify itself as the originator of its Contribution, if any, in a manner that reasonably allows subsequent Recipients to identify the originator of the Contribution.

#### 4. COMMERCIAL DISTRIBUTION

Commercial distributors of software may accept certain responsibilities with respect to end users, business partners and the like. While this license is intended to facilitate the commercial use of the Program, the Contributor who includes the Program in a commercial product offering should do so in a manner which does not create potential liability for other Contributors. Therefore, if a Contributor includes the Program in a commercial product offering, such Contributor ("Commercial Contributor") hereby agrees to defend and indemnify every other Contributor ("Indemnified Contributor") against any losses, damages and costs (collectively "Losses") arising from claims, lawsuits and other legal

actions brought by a third party against the Indemnified Contributor to the extent caused by the acts or omissions of such Commercial Contributor in connection with its distribution of the Program in a commercial product offering. The obligations in this section do not apply to any claims or Losses relating to any actual or alleged intellectual property infringement. In order to qualify, an Indemnified Contributor must: a) promptly notify the Commercial Contributor in writing of such claim, and b) allow the Commercial Contributor to control, and cooperate with the Commercial Contributor in, the defense and any related settlement negotiations. The Indemnified Contributor may participate in any such claim at its own expense.

For example, a Contributor might include the Program in a commercial product offering, Product X. That Contributor is then a Commercial Contributor. If that Commercial Contributor then makes performance claims, or offers warranties related to Product X, those performance claims and warranties are such Commercial Contributor's responsibility alone. Under this section, the Commercial Contributor would have to defend claims against the other Contributors related to those performance claims and warranties, and if a court requires any other Contributor to pay any damages as a result, the Commercial Contributor must pay those damages.

## 5. NO WARRANTY

EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, THE PROGRAM IS PROVIDED ON AN "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, EITHER EXPRESS OR IMPLIED INCLUDING, WITHOUT LIMITATION, ANY WARRANTIES OR CONDITIONS OF TITLE, NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Each Recipient is solely responsible for determining the appropriateness of using and distributing the Program and assumes all risks associated with its exercise of rights under this Agreement, including but not limited to the risks and costs of program errors, compliance with applicable laws, damage to or loss of data, programs or equipment, and unavailability or interruption of operations.

## 6. DISCLAIMER OF LIABILITY

EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, NEITHER RECIPIENT NOR ANY CONTRIBUTORS SHALL HAVE ANY LIABILITY FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING WITHOUT LIMITATION LOST PROFITS), HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OR DISTRIBUTION OF THE PROGRAM OR THE EXERCISE OF ANY RIGHTS GRANTED HEREUNDER, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## 7. GENERAL

If any provision of this Agreement is invalid or unenforceable under applicable law, it shall not affect the validity or enforceability of the remainder of the terms of this Agreement, and without further action by the parties hereto, such

provision shall be reformed to the minimum extent necessary to make such provision valid and enforceable.

If Recipient institutes patent litigation against a Contributor with respect to a patent applicable to software (including a cross-claim or counterclaim in a lawsuit), then any patent licenses granted by that Contributor to such Recipient under this Agreement shall terminate as of the date such litigation is filed. In addition, if Recipient institutes patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Program itself (excluding combinations of the Program with other software or hardware) infringes such Recipient's patent(s), then such Recipient's rights granted under Section 2(b) shall terminate as of the date such litigation is filed.

All Recipient's rights under this Agreement shall terminate if it fails to comply with any of the material terms or conditions of this Agreement and does not cure such failure in a reasonable period of time after becoming aware of such noncompliance. If all Recipient's rights under this Agreement terminate, Recipient agrees to cease use and distribution of the Program as soon as reasonably practicable. However, Recipient's obligations under this Agreement and any licenses granted by Recipient relating to the Program shall continue and survive.

Everyone is permitted to copy and distribute copies of this Agreement, but in order to avoid inconsistency the Agreement is copyrighted and may only be modified in the following manner. The Agreement Steward reserves the right to publish new versions (including revisions) of this Agreement from time to time. No one other than the Agreement Steward has the right to modify this Agreement. IBM is the initial Agreement Steward. IBM may assign the responsibility to serve as the Agreement Steward to a suitable separate entity. Each new version of the Agreement will be given a distinguishing version number. The Program (including Contributions) may always be distributed subject to the version of the Agreement under which it was received. In addition, after a new version of the Agreement is published, Contributor may elect to distribute the Program (including its Contributions) under the new version. Except as expressly stated in Sections 2(a) and 2(b) above, Recipient receives no rights or licenses to the intellectual property of any Contributor under this Agreement, whether expressly, by implication, estoppel or otherwise. All rights in the Program not expressly granted under this Agreement are reserved.

This Agreement is governed by the laws of the State of New York and the intellectual property laws of the United States of America. No party to this Agreement will bring a legal action under this Agreement more than one year after the cause of action arose. Each party waives its rights to a jury trial in any resulting litigation.

Special exception for LZMA compression module

Igor Pavlov and Amir Szekely, the authors of the LZMA compression module for

NSIS, expressly permit you to statically or dynamically link your code (or bind by name) to the files from the LZMA compression module for NSIS without subjecting your linked code to the terms of the Common Public license version 1.0. Any modifications or additions to files from the LZMA compression module for NSIS, however, are subject to the terms of the Common Public License version 1.0.

For the following XML Schemas for Java EE Deployment Descriptors:

- javaee\_5.xsd
- javaee\_web\_services\_1\_2.xsd
- javaee\_web\_services\_client\_1\_2.xsd
- javaee\_6.xsd
- javaee\_web\_services\_1\_3.xsd
- javaee\_web\_services\_client\_1\_3.xsd
- web-app\_3\_0.xsd
- web-common\_3\_0.xsd
- web-fragment\_3\_0.xsd

## COMMON DEVELOPMENT AND DISTRIBUTION LICENSE (CDDL) Version 1.0

### 1. Definitions.

1.1. Contributor. means each individual or entity that creates or contributes to the creation of Modifications.

1.2. Contributor Version. means the combination of the Original Software, prior Modifications used by a Contributor (if any), and the Modifications made by that particular Contributor.

1.3. Covered Software. means (a) the Original Software, or (b) Modifications, or (c) the combination of files containing Original Software with files containing Modifications, in each case including portions thereof.

1.4. Executable. means the Covered Software in any form other than Source Code.

1.5. Initial Developer. means the individual or entity that first makes Original Software available under this License.

1.6. Larger Work. means a work which combines Covered Software or portions thereof with code not governed by the terms of this License.

1.7. License. means this document.

1.8. Licensable. means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently acquired, any and all of the rights conveyed herein.

1.9. Modifications. means the Source Code and Executable form of any of the following:

A. Any file that results from an addition to, deletion from or modification of the contents of a file containing Original Software or previous Modifications;

B. Any new file that contains any part of the Original Software or previous Modification; or

C. Any new file that is contributed or otherwise made available under the terms of this License.

1.10. Original Software. means the Source Code and Executable form of computer software code that is originally released under this License.

1.11. Patent Claims. means any patent claim(s), now owned or hereafter acquired, including without limitation, method, process, and apparatus claims, in any patent Licensable by grantor.

1.12. Source Code. means (a) the common form of computer software code in which modifications are made and (b) associated documentation included in or with such code.

1.13. You. (or .Your.) means an individual or a legal entity exercising rights under, and complying with all of the terms of, this License. For legal entities, .You. includes any entity which controls, is controlled by, or is under common control with You. For purposes of this definition, .control. means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

## 2. License Grants.

### 2.1. The Initial Developer Grant.

Conditioned upon Your compliance with Section 3.1 below and subject to third party intellectual property claims, the Initial Developer hereby grants You a world-wide, royalty-free, non-exclusive license:

(a) under intellectual property rights (other than patent or trademark) Licensable by Initial Developer, to use, reproduce, modify, display, perform, sublicense and distribute the Original Software (or portions thereof), with or without Modifications, and/or as part of a Larger Work; and

- (b) under Patent Claims infringed by the making, using or selling of Original Software, to make, have made, use, practice, sell, and offer for sale, and/or otherwise dispose of the Original Software (or portions thereof).
- (c) The licenses granted in Sections 2.1(a) and (b) are effective on the date Initial Developer first distributes or otherwise makes the Original Software available to a third party under the terms of this License.
- (d) Notwithstanding Section 2.1(b) above, no patent license is granted:
  - (1) for code that You delete from the Original Software, or (2) for infringements caused by: (i) the modification of the Original Software, or (ii) the combination of the Original Software with other software or devices.

## 2.2. Contributor Grant.

Conditioned upon Your compliance with Section 3.1 below and subject to third party intellectual property claims, each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:

- (a) under intellectual property rights (other than patent or trademark) Licensable by Contributor to use, reproduce, modify, display, perform, sublicense and distribute the Modifications created by such Contributor (or portions thereof), either on an unmodified basis, with other Modifications, as Covered Software and/or as part of a Larger Work; and
- (b) under Patent Claims infringed by the making, using, or selling of Modifications made by that Contributor either alone and/or in combination with its Contributor Version (or portions of such combination), to make, use, sell, offer for sale, have made, and/or otherwise dispose of: (1) Modifications made by that Contributor (or portions thereof); and (2) the combination of Modifications made by that Contributor with its Contributor Version (or portions of such combination).
- (c) The licenses granted in Sections 2.2(a) and 2.2(b) are effective on the date Contributor first distributes or otherwise makes the Modifications available to a third party.
- (d) Notwithstanding Section 2.2(b) above, no patent license is granted:
  - (1) for any code that Contributor has deleted from the Contributor Version; (2) for infringements caused by: (i) third party modifications of Contributor Version, or (ii) the combination of Modifications made by that Contributor with other software (except as part of the Contributor Version) or other devices; or (3) under

Patent Claims infringed by Covered Software in the absence of Modifications made by that Contributor.

### 3. Distribution Obligations.

#### 3.1. Availability of Source Code.

Any Covered Software that You distribute or otherwise make available in Executable form must also be made available in Source Code form and that Source Code form must be distributed only under the terms of this License. You must include a copy of this License with every copy of the Source Code form of the Covered Software You distribute or otherwise make available. You must inform recipients of any such Covered Software in Executable form as to how they can obtain such Covered Software in Source Code form in a reasonable manner on or through a medium customarily used for software exchange.

#### 3.2. Modifications.

The Modifications that You create or to which You contribute are governed by the terms of this License. You represent that You believe Your Modifications are Your original creation(s) and/or You have sufficient rights to grant the rights conveyed by this License.

#### 3.3. Required Notices.

You must include a notice in each of Your Modifications that identifies You as the Contributor of the Modification. You may not remove or alter any copyright, patent or trademark notices contained within the Covered Software, or any notices of licensing or any descriptive text giving attribution to any Contributor or the Initial Developer.

#### 3.4. Application of Additional Terms.

You may not offer or impose any terms on any Covered Software in Source Code form that alters or restricts the applicable version of this License or the recipients' rights hereunder. You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Software. However, you may do so only on Your own behalf, and not on behalf of the Initial Developer or any Contributor. You must make it absolutely clear that any such warranty, support, indemnity or liability obligation is offered by You alone, and You hereby agree to indemnify the Initial Developer and every Contributor for any liability incurred by the Initial Developer or such Contributor as a result of warranty, support, indemnity or liability terms You offer.

#### 3.5. Distribution of Executable Versions.

You may distribute the Executable form of the Covered Software under the terms of this License or under the terms of a license of Your choice, which may contain terms different from this License, provided that You are in compliance with the terms of this License and that the license for the Executable form does not attempt to limit or alter the recipient's rights



in the Source Code form from the rights set forth in this License. If You distribute the Covered Software in Executable form under a different license, You must make it absolutely clear that any terms which differ from this License are offered by You alone, not by the Initial Developer or Contributor. You hereby agree to indemnify the Initial Developer and every Contributor for any liability incurred by the Initial Developer or such Contributor as a result of any such terms You offer.

### 3.6. Larger Works.

You may create a Larger Work by combining Covered Software with other code not governed by the terms of this License and distribute the Larger Work as a single product. In such a case, You must make sure the requirements of this License are fulfilled for the Covered Software.

## 4. Versions of the License.

### 4.1. New Versions.

Sun Microsystems, Inc. is the initial license steward and may publish revised and/or new versions of this License from time to time. Each version will be given a distinguishing version number. Except as provided in Section 4.3, no one other than the license steward has the right to modify this License.

### 4.2. Effect of New Versions.

You may always continue to use, distribute or otherwise make the Covered Software available under the terms of the version of the License under which You originally received the Covered Software. If the Initial Developer includes a notice in the Original Software prohibiting it from being distributed or otherwise made available under any subsequent version of the License, You must distribute and make the Covered Software available under the terms of the version of the License under which You originally received the Covered Software. Otherwise, You may also choose to use, distribute or otherwise make the Covered Software available under the terms of any subsequent version of the License published by the license steward.

### 4.3. Modified Versions.

When You are an Initial Developer and You want to create a new license for Your Original Software, You may create and use a modified version of this License if You: (a) rename the license and remove any references to the name of the license steward (except to note that the license differs from this License); and (b) otherwise make it clear that the license contains terms which differ from this License.

## 5. DISCLAIMER OF WARRANTY.

COVERED SOFTWARE IS PROVIDED UNDER THIS LICENSE ON AN .AS IS. BASIS, WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, WITHOUT

LIMITATION, WARRANTIES THAT THE COVERED SOFTWARE IS FREE OF DEFECTS, MERCHANTABILITY, FIT FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE COVERED SOFTWARE IS WITH YOU. SHOULD ANY COVERED SOFTWARE PROVE DEFECTIVE IN ANY RESPECT, YOU (NOT THE INITIAL DEVELOPER OR ANY OTHER CONTRIBUTOR) ASSUME THE COST OF ANY NECESSARY SERVICING, REPAIR OR CORRECTION. THIS DISCLAIMER OF WARRANTY CONSTITUTES AN ESSENTIAL PART OF THIS LICENSE. NO USE OF ANY COVERED SOFTWARE IS AUTHORIZED HEREUNDER EXCEPT UNDER THIS DISCLAIMER.

## 6. TERMINATION.

- 6.1. This License and the rights granted hereunder will terminate automatically if You fail to comply with terms herein and fail to cure such breach within 30 days of becoming aware of the breach. Provisions which, by their nature, must remain in effect beyond the termination of this License shall survive.
- 6.2. If You assert a patent infringement claim (excluding declaratory judgment actions) against Initial Developer or a Contributor (the Initial Developer or Contributor against whom You assert such claim is referred to as .Participant.) alleging that the Participant Software (meaning the Contributor Version where the Participant is a Contributor or the Original Software where the Participant is the Initial Developer) directly or indirectly infringes any patent, then any and all rights granted directly or indirectly to You by such Participant, the Initial Developer (if the Initial Developer is not the Participant) and all Contributors under Sections 2.1 and/or 2.2 of this License shall, upon 60 days notice from Participant terminate prospectively and automatically at the expiration of such 60 day notice period, unless if within such 60 day period You withdraw Your claim with respect to the Participant Software against such Participant either unilaterally or pursuant to a written agreement with Participant.
- 6.3. In the event of termination under Sections 6.1 or 6.2 above, all end user licenses that have been validly granted by You or any distributor hereunder prior to termination (excluding licenses granted to You by any distributor) shall survive termination.

## 7. LIMITATION OF LIABILITY.

UNDER NO CIRCUMSTANCES AND UNDER NO LEGAL THEORY, WHETHER TORT (INCLUDING NEGLIGENCE), CONTRACT, OR OTHERWISE, SHALL YOU, THE INITIAL DEVELOPER, ANY OTHER CONTRIBUTOR, OR ANY DISTRIBUTOR OF COVERED SOFTWARE, OR ANY SUPPLIER OF ANY OF SUCH PARTIES, BE LIABLE TO ANY PERSON FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES OF ANY CHARACTER INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOST PROFITS, LOSS OF GOODWILL, WORK STOPPAGE, COMPUTER FAILURE OR MALFUNCTION, OR ANY AND ALL OTHER COMMERCIAL DAMAGES OR

LOSSES, EVEN IF SUCH PARTY SHALL HAVE BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. THIS LIMITATION OF LIABILITY SHALL NOT APPLY TO LIABILITY FOR DEATH OR PERSONAL INJURY RESULTING FROM SUCH PARTY'S NEGLIGENCE TO THE EXTENT APPLICABLE LAW PROHIBITS SUCH LIMITATION. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THIS EXCLUSION AND LIMITATION MAY NOT APPLY TO YOU.

#### 8. U.S. GOVERNMENT END USERS.

The Covered Software is a .commercial item,. as that term is defined in 48 C.F.R. 2.101 (Oct. 1995), consisting of .commercial computer software. (as that term is defined at 48 C.F.R. ? 252.227-7014(a)(1)) and commercial computer software documentation. as such terms are used in 48 C.F.R. 12.212 (Sept. 1995). Consistent with 48 C.F.R. 12.212 and 48 C.F.R. 227.7202-1 through 227.7202-4 (June 1995), all U.S. Government End Users acquire Covered Software with only those rights set forth herein. This U.S. Government Rights clause is in lieu of, and supersedes, any other FAR, DFAR, or other clause or provision that addresses Government rights in computer software under this License.

#### 9. MISCELLANEOUS.

This License represents the complete agreement concerning subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable. This License shall be governed by the law of the jurisdiction specified in a notice contained within the Original Software (except to the extent applicable law, if any, provides otherwise), excluding such jurisdiction's conflict-of-law provisions. Any litigation relating to this License shall be subject to the jurisdiction of the courts located in the jurisdiction and venue specified in a notice contained within the Original Software, with the losing party responsible for costs, including, without limitation, court costs and reasonable attorneys. fees and expenses. The application of the United Nations Convention on Contracts for the International Sale of Goods is expressly excluded. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not apply to this License. You agree that You alone are responsible for compliance with the United States export administration regulations (and the export control laws and regulation of any other countries) when You use, distribute or otherwise make available any Covered Software.

#### 10. RESPONSIBILITY FOR CLAIMS.

As between Initial Developer and the Contributors, each party is responsible for claims and damages arising, directly or indirectly, out of its utilization of rights under this License and You agree to work with Initial Developer and Contributors to distribute such responsibility on an equitable

basis. Nothing herein is intended or shall be deemed to constitute any admission of liability.

## NOTICE PURSUANT TO SECTION 9 OF THE COMMON DEVELOPMENT AND DISTRIBUTION LICENSE (CDDL)

The code released under the CDDL shall be governed by the laws of the State of California (excluding conflict-of-law provisions). Any litigation relating to this License shall be subject to the jurisdiction of the Federal Courts of the Northern District of California and the state courts of the State of California, with venue lying in Santa Clara County, California.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a

copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct

or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of

this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following

boilerplate notice, with the fields enclosed by brackets "[ ]"  
replaced with your own identifying information. (Don't include  
the brackets!) The text should be enclosed in the appropriate  
comment syntax for the file format. We also recommend that a  
file or class name and description of purpose be included on the  
same "printed page" as the copyright notice for easier  
identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

#### APACHE TOMCAT SUBCOMPONENTS:

Apache Tomcat includes a number of subcomponents with separate copyright notices  
and license terms. Your use of these subcomponents is subject to the terms and  
conditions of the following licenses.

For the following XML Schemas for Java EE Deployment Descriptors:

- javaee\_5.xsd
- javaee\_web\_services\_1\_2.xsd
- javaee\_web\_services\_client\_1\_2.xsd
- javaee\_6.xsd
- javaee\_web\_services\_1\_3.xsd
- javaee\_web\_services\_client\_1\_3.xsd
- jsp\_2\_2.xsd
- web-app\_3\_0.xsd
- web-common\_3\_0.xsd
- web-fragment\_3\_0.xsd
- javaee\_7.xsd
- javaee\_web\_services\_1\_4.xsd
- javaee\_web\_services\_client\_1\_4.xsd
- jsp\_2\_3.xsd
- web-app\_3\_1.xsd
- web-common\_3\_1.xsd



COMMON DEVELOPMENT AND DISTRIBUTION LICENSE (CDDL) Version 1.0

1. Definitions.

1.1. Contributor. means each individual or entity that creates or contributes to the creation of Modifications.

1.2. Contributor Version. means the combination of the Original Software, prior Modifications used by a Contributor (if any), and the Modifications made by that particular Contributor.

1.3. Covered Software. means (a) the Original Software, or (b) Modifications, or (c) the combination of files containing Original Software with files containing Modifications, in each case including portions thereof.

1.4. Executable. means the Covered Software in any form other than Source Code.

1.5. Initial Developer. means the individual or entity that first makes Original Software available under this License.

1.6. Larger Work. means a work which combines Covered Software or portions thereof with code not governed by the terms of this License.

1.7. License. means this document.

1.8. Licensable. means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently acquired, any and all of the rights conveyed herein.

1.9. Modifications. means the Source Code and Executable form of any of the following:

A. Any file that results from an addition to, deletion from or modification of the contents of a file containing Original Software or previous Modifications;

B. Any new file that contains any part of the Original Software or previous Modification; or

C. Any new file that is contributed or otherwise made available under the terms of this License.

1.10. Original Software. means the Source Code and Executable form of computer software code that is originally released under this License.

- 1.11. Patent Claims. means any patent claim(s), now owned or hereafter acquired, including without limitation, method, process, and apparatus claims, in any patent Licensable by grantor.
- 1.12. Source Code. means (a) the common form of computer software code in which modifications are made and (b) associated documentation included in or with such code.
- 1.13. You. (or .Your.) means an individual or a legal entity exercising rights under, and complying with all of the terms of, this License. For legal entities, .You. includes any entity which controls, is controlled by, or is under common control with You. For purposes of this definition, .control. means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

## 2. License Grants.

### 2.1. The Initial Developer Grant.

Conditioned upon Your compliance with Section 3.1 below and subject to third party intellectual property claims, the Initial Developer hereby grants You a world-wide, royalty-free, non-exclusive license:

- (a) under intellectual property rights (other than patent or trademark) Licensable by Initial Developer, to use, reproduce, modify, display, perform, sublicense and distribute the Original Software (or portions thereof), with or without Modifications, and/or as part of a Larger Work; and
- (b) under Patent Claims infringed by the making, using or selling of Original Software, to make, have made, use, practice, sell, and offer for sale, and/or otherwise dispose of the Original Software (or portions thereof).
- (c) The licenses granted in Sections 2.1(a) and (b) are effective on the date Initial Developer first distributes or otherwise makes the Original Software available to a third party under the terms of this License.
- (d) Notwithstanding Section 2.1(b) above, no patent license is granted:
  - (1) for code that You delete from the Original Software, or
  - (2) for infringements caused by: (i) the modification of the Original Software, or (ii) the combination of the Original Software with other software or devices.

### 2.2. Contributor Grant.

Conditioned upon Your compliance with Section 3.1 below and subject to third party intellectual property claims, each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:

- (a) under intellectual property rights (other than patent or trademark)  
Licensable by Contributor to use, reproduce, modify, display, perform, sublicense and distribute the Modifications created by such Contributor (or portions thereof), either on an unmodified basis, with other Modifications, as Covered Software and/or as part of a Larger Work; and
- (b) under Patent Claims infringed by the making, using, or selling of Modifications made by that Contributor either alone and/or in combination with its Contributor Version (or portions of such combination), to make, use, sell, offer for sale, have made, and/or otherwise dispose of: (1) Modifications made by that Contributor (or portions thereof); and (2) the combination of Modifications made by that Contributor with its Contributor Version (or portions of such combination).
- (c) The licenses granted in Sections 2.2(a) and 2.2(b) are effective on the date Contributor first distributes or otherwise makes the Modifications available to a third party.
- (d) Notwithstanding Section 2.2(b) above, no patent license is granted:  
(1) for any code that Contributor has deleted from the Contributor Version; (2) for infringements caused by: (i) third party modifications of Contributor Version, or (ii) the combination of Modifications made by that Contributor with other software (except as part of the Contributor Version) or other devices; or (3) under Patent Claims infringed by Covered Software in the absence of Modifications made by that Contributor.

### 3. Distribution Obligations.

#### 3.1. Availability of Source Code.

Any Covered Software that You distribute or otherwise make available in Executable form must also be made available in Source Code form and that Source Code form must be distributed only under the terms of this License. You must include a copy of this License with every copy of the Source Code form of the Covered Software You distribute or otherwise make available. You must inform recipients of any such Covered Software in Executable form as to how they can obtain such Covered Software in Source Code form in a reasonable manner on or through a medium customarily used for software exchange.

#### 3.2. Modifications.

The Modifications that You create or to which You contribute are governed by the terms of this License. You represent that You believe Your Modifications are Your original creation(s) and/or You have sufficient rights to grant the rights conveyed by this License.

### 3.3. Required Notices.

You must include a notice in each of Your Modifications that identifies You as the Contributor of the Modification. You may not remove or alter any copyright, patent or trademark notices contained within the Covered Software, or any notices of licensing or any descriptive text giving attribution to any Contributor or the Initial Developer.

### 3.4. Application of Additional Terms.

You may not offer or impose any terms on any Covered Software in Source Code form that alters or restricts the applicable version of this License or the recipients' rights hereunder. You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Software. However, you may do so only on Your own behalf, and not on behalf of the Initial Developer or any Contributor. You must make it absolutely clear that any such warranty, support, indemnity or liability obligation is offered by You alone, and You hereby agree to indemnify the Initial Developer and every Contributor for any liability incurred by the Initial Developer or such Contributor as a result of warranty, support, indemnity or liability terms You offer.

### 3.5. Distribution of Executable Versions.

You may distribute the Executable form of the Covered Software under the terms of this License or under the terms of a license of Your choice, which may contain terms different from this License, provided that You are in compliance with the terms of this License and that the license for the Executable form does not attempt to limit or alter the recipient's rights in the Source Code form from the rights set forth in this License. If You distribute the Covered Software in Executable form under a different license, You must make it absolutely clear that any terms which differ from this License are offered by You alone, not by the Initial Developer or Contributor. You hereby agree to indemnify the Initial Developer and every Contributor for any liability incurred by the Initial Developer or such Contributor as a result of any such terms You offer.

### 3.6. Larger Works.

You may create a Larger Work by combining Covered Software with other code not governed by the terms of this License and distribute the Larger Work as a single product. In such a case, You must make sure the requirements of this License are fulfilled for the Covered Software.

## 4. Versions of the License.

### 4.1. New Versions.

Sun Microsystems, Inc. is the initial license steward and may publish revised and/or new versions of this License from time to time. Each version will be given a distinguishing version number. Except as provided in Section 4.3, no one other than the license steward has the right to modify this License.

#### 4.2. Effect of New Versions.

You may always continue to use, distribute or otherwise make the Covered Software available under the terms of the version of the License under which You originally received the Covered Software. If the Initial Developer includes a notice in the Original Software prohibiting it from being distributed or otherwise made available under any subsequent version of the License, You must distribute and make the Covered Software available under the terms of the version of the License under which You originally received the Covered Software. Otherwise, You may also choose to use, distribute or otherwise make the Covered Software available under the terms of any subsequent version of the License published by the license steward.

#### 4.3. Modified Versions.

When You are an Initial Developer and You want to create a new license for Your Original Software, You may create and use a modified version of this License if You: (a) rename the license and remove any references to the name of the license steward (except to note that the license differs from this License); and (b) otherwise make it clear that the license contains terms which differ from this License.

### 5. DISCLAIMER OF WARRANTY.

COVERED SOFTWARE IS PROVIDED UNDER THIS LICENSE ON AN .AS IS. BASIS, WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTIES THAT THE COVERED SOFTWARE IS FREE OF DEFECTS, MERCHANTABILITY, FIT FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE COVERED SOFTWARE IS WITH YOU. SHOULD ANY COVERED SOFTWARE PROVE DEFECTIVE IN ANY RESPECT, YOU (NOT THE INITIAL DEVELOPER OR ANY OTHER CONTRIBUTOR) ASSUME THE COST OF ANY NECESSARY SERVICING, REPAIR OR CORRECTION. THIS DISCLAIMER OF WARRANTY CONSTITUTES AN ESSENTIAL PART OF THIS LICENSE. NO USE OF ANY COVERED SOFTWARE IS AUTHORIZED HEREUNDER EXCEPT UNDER THIS DISCLAIMER.

### 6. TERMINATION.

6.1. This License and the rights granted hereunder will terminate automatically if You fail to comply with terms herein and fail to cure such breach within 30 days of becoming aware of the breach. Provisions which, by their nature, must remain in effect beyond the termination of this License shall survive.

6.2. If You assert a patent infringement claim (excluding declaratory judgment actions) against Initial Developer or a Contributor (the Initial Developer or Contributor against whom You assert such claim is referred to as .Participant.) alleging that the Participant Software (meaning the Contributor Version where the Participant is a Contributor or the Original Software where the Participant is the Initial Developer) directly or indirectly infringes any patent, then any and all rights granted directly or indirectly to You by such Participant, the Initial Developer (if the Initial Developer is not the Participant) and all Contributors under Sections 2.1 and/or 2.2 of this License shall, upon 60 days notice from Participant terminate prospectively and automatically at the expiration of such 60 day notice period, unless if within such 60 day period You withdraw Your claim with respect to the Participant Software against such Participant either unilaterally or pursuant to a written agreement with Participant.

6.3. In the event of termination under Sections 6.1 or 6.2 above, all end user licenses that have been validly granted by You or any distributor hereunder prior to termination (excluding licenses granted to You by any distributor) shall survive termination.

## 7. LIMITATION OF LIABILITY.

UNDER NO CIRCUMSTANCES AND UNDER NO LEGAL THEORY, WHETHER TORT (INCLUDING NEGLIGENCE), CONTRACT, OR OTHERWISE, SHALL YOU, THE INITIAL DEVELOPER, ANY OTHER CONTRIBUTOR, OR ANY DISTRIBUTOR OF COVERED SOFTWARE, OR ANY SUPPLIER OF ANY OF SUCH PARTIES, BE LIABLE TO ANY PERSON FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES OF ANY CHARACTER INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOST PROFITS, LOSS OF GOODWILL, WORK STOPPAGE, COMPUTER FAILURE OR MALFUNCTION, OR ANY AND ALL OTHER COMMERCIAL DAMAGES OR LOSSES, EVEN IF SUCH PARTY SHALL HAVE BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. THIS LIMITATION OF LIABILITY SHALL NOT APPLY TO LIABILITY FOR DEATH OR PERSONAL INJURY RESULTING FROM SUCH PARTY'S NEGLIGENCE TO THE EXTENT APPLICABLE LAW PROHIBITS SUCH LIMITATION. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THIS EXCLUSION AND LIMITATION MAY NOT APPLY TO YOU.

## 8. U.S. GOVERNMENT END USERS.

The Covered Software is a .commercial item., as that term is defined in 48 C.F.R. 2.101 (Oct. 1995), consisting of .commercial computer software. (as that term is defined at 48 C.F.R. ? 252.227-7014(a)(1)) and commercial computer software documentation. as such terms are used in 48 C.F.R. 12.212 (Sept. 1995). Consistent with 48 C.F.R. 12.212 and 48 C.F.R. 227.7202-1 through 227.7202-4 (June 1995), all U.S. Government End Users acquire Covered Software with only those rights set forth herein. This U.S. Government Rights clause is in lieu of, and supersedes, any other FAR, DFAR, or other clause or

provision that addresses Government rights in computer software under this License.

## 9. MISCELLANEOUS.

This License represents the complete agreement concerning subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable. This License shall be governed by the law of the jurisdiction specified in a notice contained within the Original Software (except to the extent applicable law, if any, provides otherwise), excluding such jurisdiction's conflict-of-law provisions. Any litigation relating to this License shall be subject to the jurisdiction of the courts located in the jurisdiction and venue specified in a notice contained within the Original Software, with the losing party responsible for costs, including, without limitation, court costs and reasonable attorneys' fees and expenses. The application of the United Nations Convention on Contracts for the International Sale of Goods is expressly excluded. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not apply to this License. You agree that You alone are responsible for compliance with the United States export administration regulations (and the export control laws and regulation of any other countries) when You use, distribute or otherwise make available any Covered Software.

## 10. RESPONSIBILITY FOR CLAIMS.

As between Initial Developer and the Contributors, each party is responsible for claims and damages arising, directly or indirectly, out of its utilization of rights under this License and You agree to work with Initial Developer and Contributors to distribute such responsibility on an equitable basis. Nothing herein is intended or shall be deemed to constitute any admission of liability.

## NOTICE PURSUANT TO SECTION 9 OF THE COMMON DEVELOPMENT AND DISTRIBUTION LICENSE (CDDL)

The code released under the CDDL shall be governed by the laws of the State of California (excluding conflict-of-law provisions). Any litigation relating to this License shall be subject to the jurisdiction of the Federal Courts of the Northern District of California and the state courts of the State of California, with venue lying in Santa Clara County, California.

Apache Tomcat

Copyright 1999-@YEAR@ The Apache Software Foundation

This product includes software developed at  
The Apache Software Foundation (<http://www.apache.org/>).

Apache Tomcat JDBC Pool  
Copyright 2008-2022 The Apache Software Foundation

This product includes software developed at  
The Apache Software Foundation (<http://www.apache.org/>).

Apache Standard Taglib Specification API  
Copyright 2001-2015 The Apache Software Foundation

This product includes software developed at  
The Apache Software Foundation (<http://www.apache.org/>).

Apache Standard Taglib Implementation  
Copyright 2001-2015 The Apache Software Foundation

This product includes software developed at  
The Apache Software Foundation (<http://www.apache.org/>).

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but



not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their

Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with

the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.  
Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Apache Tomcat

Copyright 1999-@YEAR@ The Apache Software Foundation

This product includes software developed at  
The Apache Software Foundation (<http://www.apache.org/>).

The original XML Schemas for Java EE Deployment Descriptors:

- javaee\_5.xsd
- javaee\_web\_services\_1\_2.xsd
- javaee\_web\_services\_client\_1\_2.xsd
- javaee\_6.xsd
- javaee\_web\_services\_1\_3.xsd
- javaee\_web\_services\_client\_1\_3.xsd
- jsp\_2\_2.xsd
- web-app\_3\_0.xsd
- web-common\_3\_0.xsd
- web-fragment\_3\_0.xsd
- javaee\_7.xsd
- javaee\_web\_services\_1\_4.xsd
- javaee\_web\_services\_client\_1\_4.xsd
- jsp\_2\_3.xsd
- web-app\_3\_1.xsd

- web-common\_3\_1.xsd
- web-fragment\_3\_1.xsd

may be obtained from:

<http://www.oracle.com/webfolder/technetwork/jsc/xml/ns/javaee/index.html>

Apache Tomcat

Copyright 1999-2022 The Apache Software Foundation

This product includes software developed at  
The Apache Software Foundation (<https://www.apache.org/>).

This software contains code derived from netty-native  
developed by the Netty project  
(<https://netty.io>, <https://github.com/netty/netty-tcnative/>)  
and from finagle-native developed at Twitter  
(<https://github.com/twitter/finagle>).

The Windows Installer is built with the Nullsoft  
Scriptable Install System (NSIS), which is  
open source software. The original software and  
related information is available at  
<http://nsis.sourceforge.net>.

Java compilation software for JSP pages is provided by the Eclipse  
JDT Core Batch Compiler component, which is open source software.  
The original software and related information is available at  
<https://www.eclipse.org/jdt/core/>.

For portions of the Tomcat JNI OpenSSL API and the OpenSSL JSSE integration  
The org.apache.tomcat.jni and the org.apache.tomcat.net.openssl packages  
are derivative work originating from the Netty project and the finagle-native  
project developed at Twitter

\* Copyright 2014 The Netty Project

\* Copyright 2014 Twitter

The original XML Schemas for Java EE Deployment Descriptors:

- javaee\_5.xsd
- javaee\_web\_services\_1\_2.xsd
- javaee\_web\_services\_client\_1\_2.xsd
- javaee\_6.xsd
- javaee\_web\_services\_1\_3.xsd
- javaee\_web\_services\_client\_1\_3.xsd
- jsp\_2\_2.xsd
- web-app\_3\_0.xsd
- web-common\_3\_0.xsd
- web-fragment\_3\_0.xsd
- javaee\_7.xsd
- javaee\_web\_services\_1\_4.xsd

- javaee\_web\_services\_client\_1\_4.xsd
- jsp\_2\_3.xsd
- web-app\_3\_1.xsd
- web-common\_3\_1.xsd
- web-fragment\_3\_1.xsd

may be obtained from:

<http://www.oracle.com/webfolder/technetwork/jsc/xml/ns/javaee/index.html>

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed



with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate

comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

## 1.80 cxf-rt-ws-policy 3.4.5

### 1.80.1 Available under license :

Apache CXF  
Copyright 2006-2021 The Apache Software Foundation

This product includes software developed at  
The Apache Software Foundation (<http://www.apache.org/>).

This product includes software Copyright University of Southampton IT Innovation Centre, 2009  
(<http://www.it-innovation.soton.ac.uk>).

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

##### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not

pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special,

incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

# 1.81 libcap 2.48-2.el8

## 1.81.1 Available under license :

Unless otherwise \*explicitly\* stated the following text describes the licensed conditions under which the contents of this module release may be distributed:

-----  
Redistribution and use in source and binary forms of this module, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain any existing copyright notice, and this entire permission notice in its entirety, including the disclaimer of warranties.
2. Redistributions in binary form must reproduce all prior and current copyright notices, this list of conditions, and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of any author may not be used to endorse or promote products derived from this software without their specific prior written permission.

ALTERNATIVELY, this product may be distributed under the terms of the GNU Library General Public License, in which case the provisions of the GNU LGPL are required INSTEAD OF the above restrictions. (This clause is necessary due to a potential conflict between the GNU LGPL and the restrictions contained in a BSD-style copyright.)

THIS SOFTWARE IS PROVIDED ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR(S) BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

-----  
Unless otherwise \*explicitly\* stated, the following text describes the licensed conditions under which the contents of this libcap/psx release may be used and distributed:

-----  
Redistribution and use in source and binary forms of libcap/psx, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain any existing copyright notice, and this entire permission notice in its entirety, including the disclaimer of warranties.
2. Redistributions in binary form must reproduce all prior and current copyright notices, this list of conditions, and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of any author may not be used to endorse or promote products derived from this software without their specific prior written permission.

ALTERNATIVELY, this product may be distributed under the terms of the GNU General Public License (v2.0 - see below), in which case the provisions of the GNU GPL are required INSTEAD OF the above restrictions. (This clause is necessary due to a potential conflict between the GNU GPL and the restrictions contained in a BSD-style copyright.)

THIS SOFTWARE IS PROVIDED ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR(S) BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

-----  
Full text of gpl-2.0.txt:  
-----

GNU GENERAL PUBLIC LICENSE  
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies



of this license document, but changing it is not allowed.

## Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE  
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is

allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues),

conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of

this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands ``show w'` and ``show c'` should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than ``show w'` and ``show c'`; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

Unless otherwise *explicitly* stated, the following text describes the licensed conditions under which the contents of this libcap/cap release may be used and distributed:

-----  
Redistribution and use in source and binary forms of libcap/cap, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain any existing copyright notice, and this entire permission notice in its entirety, including the disclaimer of warranties.
2. Redistributions in binary form must reproduce all prior and current copyright notices, this list of conditions, and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of any author may not be used to endorse or promote products derived from this software without their specific prior written permission.

ALTERNATIVELY, this product may be distributed under the terms of the GNU General Public License (v2.0 - see below), in which case the provisions of the GNU GPL are required INSTEAD OF the above restrictions. (This clause is necessary due to a potential conflict between the GNU GPL and the restrictions contained in a BSD-style copyright.)

THIS SOFTWARE IS PROVIDED ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR(S) BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

-----  
Full text of gpl-2.0.txt:  
-----

GNU GENERAL PUBLIC LICENSE  
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA



Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

## Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any

patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE  
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer

to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent

infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free

Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

Unless otherwise \*explicitly\* stated, the following text describes the licensed conditions under which the contents of this libcap release

may be used and distributed:

-----  
Redistribution and use in source and binary forms of libcap, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain any existing copyright notice, and this entire permission notice in its entirety, including the disclaimer of warranties.
2. Redistributions in binary form must reproduce all prior and current copyright notices, this list of conditions, and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of any author may not be used to endorse or promote products derived from this software without their specific prior written permission.

ALTERNATIVELY, this product may be distributed under the terms of the GNU General Public License (v2.0 - see below), in which case the provisions of the GNU GPL are required INSTEAD OF the above restrictions. (This clause is necessary due to a potential conflict between the GNU GPL and the restrictions contained in a BSD-style copyright.)

THIS SOFTWARE IS PROVIDED ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR(S) BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

-----  
Full text of gpl-2.0.txt:  
-----

GNU GENERAL PUBLIC LICENSE  
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,



51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the

program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE  
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third

parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions

either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

# 1.82 classgraph 4.8.83

## 1.82.1 Available under license :

The MIT License (MIT)

Copyright (c) 2019 Luke Hutchison

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

# 1.83 accessors-smart 2.3.1

## 1.83.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2011 JSON-SMART authors
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```



Found in path(s):

```
* /opt/cola/permits/1199730696_1630568609.39/0/accessors-smart-2-3-1-sources-
jar/net/minidev/asm/DynamicClassLoader.java
* /opt/cola/permits/1199730696_1630568609.39/0/accessors-smart-2-3-1-sources-
jar/net/minidev/asm/ASMUtil.java
* /opt/cola/permits/1199730696_1630568609.39/0/accessors-smart-2-3-1-sources-
jar/net/minidev/asm/BeansAccess.java
* /opt/cola/permits/1199730696_1630568609.39/0/accessors-smart-2-3-1-sources-
jar/net/minidev/asm/Accessor.java
```

## 1.84 libtirpc 1.1.4-6.el8

### 1.84.1 Available under license :

```
/*
* Copyright (c) Copyright (c) Bull S.A. 2005 All Rights Reserved.
* Redistribution and use in source and binary forms, with or without
* modification, are permitted provided that the following conditions
* are met:
* 1. Redistributions of source code must retain the above copyright
* notice, this list of conditions and the following disclaimer.
* 2. Redistributions in binary form must reproduce the above copyright
* notice, this list of conditions and the following disclaimer in the
* documentation and/or other materials provided with the distribution.
* 3. The name of the author may not be used to endorse or promote products
* derived from this software without specific prior written permission.
*
* THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR
* IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES
* OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED.
* IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT,
* INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT
* NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
* DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
* THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
* (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF
* THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
*/
```

## 1.85 protobuf-java 2.4.1

### 1.85.1 Available under license :

Copyright 2008, Google Inc.  
All rights reserved.

Redistribution and use in source and binary forms, with or without

modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Code generated by the Protocol Buffer compiler is owned by the owner of the input file used when generating it. This code is not standalone and requires a support library to be linked with it. This support library is itself covered by the above license.

Copyright 2008, Google Inc.

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT

LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## 1.86 mapstruct 1.3.1.Final

### 1.86.1 Available under license :

Copyright MapStruct Authors.

Licensed under the Apache License version 2.0, available at <http://www.apache.org/licenses/LICENSE-2.0>

Contributors

=====

Alexandr Shalugin - <https://github.com/shalugin>  
Andreas Gudian - <https://github.com/agudian>  
Andres Jose Sebastian Rincon Gonzalez - <https://github.com/stianrincon>  
Arne Seime - <https://github.com/seime>  
Christian Bandowski - <https://github.com/chris922>  
Christian Schuster - <https://github.com/chschu>  
Christophe Labouisse - <https://github.com/ggtools>  
Ciaran Liedeman - <https://github.com/cliedeman>  
Cindy Wang - <https://github.com/birdfriend>  
Cornelius Dirmeier - <https://github.com/cornzy>  
David Feinblum - <https://github.com/dvfeinblum>  
Darren Rambaud - <https://github.com/xyzst>  
Dilip Krishnan - <https://github.com/dilipkrish>  
Dmytro Polovinkin - <https://github.com/navpil>  
Eric Martineau - <https://github.com/ericmartineau>  
Ewald Volkert - <https://github.com/eforest>  
Filip Hrisafov - <https://github.com/filiphhr>  
Florian Tavares - <https://github.com/neoXfire>  
Gervais Blaise - <https://github.com/gervaisb>  
Gunnar Morling - <https://github.com/gunnarmorling>  
Ivo Smid - <https://github.com/bedla>  
Jeff Smyth - <https://github.com/smythie86>  
Jonathan Kraska - <https://github.com/jakraska>  
Joshua Spoorri - <https://github.com/spoorri>  
Kevin Grneberg - <https://github.com/kevcodez>  
Michael Pardo - <https://github.com/pardom>  
Mustafa Caylak - <https://github.com/luxmeter>  
Oliver Ehrenmiller - <https://github.com/greuelpirat>

Paul Strugnell - <https://github.com/ps-powa>  
Pascal Grn - <https://github.com/pascalgn>  
Pavel Makhov - <https://github.com/streetturtle>  
Peter Larson - <https://github.com/pjlaron>  
Remko Plantenga - <https://github.com/sonata82>  
Remo Meier - <https://github.com/remmeier>  
Richard Lea - <https://github.com/chigix>  
Saheb Preet Singh - <https://github.com/sahebpreet>  
Samuel Wright - <https://github.com/samwright>  
Sebastian Haberey - <https://github.com/sebastianhaberey>  
Sebastian Hasait - <https://github.com/shasait>  
Sean Huang - <https://github.com/seanjob>  
Sjaak Derksen - <https://github.com/sjaakd>  
Stefan May - <https://github.com/osthus-sm>  
Taras Mychaskiw - <https://github.com/twenty lemon>  
Tillmann Gaida - <https://github.com/Tillerino>  
Timo Eckhardt - <https://github.com/timoe>  
Tomek Gubala - <https://github.com/vgtworld>  
Vincent Alexander Beelte - <https://github.com/grandmasterpixel>  
Copyright MapStruct Authors.

MapStruct is licensed under the Apache License version 2.0, available at <http://www.apache.org/licenses/LICENSE-2.0>

---

#### MAPSTRUCT SUBCOMPONENTS WITH DIFFERENT COPYRIGHT OWNERS

The MapStruct distribution (ZIP, TAR.GZ) as well as the MapStruct library (JAR) include FreeMarker, a software developed by Attila Szegedi, Daniel Dekany and Jonathan Revusky. FreeMarker is licensed under the same license as MapStruct itself - Apache License, Version 2.0 - but the copyright owners are the aforementioned individuals.

The MapStruct distribution (ZIP, TAR.GZ) as well as the MapStruct library (JAR) include a number of files that are licensed by the Apache Software Foundation under the same license as MapStruct itself - Apache License, Version 2.0 - but the copyright owner is the Apache Software Foundation. These files are:

- freemarker/ext/jsp/web-app\_2\_2.dtd
- freemarker/ext/jsp/web-app\_2\_3.dtd
- freemarker/ext/jsp/web-app\_2\_4.xsd
- freemarker/ext/jsp/web-app\_2\_5.xsd
- freemarker/ext/jsp/web-jsptaglibrary\_1\_1.dtd
- freemarker/ext/jsp/web-jsptaglibrary\_1\_2.dtd
- freemarker/ext/jsp/web-jsptaglibrary\_2\_0.xsd
- freemarker/ext/jsp/web-jsptaglibrary\_2\_1.xsd

# 1.87 cxf-rt-ws-addr 3.4.5

## 1.87.1 Available under license :

Apache CXF  
Copyright 2006-2021 The Apache Software Foundation

This product includes software developed at  
The Apache Software Foundation (<http://www.apache.org/>).

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a

copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct

or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of

this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following



boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

## 1.88 python 3.6.8-47.el8\_6

### 1.88.1 Available under license :

Copyright (c) 2002 Jorge Acereda <jacereda@users.sourceforge.net> &  
Peter O'Gorman <ogorman@users.sourceforge.net>

Portions may be copyright others, see the AUTHORS file included with this distribution.

Maintained by Peter O'Gorman <ogorman@users.sourceforge.net>

Bug Reports and other queries should go to <ogorman@users.sourceforge.net>

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Additional Conditions for this Windows binary build

-----

This program is linked with and uses Microsoft Distributable Code, copyrighted by Microsoft Corporation. The Microsoft Distributable Code is embedded in each .exe, .dll and .pyd file as a result of running the code through a linker.

If you further distribute programs that include the Microsoft Distributable Code, you must comply with the restrictions on distribution specified by Microsoft. In particular, you must require distributors and external end users to agree to terms that protect the Microsoft Distributable Code at least as much as Microsoft's own requirements for the Distributable Code. See Microsoft's documentation (included in its developer tools and on its website at [microsoft.com](http://microsoft.com)) for specific details.

Redistribution of the Windows binary build of the Python interpreter complies with this agreement, provided that you do not:

- alter any copyright, trademark or patent notice in Microsoft's Distributable Code;
- use Microsoft's trademarks in your programs' names or in a way that suggests your programs come from or are endorsed by Microsoft;
- distribute Microsoft's Distributable Code to run on a platform other than Microsoft operating systems, run-time technologies or application platforms; or
- include Microsoft Distributable Code in malicious, deceptive or unlawful programs.

These restrictions apply only to the Microsoft Distributable Code as defined above, not to Python itself or any programs running on the Python interpreter. The redistribution of the Python interpreter and libraries is governed by the Python Software License included with this file, or by other licenses as marked.

libffi - Copyright (c) 1996-2014 Anthony Green, Red Hat, Inc and others.  
See source files for details.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

X Window System License - X11R6.4

Copyright (c) 1998 The Open Group

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE OPEN GROUP BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Except as contained in this notice, the name of The Open Group shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization from The Open Group.

X Window System is a trademark of The Open Group  
libffi - Copyright (c) 1996-2003 Red Hat, Inc.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL CYGNUS SOLUTIONS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

#### A. HISTORY OF THE SOFTWARE

=====

Python was created in the early 1990s by Guido van Rossum at Stichting Mathematisch Centrum (CWI, see <http://www.cwi.nl>) in the Netherlands as a successor of a language called ABC. Guido remains Python's principal author, although it includes many contributions from others.

In 1995, Guido continued his work on Python at the Corporation for National Research Initiatives (CNRI, see <http://www.cnri.reston.va.us>) in Reston, Virginia where he released several versions of the software.

In May 2000, Guido and the Python core development team moved to BeOpen.com to form the BeOpen PythonLabs team. In October of the same year, the PythonLabs team moved to Digital Creations, which became Zope Corporation. In 2001, the Python Software Foundation (PSF, see <https://www.python.org/psf/>) was formed, a non-profit organization created specifically to own Python-related Intellectual Property. Zope Corporation was a sponsoring member of the PSF.

All Python releases are Open Source (see <http://www.opensource.org> for the Open Source Definition). Historically, most, but not all, Python releases have also been GPL-compatible; the table below summarizes the various releases.

| Release        | Derived from | Year      | Owner      | GPL-compatible? (1) |
|----------------|--------------|-----------|------------|---------------------|
| 0.9.0 thru 1.2 |              | 1991-1995 | CWI        | yes                 |
| 1.3 thru 1.5.2 | 1.2          | 1995-1999 | CNRI       | yes                 |
| 1.6            | 1.5.2        | 2000      | CNRI       | no                  |
| 2.0            | 1.6          | 2000      | BeOpen.com | no                  |
| 1.6.1          | 1.6          | 2001      | CNRI       | yes (2)             |
| 2.1            | 2.0+1.6.1    | 2001      | PSF        | no                  |
| 2.0.1          | 2.0+1.6.1    | 2001      | PSF        | yes                 |
| 2.1.1          | 2.1+2.0.1    | 2001      | PSF        | yes                 |
| 2.1.2          | 2.1.1        | 2002      | PSF        | yes                 |
| 2.1.3          | 2.1.2        | 2002      | PSF        | yes                 |
| 2.2 and above  | 2.1.1        | 2001-now  | PSF        | yes                 |

Footnotes:

(1) GPL-compatible doesn't mean that we're distributing Python under the GPL. All Python licenses, unlike the GPL, let you distribute a modified version without making your changes open source. The GPL-compatible licenses make it possible to combine Python with other software that is released under the GPL; the others don't.

(2) According to Richard Stallman, 1.6.1 is not GPL-compatible, because its license has a choice of law clause. According to CNRI, however, Stallman's lawyer has told CNRI's lawyer that 1.6.1 is "not incompatible" with the GPL.

Thanks to the many outside volunteers who have worked under Guido's direction to make these releases possible.

## B. TERMS AND CONDITIONS FOR ACCESSING OR OTHERWISE USING PYTHON

### PYTHON SOFTWARE FOUNDATION LICENSE VERSION 2

1. This LICENSE AGREEMENT is between the Python Software Foundation ("PSF"), and the Individual or Organization ("Licensee") accessing and otherwise using this software ("Python") in source or binary form and its associated documentation.

2. Subject to the terms and conditions of this License Agreement, PSF hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use Python alone or in any derivative version, provided, however, that PSF's License Agreement and PSF's notice of copyright,

i.e., "Copyright (c) 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018 Python Software Foundation; All Rights Reserved" are retained in Python alone or in any derivative version prepared by Licensee.

3. In the event Licensee prepares a derivative work that is based on or incorporates Python or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of the changes made to Python.

4. PSF is making Python available to Licensee on an "AS IS" basis. PSF MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, PSF MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.

5. PSF SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.

6. This License Agreement will automatically terminate upon a material breach of its terms and conditions.

7. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between PSF and Licensee. This License Agreement does not grant permission to use PSF trademarks or trade name in a trademark sense to endorse or promote products or services of Licensee, or any third party.

8. By copying, installing or otherwise using Python, Licensee agrees to be bound by the terms and conditions of this License Agreement.

BEOPEN.COM LICENSE AGREEMENT FOR PYTHON 2.0

-----

BEOPEN PYTHON OPEN SOURCE LICENSE AGREEMENT VERSION 1

1. This LICENSE AGREEMENT is between BeOpen.com ("BeOpen"), having an office at 160 Saratoga Avenue, Santa Clara, CA 95051, and the Individual or Organization ("Licensee") accessing and otherwise using this software in source or binary form and its associated documentation ("the Software").

2. Subject to the terms and conditions of this BeOpen Python License Agreement, BeOpen hereby grants Licensee a non-exclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use the Software alone or in any derivative version, provided, however, that the BeOpen Python License is retained in the Software, alone or in any derivative version prepared by Licensee.

3. BeOpen is making the Software available to Licensee on an "AS IS" basis. BEOPEN MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, BEOPEN MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF THE SOFTWARE WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.

4. BEOPEN SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF THE SOFTWARE FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF USING, MODIFYING OR DISTRIBUTING THE SOFTWARE, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.

5. This License Agreement will automatically terminate upon a material breach of its terms and conditions.

6. This License Agreement shall be governed by and interpreted in all respects by the law of the State of California, excluding conflict of law provisions. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between BeOpen and Licensee. This License Agreement does not grant permission to use BeOpen trademarks or trade names in a trademark sense to endorse or promote products or services of Licensee, or any third party. As an exception, the "BeOpen Python" logos available at <http://www.pythonlabs.com/logos.html> may be used according to the permissions granted on that web page.

7. By copying, installing or otherwise using the software, Licensee agrees to be bound by the terms and conditions of this License Agreement.

#### CNRI LICENSE AGREEMENT FOR PYTHON 1.6.1

-----

1. This LICENSE AGREEMENT is between the Corporation for National Research Initiatives, having an office at 1895 Preston White Drive, Reston, VA 20191 ("CNRI"), and the Individual or Organization ("Licensee") accessing and otherwise using Python 1.6.1 software in source or binary form and its associated documentation.

2. Subject to the terms and conditions of this License Agreement, CNRI hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use Python 1.6.1 alone or in any derivative version, provided, however, that CNRI's License Agreement and CNRI's notice of copyright, i.e., "Copyright (c) 1995-2001 Corporation for National Research Initiatives; All Rights Reserved" are retained in Python 1.6.1 alone or in any derivative version prepared by Licensee. Alternately, in lieu of CNRI's License Agreement, Licensee may substitute the following text (omitting the quotes): "Python 1.6.1 is made available subject to the terms and conditions in CNRI's License Agreement. This Agreement together with Python 1.6.1 may be located on the Internet using the following unique, persistent identifier (known as a handle): 1895.22/1013. This Agreement may also be obtained from a proxy server on the Internet using the following URL: <http://hdl.handle.net/1895.22/1013>".

3. In the event Licensee prepares a derivative work that is based on or incorporates Python 1.6.1 or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of the changes made to Python 1.6.1.

4. CNRI is making Python 1.6.1 available to Licensee on an "AS IS" basis. CNRI MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, CNRI MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON 1.6.1 WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.

5. CNRI SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON 1.6.1 FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON 1.6.1, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.

6. This License Agreement will automatically terminate upon a material breach of its terms and conditions.

7. This License Agreement shall be governed by the federal intellectual property law of the United States, including without limitation the federal copyright law, and, to the extent such U.S. federal law does not apply, by the law of the Commonwealth of Virginia, excluding Virginia's conflict of law provisions. Notwithstanding the foregoing, with regard to derivative works based on Python 1.6.1 that incorporate non-separable material that was previously distributed under the GNU General Public License (GPL), the law of the Commonwealth of Virginia shall govern this License Agreement only as to issues arising under or with respect to



Paragraphs 4, 5, and 7 of this License Agreement. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between CNRI and Licensee. This License Agreement does not grant permission to use CNRI trademarks or trade name in a trademark sense to endorse or promote products or services of Licensee, or any third party.

8. By clicking on the "ACCEPT" button where indicated, or by copying, installing or otherwise using Python 1.6.1, Licensee agrees to be bound by the terms and conditions of this License Agreement.

ACCEPT

CWI LICENSE AGREEMENT FOR PYTHON 0.9.0 THROUGH 1.2

-----  
Copyright (c) 1991 - 1995, Stichting Mathematisch Centrum Amsterdam, The Netherlands. All rights reserved.

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of Stichting Mathematisch Centrum or CWI not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission.

STICHTING MATHEMATISCH CENTRUM DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS, IN NO EVENT SHALL STICHTING MATHEMATISCH CENTRUM BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

Copyright (c) 1998-2000 Thai Open Source Software Center Ltd and Clark Cooper  
Copyright (c) 2001-2017 Expat maintainers

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included

in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

pybench License

-----

This copyright notice and license applies to all files in the pybench directory of the pybench distribution.

Copyright (c), 1997-2006, Marc-Andre Lemburg (mal@lemburg.com)

Copyright (c), 2000-2006, eGenix.com Software GmbH (info@egenix.com)

All Rights Reserved.

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee or royalty is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation or portions thereof, including modifications, that you make.

THE AUTHOR MARC-ANDRE LEMBURG DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS, IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE !

This license applies to the bootstrapper application that is embedded within the installer. It has no impact on the licensing for the rest of the installer or Python itself, as no code covered by this license exists in any other part of the product.

---

Microsoft Reciprocal License (MS-RL)

This license governs use of the accompanying software. If you use the software, you accept this license. If you do not accept the license, do not use the software.

#### 1. Definitions

The terms "reproduce," "reproduction," "derivative works," and "distribution" have the same meaning here as under U.S. copyright law.

A "contribution" is the original software, or any additions or changes to the software.

A "contributor" is any person that distributes its contribution under this license.

"Licensed patents" are a contributor's patent claims that read directly on its contribution.

## 2. Grant of Rights

(A) Copyright Grant- Subject to the terms of this license, including the license conditions and limitations in section 3, each contributor grants you a non-exclusive, worldwide, royalty-free copyright license to reproduce its contribution, prepare derivative works of its contribution, and distribute its contribution or any derivative works that you create.

(B) Patent Grant- Subject to the terms of this license, including the license conditions and limitations in section 3, each contributor grants you a non-exclusive, worldwide, royalty-free license under its licensed patents to make, have made, use, sell, offer for sale, import, and/or otherwise dispose of its contribution in the software or derivative works of the contribution in the software.

## 3. Conditions and Limitations

(A) Reciprocal Grants- For any file you distribute that contains code from the software (in source code or binary format), you must provide recipients the source code to that file along with a copy of this license, which license will govern that file. You may license other files that are entirely your own work and do not contain code from the software under any terms you choose.

(B) No Trademark License- This license does not grant you rights to use any contributors' name, logo, or trademarks.

(C) If you bring a patent claim against any contributor over patents that you claim are infringed by the software, your patent license from such contributor to the software ends automatically.

(D) If you distribute any portion of the software, you must retain all copyright, patent, trademark, and attribution notices that are present in the software.

(E) If you distribute any portion of the software in source code form, you may do so only under this license by including a complete copy of this license with your distribution. If you distribute any portion of the software in compiled or object code form, you may only do so under a license that complies with this license.

(F) The software is licensed "as-is." You bear the risk of using it. The contributors give no express warranties, guarantees or conditions. You may have additional consumer rights under your local laws which this license cannot change. To the extent permitted under your local laws, the contributors exclude the implied warranties of merchantability, fitness for a particular purpose and non-infringement.

# 1.89 dnf-plugins-core 4.0.21-11.el8

## 1.89.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your

freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE

## TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide

a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for

making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you

may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author



to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful,  
but WITHOUT ANY WARRANTY; without even the implied warranty of  
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the  
GNU General Public License for more details.

You should have received a copy of the GNU General Public License along  
with this program; if not, write to the Free Software Foundation, Inc.,  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this  
when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate  
parts of the General Public License. Of course, the commands you use may  
be called something other than `show w' and `show c'; they could even be  
mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your  
school, if any, to sign a "copyright disclaimer" for the program, if  
necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
'Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into  
proprietary programs. If your program is a subroutine library, you may  
consider it more useful to permit linking proprietary applications with the  
library. If this is what you want to do, use the GNU Lesser General  
Public License instead of this License.

## 1.90 publicsuffix-list 20180723 1.e18

### 1.90.1 Available under license :

Found license 'GNU Lesser General Public License' in 'Mozilla Public License Version 2.0 version 1.1 or earlier of the License, but not also under the means either the GNU General Public License, Version 2.0, the GNU Lesser General Public License, Version 2.1, the GNU Affero General Public License, Version 3.0, or any later versions of

those non-exclusive license: 10. Versions of the License You may distribute the Covered Software under the terms of the version Secondary Licenses under the terms of this version of the License, the This Source Code Form is subject to the terms of the Mozilla Public defined by the Mozilla Public License, v. 2.0.'

# 1.91 libidn 2.2.0 1.el8

## 1.91.1 Available under license :

Libidn2 COPYING -- Licensing information.                    - \*- outline - \*-  
Copyright (C) 2011-2016 Simon Josefsson  
See the end for copying conditions.

The source code for the C library (libidn2.a or libidn.so) are licensed under the terms of either the GNU General Public License version 2.0 or later (see the file COPYINGv2) or the GNU Lesser General Public License version 3.0 or later (see the file COPYING.LESSERv3), or both in parallel as here.

The command line tool, self tests, examples, and other auxiliary files, are licensed under the GNU General Public License version 3.0 or later.

The license of the Unicode character data files (which are parsed into static storage in the library) are documented in COPYING.unicode.

Other files are licensed as indicated in each file.

There may be exceptions to these general rules, see each file for precise information.

-----  
This file is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

This file is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this file. If not, see <<http://www.gnu.org/licenses/>>.

A. Unicode Copyright.

Copyright 1991-2016 Unicode, Inc. All rights reserved.

Certain documents and files on this website contain a legend indicating that "Modification is permitted." Any person is hereby authorized, without fee, to modify such documents and files to create derivative works conforming

to the Unicode Standard, subject to Terms and Conditions herein.

Any person is hereby authorized, without fee, to view, use, reproduce, and distribute all documents and files solely for informational purposes and in the creation of products supporting the Unicode Standard, subject to the Terms and Conditions herein.

Further specifications of rights and restrictions pertaining to the use of the particular set of data files known as the "Unicode Character Database" can be found in the License.

Each version of the Unicode Standard has further specifications of rights and restrictions of use. For the book editions (Unicode 5.0 and earlier), these are found on the back of the title page. The online code charts carry specific restrictions. All other files, including online documentation of the core specification for Unicode 6.0 and later, are covered under these general Terms of Use.

No license is granted to "mirror" the Unicode website where a fee is charged for access to the "mirror" site.

Modification is not permitted with respect to this document. All copies of this document must be verbatim.

#### B. Restricted Rights Legend.

Any technical data or software which is licensed to the United States of America, its agencies and/or instrumentalities under this Agreement is commercial technical data or commercial computer software developed exclusively at private expense as defined in FAR 2.101, or DFARS 252.227-7014 (June 1995), as applicable. For technical data, use, duplication, or disclosure by the Government is subject to restrictions as set forth in DFARS 202.227-7015 Technical Data, Commercial and Items (Nov 1995) and this Agreement. For Software, in accordance with FAR 12-212 or DFARS 227-7202, as applicable, use, duplication or disclosure by the Government is subject to the restrictions set forth in this Agreement.

#### C. Warranties and Disclaimers.

This publication and/or website may include technical or typographical errors or other inaccuracies. Changes are periodically added to the information herein; these changes will be incorporated in new editions of the publication and/or website. Unicode may make improvements and/or changes in the product(s) and/or program(s) described in this publication and/or website at any time.

If this file has been purchased on magnetic or optical media from Unicode, Inc. the sole and exclusive remedy for any claim will be exchange of the defective media within ninety (90) days of original purchase.

EXCEPT AS PROVIDED IN SECTION C.2, THIS PUBLICATION AND/OR SOFTWARE IS PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND EITHER EXPRESS, IMPLIED, OR STATUTORY, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT. UNICODE AND ITS LICENSORS ASSUME NO RESPONSIBILITY FOR ERRORS OR OMISSIONS IN THIS PUBLICATION AND/OR SOFTWARE OR OTHER DOCUMENTS WHICH ARE REFERENCED BY OR LINKED TO THIS PUBLICATION OR THE UNICODE WEBSITE.

#### D. Waiver of Damages.

In no event shall Unicode or its licensors be liable for any special, incidental, indirect or consequential damages of any kind, or any damages whatsoever, whether or not Unicode was advised of the possibility of the damage, including, without limitation, those resulting from the following: loss of use, data or profits, in connection with the use, modification or distribution of this information or its derivatives.

#### E. Trademarks & Logos.

The Unicode Word Mark and the Unicode Logo are trademarks of Unicode, Inc. The Unicode Consortium and Unicode, Inc. are trade names of Unicode, Inc. Use of the information and materials found on this website indicates your acknowledgement of Unicode, Inc.'s exclusive worldwide rights in the Unicode Word Mark, the Unicode Logo, and the Unicode trade names.

The Unicode Consortium Name and Trademark Usage Policy (Trademark Policy) are incorporated herein by

reference and you agree to abide by the provisions of the Trademark Policy, which may be changed from time to time in the sole discretion of Unicode, Inc.

All third party trademarks referenced herein are the property of their respective owners.

#### F. Miscellaneous.

**Jurisdiction and Venue.** This server is operated from a location in the State of California, United States of America. Unicode makes no representation that the materials are appropriate for use in other locations. If you access this server from other locations, you are responsible for compliance with local laws. This Agreement, all use of this site and any claims and damages resulting from use of this site are governed solely by the laws of the State of California without regard to any principles which would apply the laws of a different jurisdiction. The user agrees that any disputes regarding this site shall be resolved solely in the courts located in Santa Clara County, California. The user agrees said courts have personal jurisdiction and agree to waive any right to transfer the dispute to any other forum.

**Modification by Unicode** Unicode shall have the right to modify this Agreement at any time by posting it to this site. The user may not assign any part of this Agreement without Unicodes prior written consent.

**Taxes.** The user agrees to pay any taxes arising from access to this website or use of the information herein, except for those based on Unicodes net income.

**Severability.** If any provision of this Agreement is declared invalid or unenforceable, the remaining provisions of this Agreement shall remain in effect.

**Entire Agreement.** This Agreement constitutes the entire agreement between the parties.

#### EXHIBIT 1

Unicode Data Files include all data files under the directories

<http://www.unicode.org/Public/>, <http://www.unicode.org/reports/>,  
<http://www.unicode.org/cldr/data/>, <http://source.icu-project.org/repos/icu/>, and  
<http://www.unicode.org/utility/trac/browser/>.

Unicode Data Files do not include PDF online code charts under the directory <http://www.unicode.org/Public/>.

Software includes any source code published in the Unicode Standard or under the directories

<http://www.unicode.org/Public/>, <http://www.unicode.org/reports/>,  
<http://www.unicode.org/cldr/data/>, <http://source.icu-project.org/repos/icu/>, and  
<http://www.unicode.org/utility/trac/browser/>.

**NOTICE TO USER:** Carefully read the following legal agreement.

**BY DOWNLOADING, INSTALLING, COPYING OR OTHERWISE USING UNICODE INC.'S DATA FILES ("DATA FILES"), AND/OR SOFTWARE ("SOFTWARE"), YOU UNEQUIVOCALLY ACCEPT, AND AGREE TO BE BOUND BY, ALL OF THE TERMS AND CONDITIONS OF THIS AGREEMENT. IF YOU DO NOT AGREE, DO NOT DOWNLOAD, INSTALL, COPY, DISTRIBUTE OR USE THE DATA FILES OR SOFTWARE.**

**COPYRIGHT AND PERMISSION NOTICE**

Copyright 1991-2016 Unicode, Inc. All rights reserved.  
Distributed under the Terms of Use in <http://www.unicode.org/copyright.html>.

Permission is hereby granted, free of charge, to any person obtaining a copy of the Unicode data files and any associated documentation (the "Data Files") or Unicode software and any associated documentation (the "Software") to deal in the Data Files or Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, and/or sell copies of the Data Files or Software, and to permit persons to whom the Data Files or Software are furnished to do so, provided that either (a) this copyright and permission notice appear with all copies of the Data Files or Software, or (b) this copyright and permission notice appear in associated Documentation.

THE DATA FILES AND SOFTWARE ARE PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF THIRD PARTY RIGHTS.

IN NO EVENT SHALL THE COPYRIGHT HOLDER OR HOLDERS INCLUDED IN THIS NOTICE BE LIABLE FOR ANY CLAIM, OR ANY SPECIAL INDIRECT OR CONSEQUENTIAL DAMAGES, OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THE DATA FILES OR SOFTWARE.

Except as contained in this notice, the name of a copyright holder shall not be used in advertising or otherwise to promote the sale, use or other dealings in these Data Files or Software without prior written authorization of the copyright holder.

GNU GENERAL PUBLIC LICENSE  
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by

the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program"

means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)



These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary

form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

## NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands ``show w'` and ``show c'` should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than ``show w'` and ``show c'`; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

GNU LESSER GENERAL PUBLIC LICENSE  
Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>  
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

This version of the GNU Lesser General Public License incorporates the terms and conditions of version 3 of the GNU General Public License, supplemented by the additional permissions listed below.

0. Additional Definitions.

As used herein, "this License" refers to version 3 of the GNU Lesser General Public License, and the "GNU GPL" refers to version 3 of the GNU General Public License.

"The Library" refers to a covered work governed by this License, other than an Application or a Combined Work as defined below.

An "Application" is any work that makes use of an interface provided by the Library, but which is not otherwise based on the Library. Defining a subclass of a class defined by the Library is deemed a mode of using an interface provided by the Library.

A "Combined Work" is a work produced by combining or linking an Application with the Library. The particular version of the Library with which the Combined Work was made is also called the "Linked Version".

The "Minimal Corresponding Source" for a Combined Work means the Corresponding Source for the Combined Work, excluding any source code for portions of the Combined Work that, considered in isolation, are based on the Application, and not on the Linked Version.

The "Corresponding Application Code" for a Combined Work means the object code and/or source code for the Application, including any data and utility programs needed for reproducing the Combined Work from the Application, but excluding the System Libraries of the Combined Work.

#### 1. Exception to Section 3 of the GNU GPL.

You may convey a covered work under sections 3 and 4 of this License without being bound by section 3 of the GNU GPL.

#### 2. Conveying Modified Versions.

If you modify a copy of the Library, and, in your modifications, a facility refers to a function or data to be supplied by an Application that uses the facility (other than as an argument passed when the facility is invoked), then you may convey a copy of the modified version:

- a) under this License, provided that you make a good faith effort to ensure that, in the event an Application does not supply the function or data, the facility still operates, and performs whatever part of its purpose remains meaningful, or
- b) under the GNU GPL, with none of the additional permissions of this License applicable to that copy.

### 3. Object Code Incorporating Material from Library Header Files.

The object code form of an Application may incorporate material from a header file that is part of the Library. You may convey such object code under terms of your choice, provided that, if the incorporated material is not limited to numerical parameters, data structure layouts and accessors, or small macros, inline functions and templates (ten or fewer lines in length), you do both of the following:

- a) Give prominent notice with each copy of the object code that the Library is used in it and that the Library and its use are covered by this License.
- b) Accompany the object code with a copy of the GNU GPL and this license document.

### 4. Combined Works.

You may convey a Combined Work under terms of your choice that, taken together, effectively do not restrict modification of the portions of the Library contained in the Combined Work and reverse engineering for debugging such modifications, if you also do each of the following:

- a) Give prominent notice with each copy of the Combined Work that the Library is used in it and that the Library and its use are covered by this License.
- b) Accompany the Combined Work with a copy of the GNU GPL and this license document.
- c) For a Combined Work that displays copyright notices during execution, include the copyright notice for the Library among these notices, as well as a reference directing the user to the copies of the GNU GPL and this license document.

d) Do one of the following:

- 0) Convey the Minimal Corresponding Source under the terms of this License, and the Corresponding Application Code in a form suitable for, and under terms that permit, the user to recombine or relink the Application with a modified version of the Linked Version to produce a modified Combined Work, in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.

- 1) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (a) uses at run time

a copy of the Library already present on the user's computer system, and (b) will operate properly with a modified version of the Library that is interface-compatible with the Linked Version.

e) Provide Installation Information, but only if you would otherwise be required to provide such information under section 6 of the GNU GPL, and only to the extent that such information is necessary to install and execute a modified version of the Combined Work produced by recombining or relinking the Application with a modified version of the Linked Version. (If you use option 4d0, the Installation Information must accompany the Minimal Corresponding Source and Corresponding Application Code. If you use option 4d1, you must provide the Installation Information in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.)

## 5. Combined Libraries.

You may place library facilities that are a work based on the Library side by side in a single library together with other library facilities that are not Applications and are not covered by this License, and convey such a combined library under terms of your choice, if you do both of the following:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities, conveyed under the terms of this License.
- b) Give prominent notice with the combined library that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

## 6. Revised Versions of the GNU Lesser General Public License.

The Free Software Foundation may publish revised and/or new versions of the GNU Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library as you received it specifies that a certain numbered version of the GNU Lesser General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that published version or of any later version published by the Free Software Foundation. If the Library as you received it does not specify a version number of the GNU Lesser General Public License, you may choose any version of the GNU Lesser



General Public License ever published by the Free Software Foundation.

If the Library as you received it specifies that a proxy can decide whether future versions of the GNU Lesser General Public License shall apply, that proxy's public statement of acceptance of any version is permanent authorization for you to choose that version for the Library.

## 1.92 copy-jdk-configs 4.0-2.el8

### 1.92.1 Available under license :

Copyright (c) 2015 Red Hat inc.  
All rights reserved.

Redistribution and use in source and binary forms are permitted provided that the above copyright notice and this paragraph are duplicated in all such forms and that any documentation, advertising materials, and other materials related to such distribution and use acknowledge that the software was developed by the Red Hat inc. The name of the Red Hat inc. may not be used to endorse or promote products derived from this software without specific prior written permission. THIS SOFTWARE IS PROVIDED ``AS IS'' AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

## 1.93 listenablefuture 9999.0-empty-to-avoid-conflict-with-guava

### 1.93.1 Available under license :

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

##### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity

on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one

of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a

result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

## 1.94 shadow 4.6-16.el8

## 1.94.1 Available under license :

### GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original

authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices

stating that you changed the files and the date of any change.

b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your



cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to

these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to

address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
'Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into

proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

/\*

\* Copyright (c) 1990 - 1994, Julianne Frances Haugh

\* Copyright (c) 1996 - 2000, Marek Michakiewicz

\* Copyright (c) 2000 - 2006, Tomasz Koczko

\* Copyright (c) 2007 - 2011, Nicolas Franois

\* All rights reserved.

\*

\* Redistribution and use in source and binary forms, with or without

\* modification, are permitted provided that the following conditions

\* are met:

\* 1. Redistributions of source code must retain the above copyright

\* notice, this list of conditions and the following disclaimer.

\* 2. Redistributions in binary form must reproduce the above copyright

\* notice, this list of conditions and the following disclaimer in the

\* documentation and/or other materials provided with the distribution.

\* 3. The name of the copyright holders or contributors may not be used to

\* endorse or promote products derived from this software without

\* specific prior written permission.

\*

\* THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS

\* ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT

\* LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A

\* PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT

\* HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,

\* SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT

\* LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,

\* DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY

\* THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT

\* (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE

\* OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

\*/

NOTE:

This license has been obsoleted by the change to the BSD-style copyright.

You may continue to use this license if you wish, but you are under no

obligation to do so.

(\*

This document is freely plagiarised from the 'Artistic Licence',

distributed as part of the Perl v4.0 kit by Larry Wall, which is

available from most major archive sites. I stole it from CrackLib.

\$Id\$

\*)

This documents purpose is to state the conditions under which this Package (See definition below) viz: "Shadow", the Shadow Password Suite which is held by Julianne Frances Haugh, may be copied, such that the copyright holder maintains some semblance of artistic control over the development of the package, while giving the users of the package the right to use and distribute the Package in a more-or-less customary fashion, plus the right to make reasonable modifications.

So there.

\*\*\*\*\*

Definitions:

A "Package" refers to the collection of files distributed by the Copyright Holder, and derivatives of that collection of files created through textual modification, or segments thereof.

"Standard Version" refers to such a Package if it has not been modified, or has been modified in accordance with the wishes of the Copyright Holder.

"Copyright Holder" is whoever is named in the copyright or copyrights for the package.

"You" is you, if you're thinking about copying or distributing this Package.

"Reasonable copying fee" is whatever you can justify on the basis of media cost, duplication charges, time of people involved, and so on. (You will not be required to justify it to the Copyright Holder, but only to the computing community at large as a market that must bear the fee.)

"Freely Available" means that no fee is charged for the item itself, though there may be fees involved in handling the item. It also means that recipients of the item may redistribute it under the same conditions they received it.

1. You may make and give away verbatim copies of the source form of the Standard Version of this Package without restriction, provided that you duplicate all of the original copyright notices and associated disclaimers.

2. You may apply bug fixes, portability fixes and other modifications derived from the Public Domain or from the Copyright Holder. A Package

modified in such a way shall still be considered the Standard Version.

3. You may otherwise modify your copy of this Package in any way, provided that you insert a prominent notice in each changed file stating how and when AND WHY you changed that file, and provided that you do at least ONE of the following:

a) place your modifications in the Public Domain or otherwise make them Freely Available, such as by posting said modifications to Usenet or an equivalent medium, or placing the modifications on a major archive site such as uunet.uu.net, or by allowing the Copyright Holder to include your modifications in the Standard Version of the Package.

b) use the modified Package only within your corporation or organization.

c) rename any non-standard executables so the names do not conflict with standard executables, which must also be provided, and provide separate documentation for each non-standard executable that clearly documents how it differs from the Standard Version.

d) make other distribution arrangements with the Copyright Holder.

4. You may distribute the programs of this Package in object code or executable form, provided that you do at least ONE of the following:

a) distribute a Standard Version of the executables and library files, together with instructions (in the manual page or equivalent) on where to get the Standard Version.

b) accompany the distribution with the machine-readable source of the Package with your modifications.

c) accompany any non-standard executables with their corresponding Standard Version executables, giving the non-standard executables non-standard names, and clearly documenting the differences in manual pages (or equivalent), together with instructions on where to get the Standard Version.

d) make other distribution arrangements with the Copyright Holder.

5. You may charge a reasonable copying fee for any distribution of this Package. You may charge any fee you choose for support of this Package. YOU MAY NOT CHARGE A FEE FOR THIS PACKAGE ITSELF. However, you may distribute this Package in aggregate with other (possibly commercial) programs as part of a larger (possibly commercial) software distribution provided that YOU DO NOT ADVERTISE this package as a product of your own.

6. The name of the Copyright Holder may not be used to endorse or promote products derived from this software without specific prior written permission.

7. THIS PACKAGE IS PROVIDED "AS IS" AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

The End

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

675 Mass Ave, Cambridge, MA 02139, USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and



(2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

#### GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and

you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of

Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by

modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License

may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

# 1.95 js 1.7R1

## 1.95.1 Available under license :

MOZILLA PUBLIC LICENSE  
Version 1.1

-----

### 1. Definitions.

1.0.1. "Commercial Use" means distribution or otherwise making the Covered Code available to a third party.

1.1. "Contributor" means each entity that creates or contributes to the creation of Modifications.

1.2. "Contributor Version" means the combination of the Original Code, prior Modifications used by a Contributor, and the Modifications made by that particular Contributor.

1.3. "Covered Code" means the Original Code or Modifications or the combination of the Original Code and Modifications, in each case including portions thereof.

1.4. "Electronic Distribution Mechanism" means a mechanism generally accepted in the software development community for the electronic transfer of data.

1.5. "Executable" means Covered Code in any form other than Source Code.

1.6. "Initial Developer" means the individual or entity identified as the Initial Developer in the Source Code notice required by Exhibit A.

1.7. "Larger Work" means a work which combines Covered Code or portions thereof with code not governed by the terms of this License.

1.8. "License" means this document.

1.8.1. "Licensable" means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently acquired, any and all of the rights conveyed herein.

1.9. "Modifications" means any addition to or deletion from the

substance or structure of either the Original Code or any previous Modifications. When Covered Code is released as a series of files, a Modification is:

- A. Any addition to or deletion from the contents of a file containing Original Code or previous Modifications.
  
- B. Any new file that contains any part of the Original Code or previous Modifications.

1.10. "Original Code" means Source Code of computer software code which is described in the Source Code notice required by Exhibit A as Original Code, and which, at the time of its release under this License is not already Covered Code governed by this License.

1.10.1. "Patent Claims" means any patent claim(s), now owned or hereafter acquired, including without limitation, method, process, and apparatus claims, in any patent Licensable by grantor.

1.11. "Source Code" means the preferred form of the Covered Code for making modifications to it, including all modules it contains, plus any associated interface definition files, scripts used to control compilation and installation of an Executable, or source code differential comparisons against either the Original Code or another well known, available Covered Code of the Contributor's choice. The Source Code can be in a compressed or archival form, provided the appropriate decompression or de-archiving software is widely available for no charge.

1.12. "You" (or "Your") means an individual or a legal entity exercising rights under, and complying with all of the terms of, this License or a future version of this License issued under Section 6.1. For legal entities, "You" includes any entity which controls, is controlled by, or is under common control with You. For purposes of this definition, "control" means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

## 2. Source Code License.

### 2.1. The Initial Developer Grant.

The Initial Developer hereby grants You a world-wide, royalty-free, non-exclusive license, subject to third party intellectual property claims:

- (a) under intellectual property rights (other than patent or trademark) Licensable by Initial Developer to use, reproduce, modify, display, perform, sublicense and distribute the Original

Code (or portions thereof) with or without Modifications, and/or as part of a Larger Work; and

(b) under Patents Claims infringed by the making, using or selling of Original Code, to make, have made, use, practice, sell, and offer for sale, and/or otherwise dispose of the Original Code (or portions thereof).

(c) the licenses granted in this Section 2.1(a) and (b) are effective on the date Initial Developer first distributes Original Code under the terms of this License.

(d) Notwithstanding Section 2.1(b) above, no patent license is granted: 1) for code that You delete from the Original Code; 2) separate from the Original Code; or 3) for infringements caused by: i) the modification of the Original Code or ii) the combination of the Original Code with other software or devices.

## 2.2. Contributor Grant.

Subject to third party intellectual property claims, each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license

(a) under intellectual property rights (other than patent or trademark) Licensable by Contributor, to use, reproduce, modify, display, perform, sublicense and distribute the Modifications created by such Contributor (or portions thereof) either on an unmodified basis, with other Modifications, as Covered Code and/or as part of a Larger Work; and

(b) under Patent Claims infringed by the making, using, or selling of Modifications made by that Contributor either alone and/or in combination with its Contributor Version (or portions of such combination), to make, use, sell, offer for sale, have made, and/or otherwise dispose of: 1) Modifications made by that Contributor (or portions thereof); and 2) the combination of Modifications made by that Contributor with its Contributor Version (or portions of such combination).

(c) the licenses granted in Sections 2.2(a) and 2.2(b) are effective on the date Contributor first makes Commercial Use of the Covered Code.

(d) Notwithstanding Section 2.2(b) above, no patent license is granted: 1) for any code that Contributor has deleted from the Contributor Version; 2) separate from the Contributor Version; 3) for infringements caused by: i) third party modifications of Contributor Version or ii) the combination of Modifications made by that Contributor with other software (except as part of the



Contributor Version) or other devices; or 4) under Patent Claims infringed by Covered Code in the absence of Modifications made by that Contributor.

### 3. Distribution Obligations.

#### 3.1. Application of License.

The Modifications which You create or to which You contribute are governed by the terms of this License, including without limitation Section 2.2. The Source Code version of Covered Code may be distributed only under the terms of this License or a future version of this License released under Section 6.1, and You must include a copy of this License with every copy of the Source Code You distribute. You may not offer or impose any terms on any Source Code version that alters or restricts the applicable version of this License or the recipients' rights hereunder. However, You may include an additional document offering the additional rights described in Section 3.5.

#### 3.2. Availability of Source Code.

Any Modification which You create or to which You contribute must be made available in Source Code form under the terms of this License either on the same media as an Executable version or via an accepted Electronic Distribution Mechanism to anyone to whom you made an Executable version available; and if made available via Electronic Distribution Mechanism, must remain available for at least twelve (12) months after the date it initially became available, or at least six (6) months after a subsequent version of that particular Modification has been made available to such recipients. You are responsible for ensuring that the Source Code version remains available even if the Electronic Distribution Mechanism is maintained by a third party.

#### 3.3. Description of Modifications.

You must cause all Covered Code to which You contribute to contain a file documenting the changes You made to create that Covered Code and the date of any change. You must include a prominent statement that the Modification is derived, directly or indirectly, from Original Code provided by the Initial Developer and including the name of the Initial Developer in (a) the Source Code, and (b) in any notice in an Executable version or related documentation in which You describe the origin or ownership of the Covered Code.

#### 3.4. Intellectual Property Matters

##### (a) Third Party Claims.

If Contributor has knowledge that a license under a third party's intellectual property rights is required to exercise the rights granted by such Contributor under Sections 2.1 or 2.2, Contributor must include a text file with the Source Code

distribution titled "LEGAL" which describes the claim and the party making the claim in sufficient detail that a recipient will know whom to contact. If Contributor obtains such knowledge after the Modification is made available as described in Section 3.2, Contributor shall promptly modify the LEGAL file in all copies Contributor makes available thereafter and shall take other steps (such as notifying appropriate mailing lists or newsgroups) reasonably calculated to inform those who received the Covered Code that new knowledge has been obtained.

(b) Contributor APIs.

If Contributor's Modifications include an application programming interface and Contributor has knowledge of patent licenses which are reasonably necessary to implement that API, Contributor must also include this information in the LEGAL file.

(c) Representations.

Contributor represents that, except as disclosed pursuant to Section 3.4(a) above, Contributor believes that Contributor's Modifications are Contributor's original creation(s) and/or Contributor has sufficient rights to grant the rights conveyed by this License.

### 3.5. Required Notices.

You must duplicate the notice in Exhibit A in each file of the Source Code. If it is not possible to put such notice in a particular Source Code file due to its structure, then You must include such notice in a location (such as a relevant directory) where a user would be likely to look for such a notice. If You created one or more Modification(s) You may add your name as a Contributor to the notice described in Exhibit A. You must also duplicate this License in any documentation for the Source Code where You describe recipients' rights or ownership rights relating to Covered Code. You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Code. However, You may do so only on Your own behalf, and not on behalf of the Initial Developer or any Contributor. You must make it absolutely clear than any such warranty, support, indemnity or liability obligation is offered by You alone, and You hereby agree to indemnify the Initial Developer and every Contributor for any liability incurred by the Initial Developer or such Contributor as a result of warranty, support, indemnity or liability terms You offer.

### 3.6. Distribution of Executable Versions.

You may distribute Covered Code in Executable form only if the requirements of Section 3.1-3.5 have been met for that Covered Code, and if You include a notice stating that the Source Code version of the Covered Code is available under the terms of this License,

including a description of how and where You have fulfilled the obligations of Section 3.2. The notice must be conspicuously included in any notice in an Executable version, related documentation or collateral in which You describe recipients' rights relating to the Covered Code. You may distribute the Executable version of Covered Code or ownership rights under a license of Your choice, which may contain terms different from this License, provided that You are in compliance with the terms of this License and that the license for the Executable version does not attempt to limit or alter the recipient's rights in the Source Code version from the rights set forth in this License. If You distribute the Executable version under a different license You must make it absolutely clear that any terms which differ from this License are offered by You alone, not by the Initial Developer or any Contributor. You hereby agree to indemnify the Initial Developer and every Contributor for any liability incurred by the Initial Developer or such Contributor as a result of any such terms You offer.

### 3.7. Larger Works.

You may create a Larger Work by combining Covered Code with other code not governed by the terms of this License and distribute the Larger Work as a single product. In such a case, You must make sure the requirements of this License are fulfilled for the Covered Code.

## 4. Inability to Comply Due to Statute or Regulation.

If it is impossible for You to comply with any of the terms of this License with respect to some or all of the Covered Code due to statute, judicial order, or regulation then You must: (a) comply with the terms of this License to the maximum extent possible; and (b) describe the limitations and the code they affect. Such description must be included in the LEGAL file described in Section 3.4 and must be included with all distributions of the Source Code. Except to the extent prohibited by statute or regulation, such description must be sufficiently detailed for a recipient of ordinary skill to be able to understand it.

## 5. Application of this License.

This License applies to code to which the Initial Developer has attached the notice in Exhibit A and to related Covered Code.

## 6. Versions of the License.

### 6.1. New Versions.

Netscape Communications Corporation ("Netscape") may publish revised and/or new versions of the License from time to time. Each version will be given a distinguishing version number.

## 6.2. Effect of New Versions.

Once Covered Code has been published under a particular version of the License, You may always continue to use it under the terms of that version. You may also choose to use such Covered Code under the terms of any subsequent version of the License published by Netscape. No one other than Netscape has the right to modify the terms applicable to Covered Code created under this License.

## 6.3. Derivative Works.

If You create or use a modified version of this License (which you may only do in order to apply it to code which is not already Covered Code governed by this License), You must (a) rename Your license so that the phrases "Mozilla", "MOZILLAPL", "MOZPL", "Netscape", "MPL", "NPL" or any confusingly similar phrase do not appear in your license (except to note that your license differs from this License) and (b) otherwise make it clear that Your version of the license contains terms which differ from the Mozilla Public License and Netscape Public License. (Filling in the name of the Initial Developer, Original Code or Contributor in the notice described in Exhibit A shall not of themselves be deemed to be modifications of this License.)

## 7. DISCLAIMER OF WARRANTY.

COVERED CODE IS PROVIDED UNDER THIS LICENSE ON AN "AS IS" BASIS, WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTIES THAT THE COVERED CODE IS FREE OF DEFECTS, MERCHANTABILITY, FIT FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE COVERED CODE IS WITH YOU. SHOULD ANY COVERED CODE PROVE DEFECTIVE IN ANY RESPECT, YOU (NOT THE INITIAL DEVELOPER OR ANY OTHER CONTRIBUTOR) ASSUME THE COST OF ANY NECESSARY SERVICING, REPAIR OR CORRECTION. THIS DISCLAIMER OF WARRANTY CONSTITUTES AN ESSENTIAL PART OF THIS LICENSE. NO USE OF ANY COVERED CODE IS AUTHORIZED HEREUNDER EXCEPT UNDER THIS DISCLAIMER.

## 8. TERMINATION.

8.1. This License and the rights granted hereunder will terminate automatically if You fail to comply with terms herein and fail to cure such breach within 30 days of becoming aware of the breach. All sublicenses to the Covered Code which are properly granted shall survive any termination of this License. Provisions which, by their nature, must remain in effect beyond the termination of this License shall survive.

8.2. If You initiate litigation by asserting a patent infringement claim (excluding declaratory judgment actions) against Initial Developer

or a Contributor (the Initial Developer or Contributor against whom You file such action is referred to as "Participant") alleging that:

(a) such Participant's Contributor Version directly or indirectly infringes any patent, then any and all rights granted by such Participant to You under Sections 2.1 and/or 2.2 of this License shall, upon 60 days notice from Participant terminate prospectively, unless if within 60 days after receipt of notice You either: (i) agree in writing to pay Participant a mutually agreeable reasonable royalty for Your past and future use of Modifications made by such Participant, or (ii) withdraw Your litigation claim with respect to the Contributor Version against such Participant. If within 60 days of notice, a reasonable royalty and payment arrangement are not mutually agreed upon in writing by the parties or the litigation claim is not withdrawn, the rights granted by Participant to You under Sections 2.1 and/or 2.2 automatically terminate at the expiration of the 60 day notice period specified above.

(b) any software, hardware, or device, other than such Participant's Contributor Version, directly or indirectly infringes any patent, then any rights granted to You by such Participant under Sections 2.1(b) and 2.2(b) are revoked effective as of the date You first made, used, sold, distributed, or had made, Modifications made by that Participant.

8.3. If You assert a patent infringement claim against Participant alleging that such Participant's Contributor Version directly or indirectly infringes any patent where such claim is resolved (such as by license or settlement) prior to the initiation of patent infringement litigation, then the reasonable value of the licenses granted by such Participant under Sections 2.1 or 2.2 shall be taken into account in determining the amount or value of any payment or license.

8.4. In the event of termination under Sections 8.1 or 8.2 above, all end user license agreements (excluding distributors and resellers) which have been validly granted by You or any distributor hereunder prior to termination shall survive termination.

## 9. LIMITATION OF LIABILITY.

UNDER NO CIRCUMSTANCES AND UNDER NO LEGAL THEORY, WHETHER TORT (INCLUDING NEGLIGENCE), CONTRACT, OR OTHERWISE, SHALL YOU, THE INITIAL DEVELOPER, ANY OTHER CONTRIBUTOR, OR ANY DISTRIBUTOR OF COVERED CODE, OR ANY SUPPLIER OF ANY OF SUCH PARTIES, BE LIABLE TO ANY PERSON FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES OF ANY CHARACTER INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOSS OF GOODWILL, WORK STOPPAGE, COMPUTER FAILURE OR MALFUNCTION, OR ANY AND ALL OTHER

COMMERCIAL DAMAGES OR LOSSES, EVEN IF SUCH PARTY SHALL HAVE BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. THIS LIMITATION OF LIABILITY SHALL NOT APPLY TO LIABILITY FOR DEATH OR PERSONAL INJURY RESULTING FROM SUCH PARTY'S NEGLIGENCE TO THE EXTENT APPLICABLE LAW PROHIBITS SUCH LIMITATION. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THIS EXCLUSION AND LIMITATION MAY NOT APPLY TO YOU.

#### 10. U.S. GOVERNMENT END USERS.

The Covered Code is a "commercial item," as that term is defined in 48 C.F.R. 2.101 (Oct. 1995), consisting of "commercial computer software" and "commercial computer software documentation," as such terms are used in 48 C.F.R. 12.212 (Sept. 1995). Consistent with 48 C.F.R. 12.212 and 48 C.F.R. 227.7202-1 through 227.7202-4 (June 1995), all U.S. Government End Users acquire Covered Code with only those rights set forth herein.

#### 11. MISCELLANEOUS.

This License represents the complete agreement concerning subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable. This License shall be governed by California law provisions (except to the extent applicable law, if any, provides otherwise), excluding its conflict-of-law provisions. With respect to disputes in which at least one party is a citizen of, or an entity chartered or registered to do business in the United States of America, any litigation relating to this License shall be subject to the jurisdiction of the Federal Courts of the Northern District of California, with venue lying in Santa Clara County, California, with the losing party responsible for costs, including without limitation, court costs and reasonable attorneys' fees and expenses. The application of the United Nations Convention on Contracts for the International Sale of Goods is expressly excluded. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not apply to this License.

#### 12. RESPONSIBILITY FOR CLAIMS.

As between Initial Developer and the Contributors, each party is responsible for claims and damages arising, directly or indirectly, out of its utilization of rights under this License and You agree to work with Initial Developer and Contributors to distribute such responsibility on an equitable basis. Nothing herein is intended or shall be deemed to constitute any admission of liability.

13. MULTIPLE-LICENSED CODE.

Initial Developer may designate portions of the Covered Code as "Multiple-Licensed". "Multiple-Licensed" means that the Initial Developer permits you to utilize portions of the Covered Code under Your choice of the NPL or the alternative licenses, if any, specified by the Initial Developer in the file described in Exhibit A.

EXHIBIT A -Mozilla Public License.

"The contents of this file are subject to the Mozilla Public License Version 1.1 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at <http://www.mozilla.org/MPL/>

Software distributed under the License is distributed on an "AS IS" basis, WITHOUT WARRANTY OF ANY KIND, either express or implied. See the License for the specific language governing rights and limitations under the License.

The Original Code is \_\_\_\_\_.

The Initial Developer of the Original Code is \_\_\_\_\_.

Portions created by \_\_\_\_\_ are Copyright (C) \_\_\_\_\_  
\_\_\_\_\_. All Rights Reserved.

Contributor(s): \_\_\_\_\_.

Alternatively, the contents of this file may be used under the terms of the \_\_\_\_\_ license (the "[ ] License"), in which case the provisions of [ ] License are applicable instead of those above. If you wish to allow use of your version of this file only under the terms of the [ ] License and not to allow others to use your version of this file under the MPL, indicate your decision by deleting the provisions above and replace them with the notice and other provisions required by the [ ] License. If you do not delete the provisions above, a recipient may use your version of this file under either the MPL or the [ ] License."

[NOTE: The text of this Exhibit A may differ slightly from the text of the notices in the Source Code files of the Original Code. You should use the text of this Exhibit A rather than the text found in the Original Code Source Code for Your Modifications.]

# 1.96 pyinotify 0.9.6

## 1.96.1 Available under license :

Copyright (c) 2010 Sebastien Martini <seb@dbzteam.org>

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

# 1.97 activation 1.2.2

## 1.97.1 Available under license :

Copyright (c) 2018 Oracle and/or its affiliates. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- Neither the name of the Eclipse Foundation, Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO,



THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

# Notices for Jakarta Activation

This content is produced and maintained by Jakarta Activation project.

\* Project home: <https://projects.eclipse.org/projects/ee4j.jaf>

## Copyright

All content is the property of the respective authors or their employers. For more information regarding authorship of content, please consult the listed source code repository logs.

## Declared Project Licenses

This program and the accompanying materials are made available under the terms of the Eclipse Distribution License v. 1.0, which is available at <http://www.eclipse.org/org/documents/edl-v10.php>.

SPDX-License-Identifier: BSD-3-Clause

## Source Code

The project maintains the following source code repositories:

\* <https://github.com/eclipse-ee4j/jaf>

## Third-party Content

This project leverages the following third party content.

JUnit (4.12)

\* License: Eclipse Public License

## 1.98 redhatrelease 8.6-0.1.el8

## 1.98.1 Available under license :

No license file was found, but licenses were detected in source scan.

License: GPLv2

Found in path(s):

\*/opt/cola/permits/1328278139\_1658764286.771434/0/redhat-release-8.6-0.1.0.1.el8.src.rpm-cosi-expand-archive-940Y7vCC/redhat-release.spec

# 1.99 xerces-j 2.7.1

## 1.99.1 Available under license :

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

You must give any other recipients of the Work or Derivative Works a copy of this License; and

You must cause any modified files to carry prominent notices stating that You changed the files; and

You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed

as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

## 1.100 pcre 10.32-3.el8\_6

### 1.100.1 Available under license :

PCRE2 LICENCE

-----

PCRE2 is a library of functions to support regular expressions whose syntax  
and semantics are as close as possible to those of the Perl 5 language.

Releases 10.00 and above of PCRE2 are distributed under the terms of the "BSD"  
licence, as specified below, with one exemption for certain binary  
redistributions. The documentation for PCRE2, supplied in the "doc" directory,  
is distributed under the same terms as the software itself. The data in the  
testdata directory is not copyrighted and is in the public domain.

The basic library functions are written in C and are freestanding. Also  
included in the distribution is a just-in-time compiler that can be used to

optimize pattern matching. This is an optional feature that can be omitted when the library is built.

## THE BASIC LIBRARY FUNCTIONS

-----

Written by: Philip Hazel  
Email local part: ph10  
Email domain: cam.ac.uk

University of Cambridge Computing Service,  
Cambridge, England.

Copyright (c) 1997-2018 University of Cambridge  
All rights reserved.

## PCRE2 JUST-IN-TIME COMPILATION SUPPORT

-----

Written by: Zoltan Herczeg  
Email local part: hzmester  
Email domain: freemail.hu

Copyright(c) 2010-2018 Zoltan Herczeg  
All rights reserved.

## STACK-LESS JUST-IN-TIME COMPILER

-----

Written by: Zoltan Herczeg  
Email local part: hzmester  
Email domain: freemail.hu

Copyright(c) 2009-2018 Zoltan Herczeg  
All rights reserved.

## THE "BSD" LICENCE

-----

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notices, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notices, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

\* Neither the name of the University of Cambridge nor the names of any contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

#### EXEMPTION FOR BINARY LIBRARY-LIKE PACKAGES

-----

The second condition in the BSD licence (covering binary redistributions) does not apply all the way down a chain of software. If binary package A includes PCRE2, it must respect the condition, but if package B is software that includes package A, the condition is not imposed on package B unless it uses PCRE2 independently.

End

PCRE2 LICENCE

Please see the file LICENCE in the PCRE2 distribution for licensing details.

End

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## 1.101 springfox-spi 3.0.0

### 1.101.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/*
 *
 * Copyright 2015-2016 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 *
 *
 */
```

Found in path(s):

```
*/opt/ws_local/PERMITS_SQL/1082518019_1597960242.29/0/springfox-spi-3-0-0-sources-
jar/springfox/documentation/spi/service/contexts/Orderings.java
```

No license file was found, but licenses were detected in source scan.

```
/*
 *
 * Copyright 2017-2019 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
```



\* You may obtain a copy of the License at  
\*  
\* <http://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*  
\*  
\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1082518019\_1597960242.29/0/springfox-spi-3-0-0-sources-  
jar/springfox/documentation/spi/service/ParameterMetadataAccessor.java  
\* /opt/ws\_local/PERMITS\_SQL/1082518019\_1597960242.29/0/springfox-spi-3-0-0-sources-  
jar/springfox/documentation/spi/schema/SyntheticModelProviderPlugin.java  
\* /opt/ws\_local/PERMITS\_SQL/1082518019\_1597960242.29/0/springfox-spi-3-0-0-sources-  
jar/springfox/documentation/spi/service/RequestHandlerCombiner.java  
No license file was found, but licenses were detected in source scan.

/\*  
\*  
\* Copyright 2015-2019 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <http://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*  
\*  
\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1082518019\_1597960242.29/0/springfox-spi-3-0-0-sources-  
jar/springfox/documentation/spi/service/contexts/SecurityContextBuilder.java  
\* /opt/ws\_local/PERMITS\_SQL/1082518019\_1597960242.29/0/springfox-spi-3-0-0-sources-  
jar/springfox/documentation/spi/service/contexts/OperationContext.java  
\* /opt/ws\_local/PERMITS\_SQL/1082518019\_1597960242.29/0/springfox-spi-3-0-0-sources-  
jar/springfox/documentation/spi/service/contexts/ResponseContext.java

\* /opt/ws\_local/PERMITS\_SQL/1082518019\_1597960242.29/0/springfox-spi-3-0-0-sources-jar/springfox/documentation/spi/service/contexts/DocumentationContextBuilder.java  
\* /opt/ws\_local/PERMITS\_SQL/1082518019\_1597960242.29/0/springfox-spi-3-0-0-sources-jar/springfox/documentation/spi/service/contexts/PathContext.java  
\* /opt/ws\_local/PERMITS\_SQL/1082518019\_1597960242.29/0/springfox-spi-3-0-0-sources-jar/springfox/documentation/spi/schema/AlternateTypeProvider.java  
\* /opt/ws\_local/PERMITS\_SQL/1082518019\_1597960242.29/0/springfox-spi-3-0-0-sources-jar/springfox/documentation/spi/schema/contexts/ModelContext.java  
\* /opt/ws\_local/PERMITS\_SQL/1082518019\_1597960242.29/0/springfox-spi-3-0-0-sources-jar/springfox/documentation/spi/service/contexts/OperationModelContextsBuilder.java  
\* /opt/ws\_local/PERMITS\_SQL/1082518019\_1597960242.29/0/springfox-spi-3-0-0-sources-jar/springfox/documentation/spi/service/contexts/DocumentationContext.java  
\* /opt/ws\_local/PERMITS\_SQL/1082518019\_1597960242.29/0/springfox-spi-3-0-0-sources-jar/springfox/documentation/spi/service/contexts/Defaults.java  
\* /opt/ws\_local/PERMITS\_SQL/1082518019\_1597960242.29/0/springfox-spi-3-0-0-sources-jar/springfox/documentation/spi/service/contexts/RequestMappingContext.java  
\* /opt/ws\_local/PERMITS\_SQL/1082518019\_1597960242.29/0/springfox-spi-3-0-0-sources-jar/springfox/documentation/spi/service/contexts/ParameterExpansionContext.java  
\* /opt/ws\_local/PERMITS\_SQL/1082518019\_1597960242.29/0/springfox-spi-3-0-0-sources-jar/springfox/documentation/spi/service/contexts/ParameterContext.java

No license file was found, but licenses were detected in source scan.

```
/*
 *
 * Copyright 2017 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 *
 */
```

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1082518019\_1597960242.29/0/springfox-spi-3-0-0-sources-jar/springfox/documentation/spi/schema/UniqueTypeNameAdapter.java  
\* /opt/ws\_local/PERMITS\_SQL/1082518019\_1597960242.29/0/springfox-spi-3-0-0-sources-jar/springfox/documentation/spi/schema/ViewProviderPlugin.java

No license file was found, but licenses were detected in source scan.

```
/*
 *
 * Copyright 2016 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 *
 *
 */
```

Found in path(s):

```
* /opt/ws_local/PERMITS_SQL/1082518019_1597960242.29/0/springfox-spi-3-0-0-sources-
jar/springfox/documentation/spi/service/ApiListingScannerPlugin.java
No license file was found, but licenses were detected in source scan.
```

```
/*
 *
 * Copyright 2015 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 *
 *
 */
```

Found in path(s):

```
* /opt/ws_local/PERMITS_SQL/1082518019_1597960242.29/0/springfox-spi-3-0-0-sources-
jar/springfox/documentation/spi/service/ExpandedParameterBuilderPlugin.java
* /opt/ws_local/PERMITS_SQL/1082518019_1597960242.29/0/springfox-spi-3-0-0-sources-
jar/springfox/documentation/spi/service/RequestHandlerProvider.java
```

\* /opt/ws\_local/PERMITS\_SQL/1082518019\_1597960242.29/0/springfox-spi-3-0-0-sources-jar/springfox/documentation/spi/service/ParameterBuilderPlugin.java  
\* /opt/ws\_local/PERMITS\_SQL/1082518019\_1597960242.29/0/springfox-spi-3-0-0-sources-jar/springfox/documentation/spi/service/OperationBuilderPlugin.java  
\* /opt/ws\_local/PERMITS\_SQL/1082518019\_1597960242.29/0/springfox-spi-3-0-0-sources-jar/springfox/documentation/spi/service/DefaultsProviderPlugin.java  
\* /opt/ws\_local/PERMITS\_SQL/1082518019\_1597960242.29/0/springfox-spi-3-0-0-sources-jar/springfox/documentation/spi/service/DocumentationPlugin.java  
\* /opt/ws\_local/PERMITS\_SQL/1082518019\_1597960242.29/0/springfox-spi-3-0-0-sources-jar/springfox/documentation/spi/schema/ModelPropertyBuilderPlugin.java  
\* /opt/ws\_local/PERMITS\_SQL/1082518019\_1597960242.29/0/springfox-spi-3-0-0-sources-jar/springfox/documentation/spi/service/contexts/ApiListingContext.java  
\* /opt/ws\_local/PERMITS\_SQL/1082518019\_1597960242.29/0/springfox-spi-3-0-0-sources-jar/springfox/documentation/spi/service/OperationModelsProviderPlugin.java  
\* /opt/ws\_local/PERMITS\_SQL/1082518019\_1597960242.29/0/springfox-spi-3-0-0-sources-jar/springfox/documentation/spi/schema/contexts/ModelPropertyContext.java  
\* /opt/ws\_local/PERMITS\_SQL/1082518019\_1597960242.29/0/springfox-spi-3-0-0-sources-jar/springfox/documentation/spi/service/ApiListingBuilderPlugin.java  
\* /opt/ws\_local/PERMITS\_SQL/1082518019\_1597960242.29/0/springfox-spi-3-0-0-sources-jar/springfox/documentation/service/PathAdjuster.java  
\* /opt/ws\_local/PERMITS\_SQL/1082518019\_1597960242.29/0/springfox-spi-3-0-0-sources-jar/springfox/documentation/spi/service/contexts/ApiSelector.java  
\* /opt/ws\_local/PERMITS\_SQL/1082518019\_1597960242.29/0/springfox-spi-3-0-0-sources-jar/springfox/documentation/service/PathDecorator.java  
\* /opt/ws\_local/PERMITS\_SQL/1082518019\_1597960242.29/0/springfox-spi-3-0-0-sources-jar/springfox/documentation/spi/schema/GenericTypeNamingStrategy.java  
\* /opt/ws\_local/PERMITS\_SQL/1082518019\_1597960242.29/0/springfox-spi-3-0-0-sources-jar/springfox/documentation/spi/schema/ModelBuilderPlugin.java  
\* /opt/ws\_local/PERMITS\_SQL/1082518019\_1597960242.29/0/springfox-spi-3-0-0-sources-jar/springfox/documentation/spi/service/contexts/SecurityContext.java  
\* /opt/ws\_local/PERMITS\_SQL/1082518019\_1597960242.29/0/springfox-spi-3-0-0-sources-jar/springfox/documentation/spi/schema/TypeNameProviderPlugin.java  
\* /opt/ws\_local/PERMITS\_SQL/1082518019\_1597960242.29/0/springfox-spi-3-0-0-sources-jar/springfox/documentation/spi/DocumentationType.java  
\* /opt/ws\_local/PERMITS\_SQL/1082518019\_1597960242.29/0/springfox-spi-3-0-0-sources-jar/springfox/documentation/spi/schema/EnumTypeDeterminer.java

## 1.102 telnetd-x 1.0.0

### 1.102.1 Available under license :

Java TelnetD library (embeddable telnet daemon)  
Copyright (c) 2000-2005 Dieter Wimberger.  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

Neither the name of the author nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDER AND CONTRIBUTORS ``AS IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## 1.103 scala-java8-compat\_2.13 1.0.0

### 1.103.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/*
 * Scala (https://www.scala-lang.org)
 *
 * Copyright EPFL and Lightbend, Inc.
 *
 * Licensed under Apache License 2.0
 * (http://www.apache.org/licenses/LICENSE-2.0).
 *
 * See the NOTICE file distributed with this work for
 * additional information regarding copyright ownership.
 */
```

Found in path(s):

```
* /opt/cola/permits/1424508696_1663913262.820597/0/scala-java8-compat-2-13-1-0-0-sources-1-jar/scala/compat/java8/DurationConverters.scala
* /opt/cola/permits/1424508696_1663913262.820597/0/scala-java8-compat-2-13-1-0-0-sources-1-jar/scala/compat/java8/converterImpl/Accumulates.scala
* /opt/cola/permits/1424508696_1663913262.820597/0/scala-java8-compat-2-13-1-0-0-sources-1-
```

jar/scala/compat/java8/wrappers/IteratorPrimitiveIntWrapper.java  
\* /opt/cola/permits/1424508696\_1663913262.820597/0/scala-java8-compat-2-13-1-0-0-sources-1-  
jar/scala/compat/java8/ScalaStreamSupport.java  
\* /opt/cola/permits/1424508696\_1663913262.820597/0/scala-java8-compat-2-13-1-0-0-sources-1-  
jar/scala/concurrent/java8/FutureConvertersImpl.scala  
\* /opt/cola/permits/1424508696\_1663913262.820597/0/scala-java8-compat-2-13-1-0-0-sources-1-  
jar/scala/compat/java8/OptionConverters.scala  
\* /opt/cola/permits/1424508696\_1663913262.820597/0/scala-java8-compat-2-13-1-0-0-sources-1-  
jar/scala/compat/java8/wrappers/IteratorPrimitiveDoubleWrapper.java  
\* /opt/cola/permits/1424508696\_1663913262.820597/0/scala-java8-compat-2-13-1-0-0-sources-1-  
jar/scala/compat/java8/converterImpl/AccumulatorConverters.scala  
\* /opt/cola/permits/1424508696\_1663913262.820597/0/scala-java8-compat-2-13-1-0-0-sources-1-  
jar/scala/compat/java8/wrappers/IteratorPrimitiveLongWrapper.java  
\* /opt/cola/permits/1424508696\_1663913262.820597/0/scala-java8-compat-2-13-1-0-0-sources-1-  
jar/scala/compat/java8/StreamConverters.scala  
\* /opt/cola/permits/1424508696\_1663913262.820597/0/scala-java8-compat-2-13-1-0-0-sources-1-  
jar/scala/compat/java8/WrapperTraits.scala  
\* /opt/cola/permits/1424508696\_1663913262.820597/0/scala-java8-compat-2-13-1-0-0-sources-1-  
jar/scala/compat/java8/PrimitiveIteratorConversions.scala  
\* /opt/cola/permits/1424508696\_1663913262.820597/0/scala-java8-compat-2-13-1-0-0-sources-1-  
jar/scala/compat/java8/FutureConverters.scala

## 1.104 log4j-slf4j-impl 2.17.1

### 1.104.1 Available under license :

Apache Log4j SLF4J Binding  
Copyright 1999-1969 The Apache Software Foundation

This product includes software developed at  
The Apache Software Foundation (<http://www.apache.org/>).

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

##### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction,  
and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by  
the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all

other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and

subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed



as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the

Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

## 1.105 commons-daemon 1.3.1

## 1.105.1 Available under license :

Apache Commons Daemon  
Copyright 1999-2022 The Apache Software Foundation

This product includes software developed by  
The Apache Software Foundation (<http://www.apache.org/>).

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the

editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the

Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

### APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the

same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

# 1.106 audience-annotations 0.5.0

## 1.106.1 Available under license :

Apache Yetus - Audience Annotations  
Copyright 2015-2017 The Apache Software Foundation

This product includes software developed at  
The Apache Software Foundation (<http://www.apache.org/>).

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the

outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable



copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and

do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

## 1.107 groovy-all 2.4.21

### 1.107.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
Licensed to the Apache Software Foundation (ASF) under one or more
contributor license agreements. See the NOTICE file distributed with
this work for additional information regarding copyright ownership.
The ASF licenses this file to You under the Apache License, Version 2.0
```

# (the "License"); you may not use this file except in compliance with  
# the License. You may obtain a copy of the License at  
#  
# <http://www.apache.org/licenses/LICENSE-2.0>  
#  
# Unless required by applicable law or agreed to in writing, software  
# distributed under the License is distributed on an "AS IS" BASIS,  
# WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
# See the License for the specific language governing permissions and  
# limitations under the License.

# Format: one extension on each line without the leading "\*."  
# Listed below are default groovy source file extensions.

# NOTE: This implementation of supporting multiple file extensions is experimental and  
# the exact implementation details may vary when modularization gets introduced in  
# groovy 2.0. However, in terms of the behavior, this support will remain intact.  
groovy

Found in path(s):

\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/META-  
INF/services/org.codehaus.groovy.source.Extensions  
No license file was found, but licenses were detected in source scan.

/\*

\* Licensed to the Apache Software Foundation (ASF) under one  
\* or more contributor license agreements. See the NOTICE file  
\* distributed with this work for additional information  
\* regarding copyright ownership. The ASF licenses this file  
\* to you under the Apache License, Version 2.0 (the  
\* "License"); you may not use this file except in compliance  
\* with the License. You may obtain a copy of the License at  
\*  
\* <http://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing,  
\* software distributed under the License is distributed on an  
\* "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY  
\* KIND, either express or implied. See the License for the  
\* specific language governing permissions and limitations  
\* under the License.  
\*/

These icons are from the famfamfam.com silk icons set  
<http://www.famfamfam.com/lab/icons/silk/>

Licensed under the Creative Commons Attribution Licence v2.5  
<http://creativecommons.org/licenses/by/2.5/>

Found in path(s):

\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/ui/icons/credits.txt

No license file was found, but licenses were detected in source scan.

```
Licensed to the Apache Software Foundation (ASF) under one or more
contributor license agreements. See the NOTICE file distributed with
this work for additional information regarding copyright ownership.
The ASF licenses this file to You under the Apache License, Version 2.0
(the "License"); you may not use this file except in compliance with
the License. You may obtain a copy of the License at
#
http://www.apache.org/licenses/LICENSE-2.0
#
Unless required by applicable law or agreed to in writing, software
distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License.

global transformation to handle @Grab annotation
groovy.grape.GrabAnnotationTransformation
```

```
#global transformation for AST Builder
org.codehaus.groovy.ast.builder.AstBuilderTransformation
```

Found in path(s):

\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/META-

INF/services/org.codehaus.groovy.transform.ASTTransformation

No license file was found, but licenses were detected in source scan.

```
* to you under the Apache License, Version 2.0 (the
* "License"); you may not use this file except in compliance
* with the License. You may obtain a copy of the License at
* http://www.apache.org/licenses/LICENSE-2.0
* software distributed under the License is distributed on an
* Based on an original grammar released in the PUBLIC DOMAIN
```

Found in path(s):

\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/org.codehaus.groovy/antlr/java/java.g

\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/org.codehaus.groovy/antlr/groovy.g

No license file was found, but licenses were detected in source scan.

```
Licensed to the Apache Software Foundation (ASF) under one or more
contributor license agreements. See the NOTICE file distributed with
this work for additional information regarding copyright ownership.
```

```
The ASF licenses this file to You under the Apache License, Version 2.0
(the "License"); you may not use this file except in compliance with
the License. You may obtain a copy of the License at
#
http://www.apache.org/licenses/LICENSE-2.0
#
Unless required by applicable law or agreed to in writing, software
distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License.
```

```
org.codehaus.groovy.jsr223.GroovyScriptEngineFactory
```

```
Found in path(s):
```

```
* /opt/cola/permits/1136034982_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/META-
INF/services/javax.script.ScriptEngineFactory
```

```
No license file was found, but licenses were detected in source scan.
```

```
/*
```

```
* Adapted from JLine which has the following license
```

```
*
```

```
* Copyright (c) 2002-2012, the original author or authors.
```

```
* This software is distributable under the BSD license. See the terms of the
```

```
* BSD license in the documentation provided with this software.
```

```
*
```

```
* http://www.opensource.org/licenses/bsd-license.php
```

```
*
```

```
* Subsequent modifications by the Groovy community have been done under the Apache License v2:
```

```
*
```

```
* Licensed to the Apache Software Foundation (ASF) under one
```

```
* or more contributor license agreements. See the NOTICE file
```

```
* distributed with this work for additional information
```

```
* regarding copyright ownership. The ASF licenses this file
```

```
* to you under the Apache License, Version 2.0 (the
```

```
* "License"); you may not use this file except in compliance
```

```
* with the License. You may obtain a copy of the License at
```

```
*
```

```
* http://www.apache.org/licenses/LICENSE-2.0
```

```
*
```

```
* Unless required by applicable law or agreed to in writing,
```

```
* software distributed under the License is distributed on an
```

```
* "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY
```

```
* KIND, either express or implied. See the License for the
```

```
* specific language governing permissions and limitations
```

```
* under the License.
```

```
*/
```

Found in path(s):

\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/shell/completion/FileNameCompleter.groovy

No license file was found, but licenses were detected in source scan.

/\*

- \* The initial contribution was derived from the reference implementation
- \* developed by Sun in consultation with the Groovy community. The reference
- \* implementation had the following license header:
- \*
  - \* Copyright 2006 Sun Microsystems, Inc. All rights reserved.
  - \* Use is subject to license terms.
  - \*
    - \* Redistribution and use in source and binary forms, with or without modification, are
    - \* permitted provided that the following conditions are met: Redistributions of source code
    - \* must retain the above copyright notice, this list of conditions and the following disclaimer.
    - \* Redistributions in binary form must reproduce the above copyright notice, this list of
    - \* conditions and the following disclaimer in the documentation and/or other materials
    - \* provided with the distribution. Neither the name of the Sun Microsystems nor the names of
    - \* is contributors may be used to endorse or promote products derived from this software
    - \* without specific prior written permission.
    - \*
      - \* THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
      - \* ANY EXPRESS
      - \* OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF
      - \* MERCHANTABILITY
      - \* AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE
      - \* COPYRIGHT OWNER
      - \* OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,
      - \* EXEMPLARY, OR
      - \* CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
      - \* SUBSTITUTE GOODS OR
      - \* SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED
      - \* AND ON
      - \* ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
      - \* NEGLIGENCE
      - \* OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED
      - \* OF THE
      - \* POSSIBILITY OF SUCH DAMAGE.
      - \*
        - \* Subsequent modifications by the Groovy community have been done under the Apache License v2:
        - \*
          - \* Licensed to the Apache Software Foundation (ASF) under one
          - \* or more contributor license agreements. See the NOTICE file
          - \* distributed with this work for additional information
          - \* regarding copyright ownership. The ASF licenses this file
          - \* to you under the Apache License, Version 2.0 (the
          - \* "License"); you may not use this file except in compliance

\* with the License. You may obtain a copy of the License at  
\*  
\* <http://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing,  
\* software distributed under the License is distributed on an  
\* "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY  
\* KIND, either express or implied. See the License for the  
\* specific language governing permissions and limitations  
\* under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/jsr223/GroovyCompiledScript.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/jsr223/GroovyScriptEngineFactory.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/jsr223/GroovyScriptEngineImpl.java

No license file was found, but licenses were detected in source scan.

/\*

\* Licensed to the Apache Software Foundation (ASF) under one  
\* or more contributor license agreements. See the NOTICE file  
\* distributed with this work for additional information  
\* regarding copyright ownership. The ASF licenses this file  
\* to you under the Apache License, Version 2.0 (the  
\* "License"); you may not use this file except in compliance  
\* with the License. You may obtain a copy of the License at  
\*

\* <http://www.apache.org/licenses/LICENSE-2.0>  
\*

\* Unless required by applicable law or agreed to in writing,  
\* software distributed under the License is distributed on an  
\* "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY  
\* KIND, either express or implied. See the License for the  
\* specific language governing permissions and limitations  
\* under the License.  
\*

\*/

Found in path(s):

\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/util/CharSequenceReader.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/tools/ParameterUtils.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/tools/ClassNodeUtils.java



No license file was found, but licenses were detected in source scan.

Licensed to the Apache Software Foundation (ASF) under one or more contributor license agreements. See the NOTICE file distributed with this work for additional information regarding copyright ownership. The ASF licenses this file to you under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE>

2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Found in path(s):

- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/groovydoc/gstringTemplates/classLevel/classDocName.html
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/expr/package.html
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/xml/package.html
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/overview-summary.html
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/text/package.html
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/security/package.html
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/package.html
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/groovydoc/package.html
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/index.html
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/groovydoc/gstringTemplates/classLevel/classDocStructuredData.xml
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/inspect/swingui/package.html
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/package.html
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/groovydoc/gstringTemplates/topLevel/allclasses-frame.html
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/slurpersupport/package.html
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/ui/package.html
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/swing/package.html

\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/vmplugin/package.html

\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/swing/binding/package.html

\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/overviewj.html

\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/xml/package.html

\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/groovydoc/gstringTemplates/packageLevel/package-summary.html

\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/template.package-summary.html

\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/template.class.html

\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/model/package.html

\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/classgen/package.html

\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/template.package-frame.html

\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/swing/impl/package.html

\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/ui/text/package.html

\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/bsf/package.html

\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/io/package.html

\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/groovydoc/gstringTemplates/topLevel/rootDocStructuredData.xml

\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/groovydoc/gstringTemplates/topLevel/overview-frame.html

\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/antlib.xml

\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/text/markup/package.html

\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/control/io/package.html

\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/javac/package.html

\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/control/messages/package.html

\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/servlet/package.html

\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/xml/dom/package.html

\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/binding/package.html

\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/reflection/package.html

\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/groovydoc/gstringTemplates/topLevel/overview-summary.html

\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/vmplugin/v5/package.html

\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-

jar/org/codehaus/groovy/tools/groovydoc/gstringTemplates/topLevel/help-doc.html  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/org/codehaus/groovy/syntax/package.html  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/org/codehaus/groovy/tools/groovydoc/gstringTemplates/packageLevel/packageDocStructuredData.xml  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/org/codehaus/groovy/tools/shell/package.html  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/overview.html  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/org/codehaus/groovy/tools/template.overview-frame.html  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/package.html  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/org/codehaus/groovy/control/package.html  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/org/codehaus/groovy/runtime/metaclass/package.html  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/org/codehaus/groovy/runtime/package.html  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/org/codehaus/groovy/groovydoc/package.html  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/org/codehaus/groovy/classgen/asm/package.html  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/org/codehaus/groovy/tools/groovydoc/gstringTemplates/topLevel/index.html  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/org/codehaus/groovy/tools/groovydoc/gstringTemplates/topLevel/deprecated-list.html  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/org/codehaus/groovy/ant/package.html  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/org/codehaus/groovy/runtime/wrappers/package.html  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/package.html  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/org/codehaus/groovy/tools/groovydoc/gstringTemplates/packageLevel/package-frame.html  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/org/codehaus/groovy/tools/shell/util/package.html  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/groovy/mock/interceptor/package.html  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/sql/package.html  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/org/codehaus/groovy/package.html  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/org/codehaus/groovy/tools/template.index-all.html  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/org/codehaus/groovy/tools/groovydoc/gstringTemplates/topLevel/index-all.html  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/time/package.html  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/org/codehaus/groovy/antlr/treewalker/package.html  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/groovy/xml/streamingmarkupsupport/package.html

\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/inspect/package.html  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/stmt/package.html  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/typehandling/package.html  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/template.allclasses-frame.html  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/antlr/package.html  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/swing/factory/package.html

No license file was found, but licenses were detected in source scan.

/\*

\* Licensed to the Apache Software Foundation (ASF) under one  
\* or more contributor license agreements. See the NOTICE file  
\* distributed with this work for additional information  
\* regarding copyright ownership. The ASF licenses this file  
\* to you under the Apache License, Version 2.0 (the  
\* "License"); you may not use this file except in compliance  
\* with the License. You may obtain a copy of the License at  
\*  
\* <http://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing,  
\* software distributed under the License is distributed on an  
\* "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY  
\* KIND, either express or implied. See the License for the  
\* specific language governing permissions and limitations  
\* under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/slurpersupport/NodeChildren.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/expr/MethodCallExpression.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/FileSystemCompiler.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/MetaArrayLengthProperty.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/control/SourceUnit.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/shell/util/CurlyCountingGroovyLexer.groovy  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/expr/StaticMethodCallExpression.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-

jar/groovy/mock/interceptor/Ignore.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/ast/FieldNode.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/swing/factory/LayoutFactory.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/ast/AstToTextHelper.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/tools/shell/commands/LoadCommand.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/SqlGroovyMethods.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/text/StreamingTemplateEngine.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/GroovyCategorySupport.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/transform/TimedInterruptibleASTTransformation.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/ant/GroovyTask.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/sql/SqlWithParams.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/util/SingleKeyHashMap.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/SwingGroovyMethods.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/XmlSlurper.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/syntax/TokenUtil.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/transform/AnnotationCollectorTransform.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/ast/Parameter.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/callsite/PogoGetPropertySite.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/tools/shell/util/DefaultCommandsRegistrar.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/vmplugin/v7/Selector.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/ClassExtender.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/control/ParserPlugin.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/tools/groovydoc/GroovyDocWriter.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/classgen/VariableScopeVisitor.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/control/customizers/builder/ASTTransformationCustomizerFactory.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-

jar/org/codehaus/groovy/control/ProcessingUnit.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/XmlParser.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/tools/javac/JavaCompilerFactory.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/model/NestedValueModel.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/vmplugin/v6/Java6.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/BuilderSupport.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/text/markup/MarkupTemplateTypeCheckingExtension.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/reflection/GroovyClassValueFactory.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/control/ErrorCollector.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/control/ParserPluginFactory.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/json/JsonLexer.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/binding/MutualPropertyBinding.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/tools/shell/commands/ShadowCommand.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/tools/shell/completion/CustomClassSyntaxCompleter.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/Expando.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/Lazy.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/tools/shell/IO.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/ant/FileSystemCompilerFacade.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/util/FileNameByRegexFinder.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/ast/ClassHelper.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/tools/shell/util/JAnsiHelper.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/json/internal/CharScanner.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/metaclass/NewMetaMethod.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/antlr/treewalker/SourceCodeTraversal.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/xml/MarkupBuilderHelper.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/lang/ReadOnlyPropertyException.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/transform/stc/PickAnyArgumentHint.java

- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/groovydoc/LinkArgument.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/classgen/asm/sc/StaticInvocationWriter.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/dgmimpl/NumberNumberDiv.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/swing/factory/ListFactory.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/stmt/TryCatchStatement.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/transform/stc/ClosureSignatureHint.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/transform/Canonical.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/DocGenerator.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/transform/ExternalizeMethods.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/vmplugin/v7/IndyMath.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/ProxyMetaClass.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/reflection/android/AndroidSupport.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/antlr/AntlrParserPluginFactory.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/SocketGroovyMethods.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/ui/text/TextUndoManager.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/GroovyScriptEngine.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/classgen/ClassCompletionVerifier.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/Factory.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/groovydoc/ClasspathResourceManager.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/tailrec/VariableExpressionReplacer.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/metaclass/MissingMethodExceptionNoStack.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/control/io/NullWriter.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/syntax/ASTHelper.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/expr/EmptyExpression.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-

jar/org/codehaus/groovy/ast/expr/ClosureListExpression.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/org/codehaus/groovy/classgen/asm/BinaryBooleanExpressionHelper.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/groovy/transform/PackageScopeTarget.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/org/codehaus/groovy/tools/groovydoc/SimpleGroovyPackageDoc.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/org/codehaus/groovy/control/customizers/builder/InlinedASTCustomizerFactory.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/org/codehaus/groovy/transform/sc/transformers/CompareToNullExpression.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/groovy/time/DatumDependentDuration.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/org/codehaus/groovy/bsf/GroovyEngine.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/org/codehaus/groovy/runtime/typehandling/NumberMath.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/groovy/ui/text/StructuredSyntaxDocumentFilter.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/groovy/sql/ExtractIndexAndSql.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/org/codehaus/groovy/runtime/AbstractComparator.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/org/codehaus/groovy/classgen/VerifierCodeVisitor.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/groovy/transform/stc/SecondParam.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/logging/Log4j.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/org/codehaus/groovy/tools/groovydoc/SimpleGroovyExecutableMemberDoc.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/org/codehaus/groovy/tools/shell/util/NoExitSecurityManager.groovy  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/org/codehaus/groovy/runtime/typehandling/FloatingPointMath.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/groovy/lang/SpreadListEvaluatingException.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/org/codehaus/groovy/runtime/ConvertedMap.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/org/codehaus/groovy/transform/MemoizedASTTransformation.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/org/codehaus/groovy/runtime/ConversionHandler.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/org/codehaus/groovy/runtime/ScriptReference.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/org/codehaus/groovy/runtime/dgmimpl/NumberNumberPlus.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/groovy/lang/MissingClassException.java



\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/AutoCloneASTTransformation.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/grape/GrapeEngine.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/bsf/CachingGroovyEngine.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/swing/factory/TableModelFactory.groovy  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/classgen/asm/TypeChooser.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/vmplugin/v7/TypeTransformers.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/jmx/builder/JmxAttributeInfoManager.groovy  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/expr/ArrayExpression.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/classgen/asm/StatementMetaTypeChooser.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/text/XmlTemplateEngine.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/javac/JavaAwareCompilationUnit.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/stmt/ThrowStatement.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/ConfigSlurper.groovy  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/json/internal/JsonParserUsingCharacterSource.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/classgen/asm/DelegatingController.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/wrappers/ByteWrapper.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/classgen/asm/sc/StaticCompilationMopWriter.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/stmt/EmptyStatement.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/logging/Commons.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/GroovyASTTransformationClass.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/xml/dom/DOMCategory.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/sc/StaticCompilationVisitor.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/xml/streamingmarkupsupport/AbstractStreamingBuilder.groovy  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/ObjectGraphBuilder.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-

jar/org/codehaus/groovy/runtime/callsite/BooleanClosureWrapper.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/beans/ListenerList.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/transform/SourceURI.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/metaclass/MethodSelectionException.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/ast/stmt/CatchStatement.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/swing/factory/RootPaneContainerFactory.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/testng/TestNgRunner.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/control/XStreamUtils.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/MetaClassImpl.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/ReverseListIterator.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/reflection/stdclasses/BooleanCachedClass.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/antlr/java/Java2GroovyConverter.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/ReflectionMethodInvoker.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/ui/SystemOutputInterceptor.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/swing/factory/WindowFactory.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/binding/SourceBinding.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/classgen/asm/InvocationWriter.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/ui/OutputTransforms.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/ast/tools/GenericsUtils.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/json/JsonToken.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/swing/factory/CellEditorFactory.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/swing/factory/ScrollPaneFactory.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/tools/shell/Parser.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/model/FormModel.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/json/internal/Sys.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/classgen/asm/WriterController.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/GrabConfig.java

- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/classgen/GeneratorContext.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/CliBuilder.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/callsite/MetaMethodSite.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/swing/factory/TextArgWidgetFactory.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/Category.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/swing/factory/BoxLayoutFactory.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/groovydoc/GroovyDocErrorReporter.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/tailrec/HasRecursiveCalls.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/classgen/asm/BytecodeHelper.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/groovydoc/GroovyFieldDoc.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/util/ManagedConcurrentMap.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/groovydoc/GroovyType.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/classgen/asm/BinaryObjectExpressionHelper.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/expr/MethodPointerExpression.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/ClosureComparator.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/shell/commands/InspectCommand.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/util/AbstractConcurrentMapBase.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/text/TemplateExecutionException.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/ExternalizeVerifierASTTransformation.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/callsite/PogoMetaClassSite.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/dgmimpl/NumberNumberMinus.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/mock/interceptor/MockInterceptor.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/xml/StaxBuilder.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/stc/DelegationMetadata.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/antlr/GroovySourceAST.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-

jar/org/codehaus/groovy/ast/expr/TernaryExpression.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/Reflector.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/beans/BindableASTTransformation.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/transform/AbstractASTTransformation.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/swing/factory/ComboBoxFactory.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/transform/sc/transformers/StaticMethodCallExpressionTransformer.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/text/markup/IncludeType.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/callsite/CallSiteGenerator.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/AntBuilder.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/dgmimpl/arrays/ObjectArrayPutAtMetaMethod.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/antlr/treewalker/CompositeVisitor.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/tools/groovydoc/MockOutputTool.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/tools/StringHelper.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/powerassert/AssertionRenderer.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/classgen/asm/sc/StaticPropertyAccessHelper.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/tools/RootLoader.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/swing/impl/ListWrapperListModel.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/control/customizers/builder/ImportCustomizerFactory.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/test/GroovyAssert.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/transform/tailrec/VariableAccessReplacer.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/servlet/AbstractHttpServlet.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/lang/TrampolineClosure.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/ast/ModuleNode.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/tools/shell/completion/VariableSyntaxCompleter.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/io/LineColumnReader.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-

jar/groovy/transform/builder/DefaultStrategy.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/transform/InheritConstructorsASTTransformation.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/m12n/MetaInfExtensionModule.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/metaclass/MetaMethodIndex.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/metaclass/ThreadManagedMetaBeanProperty.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/classgen/asm/MopWriter.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/m12n/PropertiesModuleFactory.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/json/internal/CharacterSource.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/beans/ListenerListASTTransformation.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/tools/shell/CommandAlias.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/classgen/InnerClassCompletionVisitor.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/tools/groovydoc/SimpleGroovyDoc.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/GeneratedClosure.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/typehandling/LongMath.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/json/internal/ArrayUtils.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/binding/PropertyPathFullBinding.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/binding/EventTriggerBinding.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/classgen/DummyClassGenerator.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/jmx/builder/JmxBuilder.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/classgen/asm/BinaryExpressionWriter.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/HandleMetaClass.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/text/TemplateEngine.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/typehandling/NumberMathModificationInfo.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/tools/shell/util/WrappedInputStream.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/MetaMethod.java

- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/AnnotationNode.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/metaclass/ReflectionMetaMethod.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/servlet/TemplateServlet.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/swing/factory/BindProxyFactory.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/reflection/stdclasses/ObjectCachedClass.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/xml/SAXBuilder.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/memoize/UnlimitedConcurrentCache.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/callsite/CallSiteClassLoader.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/transform/WithReadLock.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/expr/BooleanExpression.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/expr/SpreadMapExpression.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/control/io/ReaderSource.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/tailrec/StatementReplacer.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/antlr/java/Java2GroovyMain.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/io/GroovyPrintWriter.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/ProxyGeneratorAdapter.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/jsr223/ScriptStaticExtensions.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/Eval.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/DgmConverter.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/ConfigObject.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/transform/Undefined.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/ASTTransformationVisitor.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/beans/VetoableASTTransformation.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/GroovyTestCase.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/transform/ThreadInterrupt.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-

jar/org/codehaus/groovy/transform/trait/TraitReceiverTransformer.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/jmx/builder/JmxBeansFactory.groovy  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/stmt/BlockStatement.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/GroovyClassVisitor.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/groovydoc/ExternalGroovyClassDoc.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/callsite/MetaClassSite.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/stc/SignatureCodec.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/reflection/stdclasses/IntegerCachedClass.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/text/markup/MarkupBuilderCodeTransformer.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/stmt/ContinueStatement.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/apache/groovy/util/SystemUtil.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/shell/util/PackageHelper.groovy  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/antlr/UnicodeEscapingReader.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/swing/factory/CompoundBorderFactory.groovy  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/json/internal/LazyMap.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/EnumConstantClassNode.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/util/LazyReference.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/xml/NamespaceBuilder.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/groovydoc/FileOutputTool.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/GString.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/expr/AnnotationConstantExpression.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/json/StreamingJsonBuilder.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/antlr/SourceBuffer.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/transform/IndexedProperty.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/GroovyClassLoader.java

\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/inspect/swingui/ScriptToTreeNodeAdapter.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/groovydoc/OutputTool.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/ast/TransformTestHelper.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/beans/DefaultPropertyAccessor.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/antlr/Main.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/GroovyLogTestCase.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/tailrec/ReturnAdderForClosures.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/stmt/LoopingStatement.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/ui/text/TextEditor.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/antlr/java/Java2GroovyProcessor.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/transform/ConditionalInterrupt.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/swing/factory/ButtonGroupFactory.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/wrappers/CharWrapper.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/Interceptor.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/shell/commands/ImportCommand.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/groovydoc/SimpleGroovyRootDoc.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/NodeBuilder.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/classgen/genArrayAccess.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/shell/util/Logger.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/GroovyResourceLoader.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/swing/factory/ActionFactory.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/sc/transformers/StaticCompilationTransformer.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/sql/ExpandedVariable.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/ClosureException.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/transform/builder/Builder.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-



jar/groovy/transform/stc/ThirdParam.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/reflection/MixinInMetaClass.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/logging/Log4j2.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/ObservableList.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/WritableFile.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/trait/TraitHelpersTuple.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/AbstractASTTransformUtil.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/transform/builder/ExternalStrategy.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/ParameterArray.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/swing/factory/SplitPaneFactory.groovy  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/control/messages/SimpleMessage.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/time/BaseDuration.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/dgmimpl/NumberNumberMultiply.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/NonEmptySequence.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/swing/factory/TabbedPaneFactory.groovy  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/classgen/ClassGeneratorException.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/vmplugin/v7/TypeHelper.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/beans/PropertyReader.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/IteratorClosureAdapter.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/slurpersupport/NamespaceAwareHashMap.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/sql/InOutParameter.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/transform/stc/SimpleType.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/classgen/genArrays.groovy  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/groovydoc/SimpleGroovyProgramElementDoc.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/transform/CompilationUnitAware.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/Mixin.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/reflection/stdclasses/FloatCachedClass.java

- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/shell/util/XmlCommandRegistrar.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/SingletonASTTransformation.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/Tuple.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/swing/factory/TableFactory.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/LogASTTransformation.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/antlr/AntlrASTProcessor.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/swing/factory/FormattedTextFactory.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/classgen/asm/indy/InvokeDynamicWriter.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/sql/GroovyResultSetProxy.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/control/customizers/builder/PostCompletionFactory.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/jmx/builder/JmxEventEmitterMBean.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/tailrec/RecursivenessTester.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/shell/Command.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/antlr/java/PreJava2GroovyConverter.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/util/ArrayIterator.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/Utilities.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/ToStringASTTransformation.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/expr/FieldExpression.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/metaclass/MixedInMetaClass.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/ResourceConnector.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/InnerClassNode.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/stmt/ReturnStatement.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/reflection/stdclasses/DoubleCachedClass.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/dgmimpl/arrays/FloatArrayPutAtMetaMethod.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-

jar/org/codehaus/groovy/transform/stc/GroovyTypeCheckingExtensionSupport.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/org/codehaus/groovy/transform/SynchronizedASTTransformation.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/groovy/transform/TypeChecked.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/org/codehaus/groovy/reflection/stdclasses/BigDecimalCachedClass.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/org/codehaus/groovy/tools/shell/completion/ImportsSyntaxCompleter.groovy  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/logging/Log.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/org/codehaus/groovy/runtime/wrappers/LongWrapper.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/org/codehaus/groovy/antlr/treewalker/NodeAsHTMLPrinter.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/org/codehaus/groovy/groovydoc/GroovyExecutableMemberDoc.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/groovy/xml/streamingmarkupsupport/Builder.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/org/codehaus/groovy/tools/shell/InteractiveShellRunner.groovy  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/org/codehaus/groovy/control/StaticImportVisitor.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/org/apache/commons/cli/GroovyInternalPosixParser.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/org/codehaus/groovy/control/customizers/builder/SourceAwareCustomizerFactory.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/groovy/lang/MutableMetaClass.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/org/codehaus/groovy/control/OptimizerVisitor.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/org/codehaus/groovy/control/ASTTransformationsContext.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/groovy/transform/CompileDynamic.groovy  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/org/codehaus/groovy/classgen/asm/MethodCaller.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/org/codehaus/groovy/classgen/asm/sc/StaticTypesWriterController.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/org/codehaus/groovy/transform/sc/transformers/RangeExpressionTransformer.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/org/codehaus/groovy/ast/MixinNode.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/groovy/io/GroovyPrintStream.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/groovy/util/StringTestUtil.groovy  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
jar/org/codehaus/groovy/transform/ReadWriteLockASTTransformation.java

\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/json/internal/Dates.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/PropertyValue.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/NullObject.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/sc/transformers/CastExpressionOptimizer.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/powerassert/SourceText.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/reflection/ReflectionUtils.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/classgen/asm/VariableSlotLoader.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/memoize/NullProtectionStorage.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/util/FastArray.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/MetaBeanProperty.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/transform/Field.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/reflection/stdclasses/ArrayCachedClass.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/util/StringUtil.groovy  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/dgmimpl/arrays/ArrayGetAtMetaMethod.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/transform/Immutable.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/ui/text/GroovyFilter.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/Variable.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ant/VerifyClass.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/swing/factory/MapFactory.groovy  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/swing/binding/JComponentProperties.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/shell/Groovysh.groovy  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/shell/completion/InfixKeywordSyntaxCompleter.groovy  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/builder/AstBuilder.groovy  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/MissingPropertyException.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/groovydoc/SimpleGroovyParameter.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/GroovyStarter.java

- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/ui/view/MacOSXDefaults.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/GrabExclude.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ant/CompileTaskSupport.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/stc/SharedVariableCollector.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/swing/binding/AbstractSyntheticMetaMethods.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/tailrec/TailRecursiveASTTransformation.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/ImmutableASTTransformation.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/xml/StreamingMarkupBuilder.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/metaclass/MissingPropertyExceptionNoStack.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/classgen/InnerClassVisitor.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/stmt/BreakStatement.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/jmx/builder/JmxBeanInfoManager.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/sql/SqlWhereVisitor.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/shell/PatchedConsoleReader.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/groovydoc/GroovyAnnotationRef.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/shell/util/CommandArgumentParser.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/classgen/BytecodeSequence.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/swing/impl/ClosureCellEditor.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/shell/commands/RegisterCommand.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/InvokerHelper.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/NodeList.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/groovydoc/SimpleGroovyClassDocAssembler.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/ui/text/FindReplaceUtility.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/json/internal/JsonStringDecoder.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/MetaObjectProtocol.java

- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/MethodKey.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/ComposedClosure.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/control/io/AbstractReaderSource.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/io/FileVisitResult.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/MetaExpandProperty.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/groovydoc/GroovyDocTool.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/MethodNode.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/callsite/MetaClassConstructorSite.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ant/Groovyc.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/StringGroovyMethods.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/jmx/builder/package-info.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/metaclass/NewInstanceMetaMethod.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/reflection/CachedField.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/dgmimpl/arrays/ArrayPutAtMetaMethod.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/ClassNode.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/shell/commands/HelpCommand.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/sc/transformers/ClosureExpressionTransformer.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/typehandling/BigIntegerMath.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/VariableScope.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/ui/view/BasicContentPane.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/classgen/BytecodeInstruction.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/binding/BindingUpdatable.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/transform/PackageScope.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/ui/text/AutoIndentAction.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-

jar/org/codehaus/groovy/groovydoc/GroovyMemberDoc.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/util/slurpersupport/NoChildren.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/callsite/CallSite.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/transform/GroovyASTTransformation.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/transform/stc/StaticTypesMarker.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/util/slurpersupport/NodeChild.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/transform/PackageScopeASTTransformation.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/antlr/java/Groovifier.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/transform/sc/transformers/VariableExpressionTransformer.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/control/LabelVerifier.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/dgmimpl/arrays/ShortArrayPutAtMetaMethod.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/classgen/asm/OperandStack.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/IOGroovyMethods.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/swing/factory/BoxFactory.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/classgen/asm/sc/StaticTypesWriterControllerFactoryImpl.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/callsite/ConstructorSite.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/util/ListHashMap.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/tools/shell/commands/RecordCommand.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/EmptyRange.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/dgmimpl/arrays/BooleanArrayPutAtMetaMethod.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/NioGroovyMethods.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/util/slurpersupport/FilteredNodeChildren.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/callsite/CallSiteArray.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/apache/groovy/io/StringBuilderWriter.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/m12n/ExtensionModule.java

- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/transform/AutoClone.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/ASTTestTransformation.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/classgen/asm/BytecodeDumper.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/powerassert/SourceTextNotAvailableException.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/syntax/ReadException.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/swing/binding/AbstractButtonProperties.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/classgen/asm/ExpressionAsVariableSlot.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/memoize/ProtectionStorage.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/swing/impl/ClosureRenderer.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/GroovyCodeSource.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/javac/JavaStubCompilationUnit.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/antlr/treewalker/Visitor.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/antlr/AntlrParserPlugin.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/binding/PropertyChangeProxyTargetBinding.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/classgen/asm/CallSiteWriter.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/metaclass/MultipleSetterProperty.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/json/internal/Cache.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/ConvertedClosure.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/sql/GroovyResultSet.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/shell/Shell.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/EncodingGroovyMethods.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/binding/PropertyBinding.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/gse/DependencyTracker.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/DefaultGroovyMethodsSupport.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-



jar/groovy/io/EncodingAwareBufferedWriter.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/classgen/asm/BinaryExpressionMultiTypeDispatcher.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/control/ClassNodeResolver.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/json/JsonOutput.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/tools/shell/completion/GroovySyntaxCompleter.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/classgen/EnumVisitor.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/ast/ImportNode.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/metaclass/TemporaryMethodKey.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/typehandling/GroovyCastException.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/WritablePath.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/ui/ConsoleApplet.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/inspect/TextNode.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/tools/shell/PatchedCandidateListCompletionHandler.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/transform/sc/transformers/BooleanExpressionTransformer.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/model/ValueHolder.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/vmplugin/v7/Java7.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/dgmimpl/arrays/LongArrayPutAtMetaMethod.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/BytecodeInterface8.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/grape/GrapeIvy.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/antlr/LexerFrame.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/reflection/GroovyClassValuePreJava7.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/callsite/PojoMetaClassSite.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/json/JsonParserType.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/swing/factory/ComponentFactory.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/GrabResolver.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/Proxy.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/classgen/asm/sc/StaticTypesCallSiteWriter.java

- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/classgen/asm/ClosureWriter.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/xml/Namespace.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/sql/Sql.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/stmt/Statement.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/groovydoc/ResourceManager.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/Newify.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/dgmimpl/arrays/DoubleArrayPutAtMetaMethod.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/classgen/ClassGenerator.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/expr/DeclarationExpression.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/expr/NamedArgumentListExpression.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/sc/transformers/CompareIdentityExpression.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/shell/completion/ReflectionCompletionCandidate.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/beans/PropertyWriter.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/ScriptException.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/DelegatesTo.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/swing/SwingBuilder.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/expr/NotExpression.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/metaclass/MixinInstanceMetaProperty.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/util/HashCodeHelper.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/NodePrinter.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/swing/factory/RichActionWidgetFactory.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/text/markup/TemplateConfiguration.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/groovydoc/SimpleGroovyTag.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/transform/stc/ClosureParams.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/shell/util/ScriptVariableAnalyzer.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/StringBufferWriter.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/tailrec/ReturnStatementToIterationConverter.groovy

\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/MetaClass.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/control/CompilationUnit.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/ui/view/GTKDefaults.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/control/messages/SyntaxErrorMessage.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ant/RootLoaderRef.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/swing/factory/BeanFactory.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/swing/impl/DefaultAction.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/servlet/GroovyServlet.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/shell/commands/AliasCommand.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/GroovyExceptionInterface.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/classgen/asm/CompileStack.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/text/GStringTemplateEngine.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/json/internal/Type.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/swing/factory/RendererFactory.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/sc/StaticCompileTransformation.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/slurpersupport/NodeParents.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/syntax/CSTNode.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/jmx/builder/JmxTimerFactory.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/ui/ConsoleSupport.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/xml/DomToGroovy.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/mock/interceptor/StubFor.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/jmx/builder/JmxEventListener.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/grape/Grape.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/slurpersupport/Attribute.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/shell/commands/ExitCommand.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/GroovyTestSuite.java

\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/reflection/v7/GroovyClassValueJava7.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/util/ReleaseInfo.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/mock/interceptor/LooseExpectation.groovy  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/classgen/Verifier.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/OrderBy.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/classgen/asm/sc/StaticTypesStatementWriter.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/json/internal/CacheType.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/classgen/asm/BytecodeVariable.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/io/FileType.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/ui/view/BasicMenuBar.groovy  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/security/GroovyCodeSourcePermission.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/callsite/NullCallSite.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/CurriedClosure.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/builder/AstStringCompiler.groovy  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/sql/GroovyResultSetExtension.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/callsite/StaticMetaMethodSite.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/control/Janitor.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/control/customizers/SourceAwareCustomizer.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/shell/commands/EditCommand.groovy  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/control/io/StringReaderSource.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/transform/builder/InitializerStrategy.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/MetaClassRegistryChangeEvent.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/javac/JavacCompilerFactory.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/DefaultGroovyStaticMethods.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/BuilderASTTransformation.java

- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/XmlNodePrinter.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/callsite/GroovySunClassLoader.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/reflection/CachedClass.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/json/JsonDelegate.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/Script.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/binding/ClosureSourceBinding.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/swing/factory/EtchedBorderFactory.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/dgmimpl/arrays/ByteArrayPutAtMetaMethod.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/shell/commands/DisplayCommand.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/swing/factory/BevelBorderFactory.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/ui/GroovyMain.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/GroovyClass.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/ResourceException.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/xml/MarkupBuilder.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/Compiler.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/groovydoc/SimpleGroovyClassDoc.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/reflection/CachedConstructor.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/shell/CommandSupport.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/DefaultGroovyMethods.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/servlet/ServletCategory.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/json/internal/ReaderCharacterSource.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/GeneratedGroovyProxy.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/SourceURIASTTransformation.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/expr/BinaryExpression.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/json/JsonSlurper.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/ObjectRange.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/shell/util/HelpFormatter.groovy

\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/metaclass/MethodHelper.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/sql/DataSet.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/stmt/ForStatement.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/control/customizers/builder/CompilerCustomizationBuilder.groovy  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/ObservableSet.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/inspect/swingui/AstNodeToScriptAdapter.groovy  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/transform/stc/FromString.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/shell/Main.groovy  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/sql/InParameter.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/expr/MethodCall.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/tailrec/VariableExpressionTransformer.groovy  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/slurpersupport/Node.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/GroovyCollections.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/reflection/GroovyClassValue.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/control/customizers/builder/CustomizersFactory.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/json/internal/ValueContainer.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/ResourceGroovyMethods.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/json/internal/JsonParserCharArray.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/ASTTransformationCollectorCodeVisitor.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/expr/ListExpression.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/groovydoc/GroovyParameter.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/model/DefaultTableColumn.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/swing/binding/AbstractSyntheticBinding.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/ArrayUtil.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/transform/Synchronized.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-

jar/org/codehaus/groovy/tools/shell/CommandException.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/swing/factory/LineBorderFactory.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/groovydoc/GroovyMethodDoc.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/xml/QName.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/dgmimpl/arrays/CharArrayPutAtMetaMethod.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/dgmimpl/NumberNumberMetaMethod.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/ast/expr/MapEntryExpression.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/memoize/LRUProtectionStorage.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/AbstractFactory.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/transform/ExternalizeVerifier.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/time/TimeCategory.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/beans/Vetoable.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/binding/FullBinding.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/groovydoc/GroovyTag.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/ast/expr/ClassExpression.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/ast/stmt/IfStatement.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/GroovyException.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/groovydoc/GroovyClassDoc.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/classgen/asm/indy/IndyCallSiteWriter.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/transform/trait/SuperCallTraitTransformer.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/control/ResolveVisitor.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/tools/groovydoc/SimpleGroovyAbstractableElementDoc.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/swing/factory/ColumnFactory.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/transform/stc/MapEntryOrKeyValue.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/ast/expr/UnaryMinusExpression.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/tools/LoaderConfiguration.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/IntRange.java

- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/transform/AutoCloneStyle.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/callsite/PogoMetaClassGetPropertySite.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/groovydoc/GroovyDocTemplateEngine.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/jmx/builder/JmxClientConnectorFactory.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/typehandling/IntegerMath.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/grape/GrabAnnotationTransformation.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/swing/binding/JTextComponentProperties.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/groovydoc/SimpleGroovyMethodDoc.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/classgen/asm/MethodCallerMultiAdapter.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/StackTraceUtils.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/AdaptingMetaClass.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/expr/ConstantExpression.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/groovydoc/SimpleGroovyAnnotationRef.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/memoize/Memoize.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/ListWithDefault.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/expr/CastExpression.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/ui/view/MacOSXMenuBar.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/syntax/RuntimeParserException.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/dgmimpl/arrays/FloatArrayGetAtMetaMethod.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/ui/Console.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/metaclass/ClosureMetaMethod.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/json/internal/CharBuf.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/transform/EqualsAndHashCode.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/ThreadInterruptibleASTTransformation.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-



jar/groovy/lang/ExpandoMetaClassCreationHandle.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/swing/factory/SwingBorderFactory.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/lang/MissingFieldException.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/text/markup/DelegatingIndentWriter.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/lang/IncorrectClosureArgumentsException.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/json/JsonBuilder.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/control/BytecodeProcessor.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/util/slurpersupport/GPathResult.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/xml/Entity.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/MethodRankHelper.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/ui/ConsoleActions.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/transform/CompileDynamicProcessor.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/json/internal/Value.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/transform/stc/StaticTypeCheckingVisitor.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/swing/factory/WidgetFactory.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/lang/PropertyAccessInterceptor.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/callsite/GetEffectivePogoFieldSite.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/transform/LazyASTTransformation.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/sql/CallResultSet.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/antlr/treewalker/NodePrinter.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/cli/GroovyPosixParser.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/Range.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/transform/stc/IncorrectTypeHintException.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/transform/ASTTransformation.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/swing/factory/TitledBorderFactory.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/transform/tailrec/AstHelper.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/groovydoc/GroovyConstructorDoc.java

- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/ml2n/SimpleExtensionModule.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ant/Groovy.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/gse/StringSetMap.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/antlr/treewalker/NodeCollector.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/GroovyAssert.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/json/internal/SimpleCache.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/ExternalizeMethodsASTTransformation.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/swing/factory/ImageIconFactory.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/expr/GStringExpression.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/vmplugin/v7/IndyGuardsFiltersAndSignatures.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/swing/factory/BindFactory.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/classgen/asm/sc/StaticTypesBinaryExpressionMultiTypeDispatcher.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/ClassCodeExpressionTransformer.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/wrappers/BooleanWrapper.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/callsite/PogoMetaMethodSite.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/GroovyShell.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/EqualsAndHashCodeASTTransformation.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/FieldASTTransformation.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/servlet/ServletBinding.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/CharsetToolkit.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/SpreadMap.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/IFilenameFinder.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/stc/SignatureCodecVersion1.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/shell/commands/SetCommand.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ant/GenerateStubsTask.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/TracingInterceptor.java

- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/jmx/builder/JmxOperationInfoManager.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/swing/binding/JSliderProperties.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/json/internal/CharSequenceValue.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/time/TimeDuration.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/util/AbstractConcurrentMap.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/model/ValueModel.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/shell/Interpreter.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/groovydoc/GroovyRootDoc.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/control/AnnotationConstantsVisitor.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/CanonicalASTTransformation.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/plugin/GroovyRunner.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/syntax/Numbers.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/xml/XmlUtil.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/jmx/builder/JmxBuilderModelMBean.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/JavadocAssertionTestSuite.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/reflection/stdclasses/CachedSAMClass.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ant/FileIterator.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/swing/binding/JTableProperties.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/util/Reference.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/binding/BindingProxy.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/RangeInfo.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/control/customizers/SecureASTCustomizer.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/reflection/ReflectionCache.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/shell/commands/SaveCommand.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/GroovyCallable.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/transform/SelfType.java

- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/javac/JavaCompiler.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/shell/completion/IdentifierCompletor.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/transform/InheritConstructors.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/NotYetImplementedASTTransformation.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/classgen/asm/indy/IndyBinHelper.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/GroovyInterceptable.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/metaclass/ReflectorLoader.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/util/ReferenceBundle.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/trait/TraitASTTransformation.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/classgen/InnerClassVisitorHelper.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/groovydoc/FileSystemResourceManager.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/Buildable.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/callsite/ClassMetaClassGetPropertySite.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/binding/AbstractFullBinding.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/transform/TailRecursive.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/shell/ExitNotification.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/binding/TargetBinding.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/wrappers/ShortWrapper.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/binding/TriggerBinding.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/swing/binding/JListProperties.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/Node.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/sql/SqlOrderByVisitor.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/IndentPrinter.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/GroovyObjectSupport.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/powerassert/ValueRecorder.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-

jar/org/codehaus/groovy/tools/shell/ShellRunner.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/transform/stc/FromAbstractTypeMethods.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/control/CompilerConfiguration.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/control/CompilationFailedException.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/tools/shell/util/SimpleCompletor.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/util/ReferenceType.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/swing/factory/InternalFrameFactory.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/dgmimpl/arrays/ByteArrayGetAtMetaMethod.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/transform/DelegateASTTransformation.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/Binding.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/tools/groovydoc/ArrayClassDocWrapper.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/swing/binding/JScrollBarProperties.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/wrappers/DoubleWrapper.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/syntax/ParserException.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/antlr/treewalker/FlatNodeListTraversal.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/classgen/asm/WriterControllerFactory.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/control/GenericsVisitor.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/metaclass/MissingMethodExecutionFailed.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/GroovyMBean.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/control/MultipleCompilationErrorsException.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/jmx/builder/JmxBeanExportFactory.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/swing/impl/TableLayoutCell.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/ast/stmt/ExpressionStatement.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/ast/ASTNode.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/tools/GrapeMain.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-

jar/groovy/sql/ResultSetMetaDataWrapper.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/lang/DelegatingMetaClass.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/AllTestSuite.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/ast/tools/ClosureUtils.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/Grab.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/transform/AutoExternalize.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/json/JsonSlurperClassic.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/json/internal/JsonParserLax.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/tools/javac/JavacJavaCompiler.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/metaclass/ConcurrentReaderHashMap.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/antlr/treewalker/SourcePrinter.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/ast/stmt/CaseStatement.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/inspect/swingui/TableSorter.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/ast/ClassCodeVisitorSupport.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/dgmimpl/arrays/ObjectArrayGetAtMetaMethod.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/xml/StreamingDOMBuilder.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/json/internal/IO.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/reflection/stdclasses/ByteCachedClass.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/transform/sc/transformers/BinaryExpressionTransformer.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/text/Template.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/json/internal/ByteScanner.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/classgen/EnumCompletionVisitor.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/inspect/swingui/AstBrowser.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/ast/expr/AttributeExpression.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/lang/IllegalPropertyAccessException.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/metaclass/DefaultMetaClassInfo.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-

jar/groovy/xml/streamingmarkupsupport/BaseMarkupBuilder.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/json/internal/ValueMap.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/swing/binding/JSpinnerProperties.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/memoize/MemoizeCache.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/antlr/SourceInfo.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/transform/tailrec/TernaryToIfStatementConverter.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/XmlGroovyMethods.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/metaclass/MethodMetaProperty.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/transform/builder/SimpleStrategy.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/wrappers/IntWrapper.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/tools/GrapeUtil.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/classgen/AsmClassGenerator.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/transform/TupleConstructor.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/binding/SwingTimerTriggerBinding.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/NumberAwareComparator.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/dgmimpl/arrays/ArrayMetaMethod.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/transform/sc/transformers/ConstructorCallTransformer.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/lang/MetaClassRegistry.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/sql/BatchingPreparedStatementWrapper.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/json/JsonParser.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/typehandling/DefaultTypeTransformation.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/ast/expr/ExpressionTransformer.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/callsite/PojoMetaMethodSite.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/binding/BindPath.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/lang/MapWithDefault.java

- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/sc/transformers/ListExpressionTransformer.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/transform/ASTTest.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/shell/AnsiDetector.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/Sequence.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/transform/CompileStatic.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/classgen/ReturnAdder.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/transform/stc/SingleSignatureClosureHint.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/text/markup/TemplateASTTransformer.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/wrappers/FloatWrapper.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/MetaClassHelper.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/swing/factory/DialogFactory.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/stc/UnionTypeClassNode.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/json/internal/BaseJsonParser.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/antlr/treewalker/VisitorAdapter.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/util/LockableObject.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/groovydoc/SimpleGroovyFieldDoc.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/xml/DOMBuilder.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/transform/Trait.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/classgen/ExtendedVerifier.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/expr/UnaryPlusExpression.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/control/customizers/DelegatingCustomizer.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/tools/GeneralUtils.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/stmt/SynchronizedStatement.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/syntax/TokenMismatchException.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/text/markup/AutoNewLineTransformer.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/jmx/builder/JmxServerConnectorFactory.groovy



- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/classgen/genMathModification.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/reflection/stdclasses/BigIntegerCachedClass.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/vmplugin/VMPluginFactory.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/DeprecationException.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/io/PlatformLineWriter.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/classgen/asm/BinaryDoubleExpressionHelper.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/CategoryASTTransformation.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/json/internal/Chr.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/swing/impl/TableLayoutRow.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/text/markup/MarkupTemplateEngine.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/FlushingStreamWriter.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/text/markup/BaseTemplate.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/javac/JavaAwareResolveVisitor.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/groovydoc/SimpleGroovyConstructorDoc.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/jmx/builder/JmxBuilderTools.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/mock/interceptor/MockProxyMetaClass.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/wrappers/GroovyObjectWrapper.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/antlr/treewalker/TraversalHelper.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/classgen/asm/sc/StaticTypesClosureWriter.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/beans/DefaultPropertyWriter.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/binding/ClosureTriggerBinding.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/groovydoc/GroovyDoc.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/DynamicVariable.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/ScriptBytecodeAdapter.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-

jar/groovy/ui/view/WindowsDefaults.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/tools/shell/CommandRegistry.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/groovydoc/GroovyPackageDoc.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/transform/stc/TypeCheckingExtension.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/transform/AnnotationCollector.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/metaclass/MixinInstanceMetaMethod.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/classgen/asm/BinaryExpressionHelper.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/ast/InterfaceHelperClassNode.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/MetaProperty.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/wrappers/Wrapper.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/ast/stmt/WhileStatement.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/GroovySystem.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/reflection/stdclasses/LongCachedClass.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/util/ManagedConcurrentValueMap.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/transform/stc/TraitTypeCheckingExtension.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/ast/expr/RangeExpression.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/control/customizers/builder/SecureASTCustomizerFactory.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/tools/ErrorReporter.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/tools/shell/completion/ReflectionCompletor.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/json/internal/LazyValueMap.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/jmx/builder/JmxListenerFactory.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/vmplugin/v5/JUnit4Utils.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/control/CompilePhase.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/dgmimpl/arrays/IntegerArrayGetAtMetaMethod.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/antlr/ASTParserException.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-

jar/org/codehaus/groovy/tools/shell/completion/CommandNameCompleter.groovy  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/jmx/builder/JmxMetaMapBuilder.groovy  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/model/PropertyModel.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/sc/TemporaryVariableExpression.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/swing/impl/TableLayout.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/reflection/ParameterTypes.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/classgen/BytecodeExpression.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/expr/MapExpression.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/dgmimpl/arrays/DoubleArrayGetAtMetaMethod.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/swing/factory/GridBagFactory.groovy  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/classgen/AnnotationVisitor.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/text/markup/TemplateResolver.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/expr/PropertyExpression.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/groovydoc/GroovyProgramElementDoc.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/syntax/Reduction.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/model/ClosureModel.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/shell/completion/StricterArgumentCompleter.groovy  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/reflection/stdclasses/CachedClosureClass.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/syntax/SyntaxException.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/json/internal/FastStringUtils.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/callsite/DummyCallSite.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/RegexSupport.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/transform/Sortable.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/metaclass/TransformMetaMethod.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/builder/AstBuilderTransformation.java

\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/transform/ToString.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/SpreadMapEvaluatingException.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/InvokerInvocationException.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/callsite/PerInstancePojoMetaClassSite.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/dgmimpl/arrays/CharacterArrayGetAtMetaMethod.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/control/io/FileReaderSource.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/reflection/CachedMethod.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/json/internal/ValueList.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/StaticTypesTransformation.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/transform/stc/FirstParam.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/shell/util/Preferences.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/vmplugin/v5/PluginDefaultGroovyMethods.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/ProxyGenerator.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/Grapes.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/shell/commands/ClearCommand.groovy  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/expr/ElvisOperatorExpression.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/builder/AstSpecificationCompiler.groovy  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/transform/Memoized.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/xml/FactorySupport.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/control/ConfigurationException.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/ClosureInvokingMethod.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/MethodClosure.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/swing/factory/FrameFactory.groovy  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/transform/WithWriteLock.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/util/ManagedLinkedList.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/vmplugin/VMPlugin.java

- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/Writable.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/json/JsonTokenType.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/MapEntry.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/callsite/PogoInterceptableSite.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/xml/streamingmarkupsupport/StreamingMarkupWriter.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/beans/PropertyAccessor.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/PropertyNode.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/metaclass/ClosureStaticMetaMethod.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/shell/commands/DocCommand.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/reflection/stdclasses/ShortCachedClass.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/reflection/SunClassLoader.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/expr/SpreadExpression.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/reflection/ClassLoaderForClassArtifacts.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/dgmimpl/arrays/LongArrayGetAtMetaMethod.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/vmplugin/v5/Java5.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/m12n/StandardPropertiesModuleFactory.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ant/Groovydoc.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/FileTreeBuilder.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/util/ReferenceManager.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/binding/AggregateBinding.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/GenericsType.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/control/Phases.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/metaclass/NewStaticMetaMethod.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/ui/HistoryRecord.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/classgen/asm/OptimizingStatementWriter.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-

jar/groovy/sql/BatchingStatementWrapper.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/jmx/builder/JmxEmitterFactory.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/classgen/asm/BinaryLongExpressionHelper.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/mock/interceptor/MockFor.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/jmx/builder/JmxEventEmitter.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/swing/factory/TableLayoutFactory.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/control/customizers/CompilationCustomizer.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/powerassert/Value.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/callsite/BooleanReturningMethodInvoker.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/vmplugin/v8/Java8.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/dgmimpl/arrays/BooleanArrayGetAtMetaMethod.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/json/internal/MapItemValue.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/util/slurpersupport/NodeIterator.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/ast/expr/PrefixExpression.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/inspect/Inspector.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/reflection/GeneratedMetaMethod.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/DefaultCachedMethodKey.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/ast/AnnotatedNode.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/memoize/LRUCache.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/ui/ConsoleTextEditor.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/classgen/asm/sc/StaticTypesUnaryExpressionHelper.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/transform/TupleConstructorASTTransformation.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/antlr/treewalker/MindMapPrinter.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/classgen/asm/BinaryIntExpressionHelper.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/tools/shell/commands/ShowCommand.groovy

\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/GroovyCodeVisitor.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/classgen/asm/BinaryFloatExpressionHelper.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/stc/Receiver.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/control/customizers/ImportCustomizer.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/shell/util/MessageSource.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/ExpandoMetaClass.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/Reference.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/reflection/stdclasses/NumberCachedClass.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/expr/TupleExpression.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/control/SourceExtensionHandler.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/ui/view/BasicToolBar.groovy  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/reflection/stdclasses/StringCachedClass.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/JavadocAssertionTestBuilder.groovy  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ant/AntProjectPropertiesDelegate.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/shell/completion/NavigablePropertiesCompleter.groovy  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/expr/ArgumentListExpression.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/Delegate.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/util/TripleKeyHashMap.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/transform/TimedInterrupt.groovy  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/swing/factory/EmptyBorderFactory.groovy  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/sc/transformers/MethodCallExpressionTransformer.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/Closure.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/dgmimpl/arrays/ShortArrayGetAtMetaMethod.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/powerassert/PowerAssertionError.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/shell/completion/KeywordSyntaxCompleter.groovy  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-

jar/org/codehaus/groovy/tools/shell/commands/HistoryCommand.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/tools/groovydoc/SimpleGroovyType.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/ProcessGroovyMethods.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/text/SimpleTemplateEngine.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/time/TimeDatumDependentDuration.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/antlr/AntlrASTProcessSnippets.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/swing/LookAndFeelHelper.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/tools/shell/BufferManager.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/util/slurpersupport/ReplacementNode.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/metaclass/ClosureMetaClass.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/util/Finalizable.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/logging/Slf4j.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/swing/binding/JComboBoxMetaMethods.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/syntax/TokenException.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/swing/factory/CollectionFactory.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/inspect/swingui/AstBrowserProperties.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/callsite/GetEffectivePojoPropertySite.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/control/io/URLReaderSource.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/transform/trait/NaryOperationRewriter.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/lang/BenchmarkInterceptor.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/typehandling/BigDecimalMath.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/callsite/CallSiteAwareMetaMethod.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/transform/stc/TypeCheckingContext.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/control/messages/LocatedMessage.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/ui/view/BasicStatusBar.groovy



- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/control/HasCleanup.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/DefaultMethodKey.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/callsite/ConstructorMetaMethodSite.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/control/io/InputStreamReaderSource.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/callsite/StaticMetaClassSite.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/ConditionalInterruptibleASTTransformation.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/groovydoc/Main.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/swing/factory/SeparatorFactory.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/metaclass/OwnedMetaClass.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/classgen/asm/UnaryExpressionHelper.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/antlr/UnicodeLexerSharedInputState.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/ui/view/Defaults.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/expr/PostfixExpression.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ant/UberCompileTask.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/swing/binding/JTableMetaMethods.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/stmt/AssertStatement.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/GroovyObject.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/time/Duration.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/m12n/ExtensionModuleScanner.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/callsite/AbstractCallSite.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/json/internal/JsonFastParser.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/antlr/EnumHelper.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/control/messages/Message.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/tools/PropertyNodeUtils.java
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/tailrec/InWhileLoopWrapper.groovy
- \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-

jar/groovy/text/markup/TagLibAdapter.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/classgen/asm/StatementWriter.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/mock/interceptor/StrictExpectation.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/tools/groovydoc/SimpleGroovyMemberDoc.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/transform/stc/SecondPassExpression.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/ast/tools/WideningCategories.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/transform/stc/DefaultTypeCheckingExtension.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/mock/interceptor/Demand.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/EncodingGroovyMethodsSupport.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/ast/expr/VariableExpression.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/ast/ConstructorNode.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/tools/groovydoc/gstringTemplates/GroovyDocTemplateInfo.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/sql/ResultSetOutParameter.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/swing/factory/BindGroupFactory.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/tools/groovydoc/GroovyRootDocBuilder.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/transform/BaseScript.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/transform/tailrec/CollectRecursiveCalls.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/reflection/stdclasses/CharacterCachedClass.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/antlr/LineColumn.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/runtime/DateGroovyMethods.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/util/ComplexKeyHashMap.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/org/codehaus/groovy/transform/AbstractInterruptibleASTTransformation.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/ui/ConsoleView.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/lang/MetaClassRegistryChangeEventListner.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-  
 jar/groovy/jmx/builder/JmxBeanFactory.groovy

\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/callsite/GetEffectivePogoPropertySite.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/javac/JavaStubGenerator.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/Tuple2.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/syntax/Token.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/metaclass/MetaClassRegistryImpl.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/PermutationGenerator.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/reflection/ClassInfo.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/antlr/treewalker/PreOrderTraversal.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/GroovyBugError.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/GStringImpl.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/control/messages/ExceptionMessage.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/antlr/GroovySourceToken.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/xml/NamespaceBuilderSupport.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/stmt/DoWhileStatement.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/shell/commands/PurgeCommand.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/jmx/builder/JmxBuilderException.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/FileNameFinder.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/ui/GroovySocketServer.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/control/StaticVerifier.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/MixinASTTransformation.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/classgen/asm/sc/StaticTypesTypeChooser.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/sc/ListOfExpressionsExpression.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/typehandling/ShortTypeHandling.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/GroovyShellTestCase.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-

jar/groovy/json/internal/Exceptions.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/PackageNode.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/stc/AbstractTypeCheckingExtension.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/transform/NotYetImplemented.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/jsr223/ScriptExtensions.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/json/internal/ValueMapImpl.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/dgmimpl/arrays/IntegerArrayPutAtMetaMethod.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/model/DefaultTableModel.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/StringWriterIOException.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/antlr/ASTRuntimeException.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/stc/PropertyLookupVisitor.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/sql/OutParameter.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/m12n/ExtensionModuleRegistry.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/ObservableMap.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/ui/text/StructuredSyntaxHandler.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/ui/text/StructuredSyntaxResources.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/json/JsonException.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/swing/factory/ColumnModelFactory.groovy  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/control/customizers/ASTTransformationCustomizer.groovy  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/swing/binding/JListMetaMethods.groovy  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/xml/StreamingSAXBuilder.groovy  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/sc/StaticCompilationMetadataKeys.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/stmt/SwitchStatement.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/text/TemplateParseException.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/inspect/swingui/ObjectBrowser.groovy  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/slurpersupport/FilteredAttributes.java

\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/slurpersupport/Attributes.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/classgen/genDgmMath.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/trait/Traits.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/FactoryBuilderSupport.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/control/messages/WarningMessage.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/swing/binding/JComboBoxProperties.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/syntax/Types.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/swing/factory/MatteBorderFactory.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/Singleton.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/IndexedPropertyASTTransformation.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/CodeVisitorSupport.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/callsite/ConstructorMetaClassSite.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/sql/GroovyRowResult.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/wrappers/PojoWrapper.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/expr/ClosureExpression.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/CompileUnit.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/inspect/TextTreeNodeMaker.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/BaseScriptASTTransformation.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/shell/util/PackageHelperImpl.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/beans/DefaultPropertyReader.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/expr/Expression.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/shell/ComplexCommandSupport.groovy  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/SortableASTTransformation.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/NewifyASTTransformation.java  
 \* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-

jar/org/codehaus/groovy/runtime/ScriptTestAdapter.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/vmplugin/v7/IndyInterface.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/json/StringEscapeUtils.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/inspect/swingui/TableMap.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/beans/Bindable.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/trait/TraitComposer.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/MissingMethodException.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/classgen/asm/AssertionWriter.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/expr/BitwiseNegationExpression.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/lang/GroovyRuntimeException.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/stc/ExtensionMethodNode.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ant/LoggingHelper.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/transform/TypeCheckingMode.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/json/internal/NumberValue.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/util/ManagedReference.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/callsite/PojoMetaClassGetPropertySite.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/util/ManagedConcurrentLinkedQueue.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ast/expr/ConstructorCallExpression.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/runtime/callsite/GetEffectivePojoFieldSite.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/ui/ConsoleIvyPlugin.groovy  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/ant/FileScanner.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/groovy/util/DelegatingScript.java  
\* /opt/cola/permits/1136034982\_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/transform/stc/StaticTypeCheckingSupport.java  
No license file was found, but licenses were detected in source scan.

# Licensed to the Apache Software Foundation (ASF) under one or more  
# contributor license agreements. See the NOTICE file distributed with

```
this work for additional information regarding copyright ownership.
The ASF licenses this file to You under the Apache License, Version 2.0
(the "License"); you may not use this file except in compliance with
the License. You may obtain a copy of the License at
#
http://www.apache.org/licenses/LICENSE-2.0
#
Unless required by applicable law or agreed to in writing, software
distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License.
```

org.codehaus.groovy.testng.TestNgRunner

Found in path(s):

```
* /opt/cola/permits/1136034982_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/META-INF/services/org.codehaus.groovy.plugins.Runners
```

No license file was found, but licenses were detected in source scan.

```
to you under the Apache License, Version 2.0 (the
"License"); you may not use this file except in compliance
with the License. You may obtain a copy of the License at
http://www.apache.org/licenses/LICENSE-2.0
software distributed under the License is distributed on an
```

Found in path(s):

```
* /opt/cola/permits/1136034982_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/shell/commands/RegisterCommand.properties
* /opt/cola/permits/1136034982_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/shell/commands/ShowCommand.properties
* /opt/cola/permits/1136034982_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/shell/commands/LoadCommand.properties
* /opt/cola/permits/1136034982_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/shell/commands/ImportCommand.properties
* /opt/cola/permits/1136034982_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/META-INF/groovy-release-info.properties
* /opt/cola/permits/1136034982_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/shell/commands/HistoryCommand.properties
* /opt/cola/permits/1136034982_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/shell/commands/ClearCommand.properties
* /opt/cola/permits/1136034982_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/shell/CommandSupport.properties
* /opt/cola/permits/1136034982_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/shell/commands/InspectCommand.properties
* /opt/cola/permits/1136034982_1613662348.29/0/groovy-all-2-4-21-sources-1-jar/org/codehaus/groovy/tools/shell/commands/HelpCommand.properties
* /opt/cola/permits/1136034982_1613662348.29/0/groovy-all-2-4-21-sources-1-
```

```
jar/org/codehaus/groovy/tools/shell/commands/EditCommand.properties
* /opt/cola/permits/1136034982_1613662348.29/0/groovy-all-2-4-21-sources-1-
jar/org/codehaus/groovy/tools/shell/CommandAlias.properties
* /opt/cola/permits/1136034982_1613662348.29/0/groovy-all-2-4-21-sources-1-
jar/org/codehaus/groovy/tools/shell/commands/RecordCommand.properties
* /opt/cola/permits/1136034982_1613662348.29/0/groovy-all-2-4-21-sources-1-
jar/org/codehaus/groovy/tools/DocGenerator.properties
* /opt/cola/permits/1136034982_1613662348.29/0/groovy-all-2-4-21-sources-1-
jar/org/codehaus/groovy/tools/shell/commands/SaveCommand.properties
* /opt/cola/permits/1136034982_1613662348.29/0/groovy-all-2-4-21-sources-1-
jar/org/codehaus/groovy/tools/shell/commands/PurgeCommand.properties
* /opt/cola/permits/1136034982_1613662348.29/0/groovy-all-2-4-21-sources-1-
jar/org/codehaus/groovy/tools/shell/commands/SetCommand.properties
* /opt/cola/permits/1136034982_1613662348.29/0/groovy-all-2-4-21-sources-1-
jar/groovy/ui/InteractiveShell.properties
* /opt/cola/permits/1136034982_1613662348.29/0/groovy-all-2-4-21-sources-1-
jar/org/codehaus/groovy/tools/shell/commands/DocCommand.properties
* /opt/cola/permits/1136034982_1613662348.29/0/groovy-all-2-4-21-sources-1-
jar/org/codehaus/groovy/tools/shell/Groovysh.properties
* /opt/cola/permits/1136034982_1613662348.29/0/groovy-all-2-4-21-sources-1-
jar/org/codehaus/groovy/tools/shell/commands/ExitCommand.properties
* /opt/cola/permits/1136034982_1613662348.29/0/groovy-all-2-4-21-sources-1-
jar/org/codehaus/groovy/tools/shell/commands/AliasCommand.properties
* /opt/cola/permits/1136034982_1613662348.29/0/groovy-all-2-4-21-sources-1-
jar/org/codehaus/groovy/tools/shell/Main.properties
* /opt/cola/permits/1136034982_1613662348.29/0/groovy-all-2-4-21-sources-1-
jar/org/codehaus/groovy/tools/shell/commands/DisplayCommand.properties
* /opt/cola/permits/1136034982_1613662348.29/0/groovy-all-2-4-21-sources-1-
jar/org/codehaus/groovy/tools/shell/commands/ShadowCommand.properties
* /opt/cola/permits/1136034982_1613662348.29/0/groovy-all-2-4-21-sources-1-
jar/org/codehaus/groovy/tools/groovydoc/Main.properties
No license file was found, but licenses were detected in source scan.
```

```
/*! normalize.css v2.1.0 | MIT License | git.io/normalize */
```

Found in path(s):

```
* /opt/cola/permits/1136034982_1613662348.29/0/groovy-all-2-4-21-sources-1-
jar/org/codehaus/groovy/tools/groovydoc/gstringTemplates/topLevel/stylesheet.css
* /opt/cola/permits/1136034982_1613662348.29/0/groovy-all-2-4-21-sources-1-
jar/org/codehaus/groovy/tools/stylesheet.css
```

# 1.108 libgpg-error 1.31 1.e18

## 1.108.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991



Copyright (C) 1989, 1991 Free Software Foundation, Inc.

51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

## Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free

program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE  
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any

part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any

later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

<signature of Ty Coon>, 1 April 1989

Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General

Public License instead of this License.

## GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.  
51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts  
as the successor of the GNU Library Public License, version 2, hence  
the version number 2.1.]

### Preamble

The licenses for most software are designed to take away your  
freedom to share and change it. By contrast, the GNU General Public  
Licenses are intended to guarantee your freedom to share and change  
free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some  
specially designated software packages--typically libraries--of the  
Free Software Foundation and other authors who decide to use it. You  
can use it too, but we suggest you first think carefully about whether  
this license or the ordinary General Public License is the better  
strategy to use in any particular case, based on the explanations  
below.

When we speak of free software, we are referring to freedom of use,  
not price. Our General Public Licenses are designed to make sure that  
you have the freedom to distribute copies of free software (and charge  
for this service if you wish); that you receive source code or can get  
it if you want it; that you can change the software and use pieces of  
it in new free programs; and that you are informed that you can do  
these things.

To protect your rights, we need to make restrictions that forbid  
distributors to deny you these rights or to ask you to surrender these  
rights. These restrictions translate to certain responsibilities for  
you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis  
or for a fee, you must give the recipients all the rights that we gave  
you. You must make sure that they, too, receive or can get the source  
code. If you link other code with the library, you must provide  
complete object files to the recipients, so that they can relink them  
with the library after making changes to the library and recompiling



it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this

case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

#### GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not

compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the

Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
- b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent

license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is



copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!

## 1.109 metrics 2.2.0

### 1.109.1 Available under license :

Many Many Thanks To

=====

- \* Alex Lambert (@bifflabs)
- \* Brian Roberts (@flicker)
- \* Bruce Mitchener (@waywardmonkeys)
- \* C. Scott Andreas (@cscotta)
- \* Charles Care (@ccare)
- \* Chris Burroughs (@cburroughs)
- \* Ciamac Moallemi (@ciamac)
- \* Cliff Moon (@cliffmoon)
- \* Collin VanDyck (@collinvandyck)
- \* Dag Liodden (@daggerrz)
- \* Drew Stephens (@dinomite)

- \* Eric Daigneault (@Newtopian)
- \* Francois Beausoleil (@francois)
- \* Gerolf Seitz (@seitz)
- \* Jackson Davis (@jcdavis)
- \* James Casey (@jamesc)
- \* JD Maturen (@sku)
- \* Jeff Hodges (@jmhodges)
- \* Jesper Blomquist (jeb101)
- \* John Ewart (@johnewart)
- \* John Wang (@jvasoze)
- \* Kevin Clark (@kevinclark)
- \* Mahesh Tiyyagura (@mahesh)
- \* Martin Traverso (@martint)
- \* Matt Abrams (@abramsm)
- \* Matt Ryall (@mattryall)
- \* Matthew Gilliard (@mjg123)
- \* Matthew O'Connor (@oconnor0)
- \* Mrten Gustafson (@chids)
- \* Neil Prosser (@neilprosser)
- \* Robby Walker (@robbYWalker)
- \* Ryan Kennedy (@ryankennedy)
- \* Ryan W Tenney (@ryantenney)
- \* Shaneal Manek (@smanek)
- \* Thomas Dudziak (@tomdz)
- \* Tobias Lidskog (@tobli)

#### Metrics

Copyright 2010-2012 Coda Hale and Yammer, Inc.

This product includes software developed by Coda Hale and Yammer, Inc.

This product includes code derived from the JSR-166 project (ThreadLocalRandom), which was released with the following comments:

Written by Doug Lea with assistance from members of JCP JSR-166 Expert Group and released to the public domain, as explained at <http://creativecommons.org/publicdomain/zero/1.0/>

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

##### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise

designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. **Grant of Copyright License.** Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. **Grant of Patent License.** Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. **Redistribution.** You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must

include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly

negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright 2010-2012 Coda Hale and Yammer, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

# 1.110 cyrus-sasl 2.1.27-6.el8\_5

## 1.110.1 Available under license :

```
/* CMU libsasl
 * Tim Martin
 * Rob Earhart
 * Rob Siemborski
 */
/*
 * Copyright (c) 1998-2003 Carnegie Mellon University. All rights reserved.
 *
 * Redistribution and use in source and binary forms, with or without
 * modification, are permitted provided that the following conditions
 * are met:
 *
 * 1. Redistributions of source code must retain the above copyright
 * notice, this list of conditions and the following disclaimer.
 *
 * 2. Redistributions in binary form must reproduce the above copyright
 * notice, this list of conditions and the following disclaimer in
 * the documentation and/or other materials provided with the
 * distribution.
 *
 * 3. The name "Carnegie Mellon University" must not be used to
 * endorse or promote products derived from this software without
 * prior written permission. For permission or any other legal
 * details, please contact
 * Office of Technology Transfer
 * Carnegie Mellon University
 * 5000 Forbes Avenue
 * Pittsburgh, PA 15213-3890
 * (412) 268-4387, fax: (412) 268-7395
 * tech-transfer@andrew.cmu.edu
 *
 * 4. Redistributions of any form whatsoever must retain the following
 * acknowledgment:
 * "This product includes software developed by Computing Services
 * at Carnegie Mellon University (http://www.cmu.edu/computing/)."
```



Copyright (C) 1995-1997 Eric Young (eay@mincom.oz.au)

All rights reserved.

This package is an DES implementation written by Eric Young (eay@mincom.oz.au).  
The implementation was written so as to conform with MIT's libdes.

This library is free for commercial and non-commercial use as long as  
the following conditions are adhered to. The following conditions  
apply to all code found in this distribution.

Copyright remains Eric Young's, and as such any Copyright notices in  
the code are not to be removed.

If this package is used in a product, Eric Young should be given attribution  
as the author of that the SSL library. This can be in the form of a textual  
message at program startup or in documentation (online or textual) provided  
with the package.

Redistribution and use in source and binary forms, with or without  
modification, are permitted provided that the following conditions  
are met:

1. Redistributions of source code must retain the copyright  
notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright  
notice, this list of conditions and the following disclaimer in the  
documentation and/or other materials provided with the distribution.
3. All advertising materials mentioning features or use of this software  
must display the following acknowledgement:

This product includes software developed by Eric Young (eay@mincom.oz.au)

THIS SOFTWARE IS PROVIDED BY ERIC YOUNG ``AS IS" AND  
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE  
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE  
ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE  
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL  
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS  
OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)  
HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT  
LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY  
OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF  
SUCH DAMAGE.

The license and distribution terms for any publically available version or  
derivative of this code cannot be changed. i.e. this code cannot simply be  
copied and put under another distribution license  
[including the GNU Public License.]

The reason behind this being stated in this direct manner is past  
experience in code simply being copied and the attribution removed

from it and then being distributed as part of other packages. This implementation was a non-trivial and unpaid effort.

/\* CMU libsasl

\* Tim Martin

\* Rob Earhart

\* Rob Siemborski

\*/

/\*

\* Copyright (c) 2001 Carnegie Mellon University. All rights reserved.

\*

\* Redistribution and use in source and binary forms, with or without  
\* modification, are permitted provided that the following conditions  
\* are met:

\*

\* 1. Redistributions of source code must retain the above copyright  
\* notice, this list of conditions and the following disclaimer.

\*

\* 2. Redistributions in binary form must reproduce the above copyright  
\* notice, this list of conditions and the following disclaimer in  
\* the documentation and/or other materials provided with the  
\* distribution.

\*

\* 3. The name "Carnegie Mellon University" must not be used to  
\* endorse or promote products derived from this software without  
\* prior written permission. For permission or any other legal  
\* details, please contact

\* Office of Technology Transfer

\* Carnegie Mellon University

\* 5000 Forbes Avenue

\* Pittsburgh, PA 15213-3890

\* (412) 268-4387, fax: (412) 268-7395

\* tech-transfer@andrew.cmu.edu

\*

\* 4. Redistributions of any form whatsoever must retain the following  
\* acknowledgment:

\* "This product includes software developed by Computing Services  
\* at Carnegie Mellon University (<http://www.cmu.edu/computing/>)."

\*

\* CARNEGIE MELLON UNIVERSITY DISCLAIMS ALL WARRANTIES WITH REGARD TO  
\* THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY  
\* AND FITNESS, IN NO EVENT SHALL CARNEGIE MELLON UNIVERSITY BE LIABLE  
\* FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES  
\* WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN  
\* AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING  
\* OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

\*/

# 1.111 rpm 4.14.3-23.el8

## 1.111.1 Available under license :

RPM is covered under two separate licenses.

The entire code base may be distributed under the terms of the GNU General Public License (GPL), which appears immediately below. Alternatively, all of the source code in the lib and rpmlib subdirectories of the RPM source code distribution as well as any code derived from that code may instead be distributed under the GNU Library General Public License (LGPL), at the choice of the distributor. The complete text of the LGPL appears at the bottom of this file.

This alternative is provided to enable applications to be linked against the RPM library (commonly called librpm) without forcing such applications to be distributed under the GPL.

Any questions regarding the licensing of RPM should be addressed to rpm-maint@lists.rpm.org

---

### GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

675 Mass Ave, Cambridge, MA 02139, USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it

in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of

running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the

entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not

compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the

integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS



TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) 19yy <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 675 Mass Ave, Cambridge, MA 02139, USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

Gnomovision version 69, Copyright (C) 19yy name of author  
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.  
This is free software, and you are welcome to redistribute it  
under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program  
`Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989  
Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

-----  
**GNU LIBRARY GENERAL PUBLIC LICENSE**  
Version 2, June 1991

Copyright (C) 1991 Free Software Foundation, Inc.  
675 Mass Ave, Cambridge, MA 02139, USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

[This is the first released version of the library GPL. It is  
numbered 2 because it goes with version 2 of the ordinary GPL.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Library General Public License, applies to some

specially designated Free Software Foundation software, and to any other libraries whose authors decide to use it. You can use it for your libraries, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library, or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link a program with the library, you must provide complete object files to the recipients so that they can relink them with the library, after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

Our method of protecting your rights has two steps: (1) copyright the library, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the library.

Also, for each distributor's protection, we want to make certain that everyone understands that there is no warranty for this free library. If the library is modified by someone else and passed on, we want its recipients to know that what they have is not the original version, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that companies distributing free software will individually obtain patent licenses, thus in effect transforming the program into proprietary software. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License, which was designed for utility programs. This license, the GNU Library General Public License, applies to certain designated libraries. This license is quite different from the ordinary one; be sure to read it in full, and don't assume that anything in it is the same as in the ordinary license.

The reason we have a separate public license for some libraries is that they blur the distinction we usually make between modifying or adding to a program and simply using it. Linking a program with a library, without changing the library, is in some sense simply using the library, and is analogous to running a utility program or application program. However, in a textual and legal sense, the linked executable is a combined work, a derivative of the original library, and the ordinary General Public License treats it as such.

Because of this blurred distinction, using the ordinary General Public License for libraries did not effectively promote software sharing, because most developers did not use the libraries. We concluded that weaker conditions might promote sharing better.

However, unrestricted linking of non-free programs would deprive the users of those programs of all benefit from the free status of the libraries themselves. This Library General Public License is intended to permit developers of non-free programs to use free libraries, while preserving your freedom as a user of such programs to change the free libraries that are incorporated in them. (We have not seen how to achieve this as regards changes in header files, but we have achieved it as regards changes in the actual functions of the Library.) The hope is that this will lead to faster development of free libraries.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, while the latter only works together with the library.

Note that it is possible for a library to be covered by the ordinary General Public License rather than by this special one.

#### GNU LIBRARY GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Library General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work

which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses

the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of

the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also compile or link a "work that uses the Library" with the Library to produce a

work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)
- b) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.
- c) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.
- d) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally



accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or

otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Library General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### Appendix: How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Library General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Library General Public License for more details.

You should have received a copy of the GNU Library General Public License along with this library; if not, write to the Free Software Foundation, Inc., 675 Mass Ave, Cambridge, MA 02139, USA.

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!

## 1.112 nettle 3.4.1-7.e18

### 1.112.1 Available under license :

GNU GENERAL PUBLIC LICENSE  
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free

software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE  
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this

License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any

associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by



all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes

make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

```
This program is free software; you can redistribute it and/or modify
it under the terms of the GNU General Public License as published by
the Free Software Foundation; either version 2 of the License, or
(at your option) any later version.
```

```
This program is distributed in the hope that it will be useful,
```

but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands ``show w'` and ``show c'` should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than ``show w'` and ``show c'`; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

GNU LESSER GENERAL PUBLIC LICENSE  
Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>  
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

This version of the GNU Lesser General Public License incorporates the terms and conditions of version 3 of the GNU General Public

License, supplemented by the additional permissions listed below.

## 0. Additional Definitions.

As used herein, "this License" refers to version 3 of the GNU Lesser General Public License, and the "GNU GPL" refers to version 3 of the GNU General Public License.

"The Library" refers to a covered work governed by this License, other than an Application or a Combined Work as defined below.

An "Application" is any work that makes use of an interface provided by the Library, but which is not otherwise based on the Library. Defining a subclass of a class defined by the Library is deemed a mode of using an interface provided by the Library.

A "Combined Work" is a work produced by combining or linking an Application with the Library. The particular version of the Library with which the Combined Work was made is also called the "Linked Version".

The "Minimal Corresponding Source" for a Combined Work means the Corresponding Source for the Combined Work, excluding any source code for portions of the Combined Work that, considered in isolation, are based on the Application, and not on the Linked Version.

The "Corresponding Application Code" for a Combined Work means the object code and/or source code for the Application, including any data and utility programs needed for reproducing the Combined Work from the Application, but excluding the System Libraries of the Combined Work.

## 1. Exception to Section 3 of the GNU GPL.

You may convey a covered work under sections 3 and 4 of this License without being bound by section 3 of the GNU GPL.

## 2. Conveying Modified Versions.

If you modify a copy of the Library, and, in your modifications, a facility refers to a function or data to be supplied by an Application that uses the facility (other than as an argument passed when the facility is invoked), then you may convey a copy of the modified version:

- a) under this License, provided that you make a good faith effort to ensure that, in the event an Application does not supply the function or data, the facility still operates, and performs whatever part of its purpose remains meaningful, or

b) under the GNU GPL, with none of the additional permissions of this License applicable to that copy.

### 3. Object Code Incorporating Material from Library Header Files.

The object code form of an Application may incorporate material from a header file that is part of the Library. You may convey such object code under terms of your choice, provided that, if the incorporated material is not limited to numerical parameters, data structure layouts and accessors, or small macros, inline functions and templates (ten or fewer lines in length), you do both of the following:

- a) Give prominent notice with each copy of the object code that the Library is used in it and that the Library and its use are covered by this License.
- b) Accompany the object code with a copy of the GNU GPL and this license document.

### 4. Combined Works.

You may convey a Combined Work under terms of your choice that, taken together, effectively do not restrict modification of the portions of the Library contained in the Combined Work and reverse engineering for debugging such modifications, if you also do each of the following:

- a) Give prominent notice with each copy of the Combined Work that the Library is used in it and that the Library and its use are covered by this License.
- b) Accompany the Combined Work with a copy of the GNU GPL and this license document.
- c) For a Combined Work that displays copyright notices during execution, include the copyright notice for the Library among these notices, as well as a reference directing the user to the copies of the GNU GPL and this license document.
- d) Do one of the following:
  - 0) Convey the Minimal Corresponding Source under the terms of this License, and the Corresponding Application Code in a form suitable for, and under terms that permit, the user to recombine or relink the Application with a modified version of the Linked Version to produce a modified Combined Work, in the manner specified by section 6 of the GNU GPL for conveying

Corresponding Source.

1) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (a) uses at run time a copy of the Library already present on the user's computer system, and (b) will operate properly with a modified version of the Library that is interface-compatible with the Linked Version.

e) Provide Installation Information, but only if you would otherwise be required to provide such information under section 6 of the GNU GPL, and only to the extent that such information is necessary to install and execute a modified version of the Combined Work produced by recombining or relinking the Application with a modified version of the Linked Version. (If you use option 4d0, the Installation Information must accompany the Minimal Corresponding Source and Corresponding Application Code. If you use option 4d1, you must provide the Installation Information in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.)

#### 5. Combined Libraries.

You may place library facilities that are a work based on the Library side by side in a single library together with other library facilities that are not Applications and are not covered by this License, and convey such a combined library under terms of your choice, if you do both of the following:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities, conveyed under the terms of this License.
- b) Give prominent notice with the combined library that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

#### 6. Revised Versions of the GNU Lesser General Public License.

The Free Software Foundation may publish revised and/or new versions of the GNU Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library as you received it specifies that a certain numbered version of the GNU Lesser General Public License "or any later version" applies to it, you have the option of following the terms and

conditions either of that published version or of any later version published by the Free Software Foundation. If the Library as you received it does not specify a version number of the GNU Lesser General Public License, you may choose any version of the GNU Lesser General Public License ever published by the Free Software Foundation.

If the Library as you received it specifies that a proxy can decide whether future versions of the GNU Lesser General Public License shall apply, that proxy's public statement of acceptance of any version is permanent authorization for you to choose that version for the Library.

GNU GENERAL PUBLIC LICENSE  
Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>  
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they

know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

## TERMS AND CONDITIONS

### 0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an



exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

#### 1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

## 2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

## 3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological

measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

#### 4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

#### 5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.
- b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".
- c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.

d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

#### 6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no

further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install

modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

## 7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in

reasonable ways as different from the original version; or

d) Limiting the use for publicity purposes of names of licensors or authors of the material; or

e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or

f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

## 8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

#### 9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

#### 10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.



## 11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license

you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

#### 12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

#### 13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

#### 14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of

the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

#### 15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

#### 16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### 17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

```
This program is free software: you can redistribute it and/or modify
it under the terms of the GNU General Public License as published by
the Free Software Foundation, either version 3 of the License, or
(at your option) any later version.
```

```
This program is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
GNU General Public License for more details.
```

```
You should have received a copy of the GNU General Public License
along with this program. If not, see <https://www.gnu.org/licenses/>.
```

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program> Copyright (C) <year> <name of author>
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands

might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <https://www.gnu.org/licenses/>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <https://www.gnu.org/philosophy/why-not-lgpl.html>.

# 1.113 springfox-swagger-ui 3.0.0

## 1.113.1 Available under license :

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical

transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable

by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use,

reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.  
Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.



## END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright {yyyy} {name of copyright owner}

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

# 1.114 python-iniparse 0.4 31.e18

## 1.114.1 Available under license :

Copyright (c) 2001, 2002, 2003 Python Software Foundation  
Copyright (c) 2004-2008 Paramjit Oberoi <param.cs.wisc.edu>  
Copyright (c) 2007 Tim Lauridsen <tla@rasmil.dk>  
All Rights Reserved.

iniparse/compat.py and tests/test\_compat.py contain code derived from lib/python-2.3/ConfigParser.py and lib/python-2.3/test/test\_cfgparse.py respectively. Other code may contain small snippets from those two files as well. The Python license (LICENSE-PSF) applies to that code.

-----  
The MIT License

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"),

to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

#### A. HISTORY OF THE SOFTWARE

=====

Python was created in the early 1990s by Guido van Rossum at Stichting Mathematisch Centrum (CWI, see <http://www.cwi.nl>) in the Netherlands as a successor of a language called ABC. Guido remains Python's principal author, although it includes many contributions from others.

In 1995, Guido continued his work on Python at the Corporation for National Research Initiatives (CNRI, see <http://www.cnri.reston.va.us>) in Reston, Virginia where he released several versions of the software.

In May 2000, Guido and the Python core development team moved to BeOpen.com to form the BeOpen PythonLabs team. In October of the same year, the PythonLabs team moved to Digital Creations (now Zope Corporation, see <http://www.zope.com>). In 2001, the Python Software Foundation (PSF, see <http://www.python.org/psf/>) was formed, a non-profit organization created specifically to own Python-related Intellectual Property. Zope Corporation is a sponsoring member of the PSF.

All Python releases are Open Source (see <http://www.opensource.org> for the Open Source Definition). Historically, most, but not all, Python releases have also been GPL-compatible; the table below summarizes the various releases.

| Release from   | Derived from | Year      | Owner | GPL-compatible? (1) |
|----------------|--------------|-----------|-------|---------------------|
| 0.9.0 thru 1.2 |              | 1991-1995 | CWI   | yes                 |
| 1.3 thru 1.5.2 | 1.2          | 1995-1999 | CNRI  | yes                 |
| 1.6            | 1.5.2        | 2000      | CNRI  | no                  |

|       |           |           |            |         |
|-------|-----------|-----------|------------|---------|
| 2.0   | 1.6       | 2000      | BeOpen.com | no      |
| 1.6.1 | 1.6       | 2001      | CNRI       | yes (2) |
| 2.1   | 2.0+1.6.1 | 2001      | PSF        | no      |
| 2.0.1 | 2.0+1.6.1 | 2001      | PSF        | yes     |
| 2.1.1 | 2.1+2.0.1 | 2001      | PSF        | yes     |
| 2.2   | 2.1.1     | 2001      | PSF        | yes     |
| 2.1.2 | 2.1.1     | 2002      | PSF        | yes     |
| 2.1.3 | 2.1.2     | 2002      | PSF        | yes     |
| 2.2.1 | 2.2       | 2002      | PSF        | yes     |
| 2.2.2 | 2.2.1     | 2002      | PSF        | yes     |
| 2.2.3 | 2.2.2     | 2003      | PSF        | yes     |
| 2.3   | 2.2.2     | 2002-2003 | PSF        | yes     |
| 2.3.1 | 2.3       | 2002-2003 | PSF        | yes     |
| 2.3.2 | 2.3.1     | 2002-2003 | PSF        | yes     |
| 2.3.3 | 2.3.2     | 2002-2003 | PSF        | yes     |

Footnotes:

(1) GPL-compatible doesn't mean that we're distributing Python under the GPL. All Python licenses, unlike the GPL, let you distribute a modified version without making your changes open source. The GPL-compatible licenses make it possible to combine Python with other software that is released under the GPL; the others don't.

(2) According to Richard Stallman, 1.6.1 is not GPL-compatible, because its license has a choice of law clause. According to CNRI, however, Stallman's lawyer has told CNRI's lawyer that 1.6.1 is "not incompatible" with the GPL.

Thanks to the many outside volunteers who have worked under Guido's direction to make these releases possible.

**B. TERMS AND CONDITIONS FOR ACCESSING OR OTHERWISE USING PYTHON**

=====

**PSF LICENSE AGREEMENT FOR PYTHON 2.3**

-----

1. This LICENSE AGREEMENT is between the Python Software Foundation ("PSF"), and the Individual or Organization ("Licensee") accessing and otherwise using Python 2.3 software in source or binary form and its associated documentation.

2. Subject to the terms and conditions of this License Agreement, PSF hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use Python 2.3

alone or in any derivative version, provided, however, that PSF's License Agreement and PSF's notice of copyright, i.e., "Copyright (c) 2001, 2002, 2003 Python Software Foundation; All Rights Reserved" are retained in Python 2.3 alone or in any derivative version prepared by Licensee.

3. In the event Licensee prepares a derivative work that is based on or incorporates Python 2.3 or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of the changes made to Python 2.3.

4. PSF is making Python 2.3 available to Licensee on an "AS IS" basis. PSF MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, PSF MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON 2.3 WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.

5. PSF SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON 2.3 FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON 2.3, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.

6. This License Agreement will automatically terminate upon a material breach of its terms and conditions.

7. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between PSF and Licensee. This License Agreement does not grant permission to use PSF trademarks or trade name in a trademark sense to endorse or promote products or services of Licensee, or any third party.

8. By copying, installing or otherwise using Python 2.3, Licensee agrees to be bound by the terms and conditions of this License Agreement.

BEOPEN.COM LICENSE AGREEMENT FOR PYTHON 2.0

-----

BEOPEN PYTHON OPEN SOURCE LICENSE AGREEMENT VERSION 1

1. This LICENSE AGREEMENT is between BeOpen.com ("BeOpen"), having an office at 160 Saratoga Avenue, Santa Clara, CA 95051, and the Individual or Organization ("Licensee") accessing and otherwise using this software in source or binary form and its associated documentation ("the Software").

2. Subject to the terms and conditions of this BeOpen Python License Agreement, BeOpen hereby grants Licensee a non-exclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use the Software alone or in any derivative version, provided, however, that the BeOpen Python License is retained in the Software, alone or in any derivative version prepared by Licensee.

3. BeOpen is making the Software available to Licensee on an "AS IS" basis. BEOPEN MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, BEOPEN MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF THE SOFTWARE WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.

4. BEOPEN SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF THE SOFTWARE FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF USING, MODIFYING OR DISTRIBUTING THE SOFTWARE, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.

5. This License Agreement will automatically terminate upon a material breach of its terms and conditions.

6. This License Agreement shall be governed by and interpreted in all respects by the law of the State of California, excluding conflict of law provisions. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between BeOpen and Licensee. This License Agreement does not grant permission to use BeOpen trademarks or trade names in a trademark sense to endorse or promote products or services of Licensee, or any third party. As an exception, the "BeOpen Python" logos available at <http://www.pythonlabs.com/logos.html> may be used according to the permissions granted on that web page.

7. By copying, installing or otherwise using the software, Licensee agrees to be bound by the terms and conditions of this License Agreement.

#### CNRI LICENSE AGREEMENT FOR PYTHON 1.6.1

-----

1. This LICENSE AGREEMENT is between the Corporation for National Research Initiatives, having an office at 1895 Preston White Drive, Reston, VA 20191 ("CNRI"), and the Individual or Organization ("Licensee") accessing and otherwise using Python 1.6.1 software in source or binary form and its associated documentation.

2. Subject to the terms and conditions of this License Agreement, CNRI hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use Python 1.6.1 alone or in any derivative version, provided, however, that CNRI's License Agreement and CNRI's notice of copyright, i.e., "Copyright (c) 1995-2001 Corporation for National Research Initiatives; All Rights Reserved" are retained in Python 1.6.1 alone or in any derivative version prepared by Licensee. Alternately, in lieu of CNRI's License Agreement, Licensee may substitute the following text (omitting the quotes): "Python 1.6.1 is made available subject to the terms and conditions in CNRI's License Agreement. This Agreement together with Python 1.6.1 may be located on the Internet using the following unique, persistent identifier (known as a handle): 1895.22/1013. This Agreement may also be obtained from a proxy server on the Internet using the following URL: <http://hdl.handle.net/1895.22/1013>".

3. In the event Licensee prepares a derivative work that is based on or incorporates Python 1.6.1 or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of the changes made to Python 1.6.1.

4. CNRI is making Python 1.6.1 available to Licensee on an "AS IS" basis. CNRI MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, CNRI MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON 1.6.1 WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.

5. CNRI SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON 1.6.1 FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON 1.6.1, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.

6. This License Agreement will automatically terminate upon a material breach of its terms and conditions.

7. This License Agreement shall be governed by the federal intellectual property law of the United States, including without limitation the federal copyright law, and, to the extent such U.S. federal law does not apply, by the law of the Commonwealth of Virginia, excluding Virginia's conflict of law provisions. Notwithstanding the foregoing, with regard to derivative works based on Python 1.6.1 that incorporate non-separable material that was previously distributed under the GNU General Public License (GPL), the law of the Commonwealth of Virginia shall govern this License

Agreement only as to issues arising under or with respect to Paragraphs 4, 5, and 7 of this License Agreement. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between CNRI and Licensee. This License Agreement does not grant permission to use CNRI trademarks or trade name in a trademark sense to endorse or promote products or services of Licensee, or any third party.

8. By clicking on the "ACCEPT" button where indicated, or by copying, installing or otherwise using Python 1.6.1, Licensee agrees to be bound by the terms and conditions of this License Agreement.

ACCEPT

CWI LICENSE AGREEMENT FOR PYTHON 0.9.0 THROUGH 1.2  
-----

Copyright (c) 1991 - 1995, Stichting Mathematisch Centrum Amsterdam, The Netherlands. All rights reserved.

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of Stichting Mathematisch Centrum or CWI not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission.

STICHTING MATHEMATISCH CENTRUM DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS, IN NO EVENT SHALL STICHTING MATHEMATISCH CENTRUM BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

## 1.115 syspurpose 1.28.29

### 1.115.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies

of this license document, but changing it is not allowed.

## Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.



The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE  
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is

allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues),

conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of

this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

GNU LESSER GENERAL PUBLIC LICENSE  
Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts  
as the successor of the GNU Library Public License, version 2, hence  
the version number 2.1.]

### Preamble

The licenses for most software are designed to take away your  
freedom to share and change it. By contrast, the GNU General Public  
Licenses are intended to guarantee your freedom to share and change  
free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some  
specially designated software packages--typically libraries--of the  
Free Software Foundation and other authors who decide to use it. You  
can use it too, but we suggest you first think carefully about whether  
this license or the ordinary General Public License is the better  
strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use,  
not price. Our General Public Licenses are designed to make sure that  
you have the freedom to distribute copies of free software (and charge  
for this service if you wish); that you receive source code or can get  
it if you want it; that you can change the software and use pieces of  
it in new free programs; and that you are informed that you can do  
these things.

To protect your rights, we need to make restrictions that forbid  
distributors to deny you these rights or to ask you to surrender these  
rights. These restrictions translate to certain responsibilities for  
you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis  
or for a fee, you must give the recipients all the rights that we gave  
you. You must make sure that they, too, receive or can get the source  
code. If you link other code with the library, you must provide  
complete object files to the recipients, so that they can relink them  
with the library after making changes to the library and recompiling  
it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the  
library, and (2) we offer you this license, which gives you legal  
permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in



non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

## GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does

and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based

on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and

therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License.

Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the

user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any

particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU



Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!

Format: <https://www.debian.org/doc/packaging-manuals/copyright-format/1.0/>  
Upstream-Name: subscription-manager  
Source: <url://example.com>

Files: \*

Copyright: <years> <put author's name and email here>  
<years> <likewise for another author>

License: <special license>  
<Put the license of the package here indented by 1 space>  
<This follows the format of Description: lines in control file>

.

<Including paragraphs>

# If you want to use GPL v2 or later for the /debian/\* files use  
# the following clauses, or change it to suit. Delete these two lines

Files: debian/\*  
Copyright: 2017 Matthias Dellweg <dellweg@atix.de>  
License: GPL-2+

This package is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

.

This package is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

.

You should have received a copy of the GNU General Public License

along with this program. If not, see <<https://www.gnu.org/licenses/>>

On Debian systems, the complete text of the GNU General Public License version 2 can be found in "/usr/share/common-licenses/GPL-2".

```
Please also look if there are files or directories which have a
different copyright/license attached and list them here.
Please avoid picking licenses with terms that are more restrictive than the
packaged work, as it may make Debian's contributions unacceptable upstream.
```

## 1.116 netty-codec 4.1.78.Final

### 1.116.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2013 The Netty Project
 *
 * The Netty Project licenses this file to you under the Apache License,
 * version 2.0 (the "License"); you may not use this file except in compliance
 * with the License. You may obtain a copy of the License at:
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
 * WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
 * License for the specific language governing permissions and limitations
 * under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1350827689_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-
jar/io/netty/handler/codec/compression/JdkZlibDecoder.java
* /opt/cola/permits/1350827689_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-
jar/io/netty/handler/codec/compression/Crc32c.java
* /opt/cola/permits/1350827689_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-
jar/io/netty/handler/codec/xml/XmlFrameDecoder.java
```

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2016 The Netty Project
 *
 * The Netty Project licenses this file to you under the Apache License,
 * version 2.0 (the "License"); you may not use this file except in compliance
 * with the License. You may obtain a copy of the License at:
 *
 */
```

\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
\* License for the specific language governing permissions and limitations  
\* under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-jar/io/netty/handler/codec/DateFormatter.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-jar/io/netty/handler/codec/DatagramPacketEncoder.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-jar/io/netty/handler/codec/compression/ByteBufChecksum.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-jar/io/netty/handler/codec/string/LineEncoder.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-jar/io/netty/handler/codec/compression/CompressionUtil.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-jar/io/netty/handler/codec/CodecOutputList.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-jar/io/netty/handler/codec/string/LineSeparator.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-jar/io/netty/handler/codec/DatagramPacketDecoder.java

No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2012 The Netty Project  
\*  
\* The Netty Project licenses this file to you under the Apache License,  
\* version 2.0 (the "License"); you may not use this file except in compliance  
\* with the License. You may obtain a copy of the License at:  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
\* License for the specific language governing permissions and limitations  
\* under the License.  
\*/  
/\*\*  
\* A decoder that splits the received {@link ByteBuf}s dynamically by the  
\* value of the length field in the message. It is particularly useful when you  
\* decode a binary message which has an integer header field that represents the  
\* length of the message body or the whole message.

\* <p>  
 \* { @link LengthFieldBasedFrameDecoder } has many configuration parameters so  
 \* that it can decode any message with a length field, which is often seen in  
 \* proprietary client-server protocols. Here are some example that will give  
 \* you the basic idea on which option does what.

\* <h3>2 bytes length field at offset 0, do not strip header</h3>

\* The value of the length field in this example is <tt>12 (0x0C)</tt> which  
 \* represents the length of "HELLO, WORLD". By default, the decoder assumes  
 \* that the length field represents the number of the bytes that follows the  
 \* length field. Therefore, it can be decoded with the simplistic parameter  
 \* combination.

```
* <pre>
* lengthFieldOffset = 0
* lengthFieldLength = 2
* lengthAdjustment = 0
* initialBytesToStrip = 0 (= do not strip header)
```

```
* BEFORE DECODE (14 bytes) AFTER DECODE (14 bytes)
* +-----+-----+ +-----+-----+
* | Length | Actual Content |---->| Length | Actual Content |
* | 0x000C | "HELLO, WORLD" | | 0x000C | "HELLO, WORLD" |
* +-----+-----+ +-----+-----+
```

\* <h3>2 bytes length field at offset 0, strip header</h3>

\* Because we can get the length of the content by calling  
 \* { @link ByteBuf#readableBytes() }, you might want to strip the length  
 \* field by specifying <tt>initialBytesToStrip</tt>. In this example, we  
 \* specified <tt>2</tt>, that is same with the length of the length field, to  
 \* strip the first two bytes.

```
* <pre>
* lengthFieldOffset = 0
* lengthFieldLength = 2
* lengthAdjustment = 0
* initialBytesToStrip = 2 (= the length of the Length field)
```

```
* BEFORE DECODE (14 bytes) AFTER DECODE (12 bytes)
* +-----+-----+ +-----+-----+
* | Length | Actual Content |---->| Actual Content |
* | 0x000C | "HELLO, WORLD" | | "HELLO, WORLD" |
* +-----+-----+ +-----+-----+
```

\* <h3>2 bytes length field at offset 0, do not strip header, the length field  
 \* represents the length of the whole message</h3>

\*  
 \* In most cases, the length field represents the length of the message body  
 \* only, as shown in the previous examples. However, in some protocols, the  
 \* length field represents the length of the whole message, including the  
 \* message header. In such a case, we specify a non-zero  
 \* `<tt>lengthAdjustment</tt>`. Because the length value in this example message  
 \* is always greater than the body length by `<tt>2</tt>`, we specify `<tt>-2</tt>`  
 \* as `<tt>lengthAdjustment</tt>` for compensation.

```
* <pre>
* lengthFieldOffset = 0
* lengthFieldLength = 2
* lengthAdjustment = -2 (= the length of the Length field)
* initialBytesToStrip = 0
```

\* BEFORE DECODE (14 bytes)      AFTER DECODE (14 bytes)

```
* +-----+-----+-----+-----+
* | Length | Actual Content |---->| Length | Actual Content |
* | 0x000E | "HELLO, WORLD" | | 0x000E | "HELLO, WORLD" |
* +-----+-----+-----+-----+
```

```
* </pre>
```

\* `<h3>3 bytes length field at the end of 5 bytes header, do not strip header</h3>`

\* The following message is a simple variation of the first example. An extra  
 \* header value is prepended to the message. `<tt>lengthAdjustment</tt>` is zero  
 \* again because the decoder always takes the length of the prepended data into  
 \* account during frame length calculation.

```
* <pre>
* lengthFieldOffset = 2 (= the length of Header 1)
* lengthFieldLength = 3
* lengthAdjustment = 0
* initialBytesToStrip = 0
```

\* BEFORE DECODE (17 bytes)      AFTER DECODE (17 bytes)

```
* +-----+-----+-----+-----+
* | Header 1 | Length | Actual Content |---->| Header 1 | Length | Actual Content |
* | 0xCAFE | 0x00000C | "HELLO, WORLD" | | 0xCAFE | 0x00000C | "HELLO, WORLD" |
* +-----+-----+-----+-----+
```

```
* </pre>
```

\* `<h3>3 bytes length field at the beginning of 5 bytes header, do not strip header</h3>`

\* This is an advanced example that shows the case where there is an extra  
 \* header between the length field and the message body. You have to specify a  
 \* positive `<tt>lengthAdjustment</tt>` so that the decoder counts the extra  
 \* header into the frame length calculation.

```
* <pre>
* lengthFieldOffset = 0
```

```

* lengthFieldLength = 3
* lengthAdjustment = 2 (= the length of Header 1)
* initialBytesToStrip = 0
*
* BEFORE DECODE (17 bytes) AFTER DECODE (17 bytes)
* +-----+-----+-----+-----+ +-----+-----+-----+-----+
* | Length | Header 1 | Actual Content |----->| Length | Header 1 | Actual Content |
* | 0x00000C | 0xCAFE | "HELLO, WORLD" | | 0x00000C | 0xCAFE | "HELLO, WORLD" |
* +-----+-----+-----+-----+ +-----+-----+-----+-----+
* </pre>

```

\* <h3>2 bytes length field at offset 1 in the middle of 4 bytes header,  
 \* strip the first header field and the length field</h3>

\* This is a combination of all the examples above. There are the prepended  
 \* header before the length field and the extra header after the length field.  
 \* The prepended header affects the <tt>lengthFieldOffset</tt> and the extra  
 \* header affects the <tt>lengthAdjustment</tt>. We also specified a non-zero  
 \* <tt>initialBytesToStrip</tt> to strip the length field and the prepended  
 \* header from the frame. If you don't want to strip the prepended header, you  
 \* could specify <tt>0</tt> for <tt>initialBytesToSkip</tt>.

```

* <pre>
* lengthFieldOffset = 1 (= the length of HDR1)
* lengthFieldLength = 2
* lengthAdjustment = 1 (= the length of HDR2)
* initialBytesToStrip = 3 (= the length of HDR1 + LEN)
*
* BEFORE DECODE (16 bytes) AFTER DECODE (13 bytes)
* +-----+-----+-----+-----+ +-----+-----+-----+-----+
* | HDR1 | Length | HDR2 | Actual Content |----->| HDR2 | Actual Content |
* | 0xCA | 0x000C | 0xFE | "HELLO, WORLD" | | 0xFE | "HELLO, WORLD" |
* +-----+-----+-----+-----+ +-----+-----+-----+-----+
* </pre>

```

\* <h3>2 bytes length field at offset 1 in the middle of 4 bytes header,  
 \* strip the first header field and the length field, the length field  
 \* represents the length of the whole message</h3>

\* Let's give another twist to the previous example. The only difference from  
 \* the previous example is that the length field represents the length of the  
 \* whole message instead of the message body, just like the third example.  
 \* We have to count the length of HDR1 and Length into <tt>lengthAdjustment</tt>.  
 \* Please note that we don't need to take the length of HDR2 into account  
 \* because the length field already includes the whole header length.

```

* <pre>
* lengthFieldOffset = 1
* lengthFieldLength = 2
* lengthAdjustment = -3 (= the length of HDR1 + LEN, negative)

```

```

* initialBytesToStrip = 3
*
* BEFORE DECODE (16 bytes) AFTER DECODE (13 bytes)
* +-----+-----+-----+-----+-----+ +-----+-----+
* | HDR1 | Length | HDR2 | Actual Content |---->| HDR2 | Actual Content |
* | 0xCA | 0x0010 | 0xFE | "HELLO, WORLD" | | 0xFE | "HELLO, WORLD" |
* +-----+-----+-----+-----+-----+ +-----+-----+
* </pre>
* @see LengthFieldPrepender
*/

```

Found in path(s):

```

* /opt/cola/permits/1350827689_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-
jar/io/netty/handler/codec/LengthFieldBasedFrameDecoder.java

```

No license file was found, but licenses were detected in source scan.

```

/*
 * Copyright 2012 The Netty Project
 *
 * The Netty Project licenses this file to you under the Apache License,
 * version 2.0 (the "License"); you may not use this file except in compliance
 * with the License. You may obtain a copy of the License at:
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
 * WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
 * License for the specific language governing permissions and limitations
 * under the License.
 */
/*
 * Written by Robert Harder and released to the public domain, as explained at
 * https://creativecommons.org/licenses/publicdomain
 */
/**
 * Utility class for {@link ByteBuf} that encodes and decodes to and from
 * Base64 notation.
 * <p>
 * The encoding and decoding algorithm in this class has been derived from
 * Robert Harder's Public Domain
 * Base64 Encoder/Decoder.
 */

```

Found in path(s):

```

* /opt/cola/permits/1350827689_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-
jar/io/netty/handler/codec/base64/Base64.java

```

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2014 The Netty Project
 *
 * The Netty Project licenses this file to you under the Apache License,
 * version 2.0 (the "License"); you may not use this file except in compliance
 * with the License. You may obtain a copy of the License at:
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
 * WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
 * License for the specific language governing permissions and limitations
 * under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1350827689_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-
jar/io/netty/handler/codec/compression/Bzip2BlockDecompressor.java
* /opt/cola/permits/1350827689_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-
jar/io/netty/handler/codec/compression/Bzip2Constants.java
* /opt/cola/permits/1350827689_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-
jar/io/netty/handler/codec/compression/Bzip2HuffmanAllocator.java
* /opt/cola/permits/1350827689_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-
jar/io/netty/handler/codec/compression/Lz4Constants.java
* /opt/cola/permits/1350827689_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-
jar/io/netty/handler/codec/compression/LzfDecoder.java
* /opt/cola/permits/1350827689_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-
jar/io/netty/handler/codec/json/package-info.java
* /opt/cola/permits/1350827689_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-
jar/io/netty/handler/codec/compression/Lz4FrameDecoder.java
* /opt/cola/permits/1350827689_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-
jar/io/netty/handler/codec/compression/Bzip2HuffmanStageDecoder.java
* /opt/cola/permits/1350827689_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-
jar/io/netty/handler/codec/compression/Crc32.java
* /opt/cola/permits/1350827689_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-
jar/io/netty/handler/codec/AsciiHeadersEncoder.java
* /opt/cola/permits/1350827689_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-
jar/io/netty/handler/codec/compression/Lz4FrameEncoder.java
* /opt/cola/permits/1350827689_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-
jar/io/netty/handler/codec/compression/Bzip2BitReader.java
* /opt/cola/permits/1350827689_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-
jar/io/netty/handler/codec/MessageAggregationException.java
* /opt/cola/permits/1350827689_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-
jar/io/netty/handler/codec/compression/FastLzFrameDecoder.java
* /opt/cola/permits/1350827689_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-
```



jar/io/netty/handler/codec/compression/Bzip2Decoder.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/compression/SnappyFramedEncoder.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/compression/Bzip2BitWriter.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/compression/FastLzFrameEncoder.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/compression/Bzip2DivSufSort.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/compression/Bzip2MoveToFrontTable.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/compression/Bzip2MTFAndRLE2StageEncoder.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/compression/Bzip2Rand.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/DecoderResultProvider.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/compression/LzmaFrameEncoder.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/compression/FastLz.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/json/JsonObjectDecoder.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/compression/SnappyFramedDecoder.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/compression/Bzip2Encoder.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/compression/LzfEncoder.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/compression/Bzip2BlockCompressor.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/compression/Bzip2HuffmanStageEncoder.java  
No license file was found, but licenses were detected in source scan.

<!--

~ Copyright 2012 The Netty Project

~

~ The Netty Project licenses this file to you under the Apache License,

~ version 2.0 (the "License"); you may not use this file except in compliance

~ with the License. You may obtain a copy of the License at:

~

~ <https://www.apache.org/licenses/LICENSE-2.0>

~

~ Unless required by applicable law or agreed to in writing, software

~ distributed under the License is distributed on an "AS IS" BASIS, WITHOUT

~ WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the

~ License for the specific language governing permissions and limitations

~ under the License.

-->

Found in path(s):

\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-jar/META-INF/maven/io.netty/netty-codec/pom.xml

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2012 The Netty Project

\*

\* The Netty Project licenses this file to you under the Apache License,  
\* version 2.0 (the "License"); you may not use this file except in compliance  
\* with the License. You may obtain a copy of the License at:

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
\* License for the specific language governing permissions and limitations  
\* under the License.

\*/

/\*

\* Written by Robert Harder and released to the public domain, as explained at

\* <https://creativecommons.org/licenses/publicdomain>

\*/

/\*\*

\* Enumeration of supported Base64 dialects.

\* <p>

\* The internal lookup tables in this class has been derived from

\* <a href="http://iharder.sourceforge.net/current/java/base64/">Robert Harder's Public Domain

\* Base64 Encoder/Decoder</a>.

\*/

Found in path(s):

\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-jar/io.netty.handler.codec/base64/Base64Dialect.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2012 The Netty Project

\*

\* The Netty Project licenses this file to you under the Apache License,  
\* version 2.0 (the "License"); you may not use this file except in compliance  
\* with the License. You may obtain a copy of the License at:

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

- \*
- \* Unless required by applicable law or agreed to in writing, software
- \* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
- \* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
- \* License for the specific language governing permissions and limitations
- \* under the License.
- \*/

Found in path(s):

- \* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-jar/io/netty/handler/codec/serialization/ObjectEncoder.java
- \* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-jar/io/netty/handler/codec/compression/JZlibDecoder.java
- \* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-jar/io/netty/handler/codec/DelimiterBasedFrameDecoder.java
- \* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-jar/io/netty/handler/codec/UnsupportedMessageTypeException.java
- \* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-jar/io/netty/handler/codec/base64/Base64Encoder.java
- \* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-jar/io/netty/handler/codec/Delimiters.java
- \* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-jar/io/netty/handler/codec/marshalling/DefaultUnmarshallerProvider.java
- \* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-jar/io/netty/handler/codec/marshalling/DefaultMarshallerProvider.java
- \* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-jar/io/netty/handler/codec/serialization/ObjectDecoder.java
- \* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-jar/io/netty/handler/codec/string/package-info.java
- \* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-jar/io/netty/handler/codec/compression/DecompressionException.java
- \* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-jar/io/netty/handler/codec/base64/package-info.java
- \* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-jar/io/netty/handler/codec/protobuf/package-info.java
- \* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-jar/io/netty/handler/codec/compression/ZlibEncoder.java
- \* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-jar/io/netty/handler/codec/DecoderResult.java
- \* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-jar/io/netty/handler/codec/serialization/ClassResolver.java
- \* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-jar/io/netty/handler/codec/marshalling/MarshallingEncoder.java
- \* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-jar/io/netty/handler/codec/compression/SnappyFrameDecoder.java
- \* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-jar/io/netty/handler/codec/MessageToMessageCodec.java
- \* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-

jar/io/netty/handler/codec/marshalling/MarshallingDecoder.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/marshalling/ThreadLocalUnmarshallerProvider.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/serialization/CompactObjectInputStream.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/string/StringEncoder.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/compression/CompressionException.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/ByteToMessageCodec.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/marshalling/ContextBoundUnmarshallerProvider.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/base64/Base64Decoder.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/compression/SnappyFrameEncoder.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/DecoderException.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/marshalling/ThreadLocalMarshallerProvider.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/marshalling/CompatibleMarshallingEncoder.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/serialization/WeakReferenceMap.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/EncoderException.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/MessageToByteEncoder.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/marshalling/UnmarshallerProvider.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/MessageToMessageEncoder.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/marshalling/ChannelBufferByteOutput.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/CodecException.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/LineBasedFrameDecoder.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/package-info.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/MessageToMessageDecoder.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/bytes/ByteArrayEncoder.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/TooLongFrameException.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-

jar/io/netty/handler/codec/marshalling/CompatibleMarshallingDecoder.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/compression/Snappy.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/marshalling/UnmarshallerProvider.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/compression/ZlibWrapper.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/compression/JZlibEncoder.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/serialization/SoftReferenceMap.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/string/StringDecoder.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/compression/package-info.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/LengthFieldPrepender.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/compression/ZlibCodecFactory.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/ReplayingDecoder.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/bytes/ByteArrayDecoder.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/CorruptedFrameException.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/serialization/package-info.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/serialization/ReferenceMap.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/marshalling/package-info.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/ReplayingDecoderByteBuf.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/serialization/ClassLoaderClassResolver.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/serialization/ObjectEncoderOutputStream.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/ByteToMessageDecoder.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/serialization/ClassResolvers.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/MessageAggregator.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/marshalling/LimitingByteInput.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/serialization/CompatibleObjectEncoder.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-

jar/io/netty/handler/codec/serialization/ObjectDecoderInputStream.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/marshalling/ChannelBufferByteInput.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/compression/JdkZlibEncoder.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/PrematureChannelClosureException.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/bytes/package-info.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/compression/ZlibUtil.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/FixedLengthFrameDecoder.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/compression/ZlibDecoder.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/serialization/CachingClassResolver.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/serialization/CompactObjectOutputStream.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/xml/package-info.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2015 The Netty Project  
\*  
\* The Netty Project licenses this file to you under the Apache License,  
\* version 2.0 (the "License"); you may not use this file except in compliance  
\* with the License. You may obtain a copy of the License at:  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
\* License for the specific language governing permissions and limitations  
\* under the License.  
\*/

Found in path(s):  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/HeadersUtils.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/ProtocolDetectionState.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/ProtocolDetectionResult.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/protobuf/ProtobufEncoderNano.java

\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-jar/io/netty/handler/codec/protobuf/ProtobufVarint32LengthFieldPrepender.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-jar/io/netty/handler/codec/protobuf/ProtobufEncoder.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-jar/io/netty/handler/codec/UnsupportedValueConverter.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-jar/io/netty/handler/codec/protobuf/ProtobufVarint32FrameDecoder.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-jar/io/netty/handler/codec/protobuf/ProtobufDecoder.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-jar/io/netty/handler/codec/protobuf/ProtobufDecoderNano.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2021 The Netty Project  
\*  
\* The Netty Project licenses this file to you under the Apache License,  
\* version 2.0 (the "License"); you may not use this file except in compliance  
\* with the License. You may obtain a copy of the License at:  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
\* License for the specific language governing permissions and limitations  
\* under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-jar/io/netty/handler/codec/compression/BrotliDecoder.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-jar/io/netty/handler/codec/compression/DeflateOptions.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-jar/io/netty/handler/codec/compression/GzipOptions.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-jar/io/netty/handler/codec/compression/Zstd.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-jar/io/netty/handler/codec/compression/ZstdConstants.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-jar/io/netty/handler/codec/compression/Brotli.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-jar/io/netty/handler/codec/compression/BrotliEncoder.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-jar/io/netty/handler/codec/compression/CompressionOptions.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-

jar/io/netty/handler/codec/compression/StandardCompressionOptions.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/compression/ZstdEncoder.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/compression/BrotliOptions.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/compression/ZstdOptions.java  
No license file was found, but licenses were detected in source scan.

```
/*
* Copyright 2015 The Netty Project
*
* The Netty Project licenses this file to you under the Apache License, version 2.0 (the
* "License"); you may not use this file except in compliance with the License. You may obtain a
* copy of the License at:
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software distributed under the License
* is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either
express
* or implied. See the License for the specific language governing permissions and limitations under
* the License.
*/
```

Found in path(s):

\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/ValueConverter.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/DefaultHeadersImpl.java  
\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-  
jar/io/netty/handler/codec/CharSequenceValueConverter.java  
No license file was found, but licenses were detected in source scan.

```
/*
* Copyright 2014 The Netty Project
*
* The Netty Project licenses this file to you under the Apache License, version 2.0 (the
* "License"); you may not use this file except in compliance with the License. You may obtain a
* copy of the License at:
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software distributed under the License
* is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either
express
* or implied. See the License for the specific language governing permissions and limitations under
* the License.
```



\*/

Found in path(s):

\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-jar/io/netty/handler/codec/Headers.java

\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-jar/io/netty/handler/codec/DefaultHeaders.java

\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-jar/io/netty/handler/codec/EmptyHeaders.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2019 The Netty Project

\*

\* The Netty Project licenses this file to you under the Apache License,

\* version 2.0 (the "License"); you may not use this file except in compliance

\* with the License. You may obtain a copy of the License at:

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT

\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the

\* License for the specific language governing permissions and limitations

\* under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1350827689\_1656063912.744552/0/netty-codec-4-1-78-final-sources-1-jar/io/netty/handler/codec/compression/Lz4XXHash32.java

## 1.117 dom 2.0

### 1.117.1 Available under license :

Found license 'GNU Lesser General Public License' in '\* @copyright Copyright (C) 2008 - 2014 Asikart.com. All rights reserved. \* @license GNU Lesser General Public License version 2.1 or later.'

Found license 'GNU Lesser General Public License' in '\* @copyright Copyright (C) 2014 LYRASOFT. All rights reserved. \* @license GNU Lesser General Public License version 2.1 or later.'

Found license 'GNU Lesser General Public License' in '\* @copyright Copyright (C) 2011 - 2014 SMS Taiwan, Inc. All rights reserved. \* @license GNU Lesser General Public License version 2.1 or later.'

## 1.118 commons-dbcp 2.9.0

## 1.118.1 Available under license :

Apache Commons DBCP

Copyright 2001-2021 The Apache Software Foundation

This product includes software developed at  
The Apache Software Foundation (<https://www.apache.org/>).

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the

editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the

Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

### APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the

same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

## 1.119 ima-evm-utils 1.3.2-12.el8

### 1.119.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE

### TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the

Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.



Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made

generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING,

REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

Gnomovision version 69, Copyright (C) year name of author

Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.  
This is free software, and you are welcome to redistribute it  
under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program  
`Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989  
Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

## 1.120 lockfile 2.0

### 1.120.1 Available under license :

Zope Public License (ZPL) Version 2.1

A copyright notice accompanies this license document that identifies the copyright holders.

This license has been certified as open source. It has also been designated as GPL compatible by the Free Software Foundation (FSF).

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions in source code must retain the accompanying copyright notice, this list of conditions, and the following disclaimer.
2. Redistributions in binary form must reproduce the accompanying copyright notice, this list of conditions, and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Names of the copyright holders must not be used to endorse or promote

products derived from this software without prior written permission from the copyright holders.

4. The right to distribute this software or to use it for any purpose does not give you the right to use Servicemarks (sm) or Trademarks (tm) of the copyright holders. Use of them is covered by separate agreement with the copyright holders.

5. If any files are modified, you must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

Disclaimer

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS ``AS IS" AND ANY EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Zope Foundation and Contributors

## 1.121 kmod 25-19.el8

### 1.121.1 Available under license :

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.

51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change

free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.



GNU LESSER GENERAL PUBLIC LICENSE  
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License").

Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies,

or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU

FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.



<signature of Ty Coon>, 1 April 1990

Ty Coon, President of Vice

That's all there is to it!

## GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain

that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and

distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
  
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
  
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections

1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
'Gnomovision' (which makes passes at compilers) written by James Hacker.
```

<signature of Ty Coon>, 1 April 1989

Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

LGPL

LGPL

LGPL

## 1.122 selinux 2.9-5.el8

### 1.122.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
#
February 2020, Victor Kamensky
#
Copyright (c) 2020 by Cisco Systems, Inc.
All rights reserved
#

<summary>Polaris dbgd Policy Rules.</summary>

#####
<summary>
Write dbgd /var/run socket file
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_dbgd_var_sock_write',`
 gen_require(`
 type polaris_dbgd_t;
 type polaris_dbgd_var_run_t;
 type var_run_t;
 `)
 write_sock_files_pattern($1, var_run_t, polaris_dbgd_var_run_t)
 allow $1 polaris_dbgd_t:unix_stream_socket { connectto };
`)
```

Found in path(s):



```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisdbgd.if
```

```
No license file was found, but licenses were detected in source scan.
```

```
#
```

```
July 2017, Victor Kamensky
```

```
#
```

```
Copyright (c) 2017-2019 by Cisco Systems, Inc.
```

```
All rights reserved
```

```
#
```

```
<summary>Polaris cpp_stats Policy Rules.</summary>
```

```
Found in path(s):
```

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscppstats.if
```

```
No license file was found, but licenses were detected in source scan.
```

```
#
```

```
November 2020, Christine Hwang
```

```
#
```

```
Copyright (c) 2017-2021 by Cisco Systems, Inc.
```

```
All rights reserved
```

```
#
```

```
Map GNSS TTY to correct device context
```

```
/dev/ttyS1 -c gen_context(system_u:object_r:polaris_cabo_gnss_device_t,s0)
```

```
Found in path(s):
```

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscabognss.fc
```

```
No license file was found, but licenses were detected in source scan.
```

```
#
```

```
March 2017, Victor Kamensky
```

```
#
```

```
Copyright (c) 2017-2021 by Cisco Systems, Inc.
```

```
All rights reserved
```

```
#
```

```
policy_module(polarisnginx, 1.0);
```

```
gen_require(^
```

```
 type polaris_nginx_t;
```

```
')
```

```
polaris_btrace_data_manage(polaris_nginx_t)
```

```
polaris_chasfs_manage(polaris_nginx_t)
```

```
polaris_tdlresolve_read(polaris_nginx_t)
```

```
polaris_tdlldb_list_dirs(polaris_nginx_t)
```

```
polaris_cpuld_read(polaris_nginx_t)
```

```

polaris_lua_read(polaris_nginx_t)
polaris_flashlib_read(polaris_nginx_t)
polaris_crft_data_manage(polaris_nginx_t)

polaris_ripc_sman_ui_serv_connect(polaris_nginx_t)

polaris_lua_read(polaris_nginx_t)
polaris_disk_harddisk_read_lnk(polaris_nginx_t)

allow polaris_nginx_t self:tcp_socket { bind create listen accept setopt getopt shutdown};
allow polaris_nginx_t self:capability2 block_suspend;
allow polaris_nginx_t self:capability { setgid setuid sys_resource };

polaris_lfts_dev_use(polaris_nginx_t)
logging_send_syslog_msg(polaris_nginx_t)

corenet_tcp_connect_http_port(polaris_nginx_t)
corenet_tcp_bind_generic_node(polaris_nginx_t)
corenet_tcp_bind_http_port(polaris_nginx_t)
corenet_tcp_connect_pkiserver_port(polaris_nginx_t)
FIXME: add interface to allow bind to port 1025-65535
corenet_tcp_bind_all_ports(polaris_nginx_t)
#Allow the nginx to search/read the web servers config files
apache_read_config(polaris_nginx_t)
apache_search_config(polaris_nginx_t)
allow read httpd_sys_content_t (/var/www/...)
apache_read_sys_content(polaris_nginx_t)

gen_require(
 type httpd_var_run_t;
 type syslogd_var_run_t;
)
setattr_dirs_pattern(polaris_nginx_t, httpd_var_run_t, httpd_var_run_t)
manage_dirs_pattern(polaris_nginx_t, httpd_var_run_t, httpd_var_run_t)
manage_files_pattern(polaris_nginx_t, httpd_var_run_t, httpd_var_run_t)
manage_sock_files_pattern(polaris_nginx_t, httpd_var_run_t, httpd_var_run_t)
files_pid_filetrans(polaris_nginx_t, httpd_var_run_t, { file sock_file dir unix_stream_socket })

polaris_socketat_nsfs_read(polaris_nginx_t)
socketat does setsockopt SO_VRF
allow polaris_nginx_t self:capability net_admin;
auth_use_nsswitch(polaris_nginx_t)

allow polaris_nginx_t tmp_t:dir create_dir_perms;
files_tmp_filetrans(polaris_nginx_t, httpd_log_t, file, "ngx_access.log")
files_tmp_filetrans(polaris_nginx_t, httpd_log_t, file, "ngx_error.log")
files_tmp_filetrans(polaris_nginx_t, httpd_log_t, file, "nginx.pid")
files_tmp_filetrans(polaris_nginx_t, httpd_log_t, file, "nginx.lock.accept")

```

```

files_tmp_filetrans(polaris_nginx_t, httpd_log_t, file, "nginx.lock.cookie_tbl")
files_tmp_filetrans(polaris_nginx_t, httpd_log_t, file, "nginx.lock.login_count")
filetrans_pattern(polaris_nginx_t, syslogd_var_run_t, httpd_log_t, file, "openresty.log")
filetrans_pattern(polaris_nginx_t, syslogd_var_run_t, httpd_log_t, file, "ngxcsrf.log")
filetrans_pattern(polaris_nginx_t, syslogd_var_run_t, httpd_log_t, file, "ngxtest.log")
create_dirs_pattern(polaris_nginx_t, httpd_log_t, httpd_log_t)
manage_files_pattern(polaris_nginx_t, httpd_log_t, httpd_log_t)
apache_read_log(polaris_nginx_t)
apache_write_log(polaris_nginx_t)

polaris_restconf_tmp_use(polaris_nginx_t)
dev_read_sysfs(polaris_nginx_t)

dev/zram0 needs fs_t:filesystem getattr
#ifdef(`quake_platform',`
fs_getattr_xattr_fs(polaris_nginx_t)
')

type polaris_nginx_tmp_t;
files_tmp_file(polaris_nginx_tmp_t)
manage_files_pattern(polaris_nginx_t, polaris_nginx_tmp_t, polaris_nginx_tmp_t)
manage_dirs_pattern(polaris_nginx_t, polaris_nginx_tmp_t, polaris_nginx_tmp_t)
files_tmp_filetrans(polaris_nginx_t, polaris_nginx_tmp_t, file, "nginx_aaa")
files_tmp_filetrans(polaris_nginx_t, polaris_nginx_tmp_t, file, "nginx_master")
files_tmp_filetrans(polaris_nginx_t, polaris_nginx_tmp_t, file, "nginx_session")
files_tmp_filetrans(polaris_nginx_t, polaris_nginx_tmp_t, file, "ciscosdwan.cfg")
files_tmp_filetrans(polaris_nginx_t, polaris_nginx_tmp_t, dir, "proxy_temp")
files_tmp_filetrans(polaris_nginx_t, polaris_nginx_tmp_t, dir, "client_temp")
files_tmp_filetrans(polaris_nginx_t, polaris_nginx_tmp_t, dir, "fastcgi_temp")
files_tmp_filetrans(polaris_nginx_t, polaris_nginx_tmp_t, dir, "scgi_temp")
files_tmp_filetrans(polaris_nginx_t, polaris_nginx_tmp_t, dir, "uwsgi_temp")
files_tmp_filetrans(polaris_nginx_t, polaris_nginx_tmp_t, dir, "pki")
files_tmp_filetrans(polaris_nginx_t, polaris_nginx_tmp_t, dir, "auth")

polaris_restconf_read(polaris_nginx_t)

#####
webui_helper.sh/webui_helper_upgrade.sh
#####

polaris_process_domain_template(nginx_webui)
polaris_process_domain_template(nginx_webui_install)

polaris_nginx_exec_domain(polaris_nginx_webui_t, polaris_nginx_webui_exec_t)
polaris_nginx_exec_domain(polaris_nginx_webui_install_t, polaris_nginx_webui_install_exec_t)

corecmd_exec_bin(polaris_nginx_webui_t)
corecmd_exec_bin(polaris_nginx_webui_install_t)

```

```

allow read of /etc/passwd
auth_use_nsswitch(polaris_nginx_webui_t)
auth_use_nsswitch(polaris_nginx_webui_install_t)

#allow polaris_nginx_webui_t/polaris_nginx_webui_install_t access to nginx webui /tmp base folder
/tmp/nginx/webui_tmp
manage_files_pattern(polaris_nginx_webui_t, polaris_nginx_tmp_t, polaris_nginx_tmp_t)
manage_files_pattern(polaris_nginx_webui_install_t, polaris_nginx_tmp_t, polaris_nginx_tmp_t)

#allow polaris_file_transfer_client_t to access nginx webui /tmp base folder
/tmp/nginx/webui_tmp. We also need to allow chvrf to use the FIFO in cases
where we use the VRF interface
gen_require(
 type polaris_file_transfer_client_t;
 type polaris_chvrf_t;
)
manage_files_pattern(polaris_file_transfer_client_t, polaris_nginx_tmp_t, polaris_nginx_tmp_t)
manage_fifo_files_pattern(polaris_file_transfer_client_t, polaris_nginx_t, polaris_nginx_t)
manage_fifo_files_pattern(polaris_chvrf_t, polaris_nginx_t, polaris_nginx_t)

#fts_client binary requires access to chassis, tdlresolve and cpld
polaris_tdlresolve_read(polaris_file_transfer_client_t)
polaris_chasfs_manage(polaris_file_transfer_client_t)
polaris_cpld_read(polaris_file_transfer_client_t, polaris_sysfs_cpld_t, polaris_sysfs_cpld_t)

gen_require(
 type polaris_file_transfer_client_exec_t;
)
polaris_bexecute_domain(polaris_file_transfer_client_t, polaris_file_transfer_client_exec_t)

type polaris_fts_client_tmp_t;
files_tmp_file(polaris_fts_client_tmp_t)
polaris_fts_client_tmp_manage(polaris_file_transfer_client_t)

on ultra /var/www directory created by systemd unit that runs /mount_packages.sh
under unconfined_service_t domain
gen_require(
 type unconfined_service_t;
)
files_var_filetrans(unconfined_service_t, httpd_sys_content_t, dir, "www")

allow polaris_nginx_t self:capability dac_override;

#iox local mgr in webui connects to caf service on port 8098
corenet_tcp_connect_polaris_caf_api_port(polaris_nginx_t)

IOx downloads the application package using network protocol (e.g http)

```

```

gen_require(
 type fifo_var_run_t;
)
allow polaris_file_transfer_client_t fifo_var_run_t:fifo_file read;

webui connects to dbm backend service on port 9090
corenet_tcp_connect_polaris_wnc_mgrd_port(polaris_nginx_t)

webui connects to poljvm service on port 9093
corenet_tcp_connect_polaris_poljvm_websocket_port(polaris_nginx_t)

remote docker workflow
corenet_tcp_connect_us_cli_port(polaris_nginx_t)

webui sw mgmt app which does install and smu, invokes webui helper shell
scripts which inturn invoke installer scripts. Hence need to provide transition
rule to polaris_install_engine_t domain
polaris_install_engine_domtrans(polaris_nginx_webui_install_t)
polaris_install_show_domtrans(polaris_nginx_webui_install_t)

Allow pipe operations during install command invocation
polaris_nginx_manage_fifo_files(polaris_bexecute_t)
polaris_nginx_manage_fifo_files(polaris_code_verify_t)
polaris_nginx_manage_fifo_files(polaris_install_engine_t)
polaris_nginx_manage_fifo_files(polaris_install_show_t)
polaris_nginx_manage_fifo_files(rsync_t)

During install-add via WebUI, code_sign_verify generates a file:map denial
"/usr/bin/code_sign_verify package
/tmp/patch/smus/10_vwlc_apsp_ap3g3_17.6.bin/mount/C9800-CL-mono-patch.2021-01-11_11.31_radonep"
require {
 type etc_runtime_t;
}
allow polaris_code_verify_t etc_runtime_t:file map;

Provide sys_resource capability to webui install scripts for sys_pipe calls.
allow polaris_nginx_webui_install_t self:capability sys_resource;

nginx/webui File-manager app provides bootflash file-mgmt facility.
as part of this it needs RW access to bootflash.
TODO: Bug CSCvp83328 to isolate the access to another utility, which
can have its own domain and nginx_t can transition to it.
polaris_bootflash_manage(polaris_nginx_t)

allow nginx to manage core files
polaris_core_file_manage(polaris_nginx_t)

luajit module for nginx triggers execmem denial due to mprotect call.

```

```

TODO: cdets CSCvp70095 is used to track this vulnerability in
current nginx component.
allow polaris_nginx_t self:process execmem;

FIXME : allow shell/binary execution
Elevated privelage needs to be addressed
Tracked by Bugid : CSCvp93448
corecmd_exec_bin(polaris_nginx_t)
corecmd_exec_shell(polaris_nginx_t)

#FIXME
Need to re-evaluate these privileges
#Tracked by Bugid : CSCvp92908, CSCvt81963(fts_client)
polaris_file_transfer_client_domtrans(polaris_nginx_webui_install_t)
nginx need access btrace fifo file:
polaris_use_btrace_fifo(polaris_nginx_t)
gen_require(
 type proc_t;
)
manage_files_pattern(polaris_nginx_t, polaris_nginx_t,polaris_nginx_t)
allow polaris_nginx_t proc_t:filesystem { associate };
nginx needs access to /dev/stdout which is owned by pman
allow polaris_nginx_t polaris_pman_t:fifo_file open;

#####
aireos_translate_helper.sh
Invokes a python library that converts aireos config to ewlc config.
#####
type polaris_aireos_translator_scripts_t;
files_type(polaris_aireos_translator_scripts_t)
polaris_process_domain_template(nginx_webui_aireos_translator)
polaris_nginx_exec_domain(polaris_nginx_webui_aireos_translator_t,
polaris_nginx_webui_aireos_translator_exec_t)
allow polaris_nginx_t polaris_aireos_translator_scripts_t:dir { getattr open read search };
allow polaris_nginx_t polaris_aireos_translator_scripts_t:file { getattr ioctl open read };
allow polaris_nginx_t polaris_nginx_webui_aireos_translator_exec_t:file ioctl;
allow polaris_nginx_t self:process setfscreate;
files_list_var(polaris_nginx_t)

#####
ra_trace_webui_helper.sh
Invokes mcp_trace_filter.sh to perform radio active tracing.
#####
polaris_process_domain_template(nginx_webui_trace_filter)
polaris_nginx_exec_domain(polaris_nginx_webui_trace_filter_t, polaris_nginx_webui_trace_filter_exec_t)
corecmd_exec_bin(polaris_nginx_webui_trace_filter_t)
manage_files_pattern(polaris_nginx_webui_trace_filter_t, polaris_nginx_tmp_t, polaris_nginx_tmp_t)

```

```
manage_dirs_pattern(polaris_nginx_webui_trace_filter_t, polaris_nginx_tmp_t, polaris_nginx_tmp_t)
auth_use_nsswitch(polaris_nginx_webui_trace_filter_t)
polaris_trace_filter_domtrans(polaris_nginx_webui_trace_filter_t)
polaris_nginx_manage_fifo_files(polaris_trace_filter_t)
```

```
#####
```

```
nginx_helper.sh
```

```
#nginx show command helper run by pman invoking curl
```

```
#####
```

```
polaris_utility_domain_template(nginx_helper)
```

```
polaris_pman_entry(polaris_nginx_helper_t, polaris_nginx_helper_exec_t)
```

```
#allow execution of nginx_helper.sh
```

```
corecmd_exec_bin(polaris_nginx_helper_t)
```

```
#allow read of /etc/passwd
```

```
auth_use_nsswitch(polaris_nginx_helper_t)
```

```
#allow access to the tmp fifo file
```

```
polaris_use_btrace_fifo(polaris_nginx_helper_t)
```

```
nginx_helper.sh reads from chasfs
```

```
polaris_chasfs_manage(polaris_nginx_helper_t)
```

```
gen_require(^
```

```
 type polaris_curl_t;
```

```
')
```

```
allow execution of /usr/bin/curl on the pkiserver port
```

```
polaris_curl_domtrans(polaris_nginx_helper_t)
```

```
corenet_tcp_connect_pkiserver_port(polaris_curl_t)
```

```
#allow curl to write into chasfs
```

```
polaris_chasfs_manage(polaris_curl_t)
```

```
Found in path(s):
```

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisnginx.te
```

```
No license file was found, but licenses were detected in source scan.
```

```
#
```

```
July 2017, Victor Kamensky
```

```
#
```

```
Copyright (c) 2017-2019 by Cisco Systems, Inc.
```

```
All rights reserved
```

```
#
```

```
<summary>Polaris cpp_cdm Policy Rules.</summary>
```

```
#####
<summary>
Allow access to semaphore with type polaris_cpp_cdm_t
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_cpp_cdm_sem_use`,`
 gen_require(`
 type polaris_cpp_cdm_t;
 `)
 allow $1 polaris_cpp_cdm_t:sem rw_sem_perms;
`)

#####
<summary>
Allow access to shared memory with type polaris_cpp_cdm_t
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_cpp_cdm_shm_use`,`
 gen_require(`
 type polaris_cpp_cdm_t;
 `)
 allow $1 polaris_cpp_cdm_t:shm rw_shm_perms;
`)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscppcdm.if

No license file was found, but licenses were detected in source scan.

```
#
April 2017, Victor Kamensky
#
Copyright (c) 2017-2020 by Cisco Systems, Inc.
All rights reserved
#
<summary>Polaris dmi_ndbmand Policy Rules.</summary>

```

```
#####
```



```

<summary>
Work with NDBLOAD_LOCK_PATH.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_ndbload_lock_use`,`
 gen_require(`
 type polaris_dmi_ndbutil_lock_t;
 type tmp_t;
 `)
 manage_files_pattern($1, tmp_t, polaris_dmi_ndbutil_lock_t)
 files_tmp_filetrans($1, polaris_dmi_ndbutil_lock_t, file, ".l.ndbutil-load")
 files_tmp_filetrans($1, polaris_dmi_ndbutil_lock_t, file, ".l.ndbutil-use")
)

```

```
#####
```

```

<summary>
Manage polaris_ndbmand_ndbutil_t files
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_ndbmand_ndbutil_manage`,`
 gen_require(`
 type polaris_ndbmand_ndbutil_t;
 type polaris_confd_ndbutil_lock_t;
 `)
 manage_files_pattern($1, polaris_confd_ndbutil_lock_t, polaris_ndbmand_ndbutil_t)
)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisdmindbmand.if

No license file was found, but licenses were detected in source scan.

```

#
March 2017, Victor Kamensky
#
Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved
#

```

```
<summary>Polaris sif_mgr Policy Rules.</summary>
```

```
#####
```

```
<summary>
```

```
Allow the specified domain able to read sif_mgr /tmp files.
```

```
</summary>
```

```
<param name="type">
```

```
<summary>
```

```
Domain allowed access.
```

```
</summary>
```

```
</param>
```

```
<param name="object">
```

```
<summary>
```

```
File name in /tmp that the sif_mgr domain creates and other domains
```

```
access.
```

```
</summary>
```

```
</param>
```

```
#
```

```
interface(`polaris_sif_mgr_tmp_files_read`,`
```

```
gen_require(`
```

```
type polaris_sif_mgr_tmp_t;
```

```
`)
```

```
read_files_pattern($1, polaris_sif_mgr_tmp_t, polaris_sif_mgr_tmp_t)
```

```
')
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarissifmgr.if

No license file was found, but licenses were detected in source scan.

```
#
```

```
March 2017, Victor Kamensky
```

```
#
```

```
Copyright (c) 2016-2020 by Cisco Systems, Inc.
```

```
All rights reserved
```

```
#
```

```
<summary>Polaris Chasfs Policy Rules.</summary>
```

```
#####
```

```
Chasfs policy
```

```
#####
```

```
#####
```

```
<summary>
```

```
Manage chasfs files
```

```
</summary>
```

```
<param name="domain">
```

```

<summary>
Domain allowed access.
</summary>
</param>
<rolebase/>
#
interface(`polaris_chasfs_manage`,`
gen_require(`
type polaris_chasfs_t;
`)
manage_dirs_pattern($1, polaris_chasfs_t, polaris_chasfs_t)
manage_files_pattern($1, polaris_chasfs_t, polaris_chasfs_t)
manage_lnk_files_pattern($1, polaris_chasfs_t, polaris_chasfs_t)
manage_fifo_files_pattern($1, polaris_chasfs_t, polaris_chasfs_t)
manage_sock_files_pattern($1, polaris_chasfs_t, polaris_chasfs_t)

allow $1 polaris_chasfs_t:{file dir} watch;

chasfs contains a lot of weird permission files
allow $1 self:capability dac_read_search;
`)

```

```
#####
```

```

<summary>
Read chasfs files
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolebase/>
#
interface(`polaris_chasfs_read`,`
gen_require(`
type polaris_chasfs_t;
`)
list_dirs_pattern($1, polaris_chasfs_t, polaris_chasfs_t)
read_files_pattern($1, polaris_chasfs_t, polaris_chasfs_t)
read_lnk_files_pattern($1, polaris_chasfs_t, polaris_chasfs_t)
read_fifo_files_pattern($1, polaris_chasfs_t, polaris_chasfs_t)
read_sock_files_pattern($1, polaris_chasfs_t, polaris_chasfs_t)

allow $1 polaris_chasfs_t:{file dir} watch;

chasfs contains a lot of weird permission files
allow $1 self:capability dac_read_search;
`)

```

```
#####
<summary>
Manage chasync file(user_input_custom.xml)
</summary>
<param name="domain">
<summary>
getattr allowed access.
</summary>
</param>
<rolebase/>
#
interface(`polaris_chasync_files_manage`,`
 gen_require(`
 type polaris_chasync_files_t;
 `)
 manage_files_pattern($1, polaris_chasync_files_t, polaris_chasync_files_t)
`)
```

```
#####
<summary>
Watch read chasfs directories
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolebase/>
#
interface(`polaris_chasfs_watch_read`,`
 gen_require(`
 type polaris_chasfs_t;
 `)
 allow $1 polaris_chasfs_t:dir watch_reads;
`)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarischasfs.if

No license file was found, but licenses were detected in source scan.

```
#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#
```

```
/dev/dev_lfts -c gen_context(system_u:object_r:polaris_lfts_device_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarislfts.fc
```

No license file was found, but licenses were detected in source scan.

```
#
```

```
July 2019, Victor Kamensky
```

```
#
```

```
Copyright (c) 2019 by Cisco Systems, Inc.
```

```
All rights reserved
```

```
#
```

```
<summary>Polaris GR Manager Policy Rules.</summary>
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisgrmgr.if
```

No license file was found, but licenses were detected in source scan.

```
#
```

```
March 2017, Victor Kamensky
```

```
#
```

```
Copyright (c) 2017-2021 by Cisco Systems, Inc.
```

```
All rights reserved
```

```
#
```

```
policy_module(polarisngwc, 1.0);
```

```
chdrvmmmap device (MMAP Driver for ASIC Memory mapping)
```

```
type polaris_chdrvmmmap_device_t;
```

```
dev_node(polaris_chdrvmmmap_device_t)
```

```
gettysburg_fpga device (/dev/gettysburg_dev1)
```

```
type polaris_gettysburg_fpga_device_t;
```

```
dev_node(polaris_gettysburg_fpga_device_t)
```

```
dplr io memory maping driver /dev/cisco/dplriomem
```

```
type polaris_dplr_iomem_mmapdrv_device_t;
```

```
dev_node(polaris_dplr_iomem_mmapdrv_device_t)
```

```
/dev/shm/ngwc_shm shared memory
```

```
type polaris_ngwc_shm_t;
```

```
files_type(polaris_ngwc_shm_t)
```

```
/dev/shm/ngwc_scc_shm shared memory
```

```
type polaris_ngwc_scc_shm_t;
```

```
files_type(polaris_ngwc_scc_shm_t)
```

```

/dev/shm/iomd_to_fed_ptp_offload shared memory
type polaris_ngwc_itfpo_t;
files_type(polaris_ngwc_itfpo_t)

/dev/shm/sdm shared memory
type polaris_sdm_shm_t;
files_type(polaris_sdm_shm_t)

/dev/shm/sem.i2c_sem00N quake sempaphor
type polaris_quake_i2c_t;
files_type(polaris_quake_i2c_t)

#FPGA io memory maping driver /dev/cisco/fpga_iomem
type polaris_fpga_iomem_mmapfpga_device_t;
dev_node(polaris_fpga_iomem_mmapfpga_device_t)

Mapping permission for /dev/shm/<name>
#ifdef(^quake_platform',`
gen_require(`
 type systemd_tmpfiles_t;
 `)
mmap_files_pattern(systemd_tmpfiles_t, polaris_quake_i2c_t, polaris_quake_i2c_t)
`)

In combined image we have several policies and we choose
one to use in run-time, but file system is shared and
labeled with different file_context files, so it is
possible that we may have some labels that other policy
does not understand for now just hard missing entries
#ifdef(^nyquist_platform',`
type polaris_cm_cc_exec_t;
files_type(polaris_cm_cc_exec_t)
type polaris_cm_fp_exec_t;
files_type(polaris_cm_fp_exec_t)
type polaris_flashcheck_exec_t;
files_type(polaris_flashcheck_exec_t)
type polaris_emd_exec_t;
files_type(polaris_emd_exec_t)
type polaris_ngwc_ishow_exec_t;
files_type(polaris_ngwc_ishow_exec_t)

Adding here as this unmount command is specific to Nyquist platform.
/bin/cat9k_ssd_auth_cmds.sh
polaris_utility_domain_template(ssd_unmount)
corecmd_exec_bin(polaris_ssd_unmount_t)
storage_getattr_fixed_disk_dev(polaris_ssd_unmount_t)
fstools_domtrans(polaris_ssd_unmount_t)
mount_domtrans(polaris_ssd_unmount_t)

```

```

polaris_use_btrace_fifo(polaris_ssd_unmount_t)

#allow to read /etc/passwd
auth_use_nsswitch(polaris_ssd_unmount_t)
polaris_chasfs_read(polaris_ssd_unmount_t)
polaris_cpld_read(polaris_ssd_unmount_t)

#Read /tmp/sw/boot files
polaris_boot_tmp_read(polaris_ssd_unmount_t)
Allow read to btrace tmp files
polaris_btrace_tmppub_read(polaris_ssd_unmount_t)
Allow getattr to tmpfs
fs_getattr_tmpfs(polaris_ssd_unmount_t)
Allow read to ssd auth tmp files /tmp/ssd_blk_device created by udev
polaris_read_ssd_tmp_files(polaris_ssd_unmount_t)

allow creation/access of temporary files created by bash such as
/tmp/sh-thd-1499428203 etc
type polaris_ssd_unmount_tmp_t;
files_tmp_file(polaris_ssd_unmount_tmp_t)
files_tmp_filetrans(polaris_ssd_unmount_t, polaris_ssd_unmount_tmp_t, file)
manage_files_pattern(polaris_ssd_unmount_t, polaris_ssd_unmount_tmp_t, polaris_ssd_unmount_tmp_t)
allow polaris_ssd_unmount_t polaris_ssd_unmount_tmp_t:file { unlink };

#Allow nfs dir/file read
rpc_manage_nfs_state_data_dir(polaris_ssd_unmount_t)
rpc_manage_nfs_state_data(polaris_ssd_unmount_t)
#Allow read access to files on nfsd file system
fs_read_nfsd_files(polaris_ssd_unmount_t)
kernel_rw_rpc_sysctls(polaris_ssd_unmount_t)
fs_getattr_xattr_fs(polaris_ssd_unmount_t)

allow create/sendto/connect operations for logger
allow polaris_ssd_unmount_t self:unix_dgram_socket sendto;
allow polaris_ssd_unmount_t self:unix_dgram_socket create_socket_perms;
logging_create_devlog_dev(polaris_ssd_unmount_t)
logging_send_syslog_msg(polaris_ssd_unmount_t)
polaris_persistent_getattr(polaris_ssd_unmount_t)
#allow dir:search getattr read for udev tmp files
#allow file:write open for udev tmp files
polaris_udev_tmp_manage(polaris_ssd_unmount_t)
gen_require(^
 type rsync_exec_t;
 type rsync_port_t;
)
#allow tcp_socket:name_connect for rsync_port_t
#polaris_ssd_unmount_t has superset privileges of rsync, so its good
#to run rsync in unmount domain. This is not the case everywhere. Please use

```

```

#corenet_tcp_connect_rsync_port if rsync needs to be run in its own domain
allow polaris_ssd_unmount_t rsync_port_t:tcp_socket name_connect;
#allow file:get_attr exec read open map execute_no_trans for rsync_exec_t
allow polaris_ssd_unmount_t rsync_exec_t:file { execute execute_no_trans getattr map open read };
#allow dir:getattr for removable_t
polaris_getattr_removable(polaris_ssd_unmount_t)
')
ifdef(`passport_platform',`
type polaris_auto_upgrade_server_rp_exec_t;
files_type(polaris_auto_upgrade_server_rp_exec_t)
type polaris_bt_logger_exec_t;
files_type(polaris_bt_logger_exec_t)
type polaris_cmm_exec_t;
files_type(polaris_cmm_exec_t)
type polaris_ngwc_plfm_mgr_exec_t;
files_type(polaris_ngwc_plfm_mgr_exec_t)
type polaris_sif_mgr_exec_t;
files_type(polaris_sif_mgr_exec_t)
type polaris_torch_exec_t;
files_type(polaris_torch_exec_t)
type polaris_xcvr_test_exec_t;
files_type(polaris_xcvr_test_exec_t)
type polaris_faked_exec_t;
files_type(polaris_faked_exec_t)
type polaris_emd_exec_t;
files_type(polaris_emd_exec_t)
type polaris_ngwc_ishow_exec_t;
files_type(polaris_ngwc_ishow_exec_t)
type polaris_gr_mgr_exec_t;
files_type(polaris_gr_mgr_exec_t)
type polaris_ioxss_rp_exec_t;
files_type(polaris_ioxss_rp_exec_t)
')
ifdef(`starfleet_platform',`
type polaris_xcvr_test_exec_t;
files_type(polaris_xcvr_test_exec_t)
type polaris_auto_upgrade_server_rp_exec_t;
files_type(polaris_auto_upgrade_server_rp_exec_t)
type polaris_bt_logger_exec_t;
files_type(polaris_bt_logger_exec_t)
type polaris_cmm_exec_t;
files_type(polaris_cmm_exec_t)
type polaris_ngwc_plfm_mgr_exec_t;
files_type(polaris_ngwc_plfm_mgr_exec_t)
type polaris_sif_mgr_exec_t;
files_type(polaris_sif_mgr_exec_t);
type polaris_torch_exec_t;
files_type(polaris_torch_exec_t);

```



```

)

type polaris_disk_ucose0_t;
files_type(polaris_disk_ucose0_t);

type polaris_nplum_power_file_t;
polaris_pfile_type(polaris_nplum_power_file_t)

#permission for /ucose0
optional_policy(
 gen_require(
 type polaris_periodic_t;
)
 polaris_disk_ucose0_read_lnk(polaris_periodic_t)
)

```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisngwc.te
```

No license file was found, but licenses were detected in source scan.

```

#
February 2020, Victor Kamensky
#
Copyright (c) 2020 by Cisco Systems, Inc.
All rights reserved
#

<summary>Polaris cfmgr Policy Rules.</summary>

```

```
#####
```

```

<summary>
Write cfmgr /var/run socket file
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_cfmgr_var_sock_write`,`
 gen_require(
 type polaris_cfmgr_t;
 type polaris_cfmgr_var_run_t;
 type var_run_t;
)
 write_sock_files_pattern($1, var_run_t, polaris_cfmgr_var_run_t)
 allow $1 polaris_cfmgr_t:unix_stream_socket { connectto };
)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscfgmgr.if

No license file was found, but licenses were detected in source scan.

```
#
March 2017, Victor Kamensky
#
Copyright (c) 2017-2021 by Cisco Systems, Inc.
All rights reserved
#

policy_module(polarisstackmgr, 1.0);

gen_require(
 type polaris_stack_mgr_t;
)
polaris_btrace_data_manage(polaris_stack_mgr_t)
polaris_crft_data_manage(polaris_stack_mgr_t)
polaris_chasfs_manage(polaris_stack_mgr_t)
polaris_tdlresolve_read(polaris_stack_mgr_t)
polaris_tdlldb_list_dirs(polaris_stack_mgr_t)
polaris_cpld_read(polaris_stack_mgr_t)
polaris_lua_read(polaris_stack_mgr_t)
polaris_flashlib_read(polaris_stack_mgr_t)

polaris_rpc_sman_ui_serv_connect(polaris_stack_mgr_t)

polaris_db_tdlldb_dir_use(polaris_stack_mgr_t)

allow to send message to /dev/log
logging_send_syslog_msg(polaris_stack_mgr_t)

allow polaris_stack_mgr_t self:capability { dac_override };

polaris_dyncfg_tmp_read(polaris_stack_mgr_t)

corecmd_exec_bin(polaris_stack_mgr_t)
corecmd_exec_shell(polaris_stack_mgr_t)

allow read of /etc/passwd
auth_use_nsswitch(polaris_stack_mgr_t)

read /proc/cmdline
kernel_read_system_state(polaris_stack_mgr_t)

open /dev/ttyS0 console in stack_console_write_init
term_use_unallocated_ttys(polaris_stack_mgr_t)
```

```

on ngwc/vwlc FIPS code reads /tmp/hw_entropy
polaris_hw_entropy_use(polaris_stack_mgr_t)

#stackmgr runs mcp_trace_request.sh
polaris_trace_request_domtrans(polaris_stack_mgr_t)

#stack_mgr needs to be able to access /tmp/issu_stk/prst_sync_rld_info_prsd
polaris_issu_stack_tmp_manage(polaris_stack_mgr_t)

may use mcp_chvrf.sh to access other nodes in system.
Note that we do not actually need to transition to the chvrf domain, however
a file descriptor leak can occur and the domain transition permission macro
expands to allow polaris_chvrf_t to access the fifo
polaris_chvrf_domtrans(polaris_stack_mgr_t)

#Allow read on bootflash to be able to read reload_history
polaris_bootflash_read(polaris_stack_mgr_t)

stackmgr tmp files
type polaris_stack_mgr_tmp_t;
files_tmp_file(polaris_stack_mgr_tmp_t)
files_tmp_filetrans(polaris_stack_mgr_t, polaris_stack_mgr_tmp_t, file, "ngwc_reload_reason")
manage_files_pattern(polaris_stack_mgr_t, polaris_stack_mgr_tmp_t, polaris_stack_mgr_tmp_t)

allow polaris_stack_mgr_t self:capability sys_nice;
allow polaris_stack_mgr_t self:process setsched;

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisstackmgr.te
No license file was found, but licenses were detected in source scan.

#
January 2018, Manohar Hungund
#
Copyright (c) 2018-2019 by Cisco Systems, Inc.
All rights reserved
#

polarisoctdplogrp file contexts place holder

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisoctdplogrp.fc
No license file was found, but licenses were detected in source scan.

#
February 2020, Victor Kamensky
#

```

# Copyright (c) 2020 by Cisco Systems, Inc.

# All rights reserved

#

## <summary>Polaris cedge\_start Policy Rules.</summary>

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscedgestart.if

No license file was found, but licenses were detected in source scan.

dnl

dnl April 2018, Victor Kamensky

dnl

dnl Copyright (c) 2018-2019 by Cisco Systems, Inc.

dnl All rights reserved

dnl

define(^ polaris\_mqipc\_service\_server\_aux',`dnl

type \$1;

polaris\_mqipc\_type(\$1)

polaris\_mqipc\_\$2\_create\_name(\$3)')

define(^ polaris\_mqipc\_service\_server',`dnl

polaris\_mqipc\_service\_server\_aux(mqipc\_label(\$1), mqipc\_stem(\$1), process\_label(\$2))dnl

')

define(^ polaris\_mqipc\_service\_client\_aux',`dnl

polaris\_mqipc\_\$2\_use(\$3)')

define(^ polaris\_mqipc\_service\_client',`dnl

polaris\_mqipc\_service\_client\_aux(mqipc\_label(\$1), mqipc\_stem(\$1), process\_label(\$2))dnl

')

define(^ polaris\_mqipc\_service\_server\_elastic\_client',`')

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/m4/polaris\_ipc\_mqipc\_te.m4

No license file was found, but licenses were detected in source scan.

#

# March 2017, Victor Kamensky

#

# Copyright (c) 2016-2020 by Cisco Systems, Inc.

# All rights reserved

#

## <summary>Polaris polarisqfp Policy Rules.</summary>

#####

```

<summary>
Work (read, write, ioctl) with /dev/netmap device
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_netmap_dev_use',`
gen_require(`
 type device_t;
 type polaris_netmap_device_t;
`)
 write_chr_files_pattern($1, device_t, polaris_netmap_device_t)
 read_chr_files_pattern($1, device_t, polaris_netmap_device_t)
 allow $1 polaris_netmap_device_t:chr_file map;
)

```

#####

```

<summary>
Work (read, write, ioctl) with /dev/svc_eng_puntNN devices
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_svc_eng_punt_dev_use',`
gen_require(`
 type device_t;
 type polaris_sep_device_t;
`)
 write_chr_files_pattern($1, device_t, polaris_sep_device_t)
 read_chr_files_pattern($1, device_t, polaris_sep_device_t)
)

```

#####

```

<summary>
Allow access to semaphore with type polaris_qfp_t
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#

```

```

interface(`polaris_qfp_sem_use`,`
 gen_require(`
 type polaris_qfp_t;
 `)
 allow $1 polaris_qfp_t:sem rw_sem_perms;
`)

#####
<summary>
Send messages to qfp unix datagram sockets.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_qfp_dgram_send`,`
 gen_require(`
 type polaris_qfp_t;
 `)

 allow $1 polaris_qfp_t:unix_dgram_socket sendto;
`)

CSR & C8KV infiniband devices in Azure
interface(`polaris_infiniband_dev_use`,`
 gen_require(`
 type device_t;
 type polaris_infiniband_device_t;
 `)
 write_chr_files_pattern($1, device_t, polaris_infiniband_device_t)
 read_chr_files_pattern($1, device_t, polaris_infiniband_device_t)
 allow $1 polaris_infiniband_device_t:chr_file map;
`)

#####
<summary>
Execute iodbd.sh script in the polaris_iodbd_t domain.
</summary>
<param name="domain">
<summary>
Domain allowed to transition.
</summary>
</param>
#
interface(`polaris_iodbd_domtrans`,`
 gen_require(`

```

```

 type polaris_iodbd_t, polaris_iodbd_exec_t;
 ')

 corecmd_search_bin($1)
 domtrans_pattern($1, polaris_iodbd_exec_t, polaris_iodbd_t)
')

#####
<summary>
Manage files and directoris under /tmp/iodb
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolebase/>
#
interface(`polaris_iodb_tmp_manage',`
 gen_require(`
 type polaris_iodb_tmp_t;
 ')

 manage_files_pattern($1, polaris_iodb_tmp_t,polaris_iodb_tmp_t)
 manage_dirs_pattern($1, polaris_iodb_tmp_t, polaris_iodb_tmp_t)

 fs_getattr_tmpfs($1)
')

#####
<summary>
Manage files and directoris under /tmp/memif
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolebase/>
#
interface(`polaris_qfp_memif_manage',`
 gen_require(`
 type polaris_qfp_memif_t;
 ')

 manage_files_pattern($1, polaris_qfp_memif_t, polaris_qfp_memif_t)
 manage_sock_files_pattern($1, polaris_qfp_memif_t, polaris_qfp_memif_t)
 gen_require(`
 type tmp_t;

```

```

 ')
 manage_dirs_pattern($1, { tmp_t polaris_qfp_memif_t }, polaris_qfp_memif_t)
 allow $1 polaris_qfp_memif_t:file map;
 ')

```

```

#####
<summary>
polaris_qfp_log_manage
</summary>
<param name="filename">
<summary>
Name of the file being managed.
</summary>
</param>
<rolebase/>
#
interface(`polaris_qfp_log_manage`,`
 type polaris_qfp_var_log_t;
 logging_log_file(polaris_qfp_var_log_t)
 logging_log_filetrans(polaris_qfp_t, polaris_qfp_var_log_t, file, $1)
 manage_files_pattern(polaris_qfp_t, var_log_t, polaris_qfp_var_log_t)
`)

```

```

#####
<summary>
Work (read, write, ioctl) with /dev/icp_adf_ctl and
/dev/icp_dev_mem devices
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_icp_dev_use`,`
 gen_require(`
 type device_t;
 type polaris_icp_device_t;
 `)
 write_chr_files_pattern($1, device_t, polaris_icp_device_t)
 read_chr_files_pattern($1, device_t, polaris_icp_device_t)
 allow $1 polaris_icp_device_t:chr_file map;
`)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisqfp.if

No license file was found, but licenses were detected in source scan.



```
#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#

/usr/binos/bin/*.linux_iosd.*ms -- gen_context(system_u:object_r:polaris_iosd_exec_t,s0)
/usr/binos/bin/mcpcc-lc-ms -- gen_context(system_u:object_r:polaris_iosd_exec_t,s0)

/tmp/boottime gen_context(system_u:object_r:polaris_iosd_tmp_files_t,s0)
/tmp/booted gen_context(system_u:object_r:polaris_iosd_tmp_files_t,s0)
/tmp/restconf(/.*)? gen_context(system_u:object_r:polaris_restconf_tmp_t,s0)

/tmp/netio0(/.*)? gen_context(system_u:object_r:polaris_iosd_tmp_files_t,s0)
/tmp/nginx.conf gen_context(system_u:object_r:httpd_config_t,s0)

/bootflash/.geo(/.*)? gen_context(system_u:object_r:polaris_geodb_files_t,s0)
/harddisk/.geo(/.*)? gen_context(system_u:object_r:polaris_geodb_files_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisiosd.fc
```

No license file was found, but licenses were detected in source scan.

```
#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#
```

```
<summary>Polaris cli_agent Policy Rules.</summary>
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscliagent.if
```

No license file was found, but licenses were detected in source scan.

```
#
August 2017, Shawn Lu
#
Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved
#
```

```
polarisrogued file contexts place holder
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisrogued.fc
```

No license file was found, but licenses were detected in source scan.

```
#
July 2017, Victor Kamensky
#
Copyright (c) 2017-2021 by Cisco Systems, Inc.
All rights reserved
#

<summary>Polaris MCP Platform Policy Rules.</summary>

#####
<summary>
Work (read, write, ioctl) with /dev/scooby
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_scooby_dev_use`,`
gen_require(`
 type device_t;
 type polaris_scooby_device_t;
`)
 write_chr_files_pattern($1, device_t, polaris_scooby_device_t)
 read_chr_files_pattern($1, device_t, polaris_scooby_device_t)
`)

#####
<summary>
Work (read, write, ioctl) with /dev/spa[0123]
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_spa_dev_use`,`
gen_require(`
 type device_t;
 type polaris_spa_device_t;
`)
 write_chr_files_pattern($1, device_t, polaris_spa_device_t)
 read_chr_files_pattern($1, device_t, polaris_spa_device_t)
 allow $1 polaris_spa_device_t:chr_file map;
```

```

)

#####
<summary>
Work (read, write, ioctl) with /dev/htdp[0-9]*
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_htdp_dev_use`,`
gen_require(`
 type device_t;
 type polaris_htdp_device_t;
)
 write_chr_files_pattern($1, device_t, polaris_htdp_device_t)
 read_chr_files_pattern($1, device_t, polaris_htdp_device_t)
)

#####
<summary>
Work (read, write, ioctl) with /sys/devices/virtual/sys_platform
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_sysfs_platform_dev_use`,`
gen_require(`
 type polaris_sysfs_platform_t;
)
 manage_files_pattern($1, polaris_sysfs_platform_t, polaris_sysfs_platform_t)
)

#####
<summary>
Work (read, write, ioctl) with /dev/ds31408
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#

```

```

interface(`polaris_ds31408_dev_use`,`
 gen_require(`
 type device_t;
 type polaris_ds31408_device_t;
 `)
 rw_chr_files_pattern($1, device_t, polaris_ds31408_device_t)
`)

#####
<summary>
Allow access to /dev/cbdma
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_cbdma_dev_use`,`
 gen_require(`
 type device_t;
 type polaris_cbdma_device_t;
 `)
 write_chr_files_pattern($1, device_t, polaris_cbdma_device_t)
 read_chr_files_pattern($1, device_t, polaris_cbdma_device_t)
 allow $1 polaris_cbdma_device_t:chr_file map;
`)

#####
<summary>
Allow access to /dev/cpp_htdp
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_cpp_htdp_dev_use`,`
 gen_require(`
 type polaris_cpp_htdp_device_t;
 `)
 write_chr_files_pattern($1, device_t, polaris_cpp_htdp_device_t)
 read_chr_files_pattern($1, device_t, polaris_cpp_htdp_device_t)
 allow $1 polaris_cpp_htdp_device_t:chr_file map;
`)

#####
<summary>

```

```

Allow access to /dev/n2_device
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_n2_dev_use',`
 gen_require(`
 type device_t;
 type polaris_n2_device_t;
 `)
 write_chr_files_pattern($1, device_t, polaris_n2_device_t)
 read_chr_files_pattern($1, device_t, polaris_n2_device_t)
)

#####
<summary>
Allow access to /dev/cy2213
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_cy2213_dev_use',`
 gen_require(`
 type device_t;
 type polaris_cy2213_device_t;
 `)
 write_chr_files_pattern($1, device_t, polaris_cy2213_device_t)
 read_chr_files_pattern($1, device_t, polaris_cy2213_device_t)
)

#####
<summary>
Allow access to /dev/vega
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_vega_dev_use',`
 gen_require(`

```

```

 type device_t;
 type polaris_vega_device_t;
)
 write_chr_files_pattern($1, device_t, polaris_vega_device_t)
 read_chr_files_pattern($1, device_t, polaris_vega_device_t)
)

```

```
#####
```

```

<summary>
Work (read, write, ioctl) with /dev/dash_fpga device
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#

```

```

interface(`polaris_dash_dev_mcp_use`,
gen_require(`
 type device_t;
 type polaris_dash_device_t;
`)
 write_chr_files_pattern($1, device_t, polaris_dash_device_t)
 read_chr_files_pattern($1, device_t, polaris_dash_device_t)
 allow $1 polaris_dash_device_t:chr_file map;
)

```

Found in path(s):

```

* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarismcp.if
No license file was found, but licenses were detected in source scan.

```

dnl

dnl April 2018, Victor Kamensky

dnl

dnl Copyright (c) 2018-2019 by Cisco Systems, Inc.

dnl All rights reserved

dnl

dnl Crankshaft (Overlord, Utah and Fugazi) Platform Max Bay Limits

```
max_bay_map_set(`rp`, `per_bay`, 3)
```

```
max_bay_map_set(`cc`, `per_bay`, 3)
```

```
max_bay_map_set(`fp`, `per_bay`, 3)
```

```
max_bay_ripc_map_set(`rp`, `per_bay`, 3)
```

```
max_bay_ripc_map_set(`cc`, `per_bay`, 3)
```

```
max_bay_ripc_map_set(`fp`, `per_bay`, 3)
```

Found in path(s):

```

* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/mcprmaps.m4

```

No license file was found, but licenses were detected in source scan.

```
#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2021 by Cisco Systems, Inc.
All rights reserved
#

policy_module(polarisiosd, 1.0);

gen_require(`
 type polaris_iosd_t;
`)

#####
mqipc manual, one that missing in platform tdl file
#####

ifdef(`nyquist_platform',`
gen_require(`
 type polaris_bt_logger_iosd_mqipc_t;
`)
iosd may start first and create this mqipc channel
polaris_mqipc_create_name(polaris_iosd_t, polaris_bt_logger_iosd_mqipc_t, bt_logger_iosd)
`)

polaris_btrace_data_manage_all(polaris_iosd_t)
polaris_chasfs_manage(polaris_iosd_t)
polaris_tdlresolve_read(polaris_iosd_t)
polaris_tdlldb_list_dirs(polaris_iosd_t)
polaris_cpld_read(polaris_iosd_t)
polaris_lua_read(polaris_iosd_t)
polaris_flashlib_read(polaris_iosd_t)
polaris_crft_data_manage_all(polaris_iosd_t)
optional_policy(`
polaris_gnmib_gnoi_images_manage(polaris_iosd_t)
`)

polaris_ripc_sman_ui_serv_connect(polaris_iosd_t)

polaris_db_tdlldb_dir_use(polaris_iosd_t)

allow read of /etc/passwd
auth_use_nsswitch(polaris_iosd_t)

allow iosd read/write via hostname <>
systemd_hostnamed_manage_config(polaris_iosd_t)
```

```

creates /etc/netns/1/resolv.conf via ip domain-name <> command
creates /etc/netns/vrf.VRFNAME via ip vfr VRFNAME command
creates /etc/netns/vrf.VRFNAME/resolv.conf via ip
domain-name vrf VRFNAME <> command
gen_require(
 type net_conf_t;
)
files_etc_filetrans(polaris_iosd_t, net_conf_t, file, "resolv.conf")
files_etc_filetrans(polaris_iosd_t, net_conf_t, file, "hosts")
files_etc_filetrans(polaris_iosd_t, net_conf_t, dir, "netns")
sysnet_manage_config(polaris_iosd_t)
sysnet_manage_config_dirs(polaris_iosd_t)

for pluggable FS, allow iosd to access files on them.
polaris_getattr_removable(polaris_iosd_t)
polaris_removable_manage(polaris_iosd_t)
fs_read_removable_symlinks(polaris_iosd_t)

polaris_lsmpi_dev_use(polaris_iosd_t)
polaris_lsmpi_sysctl_read(polaris_iosd_t)
polaris_cfg_data_manage(polaris_iosd_t)
polaris_proc_rmonbifo_read(polaris_iosd_t)

polaris_icc_broken_relocations(polaris_iosd_t)

allow polaris_iosd_t self:capability { sys_nice chown fsetid sys_rawio dac_override dac_read_search ipc_lock };

gen_require(
 type httpd_config_t;
 type tmp_t;
)

iosd creates /tmp/nginx.conf file
manage_files_pattern(polaris_iosd_t, tmp_t, httpd_config_t)
transition nginx.conf into httpd_config_t
files_tmp_filetrans(polaris_iosd_t, httpd_config_t, file, "nginx.conf")
RW access to /usr/binos/conf/nginx-conf/servers (utd feature)
manage_dirs_pattern(polaris_iosd_t, httpd_config_t, httpd_config_t)

#iosd create /tmp/nginx/cert/ca.cert
polaris_nginx_tmp_manage(polaris_iosd_t)

!!!LOOK AT ME!!! - we allow iosd to read raw memory
dev_read_raw_memory(polaris_iosd_t)

polaris_flashlib_write(polaris_iosd_t)
polaris_nvram_manage(polaris_iosd_t)

```



```

polaris_persistent_manage(polaris_iosd_t)

smu management in iosd (linked in via libbcrdu.so) accesses
files created by the installer under /tmp/patch
polaris_install_tmp_read(polaris_iosd_t)

optional_policy(`
polaris_cpp_tmp_ifdev_use(polaris_iosd_t)
`)

polaris_dyncfg_tmp_read(polaris_iosd_t)

lsmpi_fetch_linux_ifindex tries to ioctl(skfd, SIOCGIFINDEX, &ifr) on
non existent ethN interface, as result kernel triggers attempt to
load kernel module that would correspond to such interface. Deny
and don't audit iosd_t attempt to load kernel modules.
LOOK AT ME: in long term we don't want iosd even try to load modules
and we would actually would want to report and fail such
kernel_dontaudit_request_load_module(polaris_iosd_t)

iosd calls nice function to change fast path priority (mcp_fastpath_thread_func)
allow polaris_iosd_t self:process setsched;

ifdef(`crankshaft_family',`
ifconfig_attach_tun_iface(polaris_iosd_t)
corenet_rw_tun_tap_dev(polaris_iosd_t)
`)

ifdef(`mcp_family',`
ifconfig_attach_tun_iface(polaris_iosd_t)
corenet_rw_tun_tap_dev(polaris_iosd_t)
allow polaris_iosd_t polaris_iosd_t:tun_socket relabelfrom;
`)

on ultra iosd is figuring out parameters of interfaces of underlying
hypervisors kvm, vmware, etc. See vxg_gethd_ifdb_scan
ifdef(`crankshaft_family',`
dev_rw_sysfs(polaris_iosd_t)
polaris_disk_objstore_manage(polaris_iosd_t)
`)
ifdef(`vxe_family',`
dev_read_sysfs(polaris_iosd_t)
polaris_disk_objstore_manage(polaris_iosd_t)
polaris_objstore_sem_use(polaris_iosd_t)
`)
ifdef(`vwlc_platform',`
polaris_disk_objstore_manage(polaris_iosd_t)
optional_policy(`

```

```

 polaris_vwlc_grub_efi_use(polaris_iosd_t)
)
)
ifdef(`wlc_family',`
dev_read_sysfs(polaris_iosd_t)
polaris_tlsdcd_uds_manage(polaris_iosd_t)
gen_require(
 type polaris_tlsdcd_t;
)
allow polaris_iosd_t polaris_tlsdcd_t:unix_dgram_socket sendto;
)
on 1ng mcpcc-lc-ms reads /sys/devices/system/cpu/online
ifdef(`mcp_family',`
dev_read_sysfs(polaris_iosd_t)
)
neptune need to figure fan type by reading
/sys/bus/platform/devices/nios/n2h_fan_ctrl_fan_tray_status
ifdef(`neptune_platform',`
dev_read_sysfs(polaris_iosd_t)
)
radium need to figure fan type by reading
/sys/bus/platform/devices/nios/n2h_fan_ctrl_fan_tray_status
ifdef(`radium_platform',`
dev_read_sysfs(polaris_iosd_t)
)
__get_nprocs opens /sys/devices/system/cpu/online
ifdef(`quake_platform',`
dev_read_sysfs(polaris_iosd_t)
)
__get_nprocs opens /sys/devices/system/cpu/online
ifdef(`supernova_platform',`
dev_read_sysfs(polaris_iosd_t)
)

work with /tmp/boottime, /tmp/booted files: create/write
type polaris_iosd_tmp_files_t;
files_tmp_file(polaris_iosd_tmp_files_t)
files_tmp_filetrans(polaris_iosd_t, polaris_iosd_tmp_files_t, file, "boottime")
files_tmp_filetrans(polaris_iosd_t, polaris_iosd_tmp_files_t, file, "booted")
create_files_pattern(polaris_iosd_t, polaris_iosd_tmp_files_t, polaris_iosd_tmp_files_t)

#allow polaris_iosd_t polaris_udev_tmp_files_t:dir { getattr open read search };
#allow polaris_iosd_t polaris_udev_tmp_files_t:file { open, read, write };
LOOK AT ME (need to review write access with iosd team)
polaris_udev_tmp_manage(polaris_iosd_t)

work with /tmp/restconf
type polaris_restconf_tmp_t;

```

```

files_tmp_file(polaris_restconf_tmp_t)
polaris_restconf_tmp_use(polaris_iosd_t)

files_tmp_filetrans(polaris_iosd_t, polaris_restconf_tmp_t, dir, "restconf")
filetrans_pattern(polaris_iosd_t, polaris_restconf_tmp_t, polaris_restconf_tmp_t, file)

work with /tmp/netio0
files_tmp_filetrans(polaris_iosd_t, polaris_iosd_tmp_files_t, dir, "netio0")
sockets and dirs created under /tmp/netio0
manage_dirs_pattern(polaris_iosd_t, polaris_iosd_tmp_files_t, polaris_iosd_tmp_files_t)
manage_sock_files_pattern(polaris_iosd_t, polaris_iosd_tmp_files_t, polaris_iosd_tmp_files_t)
allow polaris_iosd_t self:unix_dgram_socket create_socket_perms;

gen_require(
 type inetd_child_t;
)
sendto permission for /tmp/netio0/ttyC100
allow polaris_iosd_t inetd_child_t:unix_dgram_socket sendto;

polaris_socketat_nsfs_read(polaris_iosd_t)

onep uses TIPC sockets see onep_tipc_transport_start
allow polaris_iosd_t self:socket { bind create listen accept getattr read write ioctl getopt setopt };

mcp_eobc_create_socket creates UDP socket for eobc
corenet_udp_bind_polaris_iosd_eobc_port(polaris_iosd_t)
gen_require(
 type node_t;
)
allow polaris_iosd_t node_t:udp_socket node_bind;
allow polaris_iosd_t self:udp_socket { bind create ioctl setopt read write };

direct access to serial TTY devices like /dev/ttyS1
term_use_unallocated_ttys(polaris_iosd_t)

on ultra cvac_load_config function tried to access cdrom0:/iosxe_config.txt
and if exists read
#ifdef(^vxe_family',`
fs_read_iso9660_files(polaris_iosd_t)
)
#ifdef(^wlc_family',`
fs_read_iso9660_files(polaris_iosd_t)
)

ifs_get_free_bytes invokes mcp_fs_statfs and eventually mcp_wrapper_statvfs
with "/bootflash"...this needs attr access for "/"
fs_getattr_xattr_fs(polaris_iosd_t)

```

```
iosd works with cpp /dev/shm//cpp_ifdev_shmem shared mmory
optional_policy(
polaris_cpp_tmpfs_ifdev_rw(polaris_iods_t)
')
```

```
iosd reads/writes into grubenv for confreg
optional_policy(
polaris_grub_efi_use(polaris_iods_t)
')
```

```
when /bootflash or /harddisk are 100% full
allow polaris_iods_t self:capability sys_resource;
```

```
mcp_set_clock wants to call settimeofday
allow polaris_iods_t self:capability sys_time;
```

```
Need this for bluetooth to work. HCI library uses this
allow polaris_iods_t self:capability net_raw;
```

```
ifdef(^mcp_family',`
polaris_obfl_data_read(polaris_iods_t)
')
```

```
iosd uses quack on mcp and crankshaft and ngwc
```

```
ifdef(^mcp_family',`
polaris_quack_dev_use(polaris_iods_t)
')
```

```
ifdef(^crankshaft_family',`
polaris_quack_dev_use(polaris_iods_t)
')
```

```
ifdef(^ngwc_family',`
polaris_quack_dev_use(polaris_iods_t)
')
```

```
ifdef(^qwlc_platform',`
polaris_quack_dev_use(polaris_iods_t)
')
```

```
ifdef(^katar_platform',`
polaris_quack_dev_use(polaris_iods_t)
')
```

```
ifdef(^mcp_family',`
polaris_spa_dev_use(polaris_iods_t)
polaris_sysfs_platform_dev_use(polaris_iods_t)
')
```

```
on lng write/ioctl into /dev/cpld-ha
```

```
on vwlc ha scenario, iosd needs write access to /dev/cpld-ha
```

```

optional_policy(`
polaris_cpld_dev_use(polaris_iosd_t)
`)

deals with /dev/shm files semaphors; like uuid_sem semaphore
created by btrace_get_uuid function
type polaris_iosd_tmpfs_t;
files_tmpfs_file(polaris_iosd_tmpfs_t)
fs_tmpfs_filetrans(polaris_iosd_t, polaris_iosd_tmpfs_t, file)
manage_files_pattern(polaris_iosd_t, tmpfs_t, polaris_iosd_tmpfs_t)

optional_policy(`
polaris_iodb_tmp_manage(polaris_iosd_t)
`)

on ngwc FIPS code reads /tmp/hw_entropy
seems like iosd can delete the file as well
polaris_hw_entropy_create(polaris_iosd_t)

optional_policy(`
#on macallan iosd needs to access /dev/cpld
polaris_cpld_dev_read(polaris_iosd_t)
`)

on tsn iosd needs write access to
sys/devices/platform/cpld/reg_rp_reset_button_status
sys/devices/platform/cpn-110-master DSR/DTR status
ifdef(`crankshaft_family',`
type polaris_quake_i2c_t;

polaris_cpld_write(polaris_iosd_t)
polaris_ggpio_dev_read_write(polaris_iosd_t)
polaris_quake_i2c_manage(polaris_iosd_t)
`)

ifdef(`katar_platform',`
polaris_cpld_write(polaris_iosd_t)
`)

on tsn iosd needs access to /sys/devices/platform/moka_fpga
/sys/devices/platform/moka_fpga/led_status
optional_policy(`
polaris_mokafpga_rw(polaris_iosd_t)
`)

iosd reads /tmp/iosd_level
polaris_lm_tmp_read(polaris_iosd_t)

```

```

iosd needs manage_dirs, manage_files and manage_lnk
permissions at "/tmp/ufs/lic0/<remote_ip>/*"
optional_policy(`
polaris_ncd_tmp_manage(polaris_iosd_t)
`)

access NFS mounted directories from other nodes or members
fs_getattr_nfs(polaris_iosd_t)

mcp/mcprp/if_unix_se.c code works with /sys/devices/virtual/contdev
files and /proc/net/dev
polaris_manage_contdev_dev(polaris_iosd_t)
kernel_read_network_state(polaris_iosd_t)

iosd creates /tmp/iox_xml.dat file
optional_policy(`
polaris_iox_manage_tmp_files(polaris_iosd_t)
`)

polaris_caf_var_run_files_manage(polaris_iosd_t)
container_read_lib_files(polaris_iosd_t)

work with files like /tmp/rp/.shell_exec.5B1BF1D7648E21AEE3000002
type polaris_iosd2iox_tmp_t;
files_tmp_file(polaris_iosd2iox_tmp_t)
files_tmp_filetrans(polaris_iosd_t, polaris_iosd2iox_tmp_t, file)
polaris_iosd2iox_tmp_manage(polaris_iosd_t)
work with response
optional_policy(`
 polaris_iox2iosd_tmp_manage(polaris_iosd_t)
`)

polaris_sandbox_file_dir_list(polaris_iosd_t)

lfts 2.0 iosd provides route information to kernel. it talks
using generic netlink family socket. See iosd bsock_sar_netlink_process
process
allow polaris_iosd_t self:netlink_generic_socket create_socket_perms;
allow polaris_iosd_t self:netlink_socket create_socket_perms;

LOOK AT ME
on nyquist iosd accesses files like lic0-2:/sanosync.data.readLock
from saLockCheck function and it happens just right after lic0-2 was
mounted over NFSv4. It seems that labels from remote node did not
take an effect yet. For now allow access to dir and files that
are not yet labeled.
ifdef(`nyquist_platform',`
files_manage_isid_type_dirs(polaris_iosd_t)

```

```

files_manage_isid_type_files(polaris_iosd_t)
')

#ifdef(^ngwc_family',`
polaris_getattr_filesystem_disk_ucode(polaris_iosd_t)
#policy needed for accessing sys/bus/usb/drivers/usb/*/authorized
dev_rw_sysfs(polaris_iosd_t)
')

#ifdef(^passport_platform',`
polaris_cm_rp_tmp_manage(polaris_iosd_t)
')

polaris_lfts_dev_use(polaris_iosd_t)

/dev/shm/vrf_shm access for show command
polaris_vrf_shm_manage(polaris_iosd_t)

/dev/shm/sdm access
optional_policy(`
polaris_sdm_shm_manage(polaris_iosd_t)
')

iosd needs access to logging facility
logging_send_syslog_msg(polaris_iosd_t)

#iosd need access to /webui/*.odm files
polaris_read_webui_files(polaris_iosd_t)

allow getting binos networking stats AF_NETLINK
allow polaris_iosd_t self:netlink_route_socket rw_netlink_socket_perms;

confd needs to talk with IOSd via real linux udp snmp socket
allow polaris_iosd_t self:udp_socket { create_socket_perms recv_msg send_msg };
corenet_udp_bind_snmp_port(polaris_iosd_t)

PLEASE LOOK AT code should not use sysv IPC ARIs,
instead POSIX variants must be used. Remove after
code changed in proper way
allow access sysv semaphor created by qfp process
#ifdef(^vxe_family',`
polaris_qfp_sem_use(polaris_iosd_t)
')
#ifdef(^wlc_family',`
polaris_qfp_sem_use(polaris_iosd_t)
ifconfig_attach_tun_iface(polaris_iosd_t)
corenet_rw_tun_tap_dev(polaris_iosd_t)
')

```

```

lsmipi replacement punt/inject over domain sockets
ifdef(`vxe_family',`
polaris_pi_uds_manage(polaris_iosd_t)
polaris_qfp_dgram_send(polaris_iosd_t)
corenet_rw_tun_tap_dev(polaris_iosd_t)
ifconfig_attach_tun_iface(polaris_iosd_t)
')

CSR when operating in VGA mode uses /dev/tty0 as the console for the system
(including IOSD).IOSD setup scripts pass in the tty device(s) to use in the
REAL_CONSOLE and REAL_AUX environment variables. IOSD configures the tty
for its operation and hence need the capability.
allow polaris_iosd_t self:capability sys_tty_config;

LOOK AT ME: hot patch upon a reboot requires execmem operation - which
currently is not allowed. Remove the following policy when CSCvq59763
has been completed.
allow polaris_iosd_t self:process execmem;

/dev/epaN on qwlc/asr1k(mcp)
optional_policy(`
polaris_epa_dev_use(polaris_iosd_t)
')

/dev/qae_mem device access on overlord
optional_policy(`
polaris_qae_dev_use(polaris_iosd_t)
')

ioucon binary invoked on standby console attach.
polaris_ioucon_dgram_send(polaris_iosd_t)

usb device requires read permissions.
kernel_read_debugfs(polaris_iosd_t)

iosd requires access to /tmp/sv
ifdef(`ngwc_family',`
polaris_sv_tmp_use(polaris_iosd_t)
ifconfig_attach_tun_iface(polaris_iosd_t)
corenet_rw_tun_tap_dev(polaris_iosd_t)
')

polaris_i2c_use(polaris_iosd_t)

on CSR AWS deployment iosd needs read access to /dev/console
term_read_console(polaris_iosd_t)

```



```

On vxe platforms the cloudint config is stored in /varied. We need
to be able to read it.
#ifdef(`vxe_family',`
polaris_disk_varied_read(polaris_iosd_t)
')

In stacked and ha setup secondary SUP bootflash and hardisk
are mounted on active and is accessed by iosd.
polaris_getattr_bootflash(polaris_iosd_t)
polaris_getattr_harddisk(polaris_iosd_t)

read access to /dev/random
dev_read_rand(polaris_iosd_t)

Allow access of /tmp/maroon_stats files
polaris_maroon_data_manage_all(polaris_iosd_t)

#access to /dev/bp_async device on nanook platform
optional_policy(`
polaris_bp_async_dev_use(polaris_iosd_t)
')

#Permission for access file attribute to list the file info
polaris_caf_tmp_files_getattr(polaris_iosd_t)

#DB persistence
polaris_tldbpersist_setup(polaris_iosd_t)
polaris_tmp_tlddb_persist_setup(polaris_iosd_t)

IOSCC needs access to /mnt/firmware for intelligent spa during bootup
polaris_firmware_read(polaris_iosd_t)

On Sparrow platform: IOSd requires access to /dev/remap_mem0
and /dev/usb_console for OOB management
Also allows access to /dev/sparrow_psu and /dev/net/tun
/dev/shm/sem._dev_i2c_0 sempaphor
#ifdef(`sparrow_platform',`
gen_require(`
 type polaris_cm_cc_tmpfs_t;
')
polaris_remap_mem_dev_use(polaris_iosd_t)
term_use_usb_ttys(polaris_iosd_t)
polaris_sparrow_psu_dev_use(polaris_iosd_t)
polaris_i2c_sem_manage(polaris_iosd_t)
ifconfig_attach_tun_iface(polaris_iosd_t)
corenet_rw_tun_tap_dev(polaris_iosd_t)
mmap_files_pattern(polaris_iosd_t, polaris_cm_cc_tmpfs_t, polaris_cm_cc_tmpfs_t)
')

```

```

On Blackheart platform: /dev/shm/sem._dev_i2c_0 sempaphor
Allow access to /tmp/udev/etc/udev/msata/udev-info and /dev/net/tun
Allow access to /dev/remap_mem0 for alarm port
#ifdef(^blackheart_platform',`
gen_require(`
 type polaris_cm_cc_tmpfs_t;
`)
polaris_udev_access(polaris_iosd_t)
polaris_remap_mem_dev_use(polaris_iosd_t)
polaris_i2c_sem_manage(polaris_iosd_t)
ifconfig_attach_tun_iface(polaris_iosd_t)
corenet_rw_tun_tap_dev(polaris_iosd_t)
mmap_files_pattern(polaris_iosd_t, polaris_cm_cc_tmpfs_t, polaris_cm_cc_tmpfs_t)
`)

handle /tmp/rp/.iosp_client_app token
type polaris_iosp_client_app_token_t;
files_tmp_file(polaris_iosp_client_app_token_t)
files_tmp_filetrans(polaris_iosd_t, polaris_iosp_client_app_token_t, file, ".iosp_client_app")
manage_files_pattern(polaris_iosd_t, polaris_iosp_client_app_token_t, polaris_iosp_client_app_token_t)

handle /tmp/rp/.iosp_client_dmi token
type polaris_iosp_client_dmi_token_t;
files_tmp_file(polaris_iosp_client_dmi_token_t)
files_tmp_filetrans(polaris_iosd_t, polaris_iosp_client_dmi_token_t, file, ".iosp_client_dmi")
manage_files_pattern(polaris_iosd_t, polaris_iosp_client_dmi_token_t, polaris_iosp_client_dmi_token_t)

handle /tmp/rp/.iosp_dmiauthd token
type polaris_dmiauthd_token_t;
files_tmp_file(polaris_dmiauthd_token_t)
files_tmp_filetrans(polaris_iosd_t, polaris_dmiauthd_token_t, file, ".iosp_dmiauthd")
manage_files_pattern(polaris_iosd_t, polaris_dmiauthd_token_t, polaris_dmiauthd_token_t)

handle /tmp/rp/.iosp_gnmib token
type polaris_gnmib_token_t;
files_tmp_file(polaris_gnmib_token_t)
files_tmp_filetrans(polaris_iosd_t, polaris_gnmib_token_t, file, ".iosp_gnmib")
manage_files_pattern(polaris_iosd_t, polaris_gnmib_token_t, polaris_gnmib_token_t)

polaris_udev_tmp_watch(polaris_iosd_t)

Interfaces needed for Aventus platform, allow access to
/dev/shm/sem._dev_i2c_0 sempaphor
/dev/usb_console for OOB management
/dev/net/tun
brctl process needs access to fifo_file
#ifdef(^aventus_platform',`

```

```

gen_require(
 type brctl_t;
 type polaris_pman_t;
 type polaris_cm_cc_tmpfs_t;
 type ifconfig_t;
 type polaris_i2c_device_t;
)
polaris_i2c_sem_manage(polaris_iosd_t)
ifconfig_attach_tun_iface(polaris_iosd_t)
corenet_rw_tun_tap_dev(polaris_iosd_t)
term_use_usb_ttys(polaris_iosd_t)
allow brctl_t polaris_pman_t:fifo_file append;
mmap_files_pattern(polaris_iosd_t, polaris_cm_cc_tmpfs_t, polaris_cm_cc_tmpfs_t)
allow ifconfig_t polaris_i2c_device_t:chr_file { read write };
)

allow access and modify files in /tftp/inv directory
TODO Need to revisit this for further analysis
ifdef(`mcp_family',`
gen_require(
 type tftpd_dir_rw_t;
)
read_files_pattern(polaris_iosd_t, tftpd_dir_rw_t, tftpd_dir_rw_t)
)

#allow access and modify awips file in /bootflash
gen_require(
type polaris_awips_signature_file_t;
)
filetrans_pattern(polaris_iosd_t, polaris_disk_bootflash_t, polaris_awips_signature_file_t, file, "awips.json")
allow polaris_iosd_t polaris_awips_signature_file_t:file { write create read open getattr unlink};

handle geodb file access
type polaris_geodb_files_t;
polaris_disk_type(polaris_geodb_files_t)
filetrans_pattern(polaris_iosd_t, polaris_disk_bootflash_t, polaris_geodb_files_t, dir, ".geo")
filetrans_pattern(polaris_iosd_t, polaris_disk_harddisk_t, polaris_geodb_files_t, dir, ".geo")
polaris_geodb_files_manage(polaris_iosd_t)

handle /var/ip_local_port_range
type polaris_ip_linux_port_var_t;
files_tmp_file(polaris_ip_linux_port_var_t)
files_var_filetrans(polaris_iosd_t, polaris_ip_linux_port_var_t, file, "ip_local_port_range")

linux_iosd-imag access to file /var/ip_local_port_range
manage_files_pattern(polaris_iosd_t, var_t, polaris_ip_linux_port_var_t)

Allow access to /bootflash/certs

```

```

polaris_wlc_ap_cert_manage(polaris_iosd_t)

commad "ls" on /var/ip_local_port_range
gen_require(
 type polaris_shell_t;
)
allow polaris_shell_t polaris_ip_linux_port_var_t:file getattr;

handling /boot/vcpu_template.txt or /csl_p_0/vcpu_template.txt file
created by iosd by platform resource config command
type polaris_iosd_vcpu_t;
files_type(polaris_iosd_vcpu_t)
gen_require(
 type polaris_disk_csl_p_t;
 type polaris_disk_varied_t;
)
filetrans_pattern(polaris_iosd_t, { polaris_disk_csl_p_t polaris_disk_varied_t }, polaris_iosd_vcpu_t, file,
"vcpu_template.txt")
manage_files_pattern(polaris_iosd_t, { polaris_disk_csl_p_t polaris_disk_varied_t }, polaris_iosd_vcpu_t)

allow open/read/search cgroup files like /sys/fs/cgroup/cpu,cpuacct/machine
fs_read_cgroup_files(polaris_iosd_t)
fs_search_cgroup_dirs(polaris_iosd_t)
for Dynamic Core Allocation IOSd needs write access to cpu sets/shares
ifdef(^crankshaft_family',`
fs_write_cgroup_files(polaris_iosd_t)
)

sdwan_admintech_generate() creates admintech and admintech_trace files
gen_require(
 type polaris_admin_tech_data_t;
)
polaris_bootflash_filetrans(polaris_iosd_t, polaris_admin_tech_data_t, file, "admintech")
polaris_bootflash_filetrans(polaris_iosd_t, polaris_admin_tech_data_t, file, "admintech_trace")
filetrans_pattern(polaris_iosd_t, polaris_chasfs_t, polaris_admin_tech_data_t, file, "ios_admintech_done")
filetrans_pattern(polaris_iosd_t, polaris_chasfs_t, polaris_admin_tech_data_t, file, "ios_admintech_request")
polaris_admin_tech_data_manage(polaris_iosd_t)
with "/bootflash"...this needs attr to access for logfile
polaris_user_file_getattr(polaris_iosd_t)
allow polaris_iosd_t polaris_user_file_t:file { open unlink };
#=====
petra platform
ifdef(^petra_platform',`
iosd need access to petra fpga
polaris_iots_fpga_dev_use(polaris_iosd_t)
iosd need access to memory devices
polaris_iots_tm_dev_use(polaris_iosd_t)
#allow map permission for /dev/shm/TM_A53_APIS

```

```

allow polaris_iosd_t polaris_iosd_tmpfs_t:file map;
#allow access to polaris_cm_rp_t sem
polaris_cm_rp_sem_use(polaris_iosd_t)
#allow access to userio
dev_rw_userio_dev(polaris_iosd_t)
allow polaris_iosd_t userio_device_t:chr_file { map };
#iosd need access to sysfs
dev_rw_sysfs(polaris_iosd_t)
allow polaris_iosd_t sysfs_t:file { create map };
dev_manage_sysfs_dirs(polaris_iosd_t)
iosd need access to sdflash files image is stored
polaris_swipedrive_file_manage(polaris_iosd_t)
polaris_getattr_swipedrive(polaris_iosd_t)
#iosd need access to mmcblk0p3
gen_require(
 type polaris_disk_recovery_t;
)
allow polaris_iosd_t polaris_disk_recovery_t:filesystem getattr;
#iosd need access to mmcblk0p2
polaris_getattr_filesystem_disk_ucode(polaris_iosd_t)
iosd need access to /dev/mvDmaDrv
polaris_mvDmaDrv_dev_use(polaris_iosd_t)
iosd need access to /dev/mvIntDrv
polaris_mvIntDrv_dev_use(polaris_iosd_t)
#iosd need permission for LED
polaris_led_dev_use(polaris_iosd_t)
#iosd need access to rawip socket by initscripts/rc.d/init.d/iptables
allow polaris_iosd_t self:rawip_socket create_socket_perms;
#iosd needs access to /opt/cisco/caf/config/system-config.ini
polaris_caf_files_read(polaris_iosd_t)
#iosd need permission to /dev/rtc0 done via imsp_update_sw_hwclock()
dev_rw_realtime_clock(polaris_iosd_t)
)
work with /tmp/usb-disable: create/write
type polaris_iosd_usb_disable_tmp_t;
files_tmp_file(polaris_iosd_usb_disable_tmp_t);
polaris_iosd_usb_disable_tmp_manage(polaris_iosd_t)

ifdef(`ngwc_family',`
SELINUX Mismatch warning when doing power redundancy configuration commands
Allow access /bootflash/nplusm-power
polaris_nplusm_power_manage(polaris_iosd_t)
)

optional_policy(
 polaris_efi_files_list_dirs(polaris_iosd_t)
)

```

```
work with /dev/shm/mq.-iosd_to_timingd
type polaris_iosd_timing_mqipc_t;
polaris_mqipc_type(polaris_iosd_timing_mqipc_t)

polaris_mqipc_create_name(polaris_iosd_t, polaris_iosd_timing_mqipc_t, iosd_to_timingd)
```

```
watch /tmp
allow polaris_iosd_t tmp_t:dir watch;
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisiosd.te

No license file was found, but licenses were detected in source scan.

```
#
January 2018, Manohar Hungund
#
Copyright (c) 2018-2019 by Cisco Systems, Inc.
All rights reserved
#
```

```
<summary>Polaris oct_dp_log_rp Policy Rules.</summary>
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisoctdplogrp.if

No license file was found, but licenses were detected in source scan.

```
#
February 2020, Victor Kamensky
#
Copyright (c) 2020-2021 by Cisco Systems, Inc.
All rights reserved
#
```

```
<summary>Polaris cedge Policy Rules.</summary>
```

```
#####
```

```
<summary>
Manage /tmp/xml files and directories
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
```

```
interface(`polaris_cedge_xml_tmp_manage`,
 gen_require(`
 type polaris_cedge_xml_tmp_t;
```

```

 ')
 manage_dirs_pattern($1, polaris_cedge_xml_tmp_t, polaris_cedge_xml_tmp_t)
 manage_files_pattern($1, polaris_cedge_xml_tmp_t, polaris_cedge_xml_tmp_t)
 files_tmp_filetrans($1, polaris_cedge_xml_tmp_t, dir, "xml")

 allow $1 polaris_cedge_xml_tmp_t:dir { watch mounon };
 allow $1 polaris_cedge_xml_tmp_t:file map;
 ')

```

```
#####
```

```

<summary>
Manage /tmp/tmp files and directories
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#

```

```

interface(`polaris_cedge_tmp_manage`,`
 gen_require(`
 type polaris_cedge_tmp_t;
 `)
 manage_dirs_pattern($1, polaris_cedge_tmp_t, polaris_cedge_tmp_t)
 manage_files_pattern($1, polaris_cedge_tmp_t, polaris_cedge_tmp_t)
 files_tmp_filetrans($1, polaris_cedge_tmp_t, dir, "tmp")
)

```

```

)

```

```
#####
```

```

<summary>
Manage /etc/viptela files and directories
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#

```

```

interface(`polaris_cedge_etc_manage`,`
 gen_require(`
 type polaris_cedge_etc_t;
 `)
 manage_dirs_pattern($1, polaris_cedge_etc_t, polaris_cedge_etc_t)
 manage_files_pattern($1, polaris_cedge_etc_t, polaris_cedge_etc_t)
 manage_lnk_files_pattern($1, polaris_cedge_etc_t, polaris_cedge_etc_t)
 files_etc_filetrans($1, polaris_cedge_etc_t, dir, "viptela")
)

```

```

)

```

```
#####
<summary>
Read /etc/viptela files and directories
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_cedge_etc_read`,`
 gen_require(`
 type polaris_cedge_etc_t;
 `)
 search_dirs_pattern($1, polaris_cedge_etc_t, polaris_cedge_etc_t)
 read_files_pattern($1, polaris_cedge_etc_t, polaris_cedge_etc_t)
 read_lnk_files_pattern($1, polaris_cedge_etc_t, polaris_cedge_etc_t)
 files_etc_filetrans($1, polaris_cedge_etc_t, dir, "viptela")
`)
```

```
#####
<summary>
Watch cedge_etc directories and files
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolebase/>
#
interface(`polaris_cedge_etc_watch`,`
 gen_require(`
 type polaris_cedge_etc_t;
 `)
 allow $1 polaris_cedge_etc_t:{ dir file } watch;
`)
```

```
#####
<summary>
Read access /var/run/netns/* performed from vip_util_set_ns
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
```



```

#
interface(`polaris_cedge_set_ns',`
 init_read_state($1)
 fs_read_nsfs_files($1)
 sysnet_manage_ifconfig_run($1)
`)

#####
<summary>
Read access /proc/1/ns/net performed from vip_util_reset_ns
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_cedge_reset_ns',`
 init_read_state($1)
`)

#####
<summary>
Manage /dev/shm viptela files
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_cedge_tmpfs_manage',`
 gen_require(`
 type polaris_cedge_tmpfs_t;
 type tmpfs_t;
 `)
 fs_tmpfs_filetrans($1, polaris_cedge_tmpfs_t, file)
 manage_files_pattern($1, tmpfs_t, polaris_cedge_tmpfs_t)
 allow $1 polaris_cedge_tmpfs_t:file map;
`)

#####
<summary>
Manage /tmp/.econfd2sysmgr-ipc files and directories
</summary>
<param name="domain">
<summary>
Domain allowed access.

```

```

</summary>
</param>
#
interface(`polaris_econfd2sysmgr_tmp_manage`,`
 gen_require(`
 type polaris_econfd2sysmgr_tmp_t;
 `)
 manage_dirs_pattern($1, polaris_econfd2sysmgr_tmp_t, polaris_econfd2sysmgr_tmp_t)
 manage_files_pattern($1, polaris_econfd2sysmgr_tmp_t, polaris_econfd2sysmgr_tmp_t)
 files_tmp_filetrans($1, polaris_econfd2sysmgr_tmp_t, dir, ".econfd2sysmgr-ipc")
 allow $1 polaris_econfd2sysmgr_tmp_t:dir watch;
`)

```

```

#####
<summary>
Manage /tmp/* labeled with polaris_vconfd_cert_tmp_t
for vconfd_script_upload_root_ca_cert_chain.sh to access
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_vconfd_cert_tmp_manage`,`
 gen_require(`
 type polaris_vconfd_cert_tmp_t;
 `)
 manage_dirs_pattern($1, polaris_vconfd_cert_tmp_t, polaris_vconfd_cert_tmp_t)
 manage_files_pattern($1, polaris_vconfd_cert_tmp_t, polaris_vconfd_cert_tmp_t)
`)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscedge.if

No license file was found, but licenses were detected in source scan.

```

#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#

```

```

<summary>Polaris cpp_driver Policy Rules.</summary>

```

```

#####
<summary>
Allow access to semaphore with type polaris_cpp_driver_t

```

```

</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_cpp_driver_sem_use`,`
 gen_require(`
 type polaris_cpp_driver_t;
 `)
 allow $1 polaris_cpp_driver_t:sem rw_sem_perms;
`)

#####
<summary>
Allow access to shared memory with type polaris_cpp_driver_t
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_cpp_driver_shm_use`,`
 gen_require(`
 type polaris_cpp_driver_t;
 `)
 allow $1 polaris_cpp_driver_t:shm rw_shm_perms;
`)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscppdriver.if

No license file was found, but licenses were detected in source scan.

```

#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2020 by Cisco Systems, Inc.
All rights reserved
#

```

```

<summary>Polaris polarisautoupgrade Policy Rules.</summary>

```

```

#####
<summary>
Execute auto-upgrade scripts in their own domain
</summary>

```

```

<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolecap/>
#
interface(`polaris_autoupgrade_domtrans`,`
 gen_require(`
 type polaris_autoupgrade_t;
 type polaris_autoupgrade_exec_t;
 `)

 domtrans_pattern($1, polaris_autoupgrade_exec_t, polaris_autoupgrade_t)
`)

#####
<summary>
Manage tmp files created by autoupgrade.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolecap/>
#
interface(`polaris_autoupgrade_tmp_manage`,`
 gen_require(`
 type polaris_autoupgrade_tmp_t;
 `)

 manage_files_pattern($1, polaris_autoupgrade_tmp_t, polaris_autoupgrade_tmp_t)
 manage_lnk_files_pattern($1, polaris_autoupgrade_tmp_t, polaris_autoupgrade_tmp_t)
 manage_fifo_files_pattern($1, polaris_autoupgrade_tmp_t, polaris_autoupgrade_tmp_t)
`)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisautoupgrade.if

No license file was found, but licenses were detected in source scan.

```

#
October 2019, Patrick O'Halloran
#
Copyright (c) 2019-2020 by Cisco Systems, Inc.
All rights reserved
#

```

```
<summary>Polaris CRFT Policy Rules.</summary>
```

```

CRFT policy
#####
```

```

<summary>
Allow read-only access to CRFT generated files
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<param name="file_type">
<summary>
File type of crft that corresponds to given domain.
</summary>
</param>
<rolebase/>
#
```

```
interface(`polaris_crft_data_read`,`
 gen_require(`
 type polaris_crft_data_t;
 type polaris_crft_request_t;
 type polaris_crft_request_crft_t;
 `)

 read_lnk_files_pattern($1, polaris_crft_data_t, polaris_crft_data_t)
 polaris_disk_bootflash_read_lnk($1)
 polaris_disk_harddisk_read_lnk($1)
 read_files_pattern($1, polaris_crft_request_crft_t, polaris_crft_request_crft_t)
 allow $1 polaris_crft_request_t:fifo_file { ioctl write };
)
```

```

<summary>
Manage crft persistent files
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolebase/>
#
```

```
interface(`polaris_crft_data_manage`,`
```

```

gen_require(`
 type polaris_crft_data_t;
`)

manage_dirs_pattern($1, polaris_crft_data_t, polaris_crft_data_t)
manage_lnk_files_pattern($1, polaris_crft_data_t, polaris_crft_data_t)
manage_files_pattern($1, polaris_crft_data_t, polaris_crft_data_t)
Note: Based on dicussion with SELinux team, we need to call this
out specifically here for lnk file access, as:
- NGWC /harddisk -(symlink)-> /misc/scratch -(symlink)-> /mnt/sda3/user
polaris_disk_bootflash_read_lnk($1)
polaris_disk_harddisk_read_lnk($1)
allow $1 polaris_crft_data_t:file map;
`)

```

```
#####
```

```

<summary>
Manage crft files
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolebase/>
#
interface(`polaris_crft_data_manage_all`,`
 polaris_crft_data_manage($1)

```

```

gen_require(`
 attribute polaris_crft_data_domain;
 type polaris_crft_data_t;
`)

manage_files_pattern($1, polaris_crft_data_t, polaris_crft_data_domain)
manage_lnk_files_pattern($1, polaris_crft_data_t, polaris_crft_data_domain)
allow $1 polaris_crft_data_domain:file map;
`)

```

```
#####
```

```

<summary>
Make the specified type usable as crft data file type.
</summary>
<param name="type">
<summary>
Type to be used for files.
</summary>
</param>

```

```

#
interface(`polaris_crft_data_type`,`
 files_type($1)
 polaris_pfile_type($1)
 gen_require(`
 attribute polaris_crft_data_domain;
 `)
 typeattribute $1 polaris_crft_data_domain;
`)

#####
<summary>
Process to manage its own crft files
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<param name="file_type">
<summary>
File type of crft that corresponds to given domain.
</summary>
</param>
<rolebase/>
#
interface(`polaris_crft_data_client`,`
 gen_require(`
 type polaris_crft_data_t;
 `)

 manage_dirs_pattern($1, polaris_crft_data_t, $2)
 manage_files_pattern($1, polaris_crft_data_t, $2)
 manage_lnk_files_pattern($1, polaris_crft_data_t, $2)
 filetrans_pattern($1, polaris_crft_data_t, $2, file)
 allow $1 $2:file map;
`)

```

```

#####
<summary>
Process to manage its own crft files
</summary>
<param name="domain_stem">
<summary>
Steam of domain allowed access.
</summary>
</param>
<rolebase/>

```

```

#
interface(`polaris_crft_data_client_template',`
 gen_require(`
 attribute polaris_crft_data_domain;
 type polaris_crft_data_t;
 `)

 type polaris_${1}_crft_t;
 polaris_crft_data_type(polaris_${1}_crft_t)
 polaris_crft_data_client(polaris_${1}_t, polaris_${1}_crft_t)
`)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscrft.if

No license file was found, but licenses were detected in source scan.

```

#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#

```

```

/usr/cpp/bin/cpp_ha_top_level_server -- gen_context(system_u:object_r:polaris_cpp_ha_exec_t,s0)
/usr/cpp/bin/cpp_ha_top_level_server_ledp -- gen_context(system_u:object_r:polaris_cpp_ha_exec_t,s0)
/usr/cpp/bin/cpp_ha_top_level_server_us_ledp -- gen_context(system_u:object_r:polaris_cpp_ha_exec_t,s0)
/usr/cpp/bin/cpp_ha_top_level_server_vwlc -- gen_context(system_u:object_r:polaris_cpp_ha_exec_t,s0)
/usr/cpp/bin/cpp_ha_top_level_server_vwlc_ledp -- gen_context(system_u:object_r:polaris_cpp_ha_exec_t,s0)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscppha.fc

No license file was found, but licenses were detected in source scan.

```

#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#

```

policy\_module(polariscfg, 1.0);

```

#####
Cfg files policy
#####

```

```

type polaris_cfg_data_t;
files_type(polaris_cfg_data_t)

```



```

gen_require(
 attribute polaris_extended_domain;
)

files_tmp_filetrans(polaris_extended_domain, polaris_cfg_data_t, dir, "cfg")

#####
cfg_sync.sh policy
#####

polaris_utility_domain_template(cfg_sync)

polaris_bexecute_domain(polaris_cfg_sync_t, polaris_cfg_sync_exec_t)

polaris_boot_tmp_read(polaris_cfg_sync_t)
polaris_btrace_data_manage(polaris_cfg_sync_t)
polaris_chasfs_read(polaris_cfg_sync_t)
polaris_cpld_read(polaris_cfg_sync_t)
polaris_use_btrace_fifo(polaris_cfg_sync_t)

corecmd_exec_bin(polaris_cfg_sync_t)
auth_use_nsswitch(polaris_cfg_sync_t)

polaris_bootflash_read(polaris_cfg_sync_t)
polaris_nvram_manage(polaris_cfg_sync_t)
telnet_use_ptys(polaris_cfg_sync_t)

gen_require(
 type rsync_t;
)
rsync_entry_domtrans(polaris_cfg_sync_t, rsync_t)
allow rsync_t polaris_cfg_sync_t:process sigchld;
file descriptor leak when rsync is called
allow rsync_t polaris_cfg_sync_t:fifo_file { write getattr };

logging_send_syslog_msg(polaris_cfg_sync_t)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscfg.te

No license file was found, but licenses were detected in source scan.

dnl

dnl April 2018, Victor Kamensky

dnl

dnl Copyright (c) 2018-2019 by Cisco Systems, Inc.

dnl All rights reserved

dnl

```
polarisvxeipbaseauto file contexts place holder
```

```
Found in path(s):
```

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/polaris_ipc_base_fc.m4
```

```
No license file was found, but licenses were detected in source scan.
```

```
#
```

```
March 2017, Victor Kamensky
```

```
#
```

```
Copyright (c) 2016-2020 by Cisco Systems, Inc.
```

```
All rights reserved
```

```
#
```

```
<summary>Polaris cm_fp Policy Rules.</summary>
```

```
#####
```

```
<summary>
```

```
Execute cmand_fp in the polaris_cm_fp_t domain.
```

```
</summary>
```

```
<param name="domain">
```

```
<summary>
```

```
Domain allowed to transition.
```

```
</summary>
```

```
</param>
```

```
#
```

```
interface(`polaris_cm_fp_domtrans`,`
```

```
gen_require(`
```

```
type polaris_cm_fp_t, polaris_cm_fp_exec_t;
```

```
`)
```

```
corecmd_search_bin($1)
```

```
domtrans_pattern($1, polaris_cm_fp_exec_t, polaris_cm_fp_t)
```

```
`)
```

```
#####
```

```
<summary>
```

```
Allow the specified domain to manage cm_fp_tmp files
```

```
</summary>
```

```
<param name="domain">
```

```
<summary>
```

```
Domain allowed access.
```

```
</summary>
```

```
</param>
```

```
#
```

```
interface(`polaris_cm_fp_tmp_manage`,`
```

```
gen_require(`
```

```
type polaris_cm_fp_tmp_t;
```

```
type tmp_t;
```

```
)

manage_files_pattern($1, { polaris_cm_fp_tmp_t tmp_t }, polaris_cm_fp_tmp_t)
)
```

```

<summary>
Create objects in /tmp with a polaris_cm_fp_tmp_t
type using a type_transition.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>

interface(`polaris_cm_fp_tmp_filetrans`,`
gen_require(`
type polaris_cm_fp_tmp_t;
)
files_tmp_filetrans($1, polaris_cm_fp_tmp_t, file, "octeon-remote-lock-pci:0")
)
```

```

<summary>
Allow access to semaphore with type polaris_cm_fp_t
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>

interface(`polaris_cm_fp_sem_use`,`
gen_require(`
type polaris_cm_fp_t;
)
allow $1 polaris_cm_fp_t:sem rw_sem_perms;
)
```

```

<summary>
Allow access to shared memory with type polaris_cm_fp_t
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
```

```

</param>
#
interface(`polaris_cm_fp_shm_use`,`
 gen_require(`
 type polaris_cm_fp_t;
 `)
 allow $1 polaris_cm_fp_t:shm rw_shm_perms;
`)

#####
<summary>
Allow access to /dev/hkp with type polaris_cm_fp_t
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_hkp_dev_use`,`
 gen_require(`
 type device_t;
 type polaris_hkp_device_t;
 `)
 write_chr_files_pattern($1, device_t, polaris_hkp_device_t)
 read_chr_files_pattern($1, device_t, polaris_hkp_device_t)
`)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscmfp.if  
No license file was found, but licenses were detected in source scan.

```

#
August 2017, Shawn Lu
#
Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved
#
polarisifmgr file contexts place holder

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisrifmgr.fc  
No license file was found, but licenses were detected in source scan.

```

#
August 2017, Victor Kamensky
#

```

# Copyright (c) 2017-2021 by Cisco Systems, Inc.

# All rights reserved

#

## <summary>Polaris crankshaft Platform Policy Rules.</summary>

#####

## <summary>

## Work (read, write, ioctl) with /dev/linux-(user|kernel)-bde devices

## </summary>

## <param name="domain">

## <summary>

## Domain allowed access.

## </summary>

## </param>

#

interface(`polaris\_bde\_dev\_use',`

gen\_require(`

type device\_t;

type polaris\_bde\_device\_t;

')

write\_chr\_files\_pattern(\$1, device\_t, polaris\_bde\_device\_t)

read\_chr\_files\_pattern(\$1, device\_t, polaris\_bde\_device\_t)

allow \$1 polaris\_bde\_device\_t:chr\_file map;

')

#####

## <summary>

## Work (read, write, ioctl) with /dev/dash\_fpga device

## </summary>

## <param name="domain">

## <summary>

## Domain allowed access.

## </summary>

## </param>

#

interface(`polaris\_dash\_dev\_use',`

gen\_require(`

type device\_t;

type polaris\_dash\_device\_t;

')

write\_chr\_files\_pattern(\$1, device\_t, polaris\_dash\_device\_t)

read\_chr\_files\_pattern(\$1, device\_t, polaris\_dash\_device\_t)

allow \$1 polaris\_dash\_device\_t:chr\_file map;

')

#####

## <summary>

```

Work (read, write, ioctl) with /dev/huron_fpga device
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_huron_dev_use`,`
 gen_require(`
 type device_t;
 type polaris_huron_device_t;
 `)
 write_chr_files_pattern($1, device_t, polaris_huron_device_t)
 read_chr_files_pattern($1, device_t, polaris_huron_device_t)
 allow $1 polaris_huron_device_t:chr_file map;
`)

#####
<summary>
Work (read, write, ioctl) with /dev/dplr_sumatra
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_sumatra_doppler_dev_use`,`
 gen_require(`
 type device_t;
 type polaris_sumatra_doppler_device_t;
 `)
 write_chr_files_pattern($1, device_t, polaris_sumatra_doppler_device_t)
 read_chr_files_pattern($1, device_t, polaris_sumatra_doppler_device_t)
 allow $1 polaris_sumatra_doppler_device_t:chr_file map;
`)

#####
<summary>
Work (open, read, write, ioctl) with /dev/sirius_fpga device
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#

```

```

interface(`polaris_sirius_fpga_dev_use',`
gen_require(`
 type device_t;
 type polaris_siriusfpga_device_t;
`)
 rw_chr_files_pattern($1, device_t, polaris_siriusfpga_device_t);
`)

```

```

#####
<summary>
Work (read, write, ioctl) with /dev/nios device
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#

```

```

interface(`polaris_nios_dev_use',`
gen_require(`
 type device_t;
 type polaris_nios_device_t;
`)
 write_chr_files_pattern($1, device_t, polaris_nios_device_t)
 read_chr_files_pattern($1, device_t, polaris_nios_device_t)
`)

```

```

#####
<summary>
Work (read, write, ioctl) with /dev/qaе_mem device
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#

```

```

interface(`polaris_qae_dev_use',`
gen_require(`
 type device_t;
 type polaris_qae_device_t;
`)
 write_chr_files_pattern($1, device_t, polaris_qae_device_t)
 read_chr_files_pattern($1, device_t, polaris_qae_device_t)
`)

```

```

#####
<summary>

```

```

Read mokafpga files in /sys/devices/platform directory
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_mokafpga_read`,`
 gen_require(`
 type polaris_sysfs_mokafpga_t;
 type sysfs_t;
 `)
 read_files_pattern($1, polaris_sysfs_mokafpga_t, polaris_sysfs_mokafpga_t)
 list_dirs_pattern($1, polaris_sysfs_mokafpga_t, polaris_sysfs_mokafpga_t)
`)

```

```

#####
<summary>
Read/Write mokafpga files in /sys/devices/platform directory
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_mokafpga_rw`,`
 gen_require(`
 type polaris_sysfs_mokafpga_t;
 type sysfs_t;
 `)
 rw_files_pattern($1, polaris_sysfs_mokafpga_t, polaris_sysfs_mokafpga_t)
 list_dirs_pattern($1, polaris_sysfs_mokafpga_t, polaris_sysfs_mokafpga_t)
`)

```

```

#####
<summary>
Work (read, write, ioctl) with /dev/moka_fpga
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_mokafpga_dev_use`,`
 gen_require(`

```



```

 type device_t;
 type polaris_mokafpga_device_t;
)
 write_chr_files_pattern($1, device_t, polaris_mokafpga_device_t)
 read_chr_files_pattern($1, device_t, polaris_mokafpga_device_t)
)

#####
<summary>
Work (read, write, ioctl) with /dev/nim_dm_0_1 and
/dev/nim_dm devices
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_nim_dm_dev_use`,`
gen_require(`
 type device_t;
 type polaris_nim_dm_device_t;
)
 write_chr_files_pattern($1, device_t, polaris_nim_dm_device_t)
 read_chr_files_pattern($1, device_t, polaris_nim_dm_device_t)
 allow $1 polaris_nim_dm_device_t:chr_file map;
 allow $1 device_t:chr_file map;
)

#####
<summary>
Execute a domain transition to run load_usbnet.sh.
</summary>
<param name="domain">
<summary>
Domain allowed to transition.
</summary>
</param>
#
interface(`polaris_load_usbnet_domtrans`,`
gen_require(`
 type polaris_load_usbnet_t, polaris_load_usbnet_exec_t;
)

 domtrans_pattern($1, polaris_load_usbnet_exec_t, polaris_load_usbnet_t)
)

```

```
#####
<summary>
Label and allow access to i2c semaphore files.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_i2c_sem_manage`,`
 gen_require(`
 type tmpfs_t;
 type polaris_cm_cc_tmpfs_t;
 `)
 manage_files_pattern($1, tmpfs_t, polaris_cm_cc_tmpfs_t)
 mmap_files_pattern($1, polaris_cm_cc_tmpfs_t, polaris_cm_cc_tmpfs_t)
`)
```

```
#####
<summary>
Work (read, write, ioctl) with /dev/bp_async device
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_bp_async_dev_use`,`
 gen_require(`
 type device_t;
 type polaris_bp_async_device_t;
 `)
 write_chr_files_pattern($1, device_t, polaris_bp_async_device_t)
 read_chr_files_pattern($1, device_t, polaris_bp_async_device_t)
 allow $1 polaris_bp_async_device_t:chr_file map;
`)
```

```
#####
<summary>
Label and allow access to i2c semaphore files.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
```

```

#
interface(`polaris_udev_access',`
 gen_require(`
 type tmpfs_t;
 type polaris_udev_tmp_files_t;
 `)
 manage_files_pattern($1, tmpfs_t, polaris_udev_tmp_files_t)
)

<summary>
Work (read, write, ioctl) with /dev/sparrow_psu device
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_sparrow_psu_dev_use',`
 gen_require(`
 type device_t;
 type polaris_sparrow_psu_device_t;
 `)
 write_chr_files_pattern($1, device_t, polaris_sparrow_psu_device_t)
 read_chr_files_pattern($1, device_t, polaris_sparrow_psu_device_t)
)

#####
<summary>
Work (read, write, ioctl) with /dev/nutella_fpga device
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_nutella_fpga_dev_use',`
 gen_require(`
 type device_t;
 type polaris_nutella_fpga_device_t;
 `)
 write_chr_files_pattern($1, device_t, polaris_nutella_fpga_device_t)
 read_chr_files_pattern($1, device_t, polaris_nutella_fpga_device_t)
)

#####
<summary>

```

```

Read and write to qcqmi devices.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_qcqmi_dev_use`,`
gen_require(`
type device_t, qcqmi_device_t;
`)

rw_chr_files_pattern($1, device_t, qcqmi_device_t)
`)

#####
<summary>
Work (read, write, ioctl) with /dev/sm_nim_adpt device files
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_sm_nim_adpt_dev_use`,`
gen_require(`
type device_t;
type polaris_sm_nim_adpt_device_t;
`)

write_chr_files_pattern($1, device_t, polaris_sm_nim_adpt_device_t)
read_chr_files_pattern($1, device_t, polaris_sm_nim_adpt_device_t)
allow $1 polaris_sm_nim_adpt_device_t:chr_file map;
`)

#####
<summary>
Work (read, write, ioctl) with /dev/dio-*
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_dio_dev_use`,`

```

```

gen_require(
 type device_t;
 type polaris_dio_device_t;
)
write_chr_files_pattern($1, device_t, polaris_dio_device_t)
read_chr_files_pattern($1, device_t, polaris_dio_device_t)
allow $1 polaris_dio_device_t:chr_file map;
)

#####
<summary>
Read /dev/dio-*
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_dio_dev_read`,`
 gen_require(
 type device_t;
 type polaris_dio_device_t;
)
 read_chr_files_pattern($1, device_t, polaris_dio_device_t)
)

#####
<summary>
Work (read, write, ioctl) with /dev/ttyNMEA* and /dev/ttyTunNMEA*
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_tty_NMEA_dev_use`,`
 gen_require(
 type device_t;
 type polaris_tty_NMEA_device_t;
)
 write_chr_files_pattern($1, device_t, polaris_tty_NMEA_device_t)
 read_chr_files_pattern($1, device_t, polaris_tty_NMEA_device_t)
 allow $1 polaris_tty_NMEA_device_t:chr_file map;
)

#####

```

```

<summary>
Read /dev/ttyNMEA* and /dev/ttyTunNMEA*
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_tty_NMEA_dev_read`,`
 gen_require(`
 type device_t;
 type polaris_tty_NMEA_device_t;
 `)
 read_chr_files_pattern($1, device_t, polaris_tty_NMEA_device_t)
)

```

```

#####
<summary>
Work (read, write, ioctl) with /dev/nim_phy
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_nim_phy_dev_use`,`
 gen_require(`
 type device_t;
 type polaris_nim_phy_device_t;
 `)
 rw_chr_files_pattern($1, device_t, polaris_nim_phy_device_t)
 allow $1 polaris_nim_phy_device_t:chr_file map;
)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscrankshaft.if

No license file was found, but licenses were detected in source scan.

dnl

dnl July 2020, Victor Kamensky

dnl

dnl Copyright (c) 2020 by Cisco Systems, Inc.

dnl All rights reserved

dnl

dnl c8kv Platform Max Bay Limits

max\_bay\_map\_set(`rp`, `per\_bay`, 0)

```
max_bay_map_set(`cc', `per_bay', 3)
max_bay_map_set(`fp', `per_bay', 0)
```

```
max_bay_ripc_map_set(`rp', `per_bay', 0)
max_bay_ripc_map_set(`cc', `per_bay', 3)
max_bay_ripc_map_set(`fp', `per_bay', 0)
```

```
max_bay_ripc_map_set(`rp', `global', 0)
max_bay_ripc_map_set(`cc', `global', 3)
max_bay_ripc_map_set(`fp', `global', 0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/c8kvmaps.m4
```

No license file was found, but licenses were detected in source scan.

```
#
August 2017, Victor Kamensky
#
Copyright (c) 2017-2021 by Cisco Systems, Inc.
All rights reserved
#
```

```
/bootflash labels
```

```
/bootflash(/.*)? gen_context(system_u:object_r:polaris_disk_bootflash_t,s0)
/bootflash/.ssh(/.*)? gen_context(system_u:object_r:ssh_home_t,s0)
/bootflash/.ssh/ssh_host.*_key\pub gen_context(system_u:object_r:ssh_key_t,s0)
/bootflash/.ssh/ssh_host.*_key gen_context(system_u:object_r:ssh_key_t,s0)
/bootflash/tracelogs(/.*)? gen_context(system_u:object_r:polaris_btrace_data_t,s0)
/bootflash/tan(/.*)? gen_context(system_u:object_r:polaris_btrace_data_t,s0)
/bootflash/core(/.*)? gen_context(system_u:object_r:polaris_core_file_t,s0)
/bootflash/debug.conf gen_context(system_u:object_r:polaris_debug_conf_t,s0)
/bootflash/packages.conf gen_context(system_u:object_r:polaris_packages_conf_t,s0)
```

```
/objstore/.swtam for hybrid TAM access
```

```
/objstore(/.*)? gen_context(system_u:object_r:polaris_disk_objstore_t,s0)
```

```
/csl_p_0(/.*)? gen_context(system_u:object_r:polaris_disk_csl_p_t,s0)
/csl_p_1(/.*)? gen_context(system_u:object_r:polaris_disk_csl_p_t,s0)
/csl_s_0(/.*)? gen_context(system_u:object_r:polaris_disk_csl_s_t,s0)
/csl_s_1(/.*)? gen_context(system_u:object_r:polaris_disk_csl_s_t,s0)
/obfl(/.*)? gen_context(system_u:object_r:polaris_obfl_data_t,s0)
```

```
not really a license file stored by iosd during platform resource config command
```

```
/csl_p_0/vcpu_template.txt gen_context(system_u:object_r:polaris_iosd_vcpu_t,s0)
```

```
nvram devices
```

```
/dev/bootflash2 -b gen_context(system_u:object_r:polaris_nvram_file_t,s0)
/dev/bootflash3 -b gen_context(system_u:object_r:polaris_nvram_file_t,s0)
```

```

/dev/sda2 -b gen_context(system_u:object_r:polaris_nvram_file_t,s0)
/dev/sda3 -b gen_context(system_u:object_r:polaris_nvram_file_t,s0)

/dev/linux-user-bde -c gen_context(system_u:object_r:polaris_bde_device_t,s0)
/dev/linux-kernel-bde -c gen_context(system_u:object_r:polaris_bde_device_t,s0)

/dev/dash_fpga -c gen_context(system_u:object_r:polaris_dash_device_t,s0)
/dev/dash_fpga_cc0 -c gen_context(system_u:object_r:polaris_dash_device_t,s0)
/dev/dash_fpga_cc1 -c gen_context(system_u:object_r:polaris_dash_device_t,s0)
/dev/dash_fpga_cc2 -c gen_context(system_u:object_r:polaris_dash_device_t,s0)
/dev/dash_fpga_cc3 -c gen_context(system_u:object_r:polaris_dash_device_t,s0)
/dev/dash_fpga_nios -c gen_context(system_u:object_r:polaris_dash_device_t,s0)

/dev/huron_fpga -c gen_context(system_u:object_r:polaris_huron_device_t,s0)
/dev/dplr_sumatra -c gen_context(system_u:object_r:polaris_sumatra_doppler_device_t,s0)

/dev/nios -c gen_context(system_u:object_r:polaris_nios_device_t,s0)

/dev/qaе_mem -c gen_context(system_u:object_r:polaris_qae_device_t,s0)

/dev/icp_adf_gige_wd -c gen_context(system_u:object_r:polaris_icp_device_t,s0)
/dev/icp_dev0_csr -c gen_context(system_u:object_r:polaris_icp_device_t,s0)
/dev/icp_dev0_ring -c gen_context(system_u:object_r:polaris_icp_device_t,s0)
/dev/icp_dev_mem -c gen_context(system_u:object_r:polaris_icp_device_t,s0)
/dev/icp_dev_mem_page -c gen_context(system_u:object_r:polaris_icp_device_t,s0)

moka fpga
/dev/moka_fpga -c gen_context(system_u:object_r:polaris_mokafpga_device_t,s0)
/dev/moka_fpga_cc -c gen_context(system_u:object_r:polaris_mokafpga_device_t,s0)

for load usbnet module
/usr/bin/os/conf/load_usbnet.sh -- gen_context(system_u:object_r:polaris_load_usbnet_exec_t,s0)

/dev/nim_dm -c gen_context(system_u:object_r:polaris_nim_dm_device_t,s0)
/dev/nim_dm_0_1 -c gen_context(system_u:object_r:polaris_nim_dm_device_t,s0)

/dev/nim_phy -c gen_context(system_u:object_r:polaris_nim_phy_device_t,s0)

file-system on blackheart/sparrow
/crashinfo is symbolic link to /flash1
/crashinfo gen_context(system_u:object_r:polaris_disk_crashinfo_t,s0)

/flash is symbolic link to /flash1
/flash gen_context(system_u:object_r:polaris_disk_bootflash_t,s0)

/flash0 NVRAM
/flash0(/.*)? gen_context(system_u:object_r:polaris_nvram_file_t,s0)

```



```

/flash1 Bootflash
/flash1(/.*)? gen_context(system_u:object_r:polaris_disk_bootflash_t,s0)
/flash1/tracelogs(/.*)? gen_context(system_u:object_r:polaris_btrace_data_t,s0)
/flash1/.geo(/.*)? gen_context(system_u:object_r:polaris_geodb_files_t,s0)
/flash1/.USWAP(/.*)? gen_context(system_u:object_r:polaris_uswap_files_t,s0)
/flash1/.dbpersist(/.*)? gen_context(system_u:object_r:polaris_disk_dbm_t,s0)
/flash1/debug.conf -- gen_context(system_u:object_r:polaris_debug_conf_t,s0)
/flash1/packages.conf gen_context(system_u:object_r:polaris_packages_conf_t,s0)
/flash1/core(/.*)? gen_context(system_u:object_r:polaris_core_file_t,s0)
/flash1/.rollback_timer(/.*)? gen_context(system_u:object_r:polaris_rbtimer_bootflash_t,s0)
/flash1/.installer(/.*)? gen_context(system_u:object_r:polaris_disk_install_t,s0)
/flash1/.ssh(/.*)? gen_context(system_u:object_r:ssh_home_t,s0)
/flash1/.ssh/ssh_host.*_key.pub gen_context(system_u:object_r:sshd_key_t,s0)
/flash1/.ssh/ssh_host.*_key gen_context(system_u:object_r:sshd_key_t,s0)

/flash3 OBFL
/flash3(/.*)? gen_context(system_u:object_r:polaris_obfl_data_t,s0)
/flash3/OBFL(/.*)? gen_context(system_u:object_r:polaris_obfl_data_t,s0)

#harddisk
/vol/harddisk(/.*)? gen_context(system_u:object_r:polaris_disk_harddisk_t,s0)
/mnt/msata(/.*)? gen_context(system_u:object_r:polaris_disk_harddisk_t,s0)

for usage by IOx
/vol/usb1(/.*)? gen_context(system_u:object_r:polaris_disk_harddisk_t,s0)

/dev/shm/sem\._dev_i2c_0 gen_context(system_u:object_r:polaris_cm_cc_tmpfs_t,s0)
/dev/shm/sem\._dev_i2c_1 gen_context(system_u:object_r:polaris_cm_cc_tmpfs_t,s0)
/dev/shm/sem\._dev_i2c_2 gen_context(system_u:object_r:polaris_cm_cc_tmpfs_t,s0)

/tmp/udev/etc/udev/msata/udev-info gen_context(system_u:object_r:polaris_udev_tmp_files_t,s0)

Nvram symlink on Aventus platform
/aventus_config/nvram gen_context(system_u:object_r:polaris_nvram_file_t,s0)

Nvram symlink on Cabo platform
/cabo_config/nvram gen_context(system_u:object_r:polaris_nvram_file_t,s0)

Device applicable to Betelgeuse platform
/dev/sirius_fpga gen_context(system_u:object_r:polaris_siriusfpga_device_t,s0)

Device applicable to Nanook platform
/dev/bp_async -c gen_context(system_u:object_r:polaris_bp_async_device_t,s0)

Device applicable to Sparrow platform
/dev/remap_mem0 -c gen_context(system_u:object_r:polaris_remap_mem_device_t,s0)
/dev/sparrow_psu -c gen_context(system_u:object_r:polaris_sparrow_psu_device_t,s0)

```

```

/dev/dio-upstream -c gen_context(system_u:object_r:polaris_dio_device_t,s0)
/dev/dio-[1-4] -c gen_context(system_u:object_r:polaris_dio_device_t,s0)
/dev/ttyNMEA[0-1] -c gen_context(system_u:object_r:polaris_tty_NMEA_device_t,s0)
/dev/ttyTunNMEA[0-1] -c gen_context(system_u:object_r:polaris_tty_NMEA_device_t,s0)

Device applicable to Nutella platform
/dev/nutella_fpga -c gen_context(system_u:object_r:polaris_nutella_fpga_device_t,s0)

#Only qcqmi0 and qcqmi1 are generated for Telit/SWI modems
/dev/qcqmi0 -c gen_context(system_u:object_r:qcqmi_device_t,s0)
/dev/qcqmi1 -c gen_context(system_u:object_r:qcqmi_device_t,s0)

#SM NIM Adpater Switzer-CC device files
/dev/sm_nim_adpt_fpga_1 -c gen_context(system_u:object_r:polaris_sm_nim_adpt_device_t,s0)
/dev/sm_nim_adpt_nim_oir_1_0 -c gen_context(system_u:object_r:polaris_sm_nim_adpt_device_t,s0)
/dev/sm_nim_adpt_nim_oir_1_1 -c gen_context(system_u:object_r:polaris_sm_nim_adpt_device_t,s0)
/dev/sm_nim_adpt_fpga_2 -c gen_context(system_u:object_r:polaris_sm_nim_adpt_device_t,s0)
/dev/sm_nim_adpt_nim_oir_2_0 -c gen_context(system_u:object_r:polaris_sm_nim_adpt_device_t,s0)
/dev/sm_nim_adpt_nim_oir_2_1 -c gen_context(system_u:object_r:polaris_sm_nim_adpt_device_t,s0)

CLI: show platform hardware msata
/usr/binos/bin/msata_info.sh -- gen_context(system_u:object_r:polaris_msata_info_exec_t,s0)
/tmp/sata_status -- gen_context(system_u:object_r:polaris_sata_status_tmp_t,s0)

Memory blocks and gpp for Nutella platform
/dev/mmcblk0gp0p1 gen_context(system_u:object_r:polaris_nutella_gp0_t,s0)
/gpp gen_context(system_u:object_r:polaris_nutella_gpp_t,s0)

CLI: show platform hardware slot p[x] fan eeprom
/usr/binos/conf/mcp_fan_eeprom_cmd.sh -- gen_context(system_u:object_r:polaris_smart_fan_exec_t,s0)

/var/run/cwan_ezmanage_cwan_server -- gen_context(system_u:object_r:polaris_cwan_svr_var_run_t,s0)

```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscrankshaft.fc
```

No license file was found, but licenses were detected in source scan.

```

#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2021 by Cisco Systems, Inc.
All rights reserved
#

```

```
policy_module(polariscmfp, 1.0);
```

```

gen_require(
 type polaris_cm_fp_t;

```

)

```
polaris_btrace_data_manage(polaris_cm_fp_t)
polaris_crft_data_manage(polaris_cm_fp_t)
polaris_chasfs_manage(polaris_cm_fp_t)
polaris_tdlresolve_read(polaris_cm_fp_t)
polaris_tdlldb_list_dirs(polaris_cm_fp_t)
polaris_cpld_read(polaris_cm_fp_t)
polaris_flashlib_read(polaris_cm_fp_t)
```

```
polaris_ripc_sman_ui_serv_connect(polaris_cm_fp_t)
```

```
polaris_cpld_dev_use(polaris_cm_fp_t)
polaris_proc_rmonbifo_read(polaris_cm_fp_t)
polaris_obfl_data_read(polaris_cm_fp_t)
polaris_persistent_list_dirs(polaris_cm_fp_t)
polaris_chasync_files_manage(polaris_cm_fp_t)
```

```
cman_fp creates /tmp/cpp_anon_db file, instead of adding it to polaris_cpp_domain
```

```
let us just grant access to cpp tmp files
```

```
polaris_cpp_tmp_files_use(polaris_cm_fp_t, "cpp_anon_db")
```

```
on 1ng works with /dev/cpp
```

```
polaris_cpp_dev_use(polaris_cm_fp_t)
```

```
work with /dev/i2c devices
```

```
polaris_i2c_use(polaris_cm_fp_t)
```

```
on ultra read eeprom through i2c
```

```
type=AVC msg=audit(1479556298.842:11): avc: denied { getattr } for pid=5464 comm="cman_fp"
```

```
path="/sys/devices/i2c-0/i2c-1/1-0056/eeprom" dev="sysfs" ino=25556
```

```
scontext=system_u:system_r:polaris_cm_fp_t:s0 tcontext=system_u:object_r:sysfs_t:s0 tclass=file
```

```
type=AVC msg=audit(1479556298.842:12): avc: denied { read write } for pid=5464 comm="cman_fp"
```

```
name="eeprom" dev="sysfs" ino=25556 scontext=system_u:system_r:polaris_cm_fp_t:s0
```

```
tcontext=system_u:object_r:sysfs_t:s0 tclass=file
```

```
dev_rw_sysfs(polaris_cm_fp_t)
```

```
polaris_icc_broken_relocations(polaris_cm_fp_t)
```

```
allow polaris_cm_fp_t self:udp_socket { create ioctl };
```

```
cman_fp can start dyncfg_setup.sh, allow its transition to dyncfg_t type
```

```
polaris_dyncfg_domtrans(polaris_cm_fp_t)
```

```
on 1ng cman_fp write into /bootflash/crypto/octeon_pci_console_dev0_20170723_075412.log
```

```
polaris_bootflash_manage(polaris_cm_fp_t)
```

```
polaris_disk_harddisk_read_lnk(polaris_cm_fp_t)
```

```

write to devices like this /proc/bus/pci/04/00.0
kernel_read_system_state(polaris_cm_fp_t)
kernel_write_proc_files(polaris_cm_fp_t)

cm_fp tmp files like /tmp/octeon-remote-lock-pci:0
type polaris_cm_fp_tmp_t;
files_tmp_file(polaris_cm_fp_tmp_t)
polaris_cm_fp_tmp_filetrans(polaris_cm_fp_t)
polaris_cm_fp_tmp_manage(polaris_cm_fp_t)
besides /tmp/octeon-remote-lock-pci:0 all other files in /tmp
are ours
files_tmp_filetrans(polaris_cm_fp_t, polaris_cm_fp_tmp_t, file)

LOOK AT ME: raw memory write access
#ifdef(^mcp_family',`
polaris_dev_mem_use(polaris_cm_fp_t)
')

LOOK AT ME: raw memory access in cavium vendor SDK
related to octeon driver (BUG CSCvh55517)
#ifdef(^crankshaft_family',`
polaris_dev_mem_use(polaris_cm_fp_t)
')

LOOK AT ME: raw memory access in dopler SDK remove after
CSCvm34516 is fixed using CSCvm34630
#ifdef(^starfleet_platform',`
polaris_dev_mem_use(polaris_cm_fp_t)
')

"show platform hardware slot F0 eobc interface standby rmon" leads to
ioctl() call from cmlib_get_eobc_drv_info().
kernel_request_load_module(polaris_cm_fp_t)

needed for "show platform hardware slot F0 eobc interface standby rmon"
kernel_read_network_state(polaris_cm_fp_t)

on RP2/RP3 linecard cyan init happens within cm
#ifdef(^mcp_family',`
polaris_dyncfg_setup(polaris_cm_fp_t)
')

allow polaris_cm_fp_t self:capability dac_override;

polaris_obfl_data_manage(polaris_cm_fp_t)

allow polaris_cm_fp_t self:netlink_route_socket rw_netlink_socket_perms;

```

```

ifdef(`ngwc_family',`
cmfp_asic_mmap_func() function in cmfp module uses
/dev/chdrvmmmap for asic memory mapping
polaris_chdrvmmmap_dev_use(polaris_cm_fp_t)

on macallan cman_fp needs access to /dev/cisco/dplriomem
for mappin dplr io memory to application space.
polaris_dplr_iomem_mmapdrv_dev_use(polaris_cm_fp_t);

on macallan iomd needs access to /dev/cisco/fpga_iomem
for mapping FPGA io memory to application space.
polaris_fpga_iomem_mmapfpga_dev_use(polaris_cm_fp_t);
')

optional_policy(`
Allow /dev/dmammmap access
polaris_dmammmap_dev_use(polaris_cm_fp_t)
')

on starfleet need access to
/sys/device/platform/cpld/reg_fan_control
polaris_cpld_write(polaris_cm_fp_t)

/dev/shm/sdm access
optional_policy(`
polaris_sdm_shm_manage(polaris_cm_fp_t)
')

logging_send_syslog_msg(polaris_cm_fp_t)

/dev/epactrlN on qwlc
optional_policy(`
polaris_epa_dev_use(polaris_cm_fp_t)
')

/dev/astro on qwlc
optional_policy(`
polaris_astro_dev_use(polaris_cm_fp_t)
')

/dev/cpp_il on qwlc
optional_policy(`
polaris_cpp_il_dev_use(polaris_cm_fp_t)
')

on radium need to get model info
optional_policy(`
polaris_dash_dev_use(polaris_cm_fp_t)

```

```

)

on neptune, cavium library in o2_cavm_mem_map wants access to
/sys/devices/pci0000:00/0000:00:01.0/0000:01:00.0/resource0
optional_policy(`
polaris_cpp_cavium_dma_map(polaris_cm_fp_t)
`)

/dev/aikido access
polaris_aikido_dev_use(polaris_cm_fp_t)

optional_policy(`
betelgeuse need access to /dev/sirius_fpga
polaris_sirius_fpga_dev_use(polaris_cm_fp_t)
`)

access SERDES /tmp/serdes_asic_key_dir/*
optional_policy(`
polaris_serdes_asic_key_tmp_manage(polaris_cm_fp_t)
`)

type polaris_hkp_device_t;
dev_node(polaris_hkp_device_t)

access /dev/iocp0
optional_policy(`
polaris_spa_dev_use(polaris_cm_fp_t)
`)

optional_policy(`
access /dev/hkp
polaris_hkp_dev_use(polaris_cm_fp_t)

polaris_n2_dev_use(polaris_cm_fp_t)
polaris_cy2213_dev_use(polaris_cm_fp_t)
polaris_ddr_dev_use(polaris_cm_fp_t)
polaris_vega_dev_use(polaris_cm_fp_t)
`)

polaris_firmware_read(polaris_cm_fp_t)

allow access to /cs1_p_0/vcpu_template.txt
polaris_iosd_vcpu_read(polaris_cm_fp_t)

allow Cabo access to i2c semaphores
#ifdef(`cabo_platform`,`
polaris_i2c_sem_manage(polaris_cm_fp_t)
`)

```

```
ifdef(`sumatra_platform',`
access huron fpga on sumatra
polaris_huron_dev_use(polaris_cm_fp_t)
')
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscmfp.te
No license file was found, but licenses were detected in source scan.
```

```
#
December 2018, Victor Kamensky
#
Copyright (c) 2018-2019 by Cisco Systems, Inc.
All rights reserved
#
```

```
polarisezmancc file contexts place holder
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisezmancc.fc
No license file was found, but licenses were detected in source scan.
```

```
#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#
```

```
policy_module(polarisripc, 1.0);
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisripc.te
No license file was found, but licenses were detected in source scan.
```

```
#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#
```

```
polarisripc file contexts place holder
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisripc.fc
```

No license file was found, but licenses were detected in source scan.

```
dnl
dnl April 2018, Victor Kamensky
dnl
dnl Copyright (c) 2018-2019 by Cisco Systems, Inc.
dnl All rights reserved
dnl
divert(-1)
```

```
include(`polaris_process.m4')
include(`polaris_process_fc.m4')
```

```
include(`polaris_ipc_mqipc.m4')
include(`polaris_ipc_mqipc_fc.m4')
```

```
include(`polaris_ipc_ripc.m4')
include(`polaris_ipc_ripc_fc.m4')
```

```
include(`polaris_ipc_lipc.m4')
include(`polaris_ipc_lipc_fc.m4')
```

```
dnl Stub out non existent one
define(`polaris_websocket_service_server',`)
define(`polaris_cipc_service_server',`')
```

```
include(`polaris_max_scope.m4')
```

```
divert(0)dnl
#
This is a generated file! Instead of modifying this file,
modify proper platform TDL file.
#
```

```
Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/polaris_ipc_fc.m4
```

No license file was found, but licenses were detected in source scan.

```
#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2020 by Cisco Systems, Inc.
All rights reserved
#
```

```
policy_module(polarisstorage, 1.0);
```

```
#####
```



```

Persistent storage policy
#####
attribute polaris_disk;

Default disk types

type polaris_disk_bootflash_t;
polaris_disk_type(polaris_disk_bootflash_t)

type polaris_disk_varied_t;
polaris_disk_type(polaris_disk_varied_t)

type polaris_disk_harddisk_t;
polaris_disk_type(polaris_disk_harddisk_t)

type polaris_disk_csl_p_t;
polaris_disk_type(polaris_disk_csl_p_t)

type polaris_disk_csl_s_t;
polaris_disk_type(polaris_disk_csl_s_t)

type polaris_disk_objstore_t;
polaris_disk_type(polaris_disk_objstore_t)

type polaris_disk_crashinfo_t;
polaris_disk_type(polaris_disk_crashinfo_t)

type polaris_disk_license_t;
polaris_disk_type(polaris_disk_license_t)

type polaris_disk_ucode_t;
polaris_disk_type(polaris_disk_ucode_t)

type polaris_disk_recovery_t;
polaris_disk_type(polaris_disk_recovery_t)

type polaris_disk_config_t;
polaris_disk_type(polaris_disk_config_t)

Persistent files types
type polaris_system_report_t;
polaris_pfile_type(polaris_system_report_t)

type polaris_core_file_t;
polaris_pfile_type(polaris_core_file_t)

type polaris_debug_conf_t;
polaris_pfile_type(polaris_debug_conf_t)

```

```

type polaris_packages_conf_t;
polaris_pfile_type(polaris_packages_conf_t)

type polaris_grub_efi_t;
polaris_pfile_type(polaris_grub_efi_t)

we label .ssh files residing on persistent storage as ssh_home_t
and sshd_key_t
#
below statement could/should be moved into ssh te file?
gen_require(
 type ssh_home_t;
 type sshd_key_t;
)
polaris_disk_type(ssh_home_t)
polaris_disk_type(sshd_key_t)

handling /bootflash directory - created by systemd unit, note normally
something will be mounted on top of it, but in some cases like RP2 line
cards it will be ramfs directory.
gen_require(
 type root_t;
 type unconfined_service_t;
)
filetrans_pattern(unconfined_service_t, root_t, polaris_disk_bootflash_t, dir, "bootflash")

nfsd accesses different persistent storage directories and it needs getattr
gen_require(
 type nfsd_t;
)
polaris_persistent_getattr(nfsd_t)

on qwlc /misc/scratch symbolic link created by systemd-tmpfile, but then
removed and recreated by harddisk mount systemd unit
gen_require(
 type unconfined_service_t;
 type mnt_t;
)
filetrans_pattern(unconfined_service_t, mnt_t, polaris_disk_bootflash_t, lnk_file, "scratch")

gen_require(
 type polaris_confd_t;
 type tmp_t;
)
filetrans_pattern(polaris_confd_t, tmp_t, polaris_packages_conf_t, file, "packages.conf")

first time creation of /bootflash/core directory

```

```
gen_require(
 type initrc_t;
 type init_t;
)
filetrans_pattern({initrc_t init_t unconfined_service_t}, {polaris_disk_bootflash_t polaris_disk_harddisk_t} ,
polaris_core_file_t, dir, "core")
```

```
gen_require(
 type init_t;
)
files_tmp_filetrans(init_t, polaris_packages_conf_t, file, "packages.conf")
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisstorage.te

No license file was found, but licenses were detected in source scan.

```

July 2017, Victor Kamensky

Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved
#
```

```
/usr/binos/conf/run_ioxn_gs_ha.sh -- gen_context(system_u:object_r:polaris_gsd_rp_exec_t,s0)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisgsdrp.fc

No license file was found, but licenses were detected in source scan.

```

March 2017, Victor Kamensky

Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#
```

```
/usr/cpp/bin/cpp_sp_svr -- gen_context(system_u:object_r:polaris_cpp_sp_exec_t,s0)
/usr/cpp/bin/cpp_sp_svr_ledp -- gen_context(system_u:object_r:polaris_cpp_sp_exec_t,s0)
/usr/cpp/bin/cpp_sp_svr_us_ledp -- gen_context(system_u:object_r:polaris_cpp_sp_exec_t,s0)
/usr/cpp/bin/cpp_sp_svr_vwlc -- gen_context(system_u:object_r:polaris_cpp_sp_exec_t,s0)
/usr/cpp/bin/cpp_sp_svr_vwlc_ledp -- gen_context(system_u:object_r:polaris_cpp_sp_exec_t,s0)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscppsp.fc

No license file was found, but licenses were detected in source scan.

```

March 2017, Victor Kamensky
```

```

#
Copyright (c) 2016-2020 by Cisco Systems, Inc.
All rights reserved
#

<summary>Polaris Btrace Policy Rules.</summary>

#####
Btrace policy
#####

#####
<summary>
Manage btrace auxiliary files
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolebase/>
#
interface(`polaris_btrace_data_manage`,`
 gen_require(`
 type polaris_btrace_base_t;
 type polaris_btrace_tmpfs_t;
 type tmpfs_t;
 `)

 manage_dirs_pattern($1, polaris_btrace_base_t, polaris_btrace_base_t)

 # work with cache files and dirs under /tmp/tmppub, like /tmp/tmppub/libs_cache
 polaris_btrace_tmppub_manage($1)

 fs_tmpfs_filetrans($1, polaris_btrace_tmpfs_t, file, "oper_uuid_shm")
 manage_files_pattern($1, tmpfs_t, polaris_btrace_tmpfs_t)
 allow $1 polaris_btrace_tmpfs_t:file map;
)

#####
<summary>
Manage temporary (not yet persistent) btrace files
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>

```

```

<rolebase/>
#
interface(`polaris_btrace_data_manage_all`,`

 polaris_btrace_data_manage($1)

gen_require(`
 attribute polaris_btrace_data_domain;
 type polaris_btrace_base_t;
`)

 manage_files_pattern($1, polaris_btrace_base_t, polaris_btrace_data_domain)
 manage_lnk_files_pattern($1, polaris_btrace_base_t, polaris_btrace_data_domain)
 allow $1 polaris_btrace_data_domain:file map;

 # create temporary files in trace directory
 manage_files_pattern($1, polaris_btrace_base_t, polaris_btrace_base_t)
 manage_lnk_files_pattern($1, polaris_btrace_base_t, polaris_btrace_base_t)

 # watch btrace data directory for changes
 allow $1 polaris_btrace_base_t:dir watch;
)

#####
<summary>
Manage btrace persitent files
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolebase/>
#
interface(`polaris_btrace_persistent_data_manage`,`
gen_require(`
 type polaris_btrace_data_t;
`)

 manage_dirs_pattern($1, polaris_btrace_data_t, polaris_btrace_data_t)
 manage_files_pattern($1, polaris_btrace_data_t, polaris_btrace_data_t)
)

#####
<summary>
Read btrace persitent files
</summary>
<param name="domain">

```

```

<summary>
Domain allowed access.
</summary>
</param>
<rolebase/>
#
interface(`polaris_btrace_persistent_data_read`,`
gen_require(
type polaris_btrace_data_t;
)

search_dirs_pattern($1, polaris_btrace_data_t, polaris_btrace_data_t)
read_files_pattern($1, polaris_btrace_data_t, polaris_btrace_data_t)
)

```

```
#####
```

```

<summary>
Search btrace persitent files
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolebase/>
#
interface(`polaris_btrace_persistent_data_search`,`
gen_require(
type polaris_btrace_data_t;
)

search_dirs_pattern($1, polaris_btrace_data_t, polaris_btrace_data_t)
)

```

```
#####
```

```

<summary>
Search tracelogs directions in bootflash, harddisk or crashinfo
directories
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolebase/>
#
interface(`polaris_btrace_search_tracelogs`,`
gen_require(

```

```

 type polaris_disk_harddisk_t;
 type polaris_disk_bootflash_t;
 type polaris_disk_crashinfo_t;
)

 search_dirs_pattern($1, polaris_disk_harddisk_t, polaris_btrace_data_t)
 search_dirs_pattern($1, polaris_disk_bootflash_t, polaris_btrace_data_t)
 search_dirs_pattern($1, polaris_disk_crashinfo_t, polaris_btrace_data_t)
)

#####
<summary>
Manage btrace boot level config files
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolebase/>
#
interface(`polaris_btrace_lv1_config_manage',`
gen_require(`
type polaris_btrace_lv1_config_t;
type polaris_btrace_data_t;
)

manage_dirs_pattern($1, polaris_btrace_lv1_config_t, polaris_btrace_lv1_config_t)
manage_files_pattern($1, polaris_btrace_lv1_config_t, polaris_btrace_lv1_config_t)
filetrans_pattern($1, polaris_btrace_data_t, polaris_btrace_lv1_config_t, dir, "level_config")

polaris_btrace_search_tracelogs($1)

polaris_disk_bootflash_read_lnk($1)
polaris_disk_harddisk_read_lnk($1)
polaris_disk_crashinfo_read_lnk($1)
)

#####
<summary>
Read ldb_tmp btrace meta data files
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolebase/>

```

```

#
interface(`polaris_btrace_ldb_tmp_read',`
gen_require(`
type polaris_ldb_tmp_t;
`)

read_files_pattern($1, polaris_ldb_tmp_t, polaris_ldb_tmp_t)
`)

#####
<summary>
Read and write all btrace or pman fifo file, used as
standard input/output.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolecap/>
#
interface(`polaris_use_btrace_fifo',`
gen_require(`
type polaris_fifo_stdout_t;
`)

allow $1 polaris_fifo_stdout_t:fifo_file { rw_term_perms lock append create unlink getattr };

For pmanlite, allow pmans grand-children to be able to operate on
pipe created by pman.
polaris_use_pman_fifo($1)
`)

#####
<summary>
Execute create_luid_file_db in the its domain.
</summary>
<param name="domain">
<summary>
Domain allowed to transition.
</summary>
</param>
#
interface(`polaris_create_ldb_domtrans',`
gen_require(`
type polaris_create_ldb_t, polaris_create_ldb_exec_t;
`)

```



```

 corecmd_search_bin($1)
 domtrans_pattern($1, polaris_create_ldb_exec_t, polaris_create_ldb_t)
)

```

```

#####
<summary>
Make the specified type usable as btrace data file type.
</summary>
<param name="type">
<summary>
Type to be used for files.
</summary>
</param>
#

```

```

interface(`polaris_btrace_data_type',`
 files_type($1)
 gen_require(`
 attribute polaris_btrace_data_domain;
 `)
 typeattribute $1 polaris_btrace_data_domain;
)

```

```

#####
<summary>
Process to manage its own btrace files
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<param name="file_type">
<summary>
File type of btrace that corresponds to given domain.
</summary>
</param>
<rolebase/>
#

```

```

interface(`polaris_btrace_data_client',`
 gen_require(`
 type polaris_btrace_base_t;
 `)
)

```

```

 manage_files_pattern($1, polaris_btrace_base_t, $2)
 manage_lnk_files_pattern($1, polaris_btrace_base_t, $2)
 filetrans_pattern($1, polaris_btrace_base_t, $2, { file lnk_file })

```

```

all clients check for /tmp/rp/trace/publish/timed/enabled control
file presence, created by btman, may need its own type
gen_require(
 type polaris_btman_bt_t;
)
getattr_files_pattern($1, polaris_btrace_base_t, polaris_btman_bt_t)

allow $1 $2:file map;
)

```

```
#####
```

```

<summary>
Process to manage its own btrace files
</summary>
<param name="domain_stem">
<summary>
Steam of domain allowed access.
</summary>
</param>
<rolebase/>
#

```

```

interface(`polaris_btrace_data_client_template`,
gen_require(
 attribute polaris_btrace_data_domain;
 type polaris_btrace_base_t;
)

```

```

 type polaris_$1_bt_t;
 polaris_btrace_data_type(polaris_$1_bt_t)

```

```

 polaris_btrace_data_client(polaris_$1_t, polaris_$1_bt_t)
)

```

```
#####
```

```

<summary>
Execute mcp_trace_request.sh in its domain.
</summary>
<param name="domain">
<summary>
Domain allowed to transition.
</summary>
</param>
#

```

```

interface(`polaris_trace_request_domtrans`,
gen_require(
 type polaris_trace_request_t, polaris_trace_request_exec_t;
)

```

```
corecmd_search_bin($1)
domtrans_pattern($1, polaris_trace_request_exec_t, polaris_trace_request_t)
')
```

```
#####
```

```
<summary>
Watch btrace directories
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolebase/>
#
interface(`polaris_btrace_data_watch`,`
gen_require(`
 type polaris_btrace_base_t;
 type polaris_btrace_data_t;
)`
)
 allow $1 polaris_btrace_base_t:dir watch;
 allow $1 polaris_btrace_data_t:dir watch;
)
)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisbtrace.if

No license file was found, but licenses were detected in source scan.

```
#
July 2017, Victor Kamensky
#
Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved
#
```

```
policy_module(polaristamsrp, 1.0);
```

```
gen_require(`
 type polaris_tams_rp_t;
`
)
```

```
polaris_btrace_data_manage(polaris_tams_rp_t)
polaris_crft_data_manage(polaris_tams_rp_t)
polaris_chasfs_manage(polaris_tams_rp_t)
polaris_tdlresolve_read(polaris_tams_rp_t)
polaris_tdlldb_list_dirs(polaris_tams_rp_t)
polaris_flashlib_read(polaris_tams_rp_t)
```

```
polaris_cpld_read(polaris_tams_rp_t)
```

```
polaris_ripc_sman_ui_serv_connect(polaris_tams_rp_t)
```

```
tams_tamc_tipc_listener_init function create tipc socket
```

```
allow polaris_tams_rp_t self:socket { bind create listen accept getattr read write };
```

```
Found in path(s):
```

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polaristamsrp.te
```

```
No license file was found, but licenses were detected in source scan.
```

```
#
```

```
July 2017, Victor Kamensky
```

```
#
```

```
Copyright (c) 2017-2021 by Cisco Systems, Inc.
```

```
All rights reserved
```

```
#
```

```
policy_module(polaris_iomd, 1.0);
```

```
gen_require(`
```

```
 type polaris_iomd_t;
```

```
`)
```

```
polaris_btrace_data_manage(polaris_iomd_t)
```

```
polaris_crft_data_manage(polaris_iomd_t)
```

```
polaris_chasfs_manage(polaris_iomd_t)
```

```
polaris_tdlresolve_read(polaris_iomd_t)
```

```
polaris_tdlldb_list_dirs(polaris_iomd_t)
```

```
polaris_cpld_read(polaris_iomd_t)
```

```
polaris_flashlib_read(polaris_iomd_t)
```

```
polaris_ripc_sman_ui_serv_connect(polaris_iomd_t)
```

```
polaris_db_tdlldb_dir_use(polaris_iomd_t)
```

```
polaris_dyncfg_tmp_read(polaris_iomd_t)
```

```
optional_policy(`
```

```
 polaris_spa_dev_use(polaris_iomd_t)
```

```
`)
```

```
allow objstore access
```

```
polaris_disk_objstore_read(polaris_iomd_t)
```

```
polaris_ngio_dev_use(polaris_iomd_t)
```

```
deals with /dev/shm files semaphors; like uuid_sem semaphore
```

```
created by btrace_get_uuid function
```

```

type polaris_iomd_tmpfs_t;
files_tmpfs_file(polaris_iomd_tmpfs_t)
fs_tmpfs_filetrans(polaris_iomd_t, polaris_iomd_tmpfs_t, file)
manage_files_pattern(polaris_iomd_t, tmpfs_t, polaris_iomd_tmpfs_t)
sem_open through where_is_shmfs does stat on /dev/shm
fs_getattr_tmpfs(polaris_iomd_t)

#allow /dev/i2c device file
polaris_i2c_use(polaris_iomd_t)

#ifdef(^ngwc_family',`
On Macallan platforms the following api call from iomd process,
ngmodslot_is_upper_sup_present() does a read access of /dev/cpld
polaris_cpld_dev_read(polaris_iomd_t)
polaris_cpld_dev_use(polaris_iomd_t)

#allow cpp tmp file
polaris_cpp_tmp_files_use(polaris_iomd_t)

In Macallan cards which use Doppler ASIC,
IOMD module uses ngmod_doppler_mmap() api to get hold of
MMapped Asic address. As part of the operation it uses
/dev/chdrvmmmap device.
polaris_chdrvmmmap_dev_use(polaris_iomd_t)

IOMD module invokes ASIC Scan functionality
and calls asic_register_intr_handler() , which
needs to access the doppler MSI devices
/dev/msi/Slot[0-9]*/Doppler[0-9]/Group[0-9]
polaris_dplr_dev_use(polaris_iomd_t)
but above still not enough at some point
device like /dev/msi/Slot8/Doppler0/Group0 still
considered as device_t, not clear need to look a bit more
dev_rw_generic_chr_files(polaris_iomd_t)

on macallan iomd needs access to /dev/cisco/dplriomem
for mapping dplr io memory to application space.
polaris_dplr_iomem_mmapdrv_dev_use(polaris_iomd_t);

IOMD calls ngmod_obfl_errmssg_app_init() to initialize
OBFL.
polaris_obfl_data_manage(polaris_iomd_t)

IOMD fast path code invokes ngmod_fastpath_thread_func(),
which increases the scheduler priority.
allow polaris_iomd_t self:capability sys_nice;
allow polaris_iomd_t self:process setsched;

```

```

on macallan iomd needs access to /dev/cisco/fpga_iomem
for mapping FPGA io memory to application space.
polaris_fpga_iomem_mmapfpga_dev_use(polaris_iomd_t);

optional_policy(
ASIC related mmap code in IOMD needs to access PCI scan related
rescan shm mutex
polaris_cm_cc_tmpfs_manage(polaris_iomd_t)
)
)

both utah and macallan text relocations in libcpp_common_os.so
#ifdef(^crankshaft_family',`
polaris_icc_broken_relocations(polaris_iomd_t)
Nightwatch switch module needs to access the doppler devices
polaris_dplr_dev_use(polaris_iomd_t)
dev_rw_generic_chr_files(polaris_iomd_t)
allow polaris_iomd_t self:capability sys_nice;
allow polaris_iomd_t self:process setsched;
)

optional_policy(
Allow /dev/dmammmap access
polaris_dmammmap_dev_use(polaris_iomd_t)
)

optional_policy(
on starfleet access gettysburg_fpga
polaris_gettysburg_fpga_dev_use(polaris_iomd_t)
)

type polaris_iomd_tmp_t;
files_tmp_file(polaris_iomd_tmp_t)
manage_dirs_pattern(polaris_iomd_t, polaris_iomd_tmp_t, polaris_iomd_tmp_t)
manage_files_pattern(polaris_iomd_t, polaris_iomd_tmp_t, polaris_iomd_tmp_t)
manage_fifo_files_pattern(polaris_iomd_t, polaris_iomd_tmp_t, polaris_iomd_tmp_t)

on macallan MRVL88X5113_DRV_PRINT macro outputs into /tmp/mrvl88x5113.log file
files_tmp_filetrans(polaris_iomd_t, polaris_iomd_tmp_t, file, "mrvl88x5113.log")

logging_send_syslog_msg(polaris_iomd_t)

#ifdef(^ngwc_family',`
from in115050_test_app_thread_create in
drivers/userspace/inphi/dev_ephy_in115050/src/dev_ephy_in115050.c
For macallan in115025_test_app_thread_create in
drivers/userspace/inphi/dev_ephy_in115025/src/dev_ephy_in115025.c
files_tmp_filetrans(polaris_iomd_t, polaris_iomd_tmp_t, dir, "test_inphi")

```

```

In case of starfleet fixed the following module creates folder in /tmp
/drivers/userspace/mrvl_phy/dev_ephy_mrvl88ec808/src/dev_ephy_m88ec808.c
files_tmp_filetrans(polaris_iomd_t, polaris_iomd_tmp_t, dir, "test_mrvlphy")

#allow access to /tmp/serdes_asic_key_dir as this path is used both by
#cman_fp for programming DPP serdes and IOMD for programming n/w serdes
optional_policy(`
polaris_serdes_asic_key_tmp_manage(polaris_iomd_t)
`)

#Doppler E mac creates lockfiles with names following
#the pattern /tmp/nug_asic_key_dir/nug_asic_key_[0-9]_[0-9]_[0-9]
files_tmp_filetrans(polaris_iomd_t, polaris_iomd_tmp_t, dir, "nug_asic_key_dir")

#Doppler ES mac creates lockfiles with names following
#the pattern /tmp/rmt_asic_key_dir/rmt_asic_key_[0-9]_[0-9]_[0-9]
files_tmp_filetrans(polaris_iomd_t, polaris_iomd_tmp_t, dir, "rmt_asic_key_dir")

from etopus_spawn_serdes_tool_thread in
binos/platforms/ngwc/doppler_sdk/drivers/serdes/Vendor/src/etopus_serdes.c
files_tmp_filetrans(polaris_iomd_t, polaris_iomd_tmp_t, dir, "test_etp")

#on starfleet access /dev/cpld, in iomd_starfleet_create_mmap()
polaris_cpld_dev_use(polaris_iomd_t)
`)

optional_policy(`
polaris_ngwc_itfpo_manage(polaris_iomd_t)
`)

ngio device
type polaris_ngio_device_t;
dev_node(polaris_ngio_device_t)

#For NGIO modules iomd uses netlink socket (via backplane switch)
allow polaris_iomd_t self:netlink_socket { bind create };

#ifdef(^sumatra_platform',`
#on Sumatra access /dev/cpld from iomd
polaris_cpld_dev_use(polaris_iomd_t)
LOOK AT ME: After direct usage of /dev/mem is removed (CSCvw80796)
polaris_dev_mem_use(polaris_iomd_t)
polaris_sumatra_doppler_dev_use(polaris_iomd_t)

#access SERDES /tmp/serdes_asic_key_dir/*
polaris_serdes_asic_key_tmp_manage(polaris_iomd_t)

```

```

access /dev/huron_fpga
polaris_huron_dev_use(polaris_iomd_t)

manage "sysctrl_i2c.lck"
gen_require(
 type polaris_cm_rp_tmp_t;
)
files_tmp_filetrans(polaris_iomd_t, polaris_cm_rp_tmp_t, file, "sysctrl_i2c.lck")
polaris_cm_rp_tmp_manage(polaris_iomd_t)

comm="iomd" kmod="netdev-bp246"
kernel_request_load_module(polaris_iomd_t)

work with /sys/devices/i2c-15/15-0076/...
dev_rw_sysfs(polaris_iomd_t)
)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisiomd.te

No license file was found, but licenses were detected in source scan.

dnl

dnl April 2018, Victor Kamensky

dnl

dnl Copyright (c) 2018-2019 by Cisco Systems, Inc.

dnl All rights reserved

dnl

```

define(`polaris_lipc_service_server_many',
 `ifelse($3, `',
 polaris_lipc_create_name(dollarone, $1, "$2"),
 polaris_lipc_create_name(dollarone, $1, "$2-b$3")
 `ifelse($3, 0, `polaris_lipc_create_name(dollarone, $1, "$2")', `polaris_lipc_service_server_many($1, $2,
eval($3 - 1))')')')

```

```

define(`polaris_lipc_service_server_aux',`dnl
#####

```

```

#####

```

```

<summary>

```

```

Create $2 lipc chanell.

```

```

</summary>

```

```

<param name="domain">

```

```

<summary>

```

```

Domain allowed access.

```

```

</summary>

```

```

</param>

```

```

<infoflow type="none"/>

```

```

#

```

```

interface(`polaris_lipc_$1_create_name',`

```

```

 gen_require(

```



```

 type $2;
)
 $3
")

#####
<summary>
Write $2 lipc chanell.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<param name="server">
<summary>
Domain of owner of lipc channel.
</summary>
</param>
<infoflow type="none"/>
#
interface(`polaris_lipc_$1_write`,`
 gen_require(`
 type $2;
 `)

 polaris_lipc_write(dollarsone, $2, dollarstwo)
)

define(`polaris_lipc_service_server`,`dnl
polaris_lipc_service_server_aux(lipc_stem($1), lipc_label($1),
 polaris_lipc_service_server_many(lipc_label($1), $5, max_scope_map($3, $4, $2)))

define(`polaris_lipc_service_client`,`)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/polaris_ipc_lipc_if.m4
No license file was found, but licenses were detected in source scan.

#
March 2017, Victor Kamensky
#
Copyright (c) 2017-2021 by Cisco Systems, Inc.
All rights reserved
#

policy_module(polarisncd, 1.0);

```

```

gen_require(
 type polaris_ncd_t;
)

allow snmp transition in its own domain when started by ncd
ntp_domtrans_ntpdate(polaris_ncd_t)

corecmd_exec_bin(polaris_ncd_t)
corecmd_exec_shell(polaris_ncd_t)

run ldd, which in turns execve "ld.so --verify"
libs_exec_ld_so(polaris_ncd_t)

allow read of /etc/group and /etc/passwd
auth_use_nsswitch(polaris_ncd_t)

allow to read /proc/meminfo
kernel_read_system_state(polaris_ncd_t)

work with /tmp files (/tmp/ncd)
type polaris_ncd_tmp_t;
files_tmp_file(polaris_ncd_tmp_t)
manage_dirs_pattern(polaris_ncd_t, tmp_t, polaris_ncd_tmp_t)
manage_files_pattern(polaris_ncd_t, tmp_t, polaris_ncd_tmp_t)
manage_fifo_files_pattern(polaris_ncd_t, polaris_ncd_tmp_t, polaris_ncd_tmp_t)
files_tmp_filetrans(polaris_ncd_t, polaris_ncd_tmp_t, file)

create /tmp/ncd and /tmp/etc/ncd_work_dir directories
gen_require(
 type polaris_etc_t;
)
manage_dirs_pattern(polaris_ncd_t, { tmp_t polaris_etc_t }, polaris_ncd_tmp_t)
files_tmp_filetrans(polaris_ncd_t, polaris_ncd_tmp_t, dir, "ncd")
/tmp/etc/ncd_work_dir
filetrans_pattern(polaris_ncd_t, polaris_etc_t, polaris_ncd_tmp_t, dir, "ncd_work_dir")

work with /tmp/ncd/inot_fifo
files_tmp_filetrans(polaris_ncd_t, polaris_ncd_tmp_t, fifo_file, "inot_fifo")
manage_fifo_files_pattern(polaris_ncd_t, tmp_t, polaris_ncd_tmp_t)

allow snmp to read out fifo file
gen_require(
 type ntpd_t;
)
read_fifo_files_pattern(ntpd_t, polaris_ncd_tmp_t, polaris_ncd_tmp_t)

work with /tmp/ufs directory. the ufs directory can be created

```

```

by both polaris_ncd_t and udev_t subjects (depending upon platform
logic)
gen_require(
 type udev_t;
 type unconfined_service_t;
)
files_tmp_filetrans({ polaris_ncd_t udev_t unconfined_service_t }, polaris_ncd_tmp_t, dir, "ufs")

polaris_btrace_data_manage(polaris_ncd_t)
polaris_chasfs_manage(polaris_ncd_t)
polaris_cpld_read(polaris_ncd_t)
polaris_proc_rmonbifo_read(polaris_ncd_t)
polaris_rmonbifo_tmp_read(polaris_ncd_t)
polaris_boot_tmp_read(polaris_ncd_t)
polaris_disk_crashinfo_getattr(polaris_ncd_t)
polaris_disk_bootflash_read_lnk(polaris_ncd_t)
polaris_flashlib_lock(polaris_ncd_t)
polaris_flashlib_read(polaris_ncd_t)
polaris_read_debug_conf(polaris_ncd_t)
polaris_read_packages_conf(polaris_ncd_t)

brctl_domtrans(polaris_ncd_t)
sysnet_domtrans_ifconfig(polaris_ncd_t)

ncd.sh invokes ifup which in turn is calling dhclient
sysnet_domtrans_dhpcp(polaris_ncd_t)

type polaris_ncd_etc_t;
files_config_file(polaris_ncd_etc_t)
gen_require(
 attribute domain;
)
files_etc_filetrans(domain, polaris_ncd_etc_t, file, "mount_data")
manage_dirs_pattern(polaris_ncd_t, polaris_ncd_etc_t, polaris_ncd_etc_t)
manage_files_pattern(polaris_ncd_t, polaris_ncd_etc_t, polaris_ncd_etc_t)

runs exportsfs command
rpc_read_exports(polaris_ncd_t)
rpc_write_exports(polaris_ncd_t)
rpc_manage_nfs_state_data_dir(polaris_ncd_t)
rpc_manage_nfs_state_data(polaris_ncd_t)
fs_rw_nfsd_fs(polaris_ncd_t)
kernel_rw_rpc_sysctls(polaris_ncd_t)
fs_getattr_xattr_fs(polaris_ncd_t)

reloads xinetd@/tmp/etc/xinetd.conf.consolidated.service and
systemctl reload xinetd_brelay@eobc.service
systemd_exec_systemctl(polaris_ncd_t)

```

```

systemd_reload_all_services(polaris_ncd_t)
systemd_status_all_unit_files(polaris_ncd_t)

polaris_chvrf_domtrans(polaris_ncd_t)
ncd process calls ifconfig and route and mcp_chvrf
gen_require(
 type polaris_chvrf_t;
)
sysnet_domtrans_ifconfig(polaris_chvrf_t)
allow polaris_chvrf_t self:capability net_admin;
allow polaris_chvrf_t self:udp_socket { create ioctl };
allow polaris_ncd_t self:process setpgid;

polaris_persistent_getattr(polaris_ncd_t)

access to /etc/sysconfig/network-scripts
sysnet_read_config(polaris_ncd_t)

fs_getattr_tmpfs(polaris_ncd_t)

manage file under /tmp/etc/ncd_work_dir
gen_require(
 type initrc_tmp_t;
 type initrc_t;
)
filetrans_pattern(polaris_ncd_t, initrc_tmp_t, polaris_ncd_tmp_t, dir,"ncd_work_dir")
polaris_ncd_tmp_manage(polaris_ncd_t)
/tmp/root/loopback is created by initrc_t,but managed by ncd.sh.
dynamic label directory "/tmp/root/loopback" as polaris_ncd_tmp_t
files_tmp_filetrans(initrc_t, polaris_ncd_tmp_t, dir, "loopback")
flashutil has wrong file permission
allow polaris_ncd_t self:capability { dac_override sys_resource };

access to /tmp/etc/xinetd.conf consolidated
init_read_script_tmp_files(polaris_ncd_t)

allow polaris_ncd_t self:capability net_admin;

search/getattr of /tmp/udev/etc/udev
polaris_udev_tmp_list_dirs(polaris_ncd_t)

ncd calls mount to handle nfs directories
mount_domtrans(polaris_ncd_t)

#rsync_exec(polaris_ncd_t)
gen_require(
 type rsync_t;
 type rsync_tmp_t;

```

```

)
rsync_entry_domtrans(polaris_ncd_t, rsync_t)
allow rsync_t polaris_ncd_t:process sigchld;
file descriptor leak when rsync is called
allow rsync_t polaris_ncd_t:fifo_file write;
PLEASE LOOK AT ME: probably /tmp/rp/active_epoch deserves its own type
/tmp/rp/active_epoch on its way to /tmp/chassis/local/rp/chasfs/rp/0/0/epoch
manage_files_pattern(polaris_ncd_t, rsync_tmp_t, rsync_tmp_t)

creates files under /tmp/udev/etc/udev/
polaris_udev_tmp_manage(polaris_ncd_t)
allow polaris_ncd_t self:process setfscreate;

run /sbin/hwclock in its own domain
clock_domtrans(polaris_ncd_t)
stdin file descriptor leak when hwclock started
gen_require(
 type hwclock_t;
)
allow hwclock_t polaris_ncd_tmp_t:fifo_file read;

ifdef(`ngwc_family',`
polaris_getattr_filesystem_disk_ucode(polaris_ncd_t)
')

update /tmp/etc/xinetd.conf.consolidated file
polaris_etc_append(polaris_ncd_t)

ncd.sh adds entries to /etc/exports file
gen_require(
 type etc_t;
)
append_files_pattern(polaris_ncd_t, etc_t, etc_t)

create and write into /tmp/unifiedfs/unifiedfs_log
manage_files_pattern(polaris_ncd_t, polaris_ufs_tmp_t, polaris_ufs_tmp_t)

polaris_ncd_rpcinfo_net(polaris_ncd_t)

accessing /mnt/usb0
fs_search_removable(polaris_ncd_t)
polaris_getattr_removable(polaris_ncd_t)
polaris_getattr_removable(polaris_ufs_helper_t)

ncd.sh calls ps command
ps needs access to /sys/devices/system/cpu/online
write/create to "/sys/module/nfs/parameters/nfs4_unique_id"
dev_rw_sysfs(polaris_ncd_t)

```

```

dev_manage_sysfs_dirs(polaris_ncd_t)
gen_require(
 type sysfs_t;
)
create_files_pattern(polaris_ncd_t, sysfs_t, sysfs_t)

ps needs access to proc_t
kernel_read_system_state(polaris_ncd_t)
ps needs access to state of all domains
domain_read_all_domains_state(polaris_ncd_t)

send signal to ntpd
ntp_signal(polaris_ncd_t)

ncd.sh executes hostname
hostname_exec(polaris_ncd_t)

ncd.sh runs mcp_trace_request.sh
polaris_trace_request_domtrans(polaris_ncd_t)

handling /usr/binos/conf/iosd_console_attach.sh

polaris_utility_domain_template(console_attach)

polaris_bexecute_domain(polaris_console_attach_t, polaris_console_attach_exec_t)

corecmd_exec_bin(polaris_console_attach_t)
auth_use_nsswitch(polaris_console_attach_t)

execute ping over liin: usr/binos/conf/mcp_chvrf.sh liin /bin/ping -c 1 -w 300 192.168.1.6
polaris_chvrf_domtrans(polaris_console_attach_t)
from chvrf.sh code executes ping command
gen_require(
 type polaris_chvrf_t;
)
netutils_domtrans_ping(polaris_chvrf_t)
send sigchld when it is done
gen_require(
 type ping_t;
)
allow ping_t polaris_console_attach_t:process sigchld;

polaris_boot_tmp_read(polaris_console_attach_t)
polaris_btrace_data_manage(polaris_console_attach_t)
polaris_chasfs_read(polaris_console_attach_t)
polaris_cpld_read(polaris_console_attach_t)
polaris_disk_bootflash_search(polaris_console_attach_t)
polaris_disk_crashinfo_getattr(polaris_console_attach_t)

```

```

polaris_ncd_tmp_read(polaris_console_attach_t)
polaris_read_debug_conf(polaris_console_attach_t)
polaris_rmonbifo_tmp_read(polaris_console_attach_t)
polaris_use_btrace_fifo(polaris_console_attach_t)

read /proc/cmdline
kernel_read_system_state(polaris_console_attach_t)

read /tmp/myhostname file
polaris_hm_tmp_read(polaris_console_attach_t)

telnet_use_ptys(polaris_console_attach_t)

allow polaris_console_attach_t self:capability sys_resource;
allow polaris_console_attach_t self:process setrlimit;

getty starts /usr/binos/conf/iosd_console_attach.sh through breelay
gen_require(^
 type getty_t;
)
polaris_bconsole_domtrans(getty_t)

console_attach.sh start btelnet.sh over chvrf and bexecute
gen_require(^
 type polaris_bexecute_t;
)
allow polaris_bexecute_t polaris_console_attach_t:process sigchld;
corenet_tcp_connect_telnetd_port(polaris_bexecute_t)

handling /usr/binos/conf/unifiedfs/unifiedfs_helper.sh

polaris_utility_domain_template(ufs_helper)

corecmd_exec_bin(polaris_ufs_helper_t)
auth_use_nsswitch(polaris_ufs_helper_t)

rsync calls unifiedfs_helper.sh
gen_require(^
 type rsync_t;
)
polaris_ufs_helper_domtrans(rsync_t);

unifiedfs_helper.sh calls mount to handle nfs directories
mount_domtrans(polaris_ufs_helper_t)

creates files under /tmp/udev/etc/udev/
polaris_udev_tmp_manage(polaris_ufs_helper_t)

```

```

polaris_disk_bootflash_search(polaris_ufs_helper_t)
polaris_ncd_tmp_manage(polaris_ufs_helper_t)
polaris_ncd_etc_read(polaris_ufs_helper_t)

stat over /tmp/ufs/crashinfo/10.1.1.1
polaris_disk_crashinfo_getattr(polaris_ufs_helper_t)

unifiedfs_helper.sh creates /tmp/unifiedfs and manages underlying dirs
type polaris_ufs_tmp_t;
files_tmp_file(polaris_ufs_tmp_t)
files_tmp_filetrans(polaris_ufs_helper_t, polaris_ufs_tmp_t, { file dir })
manage_dirs_pattern(polaris_ufs_helper_t, polaris_ufs_tmp_t, polaris_ufs_tmp_t)
manage_files_pattern(polaris_ufs_helper_t, polaris_ufs_tmp_t, polaris_ufs_tmp_t)
manage_lnk_files_pattern(polaris_ufs_helper_t, polaris_ufs_tmp_t, polaris_ufs_tmp_t)

Required for /tmp/unifiedfs access on vWLC
ifdef(`vwlc_platform',`
files_tmp_filetrans(unconfined_service_t, polaris_ufs_tmp_t, dir, "unifiedfs")
')

polaris_ncd_rpcinfo_net(polaris_ufs_helper_t)

polaris_persistent_getattr(polaris_ufs_helper_t)

rm from coreutils-8.30 wants to know filesystem type
fs_getattr_tmpfs(polaris_ufs_helper_t)

ncd.sh read,search,open, creates, add_name and writes to /proc/hanet/tun_local_ip
gen_require(`
type polaris_hanet_proc_t;
type proc_t;
')
manage_files_pattern(polaris_ncd_t, polaris_hanet_proc_t, polaris_hanet_proc_t)
allow polaris_hanet_proc_t proc_t:filesystem associate;

allow polaris_ufs_helper_t self:capability sys_resource;

```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisncd.te
```

No license file was found, but licenses were detected in source scan.

dnl

dnl May 2018, Manohar Hungund

dnl

dnl Copyright (c) 2018-2019 by Cisco Systems, Inc.

dnl All rights reserved

dnl

dnl Starfleet Platform Max Bay Limits



```
max_bay_map_set(rp, `per_bay', 0)
max_bay_map_set(cc, `per_bay', 5)
max_bay_map_set(fp, `per_bay', 5)
```

```
min_bay_ripc_map_set(rp, `per_bay', 0)
min_bay_ripc_map_set(cc, `per_bay', 1)
min_bay_ripc_map_set(fp, `per_bay', 0)
```

```
max_bay_ripc_map_set(rp, `per_bay', 2)
max_bay_ripc_map_set(cc, `per_bay', 6)
max_bay_ripc_map_set(fp, `per_bay', 1)
```

```
min_bay_ripc_map_set(rp, `global', 0)
min_bay_ripc_map_set(cc, `global', 1)
min_bay_ripc_map_set(fp, `global', 0)
```

```
max_bay_ripc_map_set(rp, `global', 2)
max_bay_ripc_map_set(cc, `global', 6)
max_bay_ripc_map_set(fp, `global', 1)
```

dnl in elastic scope each process has its own value

```
max_elastic_map_set(rp, `elastic', BPROC_ODM, 0)
max_elastic_map_set(cc, `elastic', BPROC_ODM, 0)
max_elastic_map_set(fp, `elasite', BPROC_ODM, 0)
```

```
max_elastic_map_set(rp, `elastic', BPROC_WNCD, 0)
max_elastic_map_set(cc, `elastic', BPROC_WNCD, 0)
max_elastic_map_set(fp, `elastic', BPROC_WNCD, 0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/starfleetmaps.m4
```

No license file was found, but licenses were detected in source scan.

```
#
November 2020, Christine Hwang
#
Copyright (c) 2017-2021 by Cisco Systems, Inc.
All rights reserved
#
```

```
Map BBU TTY to correct device context
/dev/ttyS2 -c gen_context(system_u:object_r:polaris_bbu_device_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisbbu.fc
```

No license file was found, but licenses were detected in source scan.

```
#
```

```
February 2018, Manohar Hungund
#
Copyright (c) 2018-2020 by Cisco Systems, Inc.
All rights reserved
#
```

```
<summary>Polaris ACT2 Chip Device Access Policy Rules.</summary>
```

```
#####
ACT2 Chip Driver policy
#####
```

```
#####
```

```
<summary>
```

```
Work (read, write, ioctl) with /dev/act2
```

```
</summary>
```

```
<param name="domain">
```

```
<summary>
```

```
Domain allowed access.
```

```
</summary>
```

```
</param>
```

```
#
```

```
interface(`polaris_act2_dev_use',`
```

```
gen_require(`
```

```
type device_t;
```

```
type polaris_act2_device_t;
```

```
`)
```

```
read_chr_files_pattern($1, device_t, polaris_act2_device_t)
```

```
write_chr_files_pattern($1, device_t, polaris_act2_device_t)
```

```
`)
```

```
#####
```

```
<summary>
```

```
Create /tmp/hw_entropy file. Certain platforms save
```

```
entropy from main board ACT-2 chip in this file.
```

```
</summary>
```

```
<param name="domain">
```

```
<summary>
```

```
Domain allowed access.
```

```
</summary>
```

```
</param>
```

```
#
```

```
interface(`polaris_hw_entropy_create',`
```

```
gen_require(`
```

```
type polaris_hw_entropy_t;
```

```
type tmp_t;
```

```
`)
```

```

files_tmp_filetrans($1, polaris_hw_entropy_t, file, "hw_entropy")
manage_files_pattern($1, tmp_t, polaris_hw_entropy_t)
')

#####
<summary>
Use /tmp/hw_entropy file. For some reason, iosd opens file in rw mode,
not clear why it couldn't just read it.
Certain platforms save entropy from main board ACT-2 chip in this file.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_hw_entropy_use`,`
gen_require(`
 type polaris_hw_entropy_t;
 type tmp_t;
`)

rw_files_pattern($1, tmp_t, polaris_hw_entropy_t)
')

```

```

#####
<summary>
Read /tmp/hw_entropy file.
Certain platforms save entropy from main board ACT-2 chip in this file.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_hw_entropy_read`,`
gen_require(`
 type polaris_hw_entropy_t;
`)

read_files_pattern($1, tmp_t, polaris_hw_entropy_t)
')

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisact2.if

No license file was found, but licenses were detected in source scan.

```

#
April 2017, Victor Kamensky
#
Copyright (c) 2017-2020 by Cisco Systems, Inc.
All rights reserved
#

policy_module(polarisdmindbmand, 1.0);

gen_require(
 type polaris_dmi_ndbmand_t;
)

polaris_btrace_data_manage(polaris_dmi_ndbmand_t)
polaris_crft_data_manage(polaris_dmi_ndbmand_t)
polaris_chasfs_manage(polaris_dmi_ndbmand_t)
polaris_tdlresolve_read(polaris_dmi_ndbmand_t)
polaris_tdlldb_list_dirs(polaris_dmi_ndbmand_t)
polaris_cpld_read(polaris_dmi_ndbmand_t)
polaris_flashlib_read(polaris_dmi_ndbmand_t)

polaris_ripc_sman_ui_serv_connect(polaris_dmi_ndbmand_t)

polaris_db_tdlldb_dir_use(polaris_dmi_ndbmand_t)

work with NDBLOAD_LOCK_PATH
type polaris_dmi_ndbutil_lock_t;
files_tmp_file(polaris_dmi_ndbutil_lock_t)
polaris_ndbload_lock_use(polaris_dmi_ndbmand_t)

optional_policy(
deals with /dev/shm/confd setup (schema and pid)
polaris_conf_d_shm_setup(polaris_dmi_ndbmand_t)
and allow read shared schema
polaris_conf_d_shared_schema_read(polaris_dmi_ndbmand_t)
read /proc/confd_pid/exe file
polaris_conf_d_read(polaris_dmi_ndbmand_t)
)

allow polaris_dmi_ndbmand_t self:capability { dac_override dac_read_search sys_resource };

logging_send_syslog_msg(polaris_dmi_ndbmand_t)

create ndbutil directory under /var/lock
polaris_conf_d_ndbutil_create(polaris_dmi_ndbmand_t)

polaris_ndbutil_lock_template(polaris_dmi_ndbmand_t, ndbmand, ".l.schema_use.ndbmand")

```

```
polaris_conf_d_shared_schema_watch(polaris_dmi_ndbmand_t)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisdmindbmand.te
```

No license file was found, but licenses were detected in source scan.

```
#
```

```
February 2020, Victor Kamensky
```

```
#
```

```
Copyright (c) 2020 by Cisco Systems, Inc.
```

```
All rights reserved
```

```
#
```

```
policy_module(polarisomp, 1.0);
```

```
gen_require(^
```

```
 type polaris_omp_t;
```

```
)
```

```
polaris_chasfs_manage(polaris_omp_t)
```

```
polaris_cpld_read(polaris_omp_t)
```

```
polaris_flashlib_read(polaris_omp_t)
```

```
polaris_tdlresolve_read(polaris_omp_t)
```

```
polaris_ripc_sman_ui_serv_connect(polaris_omp_t)
```

```
polaris_db_tdlldb_dir_use(polaris_omp_t)
```

```
logging_send_syslog_msg(polaris_omp_t)
```

```
vconfd_load_shared_schemas
```

```
polaris_conf_d_shared_schema_read(polaris_omp_t)
```

```
omp_daemon_init calls posix_sysconf
```

```
dev_read_sysfs(polaris_omp_t)
```

```
reads /sys/fs/cgroup/cpuset/iosxe_control_processes/cpuset.cpus
```

```
fs_read_cgroup_files(polaris_omp_t)
```

```
vip_util_set_fd_limits set files limits
```

```
allow polaris_omp_t self:process setrlimit;
```

```
omp connects to omp listener tcp port 17900
```

```
corenet_tcp_connect_polaris_omp_port(polaris_omp_t)
```

```
vip_util_reset_ns opens /proc/1/ns/net
```

```
polaris_cedge_reset_ns(polaris_omp_t)
```

```
vip_util_set_ns opens /var/run/netns/*
```

```
polaris_cedge_set_ns(polaris_omp_t)
```

```
#omp_peer_active_connect() binds to OMP address
corenet_tcp_bind_generic_node(polaris_omp_t)
allow polaris_omp_t self:tcp_socket { bind connect create getopt setopt };
```

```
omp starts worker thread under CPU affinity
allow polaris_omp_t self:process setsched;
```

```
connects to ttm unix domain socket in msgq_connect_timer
polaris_ttm_var_sock_write(polaris_omp_t)
connects to ftm unix domain socket in msgq_connect_timer
polaris_ftm_var_sock_write(polaris_omp_t)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisomp.te
```

No license file was found, but licenses were detected in source scan.

```
#
July 2020, Victor Kamensky
#
Copyright (c) 2020 by Cisco Systems, Inc.
All rights reserved
#
```

```
<summary>Polaris htx Policy Rules.</summary>
```

```
#####
```

```
<summary>
```

```
Manage polaris_htx_iox_tmp_t in /tmp/HTX-IOX.
```

```
</summary>
```

```
<param name="domain">
```

```
<summary>
```

```
Domain allowed access.
```

```
</summary>
```

```
</param>
```

```
interface(`polaris_htx_iox_tmp_manage`,`
```

```
gen_require(`
 type polaris_htx_iox_tmp_t;
```

```
`)
```

```
manage_files_pattern($1, polaris_htx_iox_tmp_t, polaris_htx_iox_tmp_t)
```

```
manage_sock_files_pattern($1, polaris_htx_iox_tmp_t, polaris_htx_iox_tmp_t)
```

```
manage_dirs_pattern($1, polaris_htx_iox_tmp_t, polaris_htx_iox_tmp_t)
```

```
allow $1 polaris_htx_iox_tmp_t:dir watch;
```

```
allow $1 polaris_htx_iox_tmp_t:file map;
```

```
')
```

```
#####
<summary>
Send messages to htx unix datagram sockets.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_htx_dgram_send`,`
gen_require(`
type polaris_htx_t;
`)

allow $1 polaris_htx_t:unix_dgram_socket sendto;
`)

#####
<summary>
Work (read, write, ioctl) with /dev/sppi_memif device
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_sppi_memif_dev_use`,`
gen_require(`
type device_t;
type polaris_sppi_memif_device_t;
`)
write_chr_files_pattern($1, device_t, polaris_sppi_memif_device_t)
read_chr_files_pattern($1, device_t, polaris_sppi_memif_device_t)
`)

#####
<summary>
Work with /tmp/HTX-IOX/.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_htx_use_client_socket`,`
```

```
gen_require(
 type polaris_htx_t;
)
allow $1 polaris_htx_t:unix_stream_socket connectto;
)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarishtx.if

No license file was found, but licenses were detected in source scan.

```

July 2017, Victor Kamensky

Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved
#
```

```
policy_module(polarisesgtamcfg, 1.0);
```

```
gen_require(
 type polaris_esg_tam_cfg_t;
)
```

```
polaris_btrace_data_manage(polaris_esg_tam_cfg_t)
polaris_chasfs_manage(polaris_esg_tam_cfg_t)
polaris_tdlresolve_read(polaris_esg_tam_cfg_t)
polaris_tdlldb_list_dirs(polaris_esg_tam_cfg_t)
polaris_flashlib_read(polaris_esg_tam_cfg_t)
```

```
polaris_cpld_read(polaris_esg_tam_cfg_t)
allow polaris_esg_tam_cfg_t self:capability net_admin;
```

```
handle /tmp/tam_cfg_done
type polaris_tam_tmp_t;
files_tmp_file(polaris_tam_tmp_t)
files_tmp_filetrans(polaris_esg_tam_cfg_t, polaris_tam_tmp_t, dir, "tam_cfg_done")
manage_files_pattern(polaris_esg_tam_cfg_t, polaris_tam_tmp_t, polaris_tam_tmp_t)
gen_require(
 type tmp_t;
)
manage_dirs_pattern(polaris_esg_tam_cfg_t, tmp_t, polaris_tam_tmp_t)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisesgtamcfg.te

No license file was found, but licenses were detected in source scan.

```

March 2017, Victor Kamensky
```



```

#
Copyright (c) 2016-2020 by Cisco Systems, Inc.
All rights reserved
#

policy_module(polarisfmanfp, 1.0);

gen_require(
 type polaris_fman_fp_t;
)

polaris_btrace_data_manage(polaris_fman_fp_t)
polaris_crft_data_manage(polaris_fman_fp_t)
polaris_chasfs_manage(polaris_fman_fp_t)
polaris_tdlresolve_read(polaris_fman_fp_t)
polaris_tdlldb_list_dirs(polaris_fman_fp_t)
polaris_cpld_read(polaris_fman_fp_t)
polaris_lua_read(polaris_fman_fp_t)
polaris_flashlib_read(polaris_fman_fp_t)

polaris_ripc_sman_ui_serv_connect(polaris_fman_fp_t)

allow to send message to /dev/log
logging_send_syslog_msg(polaris_fman_fp_t)

#####
mqipc manual, one that missing in platform tdl file
#####

mq.-iosd-thr-fmanrp-R0:0
mq.-iosd-thr-fmanrp-1:R0:0
type polaris_iosd_thr_fmanrp_mqipc_t;
polaris_mqipc_type(polaris_iosd_thr_fmanrp_mqipc_t)

mq.-mobilityd-thr-fmanrp-1:R0:0
type polaris_mobilityd_thr_fmanrp_mqipc_t;
polaris_mqipc_type(polaris_mobilityd_thr_fmanrp_mqipc_t)

mq.-smd-thr-fmanrp-1:R0:0
type polaris_smd_thr_fmanrp_mqipc_t;
polaris_mqipc_type(polaris_smd_thr_fmanrp_mqipc_t)

mq.-wncd_0-thr-fmanrp-1:R0:0
type polaris_wncd_thr_fmanrp_mqipc_t;
polaris_mqipc_type(polaris_wncd_thr_fmanrp_mqipc_t)

mq.-wncmgrd_0-thr-fmanrp-1:R0:0
type polaris_wncmgrd_thr_fmanrp_mqipc_t;

```





```

polaris_mqipc_create_name(polaris_fman_fp_t, polaris_wncd_thr_fmanrp_mqipc_t, wncd_5-thr-fmanrp-2:R0:0)
polaris_mqipc_create_name(polaris_fman_fp_t, polaris_wncd_thr_fmanrp_mqipc_t, wncd_6-thr-fmanrp-1:R0:0)
polaris_mqipc_create_name(polaris_fman_fp_t, polaris_wncd_thr_fmanrp_mqipc_t, wncd_6-thr-fmanrp-2:R0:0)
polaris_mqipc_create_name(polaris_fman_fp_t, polaris_wncd_thr_fmanrp_mqipc_t, wncd_7-thr-fmanrp-1:R0:0)
polaris_mqipc_create_name(polaris_fman_fp_t, polaris_wncd_thr_fmanrp_mqipc_t, wncd_7-thr-fmanrp-2:R0:0)
polaris_mqipc_create_name(polaris_fman_fp_t, polaris_wncd_thr_fmanrp_mqipc_t, wncd_1-thr-fmanrp-R1:0)
')
polaris_cpld_dev_use(polaris_fman_fp_t)

cpp bleeds into switching platforms through fman_fp and fed
apparently even on nyquist fed creates /tmp/cpp_anon_db
polaris_cpp_process(polaris_fman_fp_t)
polaris_cpp_tmp_files_use(polaris_fman_fp_t)

optional_policy(
polaris_cpp_dev_use(polaris_fman_fp_t)
polaris_cpp_cavium_sdk_ipc_use(polaris_fman_fp_t)
)
polaris_persistent_manage(polaris_fman_fp_t)

polaris_icc_broken_relocations(polaris_fman_fp_t)

allow polaris_fman_fp_t self:capability dac_override;
allow polaris_fman_fp_t self:capability2 block_suspend;

when /bootflash or /harddisk are 100% full
allow polaris_fman_fp_t self:capability sys_resource;

write to devices like this /proc/bus/pci/04/00.0
kernel_read_system_state(polaris_fman_fp_t)
kernel_write_proc_files(polaris_fman_fp_t)

ifdef(^mcp_family',`
polaris_cm_fp_tmp_filetrans(polaris_fman_fp_t)
polaris_cm_fp_tmp_manage(polaris_fman_fp_t)
)

LOOK AT ME: raw memory write access
ifdef(^mcp_family',`
polaris_dev_mem_use(polaris_fman_fp_t)
)

LOOK AT ME: raw memory access in cavium vendor SDK
related to octeon driver (BUG CSCvh58515)
ifdef(^crankshaft_family',`
polaris_dev_mem_use(polaris_fman_fp_t)
)

```

```

polaris_dyncfg_tmp_read(polaris_fman_fp_t)

/dev/qae_mem device access on overlord
optional_policy(`
polaris_qae_dev_use(polaris_fman_fp_t)
`)

access to /dev/icp_XXX device on crankshaft platforms
optional_policy(`
 polaris_icp_dev_use(polaris_fman_fp_t)
`)

on qwlc work with /tmp/octeon-remote-lock-pci:0
ifdef(`qwlc_platform',`
polaris_cm_fp_tmp_manage(polaris_fman_fp_t)
`)

ifdef(`katar_platform',`
polaris_cm_fp_tmp_manage(polaris_fman_fp_t)
`)

optional_policy(`
#fman-fp creates tmp files in acl-mgmt workflow.
polaris_fman_acl_iptbl_tmp_file(polaris_fman_fp_t)
`)

polaris_iosd_vcpu_read(polaris_fman_fp_t)

allow open/read/search cgroup files like /sys/fs/cgroup/cpu,cpuacct/machine
fs_read_cgroup_files(polaris_fman_fp_t)
fs_search_cgroup_dirs(polaris_fman_fp_t)

optional_policy(`
Access /dev/cbdma
polaris_cbdma_dev_use(polaris_fman_fp_t)

Access /dev/n2_device
polaris_n2_dev_use(polaris_fman_fp_t)
`)
polaris_cpp_tmpfs_manage(polaris_fman_fp_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisfmanfp.te
No license file was found, but licenses were detected in source scan.

#
August 2017, Shawn Lu
#

```

```
Copyright (c) 2017-2020 by Cisco Systems, Inc.
All rights reserved
#

<summary>Polaris wncmgrd Policy Rules.</summary>
```

```
#####
<summary>
Read access to /bootflash/NACert.pem
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_read_icap_cert_file`,`
 gen_require(`
 type polaris_icap_cert_t;
 `)
 allow $1 polaris_icap_cert_t:file read_file_perms;
`)
```

Found in path(s):  
\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariswncmgrd.if  
No license file was found, but licenses were detected in source scan.

```
#
March 2017, Victor Kamensky
#
Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved
#
```

```
polariskeyman file contexts place holder
```

Found in path(s):  
\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariskeyman.fc  
No license file was found, but licenses were detected in source scan.

```
#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#
```

```
polarisnvram file contexts place holder
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisnvr.am.fc

No license file was found, but licenses were detected in source scan.

#

# March 2017, Victor Kamensky

#

# Copyright (c) 2016-2021 by Cisco Systems, Inc.

# All rights reserved

#

# /3pa staff

/3pa/usr/(.\*)?lib64/(.\*)? -- gen\_context(system\_u:object\_r:lib\_t,s0)

/3pa/usr/(.\*)?lib/(.\*)? -- gen\_context(system\_u:object\_r:lib\_t,s0)

/3pa/(.\*)?lib64/(.\*)? -- gen\_context(system\_u:object\_r:lib\_t,s0)

/3pa/(.\*)?lib/(.\*)? -- gen\_context(system\_u:object\_r:lib\_t,s0)

/3pa/usr/(.\*)?sbin/(.\*)? -- gen\_context(system\_u:object\_r:bin\_t,s0)

/3pa/usr/(.\*)?bin/(.\*)? -- gen\_context(system\_u:object\_r:bin\_t,s0)

/3pa/usr/sbin/libvirt\_lxc -- gen\_context(system\_u:object\_r:virt\_lxc\_exec\_t,s0)

/usr/lib/libvirt/libvirt\_lxc -- gen\_context(system\_u:object\_r:virt\_lxc\_exec\_t,s0)

/usr/sbin/libvirt\_lxc -- gen\_context(system\_u:object\_r:virt\_lxc\_exec\_t,s0)

/3pa/usr/sbin/libvirtd -- gen\_context(system\_u:object\_r:virt\_exec\_t,s0)

/3pa/usr/sbin/virtlogd -- gen\_context(system\_u:object\_r:virtlogd\_exec\_t,s0)

/3pa/usr/bin/virsh -- gen\_context(system\_u:object\_r:virsh\_exec\_t,s0)

/3pa/usr/bin/qemu.\* -- gen\_context(system\_u:object\_r:qemu\_exec\_t,s0)

/usr/binos/conf/libvirtd.sh -- gen\_context(system\_u:object\_r:virtd\_initrc\_exec\_t,s0)

/3pa/etc/libvirt/(.\*)? -- gen\_context(system\_u:object\_r:virt\_etc\_t,s0)

/3pa/etc/logrotate.d/(.\*)? -- gen\_context(system\_u:object\_r:etc\_t,s0)

# should go into contrib/telnet.fc?

/usr/binos/sbin/in.telnetd -- gen\_context(system\_u:object\_r:telnetd\_exec\_t,s0)

# load\_crash\_kernel.sh loads crash kernel - it should be executable

/crashkernel/load\_crash\_kernel.sh -- gen\_context(system\_u:object\_r:bin\_t,s0)

# /etc/lablogin.sh is executed during telnet login over management port

# it should be executable. Also having shell\_exec\_t label will allow it

# to transition into unconfined domain

/etc/lablogin.sh -- gen\_context(system\_u:object\_r:shell\_exec\_t,s0)

# /etc/init.d/\*functions files should be actually in bin\_t domain, the same

# as /etc/init.d/functions. Note using /etc/rc\,d/init\,d/ instead of

# /etc/init\,d/ because we have substitution rule in file\_contexts.subs\_dist

/etc/rc\,d/init\,d/binos\_functions -- gen\_context(system\_u:object\_r:bin\_t,s0)

/etc/rc\,d/init\,d/binos\_functions-pd -- gen\_context(system\_u:object\_r:bin\_t,s0)

/etc/rc\,d/init\,d/chasxml\_functions -- gen\_context(system\_u:object\_r:bin\_t,s0)

/etc/rc\,d/init\,d/common-utility-functions -- gen\_context(system\_u:object\_r:bin\_t,s0)

```

/etc/rc.d/init.d/rh-functions -- gen_context(system_u:object_r:bin_t,s0)

tftp directories
/tftp -d gen_context(system_u:object_r:tftpd_dir_rw_t,s0)
/tftp/. * gen_context(system_u:object_r:tftpd_dir_rw_t,s0)

/tmp/sw
/tmp/sw -d gen_context(system_u:object_r:tmp_t,s0)
/tmp/rp -d gen_context(system_u:object_r:tmp_t,s0)
/tmp/fp -d gen_context(system_u:object_r:tmp_t,s0)
/tmp/cc -d gen_context(system_u:object_r:tmp_t,s0)

/tmp/etc
/tmp/etc -d gen_context(system_u:object_r:polaris_etc_t,s0)

/tmp/sv
/tmp/sv -d gen_context(system_u:object_r:polaris_sv_tmp_t,s0)

firmware files
/firmware(/.*)? gen_context(system_u:object_r:polaris_firmware_t,s0)
/upgrade(/.*)? gen_context(system_u:object_r:polaris_firmware_t,s0)
/golden(/.*)? gen_context(system_u:object_r:polaris_firmware_t,s0)
CC card fpd files mark it as usr_t for now
/fpd(/.*)? -- gen_context(system_u:object_r:polaris_firmware_t,s0)

/tmp/debug\conf -l gen_context(system_u:object_r:polaris_debug_conf_t,s0)

/var/ODM/ios_core.p7b -- gen_context(system_u:object_r:etc_t,s0)

/dev/DDR -c gen_context(system_u:object_r:polaris_ddd_device_t,s0)
/dev/i2c-[0-9]* -c gen_context(system_u:object_r:polaris_i2c_device_t,s0)

/(.*)?\ebf(/.*)? gen_context(system_u:object_r:polaris_ebf_t,s0)
/bin/(.*)?\ebf(/.*)? gen_context(system_u:object_r:polaris_ebf_t,s0)
/wbin/(.*)?\ebf(/.*)? gen_context(system_u:object_r:polaris_ebf_t,s0)
/lib/(.*)?\ebf(/.*)? gen_context(system_u:object_r:polaris_ebf_t,s0)
/lib64/(.*)?\ebf(/.*)? gen_context(system_u:object_r:polaris_ebf_t,s0)
/usr/(.*)?\ebf(/.*)? gen_context(system_u:object_r:polaris_ebf_t,s0)
/usr/bin/(.*)?\ebf(/.*)? gen_context(system_u:object_r:polaris_ebf_t,s0)
/usr/sbin/(.*)?\ebf(/.*)? gen_context(system_u:object_r:polaris_ebf_t,s0)
/usr/lib/(.*)?\ebf(/.*)? gen_context(system_u:object_r:polaris_ebf_t,s0)
/usr/lib64/(.*)?\ebf(/.*)? gen_context(system_u:object_r:polaris_ebf_t,s0)
/usr/binos/(.*)?\ebf(/.*)? gen_context(system_u:object_r:polaris_ebf_t,s0)
/usr/binos/bin/(.*)?\ebf(/.*)? gen_context(system_u:object_r:polaris_ebf_t,s0)
/usr/binos/sbin/(.*)?\ebf(/.*)? gen_context(system_u:object_r:polaris_ebf_t,s0)
/usr/binos/lib/(.*)?\ebf(/.*)? gen_context(system_u:object_r:polaris_ebf_t,s0)
/usr/binos/lib64/(.*)?\ebf(/.*)? gen_context(system_u:object_r:polaris_ebf_t,s0)
/opt/confd/lib/confd/lib/core/confd/priv/(.*)?\ebf(/.*)? gen_context(system_u:object_r:polaris_ebf_t,s0)

```



```

interpreter for CRDL 32bit IOSD setup proper memory map
/usr/binos/bin/crdl_mini_loader gen_context(system_u:object_r:ld_so_t,s0)

#firmware package mount point on asr1k platforms
/mnt/firmware(/.*)? gen_context(system_u:object_r:polaris_firmware_t,s0)

/bootflash/.USWAP(/.*)? gen_context(system_u:object_r:polaris_uswap_files_t,s0)

#Nutella EFI folder
/bootflash/EFI(/.*)? gen_context(system_u:object_r:polaris_efi_files_t,s0)

#for cat9k platform
/mnt/sd3/user/.USWAP(/.*)? gen_context(system_u:object_r:polaris_uswap_files_t,s0)

/tmp/rsync_log_dir(/.*)? gen_context(system_u:object_r:polaris_rsync_tmp_t,s0)

#for wlc awips feature
/bootflash/awips.json gen_context(system_u:object_r:polaris_awips_signature_file_t,s0)

for wlc iot-gw feature to access /bootflash/certs dir
/bootflash/certs -d gen_context(system_u:object_r:polaris_ap_cert_file_t,s0)

#for curl - and allowing ip netns exec X curl
/usr/bin/curl -- gen_context(system_u:object_r:polaris_curl_exec_t,s0)

Katar WLC needs access to /tmp/ldwm_envelope
/tmp/ldwm_envelope -- gen_context(system_u:object_r:polaris_ldwm_envelope_tmp_t,s0)

CLI: show platform software tech-support
/usr/binos/conf/platform_tech_support.sh -- gen_context(system_u:object_r:polaris_tech_support_exec_t,s0)

Tamlib debug file
/bootflash/tamlib_dbg_log -- gen_context(system_u:object_r:polaris_tamlib_dbg_file_t,s0)

cryptsetup - some platforms copy cryptsetup in /bin
/bin/cryptsetup -- gen_context(system_u:object_r:lvm_exec_t,s0)
/usr/bin/cryptsetup -- gen_context(system_u:object_r:lvm_exec_t,s0)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscommon.fc
No license file was found, but licenses were detected in source scan.

```

```

dnl
dnl April 2018, Victor Kamensky
dnl
dnl Copyright (c) 2018-2019 by Cisco Systems, Inc.
dnl All rights reserved

```

```
dnl
define(`polaris_process',`)dnl
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/polaris_process_if.m4
```

No license file was found, but licenses were detected in source scan.

```
#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2020 by Cisco Systems, Inc.
All rights reserved
#
```

```
policy_module(polarisiptbl, 1.0);
```

```
#####
iptbl.sh manual
#####
```

```
polaris_process_domain_template(iptbl)
```

```
corecmd_exec_bin(polaris_iptbl_t)
```

```
allow to read /proc/meminfo
kernel_read_system_state(polaris_iptbl_t)
```

```
allow read of /etc/passwd
auth_use_nsswitch(polaris_iptbl_t)
```

```
run ldd, which in turns execve "ld.so --verify"
libs_exec_ld_so(polaris_iptbl_t)
```

```
work with /tmp files
type polaris_iptbl_tmp_t;
files_tmp_file(polaris_iptbl_tmp_t)
manage_dirs_pattern(polaris_iptbl_t, tmp_t, polaris_iptbl_tmp_t)
manage_files_pattern(polaris_iptbl_t, polaris_iptbl_tmp_t, polaris_iptbl_tmp_t)
manage_fifo_files_pattern(polaris_iptbl_t, polaris_iptbl_tmp_t, polaris_iptbl_tmp_t)
files_tmp_filetrans(polaris_iptbl_t, polaris_iptbl_tmp_t, { file dir })
```

```
allow polaris_iptbl_t self:capability sys_resource;
allow polaris_iptbl_t self:process setpgid;
```

```
polaris_btrace_data_manage(polaris_iptbl_t)
polaris_cpld_read(polaris_iptbl_t)
polaris_chasfs_manage(polaris_iptbl_t)
polaris_boot_tmp_read(polaris_iptbl_t)
```

```

polaris_rmonbifo_tmp_read(polaris_iptbl_t)
polaris_proc_rmonbifo_getattr(polaris_iptbl_t)
polaris_proc_rmonbifo_read(polaris_iptbl_t)
polaris_disk_crashinfo_getattr(polaris_iptbl_t)

execute /etc/init.d/iptables in its own domain
iptables_initrc_domtrans(polaris_iptbl_t)

LOOK AT ME iptbl.sh puts symbolic links into /sbin directory
need to fix manifest instead, so it will be static
gen_require(`
 type bin_t;
`)
manage_lnk_files_pattern(polaris_iptbl_t, bin_t, bin_t)

modutils_domtrans_insmod(polaris_iptbl_t)
iptables_domtrans(polaris_iptbl_t)

iptbl.sh calls /etc/init.d/iptables restart and that needs
read /proc/pid/net/ip_tables_names file
kernel_read_network_state(polaris_iptbl_t)
creates /var/lock/subsys/iptables
type polaris_iptables_lock_t;
files_lock_file(polaris_iptables_lock_t)
manage_files_pattern(polaris_iptbl_t, polaris_iptables_lock_t, polaris_iptables_lock_t)
files_lock_filetrans(polaris_iptbl_t, polaris_iptables_lock_t, file)

needs access to /run/netns as part of chvrf invocation
fs_read_nsfs_files(polaris_iptbl_t)
iptbl.sh invokes iptable command which runs in iptables_t label and needs
access to meta files created by iptbl.sh with label polaris_iptbl_tmp_t
allow iptables_t polaris_iptbl_tmp_t:fifo_file read_file_perms;
allow iptables_t polaris_iptbl_tmp_t:file read_file_perms;

Allow /tmp/ufs/bootflash & /tmp/ufs/harddisk read access
ifdef(`vwlc_platform',`
optional_policy(`
polaris_ncd_tmp_read(polaris_iptbl_t)
`)
`)

```

Found in path(s):

```

* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisiptbl.te
No license file was found, but licenses were detected in source scan.

#
March 2017, Victor Kamensky
#

```

# Copyright (c) 2016-2019 by Cisco Systems, Inc.

# All rights reserved

#

/usr/bin/bhytoolsd -- gen\_context(system\_u:object\_r:polaris\_bhytoolsd\_exec\_t,s0)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisbhytoolsd.fc

No license file was found, but licenses were detected in source scan.

#

# March 2017, Victor Kamensky

#

# Copyright (c) 2016-2021 by Cisco Systems, Inc.

# All rights reserved

#

policy\_module(polarisautoupgrade, 1.0);

```
gen_require(
 type polaris_autoupgrade_t;
)
```

```
corecmd_exec_bin(polaris_autoupgrade_t)
corecmd_exec_shell(polaris_autoupgrade_t)
```

```
run ldd, which in turns execve "ld.so --verify"
libs_exec_ld_so(polaris_autoupgrade_t)
```

```
allow read of /etc/group and /etc/passwd
auth_use_nsswitch(polaris_autoupgrade_t)
```

```
allow to read /proc/meminfo
kernel_read_system_state(polaris_autoupgrade_t)
```

```
allow polaris_autoupgrade_t self:capability { sys_resource dac_override };
allow polaris_autoupgrade_t self:process setpgid;
```

```
polaris_tdlldb_list_dirs(polaris_autoupgrade_t)
```

```
polaris_btrace_data_manage(polaris_autoupgrade_t)
polaris_chasfs_manage(polaris_autoupgrade_t)
polaris_cpld_read(polaris_autoupgrade_t)
polaris_proc_rmonbifo_read(polaris_autoupgrade_t)
polaris_rmonbifo_tmp_read(polaris_autoupgrade_t)
polaris_boot_tmp_manage(polaris_autoupgrade_t)
polaris_read_debug_conf(polaris_autoupgrade_t)
polaris_disk_crashinfo_getattr(polaris_autoupgrade_t)
```

```

type polaris_autoupgrade_tmp_t;
files_tmp_file(polaris_autoupgrade_tmp_t)
/tmp/etc/installer
gen_require(
 type polaris_etc_t;
)
filetrans_pattern(polaris_autoupgrade_t, polaris_etc_t, polaris_autoupgrade_tmp_t, dir, "installer")
manage_fifo_files_pattern(polaris_autoupgrade_t, polaris_autoupgrade_tmp_t, polaris_autoupgrade_tmp_t)
manage_dirs_pattern(polaris_autoupgrade_t, polaris_etc_t, polaris_autoupgrade_tmp_t)
manage_files_pattern(polaris_autoupgrade_t, polaris_autoupgrade_tmp_t, polaris_autoupgrade_tmp_t)

Allow access to bootflash
polaris_bootflash_read(polaris_autoupgrade_t)

Allow access to packages.conf
polaris_read_packages_conf(polaris_autoupgrade_t)

needs to run pidof
dev_read_sysfs(polaris_autoupgrade_t)
kernel_read_system_state(polaris_autoupgrade_t)
domain_read_all_domains_state(polaris_autoupgrade_t)

send syslog
logging_send_syslog_msg(polaris_autoupgrade_t)

script starts rsync with mcp_chvrf.sh
polaris_chvrf_domtrans(polaris_autoupgrade_t)
gen_require(
 type rsync_t;
)
allow rsync_t polaris_autoupgrade_t:process sigchld;

/tmp/ufs/crashinfo access
optional_policy(
polaris_ncd_tmp_read(polaris_autoupgrade_t)
)

autoupgrade script in case of HA setup invokes breloy to trigger install of stand-by
polaris_bexecute_domtrans(polaris_autoupgrade_t)

polaris_flashlib_lock(polaris_autoupgrade_t)
polaris_flashlib_read(polaris_autoupgrade_t)
polaris_disk_install_read(polaris_autoupgrade_t)
polaris_install_engine_domtrans(polaris_autoupgrade_t)

#add transition to create /var/installer by autoupgrade
type polaris_autoupgrade_var_t;

```

```

files_tmp_file(polaris_autoupgrade_var_t)
files_var_filetrans(polaris_autoupgrade_t, polaris_autoupgrade_var_t, {file dir})
gen_require(
 type polaris_autoupgrade_exec_t;
)

#add transition to create /var/installer/auto_upgrade_helper.sh by autoupgrade
filetrans_pattern(polaris_autoupgrade_t,polaris_autoupgrade_var_t, polaris_autoupgrade_exec_t, file,
"auto_upgrade_helper.sh")
manage_files_pattern(polaris_autoupgrade_t, polaris_autoupgrade_var_t, polaris_autoupgrade_var_t)
manage_dirs_pattern(polaris_autoupgrade_t, polaris_autoupgrade_var_t, polaris_autoupgrade_var_t)

#add transition to create files/dir in /tmp
files_tmp_filetrans(polaris_autoupgrade_t, polaris_autoupgrade_tmp_t, {file dir})

access to /tmp/installer
polaris_install_tmp_manage(polaris_autoupgrade_t)

fs_getattr_tmpfs(polaris_autoupgrade_t)

access to /tmp/rsync_log_dir
polaris_manage_rsync_tmplog_dir(polaris_autoupgrade_t)

access to /harddisk link (accessed by flashutil and rotee call)
polaris_disk_harddisk_read_lnk(polaris_autoupgrade_t)

rsync_entry_domtrans(polaris_chvrf_t, rsync_t)

gen_require(
 type polaris_autoupgrade_t;
 type polaris_autoupgrade_exec_t;
)
rsync_entry_domtrans(polaris_autoupgrade_t, rsync_t)
polaris_bexecute_domain(polaris_autoupgrade_t, polaris_autoupgrade_exec_t)

fs_getattr_xattr_fs(polaris_autoupgrade_t)

auto_upgrade_helper.sh creates /var/installer/auto_upgrade_helper.sh
allow polaris_autoupgrade_t polaris_autoupgrade_exec_t:file { create setattr write };

rsync operations for members and standby rps on autoupgrade
gen_require(
 type rsync_port_t;
)
allow polaris_autoupgrade_t rsync_port_t:tcp_socket name_connect;

rsync requires to relabel /var/installer/auto_upgrade_helper.sh on standby
gen_require(

```

```

 type var_t;
)
allow rsync_t var_t:file relabelfrom;
allow rsync_t polaris_autoupgrade_exec_t:file relabelto;

access to /vol/harddisk/*.pkg
polaris_getattr_file_harddisk(polaris_autoupgrade_t)

access to /cdrom0/ when *ova image is booted during
first instance of vwlc on ucs server
polaris_removable_read(polaris_autoupgrade_t)

polaris_getattr_file_harddisk(polaris_autoupgrade_t)

auto_upgrade_client.sh access to "/tmp/sw/rp/0/0/rp_base/mount/bin/cut"
polaris_issu_tmp_files_read(polaris_autoupgrade_t)

```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisautoupgrade.te
```

No license file was found, but licenses were detected in source scan.

```

#
June 2017, Victor Kamensky
#
Copyright (c) 2017-2021 by Cisco Systems, Inc.
All rights reserved
#

```

```
/usr/binos/conf/run_ioxn_caf.sh -- gen_context(system_u:object_r:polaris_caf_exec_t,s0)
```

```
/usr/binos/conf/iox_reset.sh -- gen_context(system_u:object_r:polaris_caf_exec_t,s0)
```

```
ifdef(`nyquist_platform',`
```

```
/usr/binos/conf/standby_ioxcfg.sh -- gen_context(system_u:object_r:polaris_sioxcd_rp_exec_t,s0)
```

```
/tmp/app_host(/.*)? gen_context(system_u:object_r:polaris_sioxcd_rp_tmp_t,s0)
```

```
/mnt/sd3/iox_alt_hdd.dsk gen_context(system_u:object_r:polaris_iox_alt_hdd_files_t,s0)
```

```
/mnt/sd3/iox_alt_hdd_mount_dir(/.*)? gen_context(system_u:object_r:polaris_iox_alt_hdd_files_t,s0)
```

```
/mnt/sd3/iox_alt_hdd_mount_dir/iox(/.*)? gen_context(system_u:object_r:polaris_iox_files_t,s0)
```

```
/mnt/sd3/iox_alt_hdd_mount_dir/caf(/.*)? gen_context(system_u:object_r:polaris_caf_tmp_files_t,s0)
```

```
/mnt/sd3/iox_alt_hdd_mount_dir/iox_data_share(/.*)? gen_context(system_u:object_r:polaris_iox_files_t,s0)
```

```
/mnt/sd3/iox_alt_hdd_mount_dir/iox_host_data_share(/.*)? gen_context(system_u:object_r:polaris_iox_files_t,s0)
```

```
/mnt/sd3/iox_alt_hdd_mount_dir/guest_share(/.*)?
```

```
gen_context(system_u:object_r:polaris_iox_shared_files_t,s0)
```

```
/mnt/sd3/user/gs_script/sss(/.*)? gen_context(system_u:object_r:polaris_iox_ss_disk_t,s0)
```

```
)
```

```
ifdef(`passport_platform',`
```

```
/flash1/iox_alt_hdd.dsk gen_context(system_u:object_r:polaris_iox_alt_hdd_files_t,s0)
```

```
/flash1/iox_alt_hdd_mount_dir(/.*)? gen_context(system_u:object_r:polaris_iox_alt_hdd_files_t,s0)
```

```

/flash1/iox_alt_hdd_mount_dir/iox(/.*)? gen_context(system_u:object_r:polaris_iox_files_t,s0)
/flash1/iox_alt_hdd_mount_dir/caf(/.*)? gen_context(system_u:object_r:polaris_caf_tmp_files_t,s0)
/flash1/iox_alt_hdd_mount_dir/iox_data_share(/.*)? gen_context(system_u:object_r:polaris_iox_files_t,s0)
/flash1/iox_alt_hdd_mount_dir/iox_host_data_share(/.*)? gen_context(system_u:object_r:polaris_iox_files_t,s0)
/flash1/iox_alt_hdd_mount_dir/guest_share(/.*)?
gen_context(system_u:object_r:polaris_iox_shared_files_t,s0)
/flash1/user/gs_script/sss(/.*)? gen_context(system_u:object_r:polaris_iox_ss_disk_t,s0)
/usr/bin/os/conf/standby_ioxcfg.sh gen_context(system_u:object_r:polaris_sioxcd_rp_exec_t,s0)
/tmp/app_host(/.*)? gen_context(system_u:object_r:polaris_sioxcd_rp_tmp_t,s0)
)

```

#All possible accesses from /bootflash/iox\_alt\_hdd\_mount\_dir (iox\_polaris.conf)

```

/bootflash/iox_alt_hdd.dsk gen_context(system_u:object_r:polaris_iox_alt_hdd_files_t,s0)
/bootflash/iox_alt_hdd_mount_dir(/.*)?
gen_context(system_u:object_r:polaris_iox_alt_hdd_files_t,s0)
/bootflash/iox_alt_hdd_mount_dir/iox(/.*)? gen_context(system_u:object_r:polaris_iox_files_t,s0)
/bootflash/iox_alt_hdd_mount_dir/caf(/.*)? gen_context(system_u:object_r:polaris_caf_tmp_files_t,s0)
/bootflash/iox_alt_hdd_mount_dir/iox_data_share(/.*)? gen_context(system_u:object_r:polaris_iox_files_t,s0)
/bootflash/iox_alt_hdd_mount_dir/iox_host_data_share(/.*)?
gen_context(system_u:object_r:polaris_iox_files_t,s0)
/bootflash/iox_alt_hdd_mount_dir/guest_share(/.*)?
gen_context(system_u:object_r:polaris_iox_shared_files_t,s0)
/bootflash/user/gs_script/sss(/.*)? gen_context(system_u:object_r:polaris_iox_ss_disk_t,s0)

```

#All the possible IOX guestshell\_dir from iox\_polaris.conf

```

/guestshell(/.*)?(.*)\.sh gen_context(system_u:object_r:polaris_guestshell_exec_t,s0)
/guestshell(/.*)? gen_context(system_u:object_r:polaris_guestshell_t,s0)

```

#All the possible IOX flash\_dir/harddisk\_dir from iox\_polaris.conf

```

/bootflash/iox(/.*)? gen_context(system_u:object_r:polaris_iox_files_t,s0)
/mnt/sd3/iox(/.*)? gen_context(system_u:object_r:polaris_iox_files_t,s0)
/flash1/iox(/.*)? gen_context(system_u:object_r:polaris_iox_files_t,s0)
/flash11/iox(/.*)? gen_context(system_u:object_r:polaris_iox_files_t,s0)
/vol/harddisk/iox(/.*)? gen_context(system_u:object_r:polaris_iox_files_t,s0)
/vol/disk0/iox(/.*)? gen_context(system_u:object_r:polaris_iox_files_t,s0)
/vol/usb1/iox(/.*)? gen_context(system_u:object_r:polaris_iox_files_t,s0)

```

```

/bootflash/iox_data_share(/.*)? gen_context(system_u:object_r:polaris_iox_files_t,s0)
/mnt/sd3/iox_data_share(/.*)? gen_context(system_u:object_r:polaris_iox_files_t,s0)
/flash1/iox_data_share(/.*)? gen_context(system_u:object_r:polaris_iox_files_t,s0)
/flash11/iox_data_share(/.*)? gen_context(system_u:object_r:polaris_iox_files_t,s0)
/vol/harddisk/iox_data_share(/.*)? gen_context(system_u:object_r:polaris_iox_files_t,s0)
/vol/disk0/iox_data_share(/.*)? gen_context(system_u:object_r:polaris_iox_files_t,s0)
/vol/usb1/iox_data_share(/.*)? gen_context(system_u:object_r:polaris_iox_files_t,s0)

```

```

/bootflash/iox_host_data_share(/.*)? gen_context(system_u:object_r:polaris_iox_files_t,s0)
/mnt/sd3/iox_host_data_share(/.*)? gen_context(system_u:object_r:polaris_iox_files_t,s0)
/flash1/iox_host_data_share(/.*)? gen_context(system_u:object_r:polaris_iox_files_t,s0)

```



```

/flash11/iox_host_data_share(/.*)? gen_context(system_u:object_r:polaris_iox_files_t,s0)
/vol/harddisk/iox_host_data_share(/.*)? gen_context(system_u:object_r:polaris_iox_files_t,s0)
/vol/disk0/iox_host_data_share(/.*)? gen_context(system_u:object_r:polaris_iox_files_t,s0)
/vol/usb1/iox_host_data_share(/.*)? gen_context(system_u:object_r:polaris_iox_files_t,s0)

/opt/cisco/caf/scripts(/.*)?(.*)\.sh gen_context(system_u:object_r:polaris_caf_exec_t,s0)
/opt/cisco/caf(/.*)?(.*) gen_context(system_u:object_r:polaris_caf_files_t,s0)
/opt/cisco/caf -d gen_context(system_u:object_r:polaris_caf_files_t,s0)

/var/log/caf(/.*)? gen_context(system_u:object_r:polaris_caf_log_t,s0)

/etc/guestshell_rsa_key\.pub gen_context(system_u:object_r:polaris_guestshell_ssh_key_t,s0)
/etc/guestshell_rsa_key gen_context(system_u:object_r:polaris_guestshell_ssh_key_t,s0)

/tmp/caf(/.*)? gen_context(system_u:object_r:polaris_caf_tmp_files_t,s0)
/bootflash/caf(/.*)? gen_context(system_u:object_r:polaris_caf_tmp_files_t,s0)
/mnt/sd3/caf(/.*)? gen_context(system_u:object_r:polaris_caf_tmp_files_t,s0)
/flash1/caf(/.*)? gen_context(system_u:object_r:polaris_caf_tmp_files_t,s0)
/flash11/caf(/.*)? gen_context(system_u:object_r:polaris_caf_tmp_files_t,s0)
/vol/harddisk/caf(/.*)? gen_context(system_u:object_r:polaris_caf_tmp_files_t,s0)
/vol/disk0/caf(/.*)? gen_context(system_u:object_r:polaris_caf_tmp_files_t,s0)
/vol/usb1/caf(/.*)? gen_context(system_u:object_r:polaris_caf_tmp_files_t,s0)

/var/run/netns/guestshell gen_context(system_u:object_r:polaris_guestshell_var_run_t,s0)
/var/run/cisco_cli(/.*)? gen_context(system_u:object_r:polaris_caf_var_run_t,s0)

/tmp/ttyF(/.*)/(.*) gen_context(system_u:object_r:fifo_var_run_t,s0)

All the possible IOX bootflash/guest-share directory. This directory is shared between IOS and IOX
/bootflash/guest-share(/.*)? gen_context(system_u:object_r:polaris_iox_shared_files_t,s0)
/mnt/sd3/guest-share(/.*)? gen_context(system_u:object_r:polaris_iox_shared_files_t,s0)
/flash1/guest-share(/.*)? gen_context(system_u:object_r:polaris_iox_shared_files_t,s0)
/flash11/guest-share(/.*)? gen_context(system_u:object_r:polaris_iox_shared_files_t,s0)
/vol/harddisk/guest-share(/.*)? gen_context(system_u:object_r:polaris_iox_shared_files_t,s0)
/vol/disk0/guest-share(/.*)? gen_context(system_u:object_r:polaris_iox_shared_files_t,s0)
/vol/usb1/guest-share(/.*)? gen_context(system_u:object_r:polaris_iox_shared_files_t,s0)

```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscaf.fc
```

No license file was found, but licenses were detected in source scan.

```

#
December 2019, Victor Kamensky
#
Copyright (c) 2019 by Cisco Systems, Inc.
All rights reserved
#

```

# polarisfnfagg file contexts place holder

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisfnfagg.fc

No license file was found, but licenses were detected in source scan.

#

# March 2017, Victor Kamensky

#

# Copyright (c) 2017-2019 by Cisco Systems, Inc.

# All rights reserved

#

## <summary>Polaris cmm Policy Rules.</summary>

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscmm.if

No license file was found, but licenses were detected in source scan.

#

# March 2017, Victor Kamensky

#

# Copyright (c) 2016-2019 by Cisco Systems, Inc.

# All rights reserved

#

# polarisplogd file contexts place holder

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisplogd.fc

No license file was found, but licenses were detected in source scan.

dnl

dnl April 2018, Victor Kamensky

dnl

dnl Copyright (c) 2018-2019 by Cisco Systems, Inc.

dnl All rights reserved

dnl

divert(-1)

include(`polaris\_process.m4')

include(`polaris\_process\_if.m4')

include(`polaris\_ipc\_mqipc.m4')

include(`polaris\_ipc\_mqipc\_if.m4')

include(`polaris\_ipc\_ripc.m4')

```
include(`polaris_ipc_ripc_if.m4')
```

```
include(`polaris_ipc_lipc.m4')
```

```
include(`polaris_ipc_lipc_if.m4')
```

```
dnl Stub out non existent one
```

```
define(`polaris_websocket_service_server',`')
```

```
define(`polaris_cipc_service_server',`')
```

```
include(`polaris_max_scope.m4')
```

```
divert(0)dnl
```

```
#
```

```
This is a generated file! Instead of modifying this file,
```

```
modify proper platform TDL file.
```

```
#
```

```
<summary>Polaris Platform IPC Policy Rules.</summary>
```

```
Found in path(s):
```

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/polaris_ipc_if.m4
```

```
No license file was found, but licenses were detected in source scan.
```

```
#
```

```
April 2017, Victor Kamensky
```

```
#
```

```
Copyright (c) 2017-2019 by Cisco Systems, Inc.
```

```
All rights reserved
```

```
#
```

```
/tmp/.1.ndbutil-load gen_context(system_u:object_r:polaris_dmi_ndbutil_lock_t,s0)
```

```
/tmp/.1.ndbutil-use gen_context(system_u:object_r:polaris_dmi_ndbutil_lock_t,s0)
```

```
Found in path(s):
```

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisdmindbmand.fc
```

```
No license file was found, but licenses were detected in source scan.
```

```
#
```

```
March 2017, Victor Kamensky
```

```
#
```

```
Copyright (c) 2016-2020 by Cisco Systems, Inc.
```

```
All rights reserved
```

```
#
```

```
/dev/cpp_vxe_rsrc -c gen_context(system_u:object_r:polaris_cpp_device_t,s0)
```

```
/dev/cpp_dev_info -c gen_context(system_u:object_r:polaris_cpp_device_t,s0)
```

```
/dev/cpp -c gen_context(system_u:object_r:polaris_cpp_device_t,s0)
```

```
/dev/cpp_kipc -c gen_context(system_u:object_r:polaris_cpp_device_t,s0)
```

```
on lng box
```

```

/dev/octeon_device -c gen_context(system_u:object_r:polaris_cpp_device_t,s0)
/dev/cpp_pdma -c gen_context(system_u:object_r:polaris_cpp_device_t,s0)
/dev/i95_[0-9]* -c gen_context(system_u:object_r:polaris_i95_device_t,s0)

/dev/shm/cpp_.* -- gen_context(system_u:object_r:polaris_cpp_tmpfs_t,s0)
/dev/shm/sem\,cpp_.* -- gen_context(system_u:object_r:polaris_cpp_tmpfs_t,s0)
/dev/shm/sem\,CPP_.* -- gen_context(system_u:object_r:polaris_cpp_tmpfs_t,s0)
/dev/shm/sem\,CGM_SHM_SEM -- gen_context(system_u:object_r:polaris_cpp_tmpfs_t,s0)
/dev/shm/cpp_ucose_dram -- gen_context(system_u:object_r:polaris_cpp_tmpfs_t,s0)
/dev/shm/cpp_sbs_shm -- gen_context(system_u:object_r:polaris_cpp_tmpfs_t,s0)

/mnt/huge/cpp_ucose_dram -- gen_context(system_u:object_r:polaris_cpp_tmpfs_t,s0)

/tmp/cpp_ifdev_rep -p gen_context(system_u:object_r:polaris_cpp_tmp_t,s0)
/tmp/cpp_ifdev_req -p gen_context(system_u:object_r:polaris_cpp_tmp_t,s0)
/tmp/cpp_anon_db -- gen_context(system_u:object_r:polaris_cpp_tmp_t,s0)

```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscpp.fc
```

No license file was found, but licenses were detected in source scan.

```

#
December 2019, Victor Kamensky
#
Copyright (c) 2019-2020 by Cisco Systems, Inc.
All rights reserved
#

```

```
policy_module(polarisservicemgr, 1.0);
```

```

gen_require(
 type polaris_service_mgr_t;
)

```

```

polaris_btrace_data_manage(polaris_service_mgr_t)
polaris_crft_data_manage(polaris_service_mgr_t)
polaris_chasfs_manage(polaris_service_mgr_t)
polaris_cpld_read(polaris_service_mgr_t)
polaris_flashlib_read(polaris_service_mgr_t)
polaris_lua_read(polaris_service_mgr_t)
polaris_tdlresolve_read(polaris_service_mgr_t)

```

```
polaris_rpc_sman_ui_serv_connect(polaris_service_mgr_t)
```

```
polaris_db_tlddb_dir_use(polaris_service_mgr_t)
```

```
Use REPM MQIPC for replication
```

```
polaris_repm_peer_mqipc_manage(polaris_service_mgr_t)
```

```
#watches of /tmp/[rp]fp[cc]/pvp/process_state directory
polaris_process_state_watch(polaris_service_mgr_t)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polaris servicemgr.te
```

No license file was found, but licenses were detected in source scan.

```
#
```

```
March 2017, Victor Kamensky
```

```
#
```

```
Copyright (c) 2016-2021 by Cisco Systems, Inc.
```

```
All rights reserved
```

```
#
```

```
policy_module(polarispvp, 1.0);
```

```
polaris_process_domain_template(pvp)
```

```
transition to pman domain, once pman is invoked by pvp
```

```
polaris_pman_domtrans(polaris_pvp_t)
```

```
corecmd_exec_bin(polaris_pvp_t)
```

```
corecmd_exec_shell(polaris_pvp_t)
```

```
can execute hostname in pvp domain
```

```
hostname_exec(polaris_pvp_t)
```

```
can execute process in polaris domain
```

```
polaris_exec(polaris_pvp_t)
```

```
allow to read /proc/meminfo
```

```
kernel_read_system_state(polaris_pvp_t)
```

```
allow to get getattr of /proc file system during find over it
```

```
kernel_getattr_proc(polaris_pvp_t)
```

```
allow read of /etc/passwd
```

```
auth_use_nsswitch(polaris_pvp_t)
```

```
run ldd, which in turns execve "ld.so --verify"
```

```
libs_exec_ld_so(polaris_pvp_t)
```

```
all to read sysctl files in /proc directory
```

```
kernel_read_all_sysctls(polaris_pvp_t)
```

```
work with /tmp files
```

```
type polaris_pvp_tmp_t;
```

```
files_tmp_file(polaris_pvp_tmp_t)
```

```
manage_dirs_pattern(polaris_pvp_t, tmp_t, polaris_pvp_tmp_t)
```

```

manage_files_pattern(polaris_pvp_t, polaris_pvp_tmp_t, polaris_pvp_tmp_t)
manage_fifo_files_pattern(polaris_pvp_t, polaris_pvp_tmp_t, polaris_pvp_tmp_t)
files_tmp_filetrans(polaris_pvp_t, polaris_pvp_tmp_t, { file dir })
filetrans_pattern(domain, tmp_t, polaris_pvp_tmp_t, dir, "pvp")

/tmp/silent_roll_select.log handling on Macallan
filetrans_pattern(domain, tmp_t, polaris_pvp_tmp_t, file, "silent_roll_select.log")

work with /tmp/[rp|fp|cc]/pvp/process_state files
type polaris_process_state_t;
files_tmp_file(polaris_process_state_t)
manage_dirs_pattern(polaris_pvp_t, polaris_pvp_tmp_t, polaris_process_state_t)
manage_files_pattern(polaris_pvp_t, polaris_pvp_tmp_t, polaris_process_state_t)
filetrans_pattern(polaris_pvp_t, polaris_pvp_tmp_t, polaris_process_state_t, dir, "process_state")

LOOK AT ME now all polaris process can change each other process
state. Need to fix it with more process specific labels in case
when polaris_domain_process becomes template.
gen_require(
 attribute polaris_domain;
)
polaris_pvp_manage_process_state_files(polaris_domain)

allow polaris_pvp_t self:capability sys_resource;

readlink access to /proc/<pid>/fd/0 triggers sys_ptrace capability need
allow polaris_pvp_t self:capability { sys_ptrace };

dmidecode_domtrans(polaris_pvp_t)

#on some ngwc pvp has to code-sign-verify silent roll packages
ifdef(^ngwc_family,`
polaris_code_verify_domtrans(polaris_pvp_t)
`)

polaris_btrace_data_manage_all(polaris_pvp_t)
polaris_chasfs_manage(polaris_pvp_t)
polaris_cpld_read(polaris_pvp_t)
polaris_cpld_write(polaris_pvp_t)
polaris_proc_rmonbifo_read(polaris_pvp_t)
polaris_rmonbifo_tmp_read(polaris_pvp_t)
polaris_tdldb_list_dirs(polaris_pvp_t)
polaris_boot_tmp_read(polaris_pvp_t)
polaris_read_debug_conf(polaris_pvp_t)

LOOK AT ME pvp.sh runs find over /proc. Needs access
to state of all processes
domain_read_all_domains_state(polaris_pvp_t)

```

```

pvp.sh can call logger command
logging_send_syslog_msg(polaris_pvp_t)

should it not be moved to dmidecode module or better
change script to call dmidecode with stdin redirected
from /dev/null (i.e dmidecode < /dev/null)
gen_require(
 type dmidecode_t;
)
polaris_pvp_stdin_read(dmidecode_t)

read pman tmp files
polaris_pman_read_tmp_files(polaris_pvp_t)

#allow polaris_pvp_t polaris_udev_tmp_files_t:dir { getattr search };
polaris_udev_tmp_list_dirs(polaris_pvp_t)

gen_require(
 type initrc_t;
 type init_t;
)
#init_script_tmp_filetrans(initrc_t, polaris_pvp_tmp_t, file, "iosd_memory_share")
files_tmp_filetrans({ initrc_t init_t }, polaris_pvp_tmp_t, file, "iosd_memory_share")

polaris_systemd_tmpfiles_tmp_filetrans(polaris_pvp_tmp_t, dir, "max_elastic_bays")

direct access to serial TTY devices like /dev/ttyS1
term_write_unallocated_ttys(polaris_pvp_t)

For Cabo, allow access to GNSS device
#ifdef(^cabo_platform',`
polaris_cabo_gnss_dev_use(polaris_pvp_t)
`)

on ultra pvp calls hv_ttyprobe utility to figure out what terminal
to use as console, and this one need read access to terminal. There is
no separate macro for read only. But since we granting write to everyone
let use 'use' which means read/write
#ifdef(^vxe_family',`
term_use_unallocated_ttys(polaris_pvp_t)
`)
#ifdef(^wlc_family',`
term_use_unallocated_ttys(polaris_pvp_t)
`)
pvp's linux_iods_image_env.sh will check /dev/ttyUSB* ports with hv_ttyprobe too.
term_use_usb_ttys(polaris_pvp_t)

```

```

allow access and modify files in /tftp directory, cannot use tftp_manage_rw_content
since it does not cover link files
gen_require(
 type tftpd_dir_rw_t;
)
manage_dirs_pattern(polaris_pvp_t, tftpd_dir_rw_t, tftpd_dir_rw_t)
manage_files_pattern(polaris_pvp_t, tftpd_dir_rw_t, tftpd_dir_rw_t)
manage_lnk_files_pattern(polaris_pvp_t, tftpd_dir_rw_t, tftpd_dir_rw_t)

ASR1K modular platforms create /tftp/inv/inventory_$(fru)_$(slot).bin
/tftp/inv is not a softlink but a directory for asr1k Modular platforms.
So it needs a file transition to polaris_chasfs_t for accessing it.
ifdef(`mcp_family',`
filetrans_pattern(domain, tftpd_dir_rw_t, polaris_chasfs_t, dir, "inv")
)
on ultra platform hv_ttyprobe utility that runs under polaris_pvp_t label
checks for existence of /boot/ttyS0_ignore file; and since /boot is symlink
to /varied it need dir search permission over polaris_disk_varied_t
ifdef(`vxe_family',`
polaris_disk_varied_search(polaris_pvp_t)
)
ifdef(`wlc_family',`
polaris_disk_varied_search(polaris_pvp_t)
)

pvp.sh calls cp utility with -a option that should preserve files
attributes as result cp needs to perform set_process_security_ctx call
which in turns calls setfscreatecon
allow polaris_pvp_t self:process setfscreate;

pvp.sh calls pidof utility and it needs read access to sysfs_t
#
When resetting a partner, pvp writes to the PCIe switch global
reset register using the i2c driver, which is also sysfs_t
LOOK AT ME should we create a new type for the PCIe switch reg
dev_rw_sysfs(polaris_pvp_t)

wants to execute /bin/dmesg
dmesg_domtrans(polaris_pvp_t)

wants to read from /tmp/rp/pvp/work/inot_fifo
gen_require(
 type dmesg_t;
)
rw_fifo_files_pattern(dmesg_t, polaris_pvp_tmp_t, polaris_pvp_tmp_t)

wants to write into /bootflash/.prst_sync
polaris_persistent_manage(polaris_pvp_t)

```



```

pvp tried to find all execept hman polaris process with
'find /tmp/rp/process -name *.pid ! -name *hman* -printf %p' command
should be able to read pman tmp files
polaris_pman_read_tmp_files(polaris_pvp_t)

on way down pvp.sh call 'workon.sh rp 0 rotate force' so we
need to transition and run it in btrace_rotate domain
polaris_btrace_rotate_domtrans(polaris_pvp_t)

on way down pvp.sh checks for *.TEMP_IN_PROGRESS in /misc/scratch/core
need to be able read /misc/scratch link
polaris_disk_bootflash_read_lnk(polaris_pvp_t)

implode.sh things, should we run them in its own domain?

removes /etc/exports, create a new empty one and runs 'exportfs -ua'
this action also needs kernel_rw_rpc_sysctls to flush
files_manage_etc_files(polaris_pvp_t)
gen_require(
 type exports_t;
)
allow polaris_pvp_t exports_t:file delete_file_perms;
rpc_write_exports(polaris_pvp_t)
rpc_manage_nfs_state_data(polaris_pvp_t)
kernel_rw_rpc_sysctls(polaris_pvp_t)

calls 'systemctl reboot'
systemd_start_power_services(polaris_pvp_t)

pvp on lng attempts to rm readonly fpd firmware file, not sure why
polaris_firmware_getattr(polaris_pvp_t)

pvp reads /tmp/iosd_level
polaris_lm_tmp_read(polaris_pvp_t)
allow polaris_pvp_t self:capability dac_override;

in some image pvp needs to monut /tmp/rp/tdlodb, in other images
it got mount by chasfs_boottime.sh systemd unit
polaris_tdlodb_manage_dirs(polaris_pvp_t)
mount_domtrans(polaris_pvp_t)

in some cases pvp script creates /tmp/xx/process directory
polaris_pman_tmp_filetrans(polaris_pvp_t, dir, "process")
polaris_pman_manage_tmp_files(polaris_pvp_t)

on ngwc pvp creates /flash1/NVRAM directory
gen_require(

```

```

 type polaris_nvram_file_t;
 type root_t;
)
filetrans_pattern(polaris_pvp_t, root_t, polaris_nvram_file_t, dir, "flash1")
manage_dirs_pattern(polaris_pvp_t, polaris_nvram_file_t, polaris_nvram_file_t)

obtain access to rommon vars which live in flashlib
polaris_flashlib_read(polaris_pvp_t)
polaris_flashlib_write(polaris_pvp_t)

on ngwc platforms pvp creates a /obfl_cc directory and soft links it
to the correct vbd device
ifdef(^ngwc_family',`
gen_require(
 type polaris_obfl_data_t;
 type root_t;
)
filetrans_pattern(polaris_pvp_t, root_t, polaris_obfl_data_t, dir, "obfl_cc")
)
on ngwc platforms pvp needs to be able to determine if the the vbd devices
exist. The types may be slightly different depending on whether the cc's
device node is managed by udev or not
ifdef(^ngwc_family',`
dev_getattr_generic_blk_files(polaris_pvp_t)
storage_getattr_fixed_disk_dev(polaris_pvp_t)
udev_read_db(polaris_pvp_t)
)

on ngwc platforms pvp soft links the /tmp/sw/cc_srdriver/<slot> directory
to the correct silent roll software package via vbd_sr_app_init()
ifdef(^ngwc_family',`
polaris_sw_data_manage(polaris_pvp_t)
)

on blackheart pvp creates /blackheart_config directory
ifdef(^blackheart_platform',`
gen_require(
 type polaris_nvram_file_t;
 type root_t;
)
filetrans_pattern(polaris_pvp_t, root_t, polaris_nvram_file_t, dir, "blackheart_config")
manage_dirs_pattern(polaris_pvp_t, polaris_nvram_file_t, polaris_nvram_file_t)
)

on sparrow pvp creates /sparrow_config directory
ifdef(^sparrow_platform',`
gen_require(
 type polaris_nvram_file_t;

```

```

 type root_t;
)
filetrans_pattern(polaris_pvp_t, root_t, polaris_nvram_file_t, dir, "sparrow_config")
manage_dirs_pattern(polaris_pvp_t, polaris_nvram_file_t, polaris_nvram_file_t)
)

on Aventus pvp creates /aventus_config directory
ifdef(`aventus_platform',`
gen_require(`
 type polaris_nvram_file_t;
 type root_t;
)
filetrans_pattern(polaris_pvp_t, root_t, polaris_nvram_file_t, dir, "aventus_config")
manage_dirs_pattern(polaris_pvp_t, polaris_nvram_file_t, polaris_nvram_file_t)
fs_manage_configfs_files(polaris_pvp_t)
)

on utah for cc and on lng cyan_init.sh is executed by pvp
polaris_dyncfg_domtrans(polaris_pvp_t)
should it not be moved to cyan module or better
change script to call cyan_init.sh with stdin redirected
from /dev/null (i.e cyan_init.sh < /dev/null)
gen_require(`
 type polaris_dyncfg_t;
)
polaris_pvp_stdin_read(polaris_dyncfg_t)

mktmpfs checks /tmp file system attributes
fs_getattr_tmpfs(polaris_pvp_t)

optional_policy(`
pvp on nyquist ls /tmp/ufs/crashinfo
polaris_ncd_tmp_read(polaris_pvp_t)
)

transition to polaris_load_usbnet_t, once load_usbnet.sh is invoked by pvp
crankshaft platforms need access to configfs
ifdef(`crankshaft_family',`
polaris_load_usbnet_domtrans(polaris_pvp_t)
gen_require(`
 type configfs_t;
)
allow polaris_pvp_t configfs_t:dir getattr;
)

runs rsync -ptgoDLq /bootflash/.installer/issu_crash/fru_crash rsync://rp0-0/bootflash/.installer/...
rsync_entry_type(polaris_pvp_t)

```

```

ifdef(`ngwc_family',`
polaris_chvrf_domtrans(polaris_pvp_t)
gen_require(`
 type rsync_t;
 ')
allow rsync_t polaris_pvp_t:process sigchld;

pvp_tmp file descriptor leaks into mcp_chvrf.sh
gen_require(`
 type polaris_chvrf_t;
 type polaris_pvp_tmp_t;
 ')
allow polaris_chvrf_t polaris_pvp_tmp_t:fifo_file { ioctl read };
')

statfs64 over /tmp
fs_getattr_xattr_fs(polaris_pvp_t)

polaris_tdlresolve_read(polaris_pvp_t)

corenet_tcp_connect_rsync_port(polaris_pvp_t)

#runs over /proc/<pid>/net/arp
kernel_read_network_state(polaris_pvp_t)

#runs over /proc/
kernel_read_network_state_symlinks(polaris_pvp_t)

work with mounts
mount_domtrans(polaris_pvp_t)

optional_policy(`
pvp.sh may mark or clear bits in /proc/exiting_bays
polaris_rw_exiting_bays(polaris_pvp_t)
')

optional_policy(`
container_runtime_domtrans(polaris_pvp_t)
')

LOOK AT ME /usr/binos/conf/dockerd_env.sh not only sets environment
it also does quite a bit of action in context of pvp when it got
sourced before dockerd start
optional_policy(`
fs_getattr_all_fs(polaris_pvp_t)
files_getattr_all_dirs(polaris_pvp_t)
fs_read_nsfs_files(polaris_pvp_t)
container_manage_config_files(polaris_pvp_t)

```

```

polaris_caf_files_read(polaris_pvp_t)
creates /var/log/docker/docker.log
logging_manage_generic_logs(polaris_pvp_t)
gen_require(
 type var_log_t;
)
allow polaris_pvp_t var_log_t:dir create;
)

support uswap feature.
pvp script create and deletes
the /bootflash./uswap/... folder.
type polaris_uswap_files_t;
files_type(polaris_uswap_files_t)
polaris_pfile_type(polaris_uswap_files_t)
filetrans_pattern(polaris_pvp_t, polaris_disk_bootflash_t, polaris_uswap_files_t, dir, ".USWAP")
manage_dirs_pattern(polaris_pvp_t, polaris_uswap_files_t, polaris_uswap_files_t)
manage_files_pattern(polaris_pvp_t, polaris_uswap_files_t, polaris_uswap_files_t)
manage_lnk_files_pattern(polaris_pvp_t, polaris_uswap_files_t, polaris_uswap_files_t)

support for pvp to create /harddisk/.CRFT directory
filetrans_pattern(polaris_pvp_t, polaris_disk_bootflash_t, polaris_crft_data_t, dir, ".CRFT")

Support SAI
type polaris_pvp_sai_t;
files_tmp_file(polaris_pvp_sai_t)
filetrans_pattern(polaris_pvp_t, polaris_pvp_tmp_t, polaris_pvp_sai_t, dir, "sai_process")
manage_dirs_pattern(polaris_pvp_t, polaris_pvp_tmp_t, polaris_pvp_sai_t)
manage_files_pattern(polaris_pvp_t, polaris_pvp_tmp_t, polaris_pvp_sai_t)
all processes controlled by pchort require access to sai files
gen_require(
 attribute polaris_domain;
)
polaris_pvp_read_sai_files(polaris_domain)

ifndef(^ngwc_family)`
ngmod_vbd_handle_mount@.service started by pvp on macallan
systemd_config_generic_services(polaris_pvp_t)
)

type polaris_pvp_var_run_t;
files_pid_file(polaris_pvp_var_run_t)
gen_require(
 type var_run_t;
)
manage_files_pattern(polaris_pvp_t, var_run_t, polaris_pvp_var_run_t)
files_pid_filetrans(polaris_pvp_t, polaris_pvp_var_run_t, file, ".uswap_clr_rp")
files_pid_filetrans(polaris_pvp_t, polaris_pvp_var_run_t, file, ".uswap_clr_fp")

```

```
files_pid_filetrans(polaris_pvp_t, polaris_pvp_var_run_t, file, ".uswap_clr_cc")
```

```
watch over /tmp/rp/pvp/control
allow polaris_pvp_t polaris_pvp_tmp_t:dir watch;
```

```
permissions required during shutdown
```

```
implode.sh 'systemctl reboot' uses dbus
dbus_system_bus_client(polaris_pvp_t)
```

```
and checks reboot.target
systemd_status_power_services(polaris_pvp_t)
```

```
writes sysctrl_i2c.lck file
gen_require(
 type polaris_cm_rp_tmp_t;
)
files_tmp_filetrans(polaris_pvp_t, polaris_cm_rp_tmp_t, file, "sysctrl_i2c.lck")
polaris_cm_rp_tmp_manage(polaris_pvp_t)
```

```
journalctl and ifconfig are used when gathering logs during a punt-inject
crash
journalctl_domtrans(polaris_pvp_t)
sysnet_domtrans_ifconfig(polaris_pvp_t)
and allow it to write to our shutdownlog
gen_require(
 type ifconfig_t;
)
polaris_btrace_data_manage_all(ifconfig_t)
```

```
implode.sh checks ip interfaces before ifconfig
polaris_socketat_nsfs_read(polaris_pvp_t)
```

```
cedge uses logrotate
polaris_ripc_confd_ipc_connect(polaris_pvp_t)
logrotate perms
polaris_confd_var_log_manage(polaris_pvp_t)
allow polaris_pvp_t self:capability { chown fowner };
var_lib stuff
files_manage_urandom_seed(polaris_pvp_t)
```

```
vconfd_script_admin_tech.sh is invoked by pvp.sh. This requires a domain
transition from pvp to admin tech context.
polaris_admin_tech_domtrans(polaris_pvp_t)
```

```
systemreport related permissions
pd_info collection when triggering systemreport
```

```

fdisk permissions
storage_raw_read_fixed_disk(polaris_pvp_t);
fstools_manage_entry_files(polaris_pvp_t);
fstools_exec(polaris_pvp_t);
polaris_rommon_device_read(polaris_pvp_t)
dmesg writes to pd_info path
write_files_pattern(dmesg_t, polaris_disk_bootflash_t, polaris_disk_bootflash_t)
gen_require(
 type admin_home_t;
)
top creates/writes dir /.config
allow polaris_pvp_t admin_home_t:dir { add_name create write };
drop-caches
kernel_rw_vm_sysctls(polaris_pvp_t);

```

```

systemreport collection reads all sorts of files
but also deletes those files afterwards...
logging_manage_audit_log(polaris_pvp_t)

```

```

report collects maroon data
polaris_maroon_data_manage_all(polaris_pvp_t);
polaris_tdlresolve_manage(polaris_pvp_t);

```

```

collect udev log
polaris_udev_tmp_manage(polaris_pvp_t)

```

```

init_status(polaris_pvp_t);

```

Found in path(s):

```

* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarispvp.te
No license file was found, but licenses were detected in source scan.

```

dnl

dnl April 2018, Victor Kamensky

dnl

dnl Copyright (c) 2018-2019 by Cisco Systems, Inc.

dnl All rights reserved

dnl

```

define(ripc_stem', `translit(patsubst($1, `-rip$', ``), `-', `_)')

```

```

define(ripc_label', `format(polaris_%s_ripc_port_t', ripc_stem($1)))

```

dnl Ripc Type Map: track that type declations unique

```

define(ripc_type_map', `defn(format(`ripc_type_map[%s]', `$1'))')

```

```

define(ripc_type_map_set', `define(format(`ripc_type_map[%s]', `$1'), `$2')')

```

Found in path(s):

```

* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/polaris_ipc_rip.c.m4

```

No license file was found, but licenses were detected in source scan.

```

July 2017, Victor Kamensky

Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved
#
```

```
policy_module(polarisquack, 1.0);
```

```

Quack Driver policy
#####
```

```
type polaris_quack_device_t;
dev_node(polaris_quack_device_t)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisquack.te
No license file was found, but licenses were detected in source scan.
```

```

March 2017, Victor Kamensky

Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#
```

```
Polaris lua files
/lua/(.*)?(.*)\.lua -- gen_context(system_u:object_r:polaris_lua_file_t,s0)
/usr/binos/conf/(.*)?(.*)\.lua -- gen_context(system_u:object_r:polaris_lua_file_t,s0)
/lua/(.*)?(.*)\.so -- gen_context(system_u:object_r:lib_t,s0)
/lua/(.*)?(.*) -d gen_context(system_u:object_r:usr_t,s0)
/lua -d gen_context(system_u:object_r:usr_t,s0)
```

```
#Polaris nginx lua files
/var/scripts/lua/(.*)? -d gen_context(system_u:object_r:polaris_lua_file_t,s0)
/var/scripts/lua/(.*)? -- gen_context(system_u:object_r:polaris_lua_file_t,s0)
```

```
why did we put .so libraries in /var directory?
/var/LibLua/LuaXML_lib\,so -- gen_context(system_u:object_r:lib_t,s0)
/var/LibLua/cjson\,so -- gen_context(system_u:object_r:lib_t,s0)
/var/LibLua/(.*)\.lua -- gen_context(system_u:object_r:polaris_lua_file_t,s0)
```

```
#/lua -- gen_context(system_u:object_r:polaris_lua_file_t,s0)
/lua/(.*)? -- gen_context(system_u:object_r:polaris_lua_file_t,s0)
```



Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarislua.fc

No license file was found, but licenses were detected in source scan.

#

# March 2017, Victor Kamensky

#

# Copyright (c) 2016-2019 by Cisco Systems, Inc.

# All rights reserved

#

/tmp/sw/cfg(/.\*)? gen\_context(system\_u:object\_r:polaris\_cfg\_data\_t,s0)

/usr/bin/os/conf/cfg\_sync.sh -- gen\_context(system\_u:object\_r:polaris\_cfg\_sync\_exec\_t,s0)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscfg.fc

No license file was found, but licenses were detected in source scan.

#

# April 2017, Victor Kamensky

#

# Copyright (c) 2017-2019 by Cisco Systems, Inc.

# All rights reserved

#

/var/log/dmi(/.\*)? gen\_context(system\_u:object\_r:polaris\_dmi\_var\_log\_t,s0)

/tmp/stream-parsers(/.\*)? gen\_context(system\_u:object\_r:polaris\_dmi\_parser\_t,s0)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisdmiopdatamgrd.fc

No license file was found, but licenses were detected in source scan.

#

# June 2017, Victor Kamensky

#

# Copyright (c) 2017-2021 by Cisco Systems, Inc.

# All rights reserved

#

## <summary>Polaris container Policy Rules.</summary>

#####

## <summary>

## Creates types and rules for a basic

## polaris container process domain.

## </summary>

## <param name="stem">

```

<summary>
Stem for the domain. Name is constructed as polaris_stem_container_t
</summary>
</param>
#
template(`polaris_container_domain_template`,
gen_require(`
 type svirt_sandbox_file_t;
 type virt_lxc_var_run_t;
 attribute sandbox_net_domain;
 attribute svirt_sandbox_domain;
 bool virt_sandbox_use_sys_admin;
 bool virt_sandbox_use_mknod;
 bool virt_sandbox_use_all_caps;
 bool virt_sandbox_use_netlink;
`)

type polaris_$1_container_t, svirt_sandbox_domain;
domain_type(polaris_$1_container_t)
domain_user_exemption_target(polaris_$1_container_t)
mls_rangetrans_target(polaris_$1_container_t)
mcs_constrained(polaris_$1_container_t)
role system_r types polaris_$1_container_t;

logging_send_syslog_msg(polaris_$1_container_t)

kernel_read_system_state(polaris_$1_container_t)
kernel_read_all_proc(polaris_$1_container_t)

 virt_default_capabilities(polaris_$1_container_t)
 typeattribute polaris_$1_container_t sandbox_net_domain;
 dontaudit polaris_$1_container_t self:capability fsetid;
 dontaudit polaris_$1_container_t self:capability2 block_suspend ;
 allow polaris_$1_container_t self:process { execstack execmem };
 manage_chr_files_pattern(polaris_$1_container_t, svirt_sandbox_file_t, svirt_sandbox_file_t)
 kernel_load_module(polaris_$1_container_t)

 tunable_policy(`virt_sandbox_use_sys_admin`,
 allow polaris_$1_container_t self:capability sys_admin;
)

 tunable_policy(`virt_sandbox_use_mknod`,
 allow polaris_$1_container_t self:capability mknod;
)

 tunable_policy(`virt_sandbox_use_all_caps`,
 allow polaris_$1_container_t self:capability all_capability_perms;
 allow polaris_$1_container_t self:capability2 all_capability2_perms;

```

```

)

tunable_policy(`virt_sandbox_use_netlink`,`
 allow polaris_${1}_container_t self:netlink_socket create_socket_perms;
 allow polaris_${1}_container_t self:netlink_tcpdiag_socket create_netlink_socket_perms;
 allow polaris_${1}_container_t self:netlink_kobject_uevent_socket create_socket_perms;
`,`
 logging_dontaudit_send_audit_msgs(polaris_${1}_container_t)
)

allow polaris_${1}_container_t virt_lxc_var_run_t:dir list_dir_perms;
allow polaris_${1}_container_t virt_lxc_var_run_t:file read_file_perms;

kernel_read_irq_sysctls(polaris_${1}_container_t)
kernel_read_messages(polaris_${1}_container_t)

dev_read_sysfs(polaris_${1}_container_t)
dev_read_mtrr(polaris_${1}_container_t)
dev_read_rand(polaris_${1}_container_t)
dev_read_urand(polaris_${1}_container_t)

files_read_kernel_modules(polaris_${1}_container_t)

Do we actually need these?
fs_mount_cgroup(polaris_${1}_container_t)
fs_manage_cgroup_dirs(polaris_${1}_container_t)
fs_manage_cgroup_files(polaris_${1}_container_t)
Needed for docker
fs_unmount_xattr_fs(polaris_${1}_container_t)

auth_use_nsswitch(polaris_${1}_container_t)

optional_policy(`
rpm_read_db(polaris_${1}_container_t)
`)

logging_send_syslog_msg(polaris_${1}_container_t)

tunable_policy(`virt_sandbox_use_audit`,`
 logging_send_audit_msgs(polaris_${1}_container_t)
`)

userdom_use_user_ptys(polaris_${1}_container_t)

optional_policy(`
 # allow vman to kill lxc container process
 # on shutdown where vman destroys container-related
 # stuff after a timeout period

```

```

 polaris_vman_kill_process(polaris_${1}_container_t)
 ')

 # copied from polariscommon.if. If the label is added in
 # in permissive map, the below interface will make permissive
 ifelse(permissive_domain(polaris_${1}_container_t), polaris_${1}_container_t,
`polaris_permissive_domain_setup(polaris_${1}_container_t)',
 confined_domain(polaris_${1}_container_t), polaris_${1}_container_t, `',
 `polaris_domain_maybe_unconfined(polaris_${1}_container_t)')

')

#####
<summary>
Creates types and rules for a basic
polaris KVM container process domain.
</summary>
<param name="stem">
<summary>
Stem for the domain. Name is constructed as polaris_stem_container_t
</summary>
</param>
#
template(`polaris_kvm_domain_template',`
gen_require(`
 attribute virt_domain;
 type svirt_image_t;
')

for now, things are same as polaris_container_domain_template
polaris_container_domain_template($1)

typeattribute polaris_${1}_container_t virt_domain;
allow {map} of svirt_image_t needed by VWAAS similar to svirt
allow polaris_${1}_container_t svirt_image_t:{ file blk_file } map;
)

#####
<summary>
Read Sandbox Files
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_sandbox_file_read',`
gen_require(`

```

```

 type svirt_sandbox_file_t;
 ')
 read_files_pattern($1, svirt_sandbox_file_t, svirt_sandbox_file_t)
 read_lnk_files_pattern($1, svirt_sandbox_file_t, svirt_sandbox_file_t)
 list_dirs_pattern($1, svirt_sandbox_file_t, svirt_sandbox_file_t)
)

#####
<summary>
Read Sandbox Files
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_sandbox_file_dir_list',`
 gen_require(`
 type polaris_disk_bootflash_t;
 type polaris_disk_harddisk_t;
 type svirt_sandbox_file_t;
 ')
 list_dirs_pattern($1, { svirt_sandbox_file_t polaris_disk_bootflash_t polaris_disk_harddisk_t },
svirt_sandbox_file_t)
 optional_policy(`
 gen_require(`
 type polaris_iox_alt_hdd_files_t;
 ')
 list_dirs_pattern($1, polaris_iox_alt_hdd_files_t , svirt_sandbox_file_t)
 ')
)

#####
<summary>
Getattr of Sandbox Files
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_sandbox_file_getattr',`
 gen_require(`
 type polaris_disk_bootflash_t;
 type polaris_disk_harddisk_t;

```

```

 type svirt_sandbox_file_t;
)
 getattr_files_pattern($1, { svirt_sandbox_file_t polaris_disk_bootflash_t polaris_disk_harddisk_t },
svirt_sandbox_file_t)
 optional_policy(
 gen_require(
 type polaris_iox_alt_hdd_files_t;
)
 getattr_files_pattern($1, polaris_iox_alt_hdd_files_t, svirt_sandbox_file_t)
)
)
)

```

```

#####
<summary>
Normal restricted permission to execute utd (snort) container
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolebase/>
#
interface(polaris_utd_container,`
 allow $1 self:netlink_generic_socket client_stream_socket_perms;
)

```

```

#####
<summary>
Allow domain transition
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(polaris_iox_container_domtrans,`
 gen_require(
 type polaris_iox_container_t;
 type container_file_t;
)
 domain_transition_pattern($1, container_file_t, polaris_iox_container_t)
)

```

```

#####
<summary>

```

```

Allow watch on container files
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_iox_container_watch',`
 gen_require(`
 type tmpfs_t;
 type container_file_t;
 `)
 allow $1 container_file_t:{ dir file lnk_file} watch;
 allow $1 tmpfs_t:{ dir file lnk_file} watch;
)

#####
<summary>
Send messages to utdl container unix datagram sockets.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_utdl_container_dgram_send',`
 gen_require(`
 type polaris_utdl_container_t;
 `)
 allow $1 polaris_utdl_container_t:unix_dgram_socket sendto;
)

#####
<summary>
Allow unix stream socket connect
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_waas_stream_connect',`
 gen_require(`
 type polaris_waas_container_t;

```

```
)
allow $1 polaris_waas_container_t:unix_stream_socket connectto;
)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscontainer.if
```

No license file was found, but licenses were detected in source scan.

```

March 2017, Victor Kamensky

Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#
```

```
/tmp/\.flashlock -- gen_context(system_u:object_r:polaris_flashlib_lock_t,s0)
/tmp/flashdev.log -- gen_context(system_u:object_r:polaris_flashlib_log_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisflashlib.fc
```

No license file was found, but licenses were detected in source scan.

```

Oct 2020, Xin Xiang

Copyright (c) 2020 by Cisco Systems, Inc.
All rights reserved
#
```

```
dma map devices
/dev/dmabmap -c gen_context(system_u:object_r:polaris_dmabmap_device_t,s0)
```

```
/dev/dma_nw is introduced by Nightwatch switch module on ESG routing platform
/dev/dma_nw -c gen_context(system_u:object_r:polaris_dmabmap_device_t,s0)
```

```
dplr interrupt devices
/dev/dplr_intrpt -c gen_context(system_u:object_r:polaris_dplr_device_t,s0)
```

```
/dev/dplr_nw is introduced by Nightwatch switch module on ESG routing platform
/dev/dplr_nw -c gen_context(system_u:object_r:polaris_dplr_device_t,s0)
```

```
e.g., /dev/msi/Slot8/Doppler0/Group0
/dev/msi/Slot[0-9]*/Doppler[0-9]* -c gen_context(system_u:object_r:polaris_dplr_device_t,s0)
/dev/msi/Slot[0-9]*/Doppler[0-9]*/(.*)? -c gen_context(system_u:object_r:polaris_dplr_device_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisdoppler.fc
```



No license file was found, but licenses were detected in source scan.

```
#
March 2017, Victor Kamensky
#
Copyright (c) 2017-2020 by Cisco Systems, Inc.
All rights reserved
#

<summary>Polaris ncd Policy Rules.</summary>

#####
<summary>
Make the specified domain able to manage tmp file created by
ncd.sh like /tmp/etc/ncd_work_dir
</summary>
<param name="type">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_ncd_tmp_manage`,`
 gen_require(`
 type polaris_ncd_tmp_t;
 `)
 manage_dirs_pattern($1, polaris_ncd_tmp_t, polaris_ncd_tmp_t)
 manage_files_pattern($1, polaris_ncd_tmp_t, polaris_ncd_tmp_t)
 manage_lnk_files_pattern($1, polaris_ncd_tmp_t, polaris_ncd_tmp_t)
`)

#####
<summary>
Make the specified domain able to read tmp file created by
ncd.sh like /tmp/ufs/crashinfo
</summary>
<param name="type">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_ncd_tmp_read`,`
 gen_require(`
 type polaris_ncd_tmp_t;
 `)
 list_dirs_pattern($1, polaris_ncd_tmp_t, polaris_ncd_tmp_t)
 read_files_pattern($1, polaris_ncd_tmp_t, polaris_ncd_tmp_t)
```

```

 read_lnk_files_pattern($1, polaris_ncd_tmp_t, polaris_ncd_tmp_t)
)

#####
<summary>
Make the specified domain able to read etc file created by
ncd.sh like /etc/conf/unifiedfs/mount_data
</summary>
<param name="type">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_ncd_etc_read`,`
 gen_require(`
 type polaris_ncd_etc_t;
 `)
 read_files_pattern($1, polaris_ncd_etc_t, polaris_ncd_etc_t)
)

#####
<summary>
Execute a domain transition to run ncd.
</summary>
<param name="domain">
<summary>
Domain allowed to transition.
</summary>
</param>
#
interface(`polaris_ncd_domtrans`,`
 gen_require(`
 type polaris_ncd_t, polaris_ncd_exec_t;
 `)
 domtrans_pattern($1, polaris_ncd_exec_t, polaris_ncd_t)
)

#####
<summary>
Execute a domain transition to run unifiedfs_helper.sh.
</summary>
<param name="domain">
<summary>
Domain allowed to transition.
</summary>
</param>

```

```

#
interface(`polaris_ufs_helper_domtrans',`
 gen_require(`
 type polaris_ufs_helper_t, polaris_ufs_helper_exec_t;
 ')

 domtrans_pattern($1, polaris_ufs_helper_exec_t, polaris_ufs_helper_t)
')

#####
<summary>
Run rpcinfo in a domain, grant proper network permissions.
</summary>
<param name="domain">
<summary>
Domain allowed to transition.
</summary>
</param>
#
interface(`polaris_ncd_rpcinfo_net',`
 corenet_tcp_bind_generic_node($1)
 corenet_tcp_bind_all_rpc_ports($1)
 corenet_tcp_connect_all_rpc_ports($1)
 corenet_tcp_connect_unreserved_ports($1)
 allow $1 self:tcp_socket { bind connect create getattr getopt setopt };

 corenet_udp_bind_generic_node($1)
 corenet_udp_bind_all_rpc_ports($1)
 allow $1 self:udp_socket { bind create getattr getopt setopt };

 corenet_tcp_connect_portmap_port($1)

ifdef(`passport_platform',`
 # invoked rpcinfo which connects to port 2049 (nfs server)
 # port is incorrectly labelled due to falling in range of TDL define
 # of IOSd gold rpc service
 polaris_ripc_iosd_gold_connect($1)
')

ifdef(`starfleet_platform',`
 # invoked rpcinfo which connects to port 2049 (nfs server)
 # port is incorrectly labelled due to falling in range of TDL define
 # of IOSd gold rpc service
 polaris_ripc_iosd_gold_connect($1)
')

ifdef(`bigbang_platform',`

```

```
#nfs server port 2049 is labelled as ripc-emd_ui_port_t based on TDL define
polaris_ripc_emd_ui_connect($1)
')
')
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisncd.if
No license file was found, but licenses were detected in source scan.
```

```
#
July 2017, Victor Kamensky
#
Copyright (c) 2017-2021 by Cisco Systems, Inc.
All rights reserved
#
```

```
policy_module(polariscppcdm, 1.0);
```

```
gen_require(`
 type polaris_cpp_cdm_t;
`)
```

```
polaris_btrace_data_manage(polaris_cpp_cdm_t)
polaris_crft_data_manage(polaris_cpp_cdm_t)
polaris_chasfs_manage(polaris_cpp_cdm_t)
polaris_tdlresolve_read(polaris_cpp_cdm_t)
polaris_tdlldb_list_dirs(polaris_cpp_cdm_t)
polaris_cpld_read(polaris_cpp_cdm_t)
polaris_flashlib_read(polaris_cpp_cdm_t)
```

```
polaris_cpp_tmp_files_use(polaris_cpp_cdm_t)
works with /dev/cpp_dev_info and /dev/cpp_kipc
polaris_cpp_dev_use(polaris_cpp_cdm_t)
polaris_cpp_tmpfs_ifdev_rw(polaris_cpp_cdm_t)
```

```
polaris_icc_broken_relocations(polaris_cpp_cdm_t)
```

```
allow polaris_cpp_cdm_t self:capability net_admin;
```

```
get attributes of /dev/shm from glibc where_is_shmfs function
fs_getattr_tmpfs(polaris_cpp_cdm_t)
```

```
polaris_cpp_cavium_sdk_ipc_use(polaris_cpp_cdm_t)
```

```
LOOK AT ME: raw memory access in cavium vendor SDK
related to octeon driver (BUG CSCvh58515)
#ifdef(`crankshaft_family',`
```

```
polaris_dev_mem_use(polaris_cpp_cdm_t)
')

overlord/neptune access /sys/bus/pci/devices/0000:01:00.0/resource0
when initializing the CPP DMAP library.
optional_policy(
polaris_cpp_cavium_dma_map(polaris_cpp_cdm_t)
')

optional_policy(
polaris_cbdma_dev_use(polaris_cpp_cdm_t)
')
polaris_cpld_dev_use(polaris_cpp_cdm_t)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscppcdm.te
No license file was found, but licenses were detected in source scan.
```

```
#
August 2017, Victor Kamensky
#
Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved
#

<summary>Polaris bsm Policy Rules.</summary>
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisbsm.if
No license file was found, but licenses were detected in source scan.
```

```
#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#
```

```
/obfl -l gen_context(system_u:object_r:polaris_obfl_data_t,s0)
/obfl0 -l gen_context(system_u:object_r:polaris_obfl_data_t,s0)

/tmp/obfl(/.*)? gen_context(system_u:object_r:polaris_obfl_data_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisobfl.fc
No license file was found, but licenses were detected in source scan.
```

```
#
```

# March 2017, Victor Kamensky

#

# Copyright (c) 2016-2019 by Cisco Systems, Inc.

# All rights reserved

#

/dev/cpld -c gen\_context(system\_u:object\_r:polaris\_cpld\_device\_t,s0)

/dev/cpld-ha -c gen\_context(system\_u:object\_r:polaris\_cpld\_device\_t,s0)

/dev/cpld-misc-int -c gen\_context(system\_u:object\_r:polaris\_cpld\_device\_t,s0)

/dev/cpld-virtual-fp -c gen\_context(system\_u:object\_r:polaris\_cpld\_device\_t,s0)

/dev/cpld-virtual-cc -c gen\_context(system\_u:object\_r:polaris\_cpld\_device\_t,s0)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscpld.fc

No license file was found, but licenses were detected in source scan.

dnl

dnl January 2021, Vaibhav Lade

dnl

dnl Copyright (c) 2021 by Cisco Systems, Inc.

dnl All rights reserved

dnl

dnl VPCGW Platform Max Bay Limits

max\_bay\_map\_set(`rp', `per\_bay', 0)

max\_bay\_map\_set(`cc', `per\_bay', 0)

max\_bay\_map\_set(`fp', `per\_bay', 0)

dnl in elastic scope each process has its own value

max\_elastic\_map\_set(`rp', `elastic', BPROC\_UEMGR, 7)

max\_elastic\_map\_set(`cc', `elastic', BPROC\_UEMGR, 7)

max\_elastic\_map\_set(`fp', `elastic', BPROC\_UEMGR, 7)

max\_elastic\_ripc\_map\_set(`rp', `elastic', BPROC\_UEMGR, 7)

max\_elastic\_ripc\_map\_set(`cc', `elastic', BPROC\_UEMGR, 7)

max\_elastic\_ripc\_map\_set(`fp', `elastic', BPROC\_UEMGR, 7)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/m4/vpcgwmaps.m4

No license file was found, but licenses were detected in source scan.

#

# July 2017, Victor Kamensky

#

# Copyright (c) 2017-2019 by Cisco Systems, Inc.

# All rights reserved

#

## <summary>Polaris gsd\_rp Policy Rules.</summary>

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisgsdrp.if

No license file was found, but licenses were detected in source scan.

#

# January 2018, Manohar Hungund

#

# Copyright (c) 2018-2019 by Cisco Systems, Inc.

# All rights reserved

#

policy\_module(polarisoctdplogrp, 1.0);

gen\_require(`

type polaris\_oct\_dp\_log\_rp\_t;

`)

polaris\_btrace\_data\_manage(polaris\_oct\_dp\_log\_rp\_t)

polaris\_chasfs\_manage(polaris\_oct\_dp\_log\_rp\_t)

polaris\_tdlresolve\_read(polaris\_oct\_dp\_log\_rp\_t)

polaris\_tdlldb\_list\_dirs(polaris\_oct\_dp\_log\_rp\_t)

polaris\_cpld\_read(polaris\_oct\_dp\_log\_rp\_t)

polaris\_flashlib\_read(polaris\_oct\_dp\_log\_rp\_t)

polaris\_ripc\_sman\_ui\_serv\_connect(polaris\_oct\_dp\_log\_rp\_t)

# direct access to serial TTY devices

# (octeon\_dp\_logger needs to acces /dev/ttyDASH7)

term\_open\_unallocated\_ttys(polaris\_oct\_dp\_log\_rp\_t)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisoctdplogrp.te

No license file was found, but licenses were detected in source scan.

#

# June 2020, Manu Roy

#

# Copyright (c) 2020 by Cisco Systems, Inc.

# All rights reserved

#

## <summary>Polaris iotswitch Policy Rules.</summary>

#

#

#####

## <summary>

## Work (read, write, ioctl) with /dev/petra-fpga device

```

</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_iots_fpga_dev_use`,`
 gen_require(`
 type device_t;
 type polaris_iots_fpga_device_t;
 `)
 write_chr_files_pattern($1, device_t, polaris_iots_fpga_device_t)
 read_chr_files_pattern($1, device_t, polaris_iots_fpga_device_t)
 allow $1 polaris_iots_fpga_device_t:chr_file map;
)

```

```
#####
```

```

<summary>
Work (read, write, ioctl) with /dev/tm
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_iots_tm_dev_use`,`
 gen_require(`
 type device_t;
 type polaris_iots_tm_device_t;
 `)
 write_chr_files_pattern($1, device_t, polaris_iots_tm_device_t)
 read_chr_files_pattern($1, device_t, polaris_iots_tm_device_t)
 allow $1 polaris_iots_tm_device_t:chr_file map;
)

```

```
#####
```

```

<summary>
Allow access to semaphore with type polaris_cm_rp_t
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_cm_rp_sem_use`,`

```



```

gen_require(
 type polaris_cm_rp_t;
)
allow $1 polaris_cm_rp_t:sem rw_sem_perms;
)

#####
<summary>
Allow access to semaphore with type polaris_iots_mvDmaDrv_device_t
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_mvDmaDrv_dev_use',`
 gen_require(
 type device_t;
 type polaris_iots_mvDmaDrv_device_t;
)
 write_chr_files_pattern($1, device_t, polaris_iots_mvDmaDrv_device_t)
 read_chr_files_pattern($1, device_t, polaris_iots_mvDmaDrv_device_t)
 allow $1 polaris_iots_mvDmaDrv_device_t:chr_file map;
)

#####
<summary>
Allow access to semaphore with type polaris_iots_mvIntDrv_device_t
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_mvIntDrv_dev_use',`
 gen_require(
 type device_t;
 type polaris_iots_mvIntDrv_device_t;
)
 write_chr_files_pattern($1, device_t, polaris_iots_mvIntDrv_device_t)
 read_chr_files_pattern($1, device_t, polaris_iots_mvIntDrv_device_t)
)

#####
<summary>
Manage iots swipedrive files

```

```

</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_swipedrive_file_manage',`
 gen_require(`
 type polaris_iots_swipedrive_file_t;
 `)
 manage_files_pattern($1, polaris_iots_swipedrive_file_t, polaris_iots_swipedrive_file_t)
 manage_lnk_files_pattern($1, polaris_iots_swipedrive_file_t, polaris_iots_swipedrive_file_t)
 manage_dirs_pattern($1, polaris_iots_swipedrive_file_t, polaris_iots_swipedrive_file_t)
)

#####
<summary>
Get the attributes of an swipe drive
filesystem.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_getattr_swipedrive',`
 gen_require(`
 type polaris_iots_swipedrive_file_t;
 `)

 allow $1 polaris_iots_swipedrive_file_t:filesystem getattr;
)

#####
<summary>
Allow access to semaphore with type polaris_iots_led_device_t
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_led_dev_use',`
 gen_require(`
 type device_t;
 `)

```

```
 type polaris_iots_led_device_t;
)
 write_chr_files_pattern($1, device_t, polaris_iots_led_device_t)
 read_chr_files_pattern($1, device_t, polaris_iots_led_device_t)
)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisiotswitch.if

No license file was found, but licenses were detected in source scan.

```
#
December 2019, Victor Kamensky
#
Copyright (c) 2019 by Cisco Systems, Inc.
All rights reserved
#
```

```
<summary>Polaris fnf_agg Policy Rules.</summary>
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisfnfagg.if

No license file was found, but licenses were detected in source scan.

```
#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2020 by Cisco Systems, Inc.
All rights reserved
#
```

```
<summary>Polaris TDLResolve Policy Rules.</summary>
```

```
#####
TDLresolve policy
#####
```

```
#####
```

```
<summary>
Open tdlresolve files
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolebase/>
#
interface(`polaris_tdlresolve_read`,`
```

```

gen_require(
 type polaris_tdlresolve_t;
)
 read_files_pattern($1, polaris_tdlresolve_t, polaris_tdlresolve_t)
 read_lnk_files_pattern($1, polaris_tdlresolve_t, polaris_tdlresolve_t)
 list_dirs_pattern($1, polaris_tdlresolve_t, polaris_tdlresolve_t)
 allow $1 polaris_tdlresolve_t:file map;
gen_require(
 type polaris_global_service_t;
)
 read_files_pattern($1, polaris_global_service_t, polaris_global_service_t)
 allow $1 polaris_global_service_t:file map;
)

#####
<summary>
Manage tdlresolve files
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolebase/>
#
interface(`polaris_tdlresolve_manage')
 gen_require(
 type polaris_tdlresolve_t;
)
 manage_files_pattern($1, polaris_tdlresolve_t, polaris_tdlresolve_t)
 manage_lnk_files_pattern($1, polaris_tdlresolve_t, polaris_tdlresolve_t)
 manage_dirs_pattern($1, polaris_tdlresolve_t, polaris_tdlresolve_t)
 allow $1 polaris_tdlresolve_t:file map;
 gen_require(
 type polaris_global_service_t;
)
 manage_files_pattern($1, polaris_global_service_t, polaris_global_service_t)
 allow $1 polaris_global_service_t:file map;
)

#####
<summary>
Watch tdlresolve directories
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>

```

```
</param>
<rolebase/>
#
interface(`polaris_tdlresolve_watch',`
 gen_require(`
 type polaris_tdlresolve_t;
 `)
 allow $1 polaris_tdlresolve_t:dir watch;
`)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polaristdlresolve.if
No license file was found, but licenses were detected in source scan.
```

```
#
September 2018, Anubha Balani
#
Copyright (c) 2018-2019 by Cisco Systems, Inc.
All rights reserved
#
```

```
/tmp/maroon_stats -d gen_context(system_u:object_r:polaris_maroon_base_t,s0)
zram devices
/dev/zram[0-9]* -b gen_context(system_u:object_r:polaris_zram_device_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarismemory.fc
No license file was found, but licenses were detected in source scan.
```

```
#
July 2020, Victor Kamensky
#
Copyright (c) 2020 by Cisco Systems, Inc.
All rights reserved
#
```

```
policy_module(polarishtx, 1.0);
```

```
gen_require(`
 type polaris_htx_t;
`)
polaris_chasfs_read(polaris_htx_t)
polaris_cpld_read(polaris_htx_t)
polaris_tdlresolve_read(polaris_htx_t)

polaris_ripc_sman_ui_serv_connect(polaris_htx_t)

logging_send_syslog_msg(polaris_htx_t)
```

```

LOOK AT ME uses shell and mkdir just to create /tmp/HTX-IOX directory
should be single mkdir system call, in fact even this may not
be needed since it is created by system-tempfiles
corecmd_exec_shell(polaris_htx_t)
corecmd_exec_bin(polaris_htx_t)
auth_use_nsswitch(polaris_htx_t)

call posix_sysconf that opens /sys/devices/system/cpu/online
dev_read_sysfs(polaris_htx_t)

create threads
allow polaris_htx_t self:process setsched;
allow polaris_htx_t self:capability sys_nice;

optional_policy(
 polaris_qfp_dgram_send(polaris_htx_t)
)

vconfd_load_shared_schemas
polaris_confd_shared_schema_read(polaris_htx_t)

type polaris_htx_iox_tmp_t;
files_tmp_file(polaris_htx_iox_tmp_t)
polaris_htx_iox_tmp_manage(polaris_htx_t)

htx logs files like /tmp/nwaas_log_sslproxy.log
type polaris_htx_tmp_t;
files_tmp_file(polaris_htx_tmp_t)
files_tmp_filetrans(polaris_htx_t, polaris_htx_tmp_t, file)
manage_files_pattern(polaris_htx_t, polaris_htx_tmp_t, polaris_htx_tmp_t)

handle /dev/shm/tcpproxy_debug_shm
type polaris_htx_tmpfs_t;
files_tmpfs_file(polaris_htx_tmpfs_t)
fs_tmpfs_filetrans(polaris_htx_t, polaris_htx_tmpfs_t, file)
fs_getattr_tmpfs(polaris_htx_t)
gen_require(^
 type tmpfs_t;
)
manage_files_pattern(polaris_htx_t, tmpfs_t, polaris_htx_tmpfs_t)
allow polaris_htx_t polaris_htx_tmpfs_t:file map;

work with /tmp/memif
optional_policy(
 polaris_qfp_memif_manage(polaris_htx_t)
)

```

```

sppi_memif
type polaris_sppi_memif_device_t;
dev_node(polaris_sppi_memif_device_t)
polaris_sppi_memif_dev_use(polaris_htx_t)

packet_socket uinet_if_sppi_channel_init
allow polaris_htx_t self:packet_socket { create_socket_perms recv_msg send_msg};
allow polaris_htx_t self:capability net_raw;

read and write /bootflash/cacert-ssl.pem
polaris_bootflash_manage(polaris_htx_t)

```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisngx.te
```

No license file was found, but licenses were detected in source scan.

```

#
March 2017, Victor Kamensky
#
Copyright (c) 2017-2021 by Cisco Systems, Inc.
All rights reserved
#

```

```
<summary>Polaris nginx Policy Rules.</summary>
```

```
#####
```

```
<summary>
```

```
Allow domain to be started by nginx with
```

```
transition into specific service domain.
```

```
</summary>
```

```
<param name="domain">
```

```
<summary>
```

```
Type to be used to run utility.
```

```
</summary>
```

```
</param>
```

```
<param name="entry_point">
```

```
<summary>
```

```
Type of the program to be used as an entry point to this domain.
```

```
</summary>
```

```
</param>
```

```
interface(`polaris_nginx_exec_domain`,`
```

```
gen_require(`
```

```
type polaris_nginx_t;
```

```
`)
```

```
domtrans_pattern(polaris_nginx_t, $2, $1)
```

```
`)
```

```

#####
<summary>
Execute mcp_trace_filter script in its own domain.
</summary>
<param name="domain">
<summary>
Domain allowed to transition.
</summary>
</param>
#
interface(`polaris_trace_filter_domtrans`,`
 gen_require(`
 type polaris_trace_filter_t, polaris_trace_filter_exec_t;
 `)

 domtrans_pattern($1, polaris_trace_filter_exec_t, polaris_trace_filter_t)
`)

#####
<summary>
Execute file transfer client in its own domain.
</summary>
<param name="domain">
<summary>
Domain allowed to transition.
</summary>
</param>
#
interface(`polaris_file_transfer_client_domtrans`,`
 gen_require(`
 type polaris_file_transfer_client_t, polaris_file_transfer_client_exec_t;
 `)

 domtrans_pattern($1, polaris_file_transfer_client_exec_t, polaris_file_transfer_client_t)
`)

#####
<summary>
Allow others to perform pipe operations on nginx files
</summary>
<param name="domain">
<summary>
Domain allowed to perform the operation
</summary>
</param>
#
interface(`polaris_nginx_manage_fifo_files`,`

```



```

gen_require(
 type polaris_nginx_t;
 type $1;
)

manage_fifo_files_pattern($1, polaris_nginx_t, polaris_nginx_t)
)

#####
<summary>
Allow the specified domain to manage polaris_nginx_tmp_t files
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_nginx_tmp_manage`,
 gen_require(
 type polaris_nginx_tmp_t;
)

 manage_files_pattern($1, polaris_nginx_tmp_t, polaris_nginx_tmp_t)
 files_tmp_filetrans($1, polaris_nginx_tmp_t, file, "ca.cert")
)

#####
<summary>
Manage polaris_fts_client_tmp_t in /tmp/fts_client.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
interface(`polaris_fts_client_tmp_manage`,
 gen_require(
 type polaris_fts_client_tmp_t;
)

 manage_files_pattern($1, polaris_fts_client_tmp_t, polaris_fts_client_tmp_t)
 manage_dirs_pattern($1, polaris_fts_client_tmp_t, polaris_fts_client_tmp_t)
)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisnginx.if

No license file was found, but licenses were detected in source scan.

```

February 2020, Victor Kamensky

Copyright (c) 2020 by Cisco Systems, Inc.
All rights reserved

<summary>Polaris cedge_tanman Policy Rules.</summary>
```

```

<summary>
Read cedge tanman files and fifo_file. I.e
/tmp/tan/tan_evt_fifo
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>

interface(`polaris_cedge_tanman_tmp_manage`,`
 gen_require(`
 type polaris_cedge_tanman_tmp_t;
 `)
 read_files_pattern($1, polaris_cedge_tanman_tmp_t, polaris_cedge_tanman_tmp_t)
 read_fifo_files_pattern($1, polaris_cedge_tanman_tmp_t, polaris_cedge_tanman_tmp_t)
`)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscedge\_tanman.if

No license file was found, but licenses were detected in source scan.

```

November 2017, Victor Kamensky

Copyright (c) 2017-2020 by Cisco Systems, Inc.
All rights reserved
#
```

```
polarisgnmib file contexts place holder
/flash1/gNOI_iosxe_.* gen_context(system_u:object_r:polaris_gnmib_gnoi_images_t,s0)
/bootflash/gNOI_iosxe_.* gen_context(system_u:object_r:polaris_gnmib_gnoi_images_t,s0)
/mnt/sd3/user/gNOI_iosxe_.* gen_context(system_u:object_r:polaris_gnmib_gnoi_images_t,s0)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisgnmib.fc

No license file was found, but licenses were detected in source scan.

```

November 2020, Christine Hwang

Copyright (c) 2017-2019, 2021 by Cisco Systems, Inc.
All rights reserved
#
```

```
<summary>Polaris bbu Policy Rules.</summary>
```

```
#####
```

```
<summary>
Work (read, write, ioctl) with /dev/ttyS2
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
```

```
interface(`polaris_bbu_dev_use`,
 gen_require(`
 type device_t;
 type polaris_bbu_device_t;
 `)
 write_chr_files_pattern($1, device_t, polaris_bbu_device_t)
 read_chr_files_pattern($1, device_t, polaris_bbu_device_t)
 allow $1 polaris_bbu_device_t:chr_file map;
)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisbbu.if

No license file was found, but licenses were detected in source scan.

```

March 2017, Victor Kamensky

Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#
```

```
<summary>Polaris polarisrollbacktimer Policy Rules.</summary>
```

```
#####
```

```
<summary>
Manage rbtimer file on bootflash (i.e /bootflash/.rollback_timer)
</summary>
```

```

<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_rbtimer_bootflash_manage',`
 gen_require(`
 type polaris_disk_bootflash_t;
 type polaris_rbtimer_bootflash_t;
 `)
 manage_dirs_pattern($1, polaris_disk_bootflash_t, polaris_rbtimer_bootflash_t)
 manage_files_pattern($1, polaris_rbtimer_bootflash_t, polaris_rbtimer_bootflash_t)
 filetrans_pattern($1, polaris_disk_bootflash_t, polaris_rbtimer_bootflash_t, dir, ".rollback_timer")
`)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisrollbacktimer.if

No license file was found, but licenses were detected in source scan.

```

#
March 2017, Victor Kamensky
#
Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved
#

```

```

<summary>Polaris keyman Policy Rules.</summary>

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariskeyman.if

No license file was found, but licenses were detected in source scan.

```

#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#

```

```

<summary>Polaris polarisoom Policy Rules.</summary>

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisoom.if

No license file was found, but licenses were detected in source scan.

```

#
July 2017, Victor Kamensky

```

```

#
Copyright (c) 2017-2021 by Cisco Systems, Inc.
All rights reserved
#

/usr/binos/conf/install_engine.sh -- gen_context(system_u:object_r:polaris_install_engine_exec_t,s0)
/usr/binos/conf/install_assist.sh -- gen_context(system_u:object_r:polaris_install_engine_exec_t,s0)
/usr/binos/conf/install_helper.sh -- gen_context(system_u:object_r:polaris_install_engine_exec_t,s0)
/usr/binos/conf/sw_pload_svc.sh -- gen_context(system_u:object_r:polaris_install_engine_exec_t,s0)
/usr/binos/conf/provision.sh -- gen_context(system_u:object_r:polaris_install_engine_exec_t,s0)
/usr/binos/conf/issu_helper.sh -- gen_context(system_u:object_r:polaris_install_engine_exec_t,s0)
/issu/issu_check.sh -- gen_context(system_u:object_r:polaris_install_engine_exec_t,s0)
/usr/binos/conf/packtool.sh -- gen_context(system_u:object_r:polaris_install_engine_exec_t,s0)
/usr/binos/conf/install_boottime.sh -- gen_context(system_u:object_r:polaris_install_engine_exec_t,s0)

/usr/bin/vconfd_script_upgrade\sh -- gen_context(system_u:object_r:polaris_install_engine_exec_t,s0)

/usr/binos/conf/issu_client_comp.py -- gen_context(system_u:object_r:polaris_install_engine_exec_t,s0)

/usr/binos/conf/install_selinux.sh -- gen_context(system_u:object_r:polaris_install_selinux_exec_t,s0)

/usr/binos/conf/install_show.sh -- gen_context(system_u:object_r:polaris_install_show_exec_t,s0)
/usr/binos/conf/install_issu_show.py -- gen_context(system_u:object_r:polaris_install_show_exec_t,s0)
/usr/bin/vconfd_script_show_installerfs.sh -- gen_context(system_u:object_r:polaris_install_show_exec_t,s0)

/usr/binos/conf/calcscha.sh -- gen_context(system_u:object_r:polaris_install_engine_exec_t,s0)

/usr/binos/conf/C9800-Wireless_startup_script.sh --
gen_context(system_u:object_r:polaris_install_wireless_exec_t,s0)
/usr/binos/conf/C9800-Wireless_stop_script.sh --
gen_context(system_u:object_r:polaris_install_wireless_exec_t,s0)

/bootflash/.issu_loc_lock gen_context(system_u:object_r:polaris_issu_files_t,s0)
/tmp/issu(/.*)? gen_context(system_u:object_r:polaris_issu_tmp_files_t,s0)

/bootflash/.installer(/.*)? gen_context(system_u:object_r:polaris_disk_install_t,s0)
/bootflash/.images(/.*)? gen_context(system_u:object_r:polaris_install_images_t,s0)
/tmp/installer_tmplog(/.*)? gen_context(system_u:object_r:polaris_install_tmp_log_t,s0)
/tmp/installer(/.*)? gen_context(system_u:object_r:polaris_install_tmp_t,s0)
/bootflash/.sdwaninstaller(/.*)? gen_context(system_u:object_r:polaris_disk_install_t,s0)
/flash1/.sdwaninstaller(/.*)? gen_context(system_u:object_r:polaris_disk_install_t,s0)

/tmp/install_all_trans_log gen_context(system_u:object_r:polaris_install_tmp_t,s0)
/tmp/show_install_output.txt gen_context(system_u:object_r:polaris_install_show_tmp_t,s0)

/tmp/sw/rp(/.*)? gen_context(system_u:object_r:polaris_sw_data_t,s0)
/tmp/sw/fp(/.*)? gen_context(system_u:object_r:polaris_sw_data_t,s0)
/tmp/sw/cc(/.*)? gen_context(system_u:object_r:polaris_sw_data_t,s0)

```

```

/tmp/sw/mount(/.*)? gen_context(system_u:object_r:polaris_sw_data_t,s0)

/tmp/patch gen_context(system_u:object_r:polaris_patch_data_t,s0)
/tmp/patch/rp(/.*)? gen_context(system_u:object_r:polaris_patch_data_t,s0)
/tmp/patch/fp(/.*)? gen_context(system_u:object_r:polaris_patch_data_t,s0)
/tmp/patch/cc(/.*)? gen_context(system_u:object_r:polaris_patch_data_t,s0)
/tmp/patch/smus(/.*)? gen_context(system_u:object_r:polaris_patch_data_t,s0)

```

```

The following labels are specific to hot patch a SMUs shared objects
using .so files). For cold patch files, the patch is subset of a package
(it has the same structure) and therefore regular labeling rules will
be in effect.
#

```

```

The SMU hot patch directory hierarchy should look as follows:
#

```

```

/RP.<ARCH>/<process>/patch(s)
/FP.<ARCH>/<process>/patch(s)
/CC.<ARCH>/<process>/patch(s)
#
/RP\[^\]*/\[^\]*/(.*)? gen_context(system_u:object_r:lib_t,s0)
/FP\[^\]*/\[^\]*/(.*)? gen_context(system_u:object_r:lib_t,s0)
/CP\[^\]*/\[^\]*/(.*)? gen_context(system_u:object_r:lib_t,s0)

```

```

bundlee image/subpkg labeling

```

```

/packages.conf -- gen_context(system_u:object_r:polaris_packages_conf_t,s0)
\.\pkginfo -- gen_context(system_u:object_r:polaris_sw_data_t,s0)
/(.*)\.\pkg -- gen_context(system_u:object_r:polaris_sw_data_t,s0)

```

```

/tmp/pkg_cs_debug(/.*)? gen_context(system_u:object_r:polaris_pkg_cs_debug_t,s0)

```

```

Found in path(s):

```

```

* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisinstall.fc

```

```

No license file was found, but licenses were detected in source scan.

```

```

#
March 2017, Victor Kamensky
#
Copyright (c) 2017-2020 by Cisco Systems, Inc.
All rights reserved
#

```

```

policy_module(polarisepcwsliaison, 1.0);

```

```

gen_require(
 type polaris_epc_ws_liaison_t;
)

```

```

polaris_btrace_data_manage(polaris_epc_ws_liaison_t)

```

```

polaris_crft_data_manage(polaris_epc_ws_liaison_t)
polaris_chasfs_manage(polaris_epc_ws_liaison_t)
polaris_tdlresolve_read(polaris_epc_ws_liaison_t)
polaris_tdlldb_list_dirs(polaris_epc_ws_liaison_t)
polaris_cpld_read(polaris_epc_ws_liaison_t)
polaris_flashlib_read(polaris_epc_ws_liaison_t)

polaris_ripc_sman_ui_serv_connect(polaris_epc_ws_liaison_t)

allow polaris_epc_ws_liaison_t self:capability { dac_override };

tshark invoked by epc_ws_liaison needs to map /etc/passwd file.
auth_map_passwd(polaris_epc_ws_liaison_t)

access to execute /sbin/tshark
corecmd_exec_bin(polaris_epc_ws_liaison_t)

dumpcap needs access to net dir in sysfs
dev_read_sysfs(polaris_epc_ws_liaison_t)

comm="dumpcap" kmod="net-pf-16-proto-12"
kernel_dontaudit_request_load_module(polaris_epc_ws_liaison_t)

write pcap files to /bootflash
polaris_bootflash_manage(polaris_epc_ws_liaison_t)

epc_ws_liaison and ngwc-fed pipe interaction
polaris_fed_shm_file_read(polaris_epc_ws_liaison_t)

for pluggable FS, allow epc liaison to access files on them.
polaris_removable_manage(polaris_epc_ws_liaison_t)

tshark and dumpcap runtime requirements
allow polaris_epc_ws_liaison_t self:capability { net_raw setgid setuid };
allow polaris_epc_ws_liaison_t self:netlink_netfilter_socket create;
allow polaris_epc_ws_liaison_t self:netlink_route_socket { bind create getattr nlmsg_read };
allow polaris_epc_ws_liaison_t self:packet_socket { bind create getopt ioctl map setopt };
allow polaris_epc_ws_liaison_t self:process setcap;
allow polaris_epc_ws_liaison_t self:unix_dgram_socket { create ioctl };
allow polaris_epc_ws_liaison_t self:udp_socket { create ioctl };

/tmp/lstn.log and /tmp/epc_ws (WS_TMP_FOLDER)
type polaris_epc_ws_liaison_tmp_t;
files_tmp_file(polaris_epc_ws_liaison_tmp_t)
files_tmp_filetrans(polaris_epc_ws_liaison_t, polaris_epc_ws_liaison_tmp_t, { file dir })
manage_dirs_pattern(polaris_epc_ws_liaison_t, polaris_epc_ws_liaison_tmp_t, polaris_epc_ws_liaison_tmp_t)
manage_files_pattern(polaris_epc_ws_liaison_t, polaris_epc_ws_liaison_tmp_t, polaris_epc_ws_liaison_tmp_t)
manage_fifo_files_pattern(polaris_epc_ws_liaison_t, polaris_epc_ws_liaison_tmp_t,

```

polaris\_epc\_ws\_liaison\_tmp\_t)

#####

# CLI: show platform software wireshark show

#####

polaris\_utility\_domain\_template(wireshark\_show)

polaris\_bexecute\_domain(polaris\_wireshark\_show\_t, polaris\_wireshark\_show\_exec\_t)

polaris\_chasfs\_manage(polaris\_wireshark\_show\_t)

corecmd\_exec\_bin(polaris\_wireshark\_show\_t)

# map /etc/passwd

auth\_map\_passwd(polaris\_wireshark\_show\_t)

# open, read, getattr pcap files

polaris\_bootflash\_read(polaris\_wireshark\_show\_t)

# write into pipe that smand created for us with popen

polaris\_smand\_use\_fifo(polaris\_wireshark\_show\_t)

corecmd\_exec\_shell(polaris\_wireshark\_show\_t)

# sys file /sys/devices/system/cpu/online

dev\_read\_sysfs(polaris\_wireshark\_show\_t)

# tshark and dumpcap runtime requirements

allow polaris\_wireshark\_show\_t self:capability { setgid setuid net\_admin };

allow polaris\_wireshark\_show\_t self:netlink\_netfilter\_socket create;

allow polaris\_wireshark\_show\_t self:netlink\_route\_socket { bind create getattr nlmsg\_read };

allow polaris\_wireshark\_show\_t self:process setcap;

allow polaris\_wireshark\_show\_t self:udp\_socket { create ioctl };

allow polaris\_wireshark\_show\_t self:unix\_dgram\_socket { create ioctl };

#dumpcap needs access "/tmp/epc\_ws/wif\_to\_ts\_pipe" fifo file

polaris\_epc\_ws\_liaison\_fifo\_read(polaris\_wireshark\_show\_t)

# comm="dumpcap" kmod="net-pf-16-proto-12"

kernel\_request\_load\_module(polaris\_wireshark\_show\_t)

# /tmp/\*.pcapng

type polaris\_wireshark\_show\_tmp\_t;

files\_tmp\_file(polaris\_wireshark\_show\_tmp\_t)

files\_tmp\_filetrans(polaris\_wireshark\_show\_t, polaris\_wireshark\_show\_tmp\_t, file)

polaris\_wireshark\_show\_tmp\_manage(polaris\_wireshark\_show\_t)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisepcwsliasion.te



No license file was found, but licenses were detected in source scan.

```

June 2020 , Manu Roy

Copyright (c) 2020 by Cisco Systems, Inc.
All rights reserved
#
```

```
policy_module(polarisiotswitch, 1.0);
```

```
petra fpga device (/dev/petra-fpga)
type polaris_iots_fpga_device_t;
dev_node(polaris_iots_fpga_device_t)
```

```
petra DMA ASIC driver (/dev/mvDmaDrv)
type polaris_iots_mvDmaDrv_device_t;
dev_node(polaris_iots_mvDmaDrv_device_t)
```

```
petra Interrupt Asic driver (/dev/mvIntDrv)
type polaris_iots_mvIntDrv_device_t;
dev_node(polaris_iots_mvIntDrv_device_t)
```

```
petra tm device (/dev/tm)
type polaris_iots_tm_device_t;
dev_node(polaris_iots_tm_device_t)
```

```
petra tm device (/dev/mmcbk1p1)
type polaris_iots_swipedrive_device_t;
dev_node(polaris_iots_swipedrive_device_t)
```

```
type polaris_iots_swipedrive_file_t;
files_type(polaris_iots_swipedrive_file_t)
dev_associate(polaris_iots_swipedrive_file_t)
```

```
LED device (/dev//dev/spidev0.0)
type polaris_iots_led_device_t;
dev_node(polaris_iots_led_device_t)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisiotswitch.te
```

No license file was found, but licenses were detected in source scan.

```

March 2017, Victor Kamensky

Copyright (c) 2016-2020 by Cisco Systems, Inc.
```

```

All rights reserved
#

<summary>Polaris psd Policy Rules.</summary>

#####
<summary>
Read polaris_restconf_t files, effectively files
under /tmp/restconf
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_restconf_read`,`
 gen_require(`
 type polaris_restconf_t;
 `)
 read_files_pattern($1, polaris_restconf_t, polaris_restconf_t)
 read_lnk_files_pattern($1, polaris_restconf_t, polaris_restconf_t)
 list_dirs_pattern($1, polaris_restconf_t, polaris_restconf_t)
`)

#####
<summary>
Manage polaris_restconf_t files, effectively files
under /tmp/restconf
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_restconf_manage`,`
 gen_require(`
 type polaris_restconf_t;
 `)
 manage_files_pattern($1, polaris_restconf_t, polaris_restconf_t)
 manage_lnk_files_pattern($1, polaris_restconf_t, polaris_restconf_t)
 manage_dirs_pattern($1, polaris_restconf_t, polaris_restconf_t)
`)

#####
<summary>
Manage polaris_ncsshd_keys_t files, effectively files

```

```

under /tmp/.ncsshd_authorized_keys
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_ncsshd_keys_manage`,`
 gen_require(`
 type polaris_ncsshd_keys_t;
 `)
 manage_files_pattern($1, polaris_ncsshd_keys_t, polaris_ncsshd_keys_t)
 manage_lnk_files_pattern($1, polaris_ncsshd_keys_t, polaris_ncsshd_keys_t)
 manage_dirs_pattern($1, polaris_ncsshd_keys_t, polaris_ncsshd_keys_t)
`)

```

```

#####
<summary>
Read polaris_psd_tmp_t files, effectively access
/tmp/dmi.ds_config created by psd and read by confd startup
script
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_psd_tmp_read`,`
 gen_require(`
 type polaris_psd_tmp_t;
 `)
 read_files_pattern($1, polaris_psd_tmp_t, polaris_psd_tmp_t)
`)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarispsd.if

No license file was found, but licenses were detected in source scan.

```

#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#

```

```

<summary>Polaris smd Policy Rules.</summary>

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarissmd.if

No license file was found, but licenses were detected in source scan.

dnl

dnl April 2018, Victor Kamensky

dnl

dnl Copyright (c) 2018-2019 by Cisco Systems, Inc.

dnl All rights reserved

dnl

```
define(`polaris_process_aux_full',`
polaris_process_domain_template($1)
")
```

```
define(`polaris_process_aux',`
ifelse(process_type_map($1), `', `polaris_process_aux_full($1)')
process_type_map_set($1, 1)
)
```

```
define(`polaris_process',`
polaris_process_aux(process_stem($1))
```

```
)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/m4/polaris\_process\_te.m4

No license file was found, but licenses were detected in source scan.

#

# April 2017, Victor Kamensky

#

# Copyright (c) 2017-2021 by Cisco Systems, Inc.

# All rights reserved

#

```
policy_module(polarisdmincshdmgmt, 1.0);
```

```
gen_require(`
 type polaris_dmi_ncsshd_mgmt_t;
)
```

```
polaris_btrace_data_manage(polaris_dmi_ncsshd_mgmt_t)
polaris_chasfs_manage(polaris_dmi_ncsshd_mgmt_t)
polaris_tdlresolve_read(polaris_dmi_ncsshd_mgmt_t)
polaris_tdlldb_list_dirs(polaris_dmi_ncsshd_mgmt_t)
polaris_flashlib_read(polaris_dmi_ncsshd_mgmt_t)
```

```

corenet_tcp_bind_generic_node(polaris_dmi_ncsshd_mgmt_t)
allow polaris_dmi_ncsshd_mgmt_t self:tcp_socket { getattr getopt setopt bind create listen accept connect read write
};
allow polaris_dmi_ncsshd_mgmt_t self:udp_socket { getattr create connect read write };
allow polaris_dmi_ncsshd_mgmt_t self:cap_userns { sys_admin net_bind_service };

type polaris_dmi_ncsshd_mgmt_var_run_t;
files_pid_file(polaris_dmi_ncsshd_mgmt_var_run_t)
manage_dirs_pattern(polaris_dmi_ncsshd_mgmt_t, polaris_dmi_ncsshd_mgmt_var_run_t,
polaris_dmi_ncsshd_mgmt_var_run_t)
manage_files_pattern(polaris_dmi_ncsshd_mgmt_t, polaris_dmi_ncsshd_mgmt_var_run_t,
polaris_dmi_ncsshd_mgmt_var_run_t)
files_pid_filetrans(polaris_dmi_ncsshd_mgmt_t, polaris_dmi_ncsshd_mgmt_var_run_t, { file dir })

access /var/log/lastlog, /var/log/btmp
type polaris_dmi_ncsshd_mgmt_var_log_t;
logging_log_file(polaris_dmi_ncsshd_mgmt_var_log_t)
manage_files_pattern(polaris_dmi_ncsshd_mgmt_t, polaris_dmi_ncsshd_mgmt_var_log_t,
polaris_dmi_ncsshd_mgmt_var_log_t)
logging_log_filetrans(polaris_dmi_ncsshd_mgmt_t, polaris_dmi_ncsshd_mgmt_var_log_t, file, "lastlog")
logging_log_filetrans(polaris_dmi_ncsshd_mgmt_t, polaris_dmi_ncsshd_mgmt_var_log_t, file, "btmp")

polaris_dmi_ncsshd_fwd_dgram_send(polaris_dmi_ncsshd_mgmt_t)

corenet_tcp_bind_polaris_dmi_ncsshd_mgmt_port(polaris_dmi_ncsshd_mgmt_t)
ncsshd allows user-defined port with: netconf-yang ssh port <port_no>
corenet_tcp_bind_all_ports(polaris_dmi_ncsshd_mgmt_t)

auth_use_nsswitch(polaris_dmi_ncsshd_mgmt_t)
assign following capabilities needed by sshd
allow polaris_dmi_ncsshd_mgmt_t self:capability { net_admin setgid sys_resource setuid sys_chroot kill };
allow polaris_dmi_ncsshd_mgmt_t self:process setrlimit;

ncsshd requests pseudo terminal when netconf session is set up without
explicitly specifying the subsystem name, such as netconf.
allow polaris_dmi_ncsshd_mgmt_t self:capability { chown fowner fsetid };
term_setattr_generic_ptys(polaris_dmi_ncsshd_mgmt_t)
term_getattr_pty_fs(polaris_dmi_ncsshd_mgmt_t)
term_use_generic_ptys(polaris_dmi_ncsshd_mgmt_t)
term_use_ptmx(polaris_dmi_ncsshd_mgmt_t)

#enable to read cpld file "/sys/devices/platform/cpld/board_vtype"
polaris_cpld_read(polaris_dmi_ncsshd_mgmt_t)
#for sshd needs access network interface resource
allow polaris_dmi_ncsshd_mgmt_t self:netlink_route_socket r_netlink_socket_perms;

calls socketat server_listen at mgmt/dmi/ncsshd/src/sshd.c
polaris_socketat_nsfs_read(polaris_dmi_ncsshd_mgmt_t)

```

```

polaris_lfts_dev_use(polaris_dmi_ncsshd_mgmt_t)

corecmd_exec_bin(polaris_dmi_ncsshd_mgmt_t)

logging_send_syslog_msg(polaris_dmi_ncsshd_mgmt_t)
TODO : revisit below statement when addressing initrc_exec_t denial
polaris_rmonbifo_tmp_read(polaris_dmi_ncsshd_mgmt_t)

allow access to /tmp/sw/cfg and /tmp/sw/boot
polaris_boot_tmp_read(polaris_dmi_ncsshd_mgmt_t)
polaris_cfg_data_manage(polaris_dmi_ncsshd_mgmt_t)

polaris_dmi_dmiauthd_dgram_send(polaris_dmi_ncsshd_mgmt_t)

corenet_tcp_connect_polaris_netconf_interceptor_port(polaris_dmi_ncsshd_mgmt_t);
This fixes runin.sh related denials. Refer to auth.c file which invokes bshell.
polaris_bexecute_domtrans(polaris_dmi_ncsshd_mgmt_t);

This fixes authorized keys access related denials.
polaris_ncsshd_authorized_keys_read(polaris_dmi_ncsshd_mgmt_t);

This fixes denials related to interceptor files.
polaris_interceptor_manage(polaris_dmi_ncsshd_mgmt_t);

This fixes denials related to netconf_callhome executable
gen_require(`
 type polaris_conf_d_t;
`)
allow polaris_dmi_ncsshd_mgmt_t polaris_conf_d_t:tcp_socket { getattr getopt setopt };

This fixes denials related to route, scp, chvrf command executables
{ read open getattr } operations are allowed on route command
{ search open } operations are allowed on scp command
{ read open execute execute_no_trans } operations are allowed on chvrf command
kernel_read_network_state(polaris_dmi_ncsshd_mgmt_t)

optional_policy(`
allows access to /tmp/xml/Intf dir and files
polaris_cedge_tmp_manage(polaris_dmi_ncsshd_mgmt_t)
polaris_cedge_xml_tmp_manage(polaris_dmi_ncsshd_mgmt_t)
`)
This fixes denials related to ifconfig executable
{ execute read open execute_no_trans map getattr } operations are allowed
sysnet_domtrans_ifconfig(polaris_dmi_ncsshd_mgmt_t)

This fixes access denials related to confd checking ncsshd_mgmt proc info
/proc/<ncsshd pid>/
read_files_pattern(polaris_conf_d_t, polaris_dmi_ncsshd_mgmt_t, polaris_dmi_ncsshd_mgmt_t)

```

```
read_lnk_files_pattern(polaris_conf_d_t, polaris_dmi_ncsshd_mgmt_t, polaris_dmi_ncsshd_mgmt_t)
```

```
allows access for admin-tech generation from vManage
polaris_admin_tech_data_manage(polaris_dmi_ncsshd_mgmt_t)
polaris_bootflash_manage(polaris_dmi_ncsshd_mgmt_t)
```

```
allow access to polaris_cfg_data_t
polaris_cfg_data_manage(polaris_dmi_ncsshd_mgmt_t)
```

```
allow access to polaris_boot_tmp_t
polaris_boot_tmp_read(polaris_dmi_ncsshd_mgmt_t)
```

```
allow to watch /var/run/netns and list dir
polaris_watch_netns(polaris_dmi_ncsshd_mgmt_t)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisdmincsshdmgmt.te

No license file was found, but licenses were detected in source scan.

```
#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2020 by Cisco Systems, Inc.
All rights reserved
#
```

```
<summary>Polaris polarispman Policy Rules.</summary>
```

```
#####
```

```
<summary>
Make the specified program domain accessible
from the pman.
</summary>
<param name="domain">
<summary>
The type of the process to transition to.
</summary>
</param>
<param name="entrypoint">
<summary>
The type of the file used as an entrypoint to this domain.
</summary>
</param>
#
```

```
interface(`polaris_pman_entry',`
 gen_require(`
 type polaris_pman_t;
 type polaris_gdb_t;
```

```

 ')

 domtrans_pattern(polaris_pman_t, $2, $1)
 domtrans_pattern(polaris_gdb_t, $2, $1)

 allow polaris_gdb_t $1:process { ptrace signal sigstop };
')

#####
<summary>
Execute a domain transition to run pman.
</summary>
<param name="domain">
<summary>
Domain allowed to transition.
</summary>
</param>
#
interface(`polaris_pman_domtrans`,`
 gen_require(`
 type polaris_pman_t, polaris_pman_exec_t;
 `)

 domtrans_pattern($1, polaris_pman_exec_t, polaris_pman_t)
')

#####
<summary>
Read pman temporary files and directories in /tmp.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_pman_read_tmp_files`,`
 gen_require(`
 type polaris_pman_tmp_t;
 `)

 read_files_pattern($1, polaris_pman_tmp_t, polaris_pman_tmp_t)
 list_dirs_pattern($1, polaris_pman_tmp_t, polaris_pman_tmp_t)
')

#####
<summary>
Manage pman temporary files and directories in /tmp.

```



```

</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_pman_manage_tmp_files`,`
 gen_require(`
 type polaris_pman_tmp_t;
 `)

 manage_files_pattern($1, polaris_pman_tmp_t, polaris_pman_tmp_t)
 manage_dirs_pattern($1, polaris_pman_tmp_t, polaris_pman_tmp_t)
`)

#####
<summary>
Create an object in the polaris_pman_tmp directories.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<param name="object">
<summary>
The object class of the object being created.
</summary>
</param>
<param name="name" optional="true">
<summary>
The name of the object being created.
</summary>
</param>
#
interface(`polaris_pman_tmp_filetrans`,`
 gen_require(`
 type polaris_pman_tmp_t;
 `)

 files_tmp_filetrans($1, polaris_pman_tmp_t, $2, $3)
`)

#####
<summary>
Check existence (getattr) of pman btrace file (i.e
polaris_pman_bt_t)

```

```

</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_pman_bt_getattr`,`
 gen_require(`
 type polaris_pman_bt_t;
 type polaris_btrace_base_t;
 `)
 getattr_files_pattern($1, polaris_btrace_base_t, polaris_pman_bt_t)
`)

```

```
#####
```

```

<summary>
Read and write to pmanlite fifo file, used as
stdout/stderr.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_use_pman_fifo`,`
 gen_require(`
 type polaris_pman_t;
 `)
 allow $1 polaris_pman_t:fifo_file { rw_fifo_file_perms };
`)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarispman.if

No license file was found, but licenses were detected in source scan.

```

#
August 2017, Shawn Lu
#
Copyright (c) 2017-2021 by Cisco Systems, Inc.
All rights reserved
#

```

```
policy_module(polariswncmgrd, 1.0);
```

```
gen_require(`
```

```

 type polaris_wncmgrd_t;
)

polaris_btrace_data_manage(polaris_wncmgrd_t)
polaris_chasfs_manage(polaris_wncmgrd_t)
polaris_tdlresolve_read(polaris_wncmgrd_t)
polaris_tdlldb_list_dirs(polaris_wncmgrd_t)
polaris_cpld_read(polaris_wncmgrd_t)
polaris_lua_read(polaris_wncmgrd_t)
polaris_flashlib_read(polaris_wncmgrd_t)

polaris_ripc_sman_ui_serv_connect(polaris_wncmgrd_t)

polaris_db_tdlldb_dir_use(polaris_wncmgrd_t)

#allow setrlimit
allow polaris_wncmgrd_t self:process setrlimit;
allow polaris_wncmgrd_t self:capability sys_resource;
allow polaris_wncmgrd_t self:capability dac_override;

allow polaris_wncmgrd_t self:tcp_socket { shutdown };

#allow wncmgrd UDP socket operations
allow polaris_wncmgrd_t self:udp_socket { bind getattr setopt };
corenet_udp_bind_generic_node(polaris_wncmgrd_t)

#allow wncmgrd module to do ioctl,open,read,write operations on char file
polaris_lfts_dev_use(polaris_wncmgrd_t)

it use tcp port 9090 and9091(polaris_wnc_mgrd_port)
corenet_tcp_bind_polaris_wnc_mgrd_port(polaris_wncmgrd_t)
#####
For ewlc, wncd and wncmgrd needs access to files under /mnt/images/...these
are related to AccessPoint images
#####
wncmgrd calls ewlc_get_ap_sw_version() to open/read
/tmp/sw/rp/0/0/rp_wlc/mount/mnt/images/ap.pri/version.info
call-chain: main -> ewlc_app_context_init -> wncd_evlib_app_init_cb ->
ewlc_capwapac_lib_init -> capwapac_init_default_config -> ewlc_get_ap_sw_version
polaris_wlc_ap_images_read(polaris_wncmgrd_t)

polaris_odm_clnt2svr_mqipc_create(polaris_wncmgrd_t)

polaris_tdlldbpersist_setup(polaris_wncmgrd_t)

polaris_tmp_tdlldb_persist_setup(polaris_wncmgrd_t)

logging_send_syslog_msg(polaris_wncmgrd_t)

```

```

bind CAPWAP control and data
corenet_udp_bind_polaris_capwap_ctr_port(polaris_wncmgrd_t)
corenet_udp_bind_polaris_capwap_data_port(polaris_wncmgrd_t)

wncmgrd accessing NA certificate to push to AP
type polaris_icap_cert_t;
polaris_pfile_type(polaris_icap_cert_t)

#wncmgrd receives the certificate file from IOSd via IPC
#and writes to /bootflash for ICap feature
#and hence requires access.
gen_require(
type polaris_icap_cert_t;
')
filetrans_pattern(polaris_wncmgrd_t, polaris_disk_bootflash_t, polaris_icap_cert_t, file, "NACert.pem")
allow polaris_wncmgrd_t polaris_icap_cert_t:file { write create read open getattr unlink };

#allow tcp connection from http port for awips file download
#from DNAC
corenet_tcp_connect_http_port(polaris_wncmgrd_t)

#allow read/write/mmap access to awips file
gen_require(
type polaris_awips_signature_file_t;
')
filetrans_pattern(polaris_wncmgrd_t, polaris_disk_bootflash_t, polaris_awips_signature_file_t, file, "awips.json")
allow polaris_wncmgrd_t polaris_awips_signature_file_t:file { map write create read open getattr unlink };

#allow read access to resolv.conf
sysnet_read_config(polaris_wncmgrd_t)

#ewlc_capwap_dgram_srvr_create_raw_send_socket () creates a socket
#creates sll.sll_family = AF_PACKET;
#sll.sll_ifindex = dgram_io_desc->lfts_ifindex;
#sll.sll_protocol = htons(ETH_P_ALL);

allow polaris_wncmgrd_t self:packet_socket { create_socket_perms setopt };
allow polaris_wncmgrd_t self:rawip_socket { create_socket_perms setopt ioctl };

allow polaris_wncmgrd_t self:capability net_raw;
corenet_raw_bind_generic_node(polaris_wncmgrd_t)

gen_require(
type port_t;
')
allow polaris_wncmgrd_t port_t:rawip_socket name_bind;

```

```
allow tmp symlinks
fs_read_tmpfs_symlinks(polaris_wncmgrd_t)
allow tmp file read
polaris_install_tmp_read(polaris_wncmgrd_t)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariswncmgrd.te

No license file was found, but licenses were detected in source scan.

```
#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2020 by Cisco Systems, Inc.
All rights reserved
#
```

```
<summary>Polaris NVRAM Policy Rules.</summary>
```

```
#####
NVRAM policy
#####
```

```
#####
```

```
<summary>
Manage nvram files (location varies by platform)
</summary>
```

```
<param name="domain">
```

```
<summary>
Domain allowed access.
</summary>
```

```
</param>
```

```
<rolebase/>
```

```
#
```

```
interface(`polaris_nvram_manage',`
```

```
 gen_require(`
```

```
 type polaris_nvram_file_t;
```

```
 type device_t;
```

```
 `)
```

```
 manage_blk_files_pattern($1, device_t, polaris_nvram_file_t)
```

```
 manage_files_pattern($1, polaris_nvram_file_t, polaris_nvram_file_t)
```

```
 manage_lnk_files_pattern($1, polaris_nvram_file_t, polaris_nvram_file_t)
```

```
 `)
```

```
#####
```

```
<summary>
```

```
Read nvram files (location varies by platform)
```

```

</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolebase/>
#
interface(`polaris_nvram_read`,`
gen_require(`
type polaris_nvram_file_t;
type device_t;
)

read_blk_files_pattern($1, device_t, polaris_nvram_file_t)
read_files_pattern($1, polaris_nvram_file_t, polaris_nvram_file_t)
read_lnk_files_pattern($1, polaris_nvram_file_t, polaris_nvram_file_t)
)

#####
<summary>
getattr for nvram files (location varies by platform)
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolebase/>
#
interface(`polaris_nvram_getattr`,`
gen_require(`
type polaris_nvram_file_t;
type device_t;
)

getattr_blk_files_pattern($1, device_t, polaris_nvram_file_t)
getattr_files_pattern($1, polaris_nvram_file_t, polaris_nvram_file_t)
getattr_lnk_files_pattern($1, polaris_nvram_file_t, polaris_nvram_file_t)
)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisnvram.if
No license file was found, but licenses were detected in source scan.

#
July 2017, Victor Kamensky
#

```

# Copyright (c) 2017-2019 by Cisco Systems, Inc.

# All rights reserved

#

/usr/cpp/bin/cpp\_stats\_svr -- gen\_context(system\_u:object\_r:polaris\_cpp\_stats\_exec\_t,s0)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscppstats.fc

No license file was found, but licenses were detected in source scan.

#

# March 2017, Victor Kamensky

#

# Copyright (c) 2016-2019 by Cisco Systems, Inc.

# All rights reserved

#

policy\_module(polarisoom, 1.0);

polaris\_process\_domain\_template(oom)

corecmd\_exec\_bin(polaris\_oom\_t)

# allow to read /proc/meminfo

kernel\_read\_system\_state(polaris\_oom\_t)

# allow read of /etc/passwd

auth\_use\_nsswitch(polaris\_oom\_t)

# run ldd, which in turns execve "ld.so --verify"

libs\_exec\_ld\_so(polaris\_oom\_t)

allow polaris\_oom\_t self:capability sys\_resource;

allow polaris\_oom\_t self:process setpgid;

polaris\_btrace\_data\_manage(polaris\_oom\_t)

polaris\_chasfs\_manage(polaris\_oom\_t)

polaris\_cpld\_read(polaris\_oom\_t)

polaris\_boot\_tmp\_read(polaris\_oom\_t)

polaris\_read\_debug\_conf(polaris\_oom\_t)

polaris\_disk\_crashinfo\_getattr(polaris\_oom\_t)

polaris\_rmonbifo\_tmp\_read(polaris\_oom\_t)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisoom.te

No license file was found, but licenses were detected in source scan.

#

```

March 2017, Victor Kamensky
#
Copyright (c) 2017-2021 by Cisco Systems, Inc.
All rights reserved
#

/mnt/sd1 edison and nyquist
/mnt/sd1(/.*)? gen_context(system_u:object_r:polaris_disk_crashinfo_t,s0)
/mnt/sd1/tracelogs(/.*)? gen_context(system_u:object_r:polaris_btrace_data_t,s0)
/mnt/sd1/system-report_.*\tar.gz gen_context(system_u:object_r:polaris_system_report_t,s0)

/mnt/sd3 edison and nyquist
/mnt/sd3(/.*)? gen_context(system_u:object_r:polaris_disk_bootflash_t,s0)
/mnt/sd3/user/core(/.*)? gen_context(system_u:object_r:polaris_core_file_t,s0)
/mnt/sd3/user/tracelogs(/.*)? gen_context(system_u:object_r:polaris_btrace_data_t,s0)
/mnt/sd3/user/tan(/.*)? gen_context(system_u:object_r:polaris_btrace_data_t,s0)
/mnt/sd3/user/.ssh(/.*)? gen_context(system_u:object_r:ssh_home_t,s0)
/mnt/sd3/user/.ssh/ssh_host.*_key\pub gen_context(system_u:object_r:sshd_key_t,s0)
/mnt/sd3/user/.ssh/ssh_host.*_key gen_context(system_u:object_r:sshd_key_t,s0)
/mnt/sd3/user/nvram_config -- gen_context(system_u:object_r:polaris_nvram_file_t,s0)
/mnt/sd3/user/debug.conf -- gen_context(system_u:object_r:polaris_debug_conf_t,s0)
/mnt/sd3/user/packages.conf gen_context(system_u:object_r:polaris_packages_conf_t,s0)
/mnt/sd3/user/.dbpersist(/.*)? gen_context(system_u:object_r:polaris_disk_dbm_t,s0)
/mnt/sd3/user/.installer(/.*)? gen_context(system_u:object_r:polaris_disk_install_t,s0)
/mnt/sd3/user/.rollback_timer(/.*)? gen_context(system_u:object_r:polaris_rbtimer_bootflash_t,s0)
/mnt/sd3/user/kernel/core(/.*)? gen_context(system_u:object_r:polaris_core_file_t,s0)
/mnt/sd3/user/sys_report(/.*)? gen_context(system_u:object_r:polaris_chasync_files_t,s0)

/mnt/sd4 nyquist
/mnt/sd4(/.*)? gen_context(system_u:object_r:polaris_disk_license_t,s0)

/mnt/sd5 edison and nyquist
/mnt/sd5(/.*)? gen_context(system_u:object_r:polaris_disk_license_t,s0)

#ifdef(^edison_platform',`
/mnt/sd6
/mnt/sd6(/.*)? gen_context(system_u:object_r:polaris_disk_license_t,s0)

/mnt/sd7
/mnt/sd7(/.*)? gen_context(system_u:object_r:polaris_obfl_data_t,s0)

/mnt/sd8
/mnt/sd8(/.*)? gen_context(system_u:object_r:polaris_disk_ucose_t,s0)

/mnt/sd9
/mnt/sd9(/.*)? gen_context(system_u:object_r:polaris_disk_recovery_t,s0)
)

```



```

ifdef(`nyquist_platform',`
/mnt/sd6
/mnt/sd6(/.*)? gen_context(system_u:object_r:polaris_obfl_data_t,s0)

/mnt/sd7
/mnt/sd7(/.*)? gen_context(system_u:object_r:polaris_disk_ucode_t,s0)
#unmount script used ny Nyquist platform
/bin/cat9k_ssd_unmount.sh gen_context(system_u:object_r:polaris_ssd_unmount_exec_t,s0)
')

ifdef(`quake_platform',`
/mnt/sd6
/mnt/sd6(/.*)? gen_context(system_u:object_r:polaris_obfl_data_t,s0)

/mnt/sd7
/mnt/sd7(/.*)? gen_context(system_u:object_r:polaris_disk_ucode_t,s0)
')

/crashinfo is symbolic link to /mnt/sd1 created by systemd-tmpfiles
/crashinfo gen_context(system_u:object_r:polaris_disk_crashinfo_t,s0)
/flash is symbolic link to /mnt/sd3/user
/flash gen_context(system_u:object_r:polaris_disk_bootflash_t,s0)
/lic0 is symbolic link to /mnt/sd4
/lic0 gen_context(system_u:object_r:polaris_disk_license_t,s0)
/lic1 is symbolic link to /mnt/sd5
/lic1 gen_context(system_u:object_r:polaris_disk_license_t,s0)
/ngwc_config/nvram is symbolic link to /mnt/sd3/user
/ngwc_config/nvram gen_context(system_u:object_r:polaris_nvram_file_t,s0)

/flash1 macallan
/flash1(/.*)? gen_context(system_u:object_r:polaris_disk_bootflash_t,s0)
/flash1/user/core(/.*)? gen_context(system_u:object_r:polaris_core_file_t,s0)
/flash1/user/tracelogs(/.*)? gen_context(system_u:object_r:polaris_btrace_data_t,s0)
/flash1/user/.ssh(/.*)? gen_context(system_u:object_r:ssh_home_t,s0)
/flash1/user/.ssh/ssh_host.*_key*.pub gen_context(system_u:object_r:sshd_key_t,s0)
/flash1/user/.ssh/ssh_host.*_key gen_context(system_u:object_r:sshd_key_t,s0)
/flash1/user/nvram_config -- gen_context(system_u:object_r:polaris_nvram_file_t,s0)
/flash1/user/debug.conf -- gen_context(system_u:object_r:polaris_debug_conf_t,s0)
/flash1/user/packages.conf gen_context(system_u:object_r:polaris_packages_conf_t,s0)
/flash1/user/kernel/core(/.*)? gen_context(system_u:object_r:polaris_core_file_t,s0)
/flash1/user/.rollback_timer(/.*)? gen_context(system_u:object_r:polaris_rbtimer_bootflash_t,s0)
/flash1/user/.installer(/.*)? gen_context(system_u:object_r:polaris_disk_install_t,s0)
/flash1/user/.dbpersist(/.*)? gen_context(system_u:object_r:polaris_disk_dbm_t,s0)
/flash1/user/tan(/.*)? gen_context(system_u:object_r:polaris_btrace_data_t,s0)
/flash1/user/sys_report(/.*)? gen_context(system_u:object_r:polaris_chasync_files_t,s0)
/flash1/TEMPLATE(/.*)? gen_context(system_u:object_r:polaris_chasync_files_t,s0)

/flash2 macallan 9500h

```

```

/flash2(/.*)? gen_context(system_u:object_r:polaris_disk_harddisk_t,s0)
/flash2/CRASH(/.*)? gen_context(system_u:object_r:polaris_disk_crashinfo_t,s0)
/flash2/CRASH/tracelogs(/.*)? gen_context(system_u:object_r:polaris_btrace_data_t,s0)

/flash3 macallan
/flash3(/.*)? gen_context(system_u:object_r:polaris_obfl_data_t,s0)

/flash4 macallan
/flash4(/.*)? gen_context(system_u:object_r:polaris_disk_license_t,s0)

/flash5 macallan
/flash5(/.*)? gen_context(system_u:object_r:polaris_disk_license_t,s0)

/flash6 macallan, used for silent roll in macallan
/flash6(/.*)? gen_context(system_u:object_r:polaris_disk_ucode_t,s0)

/flash7 macallan, silent roll
/flash7(/.*)? gen_context(system_u:object_r:polaris_disk_bootflash_t,s0)

macallan silent roll link
/cc_srdrv gen_context(system_u:object_r:polaris_disk_bootflash_t,s0)

macallan /ngmod_config/nvram link will be labeled by systemd-tmpfiles
/ngmod_config gen_context(system_u:object_r:polaris_nvram_file_t,s0)
/ngmod_config/nvram gen_context(system_u:object_r:polaris_nvram_file_t,s0)

remap_mem0 device
/dev/remap_mem0 -c gen_context(system_u:object_r:polaris_remap_mem_device_t,s0)

chdrvmmmap device (MMAP Driver for ASIC Memory mapping)
/dev/chdrvmmmap -c gen_context(system_u:object_r:polaris_chdrvmmmap_device_t,s0)

gettysburg_dev1 device
/dev/gettysburg_dev[0-9]* -c gen_context(system_u:object_r:polaris_gettysburg_fpga_device_t,s0)

types that might be packages label by other policy
ifdef(`nyquist_platform',`
/usr/binos/bin/flash_check.sh -- gen_context(system_u:object_r:polaris_flashcheck_exec_t,s0)
/usr/binos/bin/cman_fp -- gen_context(system_u:object_r:polaris_cm_fp_exec_t,s0)
/usr/binos/bin/cmcc -- gen_context(system_u:object_r:polaris_cm_cc_exec_t,s0)
')
ifdef(`passport_platform',`
/usr/binos/bin/platform_mgr -- gen_context(system_u:object_r:polaris_ngwc_plfm_mgr_exec_t,s0)
/usr/binos/bin/xcvr_test -- gen_context(system_u:object_r:polaris_xcvr_test_exec_t,s0)
/usr/binos/bin/sif_mgr -- gen_context(system_u:object_r:polaris_sif_mgr_exec_t,s0)
/usr/binos/bin/cmm -- gen_context(system_u:object_r:polaris_cmm_exec_t,s0)
/usr/binos/bin/bt_logger -- gen_context(system_u:object_r:polaris_bt_logger_exec_t,s0)
/usr/binos/bin/torchd -- gen_context(system_u:object_r:polaris_torch_exec_t,s0)

```

```

/usr/binos/bin/swift_sampled -- gen_context(system_u:object_r:polaris_faked_exec_t,s0)
)

PLEASE LOOK AT ME: why this file in /etc/init.d?
/etc/rc\,d/init\,d/cat9k_fpgahelper_funcs.sh -- gen_context(system_u:object_r:bin_t,s0)
/etc/rc\,d/init\,d/cat9k_kr_helper.sh -- gen_context(system_u:object_r:bin_t,s0)

symbolic links in /platform-specific directory
/platform-specific/gryphon -l gen_context(system_u:object_r:root_t,s0)
/platform-specific/gryphon_lite -l gen_context(system_u:object_r:root_t,s0)
/platform-specific/prometheus -l gen_context(system_u:object_r:root_t,s0)
/platform-specific/skyfox -l gen_context(system_u:object_r:root_t,s0)
/platform-specific/vulcan -l gen_context(system_u:object_r:root_t,s0)
/platform-specific/intrepid -l gen_context(system_u:object_r:root_t,s0)
/platform-specific/martion -l gen_context(system_u:object_r:root_t,s0)
/platform-specific/farscape -l gen_context(system_u:object_r:root_t,s0)
/platform-specific/borg -l gen_context(system_u:object_r:root_t,s0)
/platform-specific/scorpion -l gen_context(system_u:object_r:root_t,s0)

/dev/cisco/dplriomem device, Generic Memory map driver for mapping doppler IO memory to userspace
/dev/cisco/dplriomem -c gen_context(system_u:object_r:polaris_dplr_iomem_mmapdrv_device_t,s0)

/vol/disk0(/.*)? gen_context(system_u:object_r:polaris_disk_bootflash_t,s0)
/appstore_hd is symbolic link to /vol/disk0
/appstore_hd -l gen_context(system_u:object_r:polaris_disk_bootflash_t,s0)
/appstore_flash is symbolic link to /flash1
/appstore_flash -l gen_context(system_u:object_r:polaris_disk_bootflash_t,s0)
/rp_srdv is symbolic link to /flash6/DPU
/rp_srdv -l gen_context(system_u:object_r:polaris_disk_bootflash_t,s0)
/init is symbolic link to /lib/systemd/systemd
/init -l gen_context(system_u:object_r:init_exec_t,s0)
/install is symbolic link to /flash1/INSTALL
/install -l gen_context(system_u:object_r:polaris_disk_bootflash_t,s0)
/disk0 is symbolic link to /vol/disk0
/disk0 -l gen_context(system_u:object_r:polaris_disk_bootflash_t,s0)

provide relabeling rules for /platform-specific/personality file
otherwise, they cause conflicting specifications error during relabeling
/platform-specific/bigbang/lib/modules(/.*)? gen_context(system_u:object_r:modules_object_t,s0)
/platform-specific/nyquist/lib/modules(/.*)? gen_context(system_u:object_r:modules_object_t,s0)
/platform-specific/passport/lib/modules(/.*)? gen_context(system_u:object_r:modules_object_t,s0)
/platform-specific/starfleet/lib/modules(/.*)? gen_context(system_u:object_r:modules_object_t,s0)
/platform-specific/intrepid/lib/modules(/.*)? gen_context(system_u:object_r:modules_object_t,s0)
/platform-specific/martion/lib/modules(/.*)? gen_context(system_u:object_r:modules_object_t,s0)
/platform-specific/farscape/lib/modules(/.*)? gen_context(system_u:object_r:modules_object_t,s0)
/platform-specific/borg/lib/modules(/.*)? gen_context(system_u:object_r:modules_object_t,s0)
/platform-specific/scorpion/lib/modules(/.*)? gen_context(system_u:object_r:modules_object_t,s0)
/platform-specific/imperial/lib/modules(/.*)? gen_context(system_u:object_r:modules_object_t,s0)

```

```

/platform-specific/jura/lib/modules(/.*)? gen_context(system_u:object_r:modules_object_t,s0)

/platform-specific/bigbang/lib/systemd/system(/.*)? gen_context(system_u:object_r:systemd_unit_file_t,s0)
/platform-specific/nyquist/lib/systemd/system(/.*)? gen_context(system_u:object_r:systemd_unit_file_t,s0)
/platform-specific/passport/lib/systemd/system(/.*)? gen_context(system_u:object_r:systemd_unit_file_t,s0)
/platform-specific/starfleet/lib/systemd/system(/.*)? gen_context(system_u:object_r:systemd_unit_file_t,s0)
/platform-specific/intrepid/lib/systemd/system(/.*)? gen_context(system_u:object_r:systemd_unit_file_t,s0)
/platform-specific/martian/lib/systemd/system(/.*)? gen_context(system_u:object_r:systemd_unit_file_t,s0)
/platform-specific/farscape/lib/systemd/system(/.*)? gen_context(system_u:object_r:systemd_unit_file_t,s0)
/platform-specific/borg/lib/systemd/system(/.*)? gen_context(system_u:object_r:systemd_unit_file_t,s0)
/platform-specific/scorpion/lib/systemd/system(/.*)? gen_context(system_u:object_r:systemd_unit_file_t,s0)
/platform-specific/imperial/lib/systemd/system(/.*)? gen_context(system_u:object_r:systemd_unit_file_t,s0)
/platform-specific/jura/lib/systemd/system(/.*)? gen_context(system_u:object_r:systemd_unit_file_t,s0)
/platform-specific/quake1/lib/systemd/system(/.*)? gen_context(system_u:object_r:systemd_unit_file_t,s0)
/platform-specific/quake2/lib/systemd/system(/.*)? gen_context(system_u:object_r:systemd_unit_file_t,s0)

/platform-specific/bigbang/usr/binos/conf(/.*)? gen_context(system_u:object_r:usr_t,s0)
/platform-specific/nyquist/usr/binos/conf(/.*)? gen_context(system_u:object_r:usr_t,s0)
/platform-specific/passport/usr/binos/conf(/.*)? gen_context(system_u:object_r:usr_t,s0)
/platform-specific/starfleet/usr/binos/conf(/.*)? gen_context(system_u:object_r:usr_t,s0)
/platform-specific/intrepid/usr/binos/conf(/.*)? gen_context(system_u:object_r:usr_t,s0)
/platform-specific/martian/usr/binos/conf(/.*)? gen_context(system_u:object_r:usr_t,s0)
/platform-specific/farscape/usr/binos/conf(/.*)? gen_context(system_u:object_r:usr_t,s0)
/platform-specific/borg/usr/binos/conf(/.*)? gen_context(system_u:object_r:usr_t,s0)
/platform-specific/scorpion/usr/binos/conf(/.*)? gen_context(system_u:object_r:usr_t,s0)
/platform-specific/imperial/usr/binos/conf(/.*)? gen_context(system_u:object_r:usr_t,s0)
/platform-specific/jura/usr/binos/conf(/.*)? gen_context(system_u:object_r:usr_t,s0)

/platform-specific/bigbang/usr/binos/bin(/.*)? gen_context(system_u:object_r:bin_t,s0)
/platform-specific/nyquist/usr/binos/bin(/.*)? gen_context(system_u:object_r:bin_t,s0)
/platform-specific/passport/usr/binos/bin(/.*)? gen_context(system_u:object_r:bin_t,s0)
/platform-specific/starfleet/usr/binos/bin(/.*)? gen_context(system_u:object_r:bin_t,s0)
/platform-specific/intrepid/usr/binos/bin(/.*)? gen_context(system_u:object_r:bin_t,s0)
/platform-specific/martian/usr/binos/bin(/.*)? gen_context(system_u:object_r:bin_t,s0)
/platform-specific/farscape/usr/binos/bin(/.*)? gen_context(system_u:object_r:bin_t,s0)
/platform-specific/borg/usr/binos/bin(/.*)? gen_context(system_u:object_r:bin_t,s0)
/platform-specific/scorpion/usr/binos/bin(/.*)? gen_context(system_u:object_r:bin_t,s0)
/platform-specific/imperial/usr/binos/bin(/.*)? gen_context(system_u:object_r:bin_t,s0)
/platform-specific/jura/usr/binos/bin(/.*)? gen_context(system_u:object_r:bin_t,s0)

/platform-specific/bigbang/bin(/.*)? gen_context(system_u:object_r:bin_t,s0)
/platform-specific/nyquist/bin(/.*)? gen_context(system_u:object_r:bin_t,s0)
/platform-specific/passport/bin(/.*)? gen_context(system_u:object_r:bin_t,s0)
/platform-specific/starfleet/bin(/.*)? gen_context(system_u:object_r:bin_t,s0)
/platform-specific/intrepid/bin(/.*)? gen_context(system_u:object_r:bin_t,s0)
/platform-specific/martian/bin(/.*)? gen_context(system_u:object_r:bin_t,s0)
/platform-specific/farscape/bin(/.*)? gen_context(system_u:object_r:bin_t,s0)
/platform-specific/borg/bin(/.*)? gen_context(system_u:object_r:bin_t,s0)

```

```

/platform-specific/scorpion/bin(/.*)? gen_context(system_u:object_r:bin_t,s0)
/platform-specific/imperial/bin(/.*)? gen_context(system_u:object_r:bin_t,s0)
/platform-specific/jura/bin(/.*)? gen_context(system_u:object_r:bin_t,s0)

/platform-specific/bigbang/etc/selinux(/.*)? gen_context(system_u:object_r:selinux_config_t,s0)
/platform-specific/nyquist/etc/selinux(/.*)? gen_context(system_u:object_r:selinux_config_t,s0)
/platform-specific/passport/etc/selinux(/.*)? gen_context(system_u:object_r:selinux_config_t,s0)
/platform-specific/starfleet/etc/selinux(/.*)? gen_context(system_u:object_r:selinux_config_t,s0)
/platform-specific/intrepid/etc/selinux(/.*)? gen_context(system_u:object_r:selinux_config_t,s0)
/platform-specific/martian/etc/selinux(/.*)? gen_context(system_u:object_r:selinux_config_t,s0)
/platform-specific/farscape/etc/selinux(/.*)? gen_context(system_u:object_r:selinux_config_t,s0)
/platform-specific/borg/etc/selinux(/.*)? gen_context(system_u:object_r:selinux_config_t,s0)
/platform-specific/scorpion/etc/selinux(/.*)? gen_context(system_u:object_r:selinux_config_t,s0)
/platform-specific/imperial/etc/selinux(/.*)? gen_context(system_u:object_r:selinux_config_t,s0)
/platform-specific/jura/etc/selinux(/.*)? gen_context(system_u:object_r:selinux_config_t,s0)
/platform-specific/quake1/etc/selinux(/.*)? gen_context(system_u:object_r:selinux_config_t,s0)
/platform-specific/quake2/etc/selinux(/.*)? gen_context(system_u:object_r:selinux_config_t,s0)

```

# /objstore/.swtam for hybrid TAM access

```

/objstore(/.*)? gen_context(system_u:object_r:polaris_disk_objstore_t,s0)

```

```

/platform-specific/bigbang/etc/selinux/([^\]*)?contexts(/.*)? gen_context(system_u:object_r:default_context_t,s0)
/platform-specific/nyquist/etc/selinux/([^\]*)?contexts(/.*)? gen_context(system_u:object_r:default_context_t,s0)
/platform-specific/passport/etc/selinux/([^\]*)?contexts(/.*)? gen_context(system_u:object_r:default_context_t,s0)
/platform-specific/starfleet/etc/selinux/([^\]*)?contexts(/.*)? gen_context(system_u:object_r:default_context_t,s0)
/platform-specific/intrepid/etc/selinux/([^\]*)?contexts(/.*)? gen_context(system_u:object_r:default_context_t,s0)
/platform-specific/martian/etc/selinux/([^\]*)?contexts(/.*)? gen_context(system_u:object_r:default_context_t,s0)
/platform-specific/farscape/etc/selinux/([^\]*)?contexts(/.*)? gen_context(system_u:object_r:default_context_t,s0)
/platform-specific/borg/etc/selinux/([^\]*)?contexts(/.*)? gen_context(system_u:object_r:default_context_t,s0)
/platform-specific/scorpion/etc/selinux/([^\]*)?contexts(/.*)? gen_context(system_u:object_r:default_context_t,s0)
/platform-specific/imperial/etc/selinux/([^\]*)?contexts(/.*)? gen_context(system_u:object_r:default_context_t,s0)
/platform-specific/jura/etc/selinux/([^\]*)?contexts(/.*)? gen_context(system_u:object_r:default_context_t,s0)
/platform-specific/quake1/etc/selinux/([^\]*)?contexts(/.*)? gen_context(system_u:object_r:default_context_t,s0)
/platform-specific/quake2/etc/selinux/([^\]*)?contexts(/.*)? gen_context(system_u:object_r:default_context_t,s0)

```

```

/platform-specific/bigbang/etc/hosts[^]* -- gen_context(system_u:object_r:net_conf_t,s0)
/platform-specific/nyquist/etc/hosts[^]* -- gen_context(system_u:object_r:net_conf_t,s0)
/platform-specific/passport/etc/hosts[^]* -- gen_context(system_u:object_r:net_conf_t,s0)
/platform-specific/starfleet/etc/hosts[^]* -- gen_context(system_u:object_r:net_conf_t,s0)
/platform-specific/intrepid/etc/hosts[^]* -- gen_context(system_u:object_r:net_conf_t,s0)
/platform-specific/martian/etc/hosts[^]* -- gen_context(system_u:object_r:net_conf_t,s0)
/platform-specific/farscape/etc/hosts[^]* -- gen_context(system_u:object_r:net_conf_t,s0)
/platform-specific/borg/etc/hosts[^]* -- gen_context(system_u:object_r:net_conf_t,s0)
/platform-specific/scorpion/etc/hosts[^]* -- gen_context(system_u:object_r:net_conf_t,s0)
/platform-specific/imperial/etc/hosts[^]* -- gen_context(system_u:object_r:net_conf_t,s0)
/platform-specific/jura/etc/hosts[^]* -- gen_context(system_u:object_r:net_conf_t,s0)

```

```

/verify_packages.sh -- gen_context(system_u:object_r:bin_t,s0)
/platform-specific/bigbang/verify_packages.sh -- gen_context(system_u:object_r:bin_t,s0)
/platform-specific/nyquist/verify_packages.sh -- gen_context(system_u:object_r:bin_t,s0)
/platform-specific/passport/verify_packages.sh -- gen_context(system_u:object_r:bin_t,s0)
/platform-specific/starfleet/verify_packages.sh -- gen_context(system_u:object_r:bin_t,s0)
/platform-specific/intrepid/verify_packages.sh -- gen_context(system_u:object_r:bin_t,s0)
/platform-specific/martian/verify_packages.sh -- gen_context(system_u:object_r:bin_t,s0)
/platform-specific/farscape/verify_packages.sh -- gen_context(system_u:object_r:bin_t,s0)
/platform-specific/borg/verify_packages.sh -- gen_context(system_u:object_r:bin_t,s0)
/platform-specific/scorpion/verify_packages.sh -- gen_context(system_u:object_r:bin_t,s0)
/platform-specific/imperial/verify_packages.sh -- gen_context(system_u:object_r:bin_t,s0)
/platform-specific/jura/verify_packages.sh -- gen_context(system_u:object_r:bin_t,s0)

/platform-specific/bigbang/etc/udev/rules.d(/.*)? gen_context(system_u:object_r:udev_rules_t,s0)
/platform-specific/nyquist/etc/udev/rules.d(/.*)? gen_context(system_u:object_r:udev_rules_t,s0)
/platform-specific/passport/etc/udev/rules.d(/.*)? gen_context(system_u:object_r:udev_rules_t,s0)
/platform-specific/starfleet/etc/udev/rules.d(/.*)? gen_context(system_u:object_r:udev_rules_t,s0)
/platform-specific/intrepid/etc/udev/rules.d(/.*)? gen_context(system_u:object_r:udev_rules_t,s0)
/platform-specific/martian/etc/udev/rules.d(/.*)? gen_context(system_u:object_r:udev_rules_t,s0)
/platform-specific/farscape/etc/udev/rules.d(/.*)? gen_context(system_u:object_r:udev_rules_t,s0)
/platform-specific/borg/etc/udev/rules.d(/.*)? gen_context(system_u:object_r:udev_rules_t,s0)
/platform-specific/scorpion/etc/udev/rules.d(/.*)? gen_context(system_u:object_r:udev_rules_t,s0)
/platform-specific/imperial/etc/udev/rules.d(/.*)? gen_context(system_u:object_r:udev_rules_t,s0)
/platform-specific/jura/etc/udev/rules.d(/.*)? gen_context(system_u:object_r:udev_rules_t,s0)

/dev/shm/sem\,i2c_sem000 gen_context(system_u:object_r:polaris_quake_i2c_t,s0)
/dev/shm/sem\,i2c_sem001 gen_context(system_u:object_r:polaris_quake_i2c_t,s0)
/dev/shm/sem\,i2c_sem002 gen_context(system_u:object_r:polaris_quake_i2c_t,s0)
/dev/shm/sem\,i2c_sem003 gen_context(system_u:object_r:polaris_quake_i2c_t,s0)
/dev/shm/sem\,i2c_sem004 gen_context(system_u:object_r:polaris_quake_i2c_t,s0)
/dev/shm/sem\,i2c_sem005 gen_context(system_u:object_r:polaris_quake_i2c_t,s0)
/dev/shm/sem\,i2c_sem006 gen_context(system_u:object_r:polaris_quake_i2c_t,s0)
/dev/shm/sem\,i2c_sem007 gen_context(system_u:object_r:polaris_quake_i2c_t,s0)
/dev/shm/sem\,io_expander_semaphore gen_context(system_u:object_r:polaris_quake_i2c_t,s0)

on pangea/bigbang platforms /dev/NVRAM block device is accessed
by flashlib in iosd. It stores rommon vars
ifdef(`bigbang_platform',`
/dev/NVRAM -b gen_context(system_u:object_r:polaris_flashlib_device_t)
/mnt/sd6
/mnt/sd6(/.*)? gen_context(system_u:object_r:polaris_obfl_data_t,s0)
')

/vol/usb1(/.*)? gen_context(system_u:object_r:polaris_disk_harddisk_t,s0)

/mnt/vbd[a-j]2(/.*)? gen_context(system_u:object_r:polaris_obfl_data_t,s0)

```

/tmp/fpga\_upgrade gen\_context(system\_u:object\_r:polaris\_fpga\_upgrade\_tmp\_t,s0)

#/unicode0 9300 silent roll

/unicode0(/.\*)? gen\_context(system\_u:object\_r:polaris\_disk\_unicode0\_t,s0)

#/dev/cisco/fpga\_iomem device, Generic Memory map driver for mapping FPGA IO memory to userspace

/dev/cisco/fpga\_iomem -c gen\_context(system\_u:object\_r:polaris\_fpga\_iomem\_mmapfpga\_device\_t,s0)

# nplum-power file is located in /bootflash and needs to be accessed by cman-rp/IOSd

/flash1/user/nplum-power gen\_context(system\_u:object\_r:polaris\_nplum\_power\_file\_t,s0)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisngwc.fc

No license file was found, but licenses were detected in source scan.

#

# June 2020, Cuiyan Ma

#

# Copyright (c) 2020 by Cisco Systems, Inc.

# All rights reserved

#

/usr/binos/conf/issu\_comp\_check.sh -- gen\_context(system\_u:object\_r:polaris\_issu\_comp\_check\_exec\_t,s0)

/tmp/boottime\_comp\_check\_tree\_other\_rp -d gen\_context(system\_u:object\_r:polaris\_issu\_comp\_check\_tmp\_t,s0)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisissucompcheck.fc

No license file was found, but licenses were detected in source scan.

#

# March 2017, Victor Kamensky

#

# Copyright (c) 2017-2020 by Cisco Systems, Inc.

# All rights reserved

#

## <summary>Polaris repm Policy Rules.</summary>

#####

## <summary>

## Manage /tmp/replications files.

## </summary>

## <param name="domain">

## <summary>

## Domain allowed access.

## </summary>

## </param>

#

```

interface(`polaris_repm_tmp_manage',`
 gen_require(`
 type polaris_repm_tmp_t;
 `)
 manage_files_pattern($1, polaris_repm_tmp_t, polaris_repm_tmp_t)
 manage_dirs_pattern($1, polaris_repm_tmp_t, polaris_repm_tmp_t)
`)

#####
<summary>
Manage /dev/shm/mq.-repm_peer_mq/ files.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_repm_peer_mqipc_manage',`
 gen_require(`
 type polaris_repm_peer_mqipc_t;
 `)
 manage_files_pattern($1, polaris_repm_peer_mqipc_t, polaris_repm_peer_mqipc_t)
 allow $1 polaris_repm_peer_mqipc_t:file map;
 polaris_mqipc_create_name_dir($1, polaris_repm_peer_mqipc_t, repm_peer_mq)
`)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisrepm.if

No license file was found, but licenses were detected in source scan.

dnl

dnl April 2018, Victor Kamensky

dnl

dnl Copyright (c) 2018-2019 by Cisco Systems, Inc.

dnl All rights reserved

dnl

```
define(`mqipc_interface_map',`defn(format(`mqipc_interface_map[%s]",`$1'))')
```

```
define(`mqipc_interface_map_set',`define(format(`mqipc_interface_map[%s]",`$1'),`$2'))')
```

```
define(`polaris_mqipc_service_server_many',
```

```
 `ifelse($3,`,
```

```
 polaris_mqipc_create_name(dollarsone, $1, $2),
```

```
 polaris_mqipc_create_name(dollarsone, $1, $2-b$3)
```

```
 `ifelse($3, 0, `polaris_mqipc_create_name(dollarsone, $1, $2)', `polaris_mqipc_service_server_many($1, $2,
```

```
eval($3 - 1))')')
```



```

define(`polaris_mqipc_service_server_aux_full',`dnl
#####
<summary>
Create $2 mqipc chanell.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<infoflow type="none"/>
#
interface(`polaris_mqipc_$1_create_name',`
 gen_require(
 type $2;
)
 $3
")

#####
<summary>
Use $2 mqipc chanell.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<infoflow type="none"/>
#
interface(`polaris_mqipc_$1_use',`
 gen_require(
 type $2;
)

 polaris_mqipc_use(dollarsone, $2)
")
)

define(`polaris_mqipc_service_server_aux',`
ifelse(mqipc_interface_map($1), `', `polaris_mqipc_service_server_aux_full($1, $2, $3)')
mqipc_interface_map_set($1, 1)
)

define(`polaris_mqipc_service_server',`dnl
polaris_mqipc_service_server_aux(mqipc_stem($1), mqipc_label($1),
 polaris_mqipc_service_server_many(mqipc_label($1), $5, max_scope_map($3, $4, $2)))')

```

```
define(`polaris_mqipc_service_client`,`
```

```
define(`polaris_mqipc_service_server_elastic_client`,`dnl
```

```
polaris_mqipc_service_server_aux(mqipc_stem($1), mqipc_label($1),
 polaris_mqipc_service_server_many(mqipc_label($1), $5, max_scope_map($4, elastic, $3)))`
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/m4/polaris\_ipc\_mqipc\_if.m4

No license file was found, but licenses were detected in source scan.

```
#
```

```
March 2017, Victor Kamensky
```

```
#
```

```
Copyright (c) 2016-2019 by Cisco Systems, Inc.
```

```
All rights reserved
```

```
#
```

```
/dev/lsmapi -c gen_context(system_u:object_r:polaris_lsmapi_device_t,s0)
```

```
/dev/lsmapi_app0 -c gen_context(system_u:object_r:polaris_lsmapi_device_t,s0)
```

```
/dev/lsmapi_app1 -c gen_context(system_u:object_r:polaris_lsmapi_device_t,s0)
```

```
/dev/lsmapi_app2 -c gen_context(system_u:object_r:polaris_lsmapi_device_t,s0)
```

```
/tmp/pi(/.*)? gen_context(system_u:object_r:polaris_pi_uds_t,s0)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarislsmapi.fc

No license file was found, but licenses were detected in source scan.

```
#
```

```
November 2020, Christine Hwang
```

```
#
```

```
Copyright (c) 2017-2021 by Cisco Systems, Inc.
```

```
All rights reserved
```

```
#
```

```
policy_module(polarisbbu, 1.0);
```

```
gen_require(`
```

```
 type polaris_bbu_t;
```

```
`)
```

```
polaris_btrace_data_manage(polaris_bbu_t)
```

```
polaris_chasfs_manage(polaris_bbu_t)
```

```
polaris_tdlresolve_read(polaris_bbu_t)
```

```
polaris_cpld_read(polaris_bbu_t)
```

```
polaris_ripc_sman_ui_serv_connect(polaris_bbu_t)
```

```

Allow I2C Usage
polaris_i2c_use(polaris_bbu_t)
polaris_i2c_sem_manage(polaris_bbu_t)

Allow sysfs read for platform ID
dev_list_sysfs(polaris_bbu_t)

Allow bbu to access NVRAM for /flash0/bbu
fs_getattr_tmpfs(polaris_bbu_t)
polaris_nvram_manage(polaris_bbu_t)

Allow logger which is used for syslog messages
allow polaris_bbu_t self:unix_dgram_socket { connect create };
logging_send_syslog_msg(polaris_bbu_t)

tty BBU device
type polaris_bbu_device_t;
dev_node(polaris_bbu_device_t)

polaris_bbu_dev_use(polaris_bbu_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisbbu.te
No license file was found, but licenses were detected in source scan.

#
February 2020, Victor Kamensky
#
Copyright (c) 2020 by Cisco Systems, Inc.
All rights reserved
#

<summary>Polaris dmi_ports_fetch Policy Rules.</summary>

#####

<summary>
Execute a domain transition to run dmi_ports_fetch.
</summary>
<param name="domain">
<summary>
Domain allowed to transition.
</summary>
</param>
#
interface(`polaris_dmi_ports_fetch_domtrans`,
 gen_require(`
 type polaris_dmi_ports_fetch_t, polaris_dmi_ports_fetch_exec_t;
 `)

```

```
 domtrans_pattern($1, polaris_dmi_ports_fetch_exec_t, polaris_dmi_ports_fetch_t)
')
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisdmiportsfetch.if
```

No license file was found, but licenses were detected in source scan.

```
#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2020 by Cisco Systems, Inc.
All rights reserved
#
```

```
policy_module(polariscliagent, 1.0);
```

```
gen_require(
 type polaris_cli_agent_t;
)
```

```
polaris_btrace_data_manage(polaris_cli_agent_t)
polaris_crft_data_manage(polaris_cli_agent_t)
polaris_chasfs_manage(polaris_cli_agent_t)
polaris_tdlresolve_read(polaris_cli_agent_t)
polaris_tdlldb_list_dirs(polaris_cli_agent_t)
polaris_cpld_read(polaris_cli_agent_t)
polaris_flashlib_read(polaris_cli_agent_t)
```

```
polaris_ripc_sman_ui_serv_connect(polaris_cli_agent_t)
```

```
polaris_db_tdlldb_dir_use(polaris_cli_agent_t)
```

```
polaris_libeiutil_build_config_directory(polaris_cli_agent_t)
```

```
cli_agent /var/run pid file
type polaris_cli_agent_var_run_t;
files_pid_file(polaris_cli_agent_var_run_t)
manage_files_pattern(polaris_cli_agent_t, polaris_cli_agent_var_run_t, polaris_cli_agent_var_run_t)
manage_dirs_pattern(polaris_cli_agent_t, polaris_cli_agent_var_run_t, polaris_cli_agent_var_run_t)
files_pid_filetrans(polaris_cli_agent_t, polaris_cli_agent_var_run_t, { file dir })
```

```
polaris_cfg_data_manage(polaris_cli_agent_t)
```

```
Provide sys_resource capability as well for sys_pipe calls
allow polaris_cli_agent_t self:capability { dac_override sys_resource };
```

```
logging_send_syslog_msg(polaris_cli_agent_t)
```

```
#DB persistence
polaris_tdlldbpersist_setup(polaris_cli_agent_t)
polaris_tmp_tdlldb_persist_setup(polaris_cli_agent_t)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscliagent.te
No license file was found, but licenses were detected in source scan.
```

```
#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2020 by Cisco Systems, Inc.
All rights reserved
#
```

```
policy_module(polarisflashlib, 1.0);
```

```
#####
Flashlib policy (infra/flashlib)
#####
type polaris_flashlib_lock_t;
files_type(polaris_flashlib_lock_t)
```

```
gen_require(^
 attribute polaris_extended_domain;
')
```

```
/tmp/.flashlock file is used as flashlib lock
gen_require(^
 type init_t;
')
files_tmp_filetrans({ init_t polaris_extended_domain }, polaris_flashlib_lock_t, file, ".flashlock")
```

```
type polaris_flashlib_log_t;
files_type(polaris_flashlib_log_t)
```

```
gen_require(^
 attribute polaris_extended_domain;
')
```

```
/tmp/flashdev.log file is used as flashlib to log
files_tmp_filetrans(polaris_extended_domain, polaris_flashlib_log_t, file, "flashdev.log")
```

```
/dev/shm/flash_shm shared memory
type polaris_flash_shm_t;
files_type(polaris_flash_shm_t)
```

```
gen_require(`
 attribute polaris_domain;
 type tmpfs_t;
`)
filetrans_pattern(polaris_domain, tmpfs_t, polaris_flash_shm_t, file, "flash_shm")
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisflashlib.te

No license file was found, but licenses were detected in source scan.

```
#
July 2017, Victor Kamensky
#
Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved
#
<summary>Polaris CPLD Policy Rules.</summary>
```

```
#####
Quack Driver policy
#####
```

```
#####
<summary>
Work (read, write, ioctl) with /dev/quack
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
```

```
interface(`polaris_quack_dev_use',`
gen_require(`
 type device_t;
 type polaris_quack_device_t;
`)
write_chr_files_pattern($1, device_t, polaris_quack_device_t)
read_chr_files_pattern($1, device_t, polaris_quack_device_t)
`)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisquack.if

No license file was found, but licenses were detected in source scan.

```
#
October 2017, Victor Kamensky
```

```
#
Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved
#

<summary>Polaris wstatsd Policy Rules.</summary>
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariswstatsd.if
No license file was found, but licenses were detected in source scan.
```

```
dnl
dnl Mar 2020, Manu Roy
dnl
dnl Copyright (c) 2020 by Cisco Systems, Inc.
dnl All rights reserved
dnl
dnl Petra Platform Max Bay Limits
max_bay_map_set(`rp', `per_bay', 0)
max_bay_map_set(`cc', `per_bay', 0)
max_bay_map_set(`fp', `per_bay', 0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/petramaps.m4
No license file was found, but licenses were detected in source scan.
```

```
#
October 2017, Victor Kamensky
#
Copyright (c) 2017-2020 by Cisco Systems, Inc.
All rights reserved
#
```

```
policy_module(polariswstatsd, 1.0);
```

```
gen_require(
 type polaris_wstatsd_t;
)
```

```
polaris_btrace_data_manage(polaris_wstatsd_t)
polaris_crft_data_manage(polaris_wstatsd_t)
polaris_chasfs_manage(polaris_wstatsd_t)
polaris_tdlresolve_read(polaris_wstatsd_t)
polaris_tdlldb_list_dirs(polaris_wstatsd_t)
polaris_cpld_read(polaris_wstatsd_t)
polaris_lua_read(polaris_wstatsd_t)
polaris_flashlib_read(polaris_wstatsd_t)
```

polaris\_ripc\_sman\_ui\_serv\_connect(polaris\_wstatsd\_t)

polaris\_db\_tdlldb\_dir\_use(polaris\_wstatsd\_t)

allow polaris\_wstatsd\_t self:capability dac\_override;  
allow polaris\_wstatsd\_t self:udp\_socket { bind setopt getattr };  
corenet\_udp\_bind\_generic\_node(polaris\_wstatsd\_t)  
corenet\_udp\_bind\_polaris\_capwap\_data\_port(polaris\_wstatsd\_t)  
polaris\_socketat\_nsfs\_read(polaris\_wstatsd\_t)  
polaris\_lfts\_dev\_use(polaris\_wstatsd\_t)

polaris\_tdlldbpersist\_setup(polaris\_wstatsd\_t)

polaris\_tmp\_tdlldb\_persist\_setup(polaris\_wstatsd\_t)

logging\_send\_syslog\_msg(polaris\_wstatsd\_t)

#allow to read /etc/passwd  
auth\_use\_nsswitch(polaris\_wstatsd\_t)

#this is being given for process to execute tar  
corecmd\_exec\_bin(polaris\_wstatsd\_t)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariswstatsd.te

No license file was found, but licenses were detected in source scan.

#  
# December 2019, Victor Kamensky  
#  
# Copyright (c) 2019-2020 by Cisco Systems, Inc.  
# All rights reserved  
#

policy\_module(polarisfnfagg, 1.0);

gen\_require(  
 type polaris\_fnf\_agg\_t;  
)

polaris\_btrace\_data\_manage(polaris\_fnf\_agg\_t)  
polaris\_crft\_data\_manage(polaris\_fnf\_agg\_t)  
polaris\_chasfs\_read(polaris\_fnf\_agg\_t)  
polaris\_tdlresolve\_read(polaris\_fnf\_agg\_t)  
polaris\_lua\_read(polaris\_fnf\_agg\_t)  
polaris\_flashlib\_read(polaris\_fnf\_agg\_t)  
polaris\_cpld\_read(polaris\_fnf\_agg\_t)



```

polaris_ripc_sman_ui_serv_connect(polaris_fnf_agg_t)

polaris_db_tlddb_dir_use(polaris_fnf_agg_t)

allow polaris_fnf_agg_t self:capability { dac_override dac_read_search };

type polaris_fnf_agg_tmp_t;
files_tmp_file(polaris_fnf_agg_tmp_t)
files_tmp_filetrans(polaris_fnf_agg_t, polaris_fnf_agg_tmp_t, dir, "fnf_agg")
manage_files_pattern(polaris_fnf_agg_t, polaris_fnf_agg_tmp_t, polaris_fnf_agg_tmp_t)
manage_dirs_pattern(polaris_fnf_agg_t, polaris_fnf_agg_tmp_t, polaris_fnf_agg_tmp_t)

allow sending files over HTTP
corenet_tcp_connect_http_port(polaris_fnf_agg_t)
sysnet_read_config(polaris_fnf_agg_t)

allow UDP connection for punting fnf records
allow polaris_fnf_agg_t self:udp_socket { create_socket_perms recv_msg };
corenet_udp_bind_generic_node(polaris_fnf_agg_t)

allow punting on routers/ewlc where lfts is being used
polaris_lfts_dev_use(polaris_fnf_agg_t)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisfnfagg.te

No license file was found, but licenses were detected in source scan.

```

#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2021 by Cisco Systems, Inc.
All rights reserved
#

<summary>Polaris VXE Platform Policy Rules.</summary>

```

```

interface(`polaris_objstore_sem_use',`
 gen_require(`
 type polaris_objstore_sem_t;
 `)
 allow $1 polaris_objstore_sem_t:sem rw_sem_perms;
 mmap_files_pattern($1, polaris_objstore_sem_t, polaris_objstore_sem_t)
 manage_files_pattern($1, polaris_objstore_sem_t, polaris_objstore_sem_t)
`)

```

```

#####
<summary>
Work (read, write, ioctl) with /dev/vda1 device

```

```

</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_grub_efi_use`,`
gen_require(`
type polaris_grub_efi_t;
`)
write_chr_files_pattern($1, polaris_grub_efi_t, polaris_grub_efi_t)
read_chr_files_pattern($1, polaris_grub_efi_t, polaris_grub_efi_t)
`)

#####
<summary>
Search /dev/vda1 device the efi partition
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_grub_efi_search`,`
gen_require(`
type polaris_grub_efi_t;
`)
search_dirs_pattern($1, polaris_grub_efi_t, polaris_grub_efi_t)
`)

#####
<summary>
Read VXE install info files
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_vxeinstall_info_read`,`
gen_require(`
type polaris_vxeinstall_info_t;
`)
read_files_pattern($1, polaris_vxeinstall_info_t, polaris_vxeinstall_info_t)
list_dirs_pattern($1, polaris_vxeinstall_info_t, polaris_vxeinstall_info_t)
`)

```

```

)

#####
<summary>
Read /dev/vda1 device the efi partition
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_grub_info_read',`
gen_require(`
type polaris_grubver_t;
type polaris_grub_bios_t;
type polaris_grub_efi_t;
`)
read_files_pattern($1, polaris_grubver_t, polaris_grubver_t)
read_files_pattern($1, polaris_grub_bios_t, polaris_grub_bios_t)
read_files_pattern($1, polaris_grub_efi_t, polaris_grub_efi_t)
list_dirs_pattern($1, polaris_grubver_t, polaris_grubver_t)
list_dirs_pattern($1, polaris_grub_bios_t, polaris_grub_bios_t)
list_dirs_pattern($1, polaris_grub_efi_t, polaris_grub_efi_t)
`)

#####
<summary>
Manage /dev/vda1 device the efi partition
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_grubcfg_manage',`
gen_require(`
type polaris_grub_bios_t;
type polaris_grub_efi_t;
`)
manage_files_pattern($1, polaris_grub_bios_t, polaris_grub_bios_t)
manage_files_pattern($1, polaris_grub_efi_t, polaris_grub_efi_t)
manage_dirs_pattern($1, polaris_grub_bios_t, polaris_grub_bios_t)
manage_dirs_pattern($1, polaris_grub_efi_t, polaris_grub_efi_t)
`)

#####

```

```

<summary>
Manage regular files/directories under /varied/grub
CSR manages files in legacy grub disk location
also allow run readlink -f /dev/bootflash
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_legacy_grub_manage',`
gen_require(`
type boot_t;
type fixed_disk_device_t;
`)
manage_files_pattern($1, boot_t, boot_t)
manage_dirs_pattern($1, boot_t, boot_t)
storage_getattr_fixed_disk_dev($1)
`)

#####
<summary>
Work (read, write, ioctl) with /dev/hanet
hanet driver used by vpcgw platform of VXE family
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
ifdef(`vpcgw_platform',`
interface(`polaris_hanet_dev_use',`
gen_require(`
 type device_t;
 type polaris_hanet_device_t;
`)
 write_chr_files_pattern($1, device_t, polaris_hanet_device_t)
 read_chr_files_pattern($1, device_t, polaris_hanet_device_t)
`)
`)
#

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisvxe.if
No license file was found, but licenses were detected in source scan.

#

```

# March 2017, Victor Kamensky

#

# Copyright (c) 2016-2020 by Cisco Systems, Inc.

# All rights reserved

#

```
/usr/binos/conf/pman.sh -- gen_context(system_u:object_r:polaris_pman_exec_t,s0)
/usr/bin/pman -- gen_context(system_u:object_r:polaris_pman_exec_t,s0)
/bin/gdbserver -- gen_context(system_u:object_r:polaris_gdb_exec_t,s0)
/usr/bin/gdbserver -- gen_context(system_u:object_r:polaris_gdb_exec_t,s0)
/tmp/pman_ports(/.*)? gen_context(system_u:object_r:polaris_pman_tmp_t,s0)

/tmp/fp/process(/.*)? gen_context(system_u:object_r:polaris_pman_tmp_t,s0)
/tmp/rp/process(/.*)? gen_context(system_u:object_r:polaris_pman_tmp_t,s0)

/tmp/vxe_ucose_image gen_context(system_u:object_r:polaris_pman_tmp_t,s0)
/tmp/wlc_ucose_image gen_context(system_u:object_r:polaris_pman_tmp_t,s0)
/tmp/utah_ucose_image gen_context(system_u:object_r:polaris_pman_tmp_t,s0)
/tmp/fugazi_ucose_image gen_context(system_u:object_r:polaris_pman_tmp_t,s0)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarispman.fc

No license file was found, but licenses were detected in source scan.

dnl

dnl April 2018, Victor Kamensky

dnl

dnl Copyright (c) 2018-2019 by Cisco Systems, Inc.

dnl All rights reserved

dnl

dnl Macallan Platform Max Bay Limits

max\_bay\_map\_set(`rp', `per\_bay', 0)

max\_bay\_map\_set(`cc', `per\_bay', 9)

max\_bay\_map\_set(`fp', `per\_bay', 9)

min\_bay\_ripc\_map\_set(`rp', `per\_bay', 0)

min\_bay\_ripc\_map\_set(`cc', `per\_bay', 1)

min\_bay\_ripc\_map\_set(`fp', `per\_bay', 0)

max\_bay\_ripc\_map\_set(`rp', `per\_bay', 2)

max\_bay\_ripc\_map\_set(`cc', `per\_bay', 10)

max\_bay\_ripc\_map\_set(`fp', `per\_bay', 1)

min\_bay\_ripc\_map\_set(`rp', `global', 0)

min\_bay\_ripc\_map\_set(`cc', `global', 1)

min\_bay\_ripc\_map\_set(`fp', `global', 0)

max\_bay\_ripc\_map\_set(`rp', `global', 2)

```
max_bay_ripc_map_set(`cc`, `global`, 10)
max_bay_ripc_map_set(`fp`, `global`, 1)
```

```
dnl in elastic scope each process has its own value
max_elastic_map_set(`rp`, `elastic`, BPROC_ODM, 0)
max_elastic_map_set(`cc`, `elastic`, BPROC_ODM, 0)
max_elastic_map_set(`fp`, `elasitic`, BPROC_ODM, 0)
```

```
max_elastic_map_set(`rp`, `elastic`, BPROC_WNCD, 0)
max_elastic_map_set(`cc`, `elastic`, BPROC_WNCD, 0)
max_elastic_map_set(`fp`, `elastic`, BPROC_WNCD, 0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/macallanmaps.m4
```

No license file was found, but licenses were detected in source scan.

```
#
March 2017, Victor Kamensky
#
Copyright (c) 2017-2020 by Cisco Systems, Inc.
All rights reserved
#
```

```
policy_module(polarisissustack, 1.0);
```

```
gen_require(
 type polaris_issu_stack_t;
)
```

```
corecmd_exec_bin(polaris_issu_stack_t)
corecmd_exec_shell(polaris_issu_stack_t)
```

```
run ldd, which in turns execve "ld.so --verify"
libs_exec_ld_so(polaris_issu_stack_t)
```

```
allow read of /etc/group and /etc/passwd
auth_use_nsswitch(polaris_issu_stack_t)
```

```
allow to read /proc/meminfo
kernel_read_system_state(polaris_issu_stack_t)
```

```
work with /tmp files (/tmp/issu_stk)
type polaris_issu_stack_tmp_t;
files_tmp_file(polaris_issu_stack_tmp_t)
manage_dirs_pattern(polaris_issu_stack_t, tmp_t, polaris_issu_stack_tmp_t)
manage_files_pattern(polaris_issu_stack_t, polaris_issu_stack_tmp_t, polaris_issu_stack_tmp_t)
manage_fifo_files_pattern(polaris_issu_stack_t, polaris_issu_stack_tmp_t, polaris_issu_stack_tmp_t)
files_tmp_filetrans(polaris_issu_stack_t, polaris_issu_stack_tmp_t, file)
```

```

files_tmp_filetrans(polaris_issu_stack_t, polaris_issu_stack_tmp_t, dir, "issu_stk")

allow polaris_issu_stack_t self:capability sys_resource;

polaris_btrace_data_manage(polaris_issu_stack_t)
polaris_chasfs_manage(polaris_issu_stack_t)
polaris_cpld_read(polaris_issu_stack_t)
polaris_proc_rmonbifo_read(polaris_issu_stack_t)
polaris_rmonbifo_tmp_read(polaris_issu_stack_t)
polaris_boot_tmp_read(polaris_issu_stack_t)
polaris_tdlresolve_read(polaris_issu_stack_t)
polaris_disk_crashinfo_getattr(polaris_issu_stack_t)

allow polaris_issu_stack_t self:capability dac_override;

polaris_read_debug_conf(polaris_issu_stack_t)

polaris_flashlib_read(polaris_issu_stack_t)

allow polaris_issu_stack_t self:process setpgid;

modify tdlresolve epoch
polaris_tdlresolve_manage(polaris_issu_stack_t)

#rsync_exec(polaris_issu_stack_t)
gen_require(^
 type rsync_t;
)
rsync_entry_domtrans(polaris_issu_stack_t, rsync_t)
allow rsync_t polaris_issu_stack_t:process sigchld;

execute rsync over over eobc: /usr/binos/conf/mcp_chvrf.sh eobc rsync
polaris_chvrf_domtrans(polaris_issu_stack_t)
from chvrf.sh code executes rsync command
gen_require(^
 type polaris_chvrf_t;
)
rsync_entry_domtrans(polaris_chvrf_t, rsync_t)
LOOK AT ME: issu_stack.sh leaks fd of /tmp/issu_stk/chassis_state_evt_fifo
for now grant access, since changing script may not be trivial
manage_fifo_files_pattern(polaris_chvrf_t, polaris_issu_stack_tmp_t, polaris_issu_stack_tmp_t)
write_files_pattern(polaris_chvrf_t, polaris_issu_stack_tmp_t, polaris_issu_stack_tmp_t)

polaris_install_engine_domtrans(polaris_issu_stack_t)
LOOK AT ME: isse_stack.sh leak fd of /tmp/issu_stk/chassis_state_evt_fifo
for now grant access, since changing script may not be trivial
gen_require(^
 type polaris_install_engine_t;

```

```

)
read_fifo_files_pattern(polaris_install_engine_t, polaris_issu_stack_tmp_t, polaris_issu_stack_tmp_t)

polaris_install_tmp_read(polaris_issu_stack_t)

access /bootflash/.installer/install_issu_state
polaris_disk_install_read(polaris_issu_stack_t)

rm from coreutils-8.30 wants to know filesystem type
fs_getattr_tmpfs(polaris_issu_stack_t)

reads /tmp/remote_sw_verinfo.txt
gen_require(
 type rsync_tmp_t;
)
read_files_pattern(polaris_issu_stack_t, rsync_tmp_t, rsync_tmp_t)

watch over /tmp/tdlresolve/work
polaris_tdlresolve_watch(polaris_issu_stack_t)

#issu_stack.sh access to epoch_merge.lua,epoch_endpoint_update.lua
polaris_lua_read(polaris_issu_stack_t)

#issu_stack.sh access to /tmp/rsync_log_dir
polaris_manage_rsync_tmpllog_dir(polaris_issu_stack_t)

#issu_stack.sh access to epoch_merge.lua which merges epoch files, local.epoch and inyterchassis/.epcioh file
#luajit/usr/binos/conf/epoch_merge.lua--base-file/tmp/tdlresolve/epoch_dir/local.epoch
#--merge-file/tmp/tdlresolve/work/inter
allow polaris_issu_stack_t self:process execmem;

#access to /tmp/installer/
polaris_install_tmp_manage(polaris_issu_stack_t)

#access to /tmp/ufs/harddisk
polaris_ncd_tmp_read(polaris_issu_stack_t)

use of errmsg.sh
polaris_script_errmsg_use(polaris_issu_stack_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisissustack.te
No license file was found, but licenses were detected in source scan.

#
March 2017, Victor Kamensky
#

```



```

Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#

policy_module(polarislsmapi, 1.0);

#####
Polaris lsmapi
#####

type polaris_lsmapi_device_t;
dev_node(polaris_lsmapi_device_t)

note polaris_sysfs_contdev_t is defined in kernel/devices.te, since genfscon statements
could be only in base policy

punt/inject working through unix domain sockets
type polaris_pi_uds_t;
files_tmp_file(polaris_pi_uds_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarislsmapi.te
No license file was found, but licenses were detected in source scan.

#
May 2017, Victor Kamensky
#
Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved
#

<summary>Polaris mdt_pubd Policy Rules.</summary>

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarismdtpubd.if
No license file was found, but licenses were detected in source scan.

#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2020 by Cisco Systems, Inc.
All rights reserved
#

policy_module(polarisemd, 1.0);

gen_require(
 type polaris_emd_t;

```

```

)

polaris_btrace_data_manage(polaris_emd_t)
polaris_crft_data_manage(polaris_emd_t)
polaris_chasfs_manage(polaris_emd_t)
polaris_tdlresolve_read(polaris_emd_t)
polaris_tdlldb_list_dirs(polaris_emd_t)
polaris_cpld_read(polaris_emd_t)
polaris_flashlib_read(polaris_emd_t)

polaris_ripc_sman_ui_serv_connect(polaris_emd_t)

polaris_cpld_dev_use(polaris_emd_t)
dev_read_sysfs(polaris_emd_t)
polaris_obfl_data_manage(polaris_emd_t)
polaris_persistent_read(polaris_emd_t)

allow polaris_emd_t self:capability dac_override;

#ifdef(^mcp_family',`
polaris_scooby_dev_use(polaris_emd_t)
read/write /sys/bus/i2c/drivers/pca9544/2-0077/reg_control and others
dev_getattr_sysfs_fs(polaris_emd_t)
dev_rw_sysfs(polaris_emd_t)
`)

logging_send_syslog_msg(polaris_emd_t)

#ifdef(^qwlc_platform',`
on qwlc read eeprom through i2c like /sys/devices/i2c-12/12-0050/eeprom
dev_rw_sysfs(polaris_emd_t)
dev_getattr_sysfs_fs(polaris_emd_t)
`)

#sparrow needs access to /dev/i2c*
#ifdef(^sparrow_platform',`
gen_require(`
 type polaris_cm_cc_tmpfs_t;
`)
polaris_i2c_use(polaris_emd_t)
polaris_i2c_sem_manage(polaris_emd_t)
mmap_files_pattern(polaris_emd_t, polaris_cm_cc_tmpfs_t, polaris_cm_cc_tmpfs_t)
`)

#ifdef(^katar_platform',`
dev_rw_sysfs(polaris_emd_t)
dev_getattr_sysfs_fs(polaris_emd_t)
`)

```

```
emd creates udp socket
allow polaris_emd_t self:udp_socket create_socket_perms;
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisemd.te
```

No license file was found, but licenses were detected in source scan.

```
#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2020 by Cisco Systems, Inc.
All rights reserved
#
```

```
<summary>Polaris polarisdroputil Policy Rules.</summary>
```

```
#####
```

```
<summary>
Manage droputils temporary files and directories in /tmp.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
```

```
interface(`polaris_droputil_manage_tmp_files`,`
 gen_require(`
 type polaris_droputil_tmp_t;
 `)

 manage_files_pattern($1, polaris_droputil_tmp_t, polaris_droputil_tmp_t)
 read_innk_files_pattern($1, polaris_droputil_tmp_t, polaris_droputil_tmp_t)
`)
```

```
#####
```

```
<summary>
Watch droputil_tmp directories
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolebase/>
#
```

```
interface(`polaris_droputil_tmp_watch`,`
```

```
gen_require(
 type polaris_droputil_tmp_t;
)
 allow $1 polaris_droputil_tmp_t:dir watch;
)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisdroputil.if

No license file was found, but licenses were detected in source scan.

```

March 2017, Victor Kamensky

Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#
```

```
/tmp/iosd_level -- gen_context(system_u:object_r:polaris_lm_tmp_t,s0)
/tmp/stack_apcount -- gen_context(system_u:object_r:polaris_lm_tmp_t,s0)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarislm.fc

No license file was found, but licenses were detected in source scan.

```
dnl
dnl April 2018, Victor Kamensky
dnl
dnl Copyright (c) 2018-2019 by Cisco Systems, Inc.
dnl All rights reserved
dnl
define(`polaris_ripc_service_server',`)
define(`polaris_ripc_service_client',`)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/m4/polaris\_ipc\_ripc\_if.m4

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/m4/polaris\_ipc\_ripc\_fc.m4

No license file was found, but licenses were detected in source scan.

```
dnl
dnl December 2018, Victor Kamensky
dnl
dnl Copyright (c) 2018-2020 by Cisco Systems, Inc.
dnl All rights reserved
dnl
dnl Nyquist Platform Max Bay Limits
max_bay_map_set(`rp', `per_bay', 0)
max_bay_map_set(`cc', `per_bay', 0)
max_bay_map_set(`fp', `per_bay', 0)
```

```
dnl in elastic scope each process has its own value
max_elastic_map_set(`rp', `elastic', BPROC_ODM, 0)
max_elastic_map_set(`cc', `elastic', BPROC_ODM, 0)
max_elastic_map_set(`fp', `elasitic', BPROC_ODM, 0)
```

```
max_elastic_map_set(`rp', `elastic', BPROC_WNCD, 0)
max_elastic_map_set(`cc', `elastic', BPROC_WNCD, 0)
max_elastic_map_set(`fp', `elastic', BPROC_WNCD, 0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/quake1maps.m4
No license file was found, but licenses were detected in source scan.
```

```
#
Sep 2020, Sridhar C
#
Copyright (c) 2020-2021 by Cisco Systems, Inc.
All rights reserved
#
```

```
policy_module(polaristlscd, 1.0);
```

```
gen_require(
 type polaris_tlscd_t;
 type net_conf_t;
)
```

```
polaris_btrace_data_manage(polaris_tlscd_t)
polaris_chasfs_manage(polaris_tlscd_t)
polaris_tdlresolve_read(polaris_tlscd_t)
polaris_tdlldb_list_dirs(polaris_tlscd_t)
polaris_lua_read(polaris_tlscd_t)
polaris_flashlib_read(polaris_tlscd_t)
polaris_chasfs_read(polaris_tlscd_t)
polaris_cpld_read(polaris_tlscd_t)
polaris_db_tdlldb_dir_use(polaris_tlscd_t)
```

```
Related to vrf support of the socket
polaris_lfts_dev_use(polaris_tlscd_t)
polaris_socketat_nsfs_read(polaris_tlscd_t)
polaris_vrf_shm_manage(polaris_tlscd_t)
```

```
TLSCd reads TCP/UDP ports open in VRF_GLOBAL for packet forwarding
to IOSd or BinOS applications.
kernel_read_net_sysctls(polaris_tlscd_t)
kernel_read_network_state(polaris_tlscd_t)
kernel_search_network_sysctl(polaris_tlscd_t)
```

```

allow polaris_tlscd_t net_conf_t:dir search;
allow polaris_tlscd_t net_conf_t:file { getattr open read watch };

UDS related sockets are:
/tmp/tlscd/iosd_to_tlscd_0_socket
/tmp/tlscd/tlscd_to_iosd_0_socket
IOSd and TLSCd exchange packet over these UDS socket, allow create/bind
type polaris_tlscd_uds_t;
files_tmp_file(polaris_tlscd_uds_t)
polaris_tlscd_uds_manage(polaris_tlscd_t)
polaris_iosd_dgram_send(polaris_tlscd_t)
allow polaris_tlscd_t self:unix_dgram_socket { bind create };

Tunnel and TLS TCP connection related related
corenet_rw_tun_tap_dev(polaris_tlscd_t)
allow polaris_tlscd_t self:tun_socket create;
corenet_tcp_connect_all_ports(polaris_tlscd_t)

errmsg
logging_send_syslog_msg(polaris_tlscd_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polaristlscd.te
No license file was found, but licenses were detected in source scan.

dnl
dnl April 2018, Victor Kamensky
dnl
dnl Copyright (c) 2018-2019 by Cisco Systems, Inc.
dnl All rights reserved
dnl
define(^polaris_database_aux',`dnl
type $1;
polaris_tdldb_type($1)
')

define(^polaris_database',`dnl
polaris_database_aux(database_label($1))
')

define(^polaris_database_process_aux_full',`dnl
gen_require(`
 type $2;
")
polaris_db_tdldb_$1_use($2)
')
```

```
define(`polaris_database_process_aux',`dnl
ifelse(database_use_map($1, $2), `', `polaris_database_process_aux_full($1, $2)')
database_use_map_set($1, $2, 1)
')
```

```
define(`polaris_database_process',`dnl
polaris_database_process_aux(database_stem($1), process_label($2))dnl
')
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/m4/polaris\_database\_db\_te.m4

No license file was found, but licenses were detected in source scan.

```
#
January 2021, Gabriel Lee, Shawn Liu
#
Copyright (c) 2021 by Cisco Systems, Inc.
All rights reserved
#
<summary>Polaris ezmanage Policy Rules.</summary>
```

```
#####
<summary>
Transition to ezmanage
</summary>
<param name="domain">
<summary>
Domain allowed to transition.
</summary>
</param>
#
interface(`polaris_ezmanage_domtrans',`
gen_require(`
type polaris_ezmanage_t, polaris_ezmanage_exec_t;
')
```

```
domtrans_pattern($1, polaris_ezmanage_exec_t, polaris_ezmanage_t)
')
```

```
#####
<summary>
Read files under polaris_ezmanage_file_t label
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
```

```

</param>
#
interface(`polaris_manage_ezmanage_files`,`
 gen_require(`
 type polaris_ezmanage_file_t;
 `)

 manage_files_pattern($1, polaris_ezmanage_file_t , polaris_ezmanage_file_t)
 read_lnk_files_pattern($1, polaris_ezmanage_file_t, polaris_ezmanage_file_t)
 manage_dirs_pattern($1, polaris_ezmanage_file_t , polaris_ezmanage_file_t)
)

#####
<summary>
Manage files under polaris_ezmanage_var_run_t label
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolecap/>
#
interface(`polaris_manage_ezmanage_var_run_files`,`
 gen_require(`
 type polaris_ezmanage_var_run_t;
 `)

 manage_sock_files_pattern($1, polaris_ezmanage_var_run_t, polaris_ezmanage_var_run_t);
)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisezmanage.if
No license file was found, but licenses were detected in source scan.

#
February 2020, Victor Kamensky
#
Copyright (c) 2020-2021 by Cisco Systems, Inc.
All rights reserved
#

policy_module(polariscedge, 1.0);

/tmp/xml handling
type polaris_cedge_xml_tmp_t;
files_tmp_file(polaris_cedge_xml_tmp_t)

```



```

PLEASE LOOK AT ME very strange choice of directory name
/tmp/tmp/ handling
type polaris_cedge_tmp_t;
files_tmp_file(polaris_cedge_tmp_t)

/etc/viptela handling
type polaris_cedge_etc_t;
files_config_file(polaris_cedge_etc_t)

/dev/shm handling
type polaris_cedge_tmpfs_t;
files_tmpfs_file(polaris_cedge_tmpfs_t)

/tmp/.econfd2sysmgr-ipc handling
type polaris_econfd2sysmgr_tmp_t;
files_tmp_file(polaris_econfd2sysmgr_tmp_t)

vconfd_script_reboot.sh policy
polaris_vconfd_domain_template(vconfd_reboot)

vconfd_script_if_reset.sh policy
polaris_vconfd_domain_template(vconfd_ifreset)

vconfd_script_get_config.sh policy
polaris_vconfd_domain_template(vconfd_cfg)

#####
vconfd_script_*_stats policy
polaris_vconfd_domain_template(vconfd_history)
corecmd_exec_bin(polaris_vconfd_history_t)

performs 'rm /tmp/xml/Pfr/Pfr-1600801323.xml.gz'....but, do not know where
polaris_cedge_tmp_manage(polaris_vconfd_history_t)

performs 'ls -rt /tmp/xml/UtdUrf-IOX' etc.
polaris_cedge_xml_tmp_manage(polaris_vconfd_history_t)

vconfd_script_manage_list_stats.sh performs operations on
/tmp/vconfd/stats.XXXXXXX
polaris_vconfd_tmp_manage(polaris_vconfd_history_t)
#####
software policy
polaris_vconfd_domain_template(vconfd_software)

nms policy
polaris_vconfd_domain_template(vconfd_nms)

device policy

```

```

polaris_vconfd_domain_template(vconfd_device)

internal policy
polaris_vconfd_domain_template(vconfd_reset)

cert policy
polaris_vconfd_domain_template(vconfd_cert)

#####
csr policy
polaris_vconfd_domain_template(vconfd_csr)

vconfd_script_show_csr.sh invokes vlog
/bin/sh vlog ...
vlog is implemented in viptela/utils/vlog using logger; that needs
- ceate/connect unix_dgram_socket
- read from devtmpfs of type devlog_t
- write to sock_file of type devlog_t
- sendto path="/run/systemd/journal/dev-log" of type unix_dgram_socket
logging_send_syslog_msg(polaris_vconfd_csr_t)
corecmd_exec_bin(polaris_vconfd_csr_t)

reads /usr/share/viptela/server.csr
polaris_bootflash_read(polaris_vconfd_csr_t)
#####
serial vsmart-upload vedge-upload policy
polaris_vconfd_domain_template(vconfd_serialnum)

crash policy
polaris_vconfd_domain_template(vconfd_crash)

aaa policy
polaris_vconfd_domain_template(vconfd_aaa)

container policy
polaris_vconfd_domain_template(vconfd_contr)

iox policy
polaris_vconfd_domain_template(vconfd_iox)

utd policy
polaris_vconfd_domain_template(vconfd_utd)

geo policy
polaris_vconfd_domain_template(vconfd_geo)

vconfd_script_vnping.sh, vconfd_script_vpings.sh, vconfd_script_vtraceroute.sh
scripts policy

```

```

polaris_vconfd_domain_template(vconfd_net)

runs ip command
sysnet_domtrans_ifconfig(polaris_vconfd_net_t)
runs confd_cmd
corecmd_exec_bin(polaris_vconfd_net_t)

polaris_conf_d_connect(polaris_vconfd_net_t)

/tmp/ polaris_vconfd_cert_t handling
type polaris_vconfd_cert_tmp_t;
files_tmp_file(polaris_vconfd_cert_tmp_t)
files_tmp_filetrans(polaris_vconfd_cert_t, polaris_vconfd_cert_tmp_t, { file dir })
polaris_vconfd_cert_tmp_manage(polaris_vconfd_cert_t)

permit access to polaris_vconfd_cert_t
allow polaris_vconfd_cert_t self:capability { chown dac_override };

logging_send_syslog_msg(polaris_vconfd_cert_t)

corecmd_sbin_entry_type(polaris_vconfd_cert_t)
corecmd_shell_entry_type(polaris_vconfd_cert_t)

fs_read_nsfs_files(polaris_vconfd_cert_t)
logging_create_devlog_dev(polaris_vconfd_cert_t)

to access the /bootflash: as the cert is stored in /bootflash:
IOS cert related CLIs can create/store the certs in /bootflash with any
file name(s), so allow generic access to bootflash.
polaris_bootflash_manage(polaris_vconfd_cert_t)

manage /etc/viptela
polaris_cedge_etc_manage(polaris_vconfd_cert_t)
polaris_cedge_reset_ns(polaris_vconfd_cert_t)

needed for accessing /tmp/chassis/local/rp/chasfs/midplane/chassis_model
polaris_chasfs_read(polaris_vconfd_cert_t)

#access to /etc/viptela
gen_require(
 type polaris_nginx_t;
)
polaris_cedge_etc_manage(polaris_nginx_t)

For "confd_cmd", allow polaris_vconfd_cert_t, which is not a Binos process,
to access polaris_conf_d_ipc_ripc_port_t.
polaris_ripc_conf_d_ipc_connect(polaris_vconfd_cert_t)

```

```
permit to access /var/run/netns/default
sysnet_manage_ifconfig_run(polaris_vconfd_cert_t)

vconfd_script_show_root_ca_cert.sh performs operations on
/tmp/vconfd/root_cert.XXXXXX
polaris_vconfd_tmp_manage(polaris_vconfd_cert_t)
fs_getattr_tmpfs(polaris_vconfd_cert_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscedge.te
No license file was found, but licenses were detected in source scan.
```

```
#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2020 by Cisco Systems, Inc.
All rights reserved
#
```

```
<summary>Polaris CPLD Policy Rules.</summary>
```

```
#####
CPLD Driver policy
#####
```

```
#####
```

```
<summary>
Read cpld files in /sys directory
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
```

```
interface(`polaris_cpld_read`,`
gen_require(`
type polaris_sysfs_cpld_t;
type sysfs_t;
`)
read_files_pattern($1, polaris_sysfs_cpld_t, polaris_sysfs_cpld_t)
genfscon statement specifically excludes symbolic links from
genfscon path specific entries. To workaround, let us allow
to follow sysfs_t symbolic links
allow $1 sysfs_t:lnk_file { read getattr };
list_dirs_pattern($1, polaris_sysfs_cpld_t, polaris_sysfs_cpld_t)
')
```

```
#####
<summary>
Write cpld files in /sys directory
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_cpld_write`,`
gen_require(`
type polaris_sysfs_cpld_t;
type sysfs_t;
`)
manage_files_pattern($1, polaris_sysfs_cpld_t, polaris_sysfs_cpld_t)
manage_dirs_pattern($1, polaris_sysfs_cpld_t, polaris_sysfs_cpld_t)
genfscon statement specifically excludes symbolic links from
genfscon path specific entries. To workaround, let us allow
to follow sysfs_t symbolic links
allow $1 sysfs_t:lnk_file { read getattr };
')
```

```
#####
<summary>
Work (read, write, ioctl) with /dev/cpld
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_cpld_dev_use`,`
gen_require(`
type device_t;
type polaris_cpld_device_t;
`)
write_chr_files_pattern($1, device_t, polaris_cpld_device_t)
read_chr_files_pattern($1, device_t, polaris_cpld_device_t)
allow $1 polaris_cpld_device_t:chr_file map;
')
```

```
#####
<summary>
Work (read,ioctl) with /dev/cpld
</summary>
```

```

<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_cpld_dev_read`,`
 gen_require(`
 type device_t;
 type polaris_cpld_device_t;
 `)
 read_chr_files_pattern($1, device_t, polaris_cpld_device_t)
`)

```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscpld.if
```

No license file was found, but licenses were detected in source scan.

```

#
August 2017, Victor Kamensky
#
Copyright (c) 2017-2021 by Cisco Systems, Inc.
All rights reserved
#

```

```
policy_module(polariscrankshaft, 1.0);
```

```

spa devices i.e sys_platform_module_1ng
type polaris_spa_device_t;
dev_node(polaris_spa_device_t)

```

```

htdp device
type polaris_htdp_device_t;
dev_node(polaris_htdp_device_t)

```

```

bde device (/dev/linux-user-bde)
type polaris_bde_device_t;
dev_node(polaris_bde_device_t)

```

```

dash fpga device (/dev/dash_fpga)
type polaris_dash_device_t;
dev_node(polaris_dash_device_t)

```

```

nios device (/dev/nios)
type polaris_nios_device_t;
dev_node(polaris_nios_device_t)

```

```
qae device (/dev/qae_mem)
```

```

type polaris_qae_device_t;
dev_node(polaris_qae_device_t)

moka fpga device (/dev/moka_fpga)
type polaris_mokafpga_device_t;
dev_node(polaris_mokafpga_device_t)

sirius fpga device (/dev/sirius_fpga)
type polaris_siriusfpga_device_t;
dev_node(polaris_siriusfpga_device_t);

moka nim device (/dev/nim_dm*)
type polaris_nim_dm_device_t;
dev_node(polaris_nim_dm_device_t)

/dev/bp_async device on nanook platform
type polaris_bp_async_device_t;
dev_node(polaris_bp_async_device_t)

/dev/sparrow_psu device on sparrow platform
type polaris_sparrow_psu_device_t;
dev_node(polaris_sparrow_psu_device_t)

/dev/nutella_fpga device on nutella platform
type polaris_nutella_fpga_device_t;
dev_node(polaris_nutella_fpga_device_t)

/dev/huron_fpga on Sumatra platform
type polaris_huron_device_t;
dev_node(polaris_huron_device_t)

/dev/dplr_sumatra on Sumatra platform
type polaris_sumatra_doppler_device_t;
dev_node(polaris_sumatra_doppler_device_t)

/tmp/sata_status for mSATA
type polaris_sata_status_tmp_t;
files_tmp_file(polaris_sata_status_tmp_t)

TSN tsn_platform.tdl for IPCs and processes definition and it uses
crankshaft_platform.tdl for databases definition. Unfortunately they are
out of sync wrt BPROC_NGWC_FED - crankshaft_platform.tdl refers it but
tsn_platform.tdl does not contain such definition.
ifdef(^tsn_platform',`
type polaris_ngwc_fed_t;
')

Supernova supernova_platform.tdl for IPCs and processes definition and it uses

```

```

crankshaft_platform.tdl for databases definition. Unfortunately they are
out of sync wrt BPROC_FM_RP - crankshaft_platform.tdl refers it but
supernova_platform.tdl does not contain such definition.
ifdef(`supernova_platform',`
type polaris_fman_rp_t;
`)

Nanook
The Nanook platform does not support SDWAN and so the SDWAN processes are not
defined in the nanook_platform.tdl. However, it uses the database_def's from
the crankshaft_platform.tdl, which do have the SDWAN databases. So we need to
add the processes to the SELinux policy
ifdef(`nanook_platform',`
type polaris_cfgmgr_t;
type polaris_cxp_t;
type polaris_dbgd_t;
type polaris_fpm_t;
type polaris_ftm_t;
type polaris_omp_t;
type polaris_sdavc_proxy_t;
type polaris_ttm_t;
type polaris_vdaemon_t;
type polaris_htx_t;
`)

#####
load_usbnet policies start
#####
/usr/bin/conf/load_usbnet.sh is invoked to load usb network driver module
kernel/drivers/net/usb/usbnet.ko for TSN.
#####

polaris_process_domain_template(load_usbnet)

allow polaris_load_usbnet_t access to execute programs in system bin dirs, load
usbnet.ko for USB network interface for TSN and allow read access
to /sys/class/net and /proc/cmdline
LOOK AT ME: /tmp/rp/pvp/work/inot_fifo inotifywait fd leak to child
corecmd_exec_bin(polaris_load_usbnet_t)
modutils_exec_insmod(polaris_load_usbnet_t)
modutils_list_module_config(polaris_load_usbnet_t)
modutils_read_module_config(polaris_load_usbnet_t)
sysnet_manage_config_dirs(polaris_load_usbnet_t)
polaris_pvp_stdin_read(polaris_load_usbnet_t)
files_read_kernel_modules(polaris_load_usbnet_t)
dev_rw_sysfs(polaris_load_usbnet_t)
kernel_read_system_state(polaris_load_usbnet_t)

```



```

stdout inherited from unconfined_service that might call it
polaris_unconfined_service_fifo_file_manage(polaris_load_usbnet_t)

handle /tmp/load_usbnet_intf
type polaris_load_usbnet_tmp_t;
files_tmp_file(polaris_load_usbnet_tmp_t)
files_tmp_filetrans(polaris_load_usbnet_t, polaris_load_usbnet_tmp_t, file)
manage_files_pattern(polaris_load_usbnet_t, polaris_load_usbnet_tmp_t, polaris_load_usbnet_tmp_t)

allow read of /etc/passwd
allow map permission
passwd_file_t:file { getattr open read };
auth_map_passwd(polaris_load_usbnet_t)

#####
load_usbnet policies end
#####

#####
CLI: show platform hardware msata <status/info>
#####
ifdef(`crankshaft_family',`
gen_require(
 type polaris_sysfs_ggpio_t;
 type polaris_msata_info_t;
)

polaris_utility_domain_template(msata_info)
polaris_bexecute_domain(polaris_msata_info_t, polaris_msata_info_exec_t)
need write for pipes like "pipe:[70623]"
corecmd_exec_bin(polaris_msata_info_t)
need write/getattr for pipes like "pipe:[71322]"
polaris_cmrp_use_fifo(polaris_msata_info_t)
fstools_domtrans(polaris_msata_info_t)
allow use of mSATA device
polaris_nvram_manage(polaris_msata_info_t)
allow self
allow polaris_msata_info_t self:capability sys_rawio;
allow polaris_msata_info_t self:process setfscreate;
allow /usr/sbin/smartctl to access /sys/devices/platform/cpn-110-master/
cpn-110-master:config-space/f2540000.sata/ata2/host1/scsi_host/host1/proc_name and
/sys/devices/platform/cpn-110-master/cpn-110-master:config-space/f2540000.sata/
ata2/host1/target1:0:0
read_files_pattern(polaris_msata_info_t, polaris_sysfs_ggpio_t, polaris_sysfs_ggpio_t)
dev_list_sysfs(polaris_msata_info_t)
allow smartctl to access to /dev/sda to determine its lifetime
storage_raw_read_fixed_disk(polaris_msata_info_t)

```

```

CLI: show platform hardware slot p[x] fan eeprom
polaris_utility_domain_template(smart_fan)
polaris_bexecute_domain(polaris_smart_fan_t, polaris_smart_fan_exec_t)
allow /ls command
corecmd_exec_bin(polaris_smart_fan_t)
allow read of /etc/passwd
auth_map_passwd(polaris_smart_fan_t)
allow read of /sys/devices/platform/nios/*
dev_read_sysfs(polaris_smart_fan_t)
need write/getattr access for pipes like "pipe:[86004]"
polaris_cmrp_use_fifo(polaris_smart_fan_t)

sumatra and sparrow platforms need map access for "show platform hardware msata status | lifetime"
auth_map_passwd(polaris_msata_info_t)
)

#ifdef(^sumatra_platform',`
During "show platform hardware msata status | lifetime" - msata_info.sh accesses /tmp/sata_status
files_tmp_filetrans(polaris_msata_info_t, polaris_sata_status_tmp_t, file)
manage_files_pattern(polaris_msata_info_t, polaris_sata_status_tmp_t, polaris_sata_status_tmp_t)
)

#####
show platform hardware msata end
#####

#type for /dev/qcqmIX
type qcqmi_device_t;
dev_node(qcqmi_device_t);

sm_nim_adpt device (/dev/sm_nim_adpt_XXX)
type polaris_sm_nim_adpt_device_t;
dev_node(polaris_sm_nim_adpt_device_t)

dio device
type polaris_dio_device_t;
dev_node(polaris_dio_device_t)

tty NMEA device
type polaris_tty_NMEA_device_t;
dev_node(polaris_tty_NMEA_device_t)

memory blocks and gpp on Nutella-XE platform
type polaris_nutella_memory_block_p7_t;
dev_node(polaris_nutella_memory_block_p7_t)

type polaris_nutella_memory_block_p1_t;

```

```
dev_node(polaris_nutella_memory_block_p1_t)
```

```
type polaris_nutella_memory_block_boot_t;
dev_node(polaris_nutella_memory_block_boot_t)
```

```
type polaris_nutella_gp0_t;
dev_node(polaris_nutella_gp0_t)
```

```
type polaris_nutella_gpp_t;
dev_node(polaris_nutella_gpp_t)
```

```
nim device (/dev/nim_phy)
type polaris_nim_phy_device_t;
dev_node(polaris_nim_phy_device_t)
```

```
type polaris_cwan_svr_var_run_t;
files_pid_file(polaris_cwan_svr_var_run_t)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscrankshaft.te
No license file was found, but licenses were detected in source scan.
```

```

March 2017, Victor Kamensky

Copyright (c) 2017-2020 by Cisco Systems, Inc.
All rights reserved
#
```

```
<summary>Polaris epc_ws_liaison Policy Rules.</summary>
```

```
interface(`polaris_epc_ws_liaison_tmp_read`,
 gen_require(`
 type polaris_epc_ws_liaison_tmp_t;
 `)
 read_files_pattern($1, polaris_epc_ws_liaison_tmp_t, polaris_epc_ws_liaison_tmp_t)
)
```

```
#####
```

```
<summary>
Allow to open, write, add_name and write /tmp/epc_ws/fed_to_wif_pipe file.
Allow to create and write /tmp/epc_ws dir.
</summary>
<param name="domain">
<summary>
epc_ws_liaison and ngwc-fed fifo_file interaction.
</summary>
</param>
```

```

#
interface(`polaris_epc_ws_liaison_fifo_manage',`
 gen_require(`
 type polaris_epc_ws_liaison_tmp_t;
 ')
 manage_dirs_pattern($1, polaris_epc_ws_liaison_tmp_t, polaris_epc_ws_liaison_tmp_t)
 manage_fifo_files_pattern($1, polaris_epc_ws_liaison_tmp_t, polaris_epc_ws_liaison_tmp_t)
')

#####
<summary>
Allow to open, read "/tmp/epc_ws/wif_to_ts_pipe" fifo file.
##
</summary>
<param name="domain">
<summary>
epc_ws_liaison and dumpcap fifo_file interaction.
</summary>
</param>
#
interface(`polaris_epc_ws_liaison_fifo_read',`
 gen_require(`
 type polaris_epc_ws_liaison_tmp_t;
 ')
 read_fifo_files_pattern($1, polaris_epc_ws_liaison_tmp_t, polaris_epc_ws_liaison_tmp_t)
')

#####
<summary>
Allow to write, create, unlink "/tmp/*.pcapng" temporary files.
##
</summary>
<param name="domain">
<summary>
polaris_wireshark_show fifo_file interaction.
</summary>
</param>
#
interface(`polaris_wireshark_show_tmp_manage',`
 gen_require(`
 type polaris_wireshark_show_tmp_t;
 ')
 manage_files_pattern($1, polaris_wireshark_show_tmp_t, polaris_wireshark_show_tmp_t)
')

#####
<summary>
Create, read, and write temporary files.
</summary>

```

```
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_epc_ws_liaison_tmp_file`,`
 gen_require(`
 type polaris_epc_ws_liaison_tmp_t;
 `)
 files_tmp_filetrans($1, polaris_epc_ws_liaison_tmp_t, dir, "epc_ws")
`)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisepcwsliaison.if

No license file was found, but licenses were detected in source scan.

```
#
February 2020, Victor Kamensky
#
Copyright (c) 2020 by Cisco Systems, Inc.
All rights reserved
#
```

```
policy_module(polariscxp, 1.0);
```

```
gen_require(`
 type polaris_cxp_t;
`)
polaris_chasfs_read(polaris_cxp_t)
polaris_cpld_read(polaris_cxp_t)
```

```
logging_send_syslog_msg(polaris_cxp_t)
```

```
vconfd_load_shared_schemas
polaris_conf_d_shared_schema_read(polaris_cxp_t)
```

```
corecmd_exec_bin(polaris_cxp_t)
corecmd_exec_shell(polaris_cxp_t)
auth_use_nsswitch(polaris_cxp_t)
```

```
work with /tmp/xml
polaris_cedge_xml_tmp_manage(polaris_cxp_t)
```

```
work with /tmp/tmp
polaris_cedge_tmp_manage(polaris_cxp_t)
```

```
/var/run/cxp dir and pid
```

```

type polaris_cxp_var_run_t;
files_pid_file(polaris_cxp_var_run_t)
manage_files_pattern(polaris_cxp_t, polaris_cxp_var_run_t, polaris_cxp_var_run_t)
manage_dirs_pattern(polaris_cxp_t, polaris_cxp_var_run_t, polaris_cxp_var_run_t)
manage_sock_files_pattern(polaris_cxp_t, polaris_cxp_var_run_t, polaris_cxp_var_run_t)
files_pid_filetrans(polaris_cxp_t, polaris_cxp_var_run_t, { file dir sock_file })

polaris_ttm_var_sock_write(polaris_cxp_t)

vip_execute_nowait uses setpgid
allow polaris_cxp_t self:process setpgid;

cxp may create vrf-based netns on demand
polaris_vrf_netns_manage(polaris_cxp_t)

Allow /usr//cxpd manages /usr/binos/conf/global.service.conf and
/tmp/tdlresolve/
polaris_tdlresolve_manage(polaris_cxp_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscxp.te
No license file was found, but licenses were detected in source scan.

#
February 2020, Victor Kamensky
#
Copyright (c) 2020 by Cisco Systems, Inc.
All rights reserved
#

/usr/binos/conf/viptela-start.sh -- gen_context(system_u:object_r:polaris_cedge_start_exec_t,s0)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscgedgestart.fc
No license file was found, but licenses were detected in source scan.

dnl
dnl April 2018, Victor Kamensky
dnl
dnl Copyright (c) 2018-2019 by Cisco Systems, Inc.
dnl All rights reserved
dnl
dnl divert(-1)

include(`polaris_process.m4')

include(`polaris_database_db.m4')
include(`polaris_database_db_te.m4')

```

```

include(`polaris_max_scope.m4')

divert(0)dnl
#
This is a generated file! Instead of modifying this file,
modify proper platform TDL file.
#
policy_module(polarisplatformdbauto, 1.0);

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/polaris_database_te.m4
No license file was found, but licenses were detected in source scan.

#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2020 by Cisco Systems, Inc.
All rights reserved
#

<summary>Polaris vman Policy Rules.</summary>

#####
<summary>
Read files of type polaris_vman_tmp_t (e.g., /tmp/cgroup.log)
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_vman_tmp_read',`
 gen_require(`
 type polaris_vman_tmp_t;
 ')
 read_files_pattern($1, polaris_vman_tmp_t, polaris_vman_tmp_t)
')

#####
<summary>
Write files of type polaris_vman_tmp_t (e.g., /tmp/cgroup.log)
</summary>
<param name="domain">
<summary>
Domain allowed access.

```

```

</summary>
</param>
#
interface(`polaris_vman_tmp_write`,`
gen_require(`
type polaris_vman_tmp_t;
`)
write_files_pattern($1, polaris_vman_tmp_t, polaris_vman_tmp_t)
`)

#####
<summary>
Manage dir/files of type polaris_vman_tmp_t (e.g., /tmp/cgroup.log)
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_vman_tmp_manage`,`
gen_require(`
type polaris_vman_tmp_t;
`)
manage_files_pattern($1, polaris_vman_tmp_t, polaris_vman_tmp_t)
manage_dirs_pattern($1, polaris_vman_tmp_t, polaris_vman_tmp_t)
`)

#####
<summary>
Read files of type polaris_disk_vman_t (e.g., /bootflash/virtual-instance/)
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_disk_vman_read`,`
gen_require(`
type polaris_disk_vman_t;
`)
read_files_pattern($1, polaris_disk_vman_t, polaris_disk_vman_t)
read_lnk_files_pattern($1, polaris_disk_vman_t, polaris_disk_vman_t)
list_dirs_pattern($1, polaris_disk_vman_t, polaris_disk_vman_t)
`)

#####

```



```

<summary>
List files of type polaris_disk_vman_t (e.g., /bootflash/virtual-instance/)
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_disk_vman_dir_list`,`
 gen_require(`
 type polaris_disk_vman_t;
 type polaris_disk_bootflash_t;
 type polaris_disk_harddisk_t;
 `)
 list_dirs_pattern($1, { polaris_disk_vman_t polaris_disk_bootflash_t polaris_disk_harddisk_t },
polaris_disk_vman_t)
`)

```

```

#####
<summary>
Operate on @vman_domain_socket unix socket. Look at
vman_clnt_msg_transport_init function in vman_clnt_msg_uds.c
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_vman_use_client_socket`,`
 gen_require(`
 type polaris_vman_t;
 `)
 allow $1 polaris_vman_t:unix_stream_socket connectto;
`)

```

```

#####
<summary>
Manage /tmp/xml/
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolebase/>
#

```

```

interface(`polaris_vman_log_files_manage',`
optional_policy(`
 gen_require(`
 type polaris_vman_log_t;
 ')

 manage_files_pattern($1, polaris_vman_log_t,polaris_vman_log_t)
 manage_dirs_pattern($1, polaris_vman_log_t, polaris_vman_log_t)
)
)

```

```

#####
<summary>
Read files of type polaris_var_vman_t (e.g., /var/virtual-instance)
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#

```

```

interface(`polaris_vman_var_read',`
 gen_require(`
 type polaris_var_vman_t;
 ')
 list_dirs_pattern($1, polaris_var_vman_t, polaris_var_vman_t)
 read_files_pattern($1, polaris_var_vman_t, polaris_var_vman_t)
)

```

```

#####
<summary>
Write into fifo file created by vman, typical case when
vman starts script under popen in different domain.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolecap/>
#

```

```

interface(`polaris_vman_use_fifo',`
 gen_require(`
 type polaris_vman_t;
 ')

 read_fifo_files_pattern($1, polaris_vman_t, polaris_vman_t)
)

```

```

write_fifo_files_pattern($1, polaris_vman_t, polaris_vman_t)
)

#####
<summary>
Check existence (getattr) of vman btrace file (i.e
polaris_vman_bt_t)
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_vman_bt_getattr`,`
 gen_require(`
 type polaris_vman_bt_t;
 type polaris_btrace_base_t;
 `)
 getattr_files_pattern($1, polaris_btrace_base_t, polaris_vman_bt_t)
)

```

```

#####
<summary>
Allow domain to write to pipes connected to virtlogd_t.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_vman_virtlog_allow`,`
 gen_require(`
 type virtlogd_t;
 `)

```

```

#allow domain to write to pipes
allow $1 virtlogd_t:fifo_file rw_inherited_fifo_file_perms;

```

```

#allow virtlogd_t to search dirs /var/log/libvirt/qemu
logging_search_logs(virtlogd_t)
)

```

```

#####
<summary>
Allow polaris_vman_t to kill process from domain.
</summary>

```

```

<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_vman_kill_process`,
 gen_require(`
 type polaris_vman_t;
 `)
 allow polaris_vman_t $1:process sigkill;
)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisvman.if

No license file was found, but licenses were detected in source scan.

```

#
August 2017, Victor Kamensky
#
Copyright (c) 2017-2020 by Cisco Systems, Inc.
All rights reserved
#

```

```

<summary>Polaris tws Policy Rules.</summary>

```

```

#####

```

```

<summary>
Allow the specified domain to manage KGV data files
I.e /tmp/package_biv_sums.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#

```

```

interface(`polaris_kgv_data_manage`,
 gen_require(`
 type polaris_kgv_data_t;
 `)

 manage_files_pattern($1, polaris_kgv_data_t, polaris_kgv_data_t)
 allow $1 polaris_kgv_data_t:file map;
)

```

```

#####

```

```

<summary>

```

```

Execute a domain transition to run code_sign_verify
</summary>
<param name="domain">
<summary>
Domain allowed to transition.
</summary>
</param>
#
interface(`polaris_code_verify_domtrans`,`
 gen_require(`
 type polaris_code_verify_t, polaris_code_verify_exec_t;
 `)

 domtrans_pattern($1, polaris_code_verify_exec_t, polaris_code_verify_t)
`)

#####
<summary>
Execute a domain transition to the polaris_hw_upgrade
</summary>
<param name="domain">
<summary>
Domain allowed to transition.
</summary>
</param>
#
interface(`polaris_hw_upgrade_domtrans`,`
 gen_require(`
 type polaris_hw_upgrade_t, polaris_hw_upgrade_exec_t;
 `)

 corecmd_search_bin($1)
 domtrans_pattern($1, polaris_hw_upgrade_exec_t, polaris_hw_upgrade_t)
`)

#####
<summary>
Work (read, write, ioctl) with /dev/aikido device
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_aikido_dev_use`,`
 gen_require(`
 type device_t;

```

```

type polaris_aikido_device_t;
)
write_chr_files_pattern($1, device_t, polaris_aikido_device_t)
read_chr_files_pattern($1, device_t, polaris_aikido_device_t)
)

#####
<summary>
Execute a domain transition to the polaris_rom_upgrade
</summary>
<param name="domain">
<summary>
Domain allowed to transition.
</summary>
</param>
#
interface(`polaris_rom_upgrade_domtrans`,`
gen_require(`
type polaris_hw_upgrade_t, polaris_rom_upgrade_exec_t;
`)

corecmd_search_bin($1)
domtrans_pattern($1, polaris_rom_upgrade_exec_t, polaris_rom_upgrade_t)
`)

#####
<summary>
Write into fifo file created during rommon_upgrade
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolecap/>
#
interface(`polaris_rom_upgrade_use_fifo`,`
gen_require(`
type polaris_rom_upgrade_t;
`)

write_fifo_files_pattern($1, polaris_rom_upgrade_t, polaris_rom_upgrade_t)
`)

#####
<summary>
Work (read, write, ioctl) with /dev/scansta device
</summary>

```

```

<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_scansta_dev_use`,`
gen_require(`
 type device_t;
 type polaris_scansta_device_t;
`)
 write_chr_files_pattern($1, device_t, polaris_scansta_device_t)
 read_chr_files_pattern($1, device_t, polaris_scansta_device_t)
`)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polaristws.if

No license file was found, but licenses were detected in source scan.

```

#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2020 by Cisco Systems, Inc.
All rights reserved
#

/tmp/.*\/chasfs(/.*)? gen_context(system_u:object_r:polaris_chasfs_t,s0)

/tmp/chassis/local/.*\/chasfs(/.*)? gen_context(system_u:object_r:polaris_chasfs_t,s0)
/tmp/chassis gen_context(system_u:object_r:polaris_chasfs_t,s0)
/tmp/chassis(/.*)? gen_context(system_u:object_r:polaris_chasfs_t,s0)

/tmp/.*\/chasync(/.*)? gen_context(system_u:object_r:polaris_chasync_tmp_t,s0)
/vol/harddisk/sys_report(/.*)? gen_context(system_u:object_r:polaris_chasync_files_t,s0)
/vol/harddisk/fp_cc_crash(/.*)? gen_context(system_u:object_r:polaris_chasync_files_t,s0)
/var/log/chasync(/.*)? gen_context(system_u:object_r:polaris_chasync_log_t,s0)

/usr/binos/conf/chasync.sh -- gen_context(system_u:object_r:polaris_chasync_exec_t,s0)

real path is /etc/init.d/chasfs_boottime.sh but we need to add rc.d because
in file_contexts.subs_dist we have substitute rule for /etc/init.d/
/etc/rc.d/init.d/chasfs_boottime.sh -- gen_context(system_u:object_r:polaris_chasfs_boottime_exec_t,s0)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarischasfs.fc

No license file was found, but licenses were detected in source scan.

```
#
```

# March 2017, Victor Kamensky

#

# Copyright (c) 2016-2020 by Cisco Systems, Inc.

# All rights reserved

#

/tmp/.CRDU\_COMMAND\_PIPE gen\_context(system\_u:object\_r:polaris\_crdu\_pipe\_tmp\_t,s0)

/tmp/.CRDU\_RESPONSE\_PIPE gen\_context(system\_u:object\_r:polaris\_crdu\_pipe\_tmp\_t,s0)

/usr/binos/conf/trans\_ports\_helper.sh -- gen\_context(system\_u:object\_r:polaris\_trans\_ports\_helper\_exec\_t,s0)

/usr/binos/conf/trans\_stats\_helper.sh -- gen\_context(system\_u:object\_r:polaris\_trans\_stats\_helper\_exec\_t,s0)

/usr/binos/conf/mcp\_disk\_oir.sh -- gen\_context(system\_u:object\_r:polaris\_disk\_oir\_exec\_t,s0)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarissmand.fc

No license file was found, but licenses were detected in source scan.

#

# March 2017, Victor Kamensky

#

# Copyright (c) 2016-2021 by Cisco Systems, Inc.

# All rights reserved

#

policy\_module(polarissmand, 1.0);

gen\_require(^

type polaris\_smand\_t;

type polaris\_smand\_exec\_t;

')

polaris\_btrace\_data\_manage(polaris\_smand\_t)

polaris\_crft\_data\_manage(polaris\_smand\_t)

polaris\_chasfs\_manage(polaris\_smand\_t)

polaris\_tdlresolve\_read(polaris\_smand\_t)

polaris\_tdldb\_list\_dirs(polaris\_smand\_t)

polaris\_cpldb\_read(polaris\_smand\_t)

polaris\_lua\_read(polaris\_smand\_t)

polaris\_flashlib\_read(polaris\_smand\_t)

polaris\_send\_signal\_to\_bexecute(polaris\_smand\_t)

polaris\_rpc\_sman\_ui\_serv\_connect(polaris\_smand\_t)

polaris\_db\_tdldb\_dir\_use(polaris\_smand\_t)

type polaris\_crdu\_pipe\_tmp\_t;

files\_tmp\_file(polaris\_crdu\_pipe\_tmp\_t)



```

files_tmp_filetrans(polaris_smand_t, polaris_crdu_pipe_tmp_t, fifo_file, ".CRDU_COMMAND_PIPE")
files_tmp_filetrans(polaris_smand_t, polaris_crdu_pipe_tmp_t, fifo_file, ".CRDU_RESPONSE_PIPE")
polaris_smand_crdu_pipe_manage(polaris_smand_t)

work with /tmp/sman files
type polaris_smand_tmp_t;
files_tmp_file(polaris_smand_tmp_t)
manage_dirs_pattern(polaris_smand_t, polaris_smand_tmp_t, polaris_smand_tmp_t)
manage_files_pattern(polaris_smand_t, polaris_smand_tmp_t, polaris_smand_tmp_t)
files_tmp_filetrans(polaris_smand_t, polaris_smand_tmp_t, { file dir })

allow read of /etc/group
auth_use_nsswitch(polaris_smand_t)

allow to send message to /dev/log
logging_send_syslog_msg(polaris_smand_t)

allow objstore access
polaris_disk_objstore_read(polaris_smand_t)

on edison smand shares sysv semaphore with iosd, why sem got initrc_t label
is not clear.
gen_require(
 type initrc_t;
)
allow polaris_smand_t initrc_t:sem { read write unix_write associate };

why smand needs all these capability?
allow polaris_smand_t self:capability { dac_override chown fsetid };
allow polaris_smand_t self:capability2 block_suspend;
allow polaris_smand_t self:capability sys_resource;

on edison smand wants to read /proc/mtd which is proc_t
type=AVC msg=audit(1478481219.216:6): avc: denied { read } for pid=5410 comm="smand" name="mtd"
dev="proc" ino=4026535811 scontext=system_u:system_r:polaris_smand_t:s0
tcontext=system_u:object_r:proc_t:s0 tclass=file
try to drop it latter
kernel_read_system_state(polaris_smand_t)

on edison silent roll package is still in iso format
type=AVC msg=audit(1478497356.229:7): avc: denied { getattr } for pid=5816 comm="smand"
path="/tmp/sw/mount/cat3k_caa-srdriver.2016-11-06_21.10_kamensky.SSA.pkg/usr/binos/lib64" dev="loop7"
ino=3456 scontext=system_u:system_r:polaris_smand_t:s0 tcontext=system_u:object_r:iso9660_t:s0 tclass=dir
gen_require(
 type iso9660_t;
)
allow polaris_smand_t iso9660_t:dir { search getattr };

```

```

polaris_dyncfg_tmp_read(polaris_smand_t)

corecmd_exec_shell(polaris_smand_t)

CLI "Show install issu history" invokes /usr/binos/conf/install_issu_show.py which
needs /usr/bin/python3(bin file) execution
corecmd_exec_bin(polaris_smand_t)

smand execute install_show.sh in its own domain need read results
polaris_install_show_tmp_read(polaris_smand_t)

during boot issu_boottime.sh calls smand to obtain some information
gen_require(
 type unconfined_service_t;
)
domtrans_pattern(unconfined_service_t, polaris_smand_exec_t, polaris_smand_t)

system_stats_periodic function from sman/src/fru_stats.c does
ioctl(fd, SIOCGIFADDR, &ifr); on "system" interface name, which normally
does not exist in Polaris platforms
kernel_dontaudit_request_load_module(polaris_smand_t)

system_stats_periodic function from sman/src/fru_stats.c does
statfs64 for /flash directory
fs_getattr_xattr_fs(polaris_smand_t)
polaris_disk_bootflash_read_lnk(polaris_smand_t)
polaris_disk_bootflash_search(polaris_smand_t)

gen_require(
 type rsync_t;
)
upon exec rsync inherits smand's stdout/stderr fifo files
allow rsync_t polaris_smand_t:fifo_file write;

gen_require(
 type polaris_bshell_t;
)
polaris_chasfs_read(polaris_bshell_t)
polaris_tdlresolve_read(polaris_bshell_t)

bshell memory logs related
type polaris_memmon_tmp_files_t;
files_tmp_file(polaris_memmon_tmp_files_t)
files_tmp_filetrans(unconfined_service_t, polaris_memmon_tmp_files_t, dir, "memmon_logs")
give bshell permissions
manage_files_pattern(polaris_bshell_t, polaris_memmon_tmp_files_t, polaris_memmon_tmp_files_t)

sman needs to access gnmib gnoi images

```

```

optional_policy(
polaris_gnmib_gnoi_images_read(polaris_smand_t)
')

CLI "Show install issu history" access to "/bootflash/.installer/install_issu_history"
and "/tmp/show_install_output.txt"
polaris_install_engine_domtrans(polaris_smand_t)
polaris_install_show_domtrans(polaris_smand_t)

xcopy_script gets called for xcopy RPC data model
polaris_xcopy_script_domtrans(polaris_smand_t)

#
=====
=
"sh ip ports" CLI policies, execute trans_ports_helper.sh script
polaris_utility_domain_template(trans_ports_helper)
transit into the domain
domtrans_pattern(polaris_smand_t, polaris_trans_ports_helper_exec_t, polaris_trans_ports_helper_t)
#binary tracing fifo_file as standard output
polaris_use_btrace_fifo(polaris_trans_ports_helper_t)
execute "tail" command
corecmd_exec_bin(polaris_trans_ports_helper_t)
corecmd_exec_shell(polaris_trans_ports_helper_t)
polaris_proc_fd_all_getattr(polaris_trans_ports_helper_t)
getattr all polaris_domain
domain_getattr_all_domains(polaris_trans_ports_helper_t)
run mcp_chvrf.sh without transition
polaris_exec_chvrf(polaris_trans_ports_helper_t)
fs_read_nsfs_files(polaris_trans_ports_helper_t)

lsof options tcp reads /proc/net/raw
kernel_read_network_state(polaris_trans_ports_helper_t)
ls access to /proc/3792/fd/6 triggers sys_ptrace capability
allow polaris_trans_ports_helper_t self:capability { sys_ptrace };

allow file and directory read and execute permission checks
allow polaris_trans_ports_helper_t self:capability dac_read_search;

map /etc/passwd
auth_use_nsswitch(polaris_trans_ports_helper_t)

type polaris_trans_ports_tmp_t;
files_tmp_file(polaris_trans_ports_tmp_t)
create /tmp/trans_ports_tmp and /tmp/trans_ports_result
files_tmp_filetrans(polaris_trans_ports_helper_t, polaris_trans_ports_tmp_t, file, "show_ports_tmp")
files_tmp_filetrans(polaris_trans_ports_helper_t, polaris_trans_ports_tmp_t, file, "show_ports_result")
polaris_trans_ports_tmp_manage(polaris_trans_ports_helper_t)

```

```

smand open and unlinks /tmp/trans_ports_tmp
polaris_trans_ports_tmp_manage(polaris_smand_t)
#
=====
=
"show platform software kernel ... " CLI executes trans_stats_helper.sh. Need domain
transition
#
polaris_utility_domain_template(trans_stats_helper)
transit into the domain
domtrans_pattern(polaris_smand_t, polaris_trans_stats_helper_exec_t, polaris_trans_stats_helper_t)
#binary tracing fifo_file as standard output
polaris_use_btrace_fifo(polaris_trans_stats_helper_t)
#execute lsof in helper script
corecmd_exec_bin(polaris_trans_stats_helper_t)
corecmd_exec_shell(polaris_trans_stats_helper_t)
auth_use_nsswitch(polaris_trans_stats_helper_t)
lsof reads /proc/*/fd/* attributes
polaris_proc_fd_all_getattr(polaris_trans_stats_helper_t)

lsof options tcp reads /proc/net/raw
kernel_read_network_state(polaris_trans_stats_helper_t)

lsof reads /proc/locks
kernel_read_system_state(polaris_trans_stats_helper_t)

lsof readmnt
fs_read_nsfs_files(polaris_trans_stats_helper_t)

ls access to /proc/3792/fd/6 triggers sys_ptrace capability
and dac_read_search as well.
allow polaris_trans_stats_helper_t self:capability { sys_ptrace dac_read_search };

type polaris_trans_stats_tmp_t;
files_tmp_file(polaris_trans_stats_tmp_t)
create /tmp/trans_tmp and /tmp/trans_tmp.1 to store lsof output
files_tmp_filetrans(polaris_trans_stats_helper_t, polaris_trans_stats_tmp_t, file, "trans_tmp")
files_tmp_filetrans(polaris_trans_stats_helper_t, polaris_trans_stats_tmp_t, file, "trans_tmp.1")
polaris_trans_stats_tmp_manage(polaris_trans_stats_helper_t)
smand open and unlinks /tmp/trans_tmp
polaris_trans_stats_tmp_manage(polaris_smand_t)

run mcp_chvrf.sh without transition
polaris_exec_chvrf(polaris_trans_stats_helper_t)

#
=====
=====

```

```
CLI "request platform hardware filesystem harddisk: offline | online" which runs mcp_disk_oir.sh
```

```
polaris_utility_domain_template(disk_oir)
```

```
polaris_bexecute_domain(polaris_disk_oir_t, polaris_disk_oir_exec_t)
```

```
#execute lsof
```

```
corecmd_exec_bin(polaris_disk_oir_t)
```

```
This is a CLI script that access types and /proc/pid/fd/*
```

```
polaris_proc_fd_all_getattr(polaris_disk_oir_t)
```

```
access sysctl_rpc_t
```

```
kernel_read_rpc_sysctls(polaris_disk_oir_t)
```

```
reads /proc/net/*
```

```
kernel_read_network_state(polaris_disk_oir_t)
```

```
allow read of /etc/passwd
```

```
auth_use_nsswitch(polaris_disk_oir_t)
```

```
lsof readmnt
```

```
fs_read_nsfs_files(polaris_disk_oir_t)
```

```
#inherits stdin/stdout of pty opened by telnetd
```

```
telnet_use_ptys(polaris_disk_oir_t)
```

```
allow polaris_disk_oir_t self:capability { dac_read_search sys_nice sys_rawio };
```

```
allow polaris_disk_oir_t self:process { setfscreate setsched };
```

```
execute lvm commands
```

```
lvm_domtrans(polaris_disk_oir_t)
```

```
"lsof -nP"read /dev/sda1 (/csl_p_0) and other operations when disk is destroyed.
```

```
storage_manage_fixed_disk(polaris_disk_oir_t)
```

```
access /tmp/chassis/cpld/chasfs
```

```
polaris_chasfs_read(polaris_disk_oir_t)
```

```
#cat /tmp/chassis/cpld/chasfs/platform_type'
```

```
polaris_cpld_read(polaris_disk_oir_t)
```

```
#!/bin/rm -rf /tmp/udev/etc/udev/harddisk'
```

```
fs_getattr_tmpfs(polaris_disk_oir_t)
```

```
access /tmp/udev/etc/udev/harddisk'
```

```
polaris_udev_tmp_manage(polaris_disk_oir_t)
```

```
/bin/mkdir -p /tmp/udev_cache/harddisk
```

```

files_tmp_filetrans(polaris_disk_oir_t, polaris_udev_tmp_files_t, dir, "udev_cache")

systemctl start handle_mount@vol-harddisk.service, communicate with systemd
systemd_exec_systemctl(polaris_disk_oir_t)
mount /dev/harddisk1 /vol/harddisk
mount_domtrans(polaris_disk_oir_t)

read /proc/cmdline
kernel_read_all_proc(polaris_disk_oir_t)

system service start/stop: /lib/systemd/system/handle_mount@.service
systemd_config_generic_services(polaris_disk_oir_t)

#/sbin/hdparm -S 0 /dev/sdb, execute hdparm in its own domain
fstools_domtrans(polaris_disk_oir_t)

ifdef(`crankshaft_family',`
 gen_require(`
 type device_t;
 type udev_t;
 ')
 filetrans_pattern({udev_t polaris_disk_oir_t}, device_t, fixed_disk_device_t, lnk_file, "harddisk")
 filetrans_pattern({udev_t polaris_disk_oir_t}, device_t, fixed_disk_device_t, lnk_file, "harddisk1")
 manage_lnk_files_pattern(polaris_disk_oir_t, fixed_disk_device_t, fixed_disk_device_t)
 # /dev/harddisk may be labeled with device_t. The "unlink" AVC denial will be fixed when it is labeled correctly

 # allow /bin/dd to access /dev/nvme in blk_file
 dev_nvme_blk_files_manage(polaris_disk_oir_t)

 # allow /bin/cat to access /tmp/nim_xxd_present
 gen_require(`
 type polaris_cmrp_nim_xxd_tmp_t;
 ')
 read_files_pattern(polaris_disk_oir_t, polaris_cmrp_nim_xxd_tmp_t, polaris_cmrp_nim_xxd_tmp_t)
)

#watches of /tmp/[rp|fp|cc]/pvp/process_state directory
polaris_process_state_watch(polaris_smand_t)

ifdef(`petra_platform',`
 #allow access to polaris_cm_rp sem
 polaris_cm_rp_sem_use(polaris_smand_t)
 #allow access to /flash12/moncfg/cfg.dat
 polaris_swipedrive_file_manage(polaris_smand_t)
 #allow access to /flash6/moncfg/cfg.dat
 polaris_nvram_read(polaris_smand_t)
)

```

dmesg\_domtrans(polaris\_smand\_t)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarissmand.te

No license file was found, but licenses were detected in source scan.

#

# July 2017, Victor Kamensky

#

# Copyright (c) 2017-2019 by Cisco Systems, Inc.

# All rights reserved

#

# pci rescan shm file

/dev/shm/rescan\_shm gen\_context(system\_u:object\_r:polaris\_cm\_cc\_tmpfs\_t,s0)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarismcc.fc

No license file was found, but licenses were detected in source scan.

#

# August 2017, Shawn Lu

#

# Copyright (c) 2017-2019 by Cisco Systems, Inc.

# All rights reserved

#

## <summary>Polaris mobilityd Policy Rules.</summary>

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarismobilityd.if

No license file was found, but licenses were detected in source scan.

#

# September 2018, Anubha Balani

#

# Copyright (c) 2018-2019 by Cisco Systems, Inc.

# All rights reserved

#

policy\_module(polarismemory, 1.0);

#####

# Polaris memory: libmaroon and such

#####

attribute polaris\_maroon\_data\_domain;

```

type polaris_maroon_base_t;
files_type(polaris_maroon_base_t)

typeattribute polaris_maroon_base_t polaris_maroon_data_domain;

gen_require(
 attribute polaris_extended_domain;
)

files_tmp_filetrans(polaris_extended_domain, polaris_maroon_base_t, dir, "maroon_stats")

type polaris_zram_device_t;
dev_node(polaris_zram_device_t)

```

Found in path(s):

```

* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarismemory.te
No license file was found, but licenses were detected in source scan.

```

```

#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#

```

```

polarisemd file contexts place holder

```

Found in path(s):

```

* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisemd.fc
No license file was found, but licenses were detected in source scan.

```

```

#
March 2017, Victor Kamensky
#
Copyright (c) 2017-2020 by Cisco Systems, Inc.
All rights reserved
#

```

```

<summary>Polaris nif_mgr Policy Rules.</summary>

```

```

#####

```

```

<summary>
Use /tmp/sv directory and files. Currently this acts as a
chasfs root for information shared between the nif manager
and the fed.
</summary>
<param name="domain">
<summary>

```



```

Domain allowed access.
</summary>
</param>
#
interface(`polaris_sv_tmp_use`,`
 gen_require(`
 type polaris_sv_tmp_t;
 type tmp_t;
 `)

 manage_dirs_pattern($1, tmp_t, polaris_sv_tmp_t)
 manage_files_pattern($1, polaris_sv_tmp_t, polaris_sv_tmp_t)
 allow $1 polaris_sv_tmp_t:dir watch;
)

#####
<summary>
This is to allow creation and write to
doppler_sesa file under proc
##
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_proc_sesa_create_write`,`
 gen_require(`
 type polaris_proc_sesa_t;
 `)

 setattr_files_pattern($1, polaris_proc_sesa_t, polaris_proc_sesa_t)
 rw_files_pattern($1, polaris_proc_sesa_t, polaris_proc_sesa_t)
)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisnifmgr.if
No license file was found, but licenses were detected in source scan.

#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#

/usr/binos/conf/btdecode -- gen_context(system_u:object_r:polaris_btdecode_exec_t,s0)

```

```
/usr/binos/conf/bttail -- gen_context(system_u:object_r:polaris_btdecode_exec_t,s0)
/usr/binos/conf/mcp_trace_filter.sh -- gen_context(system_u:object_r:polaris_trace_filter_exec_t,s0)
/usr/binos/conf/mcp_trace_request.sh -- gen_context(system_u:object_r:polaris_trace_request_exec_t,s0)
```

```
/usr/binos/bin/create_luid_file_db -- gen_context(system_u:object_r:polaris_create_ldb_exec_t,s0)
/tmp/btrace_luids_file.cdb.tmp -- gen_context(system_u:object_r:polaris_ldb_tmp_t,s0)
/tmp/btrace_luids_file.cdb -- gen_context(system_u:object_r:polaris_ldb_tmp_t,s0)
```

```
/tmp/cc/0/trace(/.*)? gen_context(system_u:object_r:polaris_btrace_base_t,s0)
/tmp/cc/0/trace/fifo(/.*)? gen_context(system_u:object_r:polaris_fifo_stdout_base_t,s0)
/tmp/fp/trace(/.*)? gen_context(system_u:object_r:polaris_btrace_base_t,s0)
/tmp/fp/trace/fifo gen_context(system_u:object_r:polaris_fifo_stdout_base_t,s0)
/tmp/fp/trace/fifo(/.*)? gen_context(system_u:object_r:polaris_fifo_stdout_t,s0)
/tmp/rp/trace(/.*)? gen_context(system_u:object_r:polaris_btrace_base_t,s0)
/tmp/rp/trace/fifo gen_context(system_u:object_r:polaris_fifo_stdout_base_t,s0)
/tmp/rp/trace/fifo(/.*)? gen_context(system_u:object_r:polaris_fifo_stdout_t,s0)
```

```
/dev/shm/sem\uuid_sem gen_context(system_u:object_r:polaris_btrace_tmpfs_t,s0)
/dev/shm/oper_uuid_shm gen_context(system_u:object_r:polaris_btrace_tmpfs_t,s0)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisbtrace.fc

No license file was found, but licenses were detected in source scan.

```
#
September 2017, Victor Kamensky
#
Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved
#
```

# polarisunconfined file contexts place holder

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisunconfined.fc

No license file was found, but licenses were detected in source scan.

```
#
February 2020, Victor Kamensky
#
Copyright (c) 2020 by Cisco Systems, Inc.
All rights reserved
#
```

policy\_module(polarisdbgd, 1.0);

```
gen_require(`
 type polaris_dbgd_t;
```

```
)
polaris_chasfs_read(polaris_dbg_d_t)
polaris_tdlresolve_read(polaris_dbg_d_t)
polaris_cpld_read(polaris_dbg_d_t)

logging_send_syslog_msg(polaris_dbg_d_t)

vconfd_load_shared_schemas
polaris_confd_shared_schema_read(polaris_dbg_d_t)

/var/run/.dbgd socket and pid
type polaris_dbg_d_var_run_t;
files_pid_file(polaris_dbg_d_var_run_t)
manage_files_pattern(polaris_dbg_d_t, polaris_dbg_d_var_run_t, polaris_dbg_d_var_run_t)
manage_sock_files_pattern(polaris_dbg_d_t, polaris_dbg_d_var_run_t, polaris_dbg_d_var_run_t)
files_pid_filetrans(polaris_dbg_d_t, polaris_dbg_d_var_run_t, { file sock_file })

polaris_vdaemon_var_sock_write(polaris_dbg_d_t)

dbgd may create vrf-based netns on demand
polaris_vrf_netns_manage(polaris_dbg_d_t)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisdbgd.te

No license file was found, but licenses were detected in source scan.

```
#
March 2020, Victor Kamensky
#
Copyright (c) 2020 by Cisco Systems, Inc.
All rights reserved
#
```

```
<summary>Polaris JVM Policy Rules.</summary>
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisjvm.if

No license file was found, but licenses were detected in source scan.

```
All rights reserved
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisinstall.te

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polaristwsw.te

No license file was found, but licenses were detected in source scan.

```
#
December 2018, Victor Kamensky
```

```

#
Copyright (c) 2018-2019 by Cisco Systems, Inc.
All rights reserved
#

policy_module(polarisezmancc, 1.0);

gen_require(
 type polaris_ezman_cc_t;
)

polaris_chasfs_read(polaris_ezman_cc_t)
polaris_cpld_read(polaris_ezman_cc_t)
polaris_tdlresolve_read(polaris_ezman_cc_t)

polaris_ripc_sman_ui_serv_connect(polaris_ezman_cc_t)

allow polaris_ezman_cc_t self:capability dac_override;

polaris_oob_evfc_dev_use(polaris_ezman_cc_t)
LOOK AT ME by some reason relabeling of /dev/ezlkkm
device files does not work
dev_rw_generic_chr_files(polaris_ezman_cc_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisezmancc.te
No license file was found, but licenses were detected in source scan.

#
Oct 2020, Xin Xiang
#
Copyright (c) 2020 by Cisco Systems, Inc.
All rights reserved
#

policy_module(polarisdoppler, 1.0);

doppler interrupt device
type polaris_dplr_device_t;
dev_node(polaris_dplr_device_t)

dma mmap device
type polaris_dmammap_device_t;
dev_node(polaris_dmammap_device_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisdoppler.te

```

No license file was found, but licenses were detected in source scan.

```

Nov 2020, Swati Kumari

Copyright (c) 2020 by Cisco Systems, Inc.
All rights reserved

<summary>Polaris PTPD Policy Rules.</summary>
```

```

<summary>
Work (read, write, ioctl) with /dev/blzi_fpga
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>

interface(`polaris_blzi_dev_use`,
 gen_require(`
 type device_t;
 type polaris_blzi_device_t;
 `)
 write_chr_files_pattern($1, device_t, polaris_blzi_device_t)
 read_chr_files_pattern($1, device_t, polaris_blzi_device_t)
 allow $1 polaris_blzi_device_t:chr_file map;
)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisptpdrp.if

No license file was found, but licenses were detected in source scan.

```

March 2017, Victor Kamensky

Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved

<summary>Polaris cpp_cp Policy Rules.</summary>
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscppcp.if

No license file was found, but licenses were detected in source scan.

```

#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2020 by Cisco Systems, Inc.
All rights reserved
#

policy_module(polariscppdriver, 1.0);

gen_require(
 type polaris_cpp_driver_t;
)

polaris_btrace_data_manage(polaris_cpp_driver_t)
polaris_crft_data_manage(polaris_cpp_driver_t)
polaris_chasfs_manage(polaris_cpp_driver_t)
polaris_tdlresolve_read(polaris_cpp_driver_t)
polaris_tdlldb_list_dirs(polaris_cpp_driver_t)
polaris_cpld_read(polaris_cpp_driver_t)
polaris_flashlib_read(polaris_cpp_driver_t)

polaris_ripc_sman_ui_serv_connect(polaris_cpp_driver_t)

polaris_cpp_process(polaris_cpp_driver_t)
polaris_cpp_dev_use(polaris_cpp_driver_t)

allow read variety of system information from sysfs
type=AVC msg=audit(1479601620.503:19): avc: denied { open } for pid=22839 comm="cpp_driver"
path="/sys/devices/system/node/node0/meminfo" dev="sysfs" ino=805
scontext=system_u:system_r:polaris_cpp_driver_t:s0 tcontext=system_u:object_r:sysfs_t:s0 tclass=file
dev_read_sysfs(polaris_cpp_driver_t)

optional_policy(
cpp_driver reads qfp executable to look at .stabs sections that
contains qfp code fixups, then this fixup data is passed to kernel
module to modify qfp code.
gen_require(
 type bin_t;
 type polaris_qfp_exec_t;
)
read_files_pattern(polaris_cpp_driver_t, bin_t, polaris_qfp_exec_t)
)

polaris_icc_broken_relocations(polaris_cpp_driver_t)

work with /dev/i2c devices
polaris_i2c_use(polaris_cpp_driver_t)

```

```

polaris_cpp_cavium_sdk_ipc_use(polaris_cpp_driver_t)

logging_send_syslog_msg(polaris_cpp_driver_t)

LOOK AT ME: raw memory access in cavium vendor SDK
related to octeon driver (BUG CSCvh58515)
#ifdef(`crankshaft_family',`
polaris_dev_mem_use(polaris_cpp_driver_t)
')

allow access to /tmp/octeon-remote-lock-pci***
This is required as part of cpp_driver access of octeon chip.
As part of the init, call is made to octeon_remote_lock()
which requires access to the /tmp file.
#ifdef(`crankshaft_family',`
polaris_cm_fp_tmp_filetrans(polaris_cpp_driver_t)
polaris_cm_fp_tmp_manage(polaris_cpp_driver_t)
')

LOOK AT ME on overloard cpp_driver needs access to /dev/cavium_e
and /dev/pcie0 devices, on 1ng cpp_driver needs access to
/dev/yoda0_tree2, etc
dev_rw_generic_chr_files(polaris_cpp_driver_t)

/dev/cpp_il on qwlc
optional_policy(`
polaris_cpp_il_dev_use(polaris_cpp_driver_t)
')

#ifdef(`qwlc_platform',`
polaris_cpld_dev_use(polaris_cpp_driver_t)
')

#ifdef(`katar_platform',`
polaris_cpld_dev_use(polaris_cpp_driver_t)
')

#ifdef(`mcp_family',`
polaris_cpld_dev_use(polaris_cpp_driver_t)
')

optional_policy(`
polaris_cpp_htdp_dev_use(polaris_cpp_driver_t)
polaris_cbdma_dev_use(polaris_cpp_driver_t)
polaris_cpp_htdp_dev_use(polaris_cpp_driver_t)
')

```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscppdriver.te
```

```
No license file was found, but licenses were detected in source scan.
```

```
#
```

```
August 2017, Shawn Lu
```

```
#
```

```
Copyright (c) 2017-2019 by Cisco Systems, Inc.
```

```
All rights reserved
```

```
#
```

```
<summary>Polaris odm_proxy Policy Rules.</summary>
```

```
Found in path(s):
```

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisodmproxy.if
```

```
No license file was found, but licenses were detected in source scan.
```

```
#
```

```
March 2017, Victor Kamensky
```

```
#
```

```
Copyright (c) 2016-2021 by Cisco Systems, Inc.
```

```
All rights reserved
```

```
#
```

```
policy_module(polarisbtrace, 1.0);
```

```
#####
```

```
Btrace policy
```

```
#####
```

```
gen_require(`
```

```
 attribute domain;
```

```
 attribute polaris_extended_domain;
```

```
 attribute unconfined_domain_type;
```

```
`)
```

```
persistent btrace files stored under btrace_data
```

```
type polaris_btrace_data_t;
```

```
files_type(polaris_btrace_data_t)
```

```
allow btrace data file reside on persistent storage
```

```
polaris_pfile_type(polaris_btrace_data_t)
```

```
type polaris_fifo_stdout_t;
```

```
files_type(polaris_fifo_stdout_t)
```

```
type polaris_fifo_stdout_base_t;
```

```
files_type(polaris_fifo_stdout_base_t)
```

```
attribute polaris_btrace_data_domain;
```



```

type polaris_btrace_base_t;
files_type(polaris_btrace_base_t)

typeattribute polaris_btrace_base_t polaris_btrace_data_domain;
typeattribute polaris_btrace_data_t polaris_btrace_data_domain;

is "trace" in tmp_t specific enough? Maybe we would need to change it in polaris
files_tmp_filetrans(polaris_extended_domain, polaris_btrace_base_t, dir, "trace")
udev -> cat9k-ssd.mount -> unifiedfs_rsync_udev.sh -> btrace.sh might also create this dir
files_tmp_filetrans(udev_t, polaris_btrace_base_t, dir, "trace")

gen_require(
 attribute polaris_extended_domain;
 type polaris_pvp_tmp_t;
)
filetrans_pattern(polaris_extended_domain, polaris_pvp_tmp_t, polaris_btrace_base_t, dir, "trace")

filetrans_pattern(polaris_extended_domain, polaris_btrace_base_t, polaris_fifo_stdout_base_t, dir, "fifo")
filetrans_pattern(domain, polaris_btrace_base_t, polaris_fifo_stdout_base_t, dir, "fifo")
filetrans_pattern(domain, polaris_fifo_stdout_base_t, polaris_fifo_stdout_t, fifo_file)
manage_dirs_pattern(polaris_extended_domain, polaris_btrace_base_t, polaris_fifo_stdout_base_t)

polaris_utility_domain_template(btdecode)

any polaris process except iosd can execve btdecode utility to decode its own traces
gen_require(
 attribute polaris_domain;
 type polaris_iosd_t;
)
domtrans_pattern(polaris_domain - polaris_iosd_t, polaris_btdecode_exec_t, polaris_btdecode_t)
corecmd_check_exec_shell(polaris_domain - polaris_iosd_t)

btdecode not only reads btrace files, but also creates copy of the file
polaris_btrace_data_manage_all(polaris_btdecode_t)
polaris_btrace_persistent_data_manage(polaris_btdecode_t)

polaris_use_btrace_fifo(polaris_btdecode_t)
polaris_tdlresolve_read(polaris_btdecode_t)
polaris_boot_tmp_read(polaris_btdecode_t)
polaris_lua_read(polaris_btdecode_t)
polaris_chasfs_read(polaris_btdecode_t)
polaris_cpld_read(polaris_btdecode_t)
polaris_bootflash_manage(polaris_btdecode_t)

lua files need to read executables to retrieve btrace meta informations
files_mmap_all_files(polaris_btdecode_t)

```

```

could be called on trace files on persistent storage
polaris_persistent_read(polaris_btdecode_t)

need to read executables to retrieve btrace meta informations
polaris_read_exec_domain(polaris_btdecode_t)

corecmd_exec_bin(polaris_btdecode_t)
corecmd_exec_shell(polaris_btdecode_t)

allow read of /etc/group and /etc/passwd
auth_use_nsswitch(polaris_btdecode_t)

executes luajit
allow polaris_btdecode_t self:process execmem;

tmp files created by /lua/btdecode.lua in /tmp
type polaris_btdecode_tmp_t;
files_tmp_file(polaris_btdecode_tmp_t)
files_tmp_filetrans(polaris_btdecode_t, polaris_btdecode_tmp_t, file)
manage_files_pattern(polaris_btdecode_t, polaris_btdecode_tmp_t, polaris_btdecode_tmp_t)

/lua/btdecode.lua may call create_luid_file_db on demand
polaris_create_ldb_domtrans(polaris_btdecode_t)

in some cases it runs with telnet /dev/ptyN as stdin/stdout
example when executed on other node, or "monitor log profile"
command
telnet_use_ptys(polaris_btdecode_t)

Allow btdecode to read/write /dev/pts/*
term_use_generic_ptys(polaris_btdecode_t)

polaris_btrace_ldb_tmp_read(polaris_btdecode_t)

Allow btdecode to watch over /bootflash/tracelogs, /vol/harddisk/tarcelogs and /flash2/CRASH/tracelogs
polaris_btrace_data_watch(polaris_btdecode_t)

Allow btdecode to watch over /usr/binos/conf
files_watch_usr_dirs(polaris_btdecode_t)

#Allow btdecode to access UFS mounted directories for other members
optional_policy(
polaris_ncd_tmp_read(polaris_btdecode_t)
')

btrace_rotate calls ftw function through create_luid_file_db utility
that walks whole file tree in order to create btrace_luids_file.cdb

```

```

let's have separate domain for this utility
polaris_utility_domain_template(create_ldb)

files_read_all_files(polaris_create_ldb_t)
files_getattr_all_dirs(polaris_create_ldb_t)
files_read_all_symlinks(polaris_create_ldb_t)
files_list_non_security(polaris_create_ldb_t)
files_dontaudit_list_security_dirs(polaris_create_ldb_t)
files_mmap_all_files(polaris_create_ldb_t)

allow luid database scripts to read/write /dev/pts/*
term_use_generic_ptys(polaris_create_ldb_t)

creates files like btrace_luids_file.cdb_20170907160108.tmp, btrace_luids_file.cdb
type polaris_ldb_tmp_t;
files_tmp_file(polaris_ldb_tmp_t)
files_tmp_filetrans(polaris_create_ldb_t, polaris_ldb_tmp_t, file)
files_tmp_filetrans(polaris_btdecode_t, polaris_ldb_tmp_t, file, "btrace_luids_file.cdb")
manage_files_pattern(polaris_create_ldb_t, polaris_ldb_tmp_t, polaris_ldb_tmp_t)
mmap_files_pattern(polaris_create_ldb_t, polaris_create_ldb_t, polaris_create_ldb_t)
polaris_use_btrace_fifo(polaris_create_ldb_t)

in some cases it runs with telnet /dev/ptyN as stdin/stdout
example when executed on other node, or "monitor log profile"
command
telnet_use_ptys(polaris_create_ldb_t)

Allowing permission to read/open/getattr/ on
/tmp/sw/mount/*universalk9.*.SSA.pkg/usr/binos/sbin/in.telnetd
gen_require(
 type telnetd_exec_t;
)
allow polaris_btdecode_t telnetd_exec_t:file { getattr open read };

#####
CLI: show platform software trace filter-binary wired
invokes.../bin/sh /usr/binos/conf/mcp_trace_filter.sh --binary wired
#####

polaris_utility_domain_template(trace_filter)

polaris_bexecute_domtrans(polaris_trace_filter_t)
polaris_bexecute_domain(polaris_trace_filter_t, polaris_trace_filter_exec_t)
mcp_trace_filter.sh runs with telnet /dev/ptyN as
stdin/stdout if on standby
telnet_use_ptys(polaris_trace_filter_t)

script starts rsync with mcp_chvrf.sh

```

```

polaris_chvrf_domtrans(polaris_trace_filter_t)

allow polaris_trace_filter_t self:capability { dac_override sys_resource };

access /tmp/sw/boot/pkginfo
awk -v what=^.BuildPath: $pkginfo_file ~ what { print $2 } /tmp/sw/boot/pkginfo
polaris_boot_tmp_read(polaris_trace_filter_t)

polaris_chasfs_read(polaris_trace_filter_t)
polaris_disk_bootflash_read_lnk(polaris_trace_filter_t)
polaris_disk_crashinfo_getattr(polaris_trace_filter_t)
polaris_bootflash_manage(polaris_trace_filter_t)
polaris_use_btman_fifo(polaris_trace_filter_t)
polaris_use_btrace_fifo(polaris_trace_filter_t)
polaris_smand_use_fifo(polaris_trace_filter_t)
polaris_cpld_read(polaris_trace_filter_t)
polaris_tdldb_list_dirs(polaris_trace_filter_t)
polaris_disk_harddisk_read_lnk(polaris_trace_filter_t)
kernel_read_system_state(polaris_trace_filter_t)

read /proc/rmonbifo files such as env_var.sh
polaris_rmonbifo_tmp_read(polaris_trace_filter_t)

df on "/" needs fs_t.filesystem getattr
fs_getattr_xattr_fs(polaris_trace_filter_t)

#Allow mcp_trace_request.sh to access UFS mounted directories for other members
optional_policy(`
polaris_ncd_tmp_read(polaris_trace_filter_t)
`)

allow creation/access of temporary files created by bash such as
/tmp/sh-thd-1499428203 etc
type polaris_trace_filter_tmp_t;
files_tmp_file(polaris_trace_filter_tmp_t)
files_tmp_filetrans(polaris_trace_filter_t, polaris_trace_filter_tmp_t, file)
manage_files_pattern(polaris_trace_filter_t, polaris_trace_filter_tmp_t, polaris_trace_filter_tmp_t)

mcp_trace_filter.sh invokes: "df /tmp/rp/tdldb" and "df /dev/shm"
fs_getattr_tmpfs(polaris_trace_filter_t)

allow accesses to polaris lua files
polaris_lua_read(polaris_trace_filter_t)

allow read of /etc/group and /etc/passwd
auth_use_nsswitch(polaris_trace_filter_t)

corecmd_exec_bin(polaris_trace_filter_t)

```

```

why does btrace show command needs to write into btrace state?
polaris_btrace_data_manage_all(polaris_trace_filter_t)
polaris_btrace_persistent_data_manage(polaris_trace_filter_t)

Allow mcp_trace_request.sh to access NFS mounted directories for other members
such as /tmp/ufs/harddisk/10.130.1.0
fs_getattr_nfs(polaris_trace_filter_t)

#####
CLI: monitor log profile <iwan | wireless | wired ..>
invokes.../bin/sh /usr/binos/conf/mcp_trace_request.sh --operation monitor
#####

polaris_utility_domain_template(trace_request)

polaris_bexecute_domtrans(polaris_trace_request_t)
polaris_bexecute_domain(polaris_trace_request_t, polaris_trace_request_exec_t)

Provide sys_resource capability for sys_pipe calls
allow polaris_trace_request_t self:capability sys_resource;

polaris_cpld_read(polaris_trace_request_t)
polaris_disk_crashinfo_getattr(polaris_trace_request_t)
polaris_disk_bootflash_read_Ink(polaris_trace_request_t)
polaris_disk_harddisk_read_Ink(polaris_trace_request_t)
polaris_chasfs_manage(polaris_trace_request_t)

fs_getattr_xattr_fs(polaris_trace_request_t)

can execute hostname
hostname_exec(polaris_trace_request_t)

can execute dmesg
dmesg_domtrans(polaris_trace_request_t)

creates archives under /crashinfo
polaris_disk_crashinfo_manage(polaris_trace_request_t)

can tar logs to persistent all file systems (including removable file systems)
polaris_persistent_manage(polaris_trace_request_t)
polaris_removable_manage(polaris_trace_request_t)

read and write all btrace fifo file as standard input/output.
polaris_use_btrace_fifo(polaris_trace_request_t)

read /proc/rmonbifo files such as env_var.sh
polaris_rmonbifo_tmp_read(polaris_trace_request_t)

```

```

copies /tmp/silent_roll_select.log into /crashinfo so that it can be tar'd into an
archive
polaris_pvp_read_tmp_files(polaris_trace_request_t)

read /tmp/sw/boot/base_pkg
polaris_boot_tmp_read(polaris_trace_request_t)

in some cases mcp_trace_request.sh runs with telnet /dev/ptyN as
stdin/stdout
telnet_use_ptys(polaris_trace_request_t)

allow read of /etc/group and /etc/passwd
auth_use_nsswitch(polaris_trace_request_t)

read /proc/cmdline
kernel_read_system_state(polaris_trace_request_t)

corecmd_exec_bin(polaris_trace_request_t)

#ifdef(^ngwc_family',`
optional_policy(`
polaris_ncd_tmp_read(polaris_trace_request_t)
`)
`)

mcp_trace_request.sh can read all btrace files both in temp storage
as well as in persistent storage
polaris_btrace_data_manage_all(polaris_trace_request_t)
polaris_btrace_persistent_data_manage(polaris_trace_request_t)

Allow mcp_trace_request.sh to create and manage temporary files under /tmp
such as /tmp/mtr_cntrl
type polaris_trace_request_tmp_t;
files_tmp_file(polaris_trace_request_tmp_t)
files_tmp_filetrans(polaris_trace_request_t, polaris_trace_request_tmp_t, file)
manage_files_pattern(polaris_trace_request_t, polaris_trace_request_tmp_t, polaris_trace_request_tmp_t)

Allow mcp_trace_request.sh to access NFS mounted directories for other members
such as /tmp/ufs/crashinfo/10.1.1.1
fs_getattr_nfs(polaris_trace_request_t)

mcp_trace_request.sh invokes dmesg, which runs in dmesg_t domain needs access
to btrace data store
gen_require(`
 type dmesg_t;
`)
polaris_btrace_persistent_data_manage(dmesg_t)

```

```

dmesg invocation in case of disk being full,
results in writing to area of disk that
requires the sys_resource capability.
allow dmesg_t self:capability sys_resource;

Set /tmp/udev_ng4k.vbd.log to be under polaris_udev_tmp_files_t label
gen_require(
 type udev_t;
 type polaris_udev_tmp_files_t;
 type init_t;
)
files_tmp_filetrans(udev_t, polaris_udev_tmp_files_t, file, "udev_ng4k.vbd.log")
fs_tmpfs_filetrans(udev_t, polaris_udev_tmp_files_t, file, "udev_ng4k.vbd.log")
files_tmp_filetrans(init_t, polaris_udev_tmp_files_t, file, "udev_ng4k.vbd.log")
fs_tmpfs_filetrans(init_t, polaris_udev_tmp_files_t, file, "udev_ng4k.vbd.log")

Add permission for mcp_trace_request to access polaris_udev_tmp_files_t files
polaris_udev_tmp_manage(polaris_trace_request_t)

Allow ls /tmp/ufs/harddisk
optional_policy(
 polaris_ncd_tmp_read(polaris_trace_request_t)
)

#Allow mcp_trace_request to get tmpfs attributes
fs_getattr_tmpfs(polaris_trace_request_t)

#allow mcp_trace_request to execute tar
allow polaris_trace_request_t self:capability { chown fowner fsetid };

#####

type polaris_btrace_tmpfs_t;
files_tmpfs_file(polaris_btrace_tmpfs_t)

btrace semaphore created by systemd-tmpfiles needs map permission
gen_require(
 type systemd_tmpfiles_t;
)
mmap_files_pattern(systemd_tmpfiles_t, polaris_btrace_tmpfs_t, polaris_btrace_tmpfs_t)

Allow polaris processes to manage level config files in tracelogs persistent
directory like /bootflash/tracelogs/level_config
type polaris_btrace_lvl_config_t;
files_type(polaris_btrace_lvl_config_t)
gen_require(
 attribute polaris_domain;
)

```

polaris\_btrace\_lvl\_config\_manage(polaris\_domain)

```
optional_policy(
 polaris_cedge_tanman_tmp_manage(polaris_btdecode_t)
)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisbtrace.te

No license file was found, but licenses were detected in source scan.

```

March 2017, Victor Kamensky

Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#
```

/usr/binos/conf/psvp.sh -- gen\_context(system\_u:object\_r:polaris\_psvp\_exec\_t,s0)

```
/tmp/rp/psvp -d gen_context(system_u:object_r:polaris_psvp_tmp_t,s0)
/tmp/rp/psvp/inot_fifo -p gen_context(system_u:object_r:polaris_psvp_tmp_t,s0)
/tmp/rp/psvp/pvp\pid -- gen_context(system_u:object_r:polaris_psvp_tmp_t,s0)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarispsvp.fc

No license file was found, but licenses were detected in source scan.

```

July 2017, Victor Kamensky

Copyright (c) 2017-2021 by Cisco Systems, Inc.
All rights reserved
#
```

policy\_module(polarisbexecute, 1.0);

polaris\_utility\_domain\_template(bexecute)

polaris\_utility\_domain\_template(chvrf)

```
polaris_bexecute_domtrans(polaris_chvrf_t)
polaris_chvrf_domtrans(polaris_bexecute_t)
polaris_ngio_module_session_domtrans(polaris_bexecute_t)
```

polaris\_rom\_upgrade\_use\_fifo(polaris\_chvrf\_t)

```
#####
```

```
bexecute
```



```
#####
```

```
corecmd_exec_bin(polaris_bexecute_t)
```

```
allow read of /etc/passwd
```

```
auth_use_nsswitch(polaris_bexecute_t)
```

```
dev_setattr_null_dev(polaris_bexecute_t)
```

```
polaris_btrace_data_manage(polaris_bexecute_t)
```

```
polaris_crft_data_manage(polaris_bexecute_t)
```

```
polaris_chasfs_manage(polaris_bexecute_t)
```

```
polaris_cpld_read(polaris_bexecute_t)
```

```
polaris_boot_tmp_read(polaris_bexecute_t)
```

```
polaris_rmonbifo_tmp_read(polaris_bexecute_t)
```

```
polaris_proc_rmonbifo_read(polaris_bexecute_t)
```

```
polaris_dyncfg_tmp_read(polaris_bexecute_t)
```

```
polaris_read_debug_conf(polaris_bexecute_t)
```

```
polaris_tlddb_list_dirs(polaris_bexecute_t)
```

```
polaris_disk_bootflash_read_lnk(polaris_bexecute_t)
```

```
polaris_disk_harddisk_read_lnk(polaris_bexecute_t)
```

```
open/read /tmp/sw/rp/max_elastic_bays
```

```
polaris_pvp_read_tmp_files(polaris_bexecute_t)
```

```
search/getattr of /tmp/udev/etc/udev
```

```
polaris_udev_tmp_list_dirs(polaris_bexecute_t)
```

```
manage files in /tmp/pman_ports
```

```
polaris_pman_manage_tmp_files(polaris_bexecute_t)
```

```
breelay.sh does rm -rf of "/tmp/pman_ports/gdbport/9910"
```

```
This checks tmpfs file system attributes
```

```
#
```

```
Denial is observed after "show platform software audit summary"
```

```
which uses breelay to trigger corresponding audit_log.sh script
```

```
fs_getattr_tmpfs(polaris_bexecute_t)
```

```
run ldd, which in turns execve "ld.so --verify"
```

```
libs_exec_ld_so(polaris_bexecute_t)
```

```
follow /tftp/inv symlink to /tmp/chassis/local/rp/chasfs/inventory
```

```
gen_require(`
```

```
 type tftpd_dir_rw_t;
```

```
`)
```

```
read_lnk_files_pattern(polaris_bexecute_t, tftpd_dir_rw_t, tftpd_dir_rw_t)
```

```
tries to do mkdir -p /tmp/rp/lipc, but it should exist already so
```

```
getattr should be sufficient
```

```

polaris_lipc_getattr(polaris_bexecute_t)

read /proc/cmdline
kernel_read_system_state(polaris_bexecute_t)

binary tracing fifo_file as standard output
polaris_use_btrace_fifo(polaris_bexecute_t)

write into pipe that smand created for us with popen
polaris_smand_use_fifo(polaris_bexecute_t)

allow polaris_bexecute_t self:capability { chown setgid setuid fowner net_admin };
allow polaris_bexecute_t self:process { setpgid setcap };

temporary files created by bexecute like /tmp/get_status_type_pkg_list.rp-1-0-0.20170707094059.out.log
type polaris_bexecute_tmp_t;
files_tmp_file(polaris_bexecute_tmp_t)
files_tmp_filetrans(polaris_bexecute_t, polaris_bexecute_tmp_t, file)
manage_files_pattern(polaris_bexecute_t, polaris_bexecute_tmp_t, polaris_bexecute_tmp_t)

smand calls many commands through bexec.sh
polaris_smand_domain(polaris_bexecute_t, polaris_bexecute_exec_t)

hman invokes cpp_shm_mgr_info_show.sh which in turn invokes "mktemp -p /tmp/tmppub..."
polaris_btrace_tmppub_manage(polaris_bexecute_t)

ifdef(`nyquist_platform',`
term_use_unallocated_ttys(polaris_bexecute_t)
term_setattr_unallocated_ttys(polaris_bexecute_t)
`)

ifdef(`radium_platform',`
polaris_load_usbnet_domtrans(polaris_bexecute_t)

allow /usr/binos/conf/bexecute.sh for tcp_socket access
due to "/bin/sh /usr/binos/conf/mcp_chvrf.sh eobc
/usr/binos/conf/bexecute.sh -c /usr/binos/conf/module_direct.py
0 bp0 PROMETHIUM-L"
gen_require(`
type polaris_cm_rp_t;
`)
allow polaris_chvrf_t polaris_cm_rp_t:tcp_socket ioctl;

allow /usr/binos/conf/bexecute.sh for tcp_socket access
due to "/bin/sh /usr/binos/conf/mcp_chvrf.sh eobc
/usr/binos/conf/bexecute.sh -c /bin/mcp_pkg_wrap rp_daemons
/usr/binos/conf/execute_co"
gen_require(`

```

```

 type polaris_dmi_ncsshd_fwd_t;
)
 allow polaris_chvrf_t polaris_dmi_ncsshd_fwd_t:tcp_socket ioctl;
)

ifdef(`sumatra_platform',`
polaris_load_usbnet_domtrans(polaris_bexecute_t)
)

ifdef(`nanook_platform',`
polaris_load_usbnet_domtrans(polaris_bexecute_t)
)

ifdef(`supernova_platform',`
polaris_load_usbnet_domtrans(polaris_bexecute_t)
)
polaris_issu_tmp_files_manage(polaris_bexecute_t)

Unlike other platforms, quake platform has runin_exec_proc.sh script,
which is started by xinetd in inetd_t domain,
and needs to switch to bexecute domain.
In turn, runin_exec_proc.sh then starts in.telnetd process which needs
to run in telnetd_t domain, for the existing policies to do the rest.
ifdef(`quake_platform',`
gen_require(`
 type inetd_t;
 type telnetd_t;
 type telnetd_exec_t;
)
polaris_bexecute_domtrans(inetd_t)
polaris_bexecute_domain(telnetd_t, telnetd_exec_t)
)

#####
chvrf
#####
corecmd_exec_bin(polaris_chvrf_t)

allow read of /etc/passwd
auth_use_nsswitch(polaris_chvrf_t)

read polaris vrf net namespace file(s) /var/run/netns/0
fs_read_nsfs_files(polaris_chvrf_t)

write into pipe that various binos processes created for us with popen
polaris_smand_use_fifo(polaris_chvrf_t)
polaris_hman_use_fifo(polaris_chvrf_t)

```

```

polaris_dmiauthd_use_fifo(polaris_chvrf_t)
optional_policy(`
 polaris_cmrp_use_fifo(polaris_chvrf_t)
`)
optional_policy(`
 polaris_dmi_ncsshd_fwd_use_fifo(polaris_chvrf_t)
`)

mcp_chvrf.sh may run into files created by bexecute
manage_files_pattern(polaris_chvrf_t, polaris_bexecute_tmp_t, polaris_bexecute_tmp_t)

init may transition to polaris_chvrf_t - certain systemd units use
mcp_chvrf.sh to start services
gen_require(`
 type init_t;
`)
polaris_chvrf_domtrans(init_t)

mcp_chvrf.sh used to start xinetd services
gen_require(`
 type inetd_t;
 type inetd_exec_t;
`)
domtrans_pattern(polaris_chvrf_t, inetd_exec_t, inetd_t)

in some cases mcp_chvrf needs to write into someone fifo stdout
file, i.e when called from ncd.sh script
polaris_use_btrace_fifo(polaris_chvrf_t)

sysnet_domtrans_ifconfig(polaris_chvrf_t)

during some execve calls chvrf needs list /tmp/etc
polaris_etc_list(polaris_chvrf_t)

ifdef(`ngwc_family',`
/tmp/rsync_log_dir/rsync_log_XXX is stdout when mcp_chvrf.sh with rsync is called
also /tmp/etc/installer/inot_fifo file descriptor is leaked from the script
polaris_manage_rsync_tmplog_dir(polaris_chvrf_t)
polaris_autoupgrade_tmp_manage(polaris_chvrf_t)
polaris_autoupgrade_tmp_manage(polaris_bexecute_t)
`)

ifdef(`mcp_family',`
/tmp/rsync_log_dir/rsync_log_XXX is stdout when mcp_chvrf.sh with rsync is called
also /tmp/etc/installer/inot_fifo file descriptor is leaked from the script
polaris_manage_rsync_tmplog_dir(polaris_chvrf_t)
polaris_autoupgrade_tmp_manage(polaris_chvrf_t)
polaris_autoupgrade_tmp_manage(polaris_bexecute_t)
`)

```

```

)

ifdef(`wlc_family',`
/tmp/rsync_log_dir/rsync_log_XXX is stdout when mcp_chvrf.sh with rsync is called
also /tmp/etc/installer/inot_fifo file descriptor is leaked from the script
polaris_manage_rsync_tmplog_dir(polaris_chvrf_t)
polaris_autoupgrade_tmp_manage(polaris_chvrf_t)
polaris_autoupgrade_tmp_manage(polaris_bexecute_t)
`)

For "request platform software system shell" CLI, we have:
/bin/sh /usr/binos/conf/mcp_chvrf.sh eobc /usr/binos/conf/bexecute.sh
-c /usr/binos/conf/mcp_record_shell.sh
mcp_chvrf.sh needs read/write access to /dev/pts/1:
allow polaris_chvrf_t telnetd_devpts_t:chr_file { read write };
telnet_use_ptys(polaris_chvrf_t)

ifdef(`nyquist_platform',`
term_use_unallocated_ttys(polaris_chvrf_t)
`)

some times run with unix_stream_socket as stdin
init_ioctl_stream_sockets(polaris_chvrf_t)

#####
bexecute and mcp_chvrf.sh called from install_show.sh
#####

polaris_install_show_tmp_write(polaris_bexecute_t)
polaris_install_show_tmp_write(polaris_chvrf_t)

#####
install_engine.sh uses breloy to re-launch install_engine in all FRUs.
So, op_rp_switch_to_remote_loc_in_parallel() outputs to install tmp log file;
check invocation-point for comms_run_on_remote_fru.
#####
polaris_install_tmp_log_write(polaris_bexecute_t)
polaris_install_tmp_log_write(polaris_chvrf_t)

#####
CLI: show platform hardware cpp active infrastructure shared-memory all
this results in hman invoking following chain of shell scrips.
/bin/sh /usr/binos/conf/bexec.sh -c /usr/binos/conf/cpp_shm_mgr_info_show.sh
/bin/bash /usr/binos/conf/bexecute.sh -c /usr/binos/conf/cpp_shm_mgr_info_show.sh
/bin/sh /usr/binos/conf/cpp_shm_mgr_info_show.sh
/bin/bash /usr/binos/conf/bshell.sh -S -c "show platform hardware qfp active \
infrastructure shared-memory process cpp-control-process"
All these are executed in polaris_bexecute_t domain and write access to following lipc

```

```

is needed: /tmp/rp/lipc/shell_mgr_bshell_serv_socket
#####
polaris_sman_bshell_serv_lipc_write(polaris_bexecute_t)
polaris_tdlresolve_read(polaris_bexecute_t)
#####
This block is policies for "sh pla so process memory r0 name iosd maps" CLI

polaris_utility_domain_template(process_maps)

polaris_bexecute_domain(polaris_process_maps_t, polaris_process_maps_exec_t)

needs to read maps files.
domain_read_all_domains_state(polaris_process_maps_t)

"ps" needs read access to /sys/devices/system/cpu/online
"ps" needs read access to /proc/uptime
dev_read_sysfs(polaris_process_maps_t)
kernel_read_system_state(polaris_process_maps_t)

need write/ioctl/getattr access for pipes like "pipe:[118396]"
polaris_hman_use_fifo(polaris_process_maps_t)

corecmd_exec_bin(polaris_process_maps_t)
#####
This block is policies for "request platform software system shell" CLI.
Eventually, mcp_record_shell.sh is invoked. That needs its own domain.

polaris_utility_domain_template(platform_shell)

polaris_bexecute_domain(polaris_platform_shell_t, polaris_platform_shell_exec_t)
corecmd_exec_bin(polaris_platform_shell_t)
auth_use_nsswitch(polaris_platform_shell_t)

polaris_btrace_persistent_data_manage(polaris_platform_shell_t)
polaris_cpld_read(polaris_platform_shell_t)

cyan libraries access /tmp/sw/boot/rmonbifo/boardsubtype
polaris_rmonbifo_tmp_read(polaris_platform_shell_t)

pglobals.sh accesses /tmp/ufs//crashinfo on cat9k platforms
optional_policy(
polaris_ncd_tmp_read(polaris_platform_shell_t)
)

mcp_record_shell.sh needs read access to chasfs
polaris_chasfs_read(polaris_platform_shell_t)

mcp_record_shell.sh needs read access to /dev/pts/0 (telnetd_devpts_t)

```

```

telnet_use_ptys(polaris_platform_shell_t)

rsync /tmp/system_shell_access_logs/$system_shell_access_log_file
rsync://rp0-0/chasfs/etc/system_shell_access_logs/.
gen_require(
 type rsync_t;
)
rsync_entry_domtrans(polaris_platform_shell_t, rsync_t)
allow rsync_t polaris_platform_shell_t:process sigchld;
telnet_use_ptys(rsync_t)

logging_send_syslog_msg(polaris_platform_shell_t)
init_list_pid_dirs(polaris_platform_shell_t)

#when reload command is issued, needs "kill" capability
allow polaris_platform_shell_t self:capability kill;

brelay started from telnetd as result it inherits stdin/stdout of pty opened
by telnetd
telnet_use_ptys(polaris_bexecute_t)
gen_require(
 type telnetd_devpts_t;
)
allow polaris_bexecute_t telnetd_devpts_t:chr_file setattr_chr_file_perms;
allow polaris_bexecute_t self:capability fsetid;

mcp_record_shell.sh invokes:
/usr/bin/script -q /harddisk/tracelogs/system_shell_R0*
- needs access to /root/.bash_history
- performs chmod on /dev/pts/2 (needs fsetid on self)
- ioctl/open/read/write on /dev/ptmx
- needs read/search access to /harddisk/tracelogs
type polaris_bash_tmp_t;
files_type(polaris_bash_tmp_t)
filetrans_pattern(domain, user_home_dir_t, polaris_bash_tmp_t, file, ".bash_history")
polaris_bash_tmp_manage(polaris_platform_shell_t)
allow polaris_platform_shell_t self:capability fsetid;
term_use_generic_ptys(polaris_platform_shell_t)
term_setattr_generic_ptys(polaris_platform_shell_t)
term_getattr_pty_fs(polaris_platform_shell_t)
term_use_ptmx(polaris_platform_shell_t)
polaris_disk_bootflash_read_lnk(polaris_platform_shell_t)
polaris_disk_harddisk_read_lnk(polaris_platform_shell_t)

mcp_record_shell.sh invokes:
mkdir /tmp/system_shell_access_logs
create /tmp/system_shell_access_logs/SHELL_ACCESSED_*
type polaris_platform_shell_tmp_t;

```

```

files_tmp_file(polaris_platform_shell_tmp_t)
files_tmp_filetrans(polaris_platform_shell_t, polaris_platform_shell_tmp_t, dir, "system_shell_access_logs")
files_tmp_filetrans(polaris_platform_shell_t, polaris_platform_shell_tmp_t, file)
manage_dirs_pattern(polaris_platform_shell_t, polaris_platform_shell_tmp_t, polaris_platform_shell_tmp_t)
manage_files_pattern(polaris_platform_shell_t, polaris_platform_shell_tmp_t, polaris_platform_shell_tmp_t)

read /proc/cmdline
kernel_read_system_state(polaris_platform_shell_t)

read /tmp/sw/boot/base_pkg
polaris_boot_tmp_read(polaris_platform_shell_t)

polaris_disk_crashinfo_getattr(polaris_platform_shell_t)
#####

polaris_utility_domain_template(shell)

term_use_generic_ptys(polaris_shell_t)

domtrans_pattern(polaris_platform_shell_t, polaris_shell_exec_t, polaris_shell_t)

reload command needs the following policies to send signal
polaris_send_signal_to_bexecute(polaris_platform_shell_t)
polaris_send_signal_to_shell(polaris_platform_shell_t)

<desc>
<p>
Polaris "request platform system shell" drops into unconfined shell
</p>
</desc>
gen_tunable(polaris_dev_shell, true)

tunable_policy(`polaris_dev_shell`,
 polaris_unconfined_domain(polaris_shell_t)
)
polaris_domain_storage_unconfined_type(polaris_shell_t)

PLEASE LOOK AT ME do we have to many ports open
btelnet runs under bexecute in case of guest shell console access
command like app-hosting connect appid guestshell console
allow polaris_bexecute_t self:tcp_socket { connect create setopt };
corenet_tcp_connect_unreserved_ports(polaris_bexecute_t)
sysnet_read_config(polaris_bexecute_t)

brelay.sh does ls /tmp/ufs//crashinfo on cat9k
allow polaris_bexecute_t self:capability dac_override;
polaris_disk_crashinfo_getattr(polaris_bexecute_t)
optional_policy(`

```



```
polaris_ncd_tmp_read(polaris_bexecute_t)
')
```

```
polaris_utility_domain_template(bconsole)
```

```
polaris_boot_tmp_read(polaris_bconsole_t)
polaris_btrace_data_manage(polaris_bconsole_t)
polaris_chasfs_read(polaris_bconsole_t)
polaris_cpld_read(polaris_bconsole_t)
polaris_proc_rmonbifo_read(polaris_bconsole_t)
polaris_rmonbifo_tmp_read(polaris_bconsole_t)
polaris_use_btrace_fifo(polaris_bconsole_t)
polaris_show_provision_temp_read(polaris_bconsole_t)
```

```
corecmd_exec_bin(polaris_bconsole_t)
polaris_bexecute_domtrans(polaris_bconsole_t)
```

```
allow polaris_bconsole_t self:process setrlimit;
```

```
handling /var/run/agetty-iosd.pid
type polaris_bconsole_var_run_t;
files_pid_file(polaris_bconsole_var_run_t)
manage_files_pattern(polaris_bconsole_t, polaris_bconsole_var_run_t, polaris_bconsole_var_run_t)
files_pid_filetrans(polaris_bconsole_t, polaris_bconsole_var_run_t, file, "agetty-iosd.pid")
```

```
access /dev/ttyS0
term_use_unallocated_ttys(polaris_bconsole_t)
```

```
auth_use_nsswitch(polaris_bconsole_t)
```

```
#####
```

```
This block is policies for
"request platform software console attach switch standby RO" CLI.
It invokes usr/binos/conf/mcp_console_attach.sh, eventually invoking
ioucon binary, to telnet to standby.
```

```
polaris_utility_domain_template(mcp_console_attach)
polaris_bexecute_domain(polaris_mcp_console_attach_t, polaris_mcp_console_attach_exec_t)
corecmd_exec_bin(polaris_mcp_console_attach_t)
polaris_bexecute_domtrans(polaris_mcp_console_attach_t)
allow polaris_mcp_console_attach_t self:process setpgid;
polaris_chasfs_read(polaris_mcp_console_attach_t)
telnet_use_ptys(polaris_mcp_console_attach_t)
```

```
working with ioucon binary, invoked by usr/binos/conf/mcp_console_attach.sh
polaris_utility_domain_template(ioucon)
polaris_bexecute_domain(polaris_ioucon_t, polaris_ioucon_exec_t)
```

```

allow polaris_ioucon_t self:unix_dgram_socket create_socket_perms;
polaris_iosd_dgram_send(polaris_ioucon_t)
polaris_iosd_tmp_file_use(polaris_ioucon_t)
telnet_use_ptys(polaris_ioucon_t)

"test platform hardware eobc ping" invokes eobc_ping.sh
send sigchld when it is done
gen_require(
 type ping_t;
)
allow ping_t polaris_bexecute_t:process sigchld;
polaris_confd_domtrans(polaris_bexecute_t)

app-hosting connect appid <> console/session
Beluga/Meraki container
ifdef(^ms_platform',`
polaris_iox_container_domtrans(polaris_bexecute_t)
`)

Bottlenose/Meraki container
ifdef(^bottlenose_platform',`
polaris_iox_container_domtrans(polaris_bexecute_t)
`)

IOx downloads the application package using network protocol (e.g http)
gen_require(
 type fifo_var_run_t;
)
allow polaris_bexecute_t fifo_var_run_t:fifo_file read;

on vxe platforms with MBRv2/MBRv4/GPTv1/GPTv3 partition layouts
/config is file system and export_mcp_environment tries to create it anyway
polaris_getattr_disk_config(polaris_bexecute_t)

#####
This block is policies for
"hw-module session <x/y>" CLI.
It invokes usr/binos/conf/ngio_module_session.sh, eventually invoking
open64.

polaris_utility_domain_template(ngio_module_session)
polaris_bexecute_domain(polaris_ngio_module_session_t, polaris_ngio_module_session_exec_t)
corecmd_exec_bin(polaris_ngio_module_session_t)
polaris_bexecute_domtrans(polaris_ngio_module_session_t)
term_use_unallocated_ttys(polaris_ngio_module_session_t)
dev_read_sysfs(polaris_ngio_module_session_t)
allow polaris_ngio_module_session_t self:process setsched;

```

```

auth_map_passwd(polaris_ngio_module_session_t)
polaris_chasfs_read(polaris_ngio_module_session_t)
polaris_cpld_read(polaris_ngio_module_session_t)
telnet_use_ptys(polaris_ngio_module_session_t)

work with /tmp files
type polaris_ngio_module_session_tmp_t;
files_tmp_file(polaris_ngio_module_session_tmp_t)
manage_dirs_pattern(polaris_ngio_module_session_t, tmp_t, polaris_ngio_module_session_tmp_t)
manage_files_pattern(polaris_ngio_module_session_t, polaris_ngio_module_session_tmp_t,
polaris_ngio_module_session_tmp_t)
manage_fifo_files_pattern(polaris_ngio_module_session_t, polaris_ngio_module_session_tmp_t,
polaris_ngio_module_session_tmp_t)
files_tmp_filetrans(polaris_ngio_module_session_t, polaris_ngio_module_session_tmp_t, { file dir })

CLI: show platform software tech-support
requires bshell execution
/bin/bash /usr/binos/conf/bshell.sh -S -P ---- __CMD__ ---- -f
/usr/binos/conf/mcp_tech_support_command_file.txt
gen_require(
 type polaris_bshell_t;
 type polaris_bshell_exec_t;
)
domtrans_pattern(polaris_bexecute_t, polaris_bshell_exec_t, polaris_bshell_t)
scripts stdin is set by hman and needs write/append access to pipes like pipe:[80159]
polaris_hman_use_fifo(polaris_bshell_t)
in case of ISR4k show tech input for bshell dynamically created
polaris_tech_support_tmp_read(polaris_bshell_t)

CLI: show software authenticity running
this results in hman invoking below command:
/bin/sh /usr/binos/conf/bexec.sh -c "/usr/bin/code_sign_verify show3 abcd "
polaris_code_verify_domtrans(polaris_bexecute_t)

stdin is inherited when bexecute calls fts_client
polaris_fts_client_tmp_manage(polaris_bexecute_t)

disk space full issue
allow polaris_platform_shell_t self:capability sys_resource;
#####
CLI: request platform software sdwan admin-tech

executes: /bin/sh vconfd_script_show_installerfs.sh
polaris_conf_unix_stream_stdio_use(polaris_bexecute_t)

executes: bash bshell.sh -S -P ---- __CMD__ ---- -f /tmp/sdwan_tech_support_command_file_out.txt
polaris_conf_unix_stream_stdio_use(polaris_bshell_t)
#####

```

```

write to /tmp/out_$(date "+%Y%m%d%H%M%S%N") for base version verification on smu install
polaris_install_tmp_write(polaris_bexecute_t)

Nutella-XE install image
#/bin/bash /usr/binos/conf/brelay.sh -E -f rp 0 16023 -c /usr/binos/conf/install_engine.sh --operation install_commit
--isremote
polaris_conf_d_tmp_use_fifo(polaris_bexecute_t)

#awk -v what=^.BuildPath: $pkginfo_file ~ what { print $2 } /tmp/sw/rp/0/0/rp_security/mount/.pkginfo
polaris_read_packages_conf(polaris_bexecute_t)

dev_read_rand(polaris_bexecute_t)

/usr/bin/python3 /usr/binos/conf/issu_client_comp.py compare -b /usr/binos/conf/base_clients.txt -n
/bootflash/.installer/current_clients.txt
polaris_disk_install_read(polaris_bexecute_t)

allow "/usr/binos/conf/module_direct.py" (bexecute_t) to execute
"/usr/sbin/ethtool" (ifconfig_exec_t) when invoking CLI
"show platform1 hardware subslot <slot/card> backplane statistics"
sysnet_domtrans_ifconfig(polaris_bexecute_t)
Write into pipe created by stack_mgr
Parent Child Relation - stack_mgr -> mcp_trace_request -> brelay (to relay output to active)
optional_policy(
 polaris_use_stack_mgr_fifo(polaris_bexecute_t)
)

polaris_etc_list(polaris_bexecute_t)
#manage /tmp/existing_rommon_info file
polaris_manage_rommon_info(polaris_capsule_upgrade_t)

#Policies for "upgrade rom-monitor capsule primary switch 1 R0" CLI
#/usr/binos/conf/bexecute.sh -c /usr/binos/conf/cat9k-primary-capsule-upgrade.sh
#cat9k-primary-capsule-upgrade.sh have to run in its own domain

polaris_utility_domain_template(capsule_upgrade)

polaris_bootflash_manage(polaris_capsule_upgrade_t)

type polaris_capsule_upgrade_log_t;
polaris_pfile_type(polaris_capsule_upgrade_log_t)

polaris_capsule_upgrade_log_use(polaris_capsule_upgrade_t)

polaris_bexecute_domain(polaris_capsule_upgrade_t, polaris_capsule_upgrade_exec_t)

```

```

polaris_bexecute_domtrans(polaris_capsule_upgrade_t)
corecmd_exec_bin(polaris_capsule_upgrade_t)
auth_use_nsswitch(polaris_capsule_upgrade_t)
polaris_chasfs_manage(polaris_capsule_upgrade_t)
polaris_cpld_read(polaris_capsule_upgrade_t)
telnet_use_ptys(polaris_capsule_upgrade_t)

polaris_rommon_device_read(polaris_capsule_upgrade_t)

For "/bin/sh /usr/binos/conf/mcp_chvrf.sh eobc
/usr/binos/conf/bexecute.sh -c /usr/binos/conf/install_engine.sh
--operation install_c",
uses unix stream socket created by confd as standard I/O.
polaris_conf_unix_stream_stdio_use(polaris_chvrf_t)

#####
mcp_dmesg_service
#####
polaris_utility_domain_template(mcp_dmesg)

polaris_bexecute_domain(polaris_mcp_dmesg_t, polaris_mcp_dmesg_exec_t)
polaris_bexecute_domtrans(polaris_mcp_dmesg_t)
dmesg_domtrans(polaris_mcp_dmesg_t)
corecmd_exec_bin(polaris_mcp_dmesg_t)
polaris_smand_use_fifo(polaris_mcp_dmesg_t)
auth_use_nsswitch(polaris_mcp_dmesg_t)
telnet_use_ptys(polaris_mcp_dmesg_t)

allow creation/access of temporary files like /tmp/sh-thd-1608024622
type polaris_mcp_dmesg_tmp_t;
files_type(polaris_mcp_dmesg_tmp_t)
files_tmp_file(polaris_mcp_dmesg_tmp_t)
files_tmp_filetrans(polaris_mcp_dmesg_t, polaris_mcp_dmesg_tmp_t, file)
manage_files_pattern(polaris_mcp_dmesg_t, polaris_mcp_dmesg_tmp_t, polaris_mcp_dmesg_tmp_t)
fs_getattr_tmpfs(polaris_mcp_dmesg_t)

allowing reload_fru.sh for doing systemctl list-jobs
systemd_config_generic_services(polaris_bexecute_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisbexecute.te
No license file was found, but licenses were detected in source scan.

#
July 2017, Victor Kamensky
#
Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved

```

```

#

/dev/quack -c gen_context(system_u:object_r:polaris_quack_device_t,s0)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisquack.fc
No license file was found, but licenses were detected in source scan.

#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2020 by Cisco Systems, Inc.
All rights reserved
#

policy_module(polarisdbm, 1.0);

gen_require(
 type polaris_dbm_t;
)

#####
mqipc manual, one that missing in platform tdl file
#####

ifdef(`nyquist_platform',`
gen_require(
 type polaris_bt_logger_dbm_mqipc_t;
)
dbm may start first and create this mqipc channel
polaris_mqipc_create_name(polaris_dbm_t, polaris_bt_logger_dbm_mqipc_t, bt_logger_dbm)
)

polaris_btrace_data_manage(polaris_dbm_t)
polaris_crft_data_manage(polaris_dbm_t)
polaris_chasfs_manage(polaris_dbm_t)
polaris_tdlresolve_read(polaris_dbm_t)
polaris_tdlldb_list_dirs(polaris_dbm_t)
polaris_cpld_read(polaris_dbm_t)
polaris_flashlib_read(polaris_dbm_t)

polaris_ripc_sman_ui_serv_connect(polaris_dbm_t)

polaris_db_tdlldb_dir_use(polaris_dbm_t)

polaris_libeiutil_build_config_directory(polaris_dbm_t)

polaris_cfg_data_manage(polaris_dbm_t)

```

```

allow polaris_dbm_t self:capability { sys_resource };
allow polaris_dbm_t self:process setrlimit;

dbm listen on 9090 port; in case of ultra only in tcp6
corenet_tcp_bind_websm_port(polaris_dbm_t)

polaris_dynconf_tmp_read(polaris_dbm_t)

allow polaris_dbm_t self:capability dac_override;

port 9090, is it exclusively wnc_mgrd port?
corenet_tcp_bind_polaris_wnc_mgrd_port(polaris_dbm_t)
allow polaris_dbm_t self:tcp_socket { shutdown };

working dbm persistent files in /bootflash/.dbpersist
type polaris_disk_dbm_t;
polaris_disk_type(polaris_disk_dbm_t)

polaris_tdlpersist_setup(polaris_dbm_t)

dbm on active syncs with /bootflash/.dbpersist on standby
related call dbm_persist_binary_cfg_sync_to_standby()
gen_require(^
 type rsync_t;
)
rsync_entry_domtrans(polaris_dbm_t, rsync_t)

polaris_tmp_tdlpersist_setup(polaris_dbm_t)

logging_send_syslog_msg(polaris_dbm_t)

corecmd_exec_bin(polaris_dbm_t)

corecmd_exec_shell(polaris_dbm_t)

dbm needs access to "/flash1/user/installer/install_issu_state"
polaris_disk_install_read(polaris_dbm_t)

runs over /usr/bin/rsync
corenet_tcp_connect_rsync_port(polaris_dbm_t)

tar invocation in dbm code necessitates this permission
auth_map_passwd(polaris_dbm_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisdbm.te

```

No license file was found, but licenses were detected in source scan.

```

Sep 2020, Sridhar C

Copyright (c) 2020-2021 by Cisco Systems, Inc.
All rights reserved

/tmp/tlscd(/.*)? gen_context(system_u:object_r:polaris_tlscd_uds_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polaristlscd.fc
No license file was found, but licenses were detected in source scan.
```

```

March 2017, Victor Kamensky

Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#
```

```
/tmp/fp/lipc -d gen_context(system_u:object_r:polaris_lipc_t,s0)
/tmp/rp/lipc -d gen_context(system_u:object_r:polaris_lipc_t,s0)
/tmp/cc/lipc -d gen_context(system_u:object_r:polaris_lipc_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarislipc.fc
No license file was found, but licenses were detected in source scan.
```

```

April 2017, Victor Kamensky

Copyright (c) 2017-2020 by Cisco Systems, Inc.
All rights reserved
#
```

```
policy_module(polarisdmincshdfwd, 1.0);
```

```
gen_require(
 type polaris_dmi_ncsshd_fwd_t;
)
```

```
polaris_btrace_data_manage(polaris_dmi_ncsshd_fwd_t)
polaris_chasfs_manage(polaris_dmi_ncsshd_fwd_t)
polaris_tdlresolve_read(polaris_dmi_ncsshd_fwd_t)
polaris_tdlldb_list_dirs(polaris_dmi_ncsshd_fwd_t)
polaris_cpld_read(polaris_dmi_ncsshd_fwd_t)
polaris_flashlib_read(polaris_dmi_ncsshd_fwd_t)
```



```

polaris_ripc_sman_ui_serv_connect(polaris_dmi_ncsshd_fwd_t)

allow polaris_dmi_ncsshd_fwd_t self:unix_stream_socket create_stream_socket_perms;

type polaris_dmi_ncsshd_log_t;
files_tmp_file(polaris_dmi_ncsshd_log_t)
manage_files_pattern(polaris_dmi_ncsshd_fwd_t, polaris_dmi_ncsshd_log_t, polaris_dmi_ncsshd_log_t)
manage_sock_files_pattern(polaris_dmi_ncsshd_fwd_t, polaris_dmi_ncsshd_log_t, polaris_dmi_ncsshd_log_t)
files_tmp_filetrans(polaris_dmi_ncsshd_fwd_t, polaris_dmi_ncsshd_log_t, { file sock_file })

logging_send_syslog_msg(polaris_dmi_ncsshd_fwd_t)

polaris_cpld_read(polaris_dmi_ncsshd_fwd_t)

allow to execute execute_confid_cli.sh under confid domain
polaris_confid_domtrans(polaris_dmi_ncsshd_fwd_t)

starts bexec.sh
polaris_bexecute_domtrans(polaris_dmi_ncsshd_fwd_t)
polaris_send_signal_to_bexecute(polaris_dmi_ncsshd_fwd_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisdmincshdfwd.te
No license file was found, but licenses were detected in source scan.

#
April 2017, Victor Kamensky
#
Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved
#

/usr/binos/conf/cyan_init\sh -- gen_context(system_u:object_r:polaris_dyncfg_exec_t,s0)
/usr/binos/conf/dyncfg_setup\sh -- gen_context(system_u:object_r:polaris_dyncfg_exec_t,s0)

temp files created by cyan_init.sh
/tmp/cyan/cyan.log gen_context(system_u:object_r:polaris_dyncfg_log_t,s0)
/tmp/cyan/cyan_runtime.log gen_context(system_u:object_r:polaris_dyncfg_log_t,s0)

/tmp/cyan(/.*)? gen_context(system_u:object_r:polaris_dyncfg_tmp_t,s0)
/tmp/cyan\lock gen_context(system_u:object_r:polaris_dyncfg_tmp_t,s0)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscyan.fc
No license file was found, but licenses were detected in source scan.

#

```

```

July 2017, Victor Kamensky
#
Copyright (c) 2017-2021 by Cisco Systems, Inc.
All rights reserved
#

<summary>Polaris bexecute Policy Rules.</summary>

#####
<summary>
Execute bexecute in the polaris_bexecute domain.
</summary>
<param name="domain">
<summary>
Domain allowed to transition.
</summary>
</param>
#
interface(`polaris_bexecute_domtrans`,`
gen_require(`
type polaris_bexecute_t, polaris_bexecute_exec_t;
`)

corecmd_search_bin($1)
domtrans_pattern($1, polaris_bexecute_exec_t, polaris_bexecute_t)
`)

#####
<summary>
Allow domain to be started by bexecute with
transition into specific service domain.
</summary>
<param name="domain">
<summary>
Type to be used to run utility.
</summary>
</param>
<param name="entry_point">
<summary>
Type of the program to be used as an entry point to this domain.
</summary>
</param>
interface(`polaris_bexecute_domain`,`
gen_require(`
type polaris_bexecute_t;
`)

domtrans_pattern(polaris_bexecute_t, $2, $1)

```

)

```

<summary>
Execute mcp_chvrf.sh in the polaris_chvrf domain.
</summary>
<param name="domain">
<summary>
Domain allowed to transition.
</summary>
</param>

interface(`polaris_chvrf_domtrans`,`
 gen_require(`
 type polaris_chvrf_t, polaris_chvrf_exec_t;
 `)

 corecmd_search_bin($1)
 domtrans_pattern($1, polaris_chvrf_exec_t, polaris_chvrf_t)
`)
)
```

```

<summary>
Execute mcp_chvrf.sh in the caller domain.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>

interface(`polaris_exec_chvrf`,`
 gen_require(`
 type polaris_chvrf_exec_t;
 `)

 corecmd_search_bin($1)
 can_exec($1, polaris_chvrf_exec_t)
`)
)
```

```

<summary>
Execute ngio_module_session.sh in the polaris_ngio_module_session domain
</summary>
<param name="domain">
<summary>
Domain allowed to transition.
```

```

</summary>
</param>
#
interface(`polaris_ngio_module_session_domtrans`,`
gen_require(`
type polaris_ngio_module_session_t, polaris_ngio_module_session_exec_t;
`)

corecmd_search_bin($1)
domtrans_pattern($1, polaris_ngio_module_session_exec_t, polaris_ngio_module_session_t)
`)

#####
#####
<summary>
Allow the specified domain to send signals to any
polaris process.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_send_signal_to_bexecute`,`
gen_require(`
type polaris_bexecute_t;
`)

allow $1 polaris_bexecute_t:process signal_perms;
`)

#####
<summary>
Allow manage of polaris_bash_tmp_t.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_bash_tmp_manage`,`
gen_require(`
type user_home_dir_t;
type polaris_bash_tmp_t;
`)

```

```
 manage_dirs_pattern($1, user_home_dir_t, polaris_bash_tmp_t)
 manage_files_pattern($1, polaris_bash_tmp_t, polaris_bash_tmp_t)
')
```

```
#####
<summary>
Execute bexecute in the polaris_bexecute domain.
</summary>
<param name="domain">
<summary>
Domain allowed to transition.
</summary>
</param>
#
interface(`polaris_bconsole_domtrans`,`
 gen_require(`
 type polaris_bconsole_t, polaris_bconsole_exec_t;
 `)
)
```

```
corecmd_search_bin($1)
domtrans_pattern($1, polaris_bconsole_exec_t, polaris_bconsole_t)
')
```

```
#####
<summary>
Send messages to ioucon unix datagram sockets.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_ioucon_dgram_send`,`
 gen_require(`
 type polaris_ioucon_t;
 `)
)
```

```
allow $1 polaris_ioucon_t:unix_dgram_socket sendto;
')
```

```
#####
<summary>
Execute cat9k-primary-capsule-upgrade.sh , cat9k-capsule-upgrade.sh in its own domain.
</summary>
<param name="domain">
<summary>
Domain allowed to transition.
```

```

</summary>
</param>
#
interface(`polaris_capsule_upgrade_domtrans',`
 gen_require(`
 type polaris_capsule_upgrade_t, polaris_capsule_upgrade_exec_t;
 `)

 corecmd_search_bin($1)
 domtrans_pattern($1, polaris_capsule_upgrade_exec_t, polaris_capsule_upgrade_t)
)

#####
<summary>
Work(open,create,append,getattr) with /capsule-upgrade.log file
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_capsule_upgrade_log_use',`
 gen_require(`
 type polaris_disk_bootflash_t;
 type polaris_capsule_upgrade_log_t;
 `)
 allow $1 polaris_capsule_upgrade_log_t:filesystem getattr;

 filetrans_pattern($1, polaris_disk_bootflash_t, polaris_capsule_upgrade_log_t, file, "capsule-upgrade.log")
 manage_files_pattern($1, polaris_capsule_upgrade_log_t, polaris_capsule_upgrade_log_t)
 create_files_pattern($1, polaris_capsule_upgrade_log_t, polaris_capsule_upgrade_log_t)
 getattr_files_pattern($1, polaris_capsule_upgrade_log_t, polaris_capsule_upgrade_log_t)
 append_files_pattern($1, polaris_capsule_upgrade_log_t, polaris_capsule_upgrade_log_t)
 allow $1 polaris_capsule_upgrade_log_t:file map;
)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisbexecute.if

No license file was found, but licenses were detected in source scan.

```

#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#

```

```

policy_module(polarisobfl, 1.0);

#####
Obfl policy
#####

type polaris_obfl_data_t;
files_type(polaris_obfl_data_t)

gen_require(
 type init_t;
 type default_t;
 type tmp_t;
 attribute domain;
)

filetrans_pattern(domain, default_t, polaris_obfl_data_t, lnk_file, "obfl")
edison uses obfl0 name
filetrans_pattern(domain, default_t, polaris_obfl_data_t, lnk_file, "obfl0")
/tmp/obfl
files_tmp_filetrans(domain, polaris_obfl_data_t, dir, "obfl")

allow obfl data file reside on persistent storage
polaris_pfile_type(polaris_obfl_data_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisobfl.te
No license file was found, but licenses were detected in source scan.

#
March 2017, Victor Kamensky
#
Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved
#

policy_module(polarisbtlogger, 1.0);

gen_require(
 type polaris_bt_logger_t;
)

polaris_btrace_data_manage(polaris_bt_logger_t)
polaris_crft_data_manage(polaris_bt_logger_t)
polaris_chasfs_manage(polaris_bt_logger_t)
polaris_tdlresolve_read(polaris_bt_logger_t)
polaris_tdlldb_list_dirs(polaris_bt_logger_t)
polaris_cpld_read(polaris_bt_logger_t)

```

```
polaris_flashlib_read(polaris_bt_logger_t)
```

```
polaris_ripc_sman_ui_serv_connect(polaris_bt_logger_t)
```

```
polaris_db_tdldb_dir_use(polaris_bt_logger_t)
```

```

mqipc manual, one that missing in platform tdl file
#####
```

```
mq.-bt_logger_dbm
type polaris_bt_logger_dbm_mqipc_t;
polaris_mqipc_type(polaris_bt_logger_dbm_mqipc_t)
```

```
mq.-bt_logger_fman-rp
type polaris_bt_logger_fman_rp_mqipc_t;
polaris_mqipc_type(polaris_bt_logger_fman_rp_mqipc_t)
```

```
mq.-bt_logger_iosd
type polaris_bt_logger_iosd_mqipc_t;
polaris_mqipc_type(polaris_bt_logger_iosd_mqipc_t)
```

```
mq.-bt_logger_smd
type polaris_bt_logger_smd_mqipc_t;
polaris_mqipc_type(polaris_bt_logger_smd_mqipc_t)
```

```
polaris_mqipc_create_name(polaris_bt_logger_t, polaris_bt_logger_dbm_mqipc_t, bt_logger_dbm)
polaris_mqipc_create_name(polaris_bt_logger_t, polaris_bt_logger_fman_rp_mqipc_t, bt_logger_fman-rp)
polaris_mqipc_create_name(polaris_bt_logger_t, polaris_bt_logger_iosd_mqipc_t, bt_logger_iosd)
polaris_mqipc_create_name(polaris_bt_logger_t, polaris_bt_logger_smd_mqipc_t, bt_logger_smd)
```

```
allow polaris_bt_logger_t self:capability { dac_override };
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisbtlogger.te

No license file was found, but licenses were detected in source scan.

```

November 2017, Victor Kamensky

Copyright (c) 2017-2020 by Cisco Systems, Inc.
All rights reserved
#
```

```
<summary>Polaris gnmib Policy Rules.</summary>
```

```

<summary>
```



```

Create rule for ndbutils file ".l.schema_use.gnmib" under /var/lock/ndbutil
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_gnmib_ndbutil_lock`,`
 gen_require(`
 type polaris_confd_ndbutil_lock_t;
 type polaris_gnmib_ndbutil_t;
 `)

 filetrans_pattern($1, polaris_confd_ndbutil_lock_t, polaris_gnmib_ndbutil_t, file, $2)
 manage_files_pattern($1, polaris_confd_ndbutil_lock_t, polaris_gnmib_ndbutil_t)

 allow $1 polaris_gnmib_ndbutil_t:file { watch watch_reads };
)

#####
<summary>
Allow reading gnoi image files
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_gnmib_gnoi_images_read`,`
 gen_require(`
 type polaris_gnmib_gnoi_images_t;
 `)

 read_files_pattern($1, polaris_gnmib_gnoi_images_t, polaris_gnmib_gnoi_images_t)
 mmap_files_pattern($1, polaris_gnmib_gnoi_images_t, polaris_gnmib_gnoi_images_t)
)

#####
<summary>
Allow manage gnoi image files
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>

```

```
#
interface(`polaris_gnmib_gnoi_images_manage`,
 gen_require(`
 type polaris_gnmib_gnoi_images_t;
 `)

 manage_files_pattern($1, polaris_gnmib_gnoi_images_t, polaris_gnmib_gnoi_images_t)
 mmap_files_pattern($1, polaris_gnmib_gnoi_images_t, polaris_gnmib_gnoi_images_t)
)

```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisgnmib.if
No license file was found, but licenses were detected in source scan.
```

```
#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#

```

```
policy_module(polaristdldb, 1.0);
```

```
#####
Polaris tdldb (infra/tdllib)
#####
type polaris_tdldb_t;
polaris_tdldb_type(polaris_tdldb_t)

```

```
attribute polaris_tdldb;
```

```
any process creating tdldb in /tmp/rp/tdldb should transition into its domain
```

```
gen_require(`
 attribute domain;
`)
files_tmp_filetrans(domain, polaris_tdldb_t, dir, "tdldb")

```

```
DB_DIR database is not described in TDL
```

```
type polaris_dir_db_tdldb_t;
polaris_tdldb_type(polaris_dir_db_tdldb_t)

```

```
type polaris_tdldb_persist_t;
polaris_tdldb_type(polaris_tdldb_persist_t)

```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polaristdldb.te
No license file was found, but licenses were detected in source scan.
```

```

#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#

policy_module(polarislfts, 1.0);

#####
Polaris lfts
#####

type polaris_lfts_device_t;
dev_node(polaris_lfts_device_t)

"ip netns add foo" commands mounts "foo" under "/var/run/netns"
gen_require(
 type ifconfig_t;
 type var_run_t;
)
allow ifconfig_t var_run_t:dir mounton;

"ip netns exec 16 sysctl -w net.core.vrfid=16" commands mounts "16" to "/sys"
gen_require(
 type ifconfig_t;
 type unlabeled_t;
)
allow ifconfig_t unlabeled_t:dir mounton;

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarislfts.te
No license file was found, but licenses were detected in source scan.

#
March 2017, Victor Kamensky
#
Copyright (c) 2017-2021 by Cisco Systems, Inc.
All rights reserved
#

/var/tmp/trace/nginx_access.log gen_context(system_u:object_r:httpd_log_t, s0)
/var/tmp/trace/nginx_error.log gen_context(system_u:object_r:httpd_log_t, s0)
/var/tmp/trace/nginx.pid gen_context(system_u:object_r:httpd_log_t, s0)
/var/tmp/trace/nginx.lock.accept gen_context(system_u:object_r:httpd_log_t, s0)
/var/tmp/trace/nginx.lock.cookie_tbl gen_context(system_u:object_r:httpd_log_t, s0)
/var/tmp/trace/nginx.lock.login_count gen_context(system_u:object_r:httpd_log_t, s0)
/tmp/nginx_aaa gen_context(system_u:object_r:polaris_nginx_tmp_t, s0)

```

```

/tmp/nginx_master gen_context(system_u:object_r:polaris_nginx_tmp_t, s0)
/tmp/nginx_session gen_context(system_u:object_r:polaris_nginx_tmp_t, s0)

#/tmp base folder for nginx apps to create temporary files.
/tmp/nginx_webui_tmp -d gen_context(system_u:object_r:polaris_nginx_tmp_t, s0)
/tmp/nginx -d gen_context(system_u:object_r:polaris_nginx_tmp_t, s0)

Polaris WebUI Aireos translator files
/usr/binos/conf/aireos_translate_helper.sh
gen_context(system_u:object_r:polaris_nginx_webui_aireos_translator_exec_t, s0)
/var/scripts/python/aireosConfigTranslator(/.*)? --
gen_context(system_u:object_r:polaris_aireos_translator_scripts_t,s0)

/var/scripts/webui_install.sh gen_context(system_u:object_r:polaris_nginx_webui_exec_t, s0)
/usr/binos/conf/webui_upgrade_helper.sh gen_context(system_u:object_r:polaris_nginx_webui_install_exec_t, s0)
/usr/binos/conf/webui_smu_helper.sh gen_context(system_u:object_r:polaris_nginx_webui_install_exec_t, s0)
/usr/binos/conf/ra_trace_webui_helper.sh
gen_context(system_u:object_r:polaris_nginx_webui_trace_filter_exec_t, s0)
/usr/binos/conf/nginx-conf gen_context(system_u:object_r:httpd_config_t, s0)
/usr/binos/conf/nginx-conf/servers gen_context(system_u:object_r:httpd_config_t, s0)

/tmp/fts_client gen_context(system_u:object_r:polaris_fts_client_tmp_t, s0)
/usr/binos/conf/nginx_helper.sh gen_context(system_u:object_r:polaris_nginx_helper_exec_t, s0)

```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisnginx.fc
```

No license file was found, but licenses were detected in source scan.

```

#
May 2017, Victor Kamensky
#
Copyright (c) 2017-2021 by Cisco Systems, Inc.
All rights reserved
#

```

```
policy_module(polarismdtpubd, 1.0);
```

```

gen_require(
 type polaris_mdt_pubd_t;
)

```

```

polaris_btrace_data_manage(polaris_mdt_pubd_t)
polaris_chasfs_manage(polaris_mdt_pubd_t)
polaris_tdlresolve_read(polaris_mdt_pubd_t)
polaris_tdlldb_list_dirs(polaris_mdt_pubd_t)
polaris_cpldb_read(polaris_mdt_pubd_t)
polaris_lua_read(polaris_mdt_pubd_t)
polaris_flashlib_read(polaris_mdt_pubd_t)

```

```

polaris_rpc_sman_ui_serv_connect(polaris_mdt_pubd_t)

polaris_db_tlddb_dir_use(polaris_mdt_pubd_t)

#For initializing capabilities DB cfg file
polaris_libeiutil_build_config_directory(polaris_mdt_pubd_t)
polaris_cfg_data_manage(polaris_mdt_pubd_t)

optional_policy(
deals with /dev/shm/confd setup (schema and pid)
polaris_confd_shm_setup(polaris_mdt_pubd_t)
and allow read shared schema
polaris_confd_shared_schema_read(polaris_mdt_pubd_t)
read /proc/confd_pid/exe file
polaris_confd_read(polaris_mdt_pubd_t)
')

pubd could be configured to connect any port on DNAC
please see cndp_setup_tcp_socket function
polaris_lfts_dev_use(polaris_mdt_pubd_t)
corenet_tcp_connect_all_ports(polaris_mdt_pubd_t)

polaris_ndbload_lock_use(polaris_mdt_pubd_t)

corenet_tcp_connect_polaris_pttcd_port(polaris_mdt_pubd_t)

corenet_tcp_bind_polaris_netconf_interceptor_port(polaris_mdt_pubd_t)
corenet_tcp_bind_all_unreserved_ports(polaris_mdt_pubd_t)

allow polaris_mdt_pubd_t self:capability { dac_override dac_read_search };

create ndbutil directory under /var/lock
polaris_confd_ndbutil_create(polaris_mdt_pubd_t)

polaris_ndbutil_lock_template(polaris_mdt_pubd_t, pubd, ".l.schema_use.pubd")

grpc library through sysconf accesses /sys/devices/system/cpu
to get number of CPUs
dev_read_sysfs(polaris_mdt_pubd_t)

handling /tmp/rp/.telemetry and /tmp/rp/telemetry
type polaris_mdt_pubd_tmp_t;
files_tmp_file(polaris_mdt_pubd_tmp_t)
files_tmp_filetrans(polaris_mdt_pubd_t, polaris_mdt_pubd_tmp_t, dir, "telemetry")
files_tmp_filetrans(polaris_mdt_pubd_t, polaris_mdt_pubd_tmp_t, dir, ".telemetry")
gen_require(
 type tmp_t;

```

```

)
manage_dirs_pattern(polaris_mdt_pubd_t, { tmp_t polaris_mdt_pubd_tmp_t }, polaris_mdt_pubd_tmp_t)
manage_files_pattern(polaris_mdt_pubd_t, polaris_mdt_pubd_tmp_t, polaris_mdt_pubd_tmp_t)

from evconfd_dynamic_load
polaris_confd_shared_schema_watch(polaris_mdt_pubd_t)

allow grpc library to shutdown socket
allow polaris_mdt_pubd_t self:tcp_socket create_socket_perms;

allow pubd to access logging facility
logging_send_syslog_msg(polaris_mdt_pubd_t)

enabling access to /etc/netns and /etc/hosts
polaris_namespace_set_netns_with_etc(polaris_mdt_pubd_t)
gen_require(
 type net_conf_t;
)
files_etc_filetrans(polaris_mdt_pubd_t, net_conf_t, file, "hosts")
files_etc_filetrans(polaris_mdt_pubd_t, net_conf_t, file, "resolv.conf")
files_etc_filetrans(polaris_mdt_pubd_t, net_conf_t, dir, "netns")

allow pubd to create, modify, delete system network config files/dir
sysnet_manage_config(polaris_mdt_pubd_t)
sysnet_manage_config_dirs(polaris_mdt_pubd_t)

allow pubd to connect socket
allow polaris_mdt_pubd_t self:udp_socket connect;

allow pubd (object net_conf_t) to watch /etc/netns/1/resolv.conf
allow polaris_mdt_pubd_t net_conf_t:{file dir} watch;

read access to /dev/random
dev_read_rand(polaris_mdt_pubd_t)

#DB persistence
polaris_tdlldbpersist_setup(polaris_mdt_pubd_t)
polaris_tmp_tdlldbpersist_setup(polaris_mdt_pubd_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarismdtpubd.te
No license file was found, but licenses were detected in source scan.

#
March 2017, Victor Kamensky
#
Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved

```

#

# polarisstackmgr file contexts place holder

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisstackmgr.fc

No license file was found, but licenses were detected in source scan.

dnl

dnl Mar 2020, Manu Roy

dnl

dnl Copyright (c) 2020 by Cisco Systems, Inc.

dnl All rights reserved

dnl

dnl Hellcat Platform Max Bay Limits

max\_bay\_map\_set(`rp', `per\_bay', 0)

max\_bay\_map\_set(`cc', `per\_bay', 0)

max\_bay\_map\_set(`fp', `per\_bay', 0)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/m4/hellcatmaps.m4

No license file was found, but licenses were detected in source scan.

#

# March 2017, Victor Kamensky

#

# Copyright (c) 2016-2021 by Cisco Systems, Inc.

# All rights reserved

#

policy\_module(polarisperiodic, 1.0);

gen\_require(`

type polaris\_periodic\_t;

`)

corecmd\_exec\_bin(polaris\_periodic\_t)

corecmd\_exec\_shell(polaris\_periodic\_t)

# allow to read /proc/meminfo

kernel\_read\_system\_state(polaris\_periodic\_t)

# allow read of /etc/passwd

auth\_use\_nsswitch(polaris\_periodic\_t)

# run ldd, which in turns execve "ld.so --verify"

libs\_exec\_ld\_so(polaris\_periodic\_t)

```

read /etc/init.d/common-utility-functions
init_read_script_files(polaris_periodic_t)

fs_getattr_all_fs(polaris_periodic_t)

work with /tmp files
type polaris_periodic_tmp_t;
files_tmp_file(polaris_periodic_tmp_t)
manage_files_pattern(polaris_periodic_t, tmp_t, polaris_periodic_tmp_t)
files_tmp_filetrans(polaris_periodic_t, polaris_periodic_tmp_t, file)

allow polaris_periodic_t self:capability sys_resource;

polaris_btrace_data_manage(polaris_periodic_t)
polaris_chasfs_manage(polaris_periodic_t)
polaris_cpld_read(polaris_periodic_t)
polaris_proc_rmonbifo_read(polaris_periodic_t)
polaris_rmonbifo_tmp_read(polaris_periodic_t)
polaris_boot_tmp_read(polaris_periodic_t)
polaris_read_debug_conf(polaris_periodic_t)
polaris_persistent_manage(polaris_periodic_t)

reads /tmp/issu_proc
polaris_install_tmp_read(polaris_periodic_t)

optional_policy(`
polaris_ncd_tmp_read(polaris_periodic_t)
`)
"install add file" CLI triggers logger sending syslog messages
logging_send_syslog_msg(polaris_periodic_t)
"install add file" CLI triggers logger executing "pidof linux_iosd-image" which
read "/sys/devices/system/cpu/online"
dev_read_sysfs(polaris_periodic_t)
#
/usr/bin/conf/cleanup.sh do_cleanup does packages and other umount calls
mount_domtrans(polaris_periodic_t)
polaris_sw_data_manage(polaris_periodic_t)

determine if the installer is executing
domain_read_all_domains_state(polaris_periodic_t)

access to /cdrom0/ when *ova image is booted during
first instance of vwlc on ucs server
polaris_removable_read(polaris_periodic_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisperiodic.te

```



No license file was found, but licenses were detected in source scan.

```

March 2017, Victor Kamensky

Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved

/tmp/pm_post_result -- gen_context(system_u:object_r:polaris_ngwc_plfm_mgr_tmp_t,s0)
/tmp/microcode_update(/.*)? gen_context(system_u:object_r:polaris_ngwc_plfm_mgr_tmp_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisngwcplfmmgr.fc
```

No license file was found, but licenses were detected in source scan.

```

February 2020, Victor Kamensky

Copyright (c) 2020 by Cisco Systems, Inc.
All rights reserved

policy_module(polarisfpm, 1.0);

gen_require(
 type polaris_fpm_t;
)
polaris_chasfs_manage(polaris_fpm_t)
polaris_cpld_read(polaris_fpm_t)
polaris_flashlib_read(polaris_fpm_t)
polaris_tdlresolve_read(polaris_fpm_t)

polaris_ripc_sman_ui_serv_connect(polaris_fpm_t)

polaris_db_tdlldb_dir_use(polaris_fpm_t)

logging_send_syslog_msg(polaris_fpm_t)

vconfd_load_shared_schemas
polaris_confd_shared_schema_read(polaris_fpm_t)

/var/run/.fpm socket and pid
type polaris_fpm_var_run_t;
files_pid_file(polaris_fpm_var_run_t)
manage_files_pattern(polaris_fpm_t, polaris_fpm_var_run_t, polaris_fpm_var_run_t)
manage_sock_files_pattern(polaris_fpm_t, polaris_fpm_var_run_t, polaris_fpm_var_run_t)
files_pid_filetrans(polaris_fpm_t, polaris_fpm_var_run_t, { file sock_file })
```

```

polaris_ttm_var_sock_write(polaris_fpm_t)

fp_scaling_init calls posix_sysconf
dev_read_sysfs(polaris_fpm_t)

PLEASE LOOK AT ME: write access to /boot/hugepage.conf
which on ultra translates into /varied/hugepage.conf access
But no code in polaris uses it
polaris_disk_varied_manage(polaris_fpm_t)
files_manage_boot_files(polaris_fpm_t)

polaris_cedge_tmpfs_manage(polaris_fpm_t)

polaris_fm2fpm_mqipc_use(polaris_fpm_t)

manually create mqipc channel: missing in TDL
type polaris_fm2fpm_mqipc_t;
polaris_mqipc_type(polaris_fm2fpm_mqipc_t)
polaris_mqipc_create_name(polaris_fpm_t, polaris_fm2fpm_mqipc_t, fpm2fpm_vulcan_mqipc)

fp_scaling_read_core_count accesses cgroups file at
/sys/fs/cgroup/cpuset/iosxe_control_processes/cpuset.cpus
fs_read_cgroup_files(polaris_fpm_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisfpm.te
No license file was found, but licenses were detected in source scan.

dnl
dnl April 2018, Victor Kamensky
dnl
dnl Copyright (c) 2018-2019 by Cisco Systems, Inc.
dnl All rights reserved
dnl
divert(-1)

include(`polaris_process.m4')
include(`polaris_process_te.m4')

include(`polaris_ipc_mqipc.m4')
include(`polaris_ipc_mqipc_te.m4')

include(`polaris_ipc_ripc.m4')
include(`polaris_ipc_ripc_te.m4')

include(`polaris_ipc_lipc.m4')
include(`polaris_ipc_lipc_te.m4')

```

```
dnl Stub out non existent one
define(`polaris_websocket_service_server',`)
define(`polaris_cipc_service_server',`')
```

```
include(`polaris_max_scope.m4')
```

```
divert(0)dnl
#
This is a generated file! Instead of modifying this file,
modify proper platform TDL file.
#
policy_module(polarisplatformipcauto, 1.0);
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/polaris_ipc_te.m4
No license file was found, but licenses were detected in source scan.
```

```
#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#
```

```
<summary>Polaris polarisbhytoolsd Policy Rules.</summary>
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisbhytoolsd.if
No license file was found, but licenses were detected in source scan.
```

```
#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#
```

```
/tmp/tdlresolve_tmp(/.)*? gen_context(system_u:object_r:polaris_tdlresolve_t,s0)
/tmp/tdlresolve(/.)*? gen_context(system_u:object_r:polaris_tdlresolve_t,s0)
```

```
/usr/binos/conf/global.service.conf -- gen_context(system_u:object_r:polaris_global_service_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polaristdlresolve.fc
No license file was found, but licenses were detected in source scan.
```

```
#
```

```
February 2020, Victor Kamensky
#
Copyright (c) 2020 by Cisco Systems, Inc.
All rights reserved
#
```

```
<summary>Polaris ttm Policy Rules.</summary>
```

```
#####
```

```
<summary>
Write ttm /var/run socket file
</summary>
```

```
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
```

```
interface(`polaris_ttm_var_sock_write`,
 gen_require(`
 type polaris_ttm_t;
 type polaris_ttm_var_run_t;
 type var_run_t;
 `)
 write_sock_files_pattern($1, var_run_t, polaris_ttm_var_run_t)
 allow $1 polaris_ttm_t:unix_stream_socket { connectto };
)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polaristtm.if

No license file was found, but licenses were detected in source scan.

```
#
April 2017, Victor Kamensky
#
Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved
#
```

```
<summary>Polaris CYAN Policy Rules.</summary>
```

```
#####
```

```
<summary>
Execute dyncfg in the dyncfg domain.
</summary>
```

```
<param name="domain">
<summary>
Domain allowed to transition.
```

```

</summary>
</param>
#
interface(`polaris_dyncfg_domtrans`,`
gen_require(`
type polaris_dyncfg_t, polaris_dyncfg_exec_t;
`)

corecmd_search_bin($1)
domtrans_pattern($1, polaris_dyncfg_exec_t, polaris_dyncfg_t)
`)

#####
<summary>
Make the specified domain able to read tmp file created by
cyan_init.sh like /tmp/cyan/mono.cdb
</summary>
<param name="type">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_dyncfg_tmp_read`,`
gen_require(`
type polaris_dyncfg_tmp_t;
type tmp_t;
`)

read_files_pattern($1, { tmp_t polaris_dyncfg_tmp_t }, polaris_dyncfg_tmp_t)
read_lnk_files_pattern($1, { tmp_t polaris_dyncfg_tmp_t }, polaris_dyncfg_tmp_t)
allow $1 polaris_dyncfg_tmp_t:file map;

need by shell that is called from luajit script
auth_read_passwd($1)
`)

#####
<summary>
Make the specified domain able to manage tmp file created by
cyan_init.sh like /tmp/cyan.lock
</summary>
<param name="type">
<summary>
Domain allowed access.
</summary>
</param>

```

```

#
interface(`polaris_dyncfg_tmp_manage',`
 gen_require(`
 type polaris_dyncfg_tmp_t;
 type tmp_t;
 `)

 manage_files_pattern($1, { tmp_t polaris_dyncfg_tmp_t }, polaris_dyncfg_tmp_t)
 manage_lnk_files_pattern($1, { tmp_t polaris_dyncfg_tmp_t }, polaris_dyncfg_tmp_t)
 allow $1 polaris_dyncfg_tmp_t:file map;
)

#####
<summary>
Execute /tmp/dyncfg/N intialization within given domain.
##
Effectively one need this if it needs to run dyncfg_db_run_init_script,
dyncfg_db_init functions within domain context.
##
Note it involves lua execution that leads to execmem. Also lua script
may execve shell and some other simple bin processes like mkdir or ln.
</summary>
<param name="type">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_dyncfg_setup',`
 gen_require(`
 type polaris_dyncfg_tmp_t;
 type tmp_t;
 `)

 files_tmp_filetrans($1, polaris_dyncfg_tmp_t, dir, "cyan")
 manage_dirs_pattern($1, polaris_dyncfg_tmp_t, polaris_dyncfg_tmp_t)
 manage_files_pattern($1, { tmp_t polaris_dyncfg_tmp_t }, polaris_dyncfg_tmp_t)
 manage_lnk_files_pattern($1, { tmp_t polaris_dyncfg_tmp_t }, polaris_dyncfg_tmp_t)
 allow $1 polaris_dyncfg_tmp_t:file map;

 # dyncfg_setup calls luajit and luajit needs execute JIT generated code
 allow $1 self:process execmem;

 # LOOK AT ME lua initialization code still uses system function call do some
 # trivial things like mkdir. But because of that we need to grant shell and
 # bin access to all callers of
 corecmd_exec_shell($1)
 corecmd_exec_bin($1)
)

```

```

In chassis_attrs.lua method THIS.WIRELESS checks whether wireless package is installed
by opening (why open, not stat) wncmgrd binary.
optional_policy(`
 gen_require(`
 type polaris_wncmgrd_exec_t;
 type bin_t;
 `)
 read_files_pattern($1, bin_t, polaris_wncmgrd_exec_t)
`)

lua code reads /tmp/sw/boot/rmonbifo/boardtype
polaris_rmonbifo_tmp_read($1)
`)

```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscyan.if
```

No license file was found, but licenses were detected in source scan.

```

#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2021 by Cisco Systems, Inc.
All rights reserved
#

policy_module(polariscppcp, 1.0);

gen_require(`
 type polaris_cpp_cp_t;
`)

polaris_btrace_data_manage(polaris_cpp_cp_t)
polaris_crft_data_manage(polaris_cpp_cp_t)
polaris_chasfs_manage(polaris_cpp_cp_t)
polaris_tdlresolve_read(polaris_cpp_cp_t)
polaris_tdlldb_list_dirs(polaris_cpp_cp_t)
polaris_cpld_read(polaris_cpp_cp_t)
polaris_flashlib_read(polaris_cpp_cp_t)

polaris_ripc_sman_ui_serv_connect(polaris_cpp_cp_t)

polaris_db_tdlldb_dir_use(polaris_cpp_cp_t)

polaris_cpp_process(polaris_cpp_cp_t)
polaris_cpp_dev_use(polaris_cpp_cp_t)

polaris_icc_broken_relocations(polaris_cpp_cp_t)

```

```

logging_send_syslog_msg(polaris_cpp_cp_t)

polaris_cpp_cavium_sdk_ipc_use(polaris_cpp_cp_t)

LOOK AT ME: raw memory access in cavium vendor SDK
related to octeon driver (BUG CSCvh58515)
#ifdef(`crankshaft_family',`
polaris_dev_mem_use(polaris_cpp_cp_t)
')

cpp_palci_wallclock_time_ticks function reads /var/lock/subsys/sntp.offset
files_read_all_locks(polaris_cpp_cp_t)

allow objstore access
polaris_disk_objstore_read(polaris_cpp_cp_t)

optional_policy(`
polaris_spa_dev_use(polaris_cpp_cp_t)
')

handle geodb file access
polaris_geodb_files_manage(polaris_cpp_cp_t)

optional_policy(`
polaris_cbdma_dev_use(polaris_cpp_cp_t)

polaris_hkp_dev_use(polaris_cpp_cp_t)
Access /dev/astro
polaris_astro_dev_use(polaris_cpp_cp_t)
polaris_vega_dev_use(polaris_cpp_cp_t)
')
polaris_cpp_tmpfs_manage(polaris_cpp_cp_t)
polaris_cpld_dev_use(polaris_cpp_cp_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscppcp.te
No license file was found, but licenses were detected in source scan.

#
July 2017, Victor Kamensky
#
Copyright (c) 2017-2021 by Cisco Systems, Inc.
All rights reserved
#

policy_module(polariscppstats, 1.0);

gen_require(`

```



```

 type polaris_cpp_stats_t;
)

polaris_btrace_data_manage(polaris_cpp_stats_t)
polaris_crft_data_manage(polaris_cpp_stats_t)
polaris_chasfs_manage(polaris_cpp_stats_t)
polaris_tdlresolve_read(polaris_cpp_stats_t)
polaris_tdlldb_list_dirs(polaris_cpp_stats_t)
polaris_cpld_read(polaris_cpp_stats_t)
polaris_flashlib_read(polaris_cpp_stats_t)

polaris_ripc_sman_ui_serv_connect(polaris_cpp_stats_t)

polaris_cpp_tmp_files_use(polaris_cpp_stats_t)
works with /dev/cpp_dev_info, /dev/cpp and /dev/cpp_kipc
polaris_cpp_dev_use(polaris_cpp_stats_t)
polaris_cpp_tmpfs_ifdev_rw(polaris_cpp_stats_t)

polaris_icc_broken_relocations(polaris_cpp_stats_t)

get attributes of /dev/shm from glibc where_is_shmfs function
fs_getattr_tmpfs(polaris_cpp_stats_t)

optional_policy(
polaris_cbdma_dev_use(polaris_cpp_stats_t)
)
polaris_cpp_tmpfs_manage(polaris_cpp_stats_t)
polaris_cpld_dev_use(polaris_cpp_stats_t)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscppstats.te

No license file was found, but licenses were detected in source scan.

```

#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2020 by Cisco Systems, Inc.
All rights reserved
#

```

```

policy_module(polarisl, 1.0);

```

```

gen_require(
 type polaris_lm_t;
)

```

```

polaris_btrace_data_manage(polaris_lm_t)
polaris_crft_data_manage(polaris_lm_t)

```

```

polaris_chasfs_manage(polaris_lm_t)
polaris_tdlresolve_read(polaris_lm_t)
polaris_tdlldb_list_dirs(polaris_lm_t)
polaris_cpld_read(polaris_lm_t)
polaris_flashlib_read(polaris_lm_t)

polaris_ripc_sman_ui_serv_connect(polaris_lm_t)

allow polaris_lm_t self:capability { dac_override };

allow to read /proc/mtd
kernel_read_system_state(polaris_lm_t)

work with /tmp files (/tmp/iosd_level)
type polaris_lm_tmp_t;
files_tmp_file(polaris_lm_tmp_t)
files_tmp_filetrans(polaris_lm_t, polaris_lm_tmp_t, file, "iosd_level")
files_tmp_filetrans(polaris_lm_t, polaris_lm_tmp_t, file, "stack_apcount")
manage_files_pattern(polaris_lm_t, tmp_t, polaris_lm_tmp_t)

polaris_dyncfg_tmp_read(polaris_lm_t)

polaris_disk_license_manage(polaris_lm_t)

polaris_disk_csl_manage(polaris_lm_t)

logging_send_syslog_msg(polaris_lm_t)

polaris_lua_read(polaris_lm_t)
permission to access /tmp/rp/lipc/lmanrtu_stackrtu_socket
polaris_lm_t policy
allow polaris_lm_t self:unix_stream_socket connectto;

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarislm.te
No license file was found, but licenses were detected in source scan.

#
August 2017, Victor Kamensky
#
Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved
#

/usr/binos/conf/flash_check.sh -- gen_context(system_u:object_r:polaris_flashcheck_exec_t,s0)

Found in path(s):

```

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisflashcheck.fc

No license file was found, but licenses were detected in source scan.

#

# March 2017, Victor Kamensky

#

# Copyright (c) 2016-2019 by Cisco Systems, Inc.

# All rights reserved

#

policy\_module(polarislipc, 1.0);

#####

# LIPC policy

#####

gen\_require(^

    type polaris\_pvp\_t;

    attribute polaris\_extended\_domain;

')

type polaris\_lipc\_t;

files\_type(polaris\_lipc\_t)

files\_tmp\_filetrans(polaris\_extended\_domain, polaris\_lipc\_t, dir, "lipc")

init\_script\_tmp\_filetrans(polaris\_extended\_domain, polaris\_lipc\_t, dir, "lipc")

# in some cases pvp.sh creates lipc tmp directory it needs permissions for that

manage\_dirs\_pattern(polaris\_pvp\_t, tmp\_t, polaris\_lipc\_t)

gen\_require(^

    attribute polaris\_extended\_domain;

    type polaris\_pvp\_tmp\_t;

')

filetrans\_pattern(polaris\_extended\_domain, polaris\_pvp\_tmp\_t, polaris\_lipc\_t, dir, "lipc")

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarislipc.te

No license file was found, but licenses were detected in source scan.

#

# September 2018, Anubha Balani

#

# Copyright (c) 2018-2019 by Cisco Systems, Inc.

# All rights reserved

#

## <summary>Polaris Memory Service Policy Rules.</summary>

```

#####
Polaris memory: libmaroon and such
#####

#####
<summary>
Allow the specified domain to check existence of
/lib/systemd/system/ksm.service file. Effectively checking
whether KSM kernel feature is enabled on device or not.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_ksm_run_check`,`
 gen_require(`
 type systemd_unit_file_t;
 `)

 getattr_files_pattern($1, systemd_unit_file_t, systemd_unit_file_t)
`)

#####
<summary>
Manage temporary maroon files
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolebase/>
#
interface(`polaris_maroon_data_manage_all`,`

 gen_require(`
 attribute polaris_maroon_data_domain;
 type polaris_maroon_base_t;
 `)

 manage_files_pattern($1, polaris_maroon_base_t, polaris_maroon_data_domain)
 allow $1 polaris_maroon_data_domain:file map;

 # manage temporary files in maroon_stats directory
 manage_files_pattern($1, polaris_maroon_base_t, polaris_maroon_base_t)
`)

```

```
#####
<summary>
Make the specified type usable as maroon data file type.
</summary>
<param name="type">
<summary>
Type to be used for files.
</summary>
</param>
#
interface(`polaris_maroon_data_type`,`
 files_type($1)
 gen_require(`
 attribute polaris_maroon_data_domain;
 `)
 typeattribute $1 polaris_maroon_data_domain;
`)
```

```
#####
<summary>
Process to manage its own maroon files
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<param name="file_type">
<summary>
File type of maroon that corresponds to given domain.
</summary>
</param>
<rolebase/>
#
interface(`polaris_maroon_data_client`,`
 gen_require(`
 type polaris_maroon_base_t;
 `)

 manage_files_pattern($1, polaris_maroon_base_t, $2)
 allow $1 $2:file map;
 filetrans_pattern($1, polaris_maroon_base_t, $2, file)
`)
```

```
#####
<summary>
Process to manage its own maroon files
```

```

</summary>
<param name="domain_stem">
<summary>
Domain allowed access.
</summary>
</param>
<rolebase/>
#
interface(`polaris_maroon_data_client_template',`
 gen_require(`
 type polaris_maroon_base_t;
 ')

 type polaris_$1_maroon_t;
 polaris_maroon_data_type(polaris_$1_maroon_t)

 polaris_maroon_data_client(polaris_$1_t, polaris_$1_maroon_t)
')

```

```

#####
<summary>
Getattr of polaris_zram_device_t files
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolebase/>
#
interface(`polaris_zram_getattr',`
 gen_require(`
 type device_t;
 type polaris_zram_device_t;
 ')

 getattr_blk_files_pattern($1, device_t, polaris_zram_device_t)
')

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarismemory.if

No license file was found, but licenses were detected in source scan.

```

#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#

```

```
/bootflash/.dbpersist(/.*)? gen_context(system_u:object_r:polaris_disk_dbm_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisdbm.fc
```

No license file was found, but licenses were detected in source scan.

```
#
```

```
March 2017, Victor Kamensky
```

```
#
```

```
Copyright (c) 2016-2021 by Cisco Systems, Inc.
```

```
All rights reserved
```

```
#
```

```
policy_module(polarisreflector, 1.0);
```

```
polaris_process_domain_template(reflector)
```

```
corecmd_exec_bin(polaris_reflector_t)
```

```
allow to read /proc/meminfo
```

```
kernel_read_system_state(polaris_reflector_t)
```

```
allow read of /etc/passwd
```

```
auth_use_nsswitch(polaris_reflector_t)
```

```
run ldd, which in turns execve "ld.so --verify"
```

```
libs_exec_ld_so(polaris_reflector_t)
```

```
read /etc/hosts file
```

```
sysnet_read_config(polaris_reflector_t)
```

```
work with /tmp files
```

```
type polaris_reflector_tmp_t;
```

```
files_tmp_file(polaris_reflector_tmp_t)
```

```
manage_dirs_pattern(polaris_reflector_t, tmp_t, polaris_reflector_tmp_t)
```

```
manage_files_pattern(polaris_reflector_t, polaris_reflector_tmp_t, polaris_reflector_tmp_t)
```

```
manage_fifo_files_pattern(polaris_reflector_t, polaris_reflector_tmp_t, polaris_reflector_tmp_t)
```

```
files_tmp_filetrans(polaris_reflector_t, polaris_reflector_tmp_t, { file dir })
```

```
reflector can work with droputil tmp files
```

```
polaris_droputil_manage_tmp_files(polaris_reflector_t)
```

```
#rsync_exec(polaris_reflector_t)
```

```
gen_require(`
```

```
 type rsync_t;
```

```
 `)
```

```
rsync_entry_domtrans(polaris_reflector_t, rsync_t)
```

```

allow rsync_t polaris_reflector_t:process sigchld;
upon exec rsync inherits reflector.sh stdout/stderr which are
polaris_reflector_t fifo_files
allow rsync_t polaris_reflector_t:fifo_file write;

allow polaris_reflector_t self:capability { sys_resource dac_override };
allow polaris_reflector_t self:process setpgid;

polaris_btrace_data_manage(polaris_reflector_t)
polaris_cpuid_read(polaris_reflector_t)
polaris_chasfs_manage(polaris_reflector_t)
polaris_boot_tmp_read(polaris_reflector_t)
polaris_read_debug_conf(polaris_reflector_t)
polaris_disk_crashinfo_getattr(polaris_reflector_t)
polaris_rmonbifo_tmp_read(polaris_reflector_t)

watch over /tmp/rp/dropbox
polaris_droputil_tmp_watch(polaris_reflector_t)

Allow /tmp/ufs/bootflash & /tmp/ufs/harddisk read access
optional_policy(`
polaris_ncd_tmp_read(polaris_reflector_t)
`)

'rm -rf /tmp/rp/reflector'
fs_getattr_tmpfs(polaris_reflector_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisreflector.te
No license file was found, but licenses were detected in source scan.

#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2021 by Cisco Systems, Inc.
All rights reserved
#

policy_module(polarispman, 1.0);

polaris_process_domain_template(pman)

#reassess all permissions granted here for new pman
- do we clone this domain to pman, or replace it?

gen_require(`
type polaris_psvp_t;
type polaris_pvp_t;

```



```

 ')

corecmd_exec_bin(polaris_pman_t)
corecmd_exec_shell(polaris_pman_t)
can execute process in polaris domain
polaris_exec(polaris_pman_t)

LOOK AT ME start-stop-daemon from busy box iterates all
/proc/<pid> directories and reads /proc/<pid>/cmdline
/proc/<pid>/exe. I.e it need quite a bit of priviledges
domain_read_all_domains_state(polaris_pman_t)

pman wants to write to /proc/<pid>/oom_adj of each process
it started. Now oom_adj is under label of process that owns
it, so for now let pman to be able to write into any file
in polaris_domain. Latter try to clean it up by transitioning
oom_adj into separate domain?
gen_require(
 attribute polaris_domain;
)

manage_files_pattern(polaris_pman_t, polaris_domain, polaris_domain)

allow to read /proc/meminfo
kernel_read_system_state(polaris_pman_t)

allow read of /etc/passwd
auth_use_nsswitch(polaris_pman_t)

run ldd, which in turns execve "ld.so --verify"
libs_exec_ld_so(polaris_pman_t)

read /proc/sys/vm/nr_hugepages
kernel_read_vm_sysctls(polaris_pman_t)

read/write cgroups files
fs_rw_cgroup_files(polaris_pman_t)

dmidecode_domtrans(polaris_pman_t)

allow polaris_pman_t self:capability { sys_nice sys_resource dac_override sys_rawio sys_admin };

polaris_btrace_data_manage(polaris_pman_t)
polaris_chasfs_manage(polaris_pman_t)
polaris_cpld_read(polaris_pman_t)
#ifdef(^ngwc_family',`
polaris_cpld_write(polaris_pman_t)
)
polaris_proc_rmonbifo_read(polaris_pman_t)

```

```

polaris_rmonbifo_tmp_read(polaris_pman_t)
polaris_boot_tmp_read(polaris_pman_t)
polaris_read_debug_conf(polaris_pman_t)
polaris_disk_crashinfo_getattr(polaris_pman_t)

work with /tmp files
type polaris_pman_tmp_t;
files_tmp_file(polaris_pman_tmp_t)
manage_dirs_pattern(polaris_pman_t, tmp_t, polaris_pman_tmp_t)
manage_files_pattern(polaris_pman_t, polaris_pman_tmp_t, polaris_pman_tmp_t)
manage_fifo_files_pattern(polaris_pman_t, polaris_pman_tmp_t, polaris_pman_tmp_t)
files_tmp_filetrans(polaris_pman_t, polaris_pman_tmp_t, { file dir })
filetrans_pattern(domain, tmp_t, polaris_pman_tmp_t, dir, "process")
filetrans_pattern(domain, tmp_t, polaris_pman_tmp_t, dir, "pman_ports")

pcohort reads files in /tmp/rp/process directory
gen_require(
 attribute polaris_extended_domain;
)
read_files_pattern(polaris_extended_domain, polaris_pman_tmp_t, polaris_pman_tmp_t)
list_dirs_pattern(polaris_extended_domain, polaris_pman_tmp_t, polaris_pman_tmp_t)

bash needs setpgid in its make_child function
allow polaris_pman_t self:process { setpgid };

pmanlite uses getsid
allow polaris_pman_t self:process { getsession };

pman call renice utility to change process nice level
allow polaris_pman_t self:process { setsched };

pman needs to work with pvp tmp files
polaris_pvp_manage_tmp_files(polaris_pman_t)

on ultra pman waits for /tmp/cpp_ifdev_rep pipes appearance before
proceeding further before it starts iosd
optional_policy(
polaris_cpp_tmp_ifdev_getattr(polaris_pman_t)

/tmp/vxe_ucose_image created by some systemd units and accessed
by pman, lets transition it into polaris_pman_tmp_t domain
gen_require(
 type initrc_t;
 type init_t;
)
files_tmp_filetrans({ initrc_t init_t }, polaris_pman_tmp_t, file, "vxe_ucose_image")
files_tmp_filetrans({ initrc_t init_t }, polaris_pman_tmp_t, file, "wlc_ucose_image")
files_tmp_filetrans({ initrc_t init_t }, polaris_pman_tmp_t, file, "utah_ucose_image")

```

```

files_tmp_filetrans({ initrc_t init_t }, polaris_pman_tmp_t, file, "fugazi_ucode_image")
')
pman needs to manage cgroups membership of dofferent processes
See move_to_cgroup pman function. It needs setsched permission
domain_setpriority_all_domains(polaris_pman_t)

pman.sh can call logger command
logging_send_syslog_msg(polaris_pman_t)

pman can receive signals from any polaris domain process
polaris_receive_signal_from_domain(polaris_pman_t)

pman.sh calls pidof command (similar to ps)
pidof needs access to /sys/devices/system/cpu/online
dev_read_sysfs(polaris_pman_t)
pidof commands wants sys_ptrace
allow polaris_pman_t self:capability sys_ptrace;

pman can send signal to anything
domain_signal_all_domains(polaris_pman_t)

pmanlite can getpgid to its child group processes
domain_getpgid_all_domains(polaris_pman_t)

pmanlite uses killpg(<child pid>,SIGNULL) to test its child processes
domain_signull_all_domains(polaris_pman_t)

term_use_unallocated_ttys(polaris_pman_t)

optional_policy(`
polaris_repm_tmp_manage(polaris_pman_t)
`)

optional_policy(`
pman on nyquist ls /tmp/ufs/crashinfo
polaris_ncd_tmp_read(polaris_pman_t)
`)

runs find over /proc
kernel_getattr_proc(polaris_pman_t)

PLEASE LOOK AT ME: pman removes /tmp/subpkg directory after CSCvm14562 commit
back out and change properly after CSCvm51181 is fixed
polaris_install_tmp_manage(polaris_pman_t)

rm from coreutils-8.30 wants to know filesystem type
fs_getattr_tmpfs(polaris_pman_t)
fs_getattr_xattr_fs(polaris_pman_t)

```

```

domain for gdbserver started by pman

polaris_utility_domain_template(gdb)

domtrans_pattern(polaris_pman_t, polaris_gdb_exec_t, polaris_gdb_t)

pman starts gdbserver with stdout pointing to btrace fifo
polaris_use_btrace_fifo(polaris_gdb_t)

gdbserver reads /proc/$pid/exe of a process it gets attached to.
Allow to read state of all processes for now.
domain_read_all_domains_state(polaris_gdb_t)

allow gdbserver to bind to all unreserved ports for now
corenet_tcp_bind_unreserved_ports(polaris_gdb_t)
corenet_tcp_bind_generic_node(polaris_gdb_t)

allow polaris_gdb_t self:process { ptrace setpgid };
allow polaris_gdb_t self:tcp_socket { accept bind create getattr listen setopt };

pman update iosxe_control_processes/iosxe_mgmt_processes/tasks
fs_manage_cgroup_dirs(polaris_pman_t)
fs_manage_cgroup_files(polaris_pman_t)

optional_policy(`
container_runtime_domtrans(polaris_pman_t)
`)

pman calls show_version for dockerd executable
optional_policy(`
polaris_container_runtime_show_version(polaris_pman_t)
`)

needs to access nsfs file during killall invocation
fs_read_nsfs_files(polaris_pman_t)

#runs over /proc/<pid>/net/arp
kernel_read_network_state(polaris_pman_t)

#runs over /proc/<pid>/net/stat
kernel_read_network_state_symlinks(polaris_pman_t)

#runs over /proc/<pid>/net/rpc
kernel_read_rpc_sysctls(polaris_pman_t)

LOOK AT ME: why pman doing it
from mgmt/confd/confd/src/confd_startup_sh_post_exit.sh archive_errlog function

```

```

polaris_btrace_persistent_data_manage(polaris_pman_t)
polaris_confd_log_manage(polaris_pman_t)
allow polaris_pman_t self:process setfscreate;

access /bootflash/.installer/install_issu_state
polaris_disk_install_read(polaris_pman_t)

/usr/binos/conf/umbrella_init.sh that runs under pman
copies into /bootflash/ios_core.p7b
polaris_bootflash_manage(polaris_pman_t)

optional_policy(
we may write bits to the exiting_bays file in /proc
polaris_rw_exiting_bays(polaris_pman_t)
')

ifdef(^ngwc_family',`
linux_iosd_image_post_exit.sh restores the slot-based address
for the management ethernet should be restored on dual RP system.
polaris_chvrf_domtrans(polaris_pman_t)
sysnet_domtrans_ifconfig(polaris_pman_t)

For use of flashutil preparing for reload
polaris_flashlib_read(polaris_pman_t)
polaris_flashlib_write(polaris_pman_t)
')

File description leaks for TDL db lock files as processes are managed by
pman.
TODO Eventually these fd leaks should be fixed in the calling processes
#
Note that TDL db lock file interfaces are typically generated by TDL and
are not found in our local .if files
polaris_tdlresolve_read(polaris_pman_t)
polaris_db_tdlcdb_ios_oper_use(polaris_pman_t)

ifdef(^nyquist_platform',`
polaris_db_tdlcdb_ewlc_operational_use(polaris_pman_t)
polaris_db_tdlcdb_rogued_use(polaris_pman_t)
polaris_db_tdlcdb_ewlc_config_use(polaris_pman_t)
polaris_db_tdlcdb_wstatsd_use(polaris_pman_t)
polaris_db_tdlcdb_client_global_use(polaris_pman_t)
')

delete /tmp/booted from linux_iosd_image_post_exit.sh when iosd goes down.
For example: preparing for reload.
gen_require(
 type polaris_iosd_tmp_files_t;

```

```

)
allow polaris_pman_t polaris_iosd_tmp_files_t:file { delete_file_perms open };

Upon exit of a process, pman needs to remove sai directory and files
associated with the process
polaris_pvp_delete_sai_files(polaris_pman_t)
#rsync port want to establish Tcp connection
#runs over /usr/bin/rsync
corenet_tcp_connect_rsync_port(polaris_pman_t)
rsync_entry_type(polaris_pman_t)

ifndef(`crankshaft_family`,`
Provide process signal perms to pman.
polaris_caf_proc_signal_perms(polaris_pman_t)
)

open connections from processes managed by pman can leak. The selinux
errors associated with these typically come from a forked and renamed
elastic process like wncd_0. During process forking/startup, node
binds may cause denials as they are brought up by pman
ifndef(`ngwc_family`,`
corenet_tcp_bind_generic_node(polaris_pman_t)
corenet_udp_bind_generic_node(polaris_pman_t)
corenet_tcp_connect_lisp_cons_control_port(polaris_pman_t)
)

pman can stop itself on reload
allow polaris_pman_t self:capability kill;

For pmanlite, allow pman's grand-children rsync to be able to operate on pipe created by pman.
gen_require(`
 type rsync_t;
)
polaris_use_pman_fifo(rsync_t)

ifndef(`sumatra_platform`,`
Allow pman to execute cman_fp in the polaris_cm_fp_t domain
polaris_cm_fp_domtrans(polaris_pman_t)
)

```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarispman.te
```

No license file was found, but licenses were detected in source scan.

dnl

dnl April 2018, Victor Kamensky

dnl

dnl Copyright (c) 2018-2019 by Cisco Systems, Inc.

```
dnl All rights reserved
dnl
dnl Nyquist Platform Max Bay Limits
max_bay_map_set(`rp', `per_bay', 0)
max_bay_map_set(`cc', `per_bay', 0)
max_bay_map_set(`fp', `per_bay', 0)
```

```
dnl in elastic scope each process has its own value
max_elastic_map_set(`rp', `elastic', BPROC_ODM, 0)
max_elastic_map_set(`cc', `elastic', BPROC_ODM, 0)
max_elastic_map_set(`fp', `elasitc', BPROC_ODM, 0)
```

```
max_elastic_map_set(`rp', `elastic', BPROC_WNCD, 0)
max_elastic_map_set(`cc', `elastic', BPROC_WNCD, 0)
max_elastic_map_set(`fp', `elastic', BPROC_WNCD, 0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/nyquistmaps.m4
No license file was found, but licenses were detected in source scan.
```

```
#
Aug 2020, Sridhar
#
Copyright (c) 2020 by Cisco Systems, Inc.
All rights reserved
#

<summary>Polaris xcopy Policy Rules.</summary>

#####
<summary>
Execute xcopy related scripts in its own domain.
</summary>
<param name="domain">
<summary>
Domain allowed to transition.
</summary>
</param>
#
interface(`polaris_xcopy_script_domtrans',`
 gen_require(`
 type polaris_xcopy_script_t, polaris_xcopy_script_exec_t;
 `)

 domtrans_pattern($1, polaris_xcopy_script_exec_t, polaris_xcopy_script_t)
)
#
#####
```

```

<summary>
xcopy progress temp file access
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolebase/>
#
interface(`polaris_xcopy_tmp_manage`,`
gen_require(`
type polaris_xcopy_tmp_t;
`)
manage_dirs_pattern($1,polaris_xcopy_tmp_t, polaris_xcopy_tmp_t)
manage_files_pattern($1,polaris_xcopy_tmp_t, polaris_xcopy_tmp_t)
`)

```

Found in path(s):

```

* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisxcopy.if
No license file was found, but licenses were detected in source scan.

```

```

#
April 2017, Victor Kamensky
#
Copyright (c) 2017-2021 by Cisco Systems, Inc.
All rights reserved
#
<summary>Polaris dmi_ncsshd_mgmt Policy Rules.</summary>

```

```

#####
<summary>
Read polaris_ncsshd_keys_t files, effectively access
/tmp/.ncsshd_authorized_keys created by psd and read by ncssh
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_ncsshd_authorized_keys_read`,`
gen_require(`
type polaris_ncsshd_keys_t;
`)
read_files_pattern($1, polaris_ncsshd_keys_t, polaris_ncsshd_keys_t)
list_dirs_pattern($1, polaris_ncsshd_keys_t, polaris_ncsshd_keys_t)
`)

```



)

#####

## <summary>

## Watch /var/run/netns and list contents

## </summary>

## <param name="domain">

## <summary>

## Domain allowed access.

## </summary>

## </param>

#

interface(`polaris\_watch\_netns`,`

gen\_require(`

type ifconfig\_var\_run\_t;

`)

list\_dirs\_pattern(\$1, ifconfig\_var\_run\_t, ifconfig\_var\_run\_t)

allow \$1 ifconfig\_var\_run\_t:dir watch;

`)

#####

## <summary>

## Manage polaris\_pttcd\_tmp\_t files, effectively files

## under /tmp/tmppub/interceptor

## </summary>

## <param name="domain">

## <summary>

## Domain allowed access.

## </summary>

## </param>

#

interface(`polaris\_interceptor\_manage`,`

gen\_require(`

type polaris\_pttcd\_tmp\_t;

`)

manage\_files\_pattern(\$1, polaris\_pttcd\_tmp\_t, polaris\_pttcd\_tmp\_t)

manage\_dirs\_pattern(\$1, polaris\_pttcd\_tmp\_t, polaris\_pttcd\_tmp\_t)

allow \$1 polaris\_pttcd\_tmp\_t:{ dir file } watch;

`)

#####

## <summary>

## Execute a domain transition to run ncsshd polaris process.

## </summary>

## <param name="domain">

## <summary>

## Domain allowed to transition.

## </summary>

```

</param>
#
interface(`polaris_ncsshd_mgmt_domtrans`,`
 gen_require(`
 type polaris_dmi_ncsshd_mgmt_t, polaris_dmi_ncsshd_mgmt_exec_t;
 `)

 domtrans_pattern($1, polaris_dmi_ncsshd_mgmt_exec_t, polaris_dmi_ncsshd_mgmt_t)
`)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisdmincshdmgmt.if  
No license file was found, but licenses were detected in source scan.

```

#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2020 by Cisco Systems, Inc.
All rights reserved
#

<summary>Polaris cm_rp Policy Rules.</summary>

```

```

#####
<summary>
Execute cmand_fp in the polaris_cm_fp_t domain.
</summary>
<param name="domain">
<summary>
Domain allowed to transition.
</summary>
</param>
#

```

```

interface(`polaris_cm_rp_domtrans`,`
 gen_require(`
 type polaris_cm_rp_t, polaris_cm_rp_exec_t;
 `)

 corecmd_search_bin($1)
 domtrans_pattern($1, polaris_cm_rp_exec_t, polaris_cm_rp_t)
`)

```

```

#####
<summary>
Write into fifo file created by cmrp, typical case when
cmrp starts script under popen.
</summary>
<param name="domain">

```

```

<summary>
Domain allowed access.
</summary>
</param>
<rolecap/>
#
interface(`polaris_cmrp_use_fifo`,`
 gen_require(`
 type polaris_cm_rp_t;
 `)

 write_fifo_files_pattern($1, polaris_cm_rp_t, polaris_cm_rp_t)
`)

#####
<summary>
Write/read /tmp/pfu_overtime.lock file
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_cm_rp_tmp_manage`,`
 gen_require(`
 type polaris_cm_rp_tmp_t;
 type tmp_t;
 `)
 manage_dirs_pattern($1, { tmp_t polaris_cm_rp_tmp_t }, polaris_cm_rp_tmp_t)
 manage_files_pattern($1, { tmp_t polaris_cm_rp_tmp_t }, polaris_cm_rp_tmp_t)
`)

#####
<summary>
Setup policies to access dir and file
/vol/harddisk/.inv/inv_log_file
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_cm_rp_inv_log_setup`,`
 gen_require(`
 type polaris_cm_rp_inv_log_file_t;
 type polaris_disk_harddisk_t;
 `)

```

```

 type polaris_disk_bootflash_t;
 ')
 filetrans_pattern($1, {polaris_disk_harddisk_t polaris_disk_bootflash_t}, polaris_cm_rp_inv_log_file_t, dir,
".inv")
 # allow access to /vol/harddisk/.inv
 manage_dirs_pattern($1, {polaris_disk_harddisk_t polaris_disk_bootflash_t}, polaris_cm_rp_inv_log_file_t)
 # allow access to /vol/harddisk/.inv/inv_log_file
 manage_files_pattern($1,{polaris_cm_rp_inv_log_file_t}, polaris_cm_rp_inv_log_file_t)
)

```

```
#####
```

```

<summary>
Write into /tmp/codesign.txt file created by cm_rp
</summary>

```

```
<param name="domain">
```

```
<summary>
```

```
Domain allowed to transition.
```

```
</summary>
```

```
</param>
```

```
#
```

```
interface(`polaris_cm_rp_tmp_write`,`
```

```
 gen_require(`
```

```
 type polaris_cm_rp_tmp_t;
```

```
 `)
```

```
 write_files_pattern($1, { tmp_t polaris_cm_rp_tmp_t }, polaris_cm_rp_tmp_t)
```

```
 `)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscmrp.if
```

No license file was found, but licenses were detected in source scan.

```
#
```

```
February 2020, Victor Kamensky
```

```
#
```

```
Copyright (c) 2020 by Cisco Systems, Inc.
```

```
All rights reserved
```

```
#
```

```
policy_module(polarisvdaemon, 1.0);
```

```
gen_require(`
```

```
 type polaris_vdaemon_t;
```

```
`)
```

```
polaris_chasfs_manage(polaris_vdaemon_t)
```

```
read and write /bootflash/sdwan/etc/vdaemon_gen_id
```

```
polaris_bootflash_manage(polaris_vdaemon_t)
```

```
polaris_tdlresolve_read(polaris_vdaemon_t)
```

```
polaris_cpld_read(polaris_vdaemon_t)
```

```

polaris_flashlib_read(polaris_vdaemon_t)

polaris_ripc_sman_ui_serv_connect(polaris_vdaemon_t)

polaris_db_tlddb_dir_use(polaris_vdaemon_t)

logging_send_syslog_msg(polaris_vdaemon_t)

vconfd_load_shared_schemas
polaris_confd_shared_schema_read(polaris_vdaemon_t)

manage /etc/viptela
polaris_cedge_etc_manage(polaris_vdaemon_t)

polaris_cedge_reset_ns(polaris_vdaemon_t)

calls ifconfig for tun_0_0 interface
sysnet_domtrans_ifconfig(polaris_vdaemon_t)

calls dmidecode get system serial number
dmidecode_domtrans(polaris_vdaemon_t)

/var/run/.vdaemon socket and pid
type polaris_vdaemon_var_run_t;
files_pid_file(polaris_vdaemon_var_run_t)
manage_files_pattern(polaris_vdaemon_t, polaris_vdaemon_var_run_t, polaris_vdaemon_var_run_t)
manage_sock_files_pattern(polaris_vdaemon_t, polaris_vdaemon_var_run_t, polaris_vdaemon_var_run_t)
files_pid_filetrans(polaris_vdaemon_t, polaris_vdaemon_var_run_t, { file sock_file })

polaris_ttm_var_sock_write(polaris_vdaemon_t)

generate_instance_uuid reads /sys/devices/virtual/dmi/id/product_uuid
dev_read_sysfs(polaris_vdaemon_t)

vip_util_set_fd_limits calls setrlimit
allow polaris_vdaemon_t self:process { setrlimit setpgid };

allow polaris_vdaemon_t self:capability { dac_override fowner sys_resource };

vdaemon_init_tunn_intf initialize tun_0_0 in vrf 1
allow polaris_vdaemon_t self:tun_socket create;
corenet_rw_tun_tap_dev(polaris_vdaemon_t)

polaris_persistent_watch(polaris_vdaemon_t)
from vdaemon_misc.c vdaemon_init_inotify function
polaris_cedge_etc_watch(polaris_vdaemon_t)

set_netns_with_etc mounts on / and /sys

```

```

set_netns_with_etc opens /etc/netns/1 dir
polaris_namespace_set_netns_with_etc(polaris_vdaemon_t)
DNS thread complains about tmp_t mounton
on /sys when switching namespace
gen_require(
 type tmp_t;
)
allow polaris_vdaemon_t tmp_t:dir mounton;

vip_util_set_ns opens /var/run/netns/*
polaris_cedge_set_ns(polaris_vdaemon_t)
vip_dns_process_request switches namespace from linux n/w namespace to
original mount namespace
allow polaris_vdaemon_t self:capability { net_admin sys_chroot };
allow polaris_vdaemon_t self:udp_socket { bind connect create getattr getopt setopt shutdown };

control linux routes vip_route_delete and vdaemon_setup_system_ip_route
allow polaris_vdaemon_t self:netlink_route_socket { bind create getattr nlmsg_read nlmsg_write };

binds to vbond udp ports
corenet_udp_bind_generic_node(polaris_vdaemon_t)
corenet_udp_bind_polaris_vbond_port(polaris_vdaemon_t)

though default ports exist, users can configure the tcp ports in vManage and vSmart
corenet_tcp_connect_all_ports(polaris_vdaemon_t)

vbond_proc_hello executes VIP_CDB_BACKUP_SCRIPT
polaris_confdomtrans(polaris_vdaemon_t)
VIP_CDB_BACKUP_SCRIPT makes use of /etc/confd/confd_ipc_secret
auth_map_passwd(polaris_vdaemon_t)

vdaemon_write_authorized_keys_to_ncsshd opens VDAEMON_NCSSHD_AUTH_KEY_FILE file
polaris_ncsshd_keys_manage(polaris_vdaemon_t)
vbond_encode_version opens /etc/version
polaris_confd_etc_read(polaris_vdaemon_t)

generate_or_parse_uuid() invokes uuid_generate that needs read on
random-number generator devices (e.g., /dev/random).
dev_read_rand(polaris_vdaemon_t)

vdaemon_exec_iptables() is invoked by vdaemon all over the place
iptables_domtrans(polaris_vdaemon_t)

allow polaris_vdaemon_t self:capability net_raw;
allow polaris_vdaemon_t self:rawip_socket create_socket_perms;

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisvdaemon.te

```

No license file was found, but licenses were detected in source scan.

```
#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2020 by Cisco Systems, Inc.
All rights reserved
#

<summary>Polaris fman_rp Policy Rules.</summary>

#####
<summary>
Manage mqipc fmrp2fpm shared memory file in /dev/shm directory
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_fmrp2fpm_mqipc_use`,
gen_require(`
type polaris_fmrp2fpm_mqipc_t;
`)
polaris_mqipc_use($1, polaris_fmrp2fpm_mqipc_t)
')
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisfmanrp.if

No license file was found, but licenses were detected in source scan.

```
dnl
dnl May 2019
dnl
dnl Copyright (c) 2019 by Cisco Systems, Inc.
dnl All rights reserved
dnl
dnl confined and permissive domain maps
divert(-1)
define(`permissive_domain', `defn(format(``permissive_domain[%s]", ` $1'))')
define(`permissive_domain_set', `define(format(``permissive_domain[%s]", ` $1'), ` $2'))

define(`confined_domain', `defn(format(``confined_domain[%s]", ` $1'))')
define(`confined_domain_set', `define(format(``confined_domain[%s]", ` $1'), ` $2'))

dnl
```

dnl list of all subjects that should be in confined mode

dnl

```
confined_domain_set(`polaris_iosd_t', `polaris_iosd_t')
```

dnl

dnl list of all subjects that should be placed in permissive mode

dnl

```
permissive_domain_set(`polaris_nginx_t', `polaris_nginx_t')
```

```
permissive_domain_set(`polaris_nginx_webui_t', `polaris_nginx_webui_t')
```

```
permissive_domain_set(`polaris_nginx_webui_install_t', `polaris_nginx_webui_install_t')
```

```
divert(0)dnl
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/m4/domainmaps.m4

No license file was found, but licenses were detected in source scan.

#

# March 2017, Victor Kamensky

#

# Copyright (c) 2017-2020 by Cisco Systems, Inc.

# All rights reserved

#

```
/tmp/dbgmn_log_svr gen_context(system_u:object_r:polaris_fed_sock_t,s0)
```

```
/tmp/fed_post_result -- gen_context(system_u:object_r:polaris_fed_tmp_t,s0)
```

```
/flash/shfwd_params.txt gen_context(system_u:object_r:polaris_disk_bootflash_t,s0)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisngwcfed.fc

No license file was found, but licenses were detected in source scan.

#

# March 2017, Victor Kamensky

#

# Copyright (c) 2016-2021 by Cisco Systems, Inc.

# All rights reserved

#

```
policy_module(polarisrollbacktimer, 1.0);
```

```
polaris_process_domain_template(rbtimer)
```

```
corecmd_exec_bin(polaris_rbtimer_t)
```



```

allow to read /proc/meminfo
kernel_read_system_state(polaris_rbtimer_t)

allow read of /etc/passwd
auth_use_nsswitch(polaris_rbtimer_t)

run ldd, which in turns execve "ld.so --verify"
libs_exec_ld_so(polaris_rbtimer_t)

work with /tmp files
type polaris_rbtimer_tmp_t;
files_tmp_file(polaris_rbtimer_tmp_t)
manage_dirs_pattern(polaris_rbtimer_t, tmp_t, polaris_rbtimer_tmp_t)
manage_files_pattern(polaris_rbtimer_t, polaris_rbtimer_tmp_t, polaris_rbtimer_tmp_t)
manage_fifo_files_pattern(polaris_rbtimer_t, polaris_rbtimer_tmp_t, polaris_rbtimer_tmp_t)
files_tmp_filetrans(polaris_rbtimer_t, polaris_rbtimer_tmp_t, { file dir })

work with /bootflash/.rollback_timer (RBT_CONTROL_DIR) file
type polaris_rbtimer_bootflash_t;
polaris_disk_type(polaris_rbtimer_bootflash_t)
polaris_rbtimer_bootflash_manage(polaris_rbtimer_t)

allow polaris_rbtimer_t self:capability sys_resource;
allow polaris_rbtimer_t self:capability dac_override;
allow polaris_rbtimer_t self:process setpgid;

polaris_btrace_data_manage(polaris_rbtimer_t)
polaris_chasfs_manage(polaris_rbtimer_t)
polaris_cpld_read(polaris_rbtimer_t)
polaris_boot_tmp_read(polaris_rbtimer_t)
polaris_read_debug_conf(polaris_rbtimer_t)
polaris_proc_rmonbifo_read(polaris_rbtimer_t)
polaris_rmonbifo_tmp_read(polaris_rbtimer_t)
polaris_disk_crashinfo_getattr(polaris_rbtimer_t)
polaris_disk_harddisk_read_lnk(polaris_rbtimer_t)
polaris_bootflash_manage(polaris_rbtimer_t)

logging_send_syslog_msg(polaris_rbtimer_t)

uses pidof
domain_read_all_domains_state(polaris_rbtimer_t)
dev_read_sysfs(polaris_rbtimer_t)

#rollbacktimer runs install_engine.sh
polaris_install_engine_domtrans(polaris_rbtimer_t)

polaris_script_errmsg_use(polaris_rbtimer_t)

```

```
watch over /bootflash/.rollback_timer
allow polaris_rbtimer_t polaris_rbtimer_bootflash_t:dir watch;
watch over /tmp/rp/rollback_timer
allow polaris_rbtimer_t polaris_rbtimer_tmp_t:dir watch;
```

```
access to /tmp/ufs//crashinfo
optional_policy(
polaris_ncd_tmp_read(polaris_rbtimer_t)
)
access to read packages.conf
polaris_read_packages_conf(polaris_rbtimer_t)
```

```
access to /cdrom0/ when *ova image is booted during
first instance of vwlc on ucs server
polaris_removable_read(polaris_rbtimer_t)
```

```
access to "/bootflash/.installer/install_abort_timer_val"
polaris_disk_install_read(polaris_rbtimer_t)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisrollbacktimer.te
No license file was found, but licenses were detected in source scan.
```

```
#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#
```

```
policy_module(polarisbhytoolsd, 1.0);
```

```
polaris_process_domain_template(bhytoolsd)
```

```
polaris_btrace_data_manage(polaris_bhytoolsd_t)
polaris_chasfs_manage(polaris_bhytoolsd_t)
polaris_cpld_read(polaris_bhytoolsd_t)
```

```
vmttoolsd transtions from polaris_bhytoolsd_t to vmttools_t -
bhytoolsd is small wrapper that calls vmttoolsd
vmttools_domtrans(polaris_bhytoolsd_t)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisbhytoolsd.te
No license file was found, but licenses were detected in source scan.
```

```
#
August 2017, Shawn Lu
```

```

#
Copyright (c) 2017-2020 by Cisco Systems, Inc.
All rights reserved
#

policy_module(polarismobilityd, 1.0);

gen_require(`
 type polaris_mobilityd_t;
`)

polaris_btrace_data_manage(polaris_mobilityd_t)
polaris_crft_data_manage(polaris_mobilityd_t)
polaris_chasfs_manage(polaris_mobilityd_t)
polaris_tdlresolve_read(polaris_mobilityd_t)
polaris_tdlldb_list_dirs(polaris_mobilityd_t)
polaris_cpld_read(polaris_mobilityd_t)
polaris_lua_read(polaris_mobilityd_t)
polaris_flashlib_read(polaris_mobilityd_t)

polaris_ripc_sman_ui_serv_connect(polaris_mobilityd_t)

polaris_db_tdlldb_dir_use(polaris_mobilityd_t)

allow to use setrlimit
allow polaris_mobilityd_t self:capability sys_resource;
allow polaris_mobilityd_t self:process setrlimit;
allow polaris_mobilityd_t self:capability dac_override;
allow polaris_mobilityd_t self:udp_socket { create_socket_perms recv_msg send_msg };

logging_send_syslog_msg(polaris_mobilityd_t)

polaris_lfts_dev_use(polaris_mobilityd_t)

polaris_cpld_read(polaris_mobilityd_t)

polaris_odm_clnt2svr_mqipc_create(polaris_mobilityd_t)

polaris_tmp_tdlldb_persist_setup(polaris_mobilityd_t)

polaris_tdlldbpersist_setup(polaris_mobilityd_t)

corenet_udp_bind_generic_node(polaris_mobilityd_t)
corenet_udp_bind_polaris_mobility_ctl_port(polaris_mobilityd_t)
corenet_udp_bind_polaris_mobility_data_port(polaris_mobilityd_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarismobilityd.te

```

No license file was found, but licenses were detected in source scan.

```

June 2017, Victor Kamensky

Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved

/usr/binos/conf/wui-lighttpd-launch.sh -- gen_context(system_u:object_r:polaris_webui_lighttpd_exec_t,s0)

/usr/binos/conf/wui-app-launch.sh -- gen_context(system_u:object_r:polaris_webui_exec_t,s0)

/usr/binos/conf/wui-tipc-launch.sh -- gen_context(system_u:object_r:polaris_webui_exec_t,s0)

/webui(/.*)? gen_context(system_u:object_r:polaris_webui_file_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariswebui.fc
```

No license file was found, but licenses were detected in source scan.

```

April 2017, Victor Kamensky

Copyright (c) 2017-2020 by Cisco Systems, Inc.
All rights reserved
#
```

```
/tmp/.DmiAuth\socket -s gen_context(system_u:object_r:polaris_dmi_dmiauthd_tmp_t,s0)
/tmp/netconf-yang-diag(/.*)? gen_context(system_u:object_r:polaris_dmi_dmiauthd_tmp_diags_t,s0)
/usr/binos/conf/dmid_diag_logs.sh -- gen_context(system_u:object_r:polaris_dmid_diag_logs_exec_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisdmidmiauthd.fc
```

No license file was found, but licenses were detected in source scan.

```

August 2017, Shawn Lu

Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved
#
```

```
polarisrrmmgr file contexts place holder
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisrrmmgr.fc
```

No license file was found, but licenses were detected in source scan.

```

May 2017, Victor Kamensky

Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved

<summary>Polaris pttcd Policy Rules.</summary>
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisptcd.if
No license file was found, but licenses were detected in source scan.
```

```

March 2017, Victor Kamensky

Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#
```

```
/usr/binos/conf/oom.sh -- gen_context(system_u:object_r:polaris_oom_exec_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisoom.fc
No license file was found, but licenses were detected in source scan.
```

```

July 2020, Swati Kumari

Copyright (c) 2020 by Cisco Systems, Inc.
All rights reserved
#
```

```
policy_module(polarisptpdrp, 1.0);
```

```
gen_require(
 type polaris_ptpd_rp_t;
)
polaris_chasfs_read(polaris_ptpd_rp_t)
polaris_cpld_read(polaris_ptpd_rp_t)
polaris_tdlresolve_read(polaris_ptpd_rp_t)
polaris_lsmpi_dev_use(polaris_ptpd_rp_t)
```

```
ptpd needs to have open,read,write access with /dev/ds31408
polaris_ds31408_dev_use(polaris_ptpd_rp_t)
```

```

blzi device
polaris_blzi_dev_use(polaris_ptpd_rp_t)

allow polaris_ptpd_rp_t self:capability sys_nice;
allow polaris_ptpd_rp_t self:process setsched;

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisptpd_rpt.te
No license file was found, but licenses were detected in source scan.

#
March 2017, Victor Kamensky
#
Copyright (c) 2017-2020 by Cisco Systems, Inc.
All rights reserved
#

/tmp/lstn.log -- gen_context(system_u:object_r:polaris_epc_ws_liaison_tmp_t,s0)

/tmp/epc_ws(/.*)? gen_context(system_u:object_r:polaris_epc_ws_liaison_tmp_t,s0)

CLI: show platform software wireshark
/usr/bin/os/conf/wireshark_show.sh -- gen_context(system_u:object_r:polaris_wireshark_show_exec_t,s0)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisepcws_liaison.fc
No license file was found, but licenses were detected in source scan.

#
July 2017, Victor Kamensky
#
Copyright (c) 2017-2020 by Cisco Systems, Inc.
All rights reserved
#

policy_module(polarisgsdrp, 1.0);

gen_require(
 type polaris_gsd_rp_t;
)

#allow to run readlink /dev/loop0 & /bin/date
corecmd_exec_bin(polaris_gsd_rp_t)

#run ldd, which in turn exec "ld.so --verify"
libs_exec_ld_so(polaris_gsd_rp_t)

allow to run mount in its own domain

```

```

mount_domtrans(polaris_gsd_rp_t)
awk -v what=^.BuildPath: $pkginfo_file ~ what { print $2 } /tmp/sw/boot/pkginfo
polaris_boot_tmp_read(polaris_gsd_rp_t)
polaris_btrace_data_manage(polaris_gsd_rp_t)
polaris_chasfs_manage(polaris_gsd_rp_t)
polaris_read_debug_conf(polaris_gsd_rp_t)
polaris_disk_crashinfo_getattr(polaris_gsd_rp_t)
polaris_guestshell_exec_files_exec(polaris_gsd_rp_t)
polaris_guestshell_files_read(polaris_gsd_rp_t)
polaris_ncd_tmp_read(polaris_gsd_rp_t)
polaris_proc_rmonbifo_read(polaris_gsd_rp_t)
polaris_cpld_read(polaris_gsd_rp_t)
polaris_bootflash_read(polaris_gsd_rp_t)
polaris_harddisk_read(polaris_gsd_rp_t)

read /proc/cmdline
kernel_read_system_state(polaris_gsd_rp_t)

auth_use_nsswitch(polaris_gsd_rp_t)
polaris_rmonbifo_tmp_read(polaris_gsd_rp_t)

allow polaris_gsd_rp_t self:capability { dac_override sys_resource };
allow polaris_gsd_rp_t self:process setpgid;

type polaris_gsd_rp_tmp_t;
files_tmp_file(polaris_gsd_rp_tmp_t)
manage_dirs_pattern(polaris_gsd_rp_t, tmp_t, polaris_gsd_rp_tmp_t)
manage_files_pattern(polaris_gsd_rp_t, tmp_t, polaris_gsd_rp_tmp_t)
manage_fifo_files_pattern(polaris_gsd_rp_t, polaris_gsd_rp_tmp_t, polaris_gsd_rp_tmp_t)
work with /tmp/guestshell_stk directory
files_tmp_filetrans(polaris_gsd_rp_t, polaris_gsd_rp_tmp_t, dir, "guestshell_stk")

gen_require(^
 type rsync_t;
)
rsync_entry_domtrans(polaris_gsd_rp_t, rsync_t)
allow rsync_t polaris_gsd_rp_t:process sigchld;

read /opt/cisco/caf directory
polaris_caf_files_read(polaris_gsd_rp_t)

gen_require(^
 type polaris_caf_api_port_t;
 type polaris_caf_exec_t;
)
allow polaris_gsd_rp_t polaris_caf_api_port_t:tcp_socket name_connect;
allow polaris_gsd_rp_t polaris_caf_exec_t:file { getattr open read };
allow polaris_gsd_rp_t tmp_t:dir { create rmdir };

```

```

polaris_flashlib_read(polaris_gsd_rp_t)
polaris_flashlib_write(polaris_gsd_rp_t)

watch over /tmp/udev/etc/udev
polaris_udev_tmp_read(polaris_gsd_rp_t)
polaris_udev_tmp_watch(polaris_gsd_rp_t)
watch over /bootflash/gs_script
polaris_persistent_watch(polaris_gsd_rp_t)
#allow iox_ha_utils.sh to read /etc/docker/daemon.json.
gen_require(
 type container_config_t;
)
read_files_pattern(polaris_gsd_rp_t, container_config_t, container_config_t)

allow guestshell_ha.sh to log messages
logging_send_syslog_msg(polaris_gsd_rp_t)

```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisgsdrp.te
```

No license file was found, but licenses were detected in source scan.

```

#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#
<summary>Polaris Rmonbifo Policy Rules.</summary>

```

```

#####
Polaris Rmonbifo Driver policy
#####

```

```
#####
```

```

<summary>
Read /proc/rmonbifo files.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_proc_rmonbifo_read',`
gen_require(
 type polaris_proc_rmonbifo_t;

```



```

)
 read_files_pattern($1, polaris_proc_rmonbifo_t, polaris_proc_rmonbifo_t)
 list_dirs_pattern($1, polaris_proc_rmonbifo_t, polaris_proc_rmonbifo_t)
)

#####
<summary>
Getattr of /proc/rmbonbifo files.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_proc_rmonbifo_getattr`,`
 gen_require(`
 type polaris_proc_rmonbifo_t;
 `)
 getattr_files_pattern($1, polaris_proc_rmonbifo_t, polaris_proc_rmonbifo_t)
)

```

```

#####
<summary>
Read /tmp/sw/boot/rmbonbifo files.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_rmonbifo_tmp_read`,`
 gen_require(`
 type polaris_rmonbifo_tmp_t;
 type polaris_boot_tmp_t;
 `)
 read_files_pattern($1, polaris_rmonbifo_tmp_t, polaris_rmonbifo_tmp_t)
 # /tmp/sw/boot/rmonbifo dir is inside of polaris_boot_tmp_t dir
 search_dirs_pattern($1, polaris_boot_tmp_t, polaris_rmonbifo_tmp_t)
)

```

Found in path(s):  
 \* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisrmonbifo.if  
 No license file was found, but licenses were detected in source scan.

#  
 # March 2017, Victor Kamensky

```

#
Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved
#

/usr/binos/conf/ncd.sh -- gen_context(system_u:object_r:polaris_ncd_exec_t,s0)
/etc/conf/unifiedfs/mount_data gen_context(system_u:object_r:polaris_ncd_etc_t,s0)

/usr/binos/conf/iosd_console_attach.sh -- gen_context(system_u:object_r:polaris_console_attach_exec_t,s0)

/usr/binos/conf/unifiedfs/unifiedfs_helper.sh -- gen_context(system_u:object_r:polaris_ufs_helper_exec_t,s0)

```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisncd.fc
```

No license file was found, but licenses were detected in source scan.

```

#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2021 by Cisco Systems, Inc.
All rights reserved
#

```

```
<summary>Polaris iosd Policy Rules.</summary>
```

```
#####
```

```
<summary>
```

```
Make the specified domain able to work with /tmp/restconf
```

```
</summary>
```

```
<param name="type">
```

```
<summary>
```

```
Domain allowed access.
```

```
</summary>
```

```
</param>
```

```
#
```

```
interface(`polaris_restconf_tmp_use`,`
```

```
 gen_require(`
```

```
 type polaris_restconf_tmp_t;
```

```
 `)
```

```
 manage_files_pattern($1, polaris_restconf_tmp_t, polaris_restconf_tmp_t)
```

```
 manage_dirs_pattern($1, polaris_restconf_tmp_t, polaris_restconf_tmp_t)
```

```
`)
```

```
#####
```

```
<summary>
```

```

Create domain for IOSD Polaris processes. Note
depending on policy build setting it could be confined or
not confined
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<param name="entry_point">
<summary>
Type of the program to be used as an entry point to this domain.
</summary>
</param>
#
interface(`polaris_iosd_domain`,`
 polaris_process_domain_confined($1, $2)

 polaris_iosd_maybe_unconfined($1)
`)

#####
<summary>
Make the specified domain able to work with iosd2iox files
</summary>
<param name="type">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_iosd2iox_tmp_manage`,`
 gen_require(`
 type polaris_iosd2iox_tmp_t;
 `)

 manage_files_pattern($1, polaris_iosd2iox_tmp_t, polaris_iosd2iox_tmp_t)
`)

#####
<summary>
Make the specified domain able to read iosd2iox files
</summary>
<param name="type">
<summary>
Domain allowed access.
</summary>
</param>

```

```

#
interface(`polaris_iosd2iox_tmp_read`,`
 gen_require(`
 type polaris_iosd2iox_tmp_t;
 `)

 read_files_pattern($1,polaris_iosd2iox_tmp_t,polaris_iosd2iox_tmp_t)
)

#####
<summary>
Send messages to iosd unix datagram sockets.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_iosd_dgram_send`,`
 gen_require(`
 type polaris_iosd_t;
 `)

 allow $1 polaris_iosd_t:unix_dgram_socket sendto;
)

#####
<summary>
Make the specified domain to read /tmp/rp/.iosp_dmiauthd
</summary>
<param name="type">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_dmiauthd_token_read`,`
 gen_require(`
 type polaris_dmiauthd_token_t;
 `)

 read_files_pattern($1, polaris_dmiauthd_token_t, polaris_dmiauthd_token_t)
)

#####
<summary>
Make the specified domain to read /tmp/rp/.iosp_gnmib

```

```

</summary>
<param name="type">
<summary>
Domain allowed access.
</summary>
</param>
#
interface('polaris_gnmib_token_read',`
 gen_require(`
 type polaris_gnmib_token_t;
 `)

 manage_files_pattern($1, polaris_gnmib_token_t, polaris_gnmib_token_t)
)

#####
<summary>
Make the specified domain able to work with files
with polaris_iosd_tmp_files_t
</summary>
<param name="type">
<summary>
Domain allowed access.
</summary>
</param>
#
interface('polaris_iosd_tmp_file_use',`
 gen_require(`
 type polaris_iosd_tmp_files_t;
 `)

 manage_files_pattern($1, polaris_iosd_tmp_files_t, polaris_iosd_tmp_files_t)
 allow $1 polaris_iosd_tmp_files_t:sock_file { manage_sock_file_perms};
)

#####
<summary>
Manage /bootflash/geodb/ files
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolebase/>
#
interface('polaris_geodb_files_manage',`
 gen_require(`

```

```

 type polaris_geodb_files_t;
)

 manage_files_pattern($1, polaris_geodb_files_t, polaris_geodb_files_t)
 manage_dirs_pattern($1, polaris_geodb_files_t, polaris_geodb_files_t)
 manage_lnk_files_pattern($1, polaris_geodb_files_t, polaris_geodb_files_t)
)

#####
<summary>
Allow the specified domain to read /boot/vcpu_template.txt
or /csl_p_0/vcpu_template.txt
</summary>
<param name="type">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_iosd_vcpu_read`,`
 gen_require(`
 type polaris_iosd_vcpu_t;
 type polaris_disk_varied_t;
 type polaris_disk_csl_p_t;
 `)

 read_files_pattern($1, { polaris_disk_varied_t polaris_disk_csl_p_t }, polaris_iosd_vcpu_t)
)

#####
<summary>
Allow the specified domain to read /tmp/usb-disable
</summary>
<param name="type">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_iosd_usb_disable_tmp_manage`,`
 gen_require(`
 type polaris_iosd_usb_disable_tmp_t;
 `)

 manage_files_pattern($1, polaris_iosd_usb_disable_tmp_t, polaris_iosd_usb_disable_tmp_t)
 files_tmp_filetrans($1, polaris_iosd_usb_disable_tmp_t, file, "usb-disable")
)

```

```
#####
<summary>
Allow the specified domain to access /bootflash/EFI
</summary>
<param name="type">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_efi_files_list_dirs`,`
 gen_require(`
 type polaris_efi_files_t;
 `)

 list_dirs_pattern($1, polaris_efi_files_t, polaris_efi_files_t)
`)

```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisiosd.if
No license file was found, but licenses were detected in source scan.
```

```
#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2020 by Cisco Systems, Inc.
All rights reserved
#
```

```
polarissmd file contexts place holder
```

```
dc_profile_dir
/mnt/sd3/user/dc_profile_dir(/.*)? gen_context(system_u:object_r:polaris_smd_disk_t,s0)
/flash1/user/dc_profile_dir(/.*)? gen_context(system_u:object_r:polaris_smd_disk_t,s0)
/bootflash/dc_profile_dir(/.*)? gen_context(system_u:object_r:polaris_smd_disk_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarissmd.fc
No license file was found, but licenses were detected in source scan.
```

```
#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#
```

```
polarismqipc file contexts place holder
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarismqipc.fc

No license file was found, but licenses were detected in source scan.

```
#
July 2017, Victor Kamensky
#
Copyright (c) 2017-2020 by Cisco Systems, Inc.
All rights reserved
#

<summary>Polaris iomd Policy Rules.</summary>
```

```
#####
<summary>
Work (read, write, ioctl) with /dev/ngio[0-9+] devices
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_ngio_dev_use',`
gen_require(
 type device_t;
 type polaris_ngio_device_t;
)
 write_chr_files_pattern($1, device_t, polaris_ngio_device_t)
 read_chr_files_pattern($1, device_t, polaris_ngio_device_t)
)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisiomd.if

No license file was found, but licenses were detected in source scan.

```
#
March 2017, Victor Kamensky
#
Copyright (c) 2017-2021 by Cisco Systems, Inc.
All rights reserved
#
```

```
policy_module(polarisrepm, 1.0);
```

```
gen_require(
 type polaris_repm_t;
```



')

```
polaris_btrace_data_manage(polaris_repm_t)
polaris_crft_data_manage(polaris_repm_t)
polaris_chasfs_manage(polaris_repm_t)
polaris_tdlresolve_read(polaris_repm_t)
polaris_tdlldb_list_dirs(polaris_repm_t)
polaris_cpld_read(polaris_repm_t)
polaris_lua_read(polaris_repm_t)
polaris_flashlib_read(polaris_repm_t)
```

```
polaris_ripc_sman_ui_serv_connect(polaris_repm_t)
```

```
polaris_db_tdlldb_dir_use(polaris_repm_t)
```

```
allow to read /proc/meminfo
kernel_read_system_state(polaris_repm_t)
```

```
allow polaris_repm_t self:capability { sys_resource dac_override };
allow polaris_repm_t self:process setrlimit;
```

```
temporary files created for repm in /tmp/replication
type polaris_repm_tmp_t;
files_tmp_file(polaris_repm_tmp_t)
polaris_systemd_tmpfiles_tmp_filetrans(polaris_repm_tmp_t, dir, "replication")
manage_files_pattern(polaris_repm_t, polaris_repm_tmp_t, polaris_repm_tmp_t)
```

```
polaris_dyncfg_tmp_read(polaris_repm_t)
```

```
polaris_tdlldbpersist_setup(polaris_repm_t)
```

```
polaris_tmp_tdlldb_persist_setup(polaris_repm_t)
```

```
send syslog
logging_send_syslog_msg(polaris_repm_t)
```

```
mq.-local_rp_1_0
type polaris_repm_local_rp_mqipc_t;
polaris_mqipc_type(polaris_repm_local_rp_mqipc_t)
```

```
polaris_mqipc_create_name(polaris_repm_t, polaris_repm_local_rp_mqipc_t, local_rp_1_0)
polaris_mqipc_create_name(polaris_repm_t, polaris_repm_local_rp_mqipc_t, local_rp_0_0)
```

```
repm peer mqipc queues under /dev/shm/rep_peer_mq folder
type polaris_repm_peer_mqipc_t;
polaris_mqipc_type(polaris_repm_peer_mqipc_t)
polaris_mqipc_create_name_dir(polaris_repm_t, polaris_repm_peer_mqipc_t, repm_peer_mq)
```

```

repm invokes installer_api_* api's which need access to /bootflash/.installer/install_issu_state
polaris_install_disk_read(polaris_repm_t)

ifdef(`petra_platform',
#allow access to polaris_cm_rp sem for chasfs
polaris_cm_rp_sem_use(polaris_repm_t)
#allow access to /flash12/moncfg/cfg.dat for config
polaris_swipedrive_file_manage(polaris_repm_t)

)

execute /bin/tar
corecmd_exec_bin(polaris_repm_t)
tar reads /etc/passwd
auth_use_nsswitch(polaris_repm_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisrepm.te
No license file was found, but licenses were detected in source scan.

#
March 2017, Victor Kamensky
#
Copyright (c) 2017-2021 by Cisco Systems, Inc.
All rights reserved
#

<summary>Polaris NGWC Platform Policy Rules.</summary>

#####
<summary>
Manage ngwc shared memory /dev/shm/ngwc_shm.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_ngwc_shm_manage',`
 gen_require(`
 type tmpfs_t;
 type polaris_ngwc_shm_t;
 `)
 fs_getattr_tmpfs($1)
 manage_files_pattern($1, tmpfs_t, polaris_ngwc_shm_t)
 allow $1 polaris_ngwc_shm_t:file map;
 filetrans_pattern($1, tmpfs_t, polaris_ngwc_shm_t, file, "ngwc_shm")

```

)

#####

## <summary>

## Manage ngwc shared memory /dev/shm/ngwc\_scc\_shm.

## </summary>

## <param name="domain">

## <summary>

## Domain allowed access.

## </summary>

## </param>

#

interface(`polaris\_ngwc\_scc\_shm\_manage`,`

gen\_require(`

type tmpfs\_t;

type polaris\_ngwc\_scc\_shm\_t;

`)

fs\_getattr\_tmpfs(\$1)

manage\_files\_pattern(\$1, tmpfs\_t, polaris\_ngwc\_scc\_shm\_t)

allow \$1 polaris\_ngwc\_scc\_shm\_t:file map;

filetrans\_pattern(\$1, tmpfs\_t, polaris\_ngwc\_scc\_shm\_t, file, "ngwc\_scc\_shm")

)

#####

## <summary>

## Manage ngwc shared memory /dev/shm/iomd\_to\_fed\_ptp\_offload.

## </summary>

## <param name="domain">

## <summary>

## Domain allowed access.

## </summary>

## </param>

#

interface(`polaris\_ngwc\_itfpo\_manage`,`

gen\_require(`

type tmpfs\_t;

type polaris\_ngwc\_itfpo\_t;

`)

fs\_getattr\_tmpfs(\$1)

manage\_files\_pattern(\$1, tmpfs\_t, polaris\_ngwc\_itfpo\_t)

allow \$1 polaris\_ngwc\_itfpo\_t:file map;

filetrans\_pattern(\$1, tmpfs\_t, polaris\_ngwc\_itfpo\_t, file, "iomd\_to\_fed\_ptp\_offload")

)

#####

## <summary>

```

Manage ngwc sdm shared memory /dev/shm/sdm.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_sdm_shm_manage',`
 gen_require(`
 type tmpfs_t;
 type polaris_sdm_shm_t;
 `)
 fs_getattr_tmpfs($1)
 manage_files_pattern($1, tmpfs_t, polaris_sdm_shm_t)
 filetrans_pattern($1, tmpfs_t, polaris_sdm_shm_t, file, "sdm")
 allow $1 polaris_sdm_shm_t:file map;
)

#####
MMAP Driver for mapping ASIC Memory space
#####
#####
<summary>
Work (read, write, ioctl) with /dev/chdrvmmmap
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_chdrvmmmap_dev_use',`
 gen_require(`
 type device_t;
 type polaris_chdrvmmmap_device_t;
 `)
 read_chr_files_pattern($1, device_t, polaris_chdrvmmmap_device_t)
 write_chr_files_pattern($1, device_t, polaris_chdrvmmmap_device_t)
 allow $1 polaris_chdrvmmmap_device_t:chr_file map;
)

#####
<summary>
Work (read, write, ioctl) with /dev/gettysburg_dev1
</summary>
<param name="domain">
<summary>

```

```

Domain allowed access.
</summary>
</param>
#
interface(`polaris_gettysburg_fpga_dev_use`,`
gen_require(
 type device_t;
 type polaris_gettysburg_fpga_device_t;
)
 write_chr_files_pattern($1, device_t, polaris_gettysburg_fpga_device_t)
 read_chr_files_pattern($1, device_t, polaris_gettysburg_fpga_device_t)
 mmap_chr_files_pattern($1, device_t, polaris_gettysburg_fpga_device_t)
)

#####
<summary>
Work (read, write, ioctl) with /dev/cisco/dplriomem
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_dplr_iomem_mmapdrv_dev_use`,`
gen_require(
 type device_t;
 type polaris_dplr_iomem_mmapdrv_device_t;
)
 write_chr_files_pattern($1, device_t, polaris_dplr_iomem_mmapdrv_device_t)
 read_chr_files_pattern($1, device_t, polaris_dplr_iomem_mmapdrv_device_t)
 allow $1 polaris_dplr_iomem_mmapdrv_device_t:chr_file map;
)

#####
<summary>
Allow access to semaphore of quake flashlib. Pure hack
semaphore got created by dyncfg accidently, need to change to
POSIX semaphore code ASAP.
LOOK AT ME
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_quake_flashlib_sem_use`,`

```

```

gen_require(
 type polaris_dyncfg_t;
)
allow $1 polaris_dyncfg_t:sem rw_sem_perms;
)

#####
<summary>
Manage quake i2c semaphores /dev/shm/sem.i2c_sem00N
and work with corresponding i2c devices (/dev/i2c-XXX)
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_quake_i2c_manage`,`
 gen_require(
 type tmpfs_t;
 type polaris_quake_i2c_t;
)
 manage_files_pattern($1, tmpfs_t, polaris_quake_i2c_t)
 polaris_i2c_use($1)
)

#####
<summary>
Allow caller to read or write the exiting_bays file
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
interface(`polaris_rw_exiting_bays`,`
 gen_require(
 type polaris_proc_exiting_bays_t;
 type proc_t;
)

 rw_files_pattern($1, polaris_proc_exiting_bays_t, polaris_proc_exiting_bays_t)
 # FIXME/TODO:
 # The kernel does not reliably create /proc/exiting_bays on all platforms
 # The following lines should be removed when CSCvv27097 is addressed
 allow $1 polaris_proc_exiting_bays_t:file create;
 allow $1 proc_t:file create;
 allow $1 proc_t:dir { add_name write };

```

)

```

<summary>
Allow caller to create open write /tmp/fpga_upgrade
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>

interface(`polaris_fpga_upgrade_tmp_use`,`
 gen_require(`
 type polaris_fpga_upgrade_tmp_t;
 `)
 allow $1 polaris_fpga_upgrade_tmp_t:file { create open write };
`)
)
```

```

<summary>
Execute a domain transition to run cat9k_ssd_unmount.sh
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>

interface(`polaris_ssd_unmount_domtrans`,`
 gen_require(`
 type polaris_ssd_unmount_t, polaris_ssd_unmount_exec_t;
 `)
 domtrans_pattern($1, polaris_ssd_unmount_exec_t, polaris_ssd_unmount_t)
`)
)
```

```

<summary>
Read lnk_file /ucode0, polaris_disk_ucode0_t.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>

interface(`polaris_disk_ucode0_read_lnk`,`
 gen_require(`
 type polaris_disk_ucode0_t;
 `)
 allow $1 polaris_disk_ucode0_t:lnk { read };
`)
)
```

```

 type polaris_disk_ucose0_t;
 ')
 read_lnk_files_pattern($1, polaris_disk_ucose0_t, polaris_disk_ucose0_t)
)

#####
<summary>
Work (read, write, ioctl) with /dev/cisco/fpga_iomem
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_fpga_iomem_mmapfpga_dev_use`,`
gen_require(`
 type device_t;
 type polaris_fpga_iomem_mmapfpga_device_t;
)
allow $1 polaris_fpga_iomem_mmapfpga_device_t:chr_file map;
 write_chr_files_pattern($1, device_t, polaris_fpga_iomem_mmapfpga_device_t)
 read_chr_files_pattern($1, device_t, polaris_fpga_iomem_mmapfpga_device_t)
)

#####
<summary>
Read Write access to /bootflash/nplusm-power
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_nplusm_power_manage`,`
gen_require(`
 type polaris_nplusm_power_file_t;
 type polaris_disk_bootflash_t;
)
filetrans_pattern($1, polaris_disk_bootflash_t, polaris_nplusm_power_file_t, file, "nplusm-power")
allow $1 polaris_nplusm_power_file_t:file { write create read open getattr unlink };
)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisngwc.if

No license file was found, but licenses were detected in source scan.



```
#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#

/usr/binos/conf/boothelper_evt.sh -- gen_context(system_u:object_r:polaris_boothelper_evt_exec_t,s0)
/tmp/udev(/.*)? gen_context(system_u:object_r:polaris_udev_tmp_files_t,s0)

/tmp/rommon_upgrade_ngwc(/.*)? gen_context(system_u:object_r:polaris_boothelper_tmp_t,s0)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisboothelper.fc

No license file was found, but licenses were detected in source scan.

```
#
December 2018, Victor Kamensky
#
Copyright (c) 2018-2019 by Cisco Systems, Inc.
All rights reserved
#
```

```
<summary>Polaris ezman_cc Policy Rules.</summary>
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisezmancc.if

No license file was found, but licenses were detected in source scan.

```
dnl
dnl April 2018, Victor Kamensky
dnl
dnl Copyright (c) 2018-2019 by Cisco Systems, Inc.
dnl All rights reserved
dnl
define(`polaris_lipc_service_server',`)
define(`polaris_lipc_service_client',`')
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/m4/polaris\_ipc\_lipc\_fc.m4

No license file was found, but licenses were detected in source scan.

```
#
July 2019, Victor Kamensky
#
Copyright (c) 2019 by Cisco Systems, Inc.
All rights reserved
#
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisgrmgr.fc

No license file was found, but licenses were detected in source scan.

#

# July 2017, Victor Kamensky

#

# Copyright (c) 2017-2020 by Cisco Systems, Inc.

# All rights reserved

#

/usr/binos/conf/install\_issu\_monitor.sh -- gen\_context(system\_u:object\_r:polaris\_issu\_monitor\_exec\_t,s0)

/tmp/rp/issu\_mon\_dir -d gen\_context(system\_u:object\_r:polaris\_issu\_monitor\_tmp\_t,s0)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisissumonitor.fc

No license file was found, but licenses were detected in source scan.

#

# March 2019, Shikhar Dogra

#

# Copyright (c) 2019 by Cisco Systems, Inc.

# All rights reserved

#

## <summary>Polaris fman\_cc Policy Rules.</summary>

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisfmancc.if

No license file was found, but licenses were detected in source scan.

#

# March 2017, Victor Kamensky

#

# Copyright (c) 2016-2020 by Cisco Systems, Inc.

# All rights reserved

#

## <summary>Polaris smand Policy Rules.</summary>

#####

## <summary>

## Allow domain to be started by smand with

## transition into specific service domain.

## </summary>

## <param name="domain">

## <summary>

```

Type to be used to run utility.
</summary>
</param>
<param name="entry_point">
<summary>
Type of the program to be used as an entry point to this domain.
</summary>
</param>
interface(`polaris_smand_domain`,`
gen_require(`
type polaris_smand_t;
`)

domtrans_pattern(polaris_smand_t, $2, $1)
`)

#####
<summary>
Write into fifo file created by smand, typical case when
smand starts script under popen.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolecap/>
#
interface(`polaris_smand_use_fifo`,`
gen_require(`
type polaris_smand_t;
`)

write_fifo_files_pattern($1, polaris_smand_t, polaris_smand_t)
`)

#####
<summary>
Read access to CRDU fifo file created by smand
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolecap/>
#
interface(`polaris_smand_crdu_pipe_read`,`

```

```

gen_require(
 type polaris_crdu_pipe_tmp_t;
)

read_fifo_files_pattern($1, polaris_crdu_pipe_tmp_t, polaris_crdu_pipe_tmp_t)
)

#####
<summary>
Manage CRDU fifo file created by smand
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolecap/>
#
interface(`polaris_smand_crdu_pipe_manage`,`
 gen_require(
 type polaris_crdu_pipe_tmp_t;
)

 manage_fifo_files_pattern($1, polaris_crdu_pipe_tmp_t, polaris_crdu_pipe_tmp_t)
)

#####
<summary>
Write to polaris_sman_bshell_serv_lipc_t
</summary>
<param name="domain">
<summary>
Domain allowed to connect and write into this lipc file.
</summary>
</param>
#
interface(`polaris_sman_bshell_serv_lipc_write`,`
 gen_require(
 type polaris_sman_bshell_serv_lipc_t;
 type polaris_smand_t;
)

 polaris_lipc_write($1, polaris_sman_bshell_serv_lipc_t, polaris_smand_t)
)

#####
<summary>
Manage /tmp/show_ports_tmp
</summary>

```

```

<param name="domain">
<summary>
Domain allowed to manage tmp files.
</summary>
</param>
<rolecap/>
interface(`polaris_trans_ports_tmp_manage`,`
 gen_require(`
 type polaris_trans_stats_tmp_t;
 `)
 manage_files_pattern($1, polaris_trans_ports_tmp_t, polaris_trans_ports_tmp_t)
`)
#####
<summary>
create /tmp/trans_tmp and /tmp/trans_tmp.1 to store lsof output
</summary>
<param name="domain">
<summary>
Domain allowed to manage tmp files.
</summary>
</param>
<rolecap/>
interface(`polaris_trans_stats_tmp_manage`,`
 gen_require(`
 type polaris_trans_stats_tmp_t;
 `)
 manage_files_pattern($1, polaris_trans_stats_tmp_t, polaris_trans_stats_tmp_t)
`)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarissmand.if  
No license file was found, but licenses were detected in source scan.

```

#
July 2017, Victor Kamensky
#
Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved
#

```

/usr/cpp/bin/cpp\_cdm\_svr -- gen\_context(system\_u:object\_r:polaris\_cpp\_cdm\_exec\_t,s0)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscppcdm.fc  
No license file was found, but licenses were detected in source scan.

```

#
March 2017, Victor Kamensky

```

```

#
Copyright (c) 2016-2021 by Cisco Systems, Inc.
All rights reserved
#

<summary>Polaris Flashlib Policy Rules.</summary>

#####
Flashlib policy (infra/flashlib)
#####

#####
<summary>
Read Polaris /tmp/.flashlock file
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_flashlib_lock`,`
gen_require(`
 type tmp_t;
 type polaris_flashlib_lock_t;
`)

 manage_files_pattern($1, tmp_t, polaris_flashlib_lock_t)
 allow $1 self:capability dac_override;

 ifdef(`quake_platform`,`
 polaris_quake_flashlib_sem_use($1)
 `)
 # access of .flashlock on ultra
 ifdef(`vxe_family`,`
 allow $1 self:capability dac_override;
 `)
)

#####
<summary>
Write Polaris /tmp/flashdev.log file
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>

```

```

#
interface(`polaris_flashlib_log',`
gen_require(`
 type tmp_t;
 type polaris_flashlib_log_t;
`)

 manage_files_pattern($1, tmp_t, polaris_flashlib_log_t)
)

#####
<summary>
Read partition disk device that contains rommon variables.
C8KV reads object store and reads grub files in BIOS and EFI partitions.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_flashlib_read',`
 gen_require(`
 type device_t;
 type polaris_flashlib_device_t;
 `)
 polaris_flashlib_lock($1)
 polaris_flashlib_log($1)
 read_blk_files_pattern($1, device_t, polaris_flashlib_device_t)
 read_chr_files_pattern($1, device_t, polaris_flashlib_device_t)
 ifdef(`vxe_family',`
 polaris_vxeinstall_info_read($1)
 polaris_grub_info_read($1)
 `)
 ifdef(`vwlc_platform',`
 polaris_vwlcinstall_info_read($1)
 polaris_vwlc_grub_info_read($1)
 `)

 # processes that use tdllib/DB will access romvar
 # via flashlib mcp_getmonvar API which read /objstore.
 optional_policy(`
 polaris_disk_objstore_read($1)
 `)
 polaris_flash_shm_manage($1)
)

#####

```

```

<summary>
Write partition disk device that contains rommon variables.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_flashlib_write`,`
 gen_require(`
 type device_t;
 type polaris_flashlib_device_t;
 `)

 polaris_flashlib_lock($1)
 write_blk_files_pattern($1, device_t, polaris_flashlib_device_t)
 polaris_flash_shm_manage($1)
)

```

```

#####
<summary>
Manage ngwc shared memory /dev/shm/flash_shm.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_flash_shm_manage`,`
 gen_require(`
 type tmpfs_t;
 type polaris_flash_shm_t;
 `)

 fs_getattr_tmpfs($1)
 manage_files_pattern($1, tmpfs_t, polaris_flash_shm_t)
 allow $1 polaris_flash_shm_t:file map;
)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisflashlib.if

No license file was found, but licenses were detected in source scan.

```

#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2019 by Cisco Systems, Inc.

```



```

All rights reserved
#

<summary>Polaris LUA Policy Rules.</summary>

#####
Lua policy
#####

#####
<summary>
Read Polaris lua files (/lua)
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_lua_read`,`
gen_require(`
type polaris_lua_file_t;
`)

allow $1 polaris_lua_file_t:file read_file_perms;
allow $1 polaris_lua_file_t:dir { read_file_perms search_dir_perms };
`)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarislua.if
No license file was found, but licenses were detected in source scan.

#
July 2017, Victor Kamensky
#
Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved
#

<summary>Polaris tamd_rp Policy Rules.</summary>

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polaristamdrp.if
No license file was found, but licenses were detected in source scan.

#
March 2017, Victor Kamensky
#

```

# Copyright (c) 2016-2019 by Cisco Systems, Inc.

# All rights reserved

#

## <summary>Polaris polarisiptbl Policy Rules.</summary>

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisiptbl.if

No license file was found, but licenses were detected in source scan.

#

# April 2018, Victor Kamensky

#

# Copyright (c) 2018-2019 by Cisco Systems, Inc.

# All rights reserved

#

# autopolarisplatformipcbase file contexts place holder

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/autopolarisplatformipcbase.fc

No license file was found, but licenses were detected in source scan.

#

# February 2020, Victor Kamensky

#

# Copyright (c) 2020 by Cisco Systems, Inc.

# All rights reserved

#

policy\_module(polarisdmiportsfetch, 1.0);

gen\_require(^

    type polaris\_dmi\_ports\_fetch\_t;

')

polaris\_chasfs\_manage(polaris\_dmi\_ports\_fetch\_t)

polaris\_tdlresolve\_read(polaris\_dmi\_ports\_fetch\_t)

polaris\_cpld\_read(polaris\_dmi\_ports\_fetch\_t)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisdmiportsfetch.te

No license file was found, but licenses were detected in source scan.

#

# July 2018, Victor Kamensky

#

# Copyright (c) 2018-2020 by Cisco Systems, Inc.

# All rights reserved

```

#

policy_module(polarisngwcfeddebug, 1.0);

gen_require(
 type polaris_ngwc_fed_debug_mgr_t;
)

polaris_bootflash_manage(polaris_ngwc_fed_debug_mgr_t)
polaris_btrace_data_manage(polaris_ngwc_fed_debug_mgr_t)
polaris_cpld_read(polaris_ngwc_fed_debug_mgr_t)
polaris_flashlib_read(polaris_ngwc_fed_debug_mgr_t)
polaris_chasfs_read(polaris_ngwc_fed_debug_mgr_t)
polaris_tdlresolve_read(polaris_ngwc_fed_debug_mgr_t)

polaris_disk_bootflash_read_lnk(polaris_ngwc_fed_debug_mgr_t)
polaris_dmammap_dev_use(polaris_ngwc_fed_debug_mgr_t)
polaris_chdrvmmmap_dev_use(polaris_ngwc_fed_debug_mgr_t)
polaris_dplr_iomem_mmapdrv_dev_use(polaris_ngwc_fed_debug_mgr_t)

opens /proc/pid/net/dev
kernel_read_network_state(polaris_ngwc_fed_debug_mgr_t)

calls tcpdump, let it run in its own domain
netutils_domtrans(polaris_ngwc_fed_debug_mgr_t)

calls system function
corecmd_exec_shell(polaris_ngwc_fed_debug_mgr_t)

calls lspci and other utilities
corecmd_exec_bin(polaris_ngwc_fed_debug_mgr_t)

auth_use_nsswitch(polaris_ngwc_fed_debug_mgr_t)

lspci needs sysfs access
dev_list_sysfs(polaris_ngwc_fed_debug_mgr_t)
dev_read_sysfs(polaris_ngwc_fed_debug_mgr_t)

dope.py /tmp/idope_svr, /tmp/shfwd_svr socket files
type polaris_fed_debug_sock_t;
files_tmp_file(polaris_fed_debug_sock_t)

files_tmp_filetrans(polaris_ngwc_fed_debug_mgr_t, polaris_fed_debug_sock_t, sock_file, "idope_svr")
files_tmp_filetrans(polaris_ngwc_fed_debug_mgr_t, polaris_fed_debug_sock_t, sock_file, "shfwd_svr")

gen_require(
 type tmp_t;
)

```

```

manage_sock_files_pattern(polaris_ngwc_fed_debug_mgr_t, tmp_t, polaris_fed_debug_sock_t)

allow show-forward to use following temp files in /tmp dir
type polaris_fed_debug_tmp_t;
files_tmp_file(polaris_fed_debug_tmp_t)
files_tmp_filetrans(polaris_ngwc_fed_debug_mgr_t, polaris_fed_debug_tmp_t, file, "pktgen.txt")
files_tmp_filetrans(polaris_ngwc_fed_debug_mgr_t, polaris_fed_debug_tmp_t, file, "DopeElam.sh")
files_tmp_filetrans(polaris_ngwc_fed_debug_mgr_t, polaris_fed_debug_tmp_t, file, "MemDumpElam.sh")
gen_require(
 type tmp_t;
)
manage_files_pattern(polaris_ngwc_fed_debug_mgr_t, { tmp_t polaris_fed_debug_tmp_t },
polaris_fed_debug_tmp_t)

talk to fed over unix sockets
polaris_fed_sock_write(polaris_ngwc_fed_debug_mgr_t)

/dcmlog.txt
type polaris_fed_debug_dcmlog_t;
files_type(polaris_fed_debug_dcmlog_t)
gen_require(
 type root_t;
)
filetrans_pattern(polaris_ngwc_fed_debug_mgr_t, root_t, polaris_fed_debug_dcmlog_t, file, "dcmlog.txt")
manage_files_pattern(polaris_ngwc_fed_debug_mgr_t, root_t, polaris_fed_debug_dcmlog_t)

dope.py listens on port 12255
corenet_tcp_bind_generic_node(polaris_ngwc_fed_debug_mgr_t)
allow polaris_ngwc_fed_debug_mgr_t self:tcp_socket { getattr setopt ioctl getopt bind create listen accept connect
read write };
corenet_tcp_bind_polaris_fed_debug_trace_rpc_port(polaris_ngwc_fed_debug_mgr_t)
corenet_tcp_connect_polaris_fed_debug_trace_rpc_port(polaris_ngwc_fed_debug_mgr_t)

dope.py listens on port 5389 for shfwd commands
corenet_tcp_bind_polaris_fed_debug_shfwd_command_port(polaris_ngwc_fed_debug_mgr_t)

LOOK AT ME: /dev/mem access restriction remove after fix for CSCvm07702 is
committed.
#ifdef(^nyquist_platform',`
polaris_dev_mem_use(polaris_ngwc_fed_debug_mgr_t)
)
#ifdef(^starfleet_platform',`
polaris_dev_mem_use(polaris_ngwc_fed_debug_mgr_t)
)
#ifdef(^quake_platform',`
polaris_dev_mem_use(polaris_ngwc_fed_debug_mgr_t)
)

```

```

/tmp/asic_config.pickle file access
type polaris_fed_debug_asic_config_t;
files_tmp_file(polaris_fed_debug_asic_config_t);
files_tmp_filetrans(polaris_ngwc_fed_debug_mgr_t, polaris_fed_debug_asic_config_t, file, "asic_config.pickle")
gen_require(
 type tmp_t;
)
manage_files_pattern(polaris_ngwc_fed_debug_mgr_t, tmp_t, polaris_fed_debug_asic_config_t)

dope.py invokes scapy.py for DP trace which needs to create socket to seek
interface info via ioctl ifreq
allow polaris_ngwc_fed_debug_mgr_t self:udp_socket { create ioctl };

/tmp/rdope_ffi handle directory where libffi will create file with execute
mapping. Files system should be executable and /tmp so far is. Note TMPDIR
environment variable is the first choice where to create libffi executable
mapped files.
type polaris_fed_debug_ffi_t;
files_tmp_file(polaris_fed_debug_ffi_t);
files_tmp_filetrans(polaris_ngwc_fed_debug_mgr_t, polaris_fed_debug_ffi_t, dir, "rdope_ffi")
gen_require(
 type tmp_t;
)
manage_dirs_pattern(polaris_ngwc_fed_debug_mgr_t, tmp_t, polaris_fed_debug_ffi_t)
manage_files_pattern(polaris_ngwc_fed_debug_mgr_t, polaris_fed_debug_ffi_t, polaris_fed_debug_ffi_t)
allow polaris_ngwc_fed_debug_mgr_t polaris_fed_debug_ffi_t:file { execute map };

allow to read /proc/mtd called from mcp_getmonvar
kernel_read_system_state(polaris_ngwc_fed_debug_mgr_t)

polaris_remap_mem_dev_use(polaris_ngwc_fed_debug_mgr_t)

allow polaris_ngwc_fed_debug_mgr_t self:capability sys_resource;

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisngwcfeddebug.te
No license file was found, but licenses were detected in source scan.

dnl
dnl April 2018, Victor Kamensky
dnl
dnl Copyright (c) 2018-2019 by Cisco Systems, Inc.
dnl All rights reserved
dnl
dnl Process Names Map
define(`process_map', `defn(format(`process_map[%s]', `$1'))')
define(`process_map_set', `define(format(`process_map[%s]', `$1'), `$2'))

```

```

dnl Process Names and Labels
define(`process_short_name', `patsubst($1, `^BPROC_', `)')
define(`process_default_stem', `translit(process_short_name($1), `A-Z', `a-z)')
define(`process_stem', `ifelse(process_map(process_short_name($1)), `', process_default_stem($1),
process_map(process_short_name($1)))')
define(`process_label', `format(`polaris_%s_t', process_stem($1))')
define(`process_exec_label', `format(`polaris_%s_exec_t', process_stem($1))')

```

dnl Process Type Map: track that type declations unique

```

define(`process_type_map', `defn(format(`process_type_map[%s]', `$1'))')
define(`process_type_map_set', `define(format(`process_type_map[%s]', `$1'), `$2')')

```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/polaris_process.m4
```

No license file was found, but licenses were detected in source scan.

dnl

dnl April 2018, Victor Kamensky

dnl

dnl Copyright (c) 2018-2021 by Cisco Systems, Inc.

dnl All rights reserved

dnl

```
process_map_set(AUTO_UPGRADE_CLIENT_RP, autoupgrade)
```

```
process_map_set(BSM_RP, bsm)
```

```
process_map_set(BTM_CC, btman)
```

```
process_map_set(BTM_FP, btman)
```

```
process_map_set(BTM_RP, btman)
```

```
process_map_set(BTM_BP, btman)
```

```
process_map_set(CCD_RP, caf)
```

```
process_map_set(DMI_CONFD, confd)
```

```
process_map_set(DMI_PTTCD, pttcd)
```

```
process_map_set(SDWAN_CONFD, confd)
```

```
process_map_set(EMD_CC, emd)
```

```
process_map_set(EMD_FP, emd)
```

```
process_map_set(EMD_RP, emd)
```

```
process_map_set(FCD_RP, flashcheck)
```

```
process_map_set(FM_FP, fman_fp)
```

```
process_map_set(FM_CC, fman_cc)
```

```
process_map_set(FM_RP, fman_rp)
```

```
process_map_set(HM_CC, hm)
```

```
process_map_set(HM_FP, hm)
```

```
process_map_set(HM_RP, hm)
```

```
process_map_set(IOMD_CC, iomd)
```

```
process_map_set(IOSD_CC, iosd)
```

```
process_map_set(IOSD_RP, iosd)
```

```
process_map_set(IOSD_BP, iosd)
```

```
process_map_set(IOXM_RP, ioxman)
```

```
process_map_set(ISSU_STK, issu_stack)
process_map_set(LM_RP, lm)
process_map_set(MAINT_RP, periodic)
process_map_set(PLOGD_CC, plogd)
process_map_set(PLOGD_FP, plogd)
process_map_set(PLOGD_RP, plogd)
process_map_set(REPM_RP, repm)
process_map_set(SERVICE_MGR_RP, service_mgr)
process_map_set(SERVICE_MGR_FP, service_mgr)
process_map_set(SM, smand)
process_map_set(SORT_RP, sort_files)
process_map_set(VMAN_RP, vman)
process_map_set(POLJVM, jvm)
process_map_set(CLUSTERMGR, clustermgr)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/processmap.m4
```

No license file was found, but licenses were detected in source scan.

dnl

dnl April 2018, Victor Kamensky

dnl

dnl Copyright (c) 2018-2019 by Cisco Systems, Inc.

dnl All rights reserved

dnl

divert(-1)

```
include(`polaris_process.m4')
```

```
include(`polaris_database_db.m4')
```

```
include(`polaris_database_db_if.m4')
```

```
include(`polaris_max_scope.m4')
```

divert(0)dnl

#

# This is a generated file! Instead of modifying this file,

# modify proper platform TDL file.

#

```
<summary>Polaris Platform DB Policy Rules.</summary>
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/polaris_database_if.m4
```

No license file was found, but licenses were detected in source scan.

dnl

dnl April 2018, Victor Kamensky

dnl

dnl Copyright (c) 2018-2020 by Cisco Systems, Inc.

dnl All rights reserved

dnl

dnl VXE Platform Max Bay Limits

max\_bay\_map\_set(`rp`, `per\_bay`, 0)

max\_bay\_map\_set(`cc`, `per\_bay`, 0)

max\_bay\_map\_set(`fp`, `per\_bay`, 0)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/m4/vxemaps.m4

No license file was found, but licenses were detected in source scan.

#

# January 2021, Gabriel Lee, Shawn Liu

#

# Copyright (c) 2021 by Cisco Systems, Inc.

# All rights reserved

#

/ezManage\_v1/ezManage\_sms\_handler.py -- gen\_context(system\_u:object\_r:polaris\_ezmanage\_exec\_t,s0)

/ezManage\_v1(/.\*)? gen\_context(system\_u:object\_r:polaris\_ezmanage\_file\_t,s0)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisezmanage.fc

No license file was found, but licenses were detected in source scan.

#

# April 2017, Victor Kamensky

#

# Copyright (c) 2017-2019 by Cisco Systems, Inc.

# All rights reserved

#

## <summary>Polaris dmi\_vtyserverutild Policy Rules.</summary>

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisdmivtyserverutild.if

No license file was found, but licenses were detected in source scan.

#

# August 2017, Victor Kamensky

#

# Copyright (c) 2017-2019 by Cisco Systems, Inc.

# All rights reserved

#

# polarisbsm file contexts place holder



Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisbsm.fc

No license file was found, but licenses were detected in source scan.

#

# February 2020, Victor Kamensky

#

# Copyright (c) 2020 by Cisco Systems, Inc.

# All rights reserved

#

## <summary>Polaris dmi\_ports\_fetch Policy Rules.</summary>

#####

## <summary>

## Work with /bootflash/sdavc

## </summary>

## <param name="domain">

## <summary>

## Domain allowed access.

## </summary>

## </param>

#

interface(`polaris\_sdavc\_proxy\_manage`,`

gen\_require(`

type polaris\_sdavc\_proxy\_files\_t;

`)

manage\_files\_pattern(\$1, polaris\_sdavc\_proxy\_files\_t, polaris\_sdavc\_proxy\_files\_t)

manage\_dirs\_pattern(\$1, polaris\_sdavc\_proxy\_files\_t, polaris\_sdavc\_proxy\_files\_t)

`)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisssdavcproxy.if

No license file was found, but licenses were detected in source scan.

#

# March 2017, Victor Kamensky

#

# Copyright (c) 2016-2021 by Cisco Systems, Inc.

# All rights reserved

#

/usr/binos/bin/cman\_fp\_ledp -- gen\_context(system\_u:object\_r:polaris\_cm\_fp\_exec\_t,s0)

/usr/binos/bin/cman\_fp\_us\_ledp -- gen\_context(system\_u:object\_r:polaris\_cm\_fp\_exec\_t,s0)

/usr/binos/bin/cman\_fp\_vwlc -- gen\_context(system\_u:object\_r:polaris\_cm\_fp\_exec\_t,s0)

/usr/binos/bin/cman\_fp\_vwlc\_ledp -- gen\_context(system\_u:object\_r:polaris\_cm\_fp\_exec\_t,s0)

/usr/binos/bin/cman\_fp\_sumatra\_ledp -- gen\_context(system\_u:object\_r:polaris\_cm\_fp\_exec\_t,s0)

```

/usr/binos/conf/mcp_pcie_status_cmd.sh -- gen_context(system_u:object_r:polaris_pcie_status_cmd_exec_t,s0)

/dev/hkp -c gen_context(system_u:object_r:polaris_hkp_device_t,s0)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscmfp.fc
No license file was found, but licenses were detected in source scan.

#
June 2020, Manu Roy
#
Copyright (c) 2020 by Cisco Systems, Inc.
All rights reserved
#

/bootflash labels
/bootflash(/.*)? gen_context(system_u:object_r:polaris_disk_bootflash_t,s0)
/bootflash/.ssh(/.*)? gen_context(system_u:object_r:ssh_home_t,s0)
/bootflash/.ssh/ssh_host.*_key\pub gen_context(system_u:object_r:sshd_key_t,s0)
/bootflash/.ssh/ssh_host.*_key gen_context(system_u:object_r:sshd_key_t,s0)
/bootflash/core(/.*)? gen_context(system_u:object_r:polaris_core_file_t,s0)

/flash is symbolic link /flash10/USER
/flash gen_context(system_u:object_r:polaris_disk_bootflash_t,s0)

#/flash1
/flash1(/.*)? gen_context(system_u:object_r:polaris_disk_crashinfo_t,s0)
/flash1/CRASH(/.*)? gen_context(system_u:object_r:polaris_disk_crashinfo_t,s0)
/flash1/CRASH/tracelogs(/.*)? gen_context(system_u:object_r:polaris_btrace_data_t,s0)
/flash7(/.*)? gen_context(system_u:object_r:polaris_disk_license_t,s0)
/flash8(/.*)? gen_context(system_u:object_r:polaris_disk_license_t,s0)
/flash9(/.*)? gen_context(system_u:object_r:polaris_obfl_data_t,s0)

/flash10
USER is a reserved selinux keyword - escape it like this
/flash10(/.*)? gen_context(system_u:object_r:polaris_disk_bootflash_t,s0)
/flash10/USE[R]/core(/.*)? gen_context(system_u:object_r:polaris_core_file_t,s0)
/flash10/USE[R]/nvram_config -- gen_context(system_u:object_r:polaris_nvram_file_t,s0)
/flash10/USER/.ssh/ssh_host_rsa_key -- gen_context(system_u:object_r:sshd_key_t,s0)

#sdflash
/dev/mmcblk1p1 -b gen_context(system_u:object_r:polaris_iots_swipedrive_device_t,s0)
/dev/sdflash gen_context(system_u:object_r:polaris_iots_swipedrive_file_t,s0)
/sdflash gen_context(system_u:object_r:polaris_iots_swipedrive_file_t,s0)
#usb device
/dev/sda1 -b gen_context(system_u:object_r:polaris_iots_swipedrive_device_t,s0)

```

```

#DMA ASIC driver
/dev/mvDmaDrv gen_context(system_u:object_r:polaris_iots_mvDmaDrv_device_t,s0)
/dev/mvIntDrv gen_context(system_u:object_r:polaris_iots_mvIntDrv_device_t,s0)

/crashinfo is symbolic link to /mnt/sd1 created by systemd-tmpfiles
/crashinfo gen_context(system_u:object_r:polaris_disk_crashinfo_t,s0)

#/dev
/dev/petra-fpga -c gen_context(system_u:object_r:polaris_iots_fpga_device_t,s0)
/dev/petra-zynq-ps-gpio -c gen_context(system_u:object_r:polaris_iots_fpga_device_t,s0)
/dev/petra-gpio-pc3 -c gen_context(system_u:object_r:polaris_iots_fpga_device_t,s0)
#Line card fpga driver for mmap
/dev/petra-lc-fpga -c gen_context(system_u:object_r:polaris_iots_fpga_device_t,s0)

#memory devices
/dev/tm -c gen_context(system_u:object_r:polaris_iots_tm_device_t,s0)
/dev/hcam -c gen_context(system_u:object_r:polaris_iots_tm_device_t,s0)
#vlan-virtual ethernet
/dev/petra-krport -c gen_context(system_u:object_r:polaris_iots_tm_device_t,s0)

/tmp/udev/etc/udev/sdflash/udev-info gen_context(system_u:object_r:polaris_udev_tmp_files_t,s0)

hellcat
/dev/spidev0.0 -c gen_context(system_u:object_r:polaris_iots_led_device_t,s0)
/dev/spidev0.1 -c gen_context(system_u:object_r:polaris_iots_led_device_t,s0)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisiotsswitch.fc
No license file was found, but licenses were detected in source scan.

#
March 2017, Victor Kamensky
#
Copyright (c) 2017-2021 by Cisco Systems, Inc.
All rights reserved
#

policy_module(polarisngwcfed, 1.0);

gen_require(
 type polaris_ngwc_fed_t;
)

polaris_btrace_data_manage(polaris_ngwc_fed_t)
polaris_chasfs_manage(polaris_ngwc_fed_t)
polaris_tdlresolve_read(polaris_ngwc_fed_t)
polaris_tdlldb_list_dirs(polaris_ngwc_fed_t)
polaris_lua_read(polaris_ngwc_fed_t)

```

```

polaris_flashlib_read(polaris_ngwc_fed_t)
polaris_chasync_files_manage(polaris_ngwc_fed_t)

LOOK AT ME: system() call restriction remove after
CSCvn19282 is fixed using CSCvn19287.
#
fed executes cp_trace_request.sh when a sv stack split occurs.
cp_trace_request.sh does source of pglobals.sh which requires the
access of /crashinfo.
polaris_disk_crashinfo_getattr(polaris_ngwc_fed_t)

polaris_rpc_sman_ui_serv_connect(polaris_ngwc_fed_t)

polaris_db_tlddb_dir_use(polaris_ngwc_fed_t)

corecmd_exec_bin(polaris_ngwc_fed_t)
corecmd_exec_shell(polaris_ngwc_fed_t)

allow read of /etc/group and /etc/passwd
auth_use_nsswitch(polaris_ngwc_fed_t)

allow to read /proc/meminfo
kernel_read_system_state(polaris_ngwc_fed_t)

allow read/write to /proc/irq/N/irq files
kernel_rw_irq_sysctls(polaris_ngwc_fed_t)

polaris_obfl_data_manage(polaris_ngwc_fed_t)
polaris_lsmpi_dev_use(polaris_ngwc_fed_t)

allow polaris_ngwc_fed_t self:capability { sys_rawio dac_override ipc_owner sys_nice ipc_lock };
allow polaris_ngwc_fed_t self:capability2 block_suspend;

polaris_dyncfg_tmp_read(polaris_ngwc_fed_t)

optional_policy(`
polaris_ngwc_shm_manage(polaris_ngwc_fed_t)
`)

optional_policy(`
polaris_ngwc_scc_shm_manage(polaris_ngwc_fed_t)
`)

cpp bleeds into switching platforms through fman_fp and fed
apparently even on nyquist fed creates /tmp/cpp_anon_db
polaris_cpp_process(polaris_ngwc_fed_t)
polaris_cpp_tmp_files_use(polaris_ngwc_fed_t)

```

```

optional_policy(
/dev/dplr_intrpt usage
polaris_dplr_dev_use(polaris_ngwc_fed_t)

/dev/dmammap usage
polaris_dmammap_dev_use(polaris_ngwc_fed_t)

/dev/remap_mem0 usage
polaris_remap_mem_dev_use(polaris_ngwc_fed_t)
)

/dev/cli2xcvr_pipe and /dev/xcvr2cli_pipe
type polaris_fed_xcvr_pipe_t;
files_type(polaris_fed_xcvr_pipe_t)
dev_associate(polaris_fed_xcvr_pipe_t)
gen_require(
 type device_t;
)
filetrans_pattern(polaris_ngwc_fed_t, device_t, polaris_fed_xcvr_pipe_t, fifo_file, "cli2xcvr_pipe")
filetrans_pattern(polaris_ngwc_fed_t, device_t, polaris_fed_xcvr_pipe_t, fifo_file, "xcvr2cli_pipe")
manage_fifo_files_pattern(polaris_ngwc_fed_t, device_t, polaris_fed_xcvr_pipe_t)

polaris_disk_bootflash_search(polaris_ngwc_fed_t)

allow polaris_ngwc_fed_t self:process setsched;

work with /dev/msi/Slot0/Doppler0/GroupN files
dev_rw_generic_chr_files(polaris_ngwc_fed_t)

read /sys/devices/system/cpu/online
dev_read_sysfs(polaris_ngwc_fed_t)

bind to shfwd port
corenet_udp_bind_polaris_ngwc_fed_shfwd_port(polaris_ngwc_fed_t)

connect to shfwd port
corenet_tcp_connect_polaris_fed_debug_shfwd_command_port(polaris_ngwc_fed_t)

creates and write /flash/shfwd_params.txt file
polaris_bootflash_manage(polaris_ngwc_fed_t)

use polaris_ngwc_fed_t as syslog_client_type
logging_send_syslog_msg(polaris_ngwc_fed_t)

bind to dbgmn port
corenet_udp_bind_polaris_ngwc_fed_dbgmn_port(polaris_ngwc_fed_t)

```

```

corenet_udp_bind_generic_node(polaris_ngwc_fed_t)
allow polaris_ngwc_fed_t self:udp_socket { bind create getopt };

optional_policy(`
on macallan cman_fp needs access to /dev/cisco/dplr_iomem
for mapping dplr io memory to application space.
polaris_dplr_iomem_mmapdrv_dev_use(polaris_ngwc_fed_t);
`)

On Macallan as part of doppler sdk_asic_init(), a
rw call is made to /dev/cpld
polaris_cpld_dev_use(polaris_ngwc_fed_t)
polaris_cpld_read(polaris_ngwc_fed_t)
#ptp_init_systemclock() called during fed process init writes
/sys/devices/platform/cpld/reg_doppe_1588_sync
polaris_cpld_write(polaris_ngwc_fed_t)

optional_policy(`
In Macallan cards which use Doppler ASIC,
ngmod_doppler_mmap() api is called to get hold of
MMapped Asic address. As part of the operation it uses
/dev/chdrvmmmap device.
polaris_chdrvmmmap_dev_use(polaris_ngwc_fed_t)
`)

LOOK AT ME: /dev/mem access restriction remove after
CSCvk00737 is fixed using CSCvk00741
#ifdef(`nyquist_platform',`
polaris_dev_mem_use(polaris_ngwc_fed_t)
`)

LOOK AT ME: /dev/mem access restriction remove after
CSCvm34589 is fixed using CSCvm34617
#ifdef(`starfleet_platform',`
polaris_dev_mem_use(polaris_ngwc_fed_t)
`)

LOOK AT ME: /dev/mem access restriction remove after
CSCvn64182 is fixed using CSCvn64184
#ifdef(`quake_platform',`
polaris_dev_mem_use(polaris_ngwc_fed_t)
`)

#ifdef(`sumatra_platform',`
LOOK AT ME: After direct usage of /dev/mem is removed (CSCvw80796)
polaris_dev_mem_use(polaris_ngwc_fed_t)
polaris_sumatra_doppler_dev_use(polaris_ngwc_fed_t)
`)

```

```

LOOK AT ME: /dev/mem access restriction remove after
CSCvn08008 is fixed using CSCvn08019.
FED accesses raw memory (/dev/mem) for sending/receiving OOB
traffic on an FSS interface.
#ifdef(`passport_platform',`
polaris_dev_mem_use(polaris_ngwc_fed_t)
')

#Entropy number is read from ACT2 and stored in /tmp/hw_entropy
#Allow sesa library read from /tmp/hw_entropy to update random
#number seed.
polaris_hw_entropy_read(polaris_ngwc_fed_t)

fed is server for /tmp/dbgmn_log_svr socket file
type polaris_fed_sock_t;
files_tmp_file(polaris_fed_sock_t)

files_tmp_filetrans(polaris_ngwc_fed_t, polaris_fed_sock_t, sock_file, "dbgmn_log_svr")

gen_require(`
 type tmp_t;
')
manage_sock_files_pattern(polaris_ngwc_fed_t, tmp_t, polaris_fed_sock_t)

optional_policy(`
talk to rdope.sh over unix sockets
polaris_fed_debug_sock_write(polaris_ngwc_fed_t)
')

/dev/shm/sdm access
optional_policy(`
polaris_sdm_shm_manage(polaris_ngwc_fed_t)
')

creates few files under /tmp/installer (e.g like
/tmp/installer/phy_shannon_ver_1) to indicate current h/w conditions
polaris_install_tmp_manage(polaris_ngwc_fed_t)

communication between the nif manager and fed use directories under /tmp/sv
polaris_sv_tmp_use(polaris_ngwc_fed_t)

optional_policy(`
 polaris_quake_i2c_manage(polaris_ngwc_fed_t)
')

work with /tmp files (/tmp/fed_post_results)

```

```

type polaris_fed_tmp_t;
files_tmp_file(polaris_fed_tmp_t)
files_tmp_filetrans(polaris_ngwc_fed_t, polaris_fed_tmp_t, file, "fed_post_result")
files_tmp_filetrans(polaris_ngwc_fed_t, polaris_fed_tmp_t, dir, "test_mrvlphy")
manage_files_pattern(polaris_ngwc_fed_t, polaris_fed_tmp_t, polaris_fed_tmp_t)
manage_dirs_pattern(polaris_ngwc_fed_t, polaris_fed_tmp_t, polaris_fed_tmp_t)
manage_fifo_files_pattern(polaris_ngwc_fed_t, polaris_fed_tmp_t, polaris_fed_tmp_t)
polaris_cm_rp_tmp_manage(polaris_ngwc_fed_t)

Allow write to flash. Needed for template support.
polaris_flashlib_write(polaris_ngwc_fed_t)

CSCvo78054 will be used to fix fed policies on crankshaft properly.
Below policy is just to unblock Nightwatch boot issue on ISR in
enforcing mode.
ifdef(`crankshaft_family',`
ISR Nightwatch module accesses libraries compiled with icc
polaris_icc_broken_relocations(polaris_ngwc_fed_t)

#ISR Nightwatch module creates softlink /flash -> /bootflash
gen_require(`
 type root_t;
')
filetrans_pattern(polaris_ngwc_fed_t, root_t, polaris_disk_bootflash_t, lnk_file, "flash")

)

optional_policy(`
polaris_epc_ws_liaison_tmp_read(polaris_ngwc_fed_t)
')

ngwc-fed manage /tmp/epc_ws/fed_to_wif_pipe file fifo_file.
optional_policy(`
polaris_epc_ws_liaison_fifo_manage(polaris_ngwc_fed_t)
')

optional_policy(`
polaris_ngwc_itfpo_manage(polaris_ngwc_fed_t)
')

access SERDES /tmp/serdes_asic_key_dir/*
optional_policy(`
polaris_serdes_asic_key_tmp_manage(polaris_ngwc_fed_t)
')

ngwc-fed creates /tmp/epc_ws dir
optional_policy(`
polaris_epc_ws_liaison_tmp_file(polaris_ngwc_fed_t)

```



')

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisngwcfed.te

No license file was found, but licenses were detected in source scan.

#

# April 2017, Victor Kamensky

#

# Copyright (c) 2017-2019 by Cisco Systems, Inc.

# All rights reserved

#

/usr/binos/sbin/ncsshd -- gen\_context(system\_u:object\_r:polaris\_dmi\_ncsshd\_mgmt\_exec\_t,s0)

/var/run/ncsshd\_mgmt/.pid -- gen\_context(system\_u:object\_r:polaris\_dmi\_ncsshd\_mgmt\_var\_run\_t,s0)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisdmincshdmgmt.fc

No license file was found, but licenses were detected in source scan.

#

# July 2017, Victor Kamensky

#

# Copyright (c) 2017-2019 by Cisco Systems, Inc.

# All rights reserved

#

/usr/binos/conf/mcp\_smartctl\_cmds.sh -- gen\_context(system\_u:object\_r:polaris\_smartctl\_exec\_t,s0)

/tmp/smart.pid -- gen\_context(system\_u:object\_r:polaris\_smartctl\_tmp\_t,s0)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisngiolite.fc

No license file was found, but licenses were detected in source scan.

#

# May 2017, Victor Kamensky

#

# Copyright (c) 2017-2019 by Cisco Systems, Inc.

# All rights reserved

#

/tmp/tmppub/interceptor(/.\*)? gen\_context(system\_u:object\_r:polaris\_pttcd\_tmp\_t,s0)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarispttcd.fc

No license file was found, but licenses were detected in source scan.

```

#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#

<summary>Polaris Cfg Policy Rules.</summary>

#####
Cfg files policy
#####

#####
<summary>
Manage cfg files (under /tmp/sw/cfg)
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolebase/>
#
interface(`polaris_cfg_data_manage`,`
 gen_require(`
 type polaris_cfg_data_t;
 `)

 manage_dirs_pattern($1, polaris_cfg_data_t, polaris_cfg_data_t)
 manage_files_pattern($1, polaris_cfg_data_t, polaris_cfg_data_t)
 manage_lnk_files_pattern($1, polaris_cfg_data_t, polaris_cfg_data_t)
`)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscfg.if

No license file was found, but licenses were detected in source scan.

```

#
July 2017, Victor Kamensky
#
Copyright (c) 2017-2021 by Cisco Systems, Inc.
All rights reserved
#

```

policy\_module(polarisngiolite, 1.0);

gen\_require(`

```

 type polaris_ngiolite_t;
)

polaris_btrace_data_manage(polaris_ngiolite_t)
polaris_crft_data_manage(polaris_ngiolite_t)
polaris_chasfs_manage(polaris_ngiolite_t)
polaris_tdlresolve_read(polaris_ngiolite_t)
polaris_tdlldb_list_dirs(polaris_ngiolite_t)
polaris_cpld_read(polaris_ngiolite_t)
polaris_flashlib_read(polaris_ngiolite_t)

optional_policy(
polaris_cpp_tmp_ifdev_use(polaris_ngiolite_t)
)

In the file of radium_xcvr.c allow access to create and bind
the socket using the API bnxt_impl_init_netlink.
allow polaris_ngiolite_t self:netlink_generic_socket { bind create getattr setopt };

in iot platforms, ngiolite needs access to /proc/sys/net/ipv6/conf/mvsw/disable_ipv6
optional_policy(
kernel_rw_net_sysctls(polaris_ngiolite_t)
kernel_search_network_sysctl(polaris_ngiolite_t)
)

PLEASE LOOK AT code should not use sysv IPC ARIs,
instead POSIX variants must be used. Remove after
code changed in proper way
allow access sysv semaphor created by qfp process
ifdef(^crankshaft_family',`
polaris_qfp_sem_use(polaris_ngiolite_t)
polaris_ggpio_dev_read_write(polaris_ngiolite_t)
polaris_dplr_dev_use(polaris_ngiolite_t)
)

ifdef(^fugazi_platform',`
polaris_qfp_sem_use(polaris_ngiolite_t)
)

write access to /sys/bus/pci/rescan
dev_rw_sysfs(polaris_ngiolite_t)
LOOK AT ME ngiolite does it through "echo 1 > /sys/bus/pci/rescan" seems to much
to grunt shell and bin access just to write "1" string into the file
corecmd_exec_bin(polaris_ngiolite_t)
corecmd_exec_shell(polaris_ngiolite_t)
allow read of /etc/passwd
auth_use_nsswitch(polaris_ngiolite_t)

```

```

polaris_firmware_read(polaris_ngiolite_t)

polaris_udev_tmp_list_dirs(polaris_ngiolite_t)

allow access to read the file cman rommon file.
polaris_proc_rmonbifo_getattr(polaris_ngiolite_t)
polaris_proc_rmonbifo_read(polaris_ngiolite_t)

allow polaris_ngiolite_t self:capability { net_admin sys_rawio };

allow system time capability to check for system timeout
while checking the state using API cwan_modem_check_ready_state
allow polaris_ngiolite_t self:capability sys_time;

allow access to nim_xxd file created by cmcc
polaris_nim_xxd_tmp_open_unlink(polaris_ngiolite_t);

ngiolite needs to work with /dev/sd /dev/sg devices to figure out disk driver
paramters. drivers/userspace/nim_xxd library
storage_raw_read_fixed_disk(polaris_ngiolite_t)
storage_read_scsi_generic(polaris_ngiolite_t)
storage_write_scsi_generic(polaris_ngiolite_t)

polaris_sysfs_platform_dev_use(polaris_ngiolite_t)

LOOK AT ME: ngiolite needs to work with /dev/ds31408, which is generic device_t now
gen_require(
 type device_t;
)
rw_chr_files_pattern(polaris_ngiolite_t, device_t, device_t)

modprobe nim_dm dm_drv_log_level=0x01
#ifdef(`crankshaft_family',`
modutils_domtrans_insmod(polaris_ngiolite_t)
)

polaris_smartctl_domtrans(polaris_ngiolite_t)

utah_fpge_driver.c needs socket to configure interface parameters
allow polaris_ngiolite_t self:udp_socket create_socket_perms;

polaris_utility_domain_template(smartctl)

corecmd_exec_bin(polaris_smartctl_t)
corecmd_exec_shell(polaris_smartctl_t)

allow access to polaris_cpp_tmpfs_t file
Example is ifdev shared memory /dev/shm//cpp_ifdev_shmem

```

```

The ngiolite init function calls the api ifdev_init
to initialize shared memory control info.
fs_getattr_tmpfs(polaris_ngiolite_t)
polaris_cpp_tmpfs_ifdev_rw(polaris_ngiolite_t)

allow read of /etc/passwd
auth_use_nsswitch(polaris_smartctl_t)

logging_send_syslog_msg(polaris_smartctl_t)

fstools_domtrans(polaris_smartctl_t)

runs tar /bin/tar -xvzf /firmware/MicronP400m-MTFDDAK200MAN.pkg -C /firmware
polaris_firmware_manage(polaris_smartctl_t)
files_getattr_all_dirs(polaris_smartctl_t)
files_read_all_symlinks(polaris_smartctl_t)

work with /dev/sgX
storage_read_scsi_generic(polaris_smartctl_t)
storage_write_scsi_generic(polaris_smartctl_t)

allow polaris_smartctl_t self:capability { chown dac_override fowner fsetid };

type polaris_smartctl_tmp_t;
files_tmp_file(polaris_smartctl_tmp_t)
files_tmp_filetrans(polaris_smartctl_t, polaris_smartctl_tmp_t, file, "smart.pid")
manage_files_pattern(polaris_smartctl_t, polaris_smartctl_tmp_t, polaris_smartctl_tmp_t)

script inherits stdout from ngiolite, needs permission to append to it
polaris_use_btrace_fifo(polaris_smartctl_t)

LOOK AT ME: raw memory access in cavium vendor SDK
related to octeon driver (BUG CSCvh55517)
#ifdef(^crankshaft_family',`
polaris_dev_mem_use(polaris_ngiolite_t)
`)

#ifdef(^sparrow_platform',`
polaris_cm_cc_tmpfs_manage(polaris_ngiolite_t)
polaris_tty_NMEA_dev_use(polaris_ngiolite_t)
`)

#ifdef(^blackheart_platform',`
polaris_cm_cc_tmpfs_manage(polaris_ngiolite_t)
`)

#ifdef(^cabo_platform',`

```

```

polaris_cm_cc_tmpfs_manage(polaris_ngiolite_t)
')

ifdef(`aventus_platform',`
polaris_cm_cc_tmpfs_manage(polaris_ngiolite_t)
polaris_tty_NMEA_dev_use(polaris_ngiolite_t)
')

ifdef(`crankshaft_family',`
allow scan pci/devices proc dir
The ngiolite init function makes call to o2_cvmx_remote_open to
open the remote library connection to cavium chip in FFP.
The octeon library call invokes pci_get_device, which needs to
access /proc .
kernel_getattr_proc_files(polaris_ngiolite_t)
kernel_write_proc_files(polaris_ngiolite_t)
kernel_read_system_state(polaris_ngiolite_t)

allow access to /tmp/octeon-remote-lock-pci***
This is required as part of ngiolite access of octeon chip.
As part of the init, call is made to octeon_remote_lock()
which requires access to the /tmp file.
polaris_cm_fp_tmp_filetrans(polaris_ngiolite_t)
polaris_cm_fp_tmp_manage(polaris_ngiolite_t)

#####
CWAN NGIOLITE process policies start#####
#####
#cwan running as a ngiolite process needs to be able to RW/IOCTL to qcqmiX files
polaris_qcqmi_dev_use(polaris_ngiolite_t)

#RDM thread in CWAN running as ngiolite process needs access to ttyUSB0 for DM logging
term_use_usb_ttys(polaris_ngiolite_t)

#RDM/Event thread needs to add a newly generated DM log file/Crash dump file to/from bootflash directory
polaris_bootflash_manage(polaris_ngiolite_t)

#Modem Monitor thread uses sendto over a Datagram socket to send datato Turing Thread
allow polaris_ngiolite_t self:unix_dgram_socket sendto;

#Modem Monitor thread opens a socket to UDEV to process Modem USB addition/disconnection events
allow polaris_ngiolite_t self:netlink_kobject_uevent_socket create_socket_perms;

#Modem Monitor thread needs to be able to open/Read and GetAttributes to differentiate between Telit/SWI vendor
udev_rw_db(polaris_ngiolite_t)

#Turing thread needs to gather stats as well as set the IP address to /proc/net/cwan_modem0/cwan0/src_ip
kernel_search_network_state(polaris_ngiolite_t)

```

```

polaris_kernel_rw_network_state_files(polaris_ngiolite_t)

#####
CWAN NGIOLITE process policies end#####
#####
')

on tsn need access to /sys/devices/platform/moka_fpga
/sys/devices/platform/moka_fpga/external_int_pending dev
optional_policy(`
polaris_mokafpga_rw(polaris_ngiolite_t)
')

on radium need to get model info
optional_policy(`
polaris_dash_dev_use(polaris_ngiolite_t)
')

work with contdev sysfs files
polaris_contdev_dev_read(polaris_ngiolite_t)

sysnet_domtrans_ifconfig(polaris_ngiolite_t)

logging_send_syslog_msg(polaris_ngiolite_t)

ifdef(`neptune_platform',`
polaris_cpp_cavium_sdk_ipc_use(polaris_ngiolite_t)
')

optional_policy(`
polaris_nim_dm_dev_use(polaris_ngiolite_t)
')

ifdef(`radium_platform',`
#allow ngiolite to access nim_phy_device
polaris_nim_phy_dev_use(polaris_ngiolite_t)
')

TODO/FIXME, Need to review this permission, this is related to
the call "echo 1 > /sys/bus/pci/rescan"
dev_manage_sysfs_dirs(polaris_ngiolite_t)
allow polaris_ngiolite_t sysfs_t:file create;

allow ngiolite to access sfp over i2c bus
polaris_i2c_use(polaris_ngiolite_t)

on neptune, cavium library in o2_cavm_mem_map wants access to
/sys/devices/pci0000:00/0000:00:01.0/0000:01:00.0/resource0

```

```

optional_policy(
polaris_cpp_cavium_dma_map(polaris_ngiolite_t)
')

/dev/sfp-ktr & qfp sem access on Katar
#ifdef(^katar_platform',`
polaris_sfp_katar_dev_use(polaris_ngiolite_t)
polaris_qfp_sem_use(polaris_ngiolite_t)
fs_getattr_tmpfs(polaris_ngiolite_t)
polaris_cpp_tmpfs_ifdev_rw(polaris_ngiolite_t)
')

allow /usr/binos/bin/ngiolite to access /tmp/nim_xxd_present
gen_require(
 type polaris_cmrp_nim_xxd_tmp_t;
)
files_tmp_file(polaris_cmrp_nim_xxd_tmp_t)
files_tmp_filetrans(polaris_ngiolite_t, polaris_cmrp_nim_xxd_tmp_t, file, "nim_xxd_present")
manage_files_pattern(polaris_ngiolite_t, polaris_cmrp_nim_xxd_tmp_t, polaris_cmrp_nim_xxd_tmp_t)

allow /usr/binos/bin/ngiolite to access /tmp/hd_sz
gen_require(
 type udev_tmp_t;
)
read_files_pattern(polaris_ngiolite_t, udev_tmp_t, udev_tmp_t)

allow /usr/sbin/lvm to be executed and to be operated
lvm_domtrans(polaris_ngiolite_t)

allow /usr/binos/bin/ngiolite to manage /tmp
type polaris_ngiolite_tmp_t;
files_tmp_file(polaris_ngiolite_tmp_t)
allow /usr/binos/bin/ngiolite to manage /tmp/smartctl.out and
/tmp/xxdisplay.out
files_tmp_filetrans(polaris_ngiolite_t, polaris_ngiolite_tmp_t, file)
manage_files_pattern(polaris_ngiolite_t, polaris_ngiolite_tmp_t, polaris_ngiolite_tmp_t)

allow /usr/sbin/smartctl to operate on fsadm_exec_t
fstools_domtrans(polaris_ngiolite_t)

allow /usr/sbin/smartctl to access nvme device in chr and blk
dev_nvme_chr_files_manage(polaris_ngiolite_t)
dev_nvme_blk_files_manage(polaris_ngiolite_t)

#ifdef(^sumatra_platform',`
dev/cpld
polaris_cpld_dev_use(polaris_ngiolite_t)

```



```

manage "sysctrl_i2c.lck"
gen_require(
 type polaris_cm_rp_tmp_t;
)
files_tmp_filetrans(polaris_ngiolite_t, polaris_cm_rp_tmp_t, file, "sysctrl_i2c.lck")
polaris_cm_rp_tmp_manage(polaris_ngiolite_t)

access /dev/huron_fpga
polaris_huron_dev_use(polaris_ngiolite_t)

)

#ifdef(^crankshaft_family',`
/var/run/cwan socket and pid
gen_require(
 type polaris_cwan_svr_var_run_t;
)
files_pid_filetrans(polaris_ngiolite_t, polaris_cwan_svr_var_run_t, sock_file, "cwan_ezmanage_cwan_server")
create_sock_files_pattern(polaris_ngiolite_t, polaris_cwan_svr_var_run_t, polaris_cwan_svr_var_run_t)
delete_sock_files_pattern(polaris_ngiolite_t, polaris_cwan_svr_var_run_t, polaris_cwan_svr_var_run_t)
)

allow /usr/binos/bin/ngiolite to access the the following interface
fs_unmount_xattr_fs(polaris_ngiolite_t)
dev_manage_generic_symlinks(polaris_ngiolite_t)
polaris_udev_tmp_manage(polaris_ngiolite_t)

ngiolite/ezManage access rules - currently only applies to TSN
optional_policy(
 # Allow ngiolite to access ezManage dgram socket
 gen_require(
 type polaris_ezmanage_t;
)
 allow polaris_ngiolite_t polaris_ezmanage_t:unix_dgram_socket sendto;

 # Allow ngiolite to access ezManage socket file in /var/run
 polaris_manage_ezmanage_var_run_files(polaris_ngiolite_t)
)

allow ngiolite to access /dev/nim_phy
#ifdef(^crankshaft_family',`
polaris_nim_phy_dev_use(polaris_ngiolite_t)
)

allow ioctl, read, wr permission for ds31408 device
optional_policy(
 polaris_ds31408_dev_use(polaris_ngiolite_t)
)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisngiolite.te

No license file was found, but licenses were detected in source scan.

#

# April 2017, Victor Kamensky

#

# Copyright (c) 2017-2019 by Cisco Systems, Inc.

# All rights reserved

#

/tmp/\.ncsshd\_bp\.sock -s gen\_context(system\_u:object\_r:polaris\_dmi\_ncsshd\_log\_t,s0)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisdmincshdfwd.fc

No license file was found, but licenses were detected in source scan.

#

# February 2020, Victor Kamensky

#

# Copyright (c) 2020 by Cisco Systems, Inc.

# All rights reserved

#

## <summary>Polaris vdaemon Policy Rules.</summary>

#####

## <summary>

## Write vdaemon /var/run socket file

## </summary>

## <param name="domain">

## <summary>

## Domain allowed access.

## </summary>

## </param>

#

interface(`polaris\_vdaemon\_var\_sock\_write`,`

gen\_require(`

type polaris\_vdaemon\_t;

type polaris\_vdaemon\_var\_run\_t;

type var\_run\_t;

`)

write\_sock\_files\_pattern(\$1, var\_run\_t, polaris\_vdaemon\_var\_run\_t)

allow \$1 polaris\_vdaemon\_t:unix\_stream\_socket { connectto };

`)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisvdaemon.if

No license file was found, but licenses were detected in source scan.

#

# March 2017, Victor Kamensky

#

# Copyright (c) 2016-2020 by Cisco Systems, Inc.

# All rights reserved

#

policy\_module(polarisboothelper, 1.0);

polaris\_process\_domain\_template(boothelper\_evt)

corecmd\_exec\_bin(polaris\_boothelper\_evt\_t)

# allow read of /etc/group and /etc/passwd

auth\_use\_nsswitch(polaris\_boothelper\_evt\_t)

# allow to read /proc/meminfo

kernel\_read\_system\_state(polaris\_boothelper\_evt\_t)

polaris\_cpld\_read(polaris\_boothelper\_evt\_t)

#####

# work with /tmp/udev/.

type polaris\_udev\_tmp\_files\_t;

files\_tmp\_file(polaris\_udev\_tmp\_files\_t)

polaris\_systemd\_tmpfiles\_tmp\_filetrans(polaris\_udev\_tmp\_files\_t, dir, "udev")

polaris\_bootflash\_manage(polaris\_boothelper\_evt\_t)

type polaris\_boothelper\_tmp\_t;

files\_tmp\_file(polaris\_boothelper\_tmp\_t)

files\_tmp\_filetrans(polaris\_boothelper\_evt\_t, polaris\_boothelper\_tmp\_t, dir, "rommon\_upgrade\_ngwc")

manage\_files\_pattern(polaris\_boothelper\_evt\_t, polaris\_boothelper\_tmp\_t, polaris\_boothelper\_tmp\_t)

manage\_dirs\_pattern(polaris\_boothelper\_evt\_t, polaris\_boothelper\_tmp\_t, polaris\_boothelper\_tmp\_t)

# watch over /tmp/rommon\_upgrade\_ngwc

allow polaris\_boothelper\_evt\_t polaris\_boothelper\_tmp\_t:dir watch;

# nyquist creates /tmp/udev\_ssd.log

gen\_require(`

    type udev\_t;

`)

files\_tmp\_filetrans(udev\_t, polaris\_udev\_tmp\_files\_t, file, "udev\_ssd.log")

fs\_tmpfs\_filetrans(udev\_t, polaris\_udev\_tmp\_files\_t, file, "udev\_ssd.log")

```

create /dev/harddisk1 softlink during bootup
ifdef(`crankshaft_family',`
gen_require(
 type device_t;
 type initrc_t;
 type fixed_disk_device_t;
)
filetrans_pattern(initrc_t, device_t, fixed_disk_device_t, lnk_file, "harddisk1")
')
restorecon under setfiles_t appends to /tmp/udev_ssd.log
gen_require(
 type setfiles_t;
)
polaris_udev_tmp_manage(setfiles_t)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisboothelper.te

No license file was found, but licenses were detected in source scan.

```

#
August 2017, Shawn Lu
#
Copyright (c) 2017-2020 by Cisco Systems, Inc.
All rights reserved
#

```

```

policy_module(polarisnmspd, 1.0);

```

```

gen_require(
 type polaris_nmspd_t;
)

```

```

polaris_btrace_data_manage(polaris_nmspd_t)
polaris_crft_data_manage(polaris_nmspd_t)
polaris_chasfs_manage(polaris_nmspd_t)
polaris_tdlresolve_read(polaris_nmspd_t)
polaris_tdlldb_list_dirs(polaris_nmspd_t)
polaris_cpld_read(polaris_nmspd_t)
polaris_lua_read(polaris_nmspd_t)
polaris_flashlib_read(polaris_nmspd_t)

```

```

polaris_ripc_sman_ui_serv_connect(polaris_nmspd_t)

```

```

polaris_db_tdlldb_dir_use(polaris_nmspd_t)

```

```

#####

```

```

mqipc manual, one that missing in platform tdl file\n

```

```
#####
type polaris_nmospd_testclient1_mqipc_t;
polaris_mqipc_type(polaris_nmospd_testclient1_mqipc_t)

type polaris_nmospd_testclient2_mqipc_t;
polaris_mqipc_type(polaris_nmospd_testclient2_mqipc_t)

type polaris_testclient1_nmospd_mqipc_t;
polaris_mqipc_type(polaris_testclient1_nmospd_mqipc_t)

type polaris_testclient2_nmospd_mqipc_t;
polaris_mqipc_type(polaris_testclient2_nmospd_mqipc_t);

polaris_mqipc_create_name(polaris_nmospd_t, polaris_nmospd_testclient1_mqipc_t, nmospd-testclient1)
polaris_mqipc_use(polaris_nmospd_t, polaris_testclient1_nmospd_mqipc_t)

polaris_mqipc_create_name(polaris_nmospd_t, polaris_nmospd_testclient2_mqipc_t, nmospd-testclient2)
polaris_mqipc_use(polaris_nmospd_t, polaris_testclient2_nmospd_mqipc_t)

#stuff related to vrf support of the socket
polaris_lfts_dev_use(polaris_nmospd_t)
polaris_socketat_nsfs_read(polaris_nmospd_t)
enable listen on tcp port 16113
corenet_tcp_bind_polaris_nmospd_port(polaris_nmospd_t)

allow polaris_nmospd_t self:capability dac_override;

Allow IPC messages to Btrace Process from NMSPD Process
logging_send_syslog_msg(polaris_nmospd_t)
Allow NMSPD to read DNS file for nameresolution
sysnet_read_config(polaris_nmospd_t)

NMSPD uses cURL to open HTTP connections and SSL to open TLS Connections
to DNASpaces and CMX respectively
gen_require(`
 type node_t;
`)
allow polaris_nmospd_t node_t:udp_socket node_bind;
allow polaris_nmospd_t self:udp_socket { bind connect getattr };
corenet_tcp_connect_http_port(polaris_nmospd_t)
polaris_odm_clnt2svr_mqipc_create(polaris_nmospd_t)

#DB persistence
polaris_tdlbpersist_setup(polaris_nmospd_t)
polaris_tmp_tdlb_persist_setup(polaris_nmospd_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisnmospd.te
```

No license file was found, but licenses were detected in source scan.

```
#
February 2020, Victor Kamensky
#
Copyright (c) 2020 by Cisco Systems, Inc.
All rights reserved
#

policy_module(polarisftm, 1.0);

gen_require(
 type polaris_ftm_t;
)
polaris_chasfs_manage(polaris_ftm_t)
polaris_cpld_read(polaris_ftm_t)
polaris_flashlib_read(polaris_ftm_t)
polaris_tdlresolve_read(polaris_ftm_t)

polaris_ripc_sman_ui_serv_connect(polaris_ftm_t)

polaris_db_tdlldb_dir_use(polaris_ftm_t)

logging_send_syslog_msg(polaris_ftm_t)

corecmd_exec_bin(polaris_ftm_t)
corecmd_exec_shell(polaris_ftm_t)
auth_use_nsswitch(polaris_ftm_t)

vconfd_load_shared_schemas
polaris_confid_shared_schema_read(polaris_ftm_t)

work with /tmp/xml
polaris_cedge_xml_tmp_manage(polaris_ftm_t)

work with /tmp/tmp
polaris_cedge_tmp_manage(polaris_ftm_t)

polaris_cedge_reset_ns(polaris_ftm_t)

/var/run/.ftmd-xxx sockets and pid
type polaris_ftm_var_run_t;
files_pid_file(polaris_ftm_var_run_t)
manage_files_pattern(polaris_ftm_t, polaris_ftm_var_run_t, polaris_ftm_var_run_t)
manage_sock_files_pattern(polaris_ftm_t, polaris_ftm_var_run_t, polaris_ftm_var_run_t)
files_pid_filetrans(polaris_ftm_t, polaris_ftm_var_run_t, { file sock_file })

polaris_cfgmgr_var_sock_write(polaris_ftm_t)
```

```

polaris_dbgd_var_sock_write(polaris_ftm_t)
polaris_fpm_var_sock_write(polaris_ftm_t)
polaris_ttm_var_sock_write(polaris_ftm_t)
polaris_vdaemon_var_sock_write(polaris_ftm_t)

PLEASE LOOK AT ME: write access to /boot/hugepage.conf
which on ultra translates into /varied/hugepage.conf access
But no code in polaris uses it
polaris_disk_varied_manage(polaris_ftm_t)
files_manage_boot_files(polaris_ftm_t)

fp_scaling_init calls posix_sysconf
dev_read_sysfs(polaris_ftm_t)

vip_execute_nowait uses setpgid
allow polaris_ftm_t self:process setpgid;

polaris_cedge_tmpfs_manage(polaris_ftm_t)

raw socket access from trace_tunnel_socket_icmp_init ftm_binops_trace.c
allow polaris_ftm_t self:rawip_socket create_socket_perms;
allow polaris_ftm_t self:capability net_raw;

bind to ftm fnf port
corenet_udp_bind_polaris_ftm_fnf_port(polaris_ftm_t)
corenet_udp_bind_generic_node(polaris_ftm_t)

ftm may create vrf-based netns on demand, vrf.65528
polaris_vrf_netns_manage(polaris_ftm_t)

creates /tmp/HTX-IOX/sw-htx-service
optional_policy(
 polaris_htx_iox_tmp_manage(polaris_ftm_t)
)

fp_scaling_read_core_count accesses cgroups file at
/sys/fs/cgroup/cpuset/iosxe_control_processes/cpuset.cpus
fs_read_cgroup_files(polaris_ftm_t)

ftm_change_default_gw_src_ip calls ip utility
sysnet_domtrans_ifconfig(polaris_ftm_t)

ftm process periodically call nice utility to gzip some xml file
allow polaris_ftm_t self:process setsched;

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisftm.te

```

No license file was found, but licenses were detected in source scan.

```

March 2017, Victor Kamensky

Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved

<summary>Polaris fman_fp Policy Rules.</summary>
```

Found in path(s):  
\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisfmanfp.if  
No license file was found, but licenses were detected in source scan.

```

March 2017, Victor Kamensky

Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved
#
```

```
/tmp/replication(/.*)? gen_context(system_u:object_r:polaris_repm_tmp_t,s0)
```

Found in path(s):  
\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisrepm.fc  
No license file was found, but licenses were detected in source scan.

```

March 2017, Victor Kamensky

Copyright (c) 2016-2020 by Cisco Systems, Inc.
All rights reserved
#
```

```
<summary>Polaris Btrace Policy Rules.</summary>
```

```

Polaris cpp (ultra)
#####
```

```

<summary>
Work (read, write, ioctl) with /dev/cpp_dev_info and /dev/cpp_vxe_rsrc
devices.
</summary>
<param name="domain">
<summary>
```



```

Domain allowed access.
</summary>
</param>
<rolebase/>
#
interface(`polaris_cpp_dev_use',`
gen_require(`
 type device_t;
 type polaris_cpp_device_t;
`)
 write_chr_files_pattern($1, device_t, polaris_cpp_device_t)
 read_chr_files_pattern($1, device_t, polaris_cpp_device_t)
 allow $1 polaris_cpp_device_t:chr_file map;
polaris_i95_dev_use($1)
')

#####
<summary>
Make the specified domain as polaris cpp process.
</summary>
<param name="type">
<summary>
Type to be used as a cpp process.
</summary>
</param>
#
interface(`polaris_cpp_process',`
gen_require(`
 attribute polaris_cpp_domain;
`)
 typeattribute $1 polaris_cpp_domain;
')

#####
<summary>
Make the specified domain able to use cpp /tmp files.
</summary>
<param name="type">
<summary>
Domain allowed access.
</summary>
</param>
<param name="object">
<summary>
File name in /tmp that domains creates and other cpp process
access.
</summary>

```

```

</param>
#
interface(`polaris_cpp_tmp_files_use`,`
 gen_require(`
 type polaris_cpp_tmp_t;
 `)

 files_tmp_filetrans($1, polaris_cpp_tmp_t, file, $2)
 manage_files_pattern($1, tmp_t, polaris_cpp_tmp_t)
 allow $1 polaris_cpp_tmp_t:file map;
)

#####
<summary>
Specified domain can execute polaris_cpp_tmpifs_t code
which resides in /dev/shm/cpp_ucode_dram
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_cpp_tmpifs_exec`,`
 gen_require(`
 type polaris_cpp_tmpifs_t;
 `)

 allow $1 polaris_cpp_tmpifs_t:file execute;
)

#####
<summary>
Read write from polaris_cpp_tmpifs_t file
Example is ifdev shared memory /dev/shm/cpp_ifdev_shmem
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_cpp_tmpifs_ifdev_rw`,`
 gen_require(`
 type tmpifs_t;
 type polaris_cpp_tmpifs_t;
 `)

```

```

 rw_files_pattern($1, tmpfs_t, polaris_cpp_tmpfs_t)
 allow $1 polaris_cpp_tmpfs_t:file map;
)

#####
<summary>
Make the specified domain able to work with cpp /tmp/cpp_ifdev_rep and
/tmp/cpp_ifdev_req pipe files.
</summary>
<param name="type">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_cpp_tmp_ifdev_use`,`
 gen_require(`
 type polaris_cpp_tmp_t;
 `)

 manage_fifo_files_pattern($1, tmp_t, polaris_cpp_tmp_t)
 allow $1 polaris_cpp_tmp_t:file map;
)

#####
<summary>
Make the specified domain able to getattr of /tmp/cpp_ifdev_rep and
/tmp/cpp_ifdev_req pipe files.
</summary>
<param name="type">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_cpp_tmp_ifdev_getattr`,`
 gen_require(`
 type polaris_cpp_tmp_t;
 `)

 getattr_fifo_files_pattern($1, tmp_t, polaris_cpp_tmp_t)
)

#####
<summary>
Allow process to use Cavium SDK sysv IPC primitives
created by octeon_pci_dmap.c. Those could be created either

```

```

by cpp_driver (usually) or by cpp_cdm on utah and overlord,
and by cm_fp on neptune.
##
</summary>
<param name="type">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_cpp_cavium_sdk_ipc_use',`
 ifdef(`crankshaft_family',`
 polaris_cpp_driver_sem_use($1)
 polaris_cpp_driver_shm_use($1)
 optional_policy(`
 polaris_cpp_cdm_sem_use($1)
 polaris_cpp_cdm_shm_use($1)
 `)
 optional_policy(`
 polaris_cm_fp_sem_use($1)
 polaris_cm_fp_shm_use($1)
 `)
 # allow scan pci/devices proc dir
 kernel_getattr_proc_files($1)
 kernel_write_proc_files($1)
 kernel_read_system_state($1)
 `)
)

#####
<summary>
Work (read, write, ioctl) with /dev/i95 devices
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_i95_dev_use',`
 gen_require(`
 type device_t;
 type polaris_i95_device_t;
 `)
 write_chr_files_pattern($1, device_t, polaris_i95_device_t)
 read_chr_files_pattern($1, device_t, polaris_i95_device_t)
 allow $1 polaris_i95_device_t:chr_file map;
)

```

```
#####
<summary>
Work (read, write, map) with sysfs files required
by cavium library in o2_cavm_mem_map.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_cpp_cavium_dma_map`,`
 gen_require(`
 type sysfs_t;
 `)

 mmap_files_pattern($1, sysfs_t, sysfs_t)
 dev_rw_sysfs($1)
`)
```

```
#####
<summary>
Manage /dev/shm files
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolebase/>
#
interface(`polaris_cpp_tmpfs_manage`,`
 gen_require(`
 type polaris_cpp_tmpfs_t;
 type tmpfs_t;
 `)

 fs_tmpfs_filetrans($1, polaris_cpp_tmpfs_t, file)
 manage_files_pattern($1, tmpfs_t, polaris_cpp_tmpfs_t)
 allow $1 polaris_cpp_tmpfs_t:file map;
`)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscpp.if

No license file was found, but licenses were detected in source scan.

#

# March 2017, Victor Kamensky

#

# Copyright (c) 2017-2019 by Cisco Systems, Inc.

# All rights reserved

#

## <summary>Polaris bt\_logger Policy Rules.</summary>

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisbtlogger.if

No license file was found, but licenses were detected in source scan.

#

# August 2017, Shawn Lu

#

# Copyright (c) 2017-2021 by Cisco Systems, Inc.

# All rights reserved

#

# /bootflash labels

/bootflash(/.\*)? gen\_context(system\_u:object\_r:polaris\_disk\_bootflash\_t,s0)

/bootflash/.ssh(/.\*)? gen\_context(system\_u:object\_r:ssh\_home\_t,s0)

/bootflash/.ssh/ssh\_host.\*\_key\pub gen\_context(system\_u:object\_r:ssh\_key\_t,s0)

/bootflash/.ssh/ssh\_host.\*\_key gen\_context(system\_u:object\_r:ssh\_key\_t,s0)

/bootflash/tracelogs(/.\*)? gen\_context(system\_u:object\_r:polaris\_btrace\_data\_t,s0)

/bootflash/tan(/.\*)? gen\_context(system\_u:object\_r:polaris\_btrace\_data\_t,s0)

/bootflash/core(/.\*)? gen\_context(system\_u:object\_r:polaris\_core\_file\_t,s0)

/bootflash/debug.conf gen\_context(system\_u:object\_r:polaris\_debug\_conf\_t,s0)

/bootflash/packages.conf gen\_context(system\_u:object\_r:polaris\_packages\_conf\_t,s0)

# /csl\_p\_0

/csl\_p\_0(/.\*)? gen\_context(system\_u:object\_r:polaris\_disk\_csl\_p\_t,s0)

# /csl\_p\_1.context

/csl\_p\_1(/.\*)? gen\_context(system\_u:object\_r:polaris\_disk\_csl\_p\_t,s0)

# /csl\_s\_0.context

/csl\_s\_0(/.\*)? gen\_context(system\_u:object\_r:polaris\_disk\_csl\_s\_t,s0)

# /csl\_s\_1.context

/csl\_s\_1(/.\*)? gen\_context(system\_u:object\_r:polaris\_disk\_csl\_s\_t,s0)

# /obfl is separate on qwlc

/obfl(/.\*)? gen\_context(system\_u:object\_r:polaris\_obfl\_data\_t,s0)

# /varied

/varied(/.\*)? gen\_context(system\_u:object\_r:polaris\_disk\_varied\_t,s0)

/varied/install\_info gen\_context(system\_u:object\_r:polaris\_vwlcinstall\_info\_t,s0)

```

/varied/obfl_.* gen_context(system_u:object_r:polaris_obfl_data_t,s0)
/varied/grub_cisco_version gen_context(system_u:object_r:polaris_grubver_t,s0)
/varied/grub(/.*)? gen_context(system_u:object_r:boot_t,s0)
/varied/grub2(/.*)? gen_context(system_u:object_r:polaris_grub_bios_t,s0)
/varied/grub/menu.* gen_context(system_u:object_r:bootloader_etc_t, s0)
/sbin/grub* gen_context(system_u:object_r:bootloader_exec_t,s0)

/grubenv
/bootefi(/.*)? gen_context(system_u:object_r:polaris_grub_efi_t, s0)

hanet driver used by vwlc and ultra, is there better place for it?
/dev/hanet -c gen_context(system_u:object_r:polaris_hanet_device_t,s0)

from /lib/tmpfiles.d/binos-vxe.conf
/lic0 -l gen_context(system_u:object_r:polaris_disk_csl_p_t,s0)
/lic1 -l gen_context(system_u:object_r:polaris_disk_csl_s_t,s0)

/harddisk labels (qwlc)
/vol/harddisk(/.*)? gen_context(system_u:object_r:polaris_disk_harddisk_t,s0)
/vol/harddisk/tracelogs(/.*)? gen_context(system_u:object_r:polaris_btrace_data_t,s0)
/vol/harddisk/tan(/.*)? gen_context(system_u:object_r:polaris_btrace_data_t,s0)
/vol/harddisk/core(/.*)? gen_context(system_u:object_r:polaris_core_file_t,s0)
/vol/harddisk/debug.conf gen_context(system_u:object_r:polaris_debug_conf_t,s0)

/init is symbolic link to /lib/systemd/systemd
/init -l gen_context(system_u:object_r:init_exec_t,s0)
/disk0 is symbolic link to /vol/disk0
/disk0 -l gen_context(system_u:object_r:polaris_disk_bootflash_t,s0)

/dev/epa device on qwlc
/dev/epa[0-9]* -c gen_context(system_u:object_r:polaris_epa_device_t,s0)
/dev/epactrl[0-9]* -c gen_context(system_u:object_r:polaris_epa_device_t,s0)

/dev/luna_fpga on qwlc
/dev/luna_mbfpga -c gen_context(system_u:object_r:polaris_luna_mbfpga_device_t,s0)

/dev/astro on qwlc
/dev/astro -c gen_context(system_u:object_r:polaris_astro_device_t,s0)

/dev/cpp_il on qwlc
/dev/cpp_il -c gen_context(system_u:object_r:polaris_cpp_il_device_t,s0)

/flash is symbolic link to /bootflash on qwlc
/flash gen_context(system_u:object_r:polaris_disk_bootflash_t,s0)

/dev/oob_evfc on qwlc
/dev/oob_evfc -c gen_context(system_u:object_r:polaris_oob_evfc_device_t,s0)

```

```

/dev/sfp-ktr on katar
/dev/sfp-ktr -c gen_context(system_u:object_r:polaris_sfp_katar_device_t,s0)

To store tcpdump output in file haIntCaptureLo.pcap
/bootflash/haIntCaptureLo.pcap gen_context(system_u:object_r:polaris_netutils_data_t,s0)
/objstore(/.*)? gen_context(system_u:object_r:polaris_disk_objstore_t,s0)

/config labels
/config(/.*)? gen_context(system_u:object_r:polaris_disk_config_t,s0)
/config/.ssh(/.*)? gen_context(system_u:object_r:ssh_home_t,s0)
/config/.ssh/ssh_host.*_key\.pub gen_context(system_u:object_r:sshd_key_t,s0)
/config/.ssh/ssh_host.*_key gen_context(system_u:object_r:sshd_key_t,s0)

```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariswlc.fc
```

No license file was found, but licenses were detected in source scan.

dnl

dnl Copyright (c) 2018-2019 by Cisco Systems, Inc.

dnl All rights reserved

dnl

dnl WLC Platform Max Bay Limits

```
max_bay_map_set(`rp', `per_bay', 0)
```

```
max_bay_map_set(`cc', `per_bay', 0)
```

```
max_bay_map_set(`fp', `per_bay', 0)
```

dnl in elastic scope each process has its own value

```
max_elastic_map_set(`rp', `elastic', BPROC_ODM, 1)
```

```
max_elastic_map_set(`cc', `elastic', BPROC_ODM, 1)
```

```
max_elastic_map_set(`fp', `elasitc', BPROC_ODM, 1)
```

```
max_elastic_map_set(`rp', `elastic', BPROC_WNCD, 7)
```

```
max_elastic_map_set(`cc', `elastic', BPROC_WNCD, 7)
```

```
max_elastic_map_set(`fp', `elastic', BPROC_WNCD, 7)
```

```
max_elastic_ripc_map_set(`rp', `elastic', BPROC_ODM, 1)
```

```
max_elastic_ripc_map_set(`cc', `elastic', BPROC_ODM, 1)
```

```
max_elastic_ripc_map_set(`fp', `elasitc', BPROC_ODM, 1)
```

```
max_elastic_ripc_map_set(`rp', `elastic', BPROC_WNCD, 7)
```

```
max_elastic_ripc_map_set(`cc', `elastic', BPROC_WNCD, 7)
```

```
max_elastic_ripc_map_set(`fp', `elastic', BPROC_WNCD, 7)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/vwlcmaps.m4
```

No license file was found, but licenses were detected in source scan.

#



```
June 2017, Victor Kamensky
#
Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved
#
```

```
policy_module(polariswebui, 1.0);
```

```
type polaris_webui_file_t;
files_type(polaris_webui_file_t)
polaris_pfile_type(polaris_webui_file_t)
```

```
polaris_process_domain_template(webui_lighttpd)
```

```
polaris_process_domain_template(webui)
```

```
gen_require(^
 type initrc_t;
)
manage_dirs_pattern(initrc_t, polaris_webui_file_t, polaris_webui_file_t)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariswebui.te

No license file was found, but licenses were detected in source scan.

```
#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2021 by Cisco Systems, Inc.
All rights reserved
#
```

```
policy_module(polariscmrp, 1.0);
```

```
gen_require(^
 type polaris_cm_rp_t;
)
```

```
polaris_btrace_data_manage(polaris_cm_rp_t)
polaris_crft_data_manage(polaris_cm_rp_t)
polaris_chasfs_manage(polaris_cm_rp_t)
polaris_tdlresolve_read(polaris_cm_rp_t)
polaris_tdlldb_list_dirs(polaris_cm_rp_t)
polaris_cpld_read(polaris_cm_rp_t)
polaris_lua_read(polaris_cm_rp_t)
polaris_flashlib_read(polaris_cm_rp_t)
polaris_flashlib_write(polaris_cm_rp_t)
#
```

```

cm_rp opens log file to collect required RP, CC, FP and rommon details
and write into /vol/harddisk/.inv/inv_log_file
This file is accessed by crashinfo collecting script and others
type polaris_cm_rp_inv_log_file_t;
polaris_disk_type(polaris_cm_rp_inv_log_file_t)
polaris_cm_rp_inv_log_setup(polaris_cm_rp_t)

polaris_ripc_sman_ui_serv_connect(polaris_cm_rp_t)

polaris_cpld_dev_use(polaris_cm_rp_t)
polaris_lfts_dev_use(polaris_cm_rp_t)
polaris_proc_rmonbifo_read(polaris_cm_rp_t)
polaris_obfl_data_read(polaris_cm_rp_t)

polaris_db_tlddb_dir_use(polaris_cm_rp_t)
cman_rp needs read access to cpu identity
/dev/cpu/0/msr
dev_read_cpuid(polaris_cm_rp_t)
allow polaris_cm_rp_t self:capability { sys_rawio dac_override chown sys_resource };

allow polaris_cm_rp_t self:process setsched;

on ultra read eeprom through i2c
type=AVC msg=audit(1479569571.044:3): avc: denied { getattr } for pid=5283 comm="cmand"
path="/sys/devices/i2c-0/i2c-1/1-0056/eeprom" dev="sysfs" ino=25556
scontext=system_u:system_r:polaris_cm_rp_t:s0 tcontext=system_u:object_r:sysfs_t:s0 tclass=file
type=AVC msg=audit(1479569571.045:4): avc: denied { read write } for pid=5283 comm="cmand"
name="eeprom" dev="sysfs" ino=25556 scontext=system_u:system_r:polaris_cm_rp_t:s0
tcontext=system_u:object_r:sysfs_t:s0 tclass=file
dev_rw_sysfs(polaris_cm_rp_t)

polaris_ggpio_dev_read_write(polaris_cm_rp_t)

accessing obfl files like /obfl/obfl_uptime_v2.log
polaris_bootflash_read(polaris_cm_rp_t)
polaris_obfl_data_manage(polaris_cm_rp_t)

corecmd_exec_shell(polaris_cm_rp_t)

allow read of /etc/group and /etc/passwd
auth_use_nsswitch(polaris_cm_rp_t)

cman_data_chasfs_mgmt_eth_override (cman/rp/src/cman_data.c:1096) tries to do
ioctl(sk, SIOCGIFHWADDR, &ifr) for "eth2", which is not present on ultra, but
such ioctl in kernel triggers dev_load attempt in kernel. Since interface
and module does exist anyway, it is OK to deny it
kernel_dontaudit_request_load_module(polaris_cm_rp_t)

```

```

cmand creates udp socket to get interface hw address cmlib_if_config_addr
allow polaris_cm_rp_t self:udp_socket create_socket_perms;

dyncfg_setup.sh is started by cmand
polaris_dyncfg_domtrans(polaris_cm_rp_t)
polaris_dyncfg_tmp_read(polaris_cm_rp_t)
on crankshaft cm_rp does init directly
polaris_dyncfg_setup(polaris_cm_rp_t)

denied { search read open } subject: polaris_cm_rp_t; object: polaris_disk_varied_t
name="/" dev="sda5"; path="/varied"
polaris_disk_varied_manage(polaris_cm_rp_t)

#allow polaris_cm_rp_t polaris_udev_tmp_files_t:dir { read search };
polaris_udev_tmp_list_dirs(polaris_cm_rp_t)

LOOK AT ME: /tmp/rp/chasfs/inventory has symbolic links back to
/bootflash/core/modules and /bootflash/tracelogs/modules cman_inv_restart_init
calls chasfs_properties_internal over this node and as result it tries to
access those directories
polaris_core_file_search(polaris_cm_rp_t)
polaris_disk_bootflash_search(polaris_cm_rp_t)
polaris_btrace_persistent_data_search(polaris_cm_rp_t)

polaris_dyncfg_tmp_manage(polaris_cm_rp_t)

ifdef(`mcp_family',`
polaris_scooby_dev_use(polaris_cm_rp_t)
read/write /dev/ds3100 chr device
dev_rw_generic_chr_files(polaris_cm_rp_t)
polaris_spa_dev_use(polaris_cm_rp_t)
')

temporary files created for repm in /tmp/replication
type polaris_cm_rp_tmp_t;
files_tmp_file(polaris_cm_rp_tmp_t)
gen_require(
 type tmp_t;
)
files_tmp_filetrans(polaris_cm_rp_t, polaris_cm_rp_tmp_t, file, "sysctrl_i2c.lck")
files_tmp_filetrans(polaris_cm_rp_t, polaris_cm_rp_tmp_t, file, "pfu_overtime.lock")
files_tmp_filetrans(polaris_cm_rp_t, polaris_cm_rp_tmp_t, file, "golden_boot")
files_tmp_filetrans(polaris_cm_rp_t, polaris_cm_rp_tmp_t, file, "sr_message_debug.txt")
files_tmp_filetrans(polaris_cm_rp_t, polaris_cm_rp_tmp_t, file, "ngwc_sudi_auth_done")
files_tmp_filetrans(polaris_cm_rp_t, polaris_cm_rp_tmp_t, file, "codesign.txt")
polaris_cm_rp_tmp_manage(polaris_cm_rp_t)

```

```

logging_send_syslog_msg(polaris_cm_rp_t)

work with /dev/i2c devices
polaris_i2c_use(polaris_cm_rp_t)
dev_getattr_sysfs_fs(polaris_cm_rp_t)

/var files
gen_require(
 type var_log_t;
)
type polaris_cm_rp_var_log_t;
logging_log_file(polaris_cm_rp_var_log_t)
logging_log_filetrans(polaris_cm_rp_t, polaris_cm_rp_var_log_t, file, "obfl_uptime_v2.log")
manage_files_pattern(polaris_cm_rp_t, var_log_t, polaris_cm_rp_var_log_t)

needed for "show platform hardware slot R0 eobc interface primary status"
kernel_read_network_state(polaris_cm_rp_t)

#####
show platform hardware slot R0 pcie status
mcp_pcie_status_cmd.sh
/bin/sh /usr/binos/conf/bexec.sh -c /usr/binos/conf/mcp_pcie_status_cmd.sh
#####

polaris_utility_domain_template(pcie_status_cmd)

polaris_bexecute_domtrans(polaris_cm_rp_t)
polaris_bexecute_domain(polaris_pcie_status_cmd_t, polaris_pcie_status_cmd_exec_t)

allow read of /etc/passwd
auth_use_nsswitch(polaris_pcie_status_cmd_t)

"lspci" needs access to files like /sys/devices/pci0000:00/0000:00:00.0/resource
dev_read_sysfs(polaris_pcie_status_cmd_t)

polaris_send_signal_to_bexecute(polaris_cm_rp_t)

need write/getattr access for pipes like "pipe:[118396]"
polaris_cmrp_use_fifo(polaris_pcie_status_cmd_t)

corecmd_exec_bin(polaris_pcie_status_cmd_t)

on utah need to get model info
optional_policy(
 polaris_dash_dev_use(polaris_cm_rp_t)
 polaris_nios_dev_use(polaris_cm_rp_t)
)

```

```
#access to /dev/dash_fpga device on fugazi platform
ifdef(^fugazi_platform',`
 polaris_dash_dev_mcp_use(polaris_cm_rp_t)
`)
```

```
ifdef(^crankshaft_family',`
polaris_quack_dev_use(polaris_cm_rp_t)
`)
```

```
ifdef(^sparrow_platform',`
polaris_cm_cc_tmpfs_manage(polaris_cm_rp_t)
`)
```

```
ifdef(^blackheart_platform',`
polaris_cm_cc_tmpfs_manage(polaris_cm_rp_t)
`)
```

```
ifdef(^cabo_platform',`
polaris_cm_cc_tmpfs_manage(polaris_cm_rp_t)
`)
```

```
ifdef(^aventus_platform',`
polaris_cm_cc_tmpfs_manage(polaris_cm_rp_t)
polaris_dio_dev_use(polaris_cm_rp_t)
`)
```

```
ifdef(^qwlc_platform',`
polaris_quack_dev_use(polaris_cm_rp_t)
`)
```

```
ifdef(^katar_platform',`
polaris_quack_dev_use(polaris_cm_rp_t)
`)
```

```
ifdef(^wlc_family',`
netutils_domtrans_ping(polaris_cm_rp_t)
`)
```

```
ifdef(^ngwc_family',`
In cman_rp module fips/entropy component
calls cman_ngwc_tam_platform_get_act2_entropy() to
retrieve entropy from ACT2 chip.
polaris_act2_dev_use(polaris_cm_rp_t)

cman-rp init needs access to quack chip
polaris_quack_dev_use(polaris_cm_rp_t)
```

```

read /proc/cmdline
kernel_read_system_state(polaris_cm_rp_t)

#on macallan and nyquist cman_rp needs to access /flash<#>/lic0/sudi_cert_data_v3
polaris_disk_license_read(polaris_cm_rp_t)

#on macallan and starfleet cli "show firmware version lan_spi" triggers ethtool usage
sysnet_domtrans_ifconfig(polaris_cm_rp_t)
')

cman-rp needs to read /tmp/fed_post_result and /tmp/sm_post_result
on ngwc platforms
optional_policy(`
polaris_fed_tmp_files_read(polaris_cm_rp_t)
')
optional_policy(`
polaris_sif_mgr_tmp_files_read(polaris_cm_rp_t)
')

ifdef(`starfleet_platform',`
polaris_dmammap_dev_use(polaris_cm_rp_t)
')

ifdef(`nyquist_platform',`
polaris_ngwc_shm_manage(polaris_cm_rp_t)

/dev/dmammap usage
polaris_dmammap_dev_use(polaris_cm_rp_t)

/dev/remap_mem0 usage
polaris_remap_mem_dev_use(polaris_cm_rp_t)

files_tmp_filetrans(polaris_cm_rp_t, polaris_cm_rp_tmp_t, file, "pm_post_result")
files_tmp_filetrans(polaris_cm_rp_t, polaris_cm_rp_tmp_t, dir, "microcode_update")
files_tmp_filetrans(polaris_cm_rp_t, polaris_cm_rp_tmp_t, file, "mcu_upgrading")

executes tar for microcode
allow polaris_cm_rp_t self:capability { fowner fsetid };
')

ifdef(`radium_platform',`
/dev/remap_mem0 usage
polaris_remap_mem_dev_use(polaris_cm_rp_t)
')

```

```

ifdef(`sumatra_platform',`
/dev/remap_mem0 usage
polaris_remap_mem_dev_use(polaris_cm_rp_t)
LOOK AT ME: After direct usage of /dev/mem is removed (CSCvw80796)
polaris_dev_mem_use(polaris_cm_rp_t)
access huron FPGA
polaris_huron_dev_use(polaris_cm_rp_t)
`)

ifdef(`quake_platform',`
polaris_ngwc_shm_manage(polaris_cm_rp_t)

/dev/dmammap usage
polaris_dmammap_dev_use(polaris_cm_rp_t)

files_tmp_filetrans(polaris_cm_rp_t, polaris_cm_rp_tmp_t, file, "pm_post_result")
files_tmp_filetrans(polaris_cm_rp_t, polaris_cm_rp_tmp_t, dir, "microcode_update")
files_tmp_filetrans(polaris_cm_rp_t, polaris_cm_rp_tmp_t, file, "mcu_upgrading")
`)

LOOK AT ME: /dev/mem access restriction remove after
CSCvm48950 is fixed using CSCvm48953
ifdef(`nyquist_platform',`
polaris_dev_mem_use(polaris_cm_rp_t)
`)

LOOK AT ME: /dev/mem access restriction remove after
CSCvn64182 is fixed using CSCvn64184
ifdef(`quake_platform',`
polaris_dev_mem_use(polaris_cm_rp_t)
`)

#####
CLI: "show platform hardware slot R0 xaui statistics"
this results in cman (/usr/binos/bin/cmand) invoking
"/bin/sh /usr/binos/conf/bexec.sh -c /usr/binos/conf/dash_fpga_xaui.py show".
The python script dash_fpga_xaui.py runs in polaris_bexecute_t domain
and as part of its functionality it needs to create an UDP socket and make an ioctl call.
#####

polaris_utility_domain_template(dash_fpga_xaui)

polaris_bexecute_domain(polaris_dash_fpga_xaui_t, polaris_dash_fpga_xaui_exec_t)
polaris_cmrp_use_fifo(polaris_dash_fpga_xaui_t)
allow polaris_dash_fpga_xaui_t self:udp_socket { create ioctl };

#####

```

```

CLI: show plat soft cpu share
- invokes functions in binos/tools/bin/cgroup_reports.sh
- also cman_cli_show_cpu_share_cb in binos/cman/rp/src/cman_cli.c
allow open/read/search cgroup files like
/sys/fs/cgroup/cpu,cpuacct/iosxe_control_processes/cpu.shares
#####
fs_read_cgroup_files(polaris_cm_rp_t)
fs_list_cgroup_dirs(polaris_cm_rp_t)

on tsn need access to /dev/moka_fpga
optional_policy(`
polaris_mokafpga_dev_use(polaris_cm_rp_t)
`)

optional_policy(`
betelgeuse need access to /dev/sirius_fpga
polaris_sirius_fpga_dev_use(polaris_cm_rp_t)
`)

on tsn read access to /sys/devices/platform/moka_fpga
optional_policy(`
polaris_mokafpga_read(polaris_cm_rp_t)
`)

optional_policy(`
polaris_tam_getattrs_tmp_dirs(polaris_cm_rp_t)
`)

on vwlc/macallan, cmand creates /tmp/hw_entropy
polaris_hw_entropy_create(polaris_cm_rp_t)

on tsn need write access to
sys/devices/platform/cpld/reg_rp_sku_register
on starfleet need write access to
sys/devices/platform/cpld/reg_fan_fault_shutdown
optional_policy(`
polaris_cpld_write(polaris_cm_rp_t)
`)

LOOK AT ME: /dev/mem access restriction
ifdef(`tsn_platform',`
polaris_dev_mem_use(polaris_cm_rp_t)
`)

reads from, populates chasfs with values and deletes /tmp/package_biv_sums
polaris_kgv_data_manage(polaris_cm_rp_t)

optional_policy(`

```



```

 polaris_quake_i2c_manage(polaris_cm_rp_t)
)

#ifdef(^qwlc_platform',`
read/write /dev/ds3100 chr device
dev_rw_generic_chr_files(polaris_cm_rp_t)
)

#ifdef(^katar_platform',`
read/write /dev/ds3100 chr device
dev_rw_generic_chr_files(polaris_cm_rp_t)
Read access to /tmp/ldwm_envelope file
polaris_ldwm_envelope_read(polaris_cm_rp_t)
)

#ifdef(^mcp_family',`
Read access to /tmp/ldwm_envelope file
polaris_ldwm_envelope_read(polaris_cm_rp_t)
)

/dev/luna_fpga on qwlc
optional_policy(`
polaris_luna_mbfpga_dev_use(polaris_cm_rp_t)
)

open /dev/ttyS0
term_use_unallocated_ttys(polaris_cm_rp_t)

optional_policy(`
polaris_ngwc_scc_shm_manage(polaris_cm_rp_t)
)

#ifdef(^ngwc_family',`
on nyquist in ngwc_update_member_config nvram_config is
copied from /tmp/chassis/local/rp/tam/00001.nvram_config
polaris_nvram_manage(polaris_cm_rp_t)
CMAN needs to create nvram_config with the right label instead of bootflash_t
gen_require(`
 type polaris_nvram_file_t;
 type polaris_disk_bootflash_t;
)
filetrans_pattern(polaris_cm_rp_t, polaris_disk_bootflash_t, polaris_nvram_file_t, file, "nvram_config")
)

CMANRP needs to create right label instead of bootflash_t
type polaris_user_file_t;
files_type(polaris_user_file_t);
polaris_bootflash_filetrans(polaris_cm_rp_t, polaris_user_file_t, file);

```

```

manage_files_pattern(polaris_cm_rp_t, polaris_disk_bootflash_t, polaris_user_file_t)

on virtual platforms cman reads virtual sudi file /csl_p_0/vudi.pri
ifdef(`vxe_family',`
polaris_disk_csl_read(polaris_cm_rp_t)
')
ifdef(`wlc_family',`
polaris_disk_csl_read(polaris_cm_rp_t)
')

from cman_util_chasfs_watch_stby_harddisk
polaris_udev_tmp_watch(polaris_cm_rp_t)

watch read over /tmp/chassis/local/rp/tam by cman_nyq_board_auth_init
polaris_chasfs_watch_read(polaris_cm_rp_t)

/dev/aikido access
polaris_aikido_dev_use(polaris_cm_rp_t)

access SERDES /tmp/serdes_asic_key_dir/*
optional_policy(`
polaris_serdes_asic_key_tmp_manage(polaris_cm_rp_t)
')

run /sbin/hwclock in its own domain
clock_domtrans(polaris_cm_rp_t)

ifdef(`crankshaft_family',`
modprobe sm_nim_adpt.ko for Switzer-CC
modutils_domtrans_insmod(polaris_cm_rp_t)
/dev/sm_nim_adpt device files for Switzer-CC
polaris_sm_nim_adpt_dev_use(polaris_cm_rp_t)

"show platform hardware subslot <slot/card> backplane statistics"
triggers ethtool with ifconfig_t using fifo_file (pipe) on polaris_cm_rp_t.
gen_require(`
 type ifconfig_t;
')

polaris_cmrp_use_fifo(ifconfig_t)
')

polaris_iosd_vcpu_read(polaris_cm_rp_t)

#####
show platform hardware slot R0 fpga
mcp_fpga_status_cmd.sh
/bin/sh /usr/binos/conf/bexec.sh -c /usr/binos/conf/mcp_fpga_status_cmd.sh

```

#####

polaris\_utility\_domain\_template(fpga\_status\_cmd)

polaris\_bexecute\_domtrans(polaris\_cm\_rp\_t)

polaris\_bexecute\_domain(polaris\_fpga\_status\_cmd\_t, polaris\_fpga\_status\_cmd\_exec\_t)

polaris\_cmrp\_use\_fifo(polaris\_fpga\_status\_cmd\_t)

auth\_use\_nsswitch(polaris\_fpga\_status\_cmd\_t)

corecmd\_exec\_bin(polaris\_fpga\_status\_cmd\_t)

# PLEASE LOOK AT ME: /sys/devices/platform/nios should have Cisco specific label

# read content under /sys/devices/platform/nios

dev\_read\_sysfs(polaris\_fpga\_status\_cmd\_t)

ifdef(^sparrow\_platform',`

polaris\_dio\_dev\_use(polaris\_cm\_rp\_t)

')

ifdef(^cabo\_platform',`

polaris\_dio\_dev\_use(polaris\_cm\_rp\_t)

')

ifdef(^starfleet\_platform',`

polaris\_fpga\_upgrade\_tmp\_use(polaris\_cm\_rp\_t)

')

type polaris\_fpga\_upgrade\_tmp\_t;

files\_tmp\_file(polaris\_fpga\_upgrade\_tmp\_t)

files\_tmp\_filetrans(polaris\_cm\_rp\_t, polaris\_fpga\_upgrade\_tmp\_t, file, "fpga\_upgrade")

# cman\_rp needs read access to cpu identity

# /dev/cpu/0/msr

dev\_read\_cpuid(polaris\_cm\_rp\_t)

# cman\_rp needs read/write access to cpu msr

# /dev/cpu/0/msr

# following definition provides that

dev\_rw\_cpu\_microcode(polaris\_cm\_rp\_t)

type polaris\_cmrp\_nim\_xxd\_tmp\_t;

files\_tmp\_file(polaris\_cmrp\_nim\_xxd\_tmp\_t)

files\_tmp\_filetrans(polaris\_cm\_rp\_t, polaris\_cmrp\_nim\_xxd\_tmp\_t, file, "nim\_xxd\_present")

manage\_files\_pattern(polaris\_cm\_rp\_t, polaris\_cmrp\_nim\_xxd\_tmp\_t, polaris\_cmrp\_nim\_xxd\_tmp\_t)

ifdef(^2kp\_platform',`

# blzi device

polaris\_blzi\_dev\_use(polaris\_cm\_rp\_t)

')

```

#tamlib debug file access
polaris_tamlib_dbg_file_manage(polaris_cm_rp_t)

ifdef(`wlc_family',`
tcpdump access for RP
packet dump is stored in file /bootflash/haIntCaptureLo.pcap
type polaris_netutils_data_t;
polaris_pfile_type(polaris_netutils_data_t)
gen_require(`
 type polaris_disk_bootflash_t;
 type netutils_t;
')
filetrans_pattern(netutils_t, polaris_disk_bootflash_t, polaris_netutils_data_t, file, "haIntCaptureLo.pcap")
manage_files_pattern(netutils_t, polaris_netutils_data_t, polaris_netutils_data_t)

tcpdump access
netutils_run(polaris_cm_rp_t, system_r)

pidof access
dev_read_sysfs(polaris_cm_rp_t)
kernel_read_system_state(polaris_cm_rp_t)
domain_read_all_domains_state(polaris_cm_rp_t)

/usr/sbin/ethtool access for show platform hardware slot x ha_port interface stats command
sysnet_domtrans_ifconfig(polaris_cm_rp_t)
')

optional_policy(`
polaris_ds31408_dev_use(polaris_cm_rp_t)
')

polaris_ddr_dev_use(polaris_cm_rp_t)

allow /usr/sbin/smartctl to be operated on fsadm_exec_t
fstools_exec(polaris_cm_rp_t)

allow acces to /tmp/cmlib_eeprom_sim_smartctl.out
files_tmp_filetrans(polaris_cm_rp_t, polaris_cm_rp_tmp_t, file, "cmlib_eeprom_sim_smartctl.out")

allow access to /dev/nvme*
dev_nvme_chr_files_manage(polaris_cm_rp_t)
dev_nvme_blk_files_manage(polaris_cm_rp_t)

#DB persistence
polaris_tldbpersist_setup(polaris_cm_rp_t)
polaris_tmp_tldbpersist_setup(polaris_cm_rp_t)

```

```

#code_sign_verify is started by cmand
polaris_code_verify_domtrans(polaris_cm_rp_t)

ifdef(^ngwc_family',`
SELINUX Mismatch warning when doing power redundancy configuration commands
Allow access /bootflash/nplusm-power
polaris_nplusm_power_manage(polaris_cm_rp_t)
`)

ifdef(^crankshaft_family',`
For USB disable feature, /sys/bus/usb/drivers/usb/*/authorized is accessed
gen_require(
type sysfs_t;
)
allow polaris_cm_rp_t sysfs_t:file create;
dev_manage_sysfs_dirs(polaris_cm_rp_t)
)

ifdef(^petra_platform',`
#allow access to /dev/petra-fpga
polaris_iots_fpga_dev_use(polaris_cm_rp_t)
#allow access to /flash6/moncfg/cfg.dat
polaris_nvram_read(polaris_cm_rp_t)
`)

```

Found in path(s):

```

* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscmrp.te
No license file was found, but licenses were detected in source scan.

```

```

dnl
dnl April 2018, Victor Kamensky
dnl
dnl Copyright (c) 2018-2019 by Cisco Systems, Inc.
dnl All rights reserved
dnl
divert(-1)

```

```

include(^polaris_process.m4')
dnl Stub out plaris process
define(^polaris_process',`)

dnl Stub out mqipc
define(^polaris_mqipc_service_server',`)
define(^polaris_mqipc_service_client',`)
define(^polaris_mqipc_service_server_elastic_client',`)

```

```

dnl Stub out lipc
define(^polaris_lipc_service_server',`)

```

```

define(`polaris_lipc_service_client',`)

include(`polaris_ipc_ripc.m4')
include(`polaris_ipc_base_ripc_if.m4')

dnl Stub out non existent one
define(`polaris_websocket_service_server',`)
define(`polaris_cipc_service_server',`)

include(`polaris_max_scope.m4')

divert(0)dnl
#
This is a generated file! Instead of modifying this file,
modify proper platform TDL file.
#
<summary>Polaris Platform Base IPC Policy Rules.</summary>
<required val="true">
Needed for each polaris platform
</required>

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/polaris_ipc_base_if.m4
No license file was found, but licenses were detected in source scan.

#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2020 by Cisco Systems, Inc.
All rights reserved
#

policy_module(polarisplogd, 1.0);

gen_require(`
 type polaris_plogd_t;
`)

polaris_btrace_data_manage(polaris_plogd_t)
polaris_crft_data_manage(polaris_plogd_t)
polaris_chasfs_manage(polaris_plogd_t)
polaris_tdlresolve_read(polaris_plogd_t)
polaris_tdlldb_list_dirs(polaris_plogd_t)
polaris_cpld_read(polaris_plogd_t)
polaris_flashlib_read(polaris_plogd_t)

polaris_ripc_sman_ui_serv_connect(polaris_plogd_t)

```

```

originally when box starts /dev/log is symbolic link to /run/systemd/journal/dev-log
but latter plogd reset links to its own socket: make sure that we have proper
transition
gen_require(
 type devlog_t;
 type syslogd_t;
)
allow polaris_plogd_t devlog_t:sock_file manage_sock_file_perms;
allow polaris_plogd_t devlog_t:lnk_file manage_lnk_file_perms;
dev_filetrans(polaris_plogd_t, devlog_t, sock_file, "log")
make sure that unix_dgram_socket got transitioned into syslogd_t
type_transition polaris_plogd_t polaris_plogd_t:unix_dgram_socket syslogd_t;
allow polaris_plogd_t syslogd_t:unix_dgram_socket { bind create read };

autogen script misses connection between plogd
polaris_rpc_plog_serv_connect(polaris_plogd_t)

why plogd needs dac_override capability?
allow polaris_plogd_t self:capability { dac_override };
allow polaris_plogd_t self:capability2 block_suspend;

polaris_dyncfg_tmp_read(polaris_plogd_t)

plogd calls journalctl -f to get system logs including our AVC messages
plogd also signals running journalctl to manage the buffer queues
gen_require(
 type journalctl_t;
)
journalctl_domtrans(polaris_plogd_t)
allow polaris_plogd_t journalctl_t:process signal;

should be moved into contrib journalctl.te? journalctl tries to read
/proc/1/environ
gen_require(
 type journalctl_t;
)
init_read_state(journalctl_t)
allow journalctl_t self:capability sys_resource;
allow journalctl_t self:process setrlimit;

plogd calls stdbuf to set up journalctl buffering
corecmd_exec_bin(polaris_plogd_t)

writes into pman fifo stdout
polaris_use_btrace_fifo(journalctl_t)

/dev/log is symbolic link to /run/systemd/journal/dev-log
need ability to search in init_var_run_t /run/systemd

```

```

some of subjects that use syslog may not have it
gen_require(`
 attribute syslog_client_type;
`)
init_search_pid_dirs(syslog_client_type)
#plog_d calls journalctl to get system log including AVC message.
allow polaris_plogd_t journalctl_t:process signal;

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisplogd.te
No license file was found, but licenses were detected in source scan.

#
July 2017, Victor Kamensky
#
Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved
#

polaristamsrp file contexts place holder

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polaristamsrp.fc
No license file was found, but licenses were detected in source scan.

#
February 2020, Victor Kamensky
#
Copyright (c) 2020 by Cisco Systems, Inc.
All rights reserved
#

<summary>Polaris ftm Policy Rules.</summary>

#####
<summary>
Write ttm /var/run socket file
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_ftm_var_sock_write`,`
 gen_require(`
 type polaris_ftm_t;
 type polaris_ftm_var_run_t;

```



```
 type var_run_t;
)
write_sock_files_pattern($1, var_run_t, polaris_ftm_var_run_t)
allow $1 polaris_ftm_t:unix_stream_socket { connectto };
)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisftm.if

No license file was found, but licenses were detected in source scan.

```
#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2020 by Cisco Systems, Inc.
All rights reserved
#

/usr/binos/conf/iptables.sh -- gen_context(system_u:object_r:polaris_iptbl_exec_t,s0)

/tmp/rp/iptables -d gen_context(system_u:object_r:polaris_iptbl_tmp_t,s0)
/tmp/rp/iptables/inot_fifo -p gen_context(system_u:object_r:polaris_iptbl_tmp_t,s0)

in polaris we have xtables-multi at wrong location
/usr/bin/xtables-multi -- gen_context(system_u:object_r:iptables_exec_t,s0)

#fman (rp/fp) acl mgmt and iptbl modules dependency
/tmp/iptables.v4 gen_context(system_u:object_r:polaris_iptbl_tmp_t,s0)
/tmp/iptables.v6 gen_context(system_u:object_r:polaris_iptbl_tmp_t,s0)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisiptables.fc

No license file was found, but licenses were detected in source scan.

```
#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#

<summary>Polaris cpp_sp Policy Rules.</summary>
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscppsp.if

No license file was found, but licenses were detected in source scan.

```
#
March 2017, Victor Kamensky
```

```

#
Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved
#

polarisngwctblmgr file contexts place holder

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisngwctblmgr.fc
No license file was found, but licenses were detected in source scan.

#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2020 by Cisco Systems, Inc.
All rights reserved
#

/tmp/sysctrl_i2c.lck gen_context(system_u:object_r:polaris_cm_rp_tmp_t,s0)
/tmp/pfu_overtime.lock gen_context(system_u:object_r:polaris_cm_rp_tmp_t,s0)
/tmp/golden_boot gen_context(system_u:object_r:polaris_cm_rp_tmp_t,s0)

dash_fpga_xaui.py is the backend python code for
the cli "show platform hardware slot R0 xaui statistics"
/usr/binos/conf/dash_fpga_xaui.py -- gen_context(system_u:object_r:polaris_dash_fpga_xaui_exec_t,s0)

/usr/binos/bin/cmand_us -- gen_context(system_u:object_r:polaris_cm_rp_exec_t,s0)
relabel /vol/harddisk/.inv
/vol/harddisk/.inv(/.*)? gen_context(system_u:object_r:polaris_cm_rp_inv_log_file_t,s0)
/vol/harddisk_internal/.inv(/.*)? gen_context(system_u:object_r:polaris_cm_rp_inv_log_file_t,s0)

.inv dir is in /bootflash in Katar eWLC
/bootflash/.inv(/.*)? gen_context(system_u:object_r:polaris_cm_rp_inv_log_file_t,s0)

/usr/binos/conf/mcp_fpga_status_cmd.sh -- gen_context(system_u:object_r:polaris_fpga_status_cmd_exec_t,s0)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscmrp.fc
No license file was found, but licenses were detected in source scan.

#
August 2017, Shawn Lu
#
Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved
#

<summary>Polaris rrm_mgr Policy Rules.</summary>

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisrrmmgr.if

No license file was found, but licenses were detected in source scan.

```
#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#

<summary>Polaris LIPC Policy Rules.</summary>

#####
LIPC policy
#####

#####
<summary>
Manage lipc files
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolebase/>
#
interface(`polaris_lipc_manage',`
gen_require(`
type polaris_lipc_t;
)
manage_dirs_pattern($1, polaris_lipc_t, polaris_lipc_t)
manage_files_pattern($1, polaris_lipc_t, polaris_lipc_t)
manage_lnk_files_pattern($1, polaris_lipc_t, polaris_lipc_t)
manage_fifo_files_pattern($1, polaris_lipc_t, polaris_lipc_t)
manage_sock_files_pattern($1, polaris_lipc_t, polaris_lipc_t)
)

#####
<summary>
Getattr of lipc files directories
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
```

```

</param>
<rolebase/>
#
interface(`polaris_lipc_getattr`,`
gen_require(`
type polaris_lipc_t;
`)
 getattr_dirs_pattern($1, polaris_lipc_t, polaris_lipc_t)
 getattr_files_pattern($1, polaris_lipc_t, polaris_lipc_t)
 getattr_lnk_files_pattern($1, polaris_lipc_t, polaris_lipc_t)
 getattr_fifo_files_pattern($1, polaris_lipc_t, polaris_lipc_t)
 getattr_sock_files_pattern($1, polaris_lipc_t, polaris_lipc_t)
`)

#####
<summary>
Create lipc file
</summary>
<param name="domain">
<summary>
Domain allowed creating lipc channel.
</summary>
</param>
<param name="channel_domain">
<summary>
Domain assigned to lipc channel.
</summary>
</param>
<param name="channel_name">
<summary>
File name of lipc channel.
</summary>
</param>
#
interface(`polaris_lipc_create_name`,`
gen_require(`
type polaris_lipc_t;
`)
 type_transition $1 polaris_lipc_t : sock_file $2 $3;
 manage_sock_files_pattern($1, polaris_lipc_t, $2)

 polaris_socketat_nsfs_read($1)

not specific enough
type_transition $1 $1 : unix_stream_socket $2;
allow $1 $2:unix_stream_socket { listen accept bind create write read };
`)

```

```
#####
<summary>
Write lipc file
</summary>
<param name="domain">
<summary>
Domain allowed to connect and write into lipc file.
</summary>
</param>
<param name="channel_domain">
<summary>
Domain assigned to lipc channel.
</summary>
</param>
<param name="server">
<summary>
Domain of owner of lipc channel.
</summary>
</param>
#
interface(`polaris_lipc_write`,`
gen_require(`
type polaris_lipc_t;
)
write_sock_files_pattern($1, polaris_lipc_t, $2)
allow $1 $3:unix_stream_socket { connectto };

polaris_socketat_nsfs_read($1)
)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarislipc.if

No license file was found, but licenses were detected in source scan.

dnl

dnl April 2018, Victor Kamensky

dnl

dnl Copyright (c) 2018-2019 by Cisco Systems, Inc.

dnl All rights reserved

dnl

define(`polaris\_lipc\_service\_server\_aux`,`dnl

type \$1;

files\_type(\$1)

polaris\_lipc\_\$2\_create\_name(\$3)')

define(`polaris\_lipc\_service\_server\_full`,`dnl

polaris\_lipc\_service\_server\_aux(lipc\_label(\$1), lipc\_stem(\$1), process\_label(\$2))dnl

)

```
define(`polaris_lipc_service_server',`dnl
ifelse(lipc_type_map($1),``,`polaris_lipc_service_server_full($1,$2)')
lipc_type_map_set(lipc_label($1),process_label($2))
')
```

```
define(`polaris_lipc_service_client_aux',`dnl
polaris_lipc_$2_write($3,$4)')
```

```
define(`polaris_lipc_service_client',`dnl
polaris_lipc_service_client_aux(lipc_label($1),lipc_stem($1),process_label($2),lipc_type_map(lipc_label($1)))dnl
')
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/m4/polaris\_ipc\_lipc\_te.m4

No license file was found, but licenses were detected in source scan.

```
#
September 2017, Victor Kamensky
#
Copyright (c) 2017-2021 by Cisco Systems, Inc.
All rights reserved
#
```

```
policy_module(polarisbtman, 1.0);
```

```
gen_require(`
 type polaris_btman_t;
')
```

```
polaris_crft_data_manage(polaris_btman_t)
polaris_chasfs_manage(polaris_btman_t)
polaris_tdlresolve_read(polaris_btman_t)
polaris_tdlldb_list_dirs(polaris_btman_t)
polaris_cpld_read(polaris_btman_t)
polaris_flashlib_read(polaris_btman_t)
```

```
polaris_ripc_sman_ui_serv_connect(polaris_btman_t)
```

```
polaris_db_tdlldb_dir_use(polaris_btman_t)
```

```
polaris_bexecute_domtrans(polaris_btman_t)
```

```
script starts rsync with mcp_chvrf.sh
polaris_chvrf_domtrans(polaris_btman_t)
polaris_send_signal_to_bexecute(polaris_btman_t)
```

```

corecmd_exec_bin(polaris_btman_t)
corecmd_exec_shell(polaris_btman_t)

allow read of /etc/group and /etc/passwd
auth_use_nsswitch(polaris_btman_t)

allow polaris_btman_t self:capability { dac_override fsetid };

polaris_cpld_read(polaris_btman_t)

operate on all btrace files
polaris_btrace_data_manage_all(polaris_btman_t)

btman operated on /tmp/tmppub files
type polaris_btrace_tmppub_t;
files_tmp_file(polaris_btrace_tmppub_t)

polaris_systemd_tmpfiles_tmp_filetrans(polaris_btrace_tmppub_t, dir, "tmppub")
filetrans_pattern(polaris_btman_t, polaris_btrace_tmppub_t, polaris_btrace_tmppub_t, { file dir })
manage_files_pattern(polaris_btman_t, polaris_btrace_tmppub_t, polaris_btrace_tmppub_t)
manage_dirs_pattern(polaris_btman_t, polaris_btrace_tmppub_t, polaris_btrace_tmppub_t)

polaris_persistent_read(polaris_btman_t)

in purge_old_core_files_from_harddisk function of btrace_rotate_util.c
script removes outdated core files, so it needs read/write permission
to polaris_core_file_t files.
polaris_core_file_manage(polaris_btman_t)

fs_getattr_xattr_fs(polaris_btman_t)

btman checks for presence of /tmp/udev/etc/udev/harddisk
through hwutil_is_harddisk_present function of hwutil-common.sh
polaris_udev_tmp_list_dirs(polaris_btman_t)

when /bootflash or /harddisk are 100% full
allow polaris_btman_t self:capability sys_resource;

access to /tmp/sw/boot/dmesg
polaris_boot_tmp_read(polaris_btman_t)

polaris_create_ldb_domtrans(polaris_btman_t)

btman calls update_resolver_luid_paths which eventually calls open_brand function for
given polaris executable (build_crdu_luid_file_paths, bcrdu_get_proc_path_internal,
brand_type_string)
polaris_read_exec_domain(polaris_btman_t)

```

```

btman create transitional files in /tmp directory
type polaris_btman_tmp_t;
files_tmp_file(polaris_btman_tmp_t)
files_tmp_filetrans(polaris_btman_t, polaris_btman_tmp_t, file)
manage_files_pattern(polaris_btman_t, polaris_btman_tmp_t, polaris_btman_tmp_t)

use syslog
logging_send_syslog_msg(polaris_btman_t)

btman unlink /tmp/rp/pvp/work/btman_first_inst
polaris_pvp_manage_tmp_files(polaris_btman_t)

operate on btrace file in /bootflash
polaris_btrace_persistent_data_manage(polaris_btman_t)

gen_require(
 type polaris_btrace_data_t;
)
polaris_bootflash_filetrans(polaris_btman_t, polaris_btrace_data_t, dir, "tracelogs")
polaris_harddisk_filetrans(polaris_btman_t, polaris_btrace_data_t, dir, "tracelogs")
polaris_crashinfo_filetrans(polaris_btman_t, polaris_btrace_data_t, dir, "tracelogs")
polaris_bootflash_filetrans(polaris_btman_t, polaris_btrace_data_t, dir, "tan")
polaris_harddisk_filetrans(polaris_btman_t, polaris_btrace_data_t, dir, "tan")

btman creates /tmp/rp/pvp/work/btman_first_inst directory in is_first_incarnation
function called by btrace_rotate_init
polaris_pvp_manage_tmp_files(polaris_btman_t)

#####
This block is policies for "request platform software system shell" CLI

/tmp/sw/rp/0/0/rp_security/mount/usr/binos/bin/btman -f rp
-s /tmp/rp/trace/stage -w /tmp/rp/trace
- needs to read/getattr on
/tmp/sw/mount/*universalk9.*.SSA.pkg/usr/binos/sbin/in.telnetd
gen_require(
 type telnetd_exec_t;
)
allow polaris_btman_t telnetd_exec_t:file { getattr open read };

btman establishes leases for trace files
allow polaris_btman_t self:capability lease;

dump_btrace_meta walks all files with nftw
files_getattr_all_files(polaris_btman_t)
files_getattr_all_dirs(polaris_btman_t)
files_read_all_symlinks(polaris_btman_t)

```



```

files_list_non_security(polaris_btman_t)
files_read_all_files(polaris_btman_t)
files_mmap_all_files(polaris_btman_t)

btman exports data through http protocol btm_trigger_export and schedule_newfile_export
corenet_tcp_connect_http_port(polaris_btman_t)

LOOK AT ME: incorrect iosd-tps service_def. It should be renamed
iosd_tps_socket-b0 in all platform.tdl files. Remove the following
policy when CSCvp89498 is fixed.
gen_require(
 type polaris_lipc_t;
 type polaris_pman_t;
)
polaris_lipc_write(polaris_btman_t, polaris_lipc_t, polaris_pman_t)

btman manages some persistent crashinfo files
polaris_disk_crashinfo_manage(polaris_btman_t)

#DB persistence
polaris_tdlldbpersist_setup(polaris_btman_t)

polaris_tmp_tdlldb_persist_setup(polaris_btman_t)

polaris_btrace_data_watch(polaris_btman_t)

dump_btrace_meta writes to /tmp/binary_trace.1605747053/.pkginfo
polaris_install_tmp_manage(polaris_btman_t)

#allow polaris_btman_t access to polaris_cm_rp semaphore
polaris_cm_rp_sem_use(polaris_btman_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisbtman.te
No license file was found, but licenses were detected in source scan.

#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2020 by Cisco Systems, Inc.
All rights reserved
#

policy_module(polarisfmanrp, 1.0);

gen_require(
 type polaris_fman_rp_t;
)

```

```

mqipc manual, one that missing in platform tdl file
#####
```

```
mq.-fman-log-bay0-peer0
type polaris_fman_log_bay0_peer0_mqipc_t;
polaris_mqipc_type(polaris_fman_log_bay0_peer0_mqipc_t)
```

```
mq.-fman-log-bay0-peer1
type polaris_fman_log_bay0_peer1_mqipc_t;
polaris_mqipc_type(polaris_fman_log_bay0_peer1_mqipc_t)
```

```
mq.-fman-log-bay0-peer2
type polaris_fman_log_bay0_peer2_mqipc_t;
polaris_mqipc_type(polaris_fman_log_bay0_peer2_mqipc_t)
```

```
mq.-fman-log-bay0-peer3
type polaris_fman_log_bay0_peer3_mqipc_t;
polaris_mqipc_type(polaris_fman_log_bay0_peer3_mqipc_t)
```

```
mq.-fman-log-bay0-peer4
type polaris_fman_log_bay0_peer4_mqipc_t;
polaris_mqipc_type(polaris_fman_log_bay0_peer4_mqipc_t)
```

```
mq.-fman-log-bay0-peer5
type polaris_fman_log_bay0_peer5_mqipc_t;
polaris_mqipc_type(polaris_fman_log_bay0_peer5_mqipc_t)
```

```
mq.-fman-log-bay0-peer6
type polaris_fman_log_bay0_peer6_mqipc_t;
polaris_mqipc_type(polaris_fman_log_bay0_peer6_mqipc_t)
```

```
mq.-fman-log-bay0-peer7
type polaris_fman_log_bay0_peer7_mqipc_t;
polaris_mqipc_type(polaris_fman_log_bay0_peer7_mqipc_t)
```

```
mq.-fman-log-bay0-peer8
type polaris_fman_log_bay0_peer8_mqipc_t;
polaris_mqipc_type(polaris_fman_log_bay0_peer8_mqipc_t)
```

```
polaris_mqipc_create_name(polaris_fman_rp_t, polaris_fman_log_bay0_peer0_mqipc_t, fman-log-bay0-peer0)
polaris_mqipc_create_name(polaris_fman_rp_t, polaris_fman_log_bay0_peer1_mqipc_t, fman-log-bay0-peer1)
polaris_mqipc_create_name(polaris_fman_rp_t, polaris_fman_log_bay0_peer2_mqipc_t, fman-log-bay0-peer2)
polaris_mqipc_create_name(polaris_fman_rp_t, polaris_fman_log_bay0_peer3_mqipc_t, fman-log-bay0-peer3)
polaris_mqipc_create_name(polaris_fman_rp_t, polaris_fman_log_bay0_peer4_mqipc_t, fman-log-bay0-peer4)
polaris_mqipc_create_name(polaris_fman_rp_t, polaris_fman_log_bay0_peer5_mqipc_t, fman-log-bay0-peer5)
polaris_mqipc_create_name(polaris_fman_rp_t, polaris_fman_log_bay0_peer6_mqipc_t, fman-log-bay0-peer6)
```

```

polaris_mqipc_create_name(polaris_fman_rp_t, polaris_fman_log_bay0_peer7_mqipc_t, fman-log-bay0-peer7)
polaris_mqipc_create_name(polaris_fman_rp_t, polaris_fman_log_bay0_peer8_mqipc_t, fman-log-bay0-peer8)

polaris_btrace_data_manage(polaris_fman_rp_t)
polaris_crft_data_manage(polaris_fman_rp_t)
polaris_chasfs_manage(polaris_fman_rp_t)
polaris_tdlresolve_read(polaris_fman_rp_t)
polaris_tdlldb_list_dirs(polaris_fman_rp_t)
polaris_cpld_read(polaris_fman_rp_t)
polaris_flashlib_read(polaris_fman_rp_t)
polaris_lua_read(polaris_fman_rp_t)

polaris_ripc_sman_ui_serv_connect(polaris_fman_rp_t)

polaris_db_tdlldb_dir_use(polaris_fman_rp_t)

#ifdef(`nyquist_platform',`
gen_require(`
 type polaris_bt_logger_fman_rp_mqipc_t;
)
fman_rp may start first and create this mqipc channel
polaris_mqipc_create_name(polaris_fman_rp_t, polaris_bt_logger_fman_rp_mqipc_t, bt_logger_fman-rp)
)

allow polaris_fman_rp_t self:udp_socket { create ioctl };

allow polaris_fman_rp_t self:capability { dac_override };
allow polaris_fman_rp_t self:capability2 block_suspend;

not clear why fman_rp tries to load netdev-mgmtbr kernel module
it does not exist on ultra anyway
type=AVC msg=audit(1478126742.967:98): avc: denied { module_request } for pid=18020 comm="fman_rp"
kmod="netdev-mgmtbr" scontext=system_u:system_r:polaris_fman_rp_t:s0
tcontext=system_u:system_r:kernel_t:s0 tclass=system
kernel_request_load_module(polaris_fman_rp_t)

polaris_socketat_nsfs_read(polaris_fman_rp_t)

polaris_dynconf_tmp_read(polaris_fman_rp_t)

socketat usage from fman_punt_port_mapping_init for AF_NETLINK, SOCK_DGRAM
polaris_lfts_dev_use(polaris_fman_rp_t)
allow polaris_fman_rp_t self:netlink_tcpdiag_socket { create nlmsg_read };

fman_rp tries to write to sytemd journal when a peer is stuck
introduced by CSCvt19772
logging_send_syslog_msg(polaris_fman_rp_t)

```

```

optional_policy(`
#fman-rp creates tmp files in acl-mgmt workflow.
polaris_fman_acl_iptbl_tmp_file(polaris_fman_rp_t)
`)

manually create mqipc channel: missing in TDL
type polaris_fmrp2fpm_mqipc_t;
polaris_mqipc_type(polaris_fmrp2fpm_mqipc_t)
polaris_mqipc_create_name(polaris_fman_rp_t, polaris_fmrp2fpm_mqipc_t, fmrp2fpm_vulcan_mqipc)

optional_policy(`
polaris_fpm2fmrp_mqipc_use(polaris_fman_rp_t)
`)

polaris_issu_tmp_files_read(polaris_fman_rp_t)

polaris_install_tmp_read(polaris_fman_rp_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisfmanrp.te
No license file was found, but licenses were detected in source scan.

#
August 2017, Shawn Lu
#
Copyright (c) 2017-2021 by Cisco Systems, Inc.
All rights reserved
#

policy_module(polarisrifmgr, 1.0);

gen_require(`
 type polaris_rif_mgr_t;
`)

polaris_btrace_data_manage(polaris_rif_mgr_t)
polaris_crft_data_manage(polaris_rif_mgr_t)
polaris_chasfs_manage(polaris_rif_mgr_t)
polaris_tdlresolve_read(polaris_rif_mgr_t)
polaris_tdlldb_list_dirs(polaris_rif_mgr_t)
polaris_cpld_read(polaris_rif_mgr_t)
polaris_lua_read(polaris_rif_mgr_t)
polaris_flashlib_read(polaris_rif_mgr_t)
polaris_lfts_dev_use(polaris_rif_mgr_t)
logging_send_syslog_msg(polaris_rif_mgr_t)

polaris_rpc_sman_ui_serv_connect(polaris_rif_mgr_t)

```

```

allow polaris_rif_mgr_t self:capability { sys_nice dac_override };
allow polaris_rif_mgr_t self:process { setsched };
open /dev/ttyS0 console in sco_sys_init_sw_params
term_use_unallocated_ttys(polaris_rif_mgr_t)

work with /dev/hanet device
polaris_hanet_dev_use(polaris_rif_mgr_t)

update/read chassis serial numer /csl_p_0/vudi.pri
polaris_disk_csl_manage(polaris_rif_mgr_t)

monitors native interfaces flap over /proc and netlink
kernel_read_network_state(polaris_rif_mgr_t)
allow polaris_rif_mgr_t self:netlink_route_socket rw_netlink_socket_perms;
allow polaris_rif_mgr_t self:unix_dgram_socket create_socket_perms;

pidof and /proc usage
dev_read_sysfs(polaris_rif_mgr_t)
kernel_read_system_state(polaris_rif_mgr_t)
domain_read_all_domains_state(polaris_rif_mgr_t)

corecmd_exec_bin(polaris_rif_mgr_t)

kernel_dontaudit_request_load_module(polaris_rif_mgr_t)
rifmgr creates udp socket to get interface flags in rif_rp_init
allow polaris_rif_mgr_t self:udp_socket create_socket_perms;

corenet_tcp_bind_polaris_rif_mgr_port(polaris_rif_mgr_t)
corenet_tcp_connect_polaris_rif_mgr_port(polaris_rif_mgr_t)

corenet_udp_bind_polaris_rif_mgr_port(polaris_rif_mgr_t)
corenet_udp_bind_generic_node(polaris_rif_mgr_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisrifmgr.te
No license file was found, but licenses were detected in source scan.

#
March 2017, Victor Kamensky
#
Copyright (c) 2017-2020 by Cisco Systems, Inc.
All rights reserved
#

<summary>Polaris stack_mgr Policy Rules.</summary>
#####
<summary>
Read and write all stack mgr's fifo file, used as

```

```

standard input/output.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolecap/>
#
interface(`polaris_use_stack_mgr_fifo`,
gen_require(`
type polaris_stack_mgr_t;
`)

write_fifo_files_pattern($1, polaris_stack_mgr_t, polaris_stack_mgr_t)
)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisstackmgr.if

No license file was found, but licenses were detected in source scan.

```

#
April 2017, Victor Kamensky
#
Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved
#

```

```

/tmp/.DML_FIFO gen_context(system_u:object_r:polaris_dmi_vtyserverutild_tmp_t,s0)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisdmivtyserverutild.fc

No license file was found, but licenses were detected in source scan.

```

#
July 2017, Victor Kamensky
#
Copyright (c) 2017-2020 by Cisco Systems, Inc.
All rights reserved
#

```

```

<summary>Polaris cm_cc Policy Rules.</summary>

```

```

#####

```

```

<summary>
Execute cmand_fp in the polaris_cm_fp_t domain.
</summary>
<param name="domain">

```

```

<summary>
Domain allowed to transition.
</summary>
</param>
#
interface(`polaris_cm_cc_domtrans`,`
 gen_require(`
 type polaris_cm_cc_t, polaris_cm_cc_exec_t;
 `)

 corecmd_search_bin($1)
 domtrans_pattern($1, polaris_cm_cc_exec_t, polaris_cm_cc_t)
`)

#####
<summary>
Manage cm_cc_tmpfs files.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_cm_cc_tmpfs_manage`,`
 gen_require(`
 type polaris_cm_cc_tmpfs_t;
 `)

 manage_files_pattern($1, polaris_cm_cc_tmpfs_t, polaris_cm_cc_tmpfs_t)
 mmap_files_pattern($1, polaris_cm_cc_tmpfs_t, polaris_cm_cc_tmpfs_t)
`)

#####
<summary>
Check presence and unlink /tmp/nim_xxd_present file created by cman cc.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolecap/>
#
interface(`polaris_nim_xxd_tmp_open_unlink`,`
 gen_require(`
 type polaris_nim_xxd_tmp_t;
 `)

```

```
allow $1 polaris_nim_xxd_tmp_t:file { open unlink }
')
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarismcc.if

No license file was found, but licenses were detected in source scan.

```
#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#
```

```
<summary>Polaris LUA Policy Rules.</summary>
```

```
#####
```

```
Polaris lfts
```

```
#####
```

```
#####
```

```
<summary>
```

```
Work (read, write, ioctl) with /dev/dev_lfts device.
```

```
</summary>
```

```
<param name="domain">
```

```
<summary>
```

```
Domain allowed access.
```

```
</summary>
```

```
</param>
```

```
<rolebase/>
```

```
#
```

```
interface(`polaris_lfts_dev_use',`
```

```
gen_require(`
```

```
 type device_t;
```

```
 type polaris_lfts_device_t;
```

```
`)
```

```
 write_chr_files_pattern($1, device_t, polaris_lfts_device_t)
```

```
 read_chr_files_pattern($1, device_t, polaris_lfts_device_t)
```

```
')
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarislfts.if

No license file was found, but licenses were detected in source scan.

```
#
March 2017, Victor Kamensky
#
```



# Copyright (c) 2016-2019 by Cisco Systems, Inc.

# All rights reserved

#

## <summary>Polaris ofa Policy Rules.</summary>

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisofa.if

No license file was found, but licenses were detected in source scan.

#

# March 2017, Victor Kamensky

#

# Copyright (c) 2016-2020 by Cisco Systems, Inc.

# All rights reserved

#

/var/virtual-instance(/.\*)? gen\_context(system\_u:object\_r:polaris\_var\_vman\_t,s0)

/bootflash/virtual-instance(/.\*)? gen\_context(system\_u:object\_r:polaris\_disk\_vman\_t,s0)

/bootflash/virtual-instance.conf -- gen\_context(system\_u:object\_r:polaris\_disk\_vman\_t,s0)

/bootflash/vman\_fdb(/.\*)? gen\_context(system\_u:object\_r:polaris\_disk\_vman\_t,s0)

/vol/harddisk/virtual-instance(/.\*)? gen\_context(system\_u:object\_r:polaris\_disk\_vman\_t,s0)

/vol/harddisk/virtual-instance.conf -- gen\_context(system\_u:object\_r:polaris\_disk\_vman\_t,s0)

/vol/harddisk/vman\_fdb(/.\*)? gen\_context(system\_u:object\_r:polaris\_disk\_vman\_t,s0)

#sparrow, blackheart

/flash1/virtual-instance(/.\*)? gen\_context(system\_u:object\_r:polaris\_disk\_vman\_t,s0)

/flash1/virtual-instance.conf -- gen\_context(system\_u:object\_r:polaris\_disk\_vman\_t,s0)

/flash1/vman\_fdb(/.\*)? gen\_context(system\_u:object\_r:polaris\_disk\_vman\_t,s0)

/tmp/vman(/.\*)? gen\_context(system\_u:object\_r:polaris\_vman\_tmp\_t,s0)

/tmp/cgroup.log gen\_context(system\_u:object\_r:polaris\_vman\_tmp\_t,s0)

/tmp/vman\_lxc\_wdt\_[0-9]\* gen\_context(system\_u:object\_r:polaris\_vman\_tmp\_t,s0)

/tmp/trace(/.\*)? gen\_context(system\_u:object\_r:polaris\_vman\_tmp\_t,s0)

/usr/binos/conf/vman\_exec.sh -- gen\_context(system\_u:object\_r:polaris\_vman\_shell\_exec\_t,s0)

/usr/binos/conf/cgroup\_reports.sh -- gen\_context(system\_u:object\_r:polaris\_cgroup\_reports\_exec\_t,s0)

/usr/binos/conf/vman\_techsupport.sh -- gen\_context(system\_u:object\_r:polaris\_vman\_tech\_exec\_t,s0)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisvman.fc

No license file was found, but licenses were detected in source scan.

#

# August 2017, Shawn Lu

```

#
Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved
#

policy_module(polarisodmproxy, 1.0);

gen_require(
 type polaris_odm_proxy_t;
)

polaris_btrace_data_manage(polaris_odm_proxy_t)
polaris_crft_data_manage(polaris_odm_proxy_t)
polaris_chasfs_manage(polaris_odm_proxy_t)
polaris_tdlresolve_read(polaris_odm_proxy_t)
polaris_tdlldb_list_dirs(polaris_odm_proxy_t)
polaris_cpld_read(polaris_odm_proxy_t)
polaris_lua_read(polaris_odm_proxy_t)
polaris_flashlib_read(polaris_odm_proxy_t)

polaris_ripc_sman_ui_serv_connect(polaris_odm_proxy_t)

polaris_db_tdlldb_dir_use(polaris_odm_proxy_t)

#allow to setrlimit
allow polaris_odm_proxy_t self:capability sys_resource;
allow polaris_odm_proxy_t self:process setrlimit;
allow polaris_odm_proxy_t self:capability dac_override;

polaris_odm_clnt2svr_mqipc_create(polaris_odm_proxy_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisodmproxy.te
No license file was found, but licenses were detected in source scan.

#
July 2017, Victor Kamensky
#
Copyright (c) 2017-2020 by Cisco Systems, Inc.
All rights reserved
#

<summary>Polaris issu_monitor Policy Rules.</summary>
#####
<summary>
Execute issumonitor in the polaris_issu_monitor domain.
</summary>
<param name="domain">

```

```

<summary>
Domain allowed to transition.
</summary>
</param>
#
interface(`polaris_issu_monitor_domtrans`,`
gen_require(`
 type polaris_issu_monitor_t, polaris_issu_monitor_exec_t;
`)

domtrans_pattern($1, polaris_issu_monitor_exec_t, polaris_issu_monitor_t)
`)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisissumonitor.if

No license file was found, but licenses were detected in source scan.

dnl

dnl May 2018, Victor Kamensky

dnl

dnl Copyright (c) 2018-2019 by Cisco Systems, Inc.

dnl All rights reserved

dnl

dnl Place holder to let selinux-policy makefile know that this module

dnl is autogenerated, but we have different rules for it

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisplatformipcauto.fc.in

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisplatformdbauto.te.in

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisplatformdbauto.if.in

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/autopolarisplatformipcbase.te.in

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisplatformdbauto.fc.in

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisplatformipcauto.te.in

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/autopolarisplatformipcbase.if.in

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisplatformipcauto.if.in

No license file was found, but licenses were detected in source scan.

#

# March 2017, Victor Kamensky

#

# Copyright (c) 2017-2020 by Cisco Systems, Inc.

# All rights reserved

#

policy\_module(polariskeyman, 1.0);

gen\_require(`

type polaris\_keyman\_t;

')

```
polaris_btrace_data_manage(polaris_keyman_t)
polaris_crft_data_manage(polaris_keyman_t)
polaris_chasfs_manage(polaris_keyman_t)
polaris_tdlresolve_read(polaris_keyman_t)
polaris_tdlldb_list_dirs(polaris_keyman_t)
polaris_flashlib_read(polaris_keyman_t)
```

```
polaris_ripc_sman_ui_serv_connect(polaris_keyman_t)
```

```
allow polaris_keyman_t self:capability net_admin;
keyman utilizes secure memory via ciscossl libcrypto.so (mlock)
allow polaris_keyman_t self:capability ipc_lock;
polaris_cpld_read(polaris_keyman_t)
```

```
__get_nprocs opens /sys/devices/system/cpu/online
ifdef(`quake_platform',`
dev_read_sysfs(polaris_keyman_t)
')
```

```
__get_nprocs opens /sys/devices/system/cpu/online
ifdef(`supernova_platform',`
dev_read_sysfs(polaris_keyman_t)
')
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariskeyman.te
No license file was found, but licenses were detected in source scan.
```

```
#
July 2017, Victor Kamensky
#
Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved
#
```

```
polaristamdrp file contexts place holder
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polaristamdrp.fc
No license file was found, but licenses were detected in source scan.
```

```
#
July 2017, Victor Kamensky
#
Copyright (c) 2017-2021 by Cisco Systems, Inc.
All rights reserved
```

```

#

/bootflash labels
/bootflash(/.*)? gen_context(system_u:object_r:polaris_disk_bootflash_t,s0)
/bootflash/.ssh(/.*)? gen_context(system_u:object_r:ssh_home_t,s0)
/bootflash/.ssh/ssh_host.*_key\pub gen_context(system_u:object_r:ssh_key_t,s0)
/bootflash/.ssh/ssh_host.*_key gen_context(system_u:object_r:ssh_key_t,s0)
/bootflash/tracelogs(/.*)? gen_context(system_u:object_r:polaris_btrace_data_t,s0)
/bootflash/tan(/.*)? gen_context(system_u:object_r:polaris_btrace_data_t,s0)
/bootflash/core(/.*)? gen_context(system_u:object_r:polaris_core_file_t,s0)
/bootflash/debug.conf gen_context(system_u:object_r:polaris_debug_conf_t,s0)
/bootflash/packages.conf gen_context(system_u:object_r:polaris_packages_conf_t,s0)

/vol/bootflash4 labels
/vol/bootflash4(/.*)? gen_context(system_u:object_r:polaris_disk_bootflash_t,s0)
/vol/bootflash4/csl_p_0(/.*)? gen_context(system_u:object_r:polaris_disk_csl_p_t,s0)
/vol/bootflash4/csl_p_1(/.*)? gen_context(system_u:object_r:polaris_disk_csl_p_t,s0)
/vol/bootflash4/csl_s_0(/.*)? gen_context(system_u:object_r:polaris_disk_csl_s_t,s0)
/vol/bootflash4/csl_s_1(/.*)? gen_context(system_u:object_r:polaris_disk_csl_s_t,s0)
/vol/bootflash4/obfl_* gen_context(system_u:object_r:polaris_obfl_data_t,s0)

/harddisk labels
/vol/harddisk(/.*)? gen_context(system_u:object_r:polaris_disk_harddisk_t,s0)
/vol/harddisk_internal(/.*)? gen_context(system_u:object_r:polaris_disk_harddisk_t,s0)
/vol/harddisk/tracelogs(/.*)? gen_context(system_u:object_r:polaris_btrace_data_t,s0)
/vol/harddisk/tan(/.*)? gen_context(system_u:object_r:polaris_btrace_data_t,s0)
/vol/harddisk/core(/.*)? gen_context(system_u:object_r:polaris_core_file_t,s0)
/vol/harddisk/debug.conf gen_context(system_u:object_r:polaris_debug_conf_t,s0)
/vol/harddisk_internal/tracelogs(/.*)? gen_context(system_u:object_r:polaris_btrace_data_t,s0)
/vol/harddisk_internal/tan(/.*)? gen_context(system_u:object_r:polaris_btrace_data_t,s0)
/vol/harddisk_internal/core(/.*)? gen_context(system_u:object_r:polaris_core_file_t,s0)
/vol/harddisk/packages.conf gen_context(system_u:object_r:polaris_packages_conf_t,s0)
on lmg persistent storage arranged differently
/csl_p_0(/.*)? gen_context(system_u:object_r:polaris_disk_csl_p_t,s0)
/csl_p_1(/.*)? gen_context(system_u:object_r:polaris_disk_csl_p_t,s0)
/csl_s_0(/.*)? gen_context(system_u:object_r:polaris_disk_csl_s_t,s0)
/csl_s_1(/.*)? gen_context(system_u:object_r:polaris_disk_csl_s_t,s0)
/obfl(/.*)? gen_context(system_u:object_r:polaris_obfl_data_t,s0)

/vol/disk0(/.*)? gen_context(system_u:object_r:polaris_disk_bootflash_t,s0)
/init is symbolic link to /lib/systemd/systemd
/init -l gen_context(system_u:object_r:init_exec_t,s0)
/disk0 is symbolic link to /vol/disk0
/disk0 -l gen_context(system_u:object_r:polaris_disk_bootflash_t,s0)

scooby device
/dev/scooby -c gen_context(system_u:object_r:polaris_scooby_device_t,s0)

```

```

spa devices handled by sys_platform driver
/dev/spa0 -c gen_context(system_u:object_r:polaris_spa_device_t,s0)
/dev/spa1 -c gen_context(system_u:object_r:polaris_spa_device_t,s0)
/dev/spa2 -c gen_context(system_u:object_r:polaris_spa_device_t,s0)
/dev/spa3 -c gen_context(system_u:object_r:polaris_spa_device_t,s0)
/dev/iocp0 -c gen_context(system_u:object_r:polaris_spa_device_t,s0)

htdp devices
/dev/htdp[0-9]* -c gen_context(system_u:object_r:polaris_htdp_device_t,s0)

/dev/epa device on asr1k(mcp)
/dev/epa[0-9]* -c gen_context(system_u:object_r:polaris_epa_device_t,s0)
/dev/epactrl[0-9]* -c gen_context(system_u:object_r:polaris_epa_device_t,s0)

/dev/luna_fpga on asr1k(mcp)
/dev/luna_mbfpga -c gen_context(system_u:object_r:polaris_luna_mbfpga_device_t,s0)

/dev/dash_fpga device on fugazi(mcp)
/dev/dash_fpga -c gen_context(system_u:object_r:polaris_dash_device_t,s0)
/dev/dash_fpga_cc0 -c gen_context(system_u:object_r:polaris_dash_device_t,s0)

/dev/astro on asr1k(mcp)
/dev/astro -c gen_context(system_u:object_r:polaris_astro_device_t,s0)

/dev/oob_evfc on asr1k(mcp)
/dev/oob_evfc -c gen_context(system_u:object_r:polaris_oob_evfc_device_t,s0)

/dev/cpp_il on asr1k(mcp)
/dev/cpp_il -c gen_context(system_u:object_r:polaris_cpp_il_device_t,s0)

/dev/icp_adf_ctl -c gen_context(system_u:object_r:polaris_icp_device_t,s0)
/dev/icp_adf_gige_wd -c gen_context(system_u:object_r:polaris_icp_device_t,s0)
/dev/icp_dev0_csr -c gen_context(system_u:object_r:polaris_icp_device_t,s0)
/dev/icp_dev0_ring -c gen_context(system_u:object_r:polaris_icp_device_t,s0)
/dev/icp_dev_mem -c gen_context(system_u:object_r:polaris_icp_device_t,s0)
/dev/icp_dev_mem_page -c gen_context(system_u:object_r:polaris_icp_device_t,s0)
/dev/icp_dev_processes -c gen_context(system_u:object_r:polaris_icp_device_t,s0)

/dev/ds31408 -c gen_context(system_u:object_r:polaris_ds31408_device_t,s0)
/dev/cbdma -c gen_context(system_u:object_r:polaris_cbdma_device_t,s0)
/dev/cpp_htdp -c gen_context(system_u:object_r:polaris_cpp_htdp_device_t,s0)
/dev/n2_device -c gen_context(system_u:object_r:polaris_n2_device_t,s0)
/dev/cy2213 -c gen_context(system_u:object_r:polaris_cy2213_device_t,s0)

/dev/vega -c gen_context(system_u:object_r:polaris_vega_device_t,s0)

```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarismcp.fc
```

No license file was found, but licenses were detected in source scan.

```
dnl
dnl April 2018, Victor Kamensky
dnl
dnl Copyright (c) 2018-2019 by Cisco Systems, Inc.
dnl All rights reserved
dnl
define(^max_bay_map', `defn(format(`max_bay_map[%s-%s]", ` $1', ` $2'))')
define(^max_bay_map_set', `define(format(`max_bay_map[%s-%s]", ` $1', ` $2'), ` $3'))

define(^max_elastic_map', `defn(format(`max_elastic_map[%s-%s-%s]", ` $1', ` $2', ` $3'))')
define(^max_elastic_map_set', `define(format(`max_elastic_map[%s-%s-%s]", ` $1', ` $2', ` $3'), ` $4'))

define(^max_scope_map', `ifelse($2, `elastic', `max_elastic_map($1, $2, $3)', `max_bay_map($1, $2)'))

dnl RICP scope handling
define(^min_bay_ripc_map', `defn(format(`min_bay_ripc_map[%s-%s]", ` $1', ` $2'))')
define(^min_bay_ripc_map_set', `define(format(`min_bay_ripc_map[%s-%s]", ` $1', ` $2'), ` $3'))

define(^min_elastic_ripc_map', `defn(format(`min_elastic_ripc_map[%s-%s-%s]", ` $1', ` $2', ` $3'))')
define(^min_elastic_ripc_map_set', `define(format(`min_elastic_ripc_map[%s-%s-%s]", ` $1', ` $2', ` $3'), ` $4'))

define(^min_scope_ripc_map_aux', `ifelse($2, `elastic', `min_elastic_ripc_map($1, $2, $3)', `min_bay_ripc_map($1,
$2)'))
define(^min_scope_ripc_map', `ifelse(min_scope_ripc_map_aux($1, $2, $3), `', 0, min_scope_ripc_map_aux($1, $2,
$3)))

define(^max_bay_ripc_map', `defn(format(`max_bay_ripc_map[%s-%s]", ` $1', ` $2'))')
define(^max_bay_ripc_map_set', `define(format(`max_bay_ripc_map[%s-%s]", ` $1', ` $2'), ` $3'))

define(^max_elastic_ripc_map', `defn(format(`max_elastic_ripc_map[%s-%s-%s]", ` $1', ` $2', ` $3'))')
define(^max_elastic_ripc_map_set', `define(format(`max_elastic_ripc_map[%s-%s-%s]", ` $1', ` $2', ` $3'), ` $4'))

define(^max_scope_ripc_map_aux', `ifelse($2, `elastic', `max_elastic_ripc_map($1, $2, $3)',
`max_bay_ripc_map($1, $2)'))
define(^max_scope_ripc_map', `ifelse(max_scope_ripc_map_aux($1, $2, $3), `', 0, max_scope_ripc_map_aux($1,
$2, $3)))
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/polaris_max_scope.m4
```

No license file was found, but licenses were detected in source scan.

```
#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
```

#

## <summary>Polaris periodic Policy Rules.</summary>

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisperiodic.if

No license file was found, but licenses were detected in source scan.

#

# December 2019, Victor Kamensky

#

# Copyright (c) 2019 by Cisco Systems, Inc.

# All rights reserved

#

## <summary>Polaris service\_mgr Policy Rules.</summary>

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisservicemgr.if

No license file was found, but licenses were detected in source scan.

#

# March 2017, Victor Kamensky

#

# Copyright (c) 2016-2021 by Cisco Systems, Inc.

# All rights reserved

#

policy\_module(polariscommon, 1.0);

#####

# Polaris common

#####

# domain that holds all polaris processes

attribute polaris\_domain;

# domain that holds all polaris processes executables

attribute polaris\_exec\_domain;

# domain that holds all polaris processes plus few base types that operates on

# during system start, like initrc\_t and unconfined\_service\_t. Please remove

# unconfined types latter.

attribute polaris\_extended\_domain;

gen\_require(^

type unconfined\_t;

type unconfined\_service\_t;



```

 type initrc_t;
 type init_t;
 ')
typeattribute unconfined_t polaris_extended_domain;
typeattribute unconfined_service_t polaris_extended_domain;
typeattribute initrc_t polaris_extended_domain;
typeattribute init_t polaris_extended_domain;

common permissions that are safe to grant and hard to root cause.
these permissions may need to be turned off during development or tightened
in future releases
gen_require(
 attribute domain;
)

sys_resource denial is seen due to disk full issue
and possibly FD exceeding limit
allow domain self:capability sys_resource;

When management interface is enabled for development Polaris device can be
access by telnet, which directly drops into shell. It would be desirreably
to remove telnet functionality att all. But for now we need transition
rule to get shell running in unconfined domain.
gen_require(
 type telnetd_t;
)

unconfined_shell_domtrans(telnetd_t)

#####
This block is policies for "request platform software system shell" CLI.
Execute bexecute in polaris_bexecute domain.
polaris_bexecute_domtrans(telnetd_t)

/tmp/sw/rp/0/0/rp_security/mount/usr/binos/sbin/in.telnetd
-L /usr/binos/conf/brelay.sh
- this needs read/write/create access to /tmp/rp/trace/.in_telnetd_*.bin.tmp
which later gets renamed to /tmp/rp/trace/telnetd_service_sh_*.bin
polaris_btrace_data_manage(telnetd_t)
mcp_telnetd_init through btrace_application_start calls get_chassis_number
so it needs chasfs access
polaris_chasfs_read(telnetd_t)
polaris_cpld_read(telnetd_t)
polaris_btrace_lvl_config_manage(telnetd_t)
#####

LOOK AT ME: rsync needs sys_admin capability
only seen when we boot in enforcing mode, localtime glibc library call
needs time zone information and through __tz_convert function it eventually

```

```

calls syspage function and that in turns calls Cisco syspage related
prctl that is protected by CAP_ADMIN now
gen_require(
 type rsync_t;
)
allow rsync_t self:capability sys_admin;

mount_packages.sh systemd unit runs under init_t and it leaks unix socket
gen_require(
 type rsync_t;
 type init_t;
)
allow rsync_t init_t:unix_stream_socket getattr;

LOOK AT ME: auditd needs sys_admin capability
only seen when we boot in enforcing mode, denials happens upon exec of
auditdsp why is not entirely clear
gen_require(
 type auditd_t;
)
allow auditd_t self:capability sys_admin;

LOOK AT ME:
Because Cisco kernel features check for capability sys_admin
before granting access to it. It turns out to be mistake because
in SELinux universe beeing root does not meen one have sys_admin
capability. For now grant sys_admin capability to everyone :(
gen_require(
 attribute domain;
)
allow domain self:capability sys_admin;

LOOK AT ME:
all polaris SMU system is based on LD_LIBRARY_PATH passing from
parent to child, but if auxv AT_SECURE would be set to 1, glibc
will clean LD_LIBRARY_PATH and other environment variables when
it execve another process. We need to grant noatsecure to all
processes
gen_require(
 attribute domain;
)
allow domain domain:process { noatsecure rlimitinh };

nfs server exporting some directories like /harddisk
gen_require(
 type nfsd_t;
)
polaris_disk_bootflash_read_lnk(nfsd_t)

```

```

polaris_harddisk_read(nfsd_t)

nfs server check hugetlbfs files system
gen_require(
 type hugetlbfs_t;
)
list_dirs_pattern(nfsd_t, hugetlbfs_t, hugetlbfs_t)

temporarily addressing denial,
preferable to turn on nfs_export_all_rw/ro boolean
gen_require(
 type removable_t;
)
list_dirs_pattern(nfsd_t, removable_t, removable_t)

firmware type
type polaris_firmware_t;
files_type(polaris_firmware_t)

some systemd unit creates /firmware directory in initramfs
gen_require(
 attribute domain;
 type root_t;
)
filetrans_pattern(domain, root_t, polaris_firmware_t, dir, "firmware")

handling /tmp/debug.conf, created by systemd unit
gen_require(
 type polaris_debug_conf_t;
 type unconfined_service_t;
)
files_tmp_filetrans(unconfined_service_t, polaris_debug_conf_t, {file lnk_file}, "debug.conf")

/tmp/etc files; serving as /etc like but sitting in mutable storage
(assuming that real /etc would become read-only eventually)
type polaris_etc_t;
files_type(polaris_etc_t);

/tmp/sv files
type polaris_sv_tmp_t;
files_tmp_file(polaris_sv_tmp_t)

/dev/i2c-N
type polaris_i2c_device_t;
dev_node(polaris_i2c_device_t)

remap_mem0 device
type polaris_remap_mem_device_t;

```

```

dev_node(polaris_remap_mem_device_t)

type polaris_ebf_t;
files_type(polaris_ebf_t)

allow all domains map/read ebf files
gen_require(
 attribute domain;
)
polaris_ebf_map(domain)

btrace files for telnetd, since telnetd is open source label
and it does not use our domain creation template
gen_require(
 type telnetd_t;
)
type polaris_telnetd_bt_t;
polaris_btrace_data_type(polaris_telnetd_bt_t)
polaris_btrace_data_client(telnetd_t, polaris_telnetd_bt_t)

type polaris_telnetd_maroon_t;
polaris_maroon_data_type(polaris_telnetd_maroon_t)
polaris_maroon_data_client(telnetd_t, polaris_telnetd_maroon_t)

#####
"install add file" on ULTRA invokes:
/tmp/sw/rp/0/0/rp_security/mount/usr/binos/sbin/in.telnetd -L /usr/binos/conf/brelay.sh
That needs getattr on /lib/systemd/system/ksm.service
polaris_ksm_run_check(telnetd_t)

restorecon needs sys_resource capability
gen_require(
 type setfiles_t;
)
allow setfiles_t self:capability sys_resource;

accessing /sys/firmware/dmi/tables/DMI
gen_require(
 type dmidecode_t;
 type sysfs_t;
)
mmap_files_pattern(dmidecode_t, sysfs_t, sysfs_t)
gen_require(
 type dmidecode_t;
 type memory_device_t;
)
allow dmidecode_t memory_device_t:chr_file map;
called by confd_t label with it is file as stdin

```

```

polaris_conf_d_tmp_use_fifo(dmidecode_t)

rpcbind binds to port
gen_require(
 type rpcbind_t;
)
corenet_udp_bind_generic_port(rpcbind_t)

when polaris_unconfined we need to mark all subject labels except
iosd lable to run as unconfined
ifdef(^polaris_unconfined',`
 gen_require(
 type auditd_t;
 type dhcpc_t;
 type getty_t;
 type inetd_t;
 type initrc_t;
 type init_t;
 type journalctl_t;
 type nfsd_t;
 type ntpd_t;
 type rpcbind_t;
 type rpcd_t;
 type rsync_t;
 type setfiles_t;
 type sshd_t;
 type syslogd_t;
 type system_dbusd_t;
 type udev_t;
 type virtfd_t;
 type virtlogd_t;
 type ldconfig_t;
 type hostname_t;
)
 unconfined_domain(auditd_t)
 unconfined_domain(dhcpc_t)
 unconfined_domain(getty_t)
 unconfined_domain(inetd_t)
 unconfined_domain(initrc_t)
 unconfined_domain(init_t)
 unconfined_domain(journalctl_t)
 unconfined_domain(nfsd_t)
 unconfined_domain(ntpd_t)
 unconfined_domain(rpcbind_t)
 unconfined_domain(rpcd_t)
 unconfined_domain(rsync_t)
 unconfined_domain(setfiles_t)
 unconfined_domain(sshd_t)

```

```

unconfined_domain(syslogd_t)
unconfined_domain(system_dbusd_t)
unconfined_domain(udev_t)
unconfined_domain(virtfd_t)
unconfined_domain(virtlogd_t)
unconfined_domain(ldconfig_t)
unconfined_domain(hostname_t)
)

ifdef(`polaris_unconfined',`
optional_policy(`
gen_require(`
type container_runtime_t;
)
unconfined_domain(container_runtime_t)
)
)

/tmp/rsync_log_dir files
type polaris_rsync_tmp_t;
files_tmp_file(polaris_rsync_tmp_t)

activate correct named transition for basic directories
when code runs under unconfined_service_t, i.e calls ip
command that runs under ifconfig_t and creates /run/netns
gen_require(`
type unconfined_service_t;
)
domain_named_filetrans(unconfined_service_t)
gen_require(`
type ifconfig_t;
type ifconfig_var_run_t;
)
allow ifconfig_t ifconfig_var_run_t:dir mounton;

earlier invocation of ifconfig complains about tmp_t mounton
on /sys directory
gen_require(`
type tmp_t;
)
allow ifconfig_t tmp_t:dir mounton;

#SERDES library stores info in /tmp/serdes_asic_key_dir/*
type polaris_serdes_asic_key_tmp_t;
files_tmp_file(polaris_serdes_asic_key_tmp_t)

/dev/shm/vrf_shm access
type polaris_vrf_shm_t;

```

```

files_type(polaris_vrf_shm_t)

/dev/shm/cerrno_dll access
type polaris_cerr_shm_t;
files_tmpfs_file(polaris_cerr_shm_t)

for /sbin/ip: /dev/shm/vrf_shm access in netns creation
gen_require(
 type ifconfig_t;
)
polaris_vrf_shm_manage(ifconfig_t)

for /sbin/ip: adds lfts device in netns creation
polaris_lfts_dev_use(ifconfig_t)

new systemd-tmpfiles needs this permissions
gen_require(
 type systemd_tmpfiles_t;
)
allow systemd_tmpfiles_t self:capability sys_resource;
allow systemd_tmpfiles_t self:process setrlimit;

gen_require(
 type unconfined_service_t;
)
ssh_initrc_domtrans(unconfined_service_t)

#wlc awips
type polaris_awips_signature_file_t;
polaris_pfile_type(polaris_awips_signature_file_t)

/usr/bin/curl
type polaris_curl_t;
type polaris_curl_exec_t;
init_system_domain(polaris_curl_t, polaris_curl_exec_t)
corenet_udp_bind_generic_node(polaris_curl_t)
auth_use_nsswitch(polaris_curl_t)
polaris_crft_data_read(polaris_curl_t)

for ip netns exec X curl
optional_policy(
 polaris_curl_domtrans(ifconfig_t)
)

/etc/init.d/sshd that runs under initrc_t through ssh-keygen
creates /config/.ssh directory if does not exist; /config
directory is typically symlink to /bootflash
gen_require(

```

```

 type initrc_t;
 type ssh_home_t;
)
polaris_bootflash_filetrans(initrc_t, ssh_home_t, dir, ".ssh")

/tmp/ldwm_envelope file
type polaris_ldwm_envelope_tmp_t;
files_tmp_file(polaris_ldwm_envelope_tmp_t)
gen_require(`
 type initrc_t;
 type init_t;
)
files_tmp_filetrans({ initrc_t init_t }, polaris_ldwm_envelope_tmp_t, file, "ldwm_envelope")

#####
CLI: show platform software tech-support
#####
polaris_utility_domain_template(tech_support)
polaris_bexecute_domain(polaris_tech_support_t, polaris_tech_support_exec_t)
polaris_bexecute_domtrans(polaris_tech_support_t)

allow to run readlink -f /usr/binos/conf/psimple.sh
corecmd_exec_bin(polaris_tech_support_t)

Additional policies needed for workflow
auth_use_nsswitch(polaris_tech_support_t)
dev_list_sysfs(polaris_tech_support_t)
polaris_chasfs_read(polaris_tech_support_t)
polaris_cpld_read(polaris_tech_support_t)
scripts stdin is set by hman and needs access to pipes like pipe:[271524]
polaris_hman_use_fifo(polaris_tech_support_t)
Allow ls to /tmp/ufs/crashinfo
optional_policy(`
 polaris_ncd_tmp_read(polaris_tech_support_t)
)

Allow readlink to /usb0 and /usb1
optional_policy(`
 fs_read_removable_symlinks(polaris_tech_support_t)
)

gen_require(`
 type polaris_btrace_tmppub_t;
 type polaris_disk_bootflash_t;
 type polaris_disk_crashinfo_t;
)

platform_tech_support.sh creates misc files/dirs under /tmp/tmppub

```



```
type polaris_tech_support_tmp_t;
files_tmp_file(polaris_tech_support_tmp_t)
filetrans_pattern(polaris_tech_support_t, polaris_btrace_tmppub_t, polaris_tech_support_tmp_t, { file dir })
misc file directly in /tmp like /tmp/esg_tech_support_command_file_out.txt
files_tmp_filetrans(polaris_tech_support_t, polaris_tech_support_tmp_t, file,
"esg_tech_support_command_file_out.txt")
files_tmp_filetrans(polaris_tech_support_t, polaris_tech_support_tmp_t, file,
"sdwan_tech_support_command_file_out.txt")
manage_files_pattern(polaris_tech_support_t, polaris_tech_support_tmp_t, polaris_tech_support_tmp_t)
manage_dirs_pattern(polaris_tech_support_t, polaris_tech_support_tmp_t, polaris_tech_support_tmp_t)
```

```
/bootflash/certs
```

```
type polaris_ap_cert_file_t;
files_type(polaris_ap_cert_file_t)
polaris_pfile_type(polaris_ap_cert_file_t)
```

```
Additional policies needed for workflow when file option is used
show platform software tech-support file bootflash:show_tech_file
polaris_bootflash_manage(polaris_tech_support_t)
polaris_disk_crashinfo_manage(polaris_tech_support_t)
fs_getattr_tmpfs(polaris_tech_support_t)
polaris_btrace_persistent_data_read(polaris_tech_support_t)
```

```
type polaris_rommon_info_tmp_t;
files_tmp_filetrans(initrc_t, polaris_rommon_info_tmp_t, file, "existing_rommon_info")
manage_files_pattern(initrc_t, polaris_rommon_info_tmp_t, polaris_rommon_info_tmp_t)
fs_associate_tmpfs(polaris_rommon_info_tmp_t)
```

```
tamlib debug file
type polaris_tamlib_dbg_file_t;
polaris_pfile_type(polaris_tamlib_dbg_file_t)
```

```
read /proc/cmdline
kernel_read_system_state(polaris_tech_support_t)
read rmonbifo files such as env_var.sh
polaris_rmonbifo_tmp_read(polaris_tech_support_t)
read /tmp/sw/boot/base_pkg
polaris_boot_tmp_read(polaris_tech_support_t)
```

```
/dev/DDR
type polaris_DDR_device_t;
dev_node(polaris_DDR_device_t)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscommon.te

No license file was found, but licenses were detected in source scan.

dnl

dnl April 2018, Victor Kamensky

dnl

dnl Copyright (c) 2018-2019 by Cisco Systems, Inc.

dnl All rights reserved

dnl

dnl Ripc Base Interface Map: track that type declations unique

```
define(^rip_base_type_map', `defn(format(`rip_base_type_map[%s]", ` $1'))')
```

```
define(^rip_base_type_map_set', `define(format(`rip_base_type_map[%s]", ` $1'), ` $2'))')
```

```
define(^rip_base_port_map', `defn(format(`rip_base_port_map[%s]", ` $1'))')
```

```
define(^rip_base_port_map_set', `define(format(`rip_base_port_map[%s]", ` $1'), ` $2'))')
```

```
define(^polaris_rip_portcon', portcon tcp $1 gen_context(system_u:object_r:$2,s0))
```

```
define(^polaris_rip_portcon_aux', `dnl
```

```
ifelse(rip_base_port_map($1), `', `polaris_rip_portcon($1, $2)')
```

```
rip_base_port_map_set($1, $2)
```

```
)
```

```
define(^polaris_rip_portcon_many',
```

```
`polaris_rip_portcon_aux(eval($2 + $3), $1)
```

```
ifelse($4, $3, `', `polaris_rip_portcon_many($1, $2, eval($3 + 1), $4)')
```

```
define(^polaris_rip_service_server_aux', `dnl
```

```
type $1, port_type, defined_port_type;
```

```
$4
```

```
)
```

```
define(^polaris_rip_service_server_full', `dnl
```

```
polaris_rip_service_server_aux(rip_label($1), rip_stem($1), process_label($2),
```

```
 polaris_rip_portcon_many(rip_label($1), $5, min_scope_rip_map($3, $4, $2),
```

```
max_scope_rip_map($3, $4, $2)))
```

```
)
```

```
define(^polaris_rip_service_server', `dnl
```

```
ifelse(rip_base_type_map($1), `', `polaris_rip_service_server_full($1, $2, $3, $4, $5)')
```

```
rip_base_type_map_set($1, 1)
```

```
)
```

```
define(^polaris_rip_service_client', `dnl
```

```
ifelse(rip_base_type_map($1), `', `polaris_rip_service_server_full($1, $2, $3, $4, $5)')
```

```
rip_base_type_map_set($1, 1)
```

```
)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/polaris_ipc_base_rip_te.m4
```

No license file was found, but licenses were detected in source scan.

```
#
March 2017, Victor Kamensky
#
Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved
#

<summary>Polaris ngwc_plfm_mgr Policy Rules.</summary>

#####
<summary>
Read /tmp/installer files and directories
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_ngwc_plfm_mgr_tmp_manage`,
 gen_require(`
 type polaris_ngwc_plfm_mgr_tmp_t;
 `)
 manage_dirs_pattern($1, polaris_ngwc_plfm_mgr_tmp_t, polaris_ngwc_plfm_mgr_tmp_t)
 manage_files_pattern($1, polaris_ngwc_plfm_mgr_tmp_t, polaris_ngwc_plfm_mgr_tmp_t)
)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisngwcplfmgr.if

No license file was found, but licenses were detected in source scan.

```
#
April 2017, Victor Kamensky
#
Copyright (c) 2017-2020 by Cisco Systems, Inc.
All rights reserved
#

<summary>Polaris dmi_dmiauthd Policy Rules.</summary>

#####
<summary>
Connect to and send messages to dmiauthd.
tmp/.DmiAuth.sock unix datagram sockets.
</summary>
<param name="domain">
```

```

<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_dmi_dmiauthd_dgram_send`,`
 gen_require(`
 type polaris_dmi_dmiauthd_tmp_t;
 type polaris_dmi_dmiauthd_t;
 `)
 allow $1 self:unix_stream_socket {create_socket_perms};
 allow $1 polaris_dmi_dmiauthd_t:unix_stream_socket { connectto };
 write_sock_files_pattern($1, polaris_dmi_dmiauthd_tmp_t,polaris_dmi_dmiauthd_tmp_t)
`)

```

```
#####
```

```

<summary>
Manage dmiauthd fifo files
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_dmiauthd_tmp_manage`,`
 gen_require(`
 type polaris_dmi_dmiauthd_tmp_t;
 type tmp_t;
 `)
 manage_fifo_files_pattern($1, tmp_t, polaris_dmi_dmiauthd_tmp_t)
`)

```

```
#####
```

```

<summary>
Write into fifo file created by dmiauthd, typical case when
dmiauthd starts script under popen.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_dmiauthd_use_fifo`,`
 gen_require(`
 type polaris_dmi_dmiauthd_t;
 `)

```

```

write_fifo_files_pattern($1, polaris_dmi_dmiauthd_t, polaris_dmi_dmiauthd_t)
)

#####
<summary>
Manage /tmp/netconf-yang-diag/ files
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolebase/>
#
interface(`polaris_dmi_dmiauthd_tmp_diags_manage`,`
gen_require(`
type polaris_dmi_dmiauthd_tmp_diags_t;
`)
manage_files_pattern($1, polaris_dmi_dmiauthd_tmp_diags_t, polaris_dmi_dmiauthd_tmp_diags_t)
manage_dirs_pattern($1, polaris_dmi_dmiauthd_tmp_diags_t, polaris_dmi_dmiauthd_tmp_diags_t)
manage_lnk_files_pattern($1, polaris_dmi_dmiauthd_tmp_diags_t, polaris_dmi_dmiauthd_tmp_diags_t)
)

```

```

#####
<summary>
Read /tmp/netconf-yang-diag/ files
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolebase/>
#
interface(`polaris_dmi_dmiauthd_tmp_diags_read`,`
gen_require(`
type polaris_dmi_dmiauthd_tmp_diags_t;
`)
read_files_pattern($1, polaris_dmi_dmiauthd_tmp_diags_t, polaris_dmi_dmiauthd_tmp_diags_t)
list_dirs_pattern($1, polaris_dmi_dmiauthd_tmp_diags_t, polaris_dmi_dmiauthd_tmp_diags_t)
read_lnk_files_pattern($1, polaris_dmi_dmiauthd_tmp_diags_t, polaris_dmi_dmiauthd_tmp_diags_t)
)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisdmidmiauthd.if

No license file was found, but licenses were detected in source scan.

#

```
March 2019, Shikhar Dogra
#
Copyright (c) 2019 by Cisco Systems, Inc.
All rights reserved
#
```

```
polarisfmancc file contexts place holder
```

```
Found in path(s):
```

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisfmancc.fc
```

```
No license file was found, but licenses were detected in source scan.
```

```
dnl
```

```
dnl April 2018, Victor Kamensky
```

```
dnl
```

```
dnl Copyright (c) 2018-2019 by Cisco Systems, Inc.
```

```
dnl All rights reserved
```

```
dnl
```

```
define(`lipc_stem', `translit(patsubst($1, `-lipc$', ``), `-', `_)')
define(`lipc_label', `format(`polaris_%s_lipc_t', lipc_stem($1))')
```

```
dnl Lipc Type Map: track that type declations unique
```

```
define(`lipc_type_map', `defn(format(`lipc_type_map[%s]', `$1'))')
```

```
define(`lipc_type_map_set', `define(format(`lipc_type_map[%s]', `$1'), `$2')')
```

```
Found in path(s):
```

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/polaris_ipc_lipc.m4
```

```
No license file was found, but licenses were detected in source scan.
```

```
#
```

```
February 2020, Victor Kamensky
```

```
#
```

```
Copyright (c) 2020-2021 by Cisco Systems, Inc.
```

```
All rights reserved
```

```
#
```

```
policy_module(polariscfgmgr, 1.0);
```

```
gen_require(`
```

```
 type polaris_cfgmgr_t;
```

```
')
```

```
polaris_chasfs_manage(polaris_cfgmgr_t)
```

```
read day0_oper.xml and write local.data.tmp
```

```
polaris_bootflash_manage(polaris_cfgmgr_t)
```

```
polaris_boot_tmp_read(polaris_cfgmgr_t)
```

```
polaris_cpld_read(polaris_cfgmgr_t)
```

```
polaris_tdlresolve_read(polaris_cfgmgr_t)
```

```
polaris_flashlib_read(polaris_cfgmgr_t)
```

```

polaris_rpc_sman_ui_serv_connect(polaris_cfgmgr_t)

polaris_db_tlddb_dir_use(polaris_cfgmgr_t)

logging_send_syslog_msg(polaris_cfgmgr_t)

vconfd_load_shared_schemas
polaris_conf_d_shared_schema_read(polaris_cfgmgr_t)

polaris_cedge_reset_ns(polaris_cfgmgr_t)

polaris_cedge_etc_manage(polaris_cfgmgr_t)

/etc/version is opened via "show sdwan version"
polaris_conf_d_etc_read(polaris_cfgmgr_t)

/var/run/.cfgmgr socket and pid
type polaris_cfgmgr_var_run_t;
files_pid_file(polaris_cfgmgr_var_run_t)
manage_files_pattern(polaris_cfgmgr_t, polaris_cfgmgr_var_run_t, polaris_cfgmgr_var_run_t)
manage_sock_files_pattern(polaris_cfgmgr_t, polaris_cfgmgr_var_run_t, polaris_cfgmgr_var_run_t)
files_pid_filetrans(polaris_cfgmgr_t, polaris_cfgmgr_var_run_t, { file sock_file })

sets up symbloc link /var/run/netns/default to pid 1 netns
sysnet_manage_ifconfig_run(polaris_cfgmgr_t)

PLEASE LOOK AT ME create_syslog_conf_file function in
viptela/cfgmgr/cfgmgr_logging.c creates /etc/syslog.conf.sysklogd file
that nobody uses in polaris
files_manage_etc_files(polaris_cfgmgr_t)

in cfgmgr_vpn_namespace_add creates udp socket
allow polaris_cfgmgr_t self:udp_socket create_socket_perms;

watch /bootflash/sdwan/day0_oper.xml
polaris_persistent_watch(polaris_cfgmgr_t)

compute_available_memory executes '/bin/df /dev/shm'
corecmd_exec_bin(polaris_cfgmgr_t)
vip_binos_cpuinfo calls sysconf
dev_read_sysfs(polaris_cfgmgr_t)
cfgmgr_show_system_get_elem collects SDWAN_DISK_MOUNT (/bootflash) fs info
fs_getattr_xattr_fs(polaris_cfgmgr_t)
crashlist_refresh collects info about corefiles
polaris_core_file_read(polaris_cfgmgr_t)
cfgmgr_show_system_get_elem collects info about /bootflash/.installer fs
polaris_disk_install_read(polaris_cfgmgr_t)

```

```

cfgmgr_show_system_get_elem() collects available mem info by executing
'/bin/df /tmp/rp/tlddb'
polaris_tlddb_list_dirs(polaris_cfgmgr_t)

#vip_binos_cpuintfo() performs file operations on PROC_CPUSTAT_FILE (/proc/stat)
polaris_disk_install_fs_getattr(polaris_cfgmgr_t)
#vip_binos_meminfo() reads PROC_MEMINFO_PATH (/proc/meminfo)
kernel_read_system_state(polaris_cfgmgr_t)

configure ip address on system interface on vrf 1
sysnet_domtrans_ifconfig(polaris_cfgmgr_t)

create tunnel interface in cfgmgr_tun_alloc function
corenet_rw_tun_tap_dev(polaris_cfgmgr_t)
allow polaris_cfgmgr_t self:tun_socket create;

works if /proc accept_source_route file of system interface
kernel_rw_net_sysctls(polaris_cfgmgr_t)

work with /tmp/xml/geostats
polaris_cedge_xml_tmp_manage(polaris_cfgmgr_t)

work with /tmp/tmp/geostats
polaris_cedge_tmp_manage(polaris_cfgmgr_t)
allow polaris_cfgmgr_t self:process setpgid;

map on /etc/passwd
auth_map_passwd(polaris_cfgmgr_t)

give read permissions for /tmp/GPS_supported file created by iosd
polaris_iosd2iox_tmp_read(polaris_cfgmgr_t)

```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscfgmgr.te
```

No license file was found, but licenses were detected in source scan.

dnl

dnl May 2018, Manohar Hungund

dnl

dnl Copyright (c) 2018-2019, 2021 by Cisco Systems, Inc.

dnl All rights reserved

dnl

dnl Starfleet Platform Max Bay Limits

```
max_bay_map_set(`rp', `per_bay', 0)
```

```
max_bay_map_set(`bp', `per_bay', 0)
```

```
max_bay_map_set(`cc', `per_bay', 1)
```

```
max_bay_map_set(`fp', `per_bay', 1)
```



```
min_bay_ripc_map_set(rp, `per_bay', 0)
min_bay_ripc_map_set(bp, `per_bay', 0)
min_bay_ripc_map_set(cc, `per_bay', 1)
min_bay_ripc_map_set(fp, `per_bay', 0)
```

```
max_bay_ripc_map_set(rp, `per_bay', 1)
max_bay_ripc_map_set(bp, `per_bay', 1)
max_bay_ripc_map_set(cc, `per_bay', 1)
max_bay_ripc_map_set(fp, `per_bay', 1)
```

```
min_bay_ripc_map_set(rp, `global', 0)
min_bay_ripc_map_set(bp, `global', 0)
min_bay_ripc_map_set(cc, `global', 1)
min_bay_ripc_map_set(fp, `global', 0)
```

```
max_bay_ripc_map_set(rp, `global', 1)
max_bay_ripc_map_set(bp, `global', 1)
max_bay_ripc_map_set(cc, `global', 1)
max_bay_ripc_map_set(fp, `global', 1)
```

dnl in elastic scope each process has its own value

```
max_elastic_map_set(rp, `elastic', BPROC_ODM, 0)
max_elastic_map_set(cc, `elastic', BPROC_ODM, 0)
max_elastic_map_set(fp, `elasitic', BPROC_ODM, 0)
```

```
max_elastic_map_set(rp, `elastic', BPROC_WNCD, 0)
max_elastic_map_set(cc, `elastic', BPROC_WNCD, 0)
max_elastic_map_set(fp, `elastic', BPROC_WNCD, 0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/bigbangmaps.m4
```

No license file was found, but licenses were detected in source scan.

dnl

dnl Copyright (c) 2020 by Cisco Systems, Inc.

dnl All rights reserved

dnl

dnl Nyquist Platform Max Bay Limits

```
max_bay_map_set(rp, `per_bay', 0)
max_bay_map_set(cc, `per_bay', 0)
max_bay_map_set(fp, `per_bay', 0)
```

dnl in elastic scope each process has its own value

```
max_elastic_map_set(rp, `elastic', BPROC_ODM, 0)
max_elastic_map_set(cc, `elastic', BPROC_ODM, 0)
max_elastic_map_set(fp, `elasitic', BPROC_ODM, 0)
```

```
max_elastic_map_set(rp, `elastic', BPROC_WNCD, 0)
```

```
max_elastic_map_set(`cc', `elastic', BPROC_WNCD, 0)
max_elastic_map_set(`fp', `elastic', BPROC_WNCD, 0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/quake2maps.m4
No license file was found, but licenses were detected in source scan.
```

```
#
August 2017, Shawn Lu
#
Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved
#
```

```
polarisodmproxy file contexts place holder
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisodmproxy.fc
No license file was found, but licenses were detected in source scan.
```

```
#
August 2017, Shawn Lu
#
Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved
#
```

```
<summary>Polaris rif_mgr Policy Rules.</summary>
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisrifmgr.if
No license file was found, but licenses were detected in source scan.
```

```
#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2020 by Cisco Systems, Inc.
All rights reserved
#
```

```
#
August 2018 Man-Yee Hau
#
Copyright (c) 2018-2020 by cisco Systems, Inc.
All rights reserved
```

```
/usr/cpp/bin/qfp-ucode-csr -- gen_context(system_u:object_r:polaris_qfp_exec_t,s0)
/usr/cpp/bin/qfp-ucode-csr-us -- gen_context(system_u:object_r:polaris_qfp_exec_t,s0)
```

```

/usr/cpp/bin/qfp-ucode-csx -- gen_context(system_u:object_r:polaris_qfp_exec_t,s0)
/usr/cpp/bin/qfp-ucode-c8kv -- gen_context(system_u:object_r:polaris_qfp_exec_t,s0)
/usr/cpp/bin/qfp-ucode-wlc -- gen_context(system_u:object_r:polaris_qfp_exec_t,s0)
/usr/cpp/bin/qfp-ucode-utah -- gen_context(system_u:object_r:polaris_qfp_exec_t,s0)
/usr/cpp/bin/qfp-ucode-tsn -- gen_context(system_u:object_r:polaris_qfp_exec_t,s0)
/usr/cpp/bin/qfp-ucode-tsn-le -- gen_context(system_u:object_r:polaris_qfp_exec_t,s0)
/usr/cpp/bin/qfp-ucode-supernova -- gen_context(system_u:object_r:polaris_qfp_exec_t,s0)
/usr/cpp/bin/qfp-ucode-blackheart -- gen_context(system_u:object_r:polaris_qfp_exec_t,s0)
/usr/cpp/bin/qfp-ucode-sparrow -- gen_context(system_u:object_r:polaris_qfp_exec_t,s0)
/usr/cpp/bin/qfp-ucode-aventus -- gen_context(system_u:object_r:polaris_qfp_exec_t,s0)
/usr/cpp/bin/qfp-ucode-cabo -- gen_context(system_u:object_r:polaris_qfp_exec_t,s0)
/usr/cpp/bin/qfp-ucode-goldbeach -- gen_context(system_u:object_r:polaris_qfp_exec_t,s0)
/usr/cpp/bin/qfp-ucode-radium -- gen_context(system_u:object_r:polaris_qfp_exec_t,s0)
/usr/cpp/bin/qfp-ucode-fugazi -- gen_context(system_u:object_r:polaris_qfp_exec_t,s0)
/usr/cpp/bin/qfp-ucode-sumatra -- gen_context(system_u:object_r:polaris_qfp_exec_t,s0)
/usr/cpp/bin/qfp-ucode-nanook -- gen_context(system_u:object_r:polaris_qfp_exec_t,s0)
/usr/cpp/bin/qfp-ucode-csr-fb -- gen_context(system_u:object_r:polaris_qfp_exec_t,s0)
/var/run/.rte_config -- gen_context(system_u:object_r:polaris_qfp_var_run_t,s0)

/dev/netmap -c gen_context(system_u:object_r:polaris_netmap_device_t,s0)

/dev/svc_eng_punt[0-9]* -c gen_context(system_u:object_r:polaris_sep_device_t,s0)

qfp memif interfaces
/bootflash/SHARED-IOX/memif(/.*)? gen_context(system_u:object_r:polaris_qfp_memif_t,s0)
/tmp/memif(/.*)? gen_context(system_u:object_r:polaris_qfp_memif_t,s0)

CSR & C8KV infiniband devices for Azure
/dev/infiniband/uverbs[0-9]* -c gen_context(system_u:object_r:polaris_infiniband_device_t,s0)

/etc/rc.d/init.d/iocb.sh -- gen_context(system_u:object_r:polaris_iocb_exec_t,s0)

For Intel quickassist (qat) v1.5 - Note that mcp_family also includes this.
fugazi uses polarismcp.fc and polarisqfp.fc so need to exclude it here.
ifndef(`mcp_family',`
/dev/icp_adf_ctl -c gen_context(system_u:object_r:polaris_icp_device_t,s0)
/dev/icp_dev_processes -c gen_context(system_u:object_r:polaris_icp_device_t,s)
')

For platforms which use Intel quickassist (qat) v1.7
/dev/usdm_drv -c gen_context(system_u:object_r:polaris_icp_device_t,s0)
/dev/qat_adf_ctl -c gen_context(system_u:object_r:polaris_icp_device_t,s0)
/dev/qat_dev_processes -c gen_context(system_u:object_r:polaris_icp_device_t,s0)

For platforms which use the musdk from the Marvell 10.3.x.x SDK
/dev/musdk-cma -c gen_context(system_u:object_r:polaris_icp_device_t,s0)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisqfp.fc

No license file was found, but licenses were detected in source scan.

#

# June 2017, Victor Kamensky

#

# Copyright (c) 2017-2019 by Cisco Systems, Inc.

# All rights reserved

#

/usr/binos/conf/telnetd\_service.sh -- gen\_context(system\_u:object\_r:polaris\_tservice\_telnet\_exec\_t,s0)

/usr/binos/conf/sshd\_service.sh -- gen\_context(system\_u:object\_r:polaris\_tservice\_ssh\_exec\_t,s0)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polaristbservice.fc

No license file was found, but licenses were detected in source scan.

#

# March 2017, Victor Kamensky

#

# Copyright (c) 2016-2019 by Cisco Systems, Inc.

# All rights reserved

#

/usr/binos/conf/rollback\_timer.sh -- gen\_context(system\_u:object\_r:polaris\_rbtimer\_exec\_t,s0)

/bootflash/.rollback\_timer(/.\*)? gen\_context(system\_u:object\_r:polaris\_rbtimer\_bootflash\_t,s0)

/tmp/rp/rollback\_timer(/.\*)? gen\_context(system\_u:object\_r:polaris\_rbtimer\_tmp\_t,s0)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisrollbacktimer.fc

No license file was found, but licenses were detected in source scan.

dnl

dnl Copyright (c) 2018-2019 by Cisco Systems, Inc.

dnl All rights reserved

dnl

dnl Katar WLC Platform Max Bay Limits

max\_bay\_map\_set(^rp', `per\_bay', 0)

max\_bay\_map\_set(^cc', `per\_bay', 3)

max\_bay\_map\_set(^fp', `per\_bay', 0)

max\_bay\_ripc\_map\_set(^rp', `per\_bay', 0)

max\_bay\_ripc\_map\_set(^cc', `per\_bay', 3)

max\_bay\_ripc\_map\_set(^fp', `per\_bay', 0)

max\_bay\_ripc\_map\_set(^rp', `global', 0)

max\_bay\_ripc\_map\_set(^cc', `global', 3)

```
max_bay_ripc_map_set(`fp', `global', 0)
```

dnl in elastic scope each process has its own value

```
max_elastic_map_set(`rp', `elastic', BPROC_ODM, 1)
```

```
max_elastic_map_set(`cc', `elastic', BPROC_ODM, 1)
```

```
max_elastic_map_set(`fp', `elasitic', BPROC_ODM, 1)
```

```
max_elastic_map_set(`rp', `elastic', BPROC_WNCD, 7)
```

```
max_elastic_map_set(`cc', `elastic', BPROC_WNCD, 7)
```

```
max_elastic_map_set(`fp', `elastic', BPROC_WNCD, 7)
```

```
max_elastic_ripc_map_set(`rp', `elastic', BPROC_ODM, 1)
```

```
max_elastic_ripc_map_set(`cc', `elastic', BPROC_ODM, 1)
```

```
max_elastic_ripc_map_set(`fp', `elasitic', BPROC_ODM, 1)
```

```
max_elastic_ripc_map_set(`rp', `elastic', BPROC_WNCD, 7)
```

```
max_elastic_ripc_map_set(`cc', `elastic', BPROC_WNCD, 7)
```

```
max_elastic_ripc_map_set(`fp', `elastic', BPROC_WNCD, 7)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/katarmaps.m4
```

No license file was found, but licenses were detected in source scan.

```
#
```

```
June 2017, Victor Kamensky
```

```
#
```

```
Copyright (c) 2017-2021 by Cisco Systems, Inc.
```

```
All rights reserved
```

```
#
```

```
polariscontainer file contexts place holder
```

```
All the possible IOX flash_dir/harddisk_dir from iox_polaris.conf for docker
```

```
Expected labels for docker as per container.fc
```

```
/bootflash/docker(/.*)? gen_context(system_u:object_r:container_var_lib_t,s0)
```

```
/bootflash/docker/./config\env gen_context(system_u:object_r:container_share_t,s0)
```

```
/bootflash/docker/./containers/./.*\log gen_context(system_u:object_r:container_log_t,s0)
```

```
/bootflash/docker/./containers/./hostname gen_context(system_u:object_r:container_share_t,s0)
```

```
/bootflash/docker/./containers/./hosts gen_context(system_u:object_r:container_share_t,s0)
```

```
/bootflash/docker/./init(/.*)? gen_context(system_u:object_r:container_share_t,s0)
```

```
/bootflash/docker/./overlay(/.*)? gen_context(system_u:object_r:container_share_t,s0)
```

```
/bootflash/docker/./overlay2(/.*)? gen_context(system_u:object_r:container_share_t,s0)
```

```
/bootflash/iox_alt_hdd_mount_dir/docker(/.*)?
```

```
gen_context(system_u:object_r:container_var_lib_t,s0)
```

```
/bootflash/iox_alt_hdd_mount_dir/docker/./config\env
```

```
gen_context(system_u:object_r:container_share_t,s0)
```

```
/bootflash/iox_alt_hdd_mount_dir/docker/./containers/./.*\log
```

```

gen_context(system_u:object_r:container_log_t,s0)
/bootflash/iox_alt_hdd_mount_dir/docker/./*/containers/./*/hostname
gen_context(system_u:object_r:container_share_t,s0)
/bootflash/iox_alt_hdd_mount_dir/docker/./*/containers/./*/hosts
gen_context(system_u:object_r:container_share_t,s0)
/bootflash/iox_alt_hdd_mount_dir/docker/./*/init(/.*)?
gen_context(system_u:object_r:container_share_t,s0)
/bootflash/iox_alt_hdd_mount_dir/docker/./*/overlay(/.*)?
gen_context(system_u:object_r:container_share_t,s0)
/bootflash/iox_alt_hdd_mount_dir/docker/./*/overlay2(/.*)?
gen_context(system_u:object_r:container_share_t,s0)

/mnt/sd3/docker(/.*)? gen_context(system_u:object_r:container_var_lib_t,s0)
/mnt/sd3/docker/./*/config\env gen_context(system_u:object_r:container_share_t,s0)
/mnt/sd3/docker/./*/containers/./*/.*\log gen_context(system_u:object_r:container_log_t,s0)
/mnt/sd3/docker/./*/containers/./*/hostname gen_context(system_u:object_r:container_share_t,s0)
/mnt/sd3/docker/./*/containers/./*/hosts gen_context(system_u:object_r:container_share_t,s0)
/mnt/sd3/docker/./*/init(/.*)? gen_context(system_u:object_r:container_share_t,s0)
/mnt/sd3/docker/./*/overlay(/.*)? gen_context(system_u:object_r:container_share_t,s0)
/mnt/sd3/docker/./*/overlay2(/.*)? gen_context(system_u:object_r:container_share_t,s0)

ifdef(`nyquist_platform',`
/mnt/sd3/iox_alt_hdd_mount_dir/docker(/.*)?
gen_context(system_u:object_r:container_var_lib_t,s0)
/mnt/sd3/iox_alt_hdd_mount_dir/docker/./*/config\env
gen_context(system_u:object_r:container_share_t,s0)
/mnt/sd3/iox_alt_hdd_mount_dir/docker/./*/containers/./*/.*\log
gen_context(system_u:object_r:container_log_t,s0)
/mnt/sd3/iox_alt_hdd_mount_dir/docker/./*/containers/./*/hostname
gen_context(system_u:object_r:container_share_t,s0)
/mnt/sd3/iox_alt_hdd_mount_dir/docker/./*/containers/./*/hosts
gen_context(system_u:object_r:container_share_t,s0)
/mnt/sd3/iox_alt_hdd_mount_dir/docker/./*/init(/.*)?
gen_context(system_u:object_r:container_share_t,s0)
/mnt/sd3/iox_alt_hdd_mount_dir/docker/./*/overlay(/.*)?
gen_context(system_u:object_r:container_share_t,s0)
/mnt/sd3/iox_alt_hdd_mount_dir/docker/./*/overlay2(/.*)?
gen_context(system_u:object_r:container_share_t,s0)
')

ifdef(`passport_platform',`
/flash1/iox_alt_hdd_mount_dir/docker(/.*)? gen_context(system_u:object_r:container_var_lib_t,s0)
/flash1/iox_alt_hdd_mount_dir/docker/./*/config\env
gen_context(system_u:object_r:container_share_t,s0)
/flash1/iox_alt_hdd_mount_dir/docker/./*/containers/./*/.*\log
gen_context(system_u:object_r:container_log_t,s0)
/flash1/iox_alt_hdd_mount_dir/docker/./*/containers/./*/hostname
gen_context(system_u:object_r:container_share_t,s0)

```

```

/flash1/iox_alt_hdd_mount_dir/docker/./*/containers/./*/hosts
gen_context(system_u:object_r:container_share_t,s0)
/flash1/iox_alt_hdd_mount_dir/docker/./*/init(/.*)? gen_context(system_u:object_r:container_share_t,s0)
/flash1/iox_alt_hdd_mount_dir/docker/./*/overlay(/.*)?
gen_context(system_u:object_r:container_share_t,s0)
/flash1/iox_alt_hdd_mount_dir/docker/./*/overlay2(/.*)?
gen_context(system_u:object_r:container_share_t,s0)
)

```

```

/flash1/iox/docker(/.*)? gen_context(system_u:object_r:container_var_lib_t,s0)
/flash1/iox/docker/./*/config\.env gen_context(system_u:object_r:container_share_t,s0)
/flash1/iox/docker/./*/containers/./*/.*\.log gen_context(system_u:object_r:container_log_t,s0)
/flash1/iox/docker/./*/containers/./*/hostname gen_context(system_u:object_r:container_share_t,s0)
/flash1/iox/docker/./*/containers/./*/hosts gen_context(system_u:object_r:container_share_t,s0)
/flash1/iox/docker/./*/init(/.*)? gen_context(system_u:object_r:container_share_t,s0)
/flash1/iox/docker/./*/overlay(/.*)? gen_context(system_u:object_r:container_share_t,s0)
/flash1/iox/docker/./*/overlay2(/.*)? gen_context(system_u:object_r:container_share_t,s0)

```

```

/flash11/iox/docker(/.*)? gen_context(system_u:object_r:container_var_lib_t,s0)
/flash11/iox/docker/./*/config\.env gen_context(system_u:object_r:container_share_t,s0)
/flash11/iox/docker/./*/containers/./*/.*\.log gen_context(system_u:object_r:container_log_t,s0)
/flash11/iox/docker/./*/containers/./*/hostname gen_context(system_u:object_r:container_share_t,s0)
/flash11/iox/docker/./*/containers/./*/hosts gen_context(system_u:object_r:container_share_t,s0)
/flash11/iox/docker/./*/init(/.*)? gen_context(system_u:object_r:container_share_t,s0)
/flash11/iox/docker/./*/overlay(/.*)? gen_context(system_u:object_r:container_share_t,s0)
/flash11/iox/docker/./*/overlay2(/.*)? gen_context(system_u:object_r:container_share_t,s0)

```

```

/vol/harddisk/docker(/.*)? gen_context(system_u:object_r:container_var_lib_t,s0)
/vol/harddisk/docker/./*/config\.env gen_context(system_u:object_r:container_share_t,s0)
/vol/harddisk/docker/./*/containers/./*/.*\.log gen_context(system_u:object_r:container_log_t,s0)
/vol/harddisk/docker/./*/containers/./*/hostname gen_context(system_u:object_r:container_share_t,s0)
/vol/harddisk/docker/./*/containers/./*/hosts gen_context(system_u:object_r:container_share_t,s0)
/vol/harddisk/docker/./*/init(/.*)? gen_context(system_u:object_r:container_share_t,s0)
/vol/harddisk/docker/./*/overlay(/.*)? gen_context(system_u:object_r:container_share_t,s0)
/vol/harddisk/docker/./*/overlay2(/.*)? gen_context(system_u:object_r:container_share_t,s0)

```

```

/vol/disk0/docker(/.*)? gen_context(system_u:object_r:container_var_lib_t,s0)
/vol/disk0/docker/./*/config\.env gen_context(system_u:object_r:container_share_t,s0)
/vol/disk0/docker/./*/containers/./*/.*\.log gen_context(system_u:object_r:container_log_t,s0)
/vol/disk0/docker/./*/containers/./*/hostname gen_context(system_u:object_r:container_share_t,s0)
/vol/disk0/docker/./*/containers/./*/hosts gen_context(system_u:object_r:container_share_t,s0)
/vol/disk0/docker/./*/init(/.*)? gen_context(system_u:object_r:container_share_t,s0)
/vol/disk0/docker/./*/overlay(/.*)? gen_context(system_u:object_r:container_share_t,s0)
/vol/disk0/docker/./*/overlay2(/.*)? gen_context(system_u:object_r:container_share_t,s0)

```

```

/vol/usb1/docker(/.*)? gen_context(system_u:object_r:container_var_lib_t,s0)
/vol/usb1/docker/./*/config\.env gen_context(system_u:object_r:container_share_t,s0)
/vol/usb1/docker/./*/containers/./*/.*\.log gen_context(system_u:object_r:container_log_t,s0)

```

```
/vol/usb1/docker.*/containers.*/hostname gen_context(system_u:object_r:container_share_t,s0)
/vol/usb1/docker.*/containers.*/hosts gen_context(system_u:object_r:container_share_t,s0)
/vol/usb1/docker.*/init(/.*)? gen_context(system_u:object_r:container_share_t,s0)
/vol/usb1/docker.*/overlay(/.*)? gen_context(system_u:object_r:container_share_t,s0)
/vol/usb1/docker.*/overlay2(/.*)? gen_context(system_u:object_r:container_share_t,s0)
```

#### #Sumatra

```
/vol/usb1/iox/docker(/.*)? gen_context(system_u:object_r:container_var_lib_t,s0)
/vol/usb1/iox/docker.*/config\env gen_context(system_u:object_r:container_share_t,s0)
/vol/usb1/iox/docker.*/containers.*/.*\log gen_context(system_u:object_r:container_log_t,s0)
/vol/usb1/iox/docker.*/containers.*/hostname gen_context(system_u:object_r:container_share_t,s0)
/vol/usb1/iox/docker.*/containers.*/hosts gen_context(system_u:object_r:container_share_t,s0)
/vol/usb1/iox/docker.*/init(/.*)? gen_context(system_u:object_r:container_share_t,s0)
/vol/usb1/iox/docker.*/overlay(/.*)? gen_context(system_u:object_r:container_share_t,s0)
/vol/usb1/iox/docker.*/overlay2(/.*)? gen_context(system_u:object_r:container_share_t,s0)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscontainer.fc

No license file was found, but licenses were detected in source scan.

```
#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2021 by Cisco Systems, Inc.
All rights reserved
#
```

```
policy_module(polarissortfiles, 1.0);
```

```
gen_require(`
 type polaris_sort_files_t;
`)
```

```
corecmd_exec_bin(polaris_sort_files_t)
```

```
allow to read /proc/meminfo
kernel_read_system_state(polaris_sort_files_t)
```

```
allow read of /etc/passwd
auth_use_nsswitch(polaris_sort_files_t)
```

```
polaris_btrace_data_manage(polaris_sort_files_t)
polaris_chasfs_manage(polaris_sort_files_t)
polaris_rmonbifo_tmp_read(polaris_sort_files_t)
polaris_read_debug_conf(polaris_sort_files_t)
polaris_persistent_getattr(polaris_sort_files_t)
polaris_persistent_list_dirs(polaris_sort_files_t)
polaris_cpuld_read(polaris_sort_files_t)
```



```

polaris_capsule_upgrade_log_use(polaris_sort_files_t)
optional_policy(`
polaris_gnmib_gnoi_images_read(polaris_sort_files_t)
`)

Dontaudit /bootflash/#lost+found avc denials
dontaudit polaris_sort_files_t polaris_disk:chr_file { getattr };
dontaudit polaris_sort_files_t polaris_disk:blk_file { getattr };

#allow polaris_sort_files_t polaris_udev_tmp_files_t:dir { getattr search };
polaris_udev_tmp_list_dirs(polaris_sort_files_t)

optional_policy(`
polaris_iox_dir_list(polaris_sort_files_t)
`)

polaris_sandbox_file_dir_list(polaris_sort_files_t)

polaris_disk_bootflash_read_lnk(polaris_sort_files_t)

polaris_disk_bootflash_fifo_file_getattr(polaris_sort_files_t)
polaris_disk_bootflash_sock_file_getattr(polaris_sort_files_t)

allow search and read under /tmp/boot directory
polaris_boot_tmp_read(polaris_sort_files_t)

#allow manage the files under /tmp/sort
type polaris_sort_files_tmp_t;
files_tmp_file(polaris_sort_files_tmp_t)
files_tmp_filetrans(polaris_sort_files_t, polaris_sort_files_tmp_t, file)
manage_files_pattern(polaris_sort_files_t, polaris_sort_files_tmp_t, polaris_sort_files_tmp_t)

for pluggable FS, allow sort to access files on them.
polaris_getattr_removable(polaris_sort_files_t)
polaris_removable_manage(polaris_sort_files_t)
fs_read_removable_symlinks(polaris_sort_files_t)

to look at files sort_file sometime needs to violate DAC permissions
allow polaris_sort_files_t self:capability dac_read_search;

optional_policy(`
LOOK AT ME memif sock_file interface present in /bootflash as
/bootflash/SHARED-IOX/memif/memif-dp-svr, since class of the
object is sock_file adding it to polaris_disk does not make much
sense
gen_require(`
 type polaris_qfp_memif_t;
`)

```

```
getattr_sock_files_pattern(polaris_sort_files_t, polaris_qfp_memif_t, polaris_qfp_memif_t)
')
```

```
find runs fstatfs
fs_getattr_xattr_fs(polaris_sort_files_t)
```

```
allow polaris_sort_files_t fs_t:filesystem getattr
fs_getattr_all_fs(polaris_sort_files_t)
```

```
with "/bootflash"...this needs attr to access for logfile
polaris_user_file_getattr(polaris_sort_files_t)
```

```
optional_policy(
gen_require(
 type polaris_efi_files_t;
)
```

```
#find /bootflash/ -printf %i %p
allow polaris_sort_files_t polaris_efi_files_t:dir { getattr open read search };
```

```
#stat -c %i %f %s %n /bootflash/EFI/UpdateCapsule/UpdateCapsuleFile.bin
allow polaris_sort_files_t polaris_efi_files_t:file getattr;
')
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarissortfiles.te
```

No license file was found, but licenses were detected in source scan.

```
#
June 2017, Victor Kamensky
#
Copyright (c) 2017-2021 by Cisco Systems, Inc.
All rights reserved
#
```

```
policy_module(polarisioxman, 1.0);
```

```
gen_require(
 type polaris_ioxman_t;
')
```

```
polaris_btrace_data_manage(polaris_ioxman_t)
polaris_chasfs_manage(polaris_ioxman_t)
polaris_tdlresolve_read(polaris_ioxman_t)
polaris_tdlldb_list_dirs(polaris_ioxman_t)
polaris_cpld_read(polaris_ioxman_t)
polaris_lua_read(polaris_ioxman_t)
polaris_flashlib_read(polaris_ioxman_t)
```

```

polaris_ripc_sman_ui_serv_connect(polaris_ioxman_t)

polaris_db_tlddb_dir_use(polaris_ioxman_t)

#allow access to /bootflash/iox/ files
polaris_iox_dir_search(polaris_ioxman_t)

corenet_tcp_connect_polaris_caf_api_port(polaris_ioxman_t)

allow read permissions for /etc/hosts file
sysnet_read_config(polaris_ioxman_t)

ioxman interacting with caf through api http interface and
is uses curl library to send requests to caf. curl wants
to do getsockopt with SOL_SOCKET,
allow polaris_ioxman_t self:tcp_socket getopt;

allow to get getattr of /proc file system
domain_read_all_domains_state(polaris_ioxman_t)

corecmd_exec_bin(polaris_ioxman_t)
corecmd_exec_shell(polaris_ioxman_t)

allow to run mount in its own domain; guestshell_set_netns.sh
needs it; also, read and exec the set_netns script.
ioxman_setup_guestshell_namespace invokes the script
using NAMESPACE_COMMAND
mount_domtrans(polaris_ioxman_t)
polaris_guestshell_files_read(polaris_ioxman_t)
polaris_guestshell_exec_files_exec(polaris_ioxman_t)

allow read of /etc/passwd
auth_use_nsswitch(polaris_ioxman_t)

guestshell_set_netns.sh calls ps command
ps needs access to /sys/devices/system/cpu/online
dev_read_sysfs(polaris_ioxman_t)
ps needs access to proc_t
kernel_read_system_state(polaris_ioxman_t)

modifies /bootflash/iox/iox_app/guestshell_iox.json
polaris_iox_files_manage(polaris_ioxman_t)

guestshell_set_netns.sh touches /var/run/netns/guestshell
files_pid_filetrans(polaris_ioxman_t, polaris_guestshell_var_run_t, file, "guestshell")
polaris_guestshell_var_run_files_manage(polaris_ioxman_t)

Read and write the all pty

```

```

term_use_generic_ptys(polaris_ioxman_t)

allow ioxman_syslib.sh to set uid/gid for screen
allow polaris_ioxman_t self:capability { dac_override setgid setuid };

ioxman execve virsh
gen_require(
 type virsh_t;
 type virsh_exec_t;
)
domtrans_pattern(polaris_ioxman_t, virsh_exec_t, virsh_t)
virsh needs to write into /tmp/rp/trace/iox_guestshell.log
polaris_btrace_data_manage(virsh_t)

ioxman is vman client over @vman_domain_socket socket
optional_policy(
 polaris_vman_use_client_socket(polaris_ioxman_t)
)

ioxman uses VS_OPER_DB from virtual_services_tbl_init
polaris_tdlbpersist_setup(polaris_ioxman_t)

polaris_tmp_tdlb_persist_setup(polaris_ioxman_t)

ioxman through libcurl library hit c-ares DNS code needs
udp sockets access
allow polaris_ioxman_t self:udp_socket connect;

logging_send_syslog_msg(polaris_ioxman_t)

read /opt/cisco/caf/config/system-config.ini
polaris_caf_files_read(polaris_ioxman_t)

virt_manage_sandbox_files(polaris_ioxman_t)

handle ioxman /tmp files like /tmp/iox_xml.dat
type polaris_iox_tmp_t;
files_tmp_file(polaris_iox_tmp_t)
polaris_iox_manage_tmp_files(polaris_ioxman_t)

by some strange reason ioxman munges files in /bootflash/tracelogs
please see iox_tracefile_restore in ioxman/src/im_serial.c
polaris_btrace_persistent_data_manage(polaris_ioxman_t)

virsh execved from ioxman inherits stdout from ioxman
gen_require(
 type polaris_ioxman_bt_t;
 type virsh_t;
)

```

```

)
allow virsh_t polaris_ioxman_bt_t:file write;

optional_policy(
gen_require(
 attribute polaris_domain;
 attribute polaris_extended_domain;
 type container_runtime_t;
)
typeattribute container_runtime_t polaris_domain;
typeattribute container_runtime_t polaris_extended_domain;
)

/usr/binos/conf/shell_exec.sh policy

polaris_utility_domain_template(iox_shell)

polaris_bexecute_domain(polaris_iox_shell_t, polaris_iox_shell_exec_t)
shell_exec call bexec.sh
polaris_bexecute_domtrans(polaris_iox_shell_t)
corecmd_exec_bin(polaris_iox_shell_t)
polaris_chasfs_read(polaris_iox_shell_t)
auth_use_nsswitch(polaris_iox_shell_t)
fs_getattr_tmpfs(polaris_iox_shell_t)

mount_domtrans(polaris_iox_shell_t)

inherit stdin from telnetd
telnet_use_ptys(polaris_iox_shell_t)

create files under /bootflash/iox
polaris_iox_files_manage(polaris_iox_shell_t)

executing guestshell.sh
polaris_guestshell_exec_files_exec(polaris_iox_shell_t)
polaris_guestshell_files_read(polaris_iox_shell_t)

executing "ip netns exec guestshell /usr/bin/ssh ..."
sysnet_exec_ifconfig(polaris_iox_shell_t)
fs_read_nsfs_files(polaris_iox_shell_t)
files_mounon_rootfs(polaris_iox_shell_t)
dev_mounon_sysfs(polaris_iox_shell_t)
allow polaris_iox_shell_t self:netlink_route_socket rw_netlink_socket_perms;
dev_mount_sysfs_fs(polaris_iox_shell_t)
dev_unmount_sysfs_fs(polaris_iox_shell_t)

executing ssh
corenet_tcp_connect_ssh_port(polaris_iox_shell_t)

```

```

ssh_exec(polaris_iox_shell_t)
allow polaris_iox_shell_t self:tcp_socket { connect create getattr getopt setopt shutdown };

ssh creates /root/.ssh directory
userdom_create_user_home_dirs(polaris_iox_shell_t)

read /etc/guestshell_rsa_key
polaris_guestshell_key_read(polaris_iox_shell_t)

work with sandbox files
polaris_sandbox_file_dir_list(polaris_iox_shell_t)

polaris_caf_var_run_files_manage(polaris_iox_shell_t)

shell_exec.sh invokes:
mkdir /tmp/.shell_exec
create /tmp/.shell_exec/*
type polaris_iox2iosd_tmp_t;
files_tmp_file(polaris_iox2iosd_tmp_t)
files_tmp_filetrans(polaris_iox_shell_t, polaris_iox2iosd_tmp_t, dir, ".shell_exec")
files_tmp_filetrans(polaris_iox_shell_t, polaris_iox2iosd_tmp_t, file)
#allow shell_exec to manage /tmp/.ncsshd_authorized_keys
polaris_ncsshd_keys_manage(polaris_iox_shell_t)
allow shell_exec to manage /tmp/.shell_exec/* files
polaris_iox2iosd_tmp_manage(polaris_iox_shell_t)
allow shell_exec to work with files created by iosd
polaris_iosd2iox_tmp_manage(polaris_iox_shell_t)
ifdef(^nyquist_platform',`
Manage alternate hdd files
polaris_iox_alt_hdd_manage(polaris_iox_shell_t)
`)
ifdef(^passport_platform',`
Manage alternate hdd files
polaris_iox_alt_hdd_manage(polaris_iox_shell_t)
`)

allow polaris_iox_shell_t self:capability { chown dac_override fowner fsetid setgid setuid dac_read_search };
allow polaris_iox_shell_t self:cap_userns sys_admin;
allow polaris_iox_shell_t self:process setfscreate;

LOOK AT ME very fishy iox_shell executes
/bootflash/iox/repo-lxc/guestshell/rootfs_mnt/cisco/shell_exec.sh that
actually can be modified from container itself. File is recreated
each guestshell activation and it seems not executed afterwards.
Grant access for now. Need to look closely whether it could be exploited
in some way
virt_exec_sandbox_files(polaris_iox_shell_t)

```

```

ip command called from iox_shell, running it under
iox_shell domain, add required mounton on unlabeled_t
files_mounon_isid(polaris_iox_shell_t)

read guestshell net namespace file
fs_read_nsfs_files(polaris_ioxman_t)

need to create /bootflash/gs_script/db.ini file
polaris_bootflash_manage(polaris_ioxman_t)
polaris_harddisk_manage(polaris_ioxman_t)

run_ioxn_secure_dir.sh policy
gen_require(
 type polaris_iox_secure_dir_t;
)
corecmd_exec_bin(polaris_iox_secure_dir_t)
auth_use_nsswitch(polaris_iox_secure_dir_t)
polaris_caf_files_read(polaris_iox_secure_dir_t)
polaris_chasfs_manage(polaris_iox_secure_dir_t)
polaris_bootflash_manage(polaris_iox_secure_dir_t)
polaris_harddisk_manage(polaris_iox_secure_dir_t)
polaris_iox_files_manage(polaris_iox_secure_dir_t)

/bin/cat9k_ssd_auth_cmds.sh

polaris_utility_domain_template(ssd_auth)

corecmd_exec_bin(polaris_ssd_auth_t)
storage_getattr_fixed_disk_dev(polaris_ssd_auth_t)

#allow to read /etc/passwd
auth_use_nsswitch(polaris_ssd_auth_t)

fs_getattr_tmpfs(polaris_ssd_auth_t)

execute hdparam in its own domain
fstools_domtrans(polaris_ssd_auth_t)

polaris_use_btrace_fifo(polaris_ssd_auth_t)

type polaris_ssd_auth_tmp_t;
files_tmp_file(polaris_ssd_auth_tmp_t)
bash tmp files like /tmp/sh-thd.kxX3sc
files_tmp_filetrans(polaris_ssd_auth_t, polaris_ssd_auth_tmp_t, file)
manage_files_pattern(polaris_ssd_auth_t, polaris_ssd_auth_tmp_t, polaris_ssd_auth_tmp_t)
/tmp/ssd_blk_device created by udev
gen_require(
 type udev_t;

```

```

 type tmpfs_t;
 type tmp_t;
)
filetrans_pattern(udev_t, {tmpfs_t tmp_t}, polaris_ssd_auth_tmp_t, file, "ssd_blk_device")
polaris_getattr_harddisk(polaris_ssd_auth_t)

fs_read_cgroup_files(polaris_ioxman_t)

Allow ioxman to download package files using url
polaris_caf_tmp_files_manage(polaris_ioxman_t)
polaris_cli_fs_cmds_domtrans(polaris_ioxman_t)
ufs information captured by the chasfs utils
optional_policy(`
polaris_ncd_tmp_read(polaris_ioxman_t)
`)
gen_require(`
 type polaris_fts_client_tmp_t;
`)

manage_files_pattern(polaris_ioxman_t, polaris_fts_client_tmp_t, polaris_fts_client_tmp_t)
manage_dirs_pattern(polaris_ioxman_t, polaris_fts_client_tmp_t, polaris_fts_client_tmp_t)
allow polaris_ioxman_t tmp_t:file { create open unlink write };

get_orchestration_template in cgroup_init_common.sh reads
ovf-env.xml file from removable and varied
fs_read_removable_files(polaris_ioxman_t)
polaris_disk_varied_read(polaris_ioxman_t)

writes into /tmp/trace/resource.log
optional_policy(`
polaris_vman_tmp_manage(polaris_ioxman_t)
`)

watch over /tmp/udev/etc/udev/usbflash1 in iox_media_chasfs_watch
polaris_udev_tmp_read(polaris_ioxman_t)
polaris_udev_tmp_watch(polaris_ioxman_t)

ifdef(`nyquist_platform',`
Manage alternate hdd files
polaris_iox_alt_hdd_manage(polaris_ioxman_t)
`)

dev_getattr_fs(polaris_iox_shell_t)
kernel_read_system_state(polaris_iox_shell_t)

gen_require(`
 type virt_lxc_var_run_t;
`)

```



```

read_files_pattern(polaris_ioxman_t, virt_lxc_var_run_t, virt_lxc_var_run_t)

#sys_resource denial is seen even on factory reset
allow polaris_ioxman_t self:capability sys_resource;

ifdef(`passport_platform',`
Manage alternate hdd files
polaris_iox_alt_hdd_manage(polaris_ioxman_t)
')

polaris_iosd_vcpu_read(polaris_ioxman_t)

work with files like /tmp/guestinfo_status.txt
polaris_iosd2iox_tmp_manage(polaris_ioxman_t)

gen_require(`
 type screen_var_run_t;
 type screen_exec_t;
')

allow ioxman to set up ttys for screen
polaris_caf_tty_lnk_manage(polaris_ioxman_t)

allow ioxman_syslib.sh to invoke screen
screen_exec(polaris_ioxman_t)

add entrypoint to screen_exec/can_exec permissions
allow polaris_ioxman_t screen_exec_t:file entrypoint;

make sure /tmp/screens is labeled correctly
files_tmp_filetrans(polaris_ioxman_t, screen_var_run_t, dir, "screens")

allow ioxman to manage /tmp/screens/<appname>_con/aux.sid
manage_files_pattern(polaris_ioxman_t, screen_var_run_t, screen_var_run_t)

allow ioxman to manage sock_files and unix_stream_socket on screen
allow polaris_ioxman_t self:unix_stream_socket { create_socket_perms connectto };
manage_dirs_pattern(polaris_ioxman_t, screen_var_run_t, screen_var_run_t)
manage_sock_files_pattern(polaris_ioxman_t, screen_var_run_t, screen_var_run_t)

allow ioxman to transition into bexec domain
polaris_bexecute_domtrans(polaris_ioxman_t)
polaris_bexecute_domain(polaris_ioxman_t, screen_exec_t)
allow bexecute to access the /tmp/screens/*_sid files
gen_require(`
 type polaris_bexecute_t;
')
manage_files_pattern(polaris_bexecute_t, screen_var_run_t, screen_var_run_t)

```

```

allow shell_exec to manage /tmp/.ncsshd_authorized_keys
polaris_ncsshd_keys_manage(polaris_iox_shell_t)
polaris_iox2iosd_tmp_manage(polaris_iox_shell_t)

allow shell_exec to manage guestshell files
gen_require(
 type container_file_t;
)
manage_files_pattern(polaris_iox_shell_t, container_file_t, container_file_t)

allow ioxman to setattr for /dev/pts relating to screen
gen_require(
 type telnetd_devpts_t;
)
allow polaris_ioxman_t telnetd_devpts_t:chr_file setattr_chr_file_perms;

allow ioxman to access the /tmp/ttyF*. files
gen_require(
 type fifo_var_run_t;
)
files_tmp_filetrans(polaris_ioxman_t, fifo_var_run_t, fifo_file)
manage_fifo_files_pattern(polaris_ioxman_t, fifo_var_run_t, fifo_var_run_t)

allow ioxman to access rootfs and sysfs
The same is needed when guestshell uses a passwordless SSH, when users do
like "guestshell run bash" from IOS and it provides a bash shell screen
in IOS.

gen_require(
 type ssh_home_t;
)

ssh_filetrans_admin_home_content(polaris_iox_shell_t)
allow polaris_iox_shell_t ssh_home_t:dir {create search getattr};
dev_getattr_sysfs_fs(polaris_iox_shell_t)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisioxman.te

No license file was found, but licenses were detected in source scan.

```

#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#

```

```
policy_module(polarismqipc, 1.0);
```

```
attribute polaris_mqipc;
```

```
Found in path(s):
```

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarismqipc.te
```

```
No license file was found, but licenses were detected in source scan.
```

```
#
```

```
March 2017, Victor Kamensky
```

```
#
```

```
Copyright (c) 2016-2019 by Cisco Systems, Inc.
```

```
All rights reserved
```

```
#
```

```
/var/run/cli_agent\pid -- gen_context(system_u:object_r:polaris_cli_agent_var_run_t,s0)
```

```
Found in path(s):
```

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscliagent.fc
```

```
No license file was found, but licenses were detected in source scan.
```

```
#
```

```
March 2017, Victor Kamensky
```

```
#
```

```
Copyright (c) 2016-2021 by Cisco Systems, Inc.
```

```
All rights reserved
```

```
#
```

```
policy_module(polarisvxe, 1.0);
```

```
hanet driver used by vpcgw platform of VXE family
```

```
ifdef(^vpcgw_platform',`
```

```
type polaris_hanet_device_t;
```

```
dev_node(polaris_hanet_device_t)
```

```
')
```

```
on ultra in some cloud configuration runs dhclient utility
```

```
receive meta information from cloud provider, /var/lib/dhcp
```

```
directory is created by initrc_t
```

```
gen_require(`
```

```
 type dhcpc_t;
```

```
 type initrc_t;
```

```
 type dhcp_state_t;
```

```
')
```

```
files_var_lib_filetrans({ dhcpc_t initrc_t }, dhcp_state_t, dir, "dhcp")
```

```
during boot on misc cloud environment ultra image creates directory
```

```
in /tmp to keep information received from cloud provider. Since latter
```

```

it is copied into /varied directory let's assigned polaris_disk_varied_t
to them
gen_require(
 type initrc_t;
 type polaris_disk_varied_t;
 type unconfined_service_t;
)
files_tmp_filetrans({ unconfined_service_t initrc_t }, polaris_disk_varied_t, dir, "ami")
files_tmp_filetrans({ unconfined_service_t initrc_t }, polaris_disk_varied_t, dir, "azure")
files_tmp_filetrans({ unconfined_service_t initrc_t }, polaris_disk_varied_t, dir, "gcp")

park policy for small polaris process umbrella_init.sh here
gen_require(
 type polaris_umbrella_init_t;
)
polaris_bootflash_manage(polaris_umbrella_init_t)
corecmd_exec_bin(polaris_umbrella_init_t)
auth_use_nsswitch(polaris_umbrella_init_t)

define added to address issues related to dependency
on mcp-platform-tdl for db defines
Skip for vpcgw platform
ifndef(`vpcgw_platform`,
type polaris_gnmib_t;
)

type polaris_objstore_sem_t;
files_tmpfs_file(polaris_objstore_sem_t)

semaphore created by systemd-tmpfiles needs map permission
gen_require(
 type systemd_tmpfiles_t;
)
mmap_files_pattern(systemd_tmpfiles_t, polaris_objstore_sem_t, polaris_objstore_sem_t)

on vxe all processes read grub_cisco_version in polaris_disk_varied_t
gen_require(
 attribute polaris_domain;
)
polaris_disk_varied_search(polaris_domain)

type polaris_grub_bios_t;
polaris_pfile_type(polaris_grub_bios_t)

type polaris_grubver_t;
polaris_pfile_type(polaris_grubver_t)

type polaris_vxeinstall_info_t;

```

```

polaris_pfile_type(polaris_vxeinstall_info_t)
gen_require(
 type unconfined_service_t;
 type polaris_disk_varied_t;
)
unconfined service create /boot/.install_info if does not exist yet
filetrans_pattern(unconfined_service_t, polaris_disk_varied_t, polaris_vxeinstall_info_t, file, ".install_info")

on C8KV all processes read grubenv in EFI disk partition
gen_require(
 attribute polaris_domain;
)
polaris_grub_efi_search(polaris_domain)

gen_require(
 type unconfined_service_t;
 type polaris_disk_varied_t;
 type polaris_obfl_data_t;
)
unconfined service create /boot/obfl_temp_k1/2/3 if does not exist yet
filetrans_pattern(unconfined_service_t, polaris_disk_varied_t, polaris_obfl_data_t, file, "obfl_temp_k1")
filetrans_pattern(unconfined_service_t, polaris_disk_varied_t, polaris_obfl_data_t, file, "obfl_temp_k2")
filetrans_pattern(unconfined_service_t, polaris_disk_varied_t, polaris_obfl_data_t, file, "obfl_temp_k3")

handle /tmp/vxe_disk_XXX_YYY files
gen_require(
 type unconfined_service_t;
)
polaris_boot_tmp_filetrans(unconfined_service_t, file, "vxe_disk_mbr_v1")
polaris_boot_tmp_filetrans(unconfined_service_t, file, "vxe_disk_mbr_v2")
polaris_boot_tmp_filetrans(unconfined_service_t, file, "vxe_disk_mbr_v3")
polaris_boot_tmp_filetrans(unconfined_service_t, file, "vxe_disk_mbr_v4")
polaris_boot_tmp_filetrans(unconfined_service_t, file, "vxe_disk_gpt_v1")
polaris_boot_tmp_filetrans(unconfined_service_t, file, "vxe_disk_gpt_v2")
polaris_boot_tmp_filetrans(unconfined_service_t, file, "vxe_disk_gpt_v3")
polaris_boot_tmp_manage(unconfined_service_t)

/etc/init.d/sshd that runs under initrc_t through ssh-keygen
creates /config/.ssh directory if does not exist; /config
directory is typically bootflash, but on MBRv2/MBRv4/GPTv1/GPTv3
partition layouts it could be separate /config partition that is
under polaris_disk_config_t label
gen_require(
 type initrc_t;
 type ssh_home_t;
)
polaris_disk_config_filetrans(initrc_t, ssh_home_t, dir, ".ssh")

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisvxe.te

No license file was found, but licenses were detected in source scan.

```
#
July 2017, Victor Kamensky
#
Copyright (c) 2017-2020 by Cisco Systems, Inc.
All rights reserved
#

policy_module(polarisissumonitor, 1.0);

#####
install_issu_monitor
#####

polaris_process_domain_template(issu_monitor)

corecmd_exec_bin(polaris_issu_monitor_t)

allow read of /etc/group and /etc/passwd
auth_use_nsswitch(polaris_issu_monitor_t)

polaris_btrace_data_manage(polaris_issu_monitor_t)
polaris_chasfs_manage(polaris_issu_monitor_t)
polaris_cpld_read(polaris_issu_monitor_t)
polaris_proc_rmonbifo_read(polaris_issu_monitor_t)
polaris_boot_tmp_read(polaris_issu_monitor_t)
polaris_read_debug_conf(polaris_issu_monitor_t)

read and possibly create /bootflash/.installer/issu_crash dir
polaris_bootflash_manage(polaris_issu_monitor_t)

allow polaris_issu_monitor_t self:capability sys_resource;
allow polaris_issu_monitor_t self:process setpgid;

type polaris_issu_monitor_tmp_t;
files_tmp_file(polaris_issu_monitor_tmp_t)
files_tmp_filetrans(polaris_issu_monitor_t, polaris_issu_monitor_tmp_t, dir, "issu_mon_dir")
manage_files_pattern(polaris_issu_monitor_t, polaris_issu_monitor_tmp_t, polaris_issu_monitor_tmp_t)
manage_dirs_pattern(polaris_issu_monitor_t, polaris_issu_monitor_tmp_t, polaris_issu_monitor_tmp_t)
manage_fifo_files_pattern(polaris_issu_monitor_t, polaris_issu_monitor_tmp_t, polaris_issu_monitor_tmp_t)

#access to /tmp/ufs/harddisk
optional_policy(`
polaris_ncd_tmp_read(polaris_issu_monitor_t)
`)
```

```
access to /bootflash/.installer/issu_crash
polaris_disk_install_read(polaris_issu_monitor_t)

access to /tmp/sw/boot/rmonbifo/env_var.sh
polaris_rmonbifo_tmp_read(polaris_issu_monitor_t)

read /proc/cmdline
kernel_read_system_state(polaris_issu_monitor_t)

rm -rf /tmp/rp/issu_mon_dir
fs_getattr_tmpfs(polaris_issu_monitor_t)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisissumonitor.te
No license file was found, but licenses were detected in source scan.
```

```
#
February 2018, Manohar Hungund
#
Copyright (c) 2018-2019 by Cisco Systems, Inc.
All rights reserved
#
```

```
policy_module(polarisact2, 1.0);
```

```
#####
ACT2 Chip Driver policy
#####
```

```
type polaris_act2_device_t;
dev_node(polaris_act2_device_t)
```

```
#####
/tmp/hw_entropy file.
Certain platforms save entropy from main board ACT-2 chip in this file.
```

```
type polaris_hw_entropy_t;
files_tmp_file(polaris_hw_entropy_t)
#####
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisact2.te
No license file was found, but licenses were detected in source scan.
```

```
#
March 2017, Victor Kamensky
#
```

```

Copyright (c) 2016-2021 by Cisco Systems, Inc.
All rights reserved
#

policy_module(polariscppha, 1.0);

gen_require(`
 type polaris_cpp_ha_t;
`)

polaris_btrace_data_manage(polaris_cpp_ha_t)
polaris_crft_data_manage(polaris_cpp_ha_t)
polaris_chasfs_manage(polaris_cpp_ha_t)
polaris_tdlresolve_read(polaris_cpp_ha_t)
polaris_tdlldb_list_dirs(polaris_cpp_ha_t)
polaris_cpld_read(polaris_cpp_ha_t)
polaris_flashlib_read(polaris_cpp_ha_t)

polaris_ripc_sman_ui_serv_connect(polaris_cpp_ha_t)

polaris_db_tdlldb_dir_use(polaris_cpp_ha_t)

polaris_cpp_process(polaris_cpp_ha_t)
polaris_cpp_dev_use(polaris_cpp_ha_t)

polaris_icc_broken_relocations(polaris_cpp_ha_t)

polaris_cpp_cavium_sdk_ipc_use(polaris_cpp_ha_t)

allow objstore access
polaris_disk_objstore_read(polaris_cpp_ha_t)

LOOK AT ME: raw memory access in cavium vendor SDK
related to octeon driver (BUG CSCvh58515)
ifdef(`crankshaft_family',`
polaris_dev_mem_use(polaris_cpp_ha_t)
`)

allow syslogging
logging_send_syslog_msg(polaris_cpp_ha_t)

optional_policy(`
polaris_cbdma_dev_use(polaris_cpp_ha_t)
`)
polaris_cpld_dev_use(polaris_cpp_ha_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscppha.te

```



No license file was found, but licenses were detected in source scan.

```
#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2021 by Cisco Systems, Inc.
All rights reserved
#

policy_module(polariscppsp, 1.0);

gen_require(`
 type polaris_cpp_sp_t;
`)

polaris_btrace_data_manage(polaris_cpp_sp_t)
polaris_crft_data_manage(polaris_cpp_sp_t)
polaris_chasfs_manage(polaris_cpp_sp_t)
polaris_tdlresolve_read(polaris_cpp_sp_t)
polaris_tdlldb_list_dirs(polaris_cpp_sp_t)
polaris_cpld_read(polaris_cpp_sp_t)
polaris_flashlib_read(polaris_cpp_sp_t)

polaris_ripc_sman_ui_serv_connect(polaris_cpp_sp_t)

polaris_db_tdlldb_dir_use(polaris_cpp_sp_t)

polaris_cpp_process(polaris_cpp_sp_t)
polaris_cpp_dev_use(polaris_cpp_sp_t)

polaris_icc_broken_relocations(polaris_cpp_sp_t)

polaris_cpp_cavium_sdk_ipc_use(polaris_cpp_sp_t)

LOOK AT ME: raw memory access in cavium vendor SDK
related to octeon driver (BUG CSCvh58515)
#ifdef(`crankshaft_family',`
polaris_dev_mem_use(polaris_cpp_sp_t)
`)

allow syslogging
logging_send_syslog_msg(polaris_cpp_sp_t)

optional_policy(`
polaris_cbdma_dev_use(polaris_cpp_sp_t)
`)
polaris_cpld_dev_use(polaris_cpp_sp_t)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscppsp.te

No license file was found, but licenses were detected in source scan.

#

# March 2017, Victor Kamensky

#

# Copyright (c) 2016-2019 by Cisco Systems, Inc.

# All rights reserved

#

/usr/binos/conf/reflector.sh -- gen\_context(system\_u:object\_r:polaris\_reflector\_exec\_t,s0)

/tmp/rp/reflector(/.\*)? gen\_context(system\_u:object\_r:polaris\_reflector\_tmp\_t,s0)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisreflector.fc

No license file was found, but licenses were detected in source scan.

#

# March 2017, Victor Kamensky

#

# Copyright (c) 2017-2020 by Cisco Systems, Inc.

# All rights reserved

#

policy\_module(polarissifmgr, 1.0);

gen\_require(^

type polaris\_sif\_mgr\_t;

')

polaris\_btrace\_data\_manage(polaris\_sif\_mgr\_t)

polaris\_crft\_data\_manage(polaris\_sif\_mgr\_t)

polaris\_chasfs\_manage(polaris\_sif\_mgr\_t)

polaris\_tdlresolve\_read(polaris\_sif\_mgr\_t)

polaris\_tdlldb\_list\_dirs(polaris\_sif\_mgr\_t)

polaris\_cpld\_read(polaris\_sif\_mgr\_t)

polaris\_lua\_read(polaris\_sif\_mgr\_t)

polaris\_flashlib\_read(polaris\_sif\_mgr\_t)

#If romvar is not set, Set Rommon env variable needs write permission

polaris\_flashlib\_write(polaris\_sif\_mgr\_t)

polaris\_ripc\_sman\_ui\_serv\_connect(polaris\_sif\_mgr\_t)

corecmd\_exec\_bin(polaris\_sif\_mgr\_t)

corecmd\_exec\_shell(polaris\_sif\_mgr\_t)

```

allow read of /etc/group and /etc/passwd
auth_use_nsswitch(polaris_sif_mgr_t)

allow to read /proc/mtd
kernel_read_system_state(polaris_sif_mgr_t)

#allow write /proc/dplr_sesa
optional_policy(`
 polaris_proc_sesa_create_write(polaris_sif_mgr_t)
`)

access SERDES /tmp/serdes_asic_key_dir/*
polaris_serdes_asic_key_tmp_manage(polaris_sif_mgr_t)

allow read/write to /proc/irq/N/irq files
kernel_rw_irq_sysctls(polaris_sif_mgr_t)

work with /tmp files (/tmp/sm_post_result)
type polaris_sif_mgr_tmp_t;
files_tmp_file(polaris_sif_mgr_tmp_t)
files_tmp_filetrans(polaris_sif_mgr_t, polaris_sif_mgr_tmp_t, file, "sm_post_result")
files_tmp_filetrans(polaris_sif_mgr_t, polaris_sif_mgr_tmp_t, file, "fips_status")
files_tmp_filetrans(polaris_sif_mgr_t, polaris_sif_mgr_tmp_t, file, "sif_regdump_0")
files_tmp_filetrans(polaris_sif_mgr_t, polaris_sif_mgr_tmp_t, file, "sif_regdump_1")
manage_files_pattern(polaris_sif_mgr_t, tmp_t, polaris_sif_mgr_tmp_t)
polaris_cm_rp_tmp_manage(polaris_sif_mgr_t)

#allow ipc_lock when mmap64(..) a shared mememoy with MAP_LOCKED in dplr_pkt_drv_oob.c
allow polaris_sif_mgr_t self:capability { ipc_owner dac_override ipc_lock };

#allow read from /tmp/hw_entropy
polaris_hw_entropy_read(polaris_sif_mgr_t)

polaris_obfl_data_manage(polaris_sif_mgr_t)

/dev/dplr_intrpt usage
polaris_dplr_dev_use(polaris_sif_mgr_t)

/dev/dmammap usage
polaris_dmammap_dev_use(polaris_sif_mgr_t)

/dev/remap_mem0 usage
polaris_remap_mem_dev_use(polaris_sif_mgr_t)

polaris_lsmpi_dev_use(polaris_sif_mgr_t)

```

```

open /dev/ttyS0 console in sco_sys_init_sw_params
term_use_unallocated_ttys(polaris_sif_mgr_t)

polaris_socketat_nsfs_read(polaris_sif_mgr_t)

allow polaris_sif_mgr_t self:process setsched;

work with /dev/msi/Slot0/Doppler0/GroupN files
dev_rw_generic_chr_files(polaris_sif_mgr_t)
/dev/msi/Slot0/Doppler0/GroupN gets polaris_dplr_device_t label
at some point, but need above generic chr permission by some
reason, not clear need to look a bit more
polaris_dplr_dev_use(polaris_sif_mgr_t)

set out of band interface mac set_oobndif_mac
allow polaris_sif_mgr_t self:tcp_socket ioctl;

LOOK AT ME: raw memory write access
polaris_dev_mem_use(polaris_sif_mgr_t)

/dev/shm/sdm access
optional_policy(`
polaris_sdm_shm_manage(polaris_sif_mgr_t)
`)

LOOK AT ME: unsolicited creation of file in /bootflash
by CSCvm43512. Backout when CSCvm99282 is fixed
polaris_bootflash_manage(polaris_sif_mgr_t)
polaris_disk_bootflash_read_lnk(polaris_sif_mgr_t)

optional_policy(`
 polaris_quake_i2c_manage(polaris_sif_mgr_t)
`)

__get_nprocs opens /sys/devices/system/cpu/online
ifdef(`quake_platform',`
dev_read_sysfs(polaris_sif_mgr_t)
`)

optional_policy(`
polaris_ngwc_scc_shm_manage(polaris_sif_mgr_t)
`)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarissifmgr.te
No license file was found, but licenses were detected in source scan.

#

```

```
August 2017, Shawn Lu
#
Copyright (c) 2017-2020 by Cisco Systems, Inc.
All rights reserved
#

polariswncmgrd file contexts place holder

#gRPC certificate for ICap, written and read by wncmgrd
/bootflash/NACert.pem gen_context(system_u:object_r:polaris_icap_cert_t,s0)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariswncmgrd.fc
No license file was found, but licenses were detected in source scan.
```

```
dnl
dnl July 2020, Victor Kamensky
dnl
dnl Copyright (c) 2020 by Cisco Systems, Inc.
dnl All rights reserved
dnl
dnl ISRV Platform Max Bay Limits
max_bay_map_set(`rp', `per_bay', 0)
max_bay_map_set(`cc', `per_bay', 3)
max_bay_map_set(`fp', `per_bay', 0)
```

```
max_bay_ripc_map_set(`rp', `per_bay', 0)
max_bay_ripc_map_set(`cc', `per_bay', 3)
max_bay_ripc_map_set(`fp', `per_bay', 0)
```

```
max_bay_ripc_map_set(`rp', `global', 0)
max_bay_ripc_map_set(`cc', `global', 3)
max_bay_ripc_map_set(`fp', `global', 0)
```

```
Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/isrvmaps.m4
No license file was found, but licenses were detected in source scan.
```

```
#
July 2017, Victor Kamensky
#
Copyright (c) 2017-2021 by Cisco Systems, Inc.
All rights reserved
#
```

```
policy_module(polarismcp, 1.0);
```

```
scooby device
```

```

type polaris_scooby_device_t;
dev_node(polaris_scooby_device_t)

spa devices i.e sys_platform_module_1ng
type polaris_spa_device_t;
dev_node(polaris_spa_device_t)

htdp device
type polaris_htdp_device_t;
dev_node(polaris_htdp_device_t)

epaN and epactrlN devices
type polaris_epa_device_t;
dev_node(polaris_epa_device_t)

luna_fpgs device
type polaris_luna_mbfpga_device_t;
dev_node(polaris_luna_mbfpga_device_t)

dash fpga device (/dev/dash_fpga)
type polaris_dash_device_t;
dev_node(polaris_dash_device_t)

astro device
type polaris_astro_device_t;
dev_node(polaris_astro_device_t)

cpp_il device
type polaris_cpp_il_device_t;
dev_node(polaris_cpp_il_device_t)

blzi_fpga device
type polaris_blzi_device_t;
dev_node(polaris_blzi_device_t)

oob_evfc device
type polaris_oob_evfc_device_t;
dev_node(polaris_oob_evfc_device_t)

ds31408 device
type polaris_ds31408_device_t;
dev_node(polaris_ds31408_device_t)

icp_ads_ctl device
Note that fugazi gets this from polarisqfp module
#ifdef(`fugazi_platform',`
type polaris_icp_device_t;
dev_node(polaris_icp_device_t)

```

```

')

type polaris_cpp_htdp_device_t;
dev_node(polaris_cpp_htdp_device_t)

type polaris_cbdma_device_t;
dev_node(polaris_cbdma_device_t)

type polaris_n2_device_t;
dev_node(polaris_n2_device_t)

type polaris_cy2213_device_t;
dev_node(polaris_cy2213_device_t)

type polaris_vega_device_t;
dev_node(polaris_vega_device_t)

Fugazi makes use of fugazi_platform.tdl for IPCs and processes definition
and it uses mcp_platform.tdl for databases definition. The below symbols
are referred by mcp_platform.tdl but not fugazi_platform.tdl and hence these
type definitions.
ifdef(^fugazi_platform')
type polaris_fnf_agg_t;
')

optional_policy(
access to /dev/icp_XXX device on asr1k platforms
gen_require(
 type polaris_cck_qat_t;
)
polaris_icp_dev_use(polaris_cck_qat_t)
dev_list_sysfs(polaris_cck_qat_t)
polaris_chasfs_read(polaris_cck_qat_t)
polaris_cpld_read(polaris_cck_qat_t)
polaris_tdlresolve_read(polaris_cck_qat_t)
)

Handling denial for rsync_t for socket -
comm="rsync" path="socket:[16784]" dev="sockfs" ino=16784
scontext=system_u:system_r:rsync_t:s0 tcontext=system_u:system_r:init_t:s0
gen_require(
 type rsync_t;
)
init_rw_stream_sockets(rsync_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarismcp.te

```

No license file was found, but licenses were detected in source scan.

```
#
June 2017, Victor Kamensky
#
Copyright (c) 2017-2020 by Cisco Systems, Inc.
All rights reserved
#

polarisioxman file contexts place holder

/usr/binos/conf/shell_exec.sh -- gen_context(system_u:object_r:polaris_iox_shell_exec_t,s0)

/usr/binos/conf/run_ioxn_secure_dir.sh -- gen_context(system_u:object_r:polaris_iox_secure_dir_exec_t,s0)

/bin/cat9k_ssd_auth_cmds.sh -- gen_context(system_u:object_r:polaris_ssd_auth_exec_t,s0)

/tmp/trace/resource.log -- gen_context(system_u:object_r:polaris_iox_tmp_t,s0)
/tmp/screens(/.*) -- gen_context(system_u:object_r:screen_var_run_t,s0)

/tmp/.shell_exec(/.*) -- gen_context(system_u:object_r:polaris_iox2iosd_tmp_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisioxman.fc
```

No license file was found, but licenses were detected in source scan.

```
#
August 2017, Victor Kamensky
#
Copyright (c) 2017-2020 by Cisco Systems, Inc.
All rights reserved
#
```

```
policy_module(polarisbsm, 1.0);
```

```
gen_require(`
 type polaris_bsm_t;
`)
```

```
polaris_btrace_data_manage(polaris_bsm_t)
polaris_chasfs_manage(polaris_bsm_t)
polaris_tdlresolve_read(polaris_bsm_t)
polaris_tdlldb_list_dirs(polaris_bsm_t)
polaris_cpuld_read(polaris_bsm_t)
polaris_flashlib_read(polaris_bsm_t)

polaris_ripc_sman_ui_serv_connect(polaris_bsm_t)
```



```

optional_policy(
polaris_bde_dev_use(polaris_bsm_t)
')

allow polaris_bsm_t self:capability sys_nice;
allow polaris_bsm_t self:process setsched;

need access to /sys/devices/system/cpu/online
dev_read_sysfs(polaris_bsm_t)

handling /var/tmp/bsm_bcm_shell
type polaris_bsm_bcm_shell_t;
files_type(polaris_bsm_bcm_shell_t)
gen_require(
 type tmp_t;
)
filetrans_pattern(polaris_bsm_t, tmp_t, polaris_bsm_bcm_shell_t, fifo_file, "bsm_bcm_shell")
manage_fifo_files_pattern(polaris_bsm_t, tmp_t, polaris_bsm_bcm_shell_t)

ifdef(`vxe_family',`
bind to BSM_AGENT_CLIENT_PORT port from bsm_tlv_init
corenet_tcp_bind_polaris_bsm_agent_client_port(polaris_bsm_t)
')

LOOK AT ME: raw memory write access
polaris_dev_mem_use(polaris_bsm_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisbsm.te
No license file was found, but licenses were detected in source scan.

#
March 2017, Victor Kamensky
#
Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved
#

/tmp/sm_post_result -- gen_context(system_u:object_r:polaris_sif_mgr_tmp_t,s0)
/tmp/fips_status -- gen_context(system_u:object_r:polaris_sif_mgr_tmp_t,s0)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarissifmgr.fc
No license file was found, but licenses were detected in source scan.

#
June 2020, Cuiyan Ma
#

```

# Copyright (c) 2020 by Cisco Systems, Inc.

# All rights reserved

#

## <summary>Polaris polarisissucompcheck Policy Rules.</summary>

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisissucompcheck.if

No license file was found, but licenses were detected in source scan.

#

# March 2017, Victor Kamensky

#

# Copyright (c) 2017-2019 by Cisco Systems, Inc.

# All rights reserved

#

policy\_module(polarisngwcplfmmgr, 1.0);

```
gen_require(
 type polaris_ngwc_plfm_mgr_t;
)
```

polaris\_btrace\_data\_manage(polaris\_ngwc\_plfm\_mgr\_t)

polaris\_crft\_data\_manage(polaris\_ngwc\_plfm\_mgr\_t)

polaris\_chasfs\_manage(polaris\_ngwc\_plfm\_mgr\_t)

polaris\_tdlresolve\_read(polaris\_ngwc\_plfm\_mgr\_t)

polaris\_tdlldb\_list\_dirs(polaris\_ngwc\_plfm\_mgr\_t)

polaris\_cpld\_read(polaris\_ngwc\_plfm\_mgr\_t)

polaris\_lua\_read(polaris\_ngwc\_plfm\_mgr\_t)

polaris\_flashlib\_read(polaris\_ngwc\_plfm\_mgr\_t)

polaris\_ripc\_sman\_ui\_serv\_connect(polaris\_ngwc\_plfm\_mgr\_t)

corecmd\_exec\_bin(polaris\_ngwc\_plfm\_mgr\_t)

corecmd\_exec\_shell(polaris\_ngwc\_plfm\_mgr\_t)

# allow read of /etc/group and /etc/passwd

auth\_use\_nsswitch(polaris\_ngwc\_plfm\_mgr\_t)

# allow to read /proc/meminfo

kernel\_read\_system\_state(polaris\_ngwc\_plfm\_mgr\_t)

allow polaris\_ngwc\_plfm\_mgr\_t self:capability { sys\_rawio ipc\_owner dac\_override };

allow polaris\_ngwc\_plfm\_mgr\_t self:capability2 block\_suspend;

polaris\_obfl\_data\_manage(polaris\_ngwc\_plfm\_mgr\_t)

```

polaris_dyncfg_tmp_read(polaris_ngwc_plfm_mgr_t)

polaris_ngwc_shm_manage(polaris_ngwc_plfm_mgr_t)

/dev/dmabmap usage
polaris_dmabmap_dev_use(polaris_ngwc_plfm_mgr_t)

/dev/remap_mem0 usage
polaris_remap_mem_dev_use(polaris_ngwc_plfm_mgr_t)

open /dev/ttyS0 console in edison_platform_init
term_use_unallocated_ttys(polaris_ngwc_plfm_mgr_t)

polaris_disk_license_read(polaris_ngwc_plfm_mgr_t)

allow polaris_ngwc_plfm_mgr_t self:capability { chown fowner fsetid };

type polaris_ngwc_plfm_mgr_tmp_t;
files_tmp_file(polaris_ngwc_plfm_mgr_tmp_t)
files_tmp_filetrans(polaris_ngwc_plfm_mgr_t, polaris_ngwc_plfm_mgr_tmp_t, file, "pm_post_result")
files_tmp_filetrans(polaris_ngwc_plfm_mgr_t, polaris_ngwc_plfm_mgr_tmp_t, dir, "microcode_update")
files_tmp_filetrans(polaris_ngwc_plfm_mgr_t, polaris_ngwc_plfm_mgr_tmp_t, dir, "mcu_upgrading")
manage_files_pattern(polaris_ngwc_plfm_mgr_t, polaris_ngwc_plfm_mgr_tmp_t, polaris_ngwc_plfm_mgr_tmp_t)
manage_dirs_pattern(polaris_ngwc_plfm_mgr_t, polaris_ngwc_plfm_mgr_tmp_t, polaris_ngwc_plfm_mgr_tmp_t)

LOOK AT ME: raw memory write access
polaris_dev_mem_use(polaris_ngwc_plfm_mgr_t)

create /tmp/hw_entropy file and fill with info from act2
polaris_hw_entropy_create(polaris_ngwc_plfm_mgr_t)

polaris_boot_tmp_read(polaris_ngwc_plfm_mgr_t)

polaris_flashlib_write(polaris_ngwc_plfm_mgr_t)

check existence of /tmp/tam_cfg_done
polaris_tam_getattrs_tmp_dirs(polaris_ngwc_plfm_mgr_t)

LOOK AT ME: Allow access to bootflash /flash/tam_client_app.log. file access
remove after CSCvh66533 fixed
polaris_bootflash_manage(polaris_ngwc_plfm_mgr_t)

scans /sys/devices/pci0000:00/0000:00:00.0
dev_read_sysfs(polaris_ngwc_plfm_mgr_t)

rsync nvram_config file across stack
#rsync_exec(polaris_ngwc_plfm_mgr_t)
gen_require(

```

```

 type rsync_t;
 ')
rsync_entry_domtrans(polaris_ngwc_plfm_mgr_t, rsync_t)
allow rsync_t polaris_ngwc_plfm_mgr_t:process sigchld;
write access to /dev/ttyS0
term_write_unallocated_ttys(rsync_t)

reads from, populates chasfs with values and deletes /tmp/package_biv_sums
polaris_kgv_data_manage(polaris_ngwc_plfm_mgr_t)

/dev/shm/sdm access
optional_policy(
polaris_sdm_shm_manage(polaris_ngwc_plfm_mgr_t)
')

platform manager moves 00001.nvram_config file to /bootflash/nvram_config
polaris_nvram_manage(polaris_ngwc_plfm_mgr_t)
allow polaris_ngwc_plfm_mgr_t self:process setfscreate;

```

Found in path(s):

```

* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisngwcplfmngr.te
No license file was found, but licenses were detected in source scan.

```

```

#
July 2019, Victor Kamensky
#
Copyright (c) 2019-2020 by Cisco Systems, Inc.
All rights reserved
#

```

```

policy_module(polarisgrmgr, 1.0);

```

```

gen_require(
 type polaris_gr_mgr_t;
)

```

```

polaris_crft_data_manage(polaris_gr_mgr_t)
polaris_chasfs_manage(polaris_gr_mgr_t)
polaris_tdlresolve_read(polaris_gr_mgr_t)
polaris_cpld_read(polaris_gr_mgr_t)
polaris_lua_read(polaris_gr_mgr_t)

```

```

polaris_rpc_sman_ui_serv_connect(polaris_gr_mgr_t)

```

```

allow polaris_gr_mgr_t self:capability { dac_override dac_read_search };
#DB persistence
polaris_tdlbpersist_setup(polaris_gr_mgr_t)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisgrmgr.te

No license file was found, but licenses were detected in source scan.

#

# July 2017, Victor Kamensky

#

# Copyright (c) 2017-2020 by Cisco Systems, Inc.

# All rights reserved

#

# ngio devices

/dev/ngio[0-9]\* -c gen\_context(system\_u:object\_r:polaris\_ngio\_device\_t,s0)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisiomd.fc

No license file was found, but licenses were detected in source scan.

#

# July 2018, Victor Kamensky

#

# Copyright (c) 2018-2020 by Cisco Systems, Inc.

# All rights reserved

#

/tmp/idope\_svr gen\_context(system\_u:object\_r:polaris\_fed\_debug\_sock\_t,s0)

/tmp/shfwd\_svr gen\_context(system\_u:object\_r:polaris\_fed\_debug\_sock\_t,s0)

/tmp/pktgen.txt gen\_context(system\_u:object\_r:polaris\_fed\_debug\_tmp\_t,s0)

/tmp/DopeElam.sh gen\_context(system\_u:object\_r:polaris\_fed\_debug\_tmp\_t,s0)

/tmp/MemDumpElam.sh gen\_context(system\_u:object\_r:polaris\_fed\_debug\_tmp\_t,s0)

/dcmlog.txt -- gen\_context(system\_u:object\_r:polaris\_fed\_debug\_dcmlog\_t,s0)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisngwcfeddebug.fc

No license file was found, but licenses were detected in source scan.

#

# March 2017, Victor Kamensky

#

# Copyright (c) 2016-2019 by Cisco Systems, Inc.

# All rights reserved

#

policy\_module(polariscpld, 1.0);

#####

```

CPLD Driver policy
#####

note polaris_sysfs_cpdl_t is defined in kernel/devices.te, since genfscon statements
could be only in base policy

type polaris_cpdl_device_t;
dev_node(polaris_cpdl_device_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscpdl.te
No license file was found, but licenses were detected in source scan.

#
August 2017, Shawn Lu
#
Copyright (c) 2017-2020 by Cisco Systems, Inc.
All rights reserved
#

policy_module(polarisrogued, 1.0);

gen_require(
 type polaris_rogued_t;
)

polaris_btrace_data_manage(polaris_rogued_t)
polaris_chasfs_manage(polaris_rogued_t)
polaris_tdlresolve_read(polaris_rogued_t)
polaris_tdlldb_list_dirs(polaris_rogued_t)
polaris_cpdl_read(polaris_rogued_t)
polaris_lua_read(polaris_rogued_t)
polaris_flashlib_read(polaris_rogued_t)

polaris_ripc_sman_ui_serv_connect(polaris_rogued_t)

polaris_db_tdlldb_dir_use(polaris_rogued_t)

allow to use setrlimit
allow polaris_rogued_t self:process setrlimit;
allow polaris_rogued_t self:capability sys_resource;
allow polaris_rogued_t self:capability dac_override;

stuff related to vrf support of the socket
polaris_lfts_dev_use(polaris_rogued_t)
polaris_socketat_nsfs_read(polaris_rogued_t)

```

```
allow to open udp socket on RDLP port 6532
corenet_udp_bind_polaris_rdlp_port(polaris_rogued_t)
corenet_udp_bind_generic_node(polaris_rogued_t)
allow polaris_rogued_t self:udp_socket { create_socket_perms recv_msg send_msg };
```

```
reading images/ap_capabilities.xml
polaris_wlc_ap_images_read(polaris_rogued_t)
```

```
syslogs in RLDP
logging_send_syslog_msg(polaris_rogued_t)
```

```
#DB persistence
polaris_tdlldbpersist_setup(polaris_rogued_t)
polaris_tmp_tdlldb_persist_setup(polaris_rogued_t)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisrogued.te

No license file was found, but licenses were detected in source scan.

```
#
March 2017, Victor Kamensky
#
Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved
#
```

```
policy_module(polariscmm, 1.0);
```

```
gen_require(^
 type polaris_cmm_t;
')
```

```
polaris_btrace_data_manage(polaris_cmm_t)
polaris_crft_data_manage(polaris_cmm_t)
polaris_chasfs_manage(polaris_cmm_t)
polaris_tdlresolve_read(polaris_cmm_t)
polaris_tdlldb_list_dirs(polaris_cmm_t)
polaris_cpld_read(polaris_cmm_t)
polaris_flashlib_read(polaris_cmm_t)
```

```
polaris_ripc_sman_ui_serv_connect(polaris_cmm_t)
```

```
allow polaris_cmm_t self:capability dac_override;
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscmm.te

No license file was found, but licenses were detected in source scan.

dnl All rights reserved

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/polaris_ipc_base_ripc_if.m4
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/polaris_ipc_mqipc_fc.m4
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/polaris_process_fc.m4
```

No license file was found, but licenses were detected in source scan.

#

# March 2017, Victor Kamensky

#

# Copyright (c) 2016-2019 by Cisco Systems, Inc.

# All rights reserved

#

# polarisofa file contexts place holder

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisofa.fc
```

No license file was found, but licenses were detected in source scan.

#

# March 2017, Victor Kamensky

#

# Copyright (c) 2016-2019 by Cisco Systems, Inc.

# All rights reserved

#

## <summary>Polaris emd Policy Rules.</summary>

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisemd.if
```

No license file was found, but licenses were detected in source scan.

#

# June 2017, Victor Kamensky

#

# Copyright (c) 2017-2021 by Cisco Systems, Inc.

# All rights reserved

#

policy\_module(polariscaf, 1.0);

gen\_require(`

type polaris\_caf\_t;

type polaris\_caf\_exec\_t;

type usr\_t;

`)



```

ifdef(`nyquist_platform',`
gen_require(`
 type polaris_sioxcd_rp_t;
`)
Allow read of /etc/passwd
auth_map_passwd(polaris_sioxcd_rp_t)

Allow usage of ls in helper script
corecmd_exec_bin(polaris_sioxcd_rp_t)

Allow sysfs read
dev_list_sysfs(polaris_sioxcd_rp_t)

Allow create/write/open of files under tmp
type polaris_sioxcd_rp_tmp_t;
files_tmp_file(polaris_sioxcd_rp_tmp_t)
files_tmp_filetrans(polaris_sioxcd_rp_t, polaris_sioxcd_rp_tmp_t, { dir file })
manage_dirs_pattern(polaris_sioxcd_rp_t, polaris_sioxcd_rp_tmp_t, polaris_sioxcd_rp_tmp_t)
manage_files_pattern(polaris_sioxcd_rp_t, polaris_sioxcd_rp_tmp_t, polaris_sioxcd_rp_tmp_t)
manage_fifo_files_pattern(polaris_sioxcd_rp_t, polaris_sioxcd_rp_tmp_t, polaris_sioxcd_rp_tmp_t)

Allow losetup in helper script to run in its own domain
fstools_domtrans(polaris_sioxcd_rp_t)

Allow mount/umount in its own domain
mount_domtrans(polaris_sioxcd_rp_t)

Allow /tmp/sw/boot read
polaris_boot_tmp_read(polaris_sioxcd_rp_t)

Allow /tmp/tmppub read
polaris_btrace_tmppub_read(polaris_sioxcd_rp_t)

Allow iox_polaris.conf read
polaris_caf_files_read(polaris_sioxcd_rp_t)

Allow chasfs access
polaris_chasfs_manage(polaris_sioxcd_rp_t)

Allow /sys/devices/platform/cpld/board_vtype read
polaris_cpld_read(polaris_sioxcd_rp_t)

Allow debug.conf access
polaris_read_debug_conf(polaris_sioxcd_rp_t)

Allow cats /tmp/sw/boot/rmonbifo/boardsubtype
polaris_rmonbifo_tmp_read(polaris_sioxcd_rp_t)

```

```

Allow console logging
term_open_unallocated_ttys(polaris_sioxcd_rp_t)

Allow capability 1/24 access
allow polaris_sioxcd_rp_t self:capability { dac_override sys_resource };

Transition to chvrf domain needed by push_using_rsync
polaris_chvrf_domtrans(polaris_sioxcd_rp_t)

Allow flashutil
polaris_flashlib_read(polaris_sioxcd_rp_t)

logger needs to run pidof
dev_read_sysfs(polaris_sioxcd_rp_t)
kernel_read_system_state(polaris_sioxcd_rp_t)
domain_read_all_domains_state(polaris_sioxcd_rp_t)

Manage alternate hdd files
polaris_iox_alt_hdd_manage(polaris_sioxcd_rp_t)

Allow ls /tmp/ufs/crashinfo
optional_policy(`
polaris_ncd_tmp_read(polaris_sioxcd_rp_t)
`)

Allow logger which is used for syslog messages
allow polaris_sioxcd_rp_t self:unix_dgram_socket { connect create };
logging_send_syslog_msg(polaris_sioxcd_rp_t)

Allow standby to access /dev/sda3
fs_getattr_xattr_fs(polaris_sioxcd_rp_t)

Allow getattr under iox_alt_hdd_mount_dir
polaris_iox_alt_hdd_getattr(polaris_sioxcd_rp_t)
`)

polaris_chasfs_manage(polaris_caf_t)
polaris_btrace_data_manage(polaris_caf_t)
polaris_cpld_read(polaris_caf_t)
polaris_boot_tmp_read(polaris_caf_t)

run ldd, which in turns execve "ld.so --verify"
libs_exec_ld_so(polaris_caf_t)

corecmd_exec_bin(polaris_caf_t)

allow read of /etc/passwd

```

```

auth_use_nsswitch(polaris_caf_t)

run-caf.sh invokes startup.py. This leads to node_t:tcp_socket node_bind
corenet_tcp_bind_generic_node(polaris_caf_t)

allow polaris_caf_t self:capability { net_admin sys_resource };
allow polaris_caf_t self:tcp_socket { accept listen create_socket_perms };
allow polaris_caf_t self:udp_socket create_socket_perms;
allow polaris_caf_t self:unix_dgram_socket { create_socket_perms sendto };
allow polaris_caf_t self:cap_userns { sys_admin sys_ptrace setgid setuid sys_chroot };

df needs to have getattr on many file/dir/fs
fs_getattr_all_fs(polaris_caf_t)
fs_getattr_all_files(polaris_caf_t)
files_getattr_all_dirs(polaris_caf_t)
dev_getattr_all_chr_files(polaris_caf_t)
files_getattr_all_mountpoints(polaris_caf_t)

df on "/" needs fs_t:filesystem getattr
fs_getattr_xattr_fs(polaris_caf_t)

allow execution of /usr/sbin/brctl
brctl_domtrans(polaris_caf_t)

#allow open/read/search cgroup files like /sys/fs/cgroup/cpu,cpuacct/machine
fs_read_cgroup_files(polaris_caf_t)
fs_list_cgroup_dirs(polaris_caf_t)

add new type for /guestshell files and allow CAF to manage them
type polaris_guestshell_t;
files_type(polaris_guestshell_t)
manage_files_pattern(polaris_caf_t, polaris_guestshell_t, polaris_guestshell_t)
manage_lnk_files_pattern(polaris_caf_t, polaris_guestshell_t, polaris_guestshell_t)
manage_dirs_pattern(polaris_caf_t, polaris_guestshell_t, polaris_guestshell_t)

#required to support, guestshell enable, which creates <i>i</i>iox-storage>/iox/repo/guestshell
relabelto_files_pattern(polaris_caf_t, polaris_guestshell_t, polaris_guestshell_t)

run_ioxn_caf.sh invokes run-caf.sh which executes "ip"
sysnet_domtrans_ifconfig(polaris_caf_t)
allow netns operations
sysnet_manage_ifconfig_run(polaris_caf_t)

libs_domtrans_ldconfig(polaris_caf_t)

add new type for /bootflash/iox files and allow CAF to manage them
type polaris_iox_files_t;
polaris_disk_type(polaris_iox_files_t)

```

```

polaris_iox_files_manage(polaris_caf_t)

need open, read, ioctl, getattr on /bootflash/debug.conf
polaris_read_debug_conf(polaris_caf_t)

run_ioxn_caf.sh cats /tmp/sw/boot/rmonbifo/boardsubtype
polaris_rmonbifo_tmp_read(polaris_caf_t)

pvsm_cpu.sh reads /tmp/cgroup.log
optional_policy(
polaris_vman_tmp_manage(polaris_caf_t)
)

allow to read /proc/cpuinfo
kernel_read_system_state(polaris_caf_t)

optional_policy(
container_runtime_domtrans(polaris_caf_t)
)

add new type for /opt/cisco/caf files and allow CAF to manage them
type polaris_caf_files_t;
files_type(polaris_caf_files_t)
files_root_filetrans(polaris_caf_t, polaris_caf_files_t, dir)
files_root_filetrans(polaris_caf_t, polaris_caf_exec_t, dir, "scripts")
manage_dirs_pattern(polaris_caf_t, polaris_caf_files_t, polaris_caf_files_t)
manage_files_pattern(polaris_caf_t, polaris_caf_files_t, polaris_caf_files_t)
manage_lnk_files_pattern(polaris_caf_t, polaris_caf_files_t, polaris_caf_files_t)

gen_require(
 type polaris_hm_t;
)
polaris_caf_files_read(polaris_hm_t)

this label is created for sharing of core file dirs between host and containers
type polaris_caf_core_files_t;
polaris_disk_type(polaris_caf_core_files_t)
transition /local files and dirs
files_root_filetrans(polaris_caf_t, polaris_caf_core_files_t, dir, "local")
polaris_btrace_data_manage(polaris_caf_core_files_t)
manage_files_pattern(polaris_caf_core_files_t, usr_t, usr_t)

manage local core files between host and container
polaris_caf_local_core_files_manage(polaris_caf_t)
polaris_caf_local_core_files_manage(brctl_t)

run_ioxn_caf.sh invokes startup.py that eventually through resourcemanager.py
calls cpu_count_logical function in order to get number of cores and which

```

```

needs read access to /sys/devices/system/cpu/online
dev_read_sysfs(polaris_caf_t)

run-caf.sh modifies iox_polaris.conf; backup is saved due to "sed-i.bak".
in order to preserve security context, setfscreate is invoked
allow polaris_caf_t self:process setfscreate;

work with /var/log/caf/ files
type polaris_caf_log_t;
logging_log_file(polaris_caf_log_t)
manage_files_pattern(polaris_caf_t, polaris_caf_log_t, polaris_caf_log_t)
manage_dirs_pattern(polaris_caf_t, polaris_caf_log_t, polaris_caf_log_t)
logging_log_filetrans(polaris_caf_t, polaris_caf_log_t, dir, "caf")
logging_log_filetrans(polaris_caf_t, polaris_caf_log_t, dir, "docker")

corenet_tcp_bind_polaris_caf_api_port(polaris_caf_t)

virt_stream_connect(polaris_caf_t)
virt_read_config(polaris_caf_t)

allow to get getattr of /proc file system
domain_read_all_domains_state(polaris_caf_t)

allow access to /etc/guestshell_rsa_key* files
type polaris_guestshell_ssh_key_t;
files_type(polaris_guestshell_ssh_key_t)
files_etc_filetrans(polaris_caf_t, polaris_guestshell_ssh_key_t, file, "guestshell_rsa_key")
files_etc_filetrans(polaris_caf_t, polaris_guestshell_ssh_key_t, file, "guestshell_rsa_key.pub")
manage_files_pattern(polaris_caf_t, polaris_guestshell_ssh_key_t, polaris_guestshell_ssh_key_t)

add new type for "internal" temp files created by underlying python modules when
user-level python scripts (e.g., run_ioxn_caf.sh, run-caf.sh, etc) performs init;
we are now creating them using TMPDIR=/tmp/caf; and, allow CAF to manage these
internal temp files; in addition, underlying python-infra invokes __mmap() that
somehow translates to.... execute stuff like "/tmp/caf/#97893 (deleted)"
type polaris_caf_tmp_files_t;
files_tmp_file(polaris_caf_tmp_files_t)
files_tmp_filetrans(polaris_caf_t, polaris_caf_tmp_files_t, dir)
files_tmp_filetrans(polaris_caf_t, polaris_caf_tmp_files_t, file)
manage_files_pattern(polaris_caf_t, polaris_caf_tmp_files_t, polaris_caf_tmp_files_t)
manage_dirs_pattern(polaris_caf_t, polaris_caf_tmp_files_t, polaris_caf_tmp_files_t)
python through libffi tries to mmap open file with PROT_EXEC, it triggers need
for execute permission
allow polaris_caf_t polaris_caf_tmp_files_t:file execute;
allow polaris_caf_t polaris_caf_tmp_files_t:file map;

python3 seems to do a setattr syscall
A folder like /bootflash/iox/repo/guestshell/extract_archive

```

```

contains files that are extracted from a tarball and are
made polaris_caf_tmp_files_t because of the files_tmp_filetrans rule
relabel_files_pattern(polaris_caf_t, polaris_iox_files_t, polaris_iox_files_t)
relabel_files_pattern(polaris_caf_t, polaris_caf_tmp_files_t, polaris_caf_tmp_files_t)

allow to run e2fsck in its own domain
fstools_domtrans(polaris_caf_t)

allow to run mount in its own domain
mount_domtrans(polaris_caf_t)

add new type for /guestshell/*.sh files
type polaris_guestshell_exec_t;
files_type(polaris_guestshell_exec_t)

add new type for /var/run/netns/guestshell
type polaris_guestshell_var_run_t;
files_type(polaris_guestshell_var_run_t)

add new type for /var/run/cisco_cli
type polaris_caf_var_run_t;
files_pid_file(polaris_caf_var_run_t)
manage_dirs_pattern(polaris_caf_t, polaris_caf_var_run_t, polaris_caf_var_run_t)
manage_files_pattern(polaris_caf_t, polaris_caf_var_run_t, polaris_caf_var_run_t)
files_pid_filetrans(polaris_caf_t, polaris_caf_var_run_t, { file dir })

Intermediate step: When CAF unpacks the contents of the application
you upload, it will stage the contents somewhere and verify some checks
(filesystem check on the disk image, existence of several folders, etc.). Disk
images are mounted without any label since CAF has not generated security
labels yet for the app at this point. The disk gets unmounted and eventually
gets mounted again with the proper context/label.
type polaris_disk_caf_t;
polaris_disk_type(polaris_disk_caf_t)
list_dirs_pattern(polaris_caf_t, polaris_disk_caf_t, polaris_disk_caf_t)

allow polaris_caf_t self:capability { chown dac_override fowner fsetid setfcap sys_chroot sys_ptrace };
allow polaris_caf_t self:process setcap;
fs_read_nsfs_files(polaris_caf_t)

caf to manage loop device: finding free /dev/loopN device
dev_rw_loop_control(polaris_caf_t)

PLEASE LOOK AT ME
allow caf to read, write /dev/loopN devices that are
under fixed_disk_device_t label. It is pretty strong premission
and at this point it is only done for /dev/loopN devices.
Can we do better? i.e move /dev/loopN to some other label?

```

```

storage_manage_fixed_disk(polaris_caf_t)

caf executing chroot via bash
gen_require(
 type svirt_sandbox_file_t;
)
allow polaris_caf_t svirt_sandbox_file_t:file { execute execute_no_trans };

gen_require(
 type polaris_disk_bootflash_t;
 type polaris_disk_harddisk_t;
)
setattr_dirs_pattern(polaris_caf_t, polaris_disk_bootflash_t, polaris_disk_bootflash_t)
replicating policy done for polaris_disk_bootflash_t
setattr_dirs_pattern(polaris_caf_t, polaris_disk_harddisk_t, polaris_disk_harddisk_t)

caf connects to its own port 8098
corenet_tcp_connect_polaris_caf_api_port(polaris_caf_t)

virt_manage_sandbox_files(polaris_caf_t)

kernel_read_network_state(polaris_caf_t)

polaris_bootflash_manage(polaris_caf_t)
polaris_bootflash_files_mmap(polaris_caf_t)
#allow polaris_disk_harddisk_t manage like polaris_disk_bootflash_t
polaris_harddisk_manage(polaris_caf_t)

caf execve virsh
gen_require(
 type virsh_t;
 type virsh_exec_t;
)
domtrans_pattern(polaris_caf_t, virsh_exec_t, virsh_t)
virsh needs to read /opt/cisco/caf/scripts/ieobcbr.xml
polaris_caf_files_read(virsh_t)

caf calls tipc-config that works with tipc sockets
allow polaris_caf_t self:socket create_socket_perms;
allow polaris_caf_t self:netlink_generic_socket { create_socket_perms sendto recvfrom };

get and set attrs on httpd_var_run_t under /bootflash/iox
gen_require(
 type httpd_var_run_t;
)
getattr_sock_files_pattern(polaris_caf_t, httpd_var_run_t, httpd_var_run_t)
setattr_sock_files_pattern(polaris_caf_t, httpd_var_run_t, httpd_var_run_t)
manage_dirs_pattern(polaris_caf_t, httpd_var_run_t, httpd_var_run_t)

```

```

allow TCP connection for http port e.g. Local Manager
corenet_tcp_connect_http_port(polaris_caf_t)

execute lvm commands, like lvs
lvm_domtrans(polaris_caf_t)

polaris_disk_crashinfo_getattr(polaris_caf_t)
optional_policy(
polaris_ncd_tmp_read(polaris_caf_t)
')

logging_send_syslog_msg(polaris_caf_t)

tries to load KLM like cuse, fuse, overlay
modutils_domtrans_insmod(polaris_caf_t)

modifies files under /var/www/features/iox
apache_manage_sys_content(polaris_caf_t)

caf reads version of ioxman from its executable
polaris_ioxman_exec_read(polaris_caf_t)

polaris_ioxman_show_version(polaris_caf_t)

type polaris_iox_alt_hdd_files_t;
files_type(polaris_iox_alt_hdd_files_t)
polaris_pfile_type(polaris_iox_alt_hdd_files_t)
polaris_iox_alt_hdd_manage(polaris_caf_t)

On stargazer platform /vol/disk0 is used by iox to create below dirs.
On nyquist platform /vol/usb1 with polaris_disk_harddisk_t is used
Transition them to appropriate labels.
gen_require(
 type container_var_lib_t;
)

filetrans_pattern(polaris_caf_t, { polaris_disk_bootflash_t polaris_disk_harddisk_t polaris_iox_alt_hdd_files_t },
polaris_iox_files_t, dir, "iox")
filetrans_pattern(polaris_caf_t, { polaris_disk_bootflash_t polaris_disk_harddisk_t polaris_iox_alt_hdd_files_t },
polaris_caf_tmp_files_t, dir, "caf")
filetrans_pattern(polaris_caf_t, { polaris_disk_bootflash_t polaris_disk_harddisk_t polaris_iox_alt_hdd_files_t
polaris_iox_files_t }, container_var_lib_t, dir, "docker")
filetrans_pattern(polaris_caf_t, { polaris_disk_bootflash_t polaris_disk_harddisk_t polaris_iox_alt_hdd_files_t },
polaris_iox_files_t, dir, "iox_data_share")
filetrans_pattern(polaris_caf_t, { polaris_disk_bootflash_t polaris_disk_harddisk_t polaris_iox_alt_hdd_files_t },
polaris_iox_files_t, dir, "iox_host_data_share")

Allow files under guest-share directory which is shared between ios

```



```

and container
type polaris_iox_shared_files_t;
files_type(polaris_iox_shared_files_t)
polaris_pfile_type(polaris_iox_shared_files_t)
manage_dirs_pattern(polaris_caf_t, polaris_iox_shared_files_t, polaris_iox_shared_files_t)
filetrans_pattern(polaris_caf_t, { polaris_disk_bootflash_t polaris_disk_harddisk_t polaris_iox_alt_hdd_files_t },
polaris_iox_shared_files_t, dir, "guest-share")

Allow signature verification of applications
gen_require(
 type polaris_code_verify_t;
)
polaris_iox_files_manage(polaris_code_verify_t)

allow caf to control /tmp/trace/resource.log
polaris_iox_manage_tmp_files(polaris_caf_t)

some utility running under caf needs access to /varied/ovf-env.xml
polaris_disk_varied_read(polaris_caf_t)

caf reads the udev information
gen_require(
 type udev_var_run_t;
)
manage_files_pattern(polaris_caf_t, udev_var_run_t, udev_var_run_t)

gen_require(
 type virtd_lxc_t;
)
allow polaris_caf_t virtd_lxc_t:process signull;

polaris_removable_manage(polaris_caf_t)
polaris_lm_tmp_read(polaris_caf_t)

caf modifies /etc/cgroup_params.txt
files_manage_etc_files(polaris_caf_t)

read /tmp/iox_override.conf created by ioxman
polaris_iox_read_tmp_files(polaris_caf_t)

python udev library used by caf
allow polaris_caf_t self:netlink_kobject_uevent_socket { bind create getattr setopt };

#need access to rawip socket by pd_iox.sh
allow polaris_caf_t self:capability { net_raw setgid };
allow polaris_caf_t self:rawip_socket { create getopt setopt };
LOOK AT ME caf leaks fifo file descriptors need permissions for
domains that started by it

```

```

gen_require(
 type iptables_t;
)
allow iptables_t polaris_caf_t:fifo_file { read write append getattr };

allow iptables_t usersns permissions for IP accessed by the script guestshell_setup.sh
allow iptables_t self:cap_usersns { net_admin net_raw };

container_stream_connect(polaris_caf_t)

gen_require(
 type pki_ca_port_t;
)
allow polaris_caf_t pki_ca_port_t:tcp_socket name_connect;

polaris_flashlib_read(polaris_caf_t)
polaris_flashlib_write(polaris_caf_t)
polaris_contdev_dev_read(polaris_caf_t)

gen_require(
 type rsync_exec_t;
 type rsync_port_t;
)
allow polaris_caf_t rsync_exec_t:file { execute execute_no_trans getattr map open read };
allow polaris_caf_t rsync_port_t:tcp_socket name_connect;

IOX uses rsync to sync the data
gen_require(
 type rsync_t;
)
rsync_entry_domtrans(polaris_caf_t, rsync_t)
polaris_manage_rsync_tmplog_dir(polaris_caf_t)
allow rsync_t polaris_caf_t:fifo_file { getattr write };

kernel_search_network_sysctl(polaris_caf_t)
kernel_rw_net_sysctls(polaris_caf_t)
dev_rw_sysfs(polaris_caf_t)

Allow run-caf.sh to configure byte_queue_limits/limit_min for KR port
gen_require(
 type sysfs_t;
)
allow polaris_caf_t sysfs_t:file create;
dev_manage_sysfs_dirs(polaris_caf_t)

CAF needs access to setup for containers
manage_dirs_pattern(polaris_caf_t, self, self)
fs_associate_proc(polaris_caf_t)

```

```

guestshell_setup.sh reads /proc/sys/kernel/core_pattern
kernel_read_usermodehelper_state(polaris_caf_t)
and then guestshell_setup.sh reads /tmp/corelink
gen_require(
 type initrc_tmp_t;
)
allow polaris_caf_t initrc_tmp_t:lnk_file read;

Beluga/Meraki container
ifdef(^ms_platform',`
polaris_iox_container_domtrans(polaris_caf_t)
)
Bottlenose/Meraki container
ifdef(^bottlenose_platform',`
polaris_iox_container_domtrans(polaris_caf_t)
)

#allow run_ioxn_caf.sh to modify /etc/docker/daemon.json, etc.
container_manage_config_files(polaris_caf_t)

Manage IOx Secure storage CC files
type polaris_iox_ss_disk_t;
files_type(polaris_iox_ss_disk_t)
polaris_pfile_type(polaris_iox_ss_disk_t)

#Guestshell management
virt_signull(polaris_caf_t)

gen_require(
 type ifconfig_t;
)
allow ifconfig_t users permissions for IP
allow ifconfig_t self:cap_users { net_admin sys_admin sys_ptrace };
allow ifconfig_t to transition into dhcpc domain
sysnet_domtrans_dhcpc(ifconfig_t)

Being an IOSF client does not allow for setattr permissions
gen_require(
 type polaris_iosd_portal_app_lipc_t;
)
setattr_sock_files_pattern(polaris_caf_t, polaris_iosd_portal_app_lipc_t, polaris_iosd_portal_app_lipc_t)

ifdef(^passport_platform',`

gen_require(
 type polaris_sioxcd_rp_t;
)

```

```

')

Allow read of /etc/passwd
auth_map_passwd(polaris_sioxcd_rp_t)
#
Allow usage of ls in helper script
corecmd_exec_bin(polaris_sioxcd_rp_t)

Allow sysfs read
dev_list_sysfs(polaris_sioxcd_rp_t)

Allow create/write/open of files under tmp
type polaris_sioxcd_rp_tmp_t;

files_tmp_file(polaris_sioxcd_rp_tmp_t)
files_tmp_filetrans(polaris_sioxcd_rp_t, polaris_sioxcd_rp_tmp_t, { dir file })
manage_dirs_pattern(polaris_sioxcd_rp_t, polaris_sioxcd_rp_tmp_t, polaris_sioxcd_rp_tmp_t)
manage_files_pattern(polaris_sioxcd_rp_t, polaris_sioxcd_rp_tmp_t, polaris_sioxcd_rp_tmp_t)
manage_fifo_files_pattern(polaris_sioxcd_rp_t, polaris_sioxcd_rp_tmp_t, polaris_sioxcd_rp_tmp_t)

Allow losetup in helper script to run in its own domain
fstools_domtrans(polaris_sioxcd_rp_t)
#
Allow mount/umount in its own domain
mount_domtrans(polaris_sioxcd_rp_t)
#
Allow /tmp/sw/boot read
polaris_boot_tmp_read(polaris_sioxcd_rp_t)

Allow /tmp/tmppub read
polaris_btrace_tmppub_read(polaris_sioxcd_rp_t)

Allow iox_polaris.conf read
polaris_caf_files_read(polaris_sioxcd_rp_t)
#
Allow chasfs access
polaris_chasfs_manage(polaris_sioxcd_rp_t)

Allow /sys/devices/platform/cpld/board_vtype read
polaris_cpld_read(polaris_sioxcd_rp_t)

Allow debug.conf access
polaris_read_debug_conf(polaris_sioxcd_rp_t)

Allow cats /tmp/sw/boot/rmonbifo/boardsubtype
polaris_rmonbifo_tmp_read(polaris_sioxcd_rp_t)

Allow console logging

```

```

term_open_unallocated_ttys(polaris_sioxcd_rp_t)

Allow capability 1/24 access
allow polaris_sioxcd_rp_t self:capability { dac_override sys_resource };

Transition to chvrf domain needed by push_using_rsync
polaris_chvrf_domtrans(polaris_sioxcd_rp_t)

Allow flashutil
polaris_flashlib_read(polaris_sioxcd_rp_t)

#iptables execute in its own domain
iptables_domtrans(polaris_caf_t)

logger needs to run pidof
dev_read_sysfs(polaris_sioxcd_rp_t)
kernel_read_system_state(polaris_sioxcd_rp_t)
domain_read_all_domains_state(polaris_sioxcd_rp_t)

Manage alternate hdd files
polaris_iox_alt_hdd_manage(polaris_sioxcd_rp_t)

Allow ls /tmp/ufs/crashinfo
optional_policy(`
polaris_ncd_tmp_read(polaris_sioxcd_rp_t)
`)

Allow logger which is used for syslog messages
allow polaris_sioxcd_rp_t self:unix_dgram_socket { connect create };
logging_send_syslog_msg(polaris_sioxcd_rp_t)

Allow standby to access /dev/sda3
fs_getattr_xattr_fs(polaris_sioxcd_rp_t)

Allow getattr under iox_alt_hdd_mount_dir
polaris_iox_alt_hdd_getattr(polaris_sioxcd_rp_t)
`)

Allow sync_data to use chvrf
polaris_chvrf_domtrans(polaris_caf_t)

#tty device and link files under /dev
type polaris_caf_tty_file_t;
dev_node(polaris_caf_tty_file_t)
dev_filetrans(polaris_caf_t, polaris_caf_tty_file_t, lnk_file)
term_use_ptmx(polaris_caf_t)
polaris_caf_tty_lnk_manage(polaris_caf_t)
polaris_caf_chr_file_read(polaris_caf_t)

```

```

polaris_iosd_vcpu_read(polaris_caf_t)

Allow access starting/stopping iox
polaris_chasfs_read(iptables_t)
polaris_chasfs_read(ifconfig_t)
polaris_hman_use_fifo(polaris_caf_t)
iptables_domtrans(polaris_caf_t)

Allow application signature verification
polaris_code_verify_domtrans(polaris_caf_t)

#access /proc/rmonbifo file cat9k-ioxhelper.sh
polaris_proc_rmonbifo_read(polaris_caf_t)

gen_require(
 type dhcpc_t;
)
allow these users capabilities for dhcpc
allow dhcpc_t self:cap_users { net_raw net_bind_service };
allow CAF to transition to dhcpc e.g. dhclient_custom.sh
sysnet_domtrans_dhcpc(polaris_caf_t)
allow reading of dhcp configuration files e.g.
/vol/usb1/iox/repo-docker/perfsonar1/dhcp/dhcp_eth0.conf
polaris_caf_files_read(dhcpc_t)
allow writing of dhcp lease files e.g. eth0ipv4.lease
polaris_iox_files_manage(dhcpc_t)
allow dhcpc domain to transition back into CAF e.g. dhclient_custom.sh
polaris_caf_domtrans(dhcpc_t)

Allow read container share files
container_read_share_files(polaris_caf_t)

Allow manage container files
gen_require(
 type container_file_t;
 type container_share_t;
 type container_log_t;
)
mmap_files_pattern(polaris_caf_t, container_file_t, container_file_t)
manage_files_pattern(polaris_caf_t, container_file_t, container_file_t)

manage_chr_files_pattern(polaris_caf_t, container_share_t, container_share_t)
manage_fifo_files_pattern(polaris_caf_t, container_share_t, container_share_t)
manage_sock_files_pattern(polaris_caf_t, container_share_t, container_share_t)

manage_files_pattern(polaris_caf_t, container_log_t, container_log_t)

```

```

Allow polaris caf to set attributes of device nodes of fuse devices
gen_require(
 type fuse_device_t;
)
allow polaris_caf_t fuse_device_t:chr_file setattr;

Allow polaris caf to set attributes of TUN/TAP virtual network device
gen_require(
 type tun_tap_device_t;
)
allow polaris_caf_t tun_tap_device_t:chr_file setattr;

Allow operations on fifo file
type fifo_var_run_t;
make sure /tmp/ttyF0 is labeled correctly
files_tmp_file(fifo_var_run_t)
files_tmp_filetrans(polaris_caf_t, fifo_var_run_t, fifo_file)
manage_fifo_files_pattern(polaris_caf_t, fifo_var_run_t, fifo_var_run_t)

allow udev read operations
polaris_udev_tmp_read(polaris_caf_t)

allow link file for tmpfs_t
allow polaris_caf_t tmpfs_t:lnk_file create;

#####
IOx Secure storage service policies
#####
optional_policy(
gen_require(
 type polaris_ioxss_rp_t;
 type polaris_sort_files_t;
 type polaris_iosd_t;
)
type polaris_ioxss_rp_tmp_t;
files_tmp_file(polaris_ioxss_rp_tmp_t)
files_tmp_filetrans(polaris_ioxss_rp_t, polaris_ioxss_rp_tmp_t, file, "ioxss_up")
polaris_ioxss_rp_tmp_manage(polaris_ioxss_rp_t)

polaris_chasfs_read(polaris_ioxss_rp_t)
polaris_lua_read(polaris_ioxss_rp_t)

manage_files_pattern(polaris_ioxss_rp_t, polaris_iox_ss_disk_t, polaris_iox_ss_disk_t)
allow polaris_sort_files_t polaris_iox_ss_disk_t:dir list_dir_perms;
allow polaris_iosd_t polaris_iox_ss_disk_t:dir list_dir_perms;

Allow polaris_sort_files_t getattr of iosd_portal_app_lipc socket file
polaris_iosd_portal_app_lipc_getattr(polaris_sort_files_t)

```

```

allow secure storage server to connect through tcp_socket on port 9000 from system-config.ini
gen_require(
 type http_port_t;
)

allow polaris_ioxss_rp_t self:tcp_socket { bind create listen setopt };
corenet_tcp_bind_http_port(polaris_ioxss_rp_t);
allow polaris_ioxss_rp_t node_t:tcp_socket node_bind;

allow polaris caf to process signal of dhcp client
allow polaris_caf_t dhcpd_t:process signal;

allow secure storage server to connect through socket
allow polaris_ioxss_rp_t self:socket create_socket_perms;
)

optional_policy(
Allow polaris_sort_files_t getattr of container fifo file
gen_require(
 type polaris_sort_files_t;
 type container_file_t;
)
getattr_fifo_files_pattern(polaris_sort_files_t, container_file_t, container_file_t)
)

Clear iox handling
container_manage_lib_files(polaris_caf_t)
container_manage_lib_dirs(polaris_caf_t)
container_manage_share_files(polaris_caf_t)
container_manage_share_dirs(polaris_caf_t)
gen_require(
 type polaris_vs_oper_db_tdlldb_t;
 type polaris_tdlldb_t;
)
manage_files_pattern(polaris_caf_t, polaris_tdlldb_t, polaris_vs_oper_db_tdlldb_t)

allow caf to read systemd unit files
systemd_read_unit_files(polaris_caf_t)

allow restorecon on iox_alt_hdd_mount_dir
seutil_domtrans_setfiles(polaris_caf_t)

filetrans_pattern(polaris_caf_t, { polaris_disk_bootflash_t polaris_disk_harddisk_t }, polaris_iox_alt_hdd_files_t,
file, "iox_alt_hdd.dsk")
filetrans_pattern(polaris_caf_t, { polaris_disk_bootflash_t polaris_disk_harddisk_t }, polaris_iox_alt_hdd_files_t,
dir, "iox_alt_hdd_mount_dir")

```



```
allow ifconfig_t polaris_iox_files_t:file { read };
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscaf.te
```

No license file was found, but licenses were detected in source scan.

```
#
```

```
May 2017, Victor Kamensky
```

```
#
```

```
Copyright (c) 2017-2020 by Cisco Systems, Inc.
```

```
All rights reserved
```

```
#
```

```
<summary>Polaris confd Policy Rules.</summary>
```

```
#####
```

```
<summary>
```

```
Setup /dev/shm/confd directory and file, pid and shared memory.
```

```
</summary>
```

```
<param name="domain">
```

```
<summary>
```

```
Domain allowed access.
```

```
</summary>
```

```
</param>
```

```
#
```

```
interface(`polaris_conf_d_shm_setup`,`
```

```
gen_require(`
```

```
type polaris_conf_d_shm_t;
```

```
type tmpfs_t;
```

```
`)
```

```
fs_tmpfs_filetrans($1, polaris_conf_d_shm_t, dir, "confd")
```

```
manage_dirs_pattern($1, tmpfs_t, polaris_conf_d_shm_t)
```

```
manage_files_pattern($1, { tmpfs_t polaris_conf_d_shm_t }, polaris_conf_d_shm_t)
```

```
allow $1 polaris_conf_d_shm_t:file map;
```

```
`)
```

```
#####
```

```
<summary>
```

```
Read /dev/shm/confd_shared_schema shared memory.
```

```
</summary>
```

```
<param name="domain">
```

```
<summary>
```

```
Domain allowed access.
```

```
</summary>
```

```
</param>
```

```
#
```

```
interface(`polaris_conf_d_shared_schema_read`,`
```

```

gen_require(
 type polaris_confd_shm_t;
 type tmpfs_t;
)
read_files_pattern($1, { tmpfs_t polaris_confd_shm_t } , polaris_confd_shm_t)
allow $1 polaris_confd_shm_t:file map;
)

```

```
#####
```

```

<summary>
Watch confd_shm directories
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolebase/>
#

```

```

interface(`polaris_confd_shared_schema_watch`,`
gen_require(
 type polaris_confd_shm_t;
)
 allow $1 polaris_confd_shm_t:dir watch;
)

```

```
#####
```

```

<summary>
Read /proc/cond_pid/exe file. Few dmi utilities do that by
some reason. Look at handle_confd_pid_available.
Read files and symlinks under /dev/shm/confd.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#

```

```

interface(`polaris_confd_read`,`
 gen_require(
 type polaris_confd_t;
)
 read_files_pattern($1, polaris_confd_t, polaris_confd_t)
 read_lnk_files_pattern($1, polaris_confd_t, polaris_confd_t)
)

```

```
#####
```

```

<summary>
Create /var/log/ndbutil directory
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_confnd_ndbutil_create`,`
 gen_require(`
 type polaris_confnd_ndbutil_lock_t;
 `)
 files_lock_filetrans($1, polaris_confnd_ndbutil_lock_t, dir, "ndbutil")
 files_create_lock_dirs($1)
 manage_dirs_pattern($1, polaris_confnd_ndbutil_lock_t, polaris_confnd_ndbutil_lock_t)
 manage_files_pattern($1, polaris_confnd_ndbutil_lock_t, polaris_confnd_ndbutil_lock_t)
 create_dirs_pattern($1, polaris_confnd_ndbutil_lock_t, polaris_confnd_ndbutil_lock_t)
`)

#####
<summary>
Creates types for and rules for ndbutils files under /var/lock/ndbutil
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<param name="stem">
<summary>
Stem for the domain. Name is constructed as polaris_stem_ndbutil_t
</summary>
</param>
<param name="name" optional="true">
<summary>
The name of the object being created.
</summary>
</param>
#
template(`polaris_ndbutil_lock_template`,`
 gen_require(`
 type polaris_confnd_ndbutil_lock_t;
 `)
 type polaris_$2_ndbutil_t;
 files_type(polaris_$2_ndbutil_t)

 filetrans_pattern($1, polaris_confnd_ndbutil_lock_t, polaris_$2_ndbutil_t, file, $3)
`

```

```

manage_files_pattern($1, polaris_confnd_ndbutil_lock_t, polaris_$2_ndbutil_t)

allow $1 polaris_$2_ndbutil_t:file { watch watch_reads };
)

#####
<summary>
Execute a domain transition to run mmap_schema polaris process.
</summary>
<param name="domain">
<summary>
Domain allowed to transition.
</summary>
</param>
#
interface(`polaris_mmap_schema_domtrans`,`
 gen_require(`
 type polaris_mmap_schema_t, polaris_mmap_schema_exec_t;
 `)

 domtrans_pattern($1, polaris_mmap_schema_exec_t, polaris_mmap_schema_t)
)

#####
<summary>
Execute a domain transition to run confd polaris process.
</summary>
<param name="domain">
<summary>
Domain allowed to transition.
</summary>
</param>
#
interface(`polaris_confnd_domtrans`,`
 gen_require(`
 type polaris_confnd_t, polaris_confnd_exec_t;
 `)

 domtrans_pattern($1, polaris_confnd_exec_t, polaris_confnd_t)
)

#####
<summary>
Read confd log file (i.e /var/confd0/log/cia-confd.log). Used
by dmiaudthd to convert confd logs to btrace.
</summary>
<param name="domain">
<summary>

```

```

Domain allowed access.
</summary>
</param>
#
interface(`polaris_conf_d_log_read`,`
 gen_require(`
 type polaris_conf_d_var_t;
 `)
 read_files_pattern($1, polaris_conf_d_var_t, polaris_conf_d_var_t)
`)

#####
<summary>
Manage confd log file (i.e /var/confd0/log/cia-confd.log). Used
by pman to rotate logs into /bootflash/tracelogs.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_conf_d_log_manage`,`
 gen_require(`
 type polaris_conf_d_var_t;
 `)
 manage_files_pattern($1, polaris_conf_d_var_t, polaris_conf_d_var_t)
`)

#####
<summary>
Execute dmi_ports_fetch in the caller domain.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`confd_exec_dmi_ports_fetch`,`
 gen_require(`
 type polaris_dmi_ports_fetch_exec_t;
 `)

 corecmd_search_bin($1)
 can_exec($1, polaris_dmi_ports_fetch_exec_t)
`)

```

```
#####
<summary>
Manage confd /var/log files (i.e /var/log/confd)
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_confd_var_log_manage`,`
 gen_require(`
 type polaris_confd_var_log_t;
 `)
 logging_log_filetrans($1, polaris_confd_var_log_t, dir, "confd")
 manage_dirs_pattern($1, var_log_t, polaris_confd_var_log_t)
 manage_files_pattern($1, polaris_confd_var_log_t, polaris_confd_var_log_t)
`)
```

```
#####
<summary>
Read confd /var/log files (i.e /var/log/confd)
/bootflash/tracelogs/cia-netconf-trace* also has polaris_confd_var_log_t
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_confd_var_log_read`,`
 gen_require(`
 type polaris_confd_var_log_t;
 `)
 list_dirs_pattern($1, polaris_confd_var_log_t, polaris_confd_var_log_t)
 read_files_pattern($1, polaris_confd_var_log_t, polaris_confd_var_log_t)
`)
```

```
#####
<summary>
Write into fifo file created by confd, typical case when
confd starts script under popen in different domain.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
```

```

<rolecap/>
#
interface(`polaris_confd_tmp_use_fifo`,`
gen_require(`
type polaris_confd_tmp_t;
`)

read_fifo_files_pattern($1, polaris_confd_tmp_t, polaris_confd_tmp_t)
write_fifo_files_pattern($1, polaris_confd_tmp_t, polaris_confd_tmp_t)
)

```

```
#####
```

```

<summary>
Write into file created by confd, to deal with cases
confd starts script under popen in different domain and
file descriptor leaks into another domain. Since we cannot
modify confd to use O_CLOEXEC
</summary>

```

```
<param name="domain">
```

```
<summary>
```

```
Domain allowed access.
```

```
</summary>
```

```
</param>
```

```
<rolecap/>
```

```
#
```

```

interface(`polaris_confd_tmp_use`,`
gen_require(`
type polaris_confd_tmp_t;
`)

read_files_pattern($1, polaris_confd_tmp_t, polaris_confd_tmp_t)
write_files_pattern($1, polaris_confd_tmp_t, polaris_confd_tmp_t)
)

```

```
#####
```

```

<summary>
Provide access for file operations under /etc/ dir.
</summary>

```

```
<param name="domain">
```

```
<summary>
```

```
Domain allowed access.
```

```
</summary>
```

```
</param>
```

```
#
```

```

interface(`polaris_confd_etc_read`,`
gen_require(`
type polaris_confd_etc_t;
`)

```

```
 read_files_pattern($1, polaris_confd_etc_t, polaris_confd_etc_t)
')
```

```
#####
```

```
<summary>
Create an object in the /var directory under
polaris_confd_var_t label.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<param name="object">
<summary>
The object class of the object being created.
</summary>
</param>
<param name="name" optional="true">
<summary>
The name of the object being created.
</summary>
</param>
#
interface(`polaris_confd_var_filetrans`,`
 gen_require(`
 type polaris_confd_var_t;
 `)
)
```

```
 files_var_filetrans($1, polaris_confd_var_t, $2, $3)
')
```

```
#####
```

```
<summary>
Make the specified domain able to work with /var/confd0
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_confd_var_dir_manage`,`
 gen_require(`
 type polaris_confd_var_t;
 `)
)
```



```

 manage_dirs_pattern($1, polaris_confd_var_t, polaris_confd_var_t);
)

#####
<summary>
Execute a domain transition to run admin_tech scripts of sdwan
</summary>
<param name="domain">
<summary>
Domain allowed to transition.
</summary>
</param>
#
interface(`polaris_admin_tech_domtrans`,`
 gen_require(`
 type polaris_admin_tech_t, polaris_admin_tech_exec_t;
 `)

 domtrans_pattern($1, polaris_admin_tech_exec_t, polaris_admin_tech_t)
)

#####
<summary>
Read admin_tech files created under bootflash
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_admin_tech_data_read`,`
 gen_require(`
 type polaris_admin_tech_data_t;
 `)

 read_files_pattern($1, polaris_admin_tech_data_t, polaris_admin_tech_data_t)
)

#####
<summary>
Manage admin_tech files created under bootflash
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#

```

```

interface(`polaris_admin_tech_data_manage',`
 gen_require(`
 type polaris_admin_tech_data_t;
 `)
 manage_files_pattern($1, polaris_admin_tech_data_t, polaris_admin_tech_data_t)
 manage_lnk_files_pattern($1, polaris_admin_tech_data_t, polaris_admin_tech_data_t)
 manage_dirs_pattern($1, polaris_admin_tech_data_t, polaris_admin_tech_data_t)

 allow $1 polaris_admin_tech_data_t:file watch;
)

```

```

#####
<summary>
Allow domain to be started by confd with
transition into specific service domain.
</summary>
<param name="domain">
<summary>
Type to be used to run utility.
</summary>
</param>
<param name="entry_point">
<summary>
Type of the program to be used as an entry point to this domain.
</summary>
</param>

```

```

interface(`polaris_confid_domain',`
 gen_require(`
 type polaris_confid_t;
 `)

 domtrans_pattern(polaris_confid_t, $2, $1)
)

```

```

#####
<summary>
Manage confd_cli files under /tmp/confd_cli.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_confid_cli_tmp_manage',`
 gen_require(`
 type polaris_confid_cli_tmp_t;
 `)

```

```

 manage_files_pattern($1, polaris_confcli_tmp_t, polaris_confcli_tmp_t)
)

#####
<summary>
Manage vconfd files under /tmp/vconfd.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_vconfd_tmp_manage`,`
 gen_require(`
 type polaris_vconfd_tmp_t;
 `)
 manage_dirs_pattern($1, polaris_vconfd_tmp_t, polaris_vconfd_tmp_t)
 manage_files_pattern($1, polaris_vconfd_tmp_t, polaris_vconfd_tmp_t)
)

#####
<summary>
Connect to confd port. Should be used only by utility
domains that do not have TDL entry. Processes with TDL entries
just need to register as confd pseudo service clients.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_confcli_connect`,`
 polaris_ripc_confcli_ipc_connect($1)
)

#####
<summary>
Use unix stream socket created by confd as standard I/O
descriptors. Need to look more, because so far it triggers only
getattr, append and ioctl permissions. If it would be real standard I/O
it would need read and write as well.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>

```

```

</param>
#
interface(`polaris_conf_d_unix_stream_stdio_use',`
 gen_require(`
 type polaris_conf_d_t;
 `)
 allow $1 polaris_conf_d_t:unix_stream_socket { append getattr ioctl };
`)

```

```

#####
<summary>
Creates types and rules for a script that is started
by confd process.
</summary>
<param name="stem">
<summary>
Stem for the domain. Name is constructed as polaris_stem_t
</summary>
</param>
#
template(`polaris_vconf_d_domain_template',`
 polaris_utility_domain_template($1

 polaris_conf_d_domain(polaris_$1_t, polaris_$1_exec_t

 # access /etc/passwd
 auth_use_nsswitch(polaris_$1_t

 # inherit unix stream as script stdio
 polaris_conf_d_unix_stream_stdio_use(polaris_$1_t
`)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisconfd.if

No license file was found, but licenses were detected in source scan.

```

dnl
dnl April 2018, Victor Kamensky
dnl
dnl Copyright (c) 2018-2019 by Cisco Systems, Inc.
dnl All rights reserved
dnl
dnl divert(-1)

```

```
include(`polaris_process.m4')
```

```
include(`polaris_database_db.m4')
```

```
include(`polaris_database_db_fc.m4')

include(`polaris_max_scope.m4')

divert(0)dnl
#
This is a generated file! Instead of modifying this file,
modify proper platform TDL file.
#

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/polaris_database_fc.m4
No license file was found, but licenses were detected in source scan.

#
February 2020, Victor Kamensky
#
Copyright (c) 2020-2021 by Cisco Systems, Inc.
All rights reserved
#

policy_module(polarisinstallmgr, 1.0);

gen_require(`
 type polaris_install_mgr_t;
')
polaris_chasfs_manage(polaris_install_mgr_t)
polaris_tdlresolve_read(polaris_install_mgr_t)
polaris_cpld_read(polaris_install_mgr_t)
polaris_flashlib_read(polaris_install_mgr_t)
polaris_lua_read(polaris_install_mgr_t)

logging_send_syslog_msg(polaris_install_mgr_t)

polaris_rpc_sman_ui_serv_connect(polaris_install_mgr_t)

polaris_db_tdl_dir_use(polaris_install_mgr_t)

read all files in persisten storage
polaris_persistent_read(polaris_install_mgr_t)

calls code_verify
polaris_code_verify_domtrans(polaris_install_mgr_t)
calls mount command
mount_domtrans(polaris_install_mgr_t)

allow access to gnmib image files
optional_policy(`
```

```

polaris_gnmib_gnoi_images_read(polaris_install_mgr_t)
')

LOOK AT ME: /dev/mem access restriction will be removed after
CSCvu32649 is fixed using CSCvu32742.
code_sign_verify accesses /dev/mem: class=chr_file, {read, open, map}
to read the codesign key in storage
side effects: execute is also allowed
gen_require(
 type polaris_code_verify_t;
 type polaris_nvram_file_t;
)
dev_rx_raw_memory(polaris_code_verify_t)

read access to /bootflash/nvram_config on CLI "install remove inactivate"
read_files_pattern(polaris_code_verify_t, polaris_disk_bootflash_t, polaris_nvram_file_t)
getattr_files_pattern(polaris_code_verify_t, polaris_disk_bootflash_t, polaris_nvram_file_t)

open, read, map and getattr access of capsule-upgrade.log file
polaris_capsule_upgrade_log_use(polaris_code_verify_t)

calls install_mgr_helper_api.sh
corecmd_exec_bin(polaris_install_mgr_t)
corecmd_exec_shell(polaris_install_mgr_t)
auth_use_nsswitch(polaris_install_mgr_t)

/tmp/sw/inst_tmp_x handling
type polaris_install_mgr_tmp_t;
files_tmp_file(polaris_install_mgr_tmp_t)
gen_require(
 type tmp_t;
)
manage_dirs_pattern(polaris_install_mgr_t, tmp_t, polaris_install_mgr_tmp_t)
manage_dirs_pattern(polaris_install_mgr_t, polaris_install_mgr_tmp_t, polaris_install_mgr_tmp_t)
files_tmp_filetrans(polaris_install_mgr_t, polaris_install_mgr_tmp_t, dir, "inst_tmp_1")
files_tmp_filetrans(polaris_install_mgr_t, polaris_install_mgr_tmp_t, dir, "inst_tmp_2")

writes into /bootflash/.installer/watchlist
polaris_disk_install_manage(polaris_install_mgr_t)

install_mgr_monitor.c:add_prior_watches
polaris_persistent_watch(polaris_install_mgr_t)

watch over /tmp/patch
polaris_patch_data_watch(polaris_install_mgr_t)

polaris_repm_peer_mqipc_manage(polaris_install_mgr_t)

```

```

watches over /tmp for /tmp/booted appearance in
init_operation_mgmt_watches function
gen_require(
 type tmp_t;
)
allow polaris_install_mgr_t tmp_t:dir watch;

allow polaris_install_mgr_t self:capability sys_resource;

#install_mgr writes into /bootflash/.installer/watchlist and watches /bootflash/inot_fifo
polaris_install_disk_manage(polaris_install_mgr_t)

#install_mgr does search and get attribute operation on /tftp directory
gen_require(
 type tftpd_rw_t;
)
allow polaris_install_mgr_t tftpd_rw_t:dir { getattr search };

allow read access to iso9660
fs_read_iso9660_files(polaris_install_mgr_t)

accesses /proc/sys/vm/drop_caches
kernel_rw_vm_sysctls(polaris_install_mgr_t)

creates files under /tmp/pkg_cs_debug through install_helper
and verify_pkg shell function from common
polaris_pkg_cs_debug_manage(polaris_install_mgr_t)

for pluggable FS, allow the install manager to access files on them (it needs read and
write access).
gen_require(
 type removable_t;
)
allow polaris_install_mgr_t removable_t:dir { getattr open read search watch };
allow polaris_install_mgr_t removable_t:file { getattr open read };
allow polaris_install_mgr_t removable_t:lnk_file read;

#allow install_mgr to stat caf files in /vol/harddisk/caf, /bootflash/caf, etc.
polaris_caf_tmp_files_read(polaris_install_mgr_t)

install manager Cleanup related to inotify watches, Basically frees malloced memory
gen_require(
 type root_t;
)
allow polaris_install_mgr_t root_t:dir watch;

install manager access to /guestshell
polaris_guestshell_files_read(polaris_install_mgr_t)

```

```

install manager access to /lib/systemd/systemd
polaris_init_access_check(polaris_install_mgr_t)

install manager reads dcmlog.txt
optional_policy(
 gen_require(
 type polaris_fed_debug_dcmlog_t;
)
 read_files_pattern(polaris_install_mgr_t, polaris_fed_debug_dcmlog_t, polaris_fed_debug_dcmlog_t)
)
install manager reads /firmware
polaris_firmware_read(polaris_install_mgr_t)

install manager reads /guestshell
gen_require(
 type polaris_guestshell_t;
)
getattr_dirs_pattern(polaris_install_mgr_t, polaris_guestshell_t, polaris_guestshell_t)

install_manager reads /tmp/sw/boot during auto_upgrade
polaris_boot_tmp_read(polaris_install_mgr_t)

install_manager writes /tmp/sw/boot during auto_upgrade
polaris_boot_tmp_write(polaris_install_mgr_t)

install_manager reads /tmp/sw/boot/rmonbifo during auto_upgrade
polaris_rmonbifo_tmp_read(polaris_install_mgr_t)

install_manager reads /tmp/tmppub during auto_upgrade
polaris_btrace_tmppub_read(polaris_install_mgr_t)

install manager accesses /tmp/rsync_log_dir during auto_upgrade
polaris_manage_rsync_tmpplog_dir(polaris_install_mgr_t)

install manager invokes mcp_chvrf.sh for rsync operations during auto_upgrade
polaris_chvrf_domtrans(polaris_install_mgr_t)

polaris_bexecute_domtrans(polaris_install_mgr_t)

#ifdef(^ngwc_family',`
install_mgr needs to be able to execute the auto_upgrade_client_helper scripts
polaris_autoupgrade_domtrans(polaris_install_mgr_t)

read /tmp/etc/installer
polaris_autoupgrade_tmp_manage(polaris_install_mgr_t)
)

```



```

ifdef(`mcp_family',`
install_mgr needs to be able to execute the auto_upgrade_client_helper scripts
polaris_autoupgrade_domtrans(polaris_install_mgr_t)

read /tmp/etc/installer
polaris_autoupgrade_tmp_manage(polaris_install_mgr_t)
')

ifdef(`wlc_family',`
install_mgr needs to be able to execute the auto_upgrade_client_helper scripts
polaris_autoupgrade_domtrans(polaris_install_mgr_t)

read /tmp/etc/installer
polaris_autoupgrade_tmp_manage(polaris_install_mgr_t)
')

with "/bootflash"...this needs read and attr to access for logfile
polaris_read_user_file(polaris_install_mgr_t)
polaris_user_file_getattr(polaris_install_mgr_t)

auto upgrade server bind operation when install manager initialize auto upgrade server
corenet_tcp_bind_polaris_autoupgrade_port(polaris_install_mgr_t)

access to /tmp/etc
polaris_etc_list(polaris_install_mgr_t)

read access to /tmp/etc/installer
polaris_install_tmp_read(polaris_install_mgr_t)

polaris_script_errmsg_use(polaris_install_mgr_t)

install mgr calls install_abort.sh on rollback timer expiry
polaris_install_engine_domtrans(polaris_install_mgr_t)

/tmp/ufs/crashinfo access
optional_policy(`
polaris_ncd_tmp_read(polaris_install_mgr_t)
')

read/write to /bootflash/.rollback_timer/install_abort_time
polaris_rbtimer_bootflash_manage(polaris_install_mgr_t)

allow polaris_install_mgr_t self:process setpgid;

optional_policy(`
 polaris_efs_files_list_dirs(polaris_install_mgr_t)
')

```

```
walk all files on "install issu activate" and "install remove inactivate" CLI
files_read_all_files(polaris_install_mgr_t)
```

```
install mgr file descriptor leaks into mcp_chvrf.sh for rsync operation
```

```
gen_require(
 type polaris_chvrf_t;
)
allow polaris_chvrf_t polaris_install_mgr_t:file read;
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisinstallmgr.te
```

No license file was found, but licenses were detected in source scan.

```
#
May 2017, Victor Kamensky
#
Copyright (c) 2017-2021 by Cisco Systems, Inc.
All rights reserved
#
```

```
policy_module(polarisconfd, 1.0);
```

```
gen_require(
 type polaris_conf_d_t;
)
```

```
confd-startup.sh calls confd_cmd to get_phase and other cases
that utilities under confd label connects to confd
polaris_rpc_conf_d_ipc_connect(polaris_conf_d_t)
```

```
#confd needs communicate over HTTP
corenet_tcp_bind_http_port(polaris_conf_d_t)
```

```
complex_main (port 5000) is used by apache
corenet_udp_bind_complex_main_port(polaris_conf_d_t)
```

```
corenet_tcp_bind_generic_node(polaris_conf_d_t)
allow polaris_conf_d_t self:tcp_socket { getattr getopt setopt bind create listen accept connect read write };
```

```
corenet_udp_bind_generic_node(polaris_conf_d_t)
allow polaris_conf_d_t self:udp_socket { bind connect create getattr getopt setopt };
corenet_udp_bind_polaris_conf_d_snmp_traps_port(polaris_conf_d_t)
```

```
logging_send_syslog_msg(polaris_conf_d_t)
```

```
polaris_chasfs_manage(polaris_conf_d_t)
polaris_btrace_data_manage(polaris_conf_d_t)
polaris_cpld_read(polaris_conf_d_t)
```

```

polaris_boot_tmp_read(polaris_conf_d_t)
polaris_rmonbifo_tmp_read(polaris_conf_d_t)

run ldd, which in turns execve "ld.so --verify"
libs_exec_ld_so(polaris_conf_d_t)

confd-startup.sh process is shell script need permission to execute shell
and variety of small util commands under bin_t
corecmd_exec_shell(polaris_conf_d_t)
corecmd_exec_bin(polaris_conf_d_t)

allow read of /etc/passwd
auth_use_nsswitch(polaris_conf_d_t)

confdexec needs access to /sys/devices/system/cpu/online
dev_read_sysfs(polaris_conf_d_t)

allow polaris_conf_d_t self:capability { net_admin sys_resource };

allow read permissions for /etc/hosts file
sysnet_read_config(polaris_conf_d_t)

allow read permissions for /var/run/netns/8
fs_read_nsfs_files(polaris_conf_d_t)

work with /var/confd0/ files
type polaris_conf_d_var_t;
files_tmp_file(polaris_conf_d_var_t)
polaris_conf_d_var_filetrans(polaris_conf_d_t, dir, "confd0")
manage_files_pattern(polaris_conf_d_t, polaris_conf_d_var_t, polaris_conf_d_var_t)
manage_lnk_files_pattern(polaris_conf_d_t, polaris_conf_d_var_t, polaris_conf_d_var_t)
manage_dirs_pattern(polaris_conf_d_t, polaris_conf_d_var_t, polaris_conf_d_var_t)

erlang calls efile_fileinfo function (./erts/emulator/drivers/unix/unix_efile.c)
root directory. Inside of the function code calls 'access' function that check
access permission for R_OK and W_OK. W_OK triggers denial warning. Instead of
granting access let's mark it as dontaudit. Erlang will be fine with this
files_dontaudit_write_root_dirs(polaris_conf_d_t)

deals with /dev/shm/confd files (shared memory and pid)
type polaris_conf_d_shm_t;
files_tmpfs_file(polaris_conf_d_shm_t)

confd-startup.sh modifies confd.conf which is under polaris_conf_d_var_t label
sed -i /CONFD_FXS_CISCO_AUTOGEN_EWLC/d /var/confd0/confd.conf
allow polaris_conf_d_t self:process setfscreate;

type polaris_conf_d_ndbutil_lock_t;

```

```

files_lock_file(polaris_confd_ndbutil_lock_t)

#####
confd mmap_schema utility runs from systemd unit under polaris_confd_t label
#####
polaris_confd_shm_setup(polaris_confd_t)
create ndbutil directory under /var/lock
polaris_confd_ndbutil_create(polaris_confd_t)

Allow access to /crashinfo
polaris_disk_crashinfo_getattr(polaris_confd_t)

optional_policy(`
confd-startup.sh on nyquist makes ls /tmp/ufs/crashinfo
polaris_ncd_tmp_read(polaris_confd_t)
`)

confd-startup.sh reads /proc/cmdline
kernel_read_system_state(polaris_confd_t)

LOOK AT ME allow mapping of low addresses, that could be exploited
need to understand why; unfortunately confd symbols are not decodable
need to ask tail-f guys
ifdef(`tsn_platform',`
domain_mmap_low_uncond(polaris_confd_t)
gen_require(`
 type polaris_confd_cli_t;
`)
domain_mmap_low_uncond(polaris_confd_cli_t)
`)
ifdef(`quake_platform',`
domain_mmap_low_uncond(polaris_confd_t)
`)

polaris_mmap_schema_domtrans(polaris_confd_t)

mmap_schema process policy
gen_require(`
 type polaris_mmap_schema_t;
`)
polaris_btrace_data_manage(polaris_mmap_schema_t)
polaris_chasfs_read(polaris_mmap_schema_t)
polaris_cpld_read(polaris_mmap_schema_t)
polaris_flashlib_read(polaris_mmap_schema_t)

polaris_db_tlddb_dir_use(polaris_mmap_schema_t)

polaris_confd_ndbutil_create(polaris_mmap_schema_t)

```

```

polaris_conf_d_shm_setup(polaris_mmap_schema_t)

connects to config mmap_schema is not TDL process, let
grant explicit permission to access corresponding port
polaris_ripc_conf_d_ipc_connect(polaris_mmap_schema_t)
allow polaris_mmap_schema_t self:tcp_socket { connect create setopt };
polaris_socketat_nsfs_read(polaris_mmap_schema_t)

allow polaris_mmap_schema_t self:capability dac_override;

polaris_tdlresolve_read(polaris_mmap_schema_t)
polaris_conf_d_read(polaris_mmap_schema_t)

polaris_ndbmand_ndbutil_manage(polaris_mmap_schema_t)

optional_policy(`
polaris_gnmib_ndbutil_lock(polaris_mmap_schema_t, ".l.schema_use.gnmib")
`)

type polaris_conf_d_tmp_t;
files_tmp_file(polaris_conf_d_tmp_t)
polaris_systemd_tmpfiles_tmp_filetrans(polaris_conf_d_tmp_t, dir, "confd")
files_tmp_filetrans(polaris_conf_d_t, polaris_conf_d_tmp_t, dir, "confd")
manage_files_pattern(polaris_conf_d_t, tmp_t, polaris_conf_d_tmp_t)
manage_fifo_files_pattern(polaris_conf_d_t, tmp_t, polaris_conf_d_tmp_t)
manage_dirs_pattern(polaris_conf_d_t, tmp_t, polaris_conf_d_tmp_t)

posix_pathconf called from get_tmpdir calls starvfs over /tmp
fs_getattr_tmpfs(polaris_conf_d_t)

dmi_ports_fetch that runs under confd_t reads global.service.conf
polaris_tdlresolve_read(polaris_conf_d_t)
confd_exec_dmi_ports_fetch(polaris_conf_d_t)

confd-startup script reads /tmp/dmi.ds_config if it exists
polaris_psd_tmp_read(polaris_conf_d_t)

vip-confd-startup.sh related
figure out BOOT_ROLE in install_util.sh
polaris_read_packages_conf(polaris_conf_d_t)
touch /bootflash/sdwan/day0_oper.xml
allow polaris_conf_d_t self:capability dac_override;
polaris_bootflash_manage(polaris_conf_d_t)
/usr/bin/sw syncddb call uuidgen
dev_read_rand(polaris_conf_d_t)

polaris_dmiauthd_tmp_manage(polaris_conf_d_t)

```

```
PLEASE LOOK AT ME: overloaded use of /bootflash/.installer and
/bootflash/.sdwaninstaller directories. In controller mode cedge code loopback
mounts /bootflash/.sdwaninstallerfs file onto /bootflash/.sdwaninstaller and
creates /bootflash/.installer symbolic link to it. As result effective
/bootflash/.installer carries two meaning: used by polaris install infra for
regular install operations, and keep persistent state in controller mode. For
now /bootflash/.sdwaninstallerfs was forced to be mounted with
polaris_disk_install_t label, so installer policy would be happy, but confd
writes into it through /var/confd0 which is symbolic link to
/bootflash/.installer/images/pkg_boot_17.3.01/confd0 that means we need to
grant polaris_disk_install_manage to confd which is not good thing.
It would be much better if two different directories would be used.
polaris_disk_install_manage(polaris_conf_d_t)
```

```
/var/log/confd handling
type polaris_conf_d_var_log_t;
logging_log_file(polaris_conf_d_var_log_t)
polaris_conf_d_var_log_manage(polaris_conf_d_t)
```

```
/etc/version handling
type polaris_conf_d_etc_t;
files_config_file(polaris_conf_d_etc_t)
files_etc_filetrans(polaris_conf_d_t, polaris_conf_d_etc_t, file, "version")
gen_require(
 type etc_t;
)
manage_files_pattern(polaris_conf_d_t, etc_t, polaris_conf_d_etc_t)
```

```
"/usr/bin/sw syncddb" calls "confd_cmd -p 3010 -o -c "delete /software""
that invokes /usr/binos/conf/install_assist.sh
polaris_install_engine_domtrans(polaris_conf_d_t)
```

```
confd calls /usr/bin/sw that creates temp files in /tmp/cedge_sw_log
since it runs under same domain make sure that cedge_sw_log gets
right label
files_tmp_filetrans(polaris_conf_d_t, polaris_conf_d_tmp_t, dir, "cedge_sw_log")
```

```
/tmp/confd_booted created by vip-confd-start
files_tmp_filetrans(polaris_conf_d_t, polaris_conf_d_tmp_t, file, "cedge_booted")
```

```
runs flashutils to read rommon variables
polaris_flashlib_read(polaris_conf_d_t)
```

```
allow polaris_conf_d_t self:capability fowner;
```

```
optional_policy(
work with /tmp/.econfd2sysmgr-ipc
```

```

polaris_econfd2sysmgr_tmp_manage(polaris_confd_t)
')

confdexec calls dmidecode to get bios-vendor
dmidecode_domtrans(polaris_confd_t)

optional_policy(
polaris_sw.sh called in confd context accesses
/etc/viptela/controller_version
polaris_cedge_etc_manage(polaris_confd_t)
')

PLEASE LOOK AT ME confd tcp ports are supposed to be handle
through TDL pseudo services, that one it not
corenet_tcp_connect_polaris_confd_maapi_port(polaris_confd_t)

confd starts cmdptywrapper utility through erl_child_setup
that allocates free pty device using operations on /dev/ptms
allow polaris_confd_t self:capability { fsetid setgid };
term_getattr_pty_fs(polaris_confd_t)
term_setattr_generic_ptys(polaris_confd_t)
term_use_generic_ptys(polaris_confd_t)
term_use_ptmx(polaris_confd_t)

uses nice utility to start misc scripts
allow polaris_confd_t self:process setsched;

allow netconf_callhome to execute ncsshd under ncsshd domain
polaris_ncsshd_mgmt_domtrans(polaris_confd_t)

allow DmiAuth spawned by confd to access /tmp/.DmiAuth.socket
polaris_dmi_dmiauthd_dgram_send(polaris_confd_t)

the default port for NETCONF Call Home (SSH) is 4334,
and it is configurable by users
corenet_tcp_connect_all_ports(polaris_confd_t)
by default the port is selected by system, and it is configurable by users
corenet_tcp_bind_generic_port(polaris_confd_t)
netconf_callhome may create vrf-based netns on demand
polaris_vrf_netns_manage(polaris_confd_t)

cmdwrapper utility that started by confd calls xstat
allow polaris_confd_t self:capability setuid;

label for /tmp/vconfd temporary files created by binos/viptela/vconfd/*.sh
scripts created from viptela/vconfd/vconfd_script_cli_session.sh
type polaris_vconfd_tmp_t;
files_tmp_file(polaris_vconfd_tmp_t)

```

```

confd writes /tmp/vconfd/USID.XXX and /tmp/vconfd/THANDLE.YYY files
polaris_vconfd_tmp_manage(polaris_conf_d_t)

label for /tmp/confd_cli temporary files created by execute_conf_d_cli.sh
type polaris_conf_d_cli_tmp_t;
files_tmp_file(polaris_conf_d_cli_tmp_t)

execute_conf_d_cli creates /tmp/sh-thd moved to /tmp/confd_cli
files_tmp_filetrans({ polaris_conf_d_t polaris_conf_d_cli_t}, polaris_conf_d_cli_tmp_t, dir, "confd_cli")

execute_conf_d_cli.sh script policy
polaris_utility_domain_template(conf_d_cli)
polaris_bexecute_domain(polaris_conf_d_cli_t, polaris_conf_d_cli_exec_t)

polaris_chasfs_read(polaris_conf_d_cli_t)
corecmd_exec_shell(polaris_conf_d_t)
corecmd_exec_bin(polaris_conf_d_cli_t)
auth_use_nsswitch(polaris_conf_d_cli_t)
bash get_tmpdir statfs /tmp directory
fs_getattr_tmpfs(polaris_conf_d_cli_t)

polaris_conf_d_cli_tmp_manage(polaris_conf_d_cli_t)
polaris_vconfd_tmp_manage(polaris_conf_d_cli_t)
telnet_use_ptys(polaris_conf_d_cli_t)

polaris_ripc_conf_d_ipc_connect(polaris_conf_d_cli_t)

execute_conf_d_cli.sh -a -g PRIV00 runs grep over /bootflash/sdwan/.init_stage
polaris_bootflash_read(polaris_conf_d_cli_t)

execute_conf_d_cli.sh writes to "pipe:[24719894]"
polaris_dmi_ncsshd_fwd_use_fifo(polaris_conf_d_cli_t)
allow /usr/binos/conf/bexecute.sh for tcp_socket access
due to "/bin/sh /usr/binos/conf/mcp_chvrf.sh eobc
/usr/binos/conf/bexecute.sh -c /bin/mcp_pkg_wrap rp_daemons
/usr/binos/conf/execute_co"
allow polaris_conf_d_cli_t polaris_dmi_ncsshd_fwd_t:tcp_socket ioctl;
#=====
admin-tech : scripts in binos/viptela/vconfd/*admin_tech*.sh
Invocation triggered here:
viptela/vconfd/viptela-actions.yang: tailf:exec "vconfd_script_admin_tech.sh"
#=====
polaris_vconfd_domain_template(admin_tech)

/bin/bash /usr/binos/conf/bshell.sh -S -c
show platform hardware qfp active infrastructure shared-memory
process cpp-control-pro.....
polaris_bexecute_domtrans(polaris_admin_tech_t)

```



```

admin-tech launches "ps" via scripts
domain_read_all_domains_state(polaris_admin_tech_t)

See tracelogs accessed by vconfd_script_polaris_admin_tech_child.sh
polaris_btrace_data_manage_all(polaris_admin_tech_t)

various utilities like "find", "memaudit", etc needs this
files_getattr_all_files(polaris_admin_tech_t)
files_getattr_all_dirs(polaris_admin_tech_t)
fs_getattr_all_fs(polaris_admin_tech_t)
files_read_all_files(polaris_admin_tech_t)

'/bin/bash /usr/bin/memaudit' needs access to /proc/kmsg, /proc/mdstat, etc
dev_getattr_mtrr_dev(polaris_admin_tech_t)
kernel_read_all_proc(polaris_admin_tech_t)
dev_getattr_loop_control(polaris_admin_tech_t)

infra/memaudit/memaudit uses dmesg
dmesg_domtrans(polaris_admin_tech_t)
gen_require(
 type dmesg_t;
)
polaris_confd_unix_stream_stdio_use(dmesg_t)

infra/memaudit/memaudit uses mount
mount_domtrans(polaris_admin_tech_t)

infra/memaudit/memaudit uses fdisk
fstools_domtrans(polaris_admin_tech_t)
polaris_nvram_read(polaris_admin_tech_t)
polaris_nvram_getattr(polaris_admin_tech_t)

infra/memaudit/memaudit writes to /proc/sys/vm/drop_caches
kernel_rw_vm_sysctls(polaris_admin_tech_t)

memaudit and smap needs 'getattr', 'search' on sysctl_irq_t:dir
kernel_read_irq_sysctls(polaris_admin_tech_t)

du -b -s /tmp/cc /tmp/rp /tmp/fp
files_getattr_all_sockets(polaris_admin_tech_t)
files_getattr_all_pipes(polaris_admin_tech_t)

df -Th -BM needs access to /run/netns/2
fs_getattr_nsfs_files(polaris_admin_tech_t)

ls /tmp/ufs//harddisk
maapi --clicmd --get-io --no-hidden show configuration commit list

```

```

corecmd_exec_bin(polaris_admin_tech_t)

bash vconfd_script_admin_tech.sh -u root -c cli executes:
1. map on /etc/passwd
auth_map_passwd(polaris_admin_tech_t)
2. hostname
hostname_exec(polaris_admin_tech_t)
3. journalctl
journalctl_domtrans(polaris_admin_tech_t)

journalctl writes to /tmp/vm4-bootuplog-20200903-175223-UTC.log
see vconfd_script_polaris_admin_tech_child.sh
gen_require(
 type journalctl_t;
)
manage_files_pattern(journalctl_t, polaris_admin_tech_tmp_t, polaris_admin_tech_tmp_t)
polaris_conf_unix_stream_stdio_use(journalctl_t)

admin_tech reads /tmp/chassis/cpld/chasfs/board_vtype on crankshaft(sdwan)
polaris_chasfs_read(polaris_admin_tech_t)

find -H /misc/scratch -name MEMORY_LOG_*.text
memaudit writes to /bootflash/MEMORY_LOG_2020-07-28-01:32:11.text
We also have 'mv -Z /bootflash/admintech /var/tech/ios'
admin_tech watches /tmp/chassis/local/rp/chasfs/etc/ios_admintech_done
type polaris_admin_tech_data_t;
polaris_disk_type(polaris_admin_tech_data_t)
polaris_bootflash_filetrans(polaris_admin_tech_t, polaris_admin_tech_data_t, dir)
polaris_bootflash_filetrans(polaris_admin_tech_t, polaris_admin_tech_data_t, file)
polaris_admin_tech_data_manage(polaris_admin_tech_t)

sdwan_tech_support.sh -o /var/tech/binos; work with /var/tech/ files
type polaris_admin_tech_var_t;
files_tmp_file(polaris_admin_tech_var_t)
files_var_filetrans(polaris_admin_tech_t, polaris_admin_tech_var_t, dir, "tech")
manage_files_pattern(polaris_admin_tech_t, polaris_admin_tech_var_t, polaris_admin_tech_var_t)
manage_dirs_pattern(polaris_admin_tech_t, polaris_admin_tech_var_t, polaris_admin_tech_var_t)

vconfd_script_polaris_admin_tech.sh invokes vlog "Requested admin-tech initiated."
vlog is implemented in viptela/utills/vlog using logger; that needs
- ceate/connect unix_dgram_socket of type polaris_admin_tech_t
- read from devtmpfs of type devlog_t
- write to sock_file of type devlog_t
- sendto path="/run/systemd/journal/dev-log" of type unix_dgram_socket
logging_send_syslog_msg(polaris_admin_tech_t)

maapi --cliget paginate: this performs connect to confd socket
polaris_rpc_conf_ipc_connect(polaris_admin_tech_t)

```

```

reads /tmp/chassis/cpld/chasfs/board_vtype
on c8kv cpld is at /sys/bus/platform/devices/cpld which has sysfs_t LABEL
polaris_cpld_read(polaris_admin_tech_t)

handle various files created under /tmp
type polaris_admin_tech_tmp_t;
files_tmp_file(polaris_admin_tech_tmp_t)
files_tmp_filetrans(polaris_admin_tech_t, polaris_admin_tech_tmp_t, file)
manage_files_pattern(polaris_admin_tech_t, polaris_admin_tech_tmp_t, polaris_admin_tech_tmp_t)

As part of admin-tech generation on cEdges, vconfd_script_polaris_admin_tech.sh
invokes vconfd_script_polaris_admin_tech_child.sh which in turn invokes the
script sdwan_tech_support.sh. The sdwan_tech_support.sh passes the file
/tmp/sdwan_tech_support_command_file_out.txt to a bshell instance. The bshell
instance does open operation on the file. So bshell needs open allow
policy for /tmp/sdwan_tech_support_command_file_out.txt
gen_require(
 type polaris_bshell_t;
)
allow polaris_bshell_t polaris_admin_tech_tmp_t:file open;

maapi needs this.
allow polaris_admin_tech_t self:tcp_socket { getopt setopt create connect read write };

tar --ignore-failed-read -czf /home/vmanage-admin/vm4-20200903-055157-admin-tech.tar.gz
/tmp/fp/trace/cpp_cp_F0-0_TAN.20041_0.20
allow polaris_admin_tech_t self:capability dac_override;

awk /^Shared/ {v += $2} END { print v } /proc/6384/smmaps
allow polaris_admin_tech_t self:capability sys_ptrace;

'top -n1 -b' creates /.config dir
TODO/LOOKATME: selinux team to review handling of this issue in a
common way for invoking top
allow polaris_admin_tech_t root_t:dir create;

"show installerfs" is invoked by vconfd_script_admin_tech_common.sh
this invokes vconfd_script_show_installerfs.sh via confd
let's execute this under install_show domain
polaris_install_show_domtrans(polaris_confid_t)

create_bootflash_snapshot() performs 'ls -l /bootflash/.installer'
polaris_disk_install_read(polaris_admin_tech_t)

vconfd_script_polaris_admin_tech_child.sh
mv /bootflash/admintech /var/tech/ios
allow polaris_admin_tech_t self:process setfscreate;

```

```

rm -rf $collated_ra (collated_log_*)

#Nutella-XE - Vedge image install
#/bin/sh /tmp/sw/rp/0/0/rp_security/mount/bin/sw synccdb
#mount -t vfat /dev/mmcblk0gp0p1 /gpp
mount_domtrans(polaris_confd_t)

#df /bootflash
fstools_domtrans(polaris_confd_t)

#Nutella-XE - Vedge image activate
#/usr/binos/bin/flashutil --command unsetvar --name MIG_INT_STATE
polaris_flashlib_write(polaris_confd_t)

permit comm="ps" to "getattr" on dev="devtmpfs" for polaris_admin_tech_t
term_getattr_unallocated_ttys(polaris_admin_tech_t)

permit to access polaris_proc_rmonbifo_t by
/usr/bin/vconfd_script_admin_tech.sh
polaris_proc_rmonbifo_read(polaris_admin_tech_t)

permit to access/unlink /bootflash by polaris_admin_tech_t
polaris_bootflash_manage(polaris_admin_tech_t)

vconfd_script_admin_tech.sh executes 'top -n1 -b' which creates /.config dir
gen_require(
 type admin_home_t;
)
allow polaris_admin_tech_t admin_home_t:dir { add_name create write };

vconfd_script_admin_tech.sh sources vconfd_script_cli_session.sh and calls
start_cli_session() which writes to /tmp/vconfd/USID.XXX,
/tmp/vconfd/THANDLE.YYY and /tmp/vconfd/start_cli.XXXXXXXXXXX
polaris_vconfd_tmp_manage(polaris_admin_tech_t)

work with "/tmp/fp/pvp/work/inot_fifo"
polaris_pvp_stdin_read(polaris_admin_tech_t)

work with "/tmp/fp/trace/fifo/pvp_sh%fp_0_0_22607_fifo"
polaris_use_btrace_fifo(polaris_admin_tech_t)

access to tunnel interface from snapshot_cdb()
corenet_rw_tun_tap_dev(polaris_confd_t)

access to /tmp/bootstrap/sdwan/ciscosdwan_cloud_init.cfg
init_read_script_tmp_files(polaris_confd_t)

```

```

"vconfd_notifier security-clear-installed-cert" reads
/var/run/netns/default which is symlinked to /proc/1/ns/net
polaris_cedge_reset_ns(polaris_confd_t)

allow /usr/binos/conf/execute_confd_cli.sh to access polaris_disk_install_t
polaris_disk_install_read(polaris_confd_cli_t)

vconfd script ends up cleaning core files, most likely its
vconfd_script_polaris_admin_tech_child.sh, so it needs read/write
permission to polaris_core_file_t files.
polaris_core_file_manage(polaris_admin_tech_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisconfd.te
No license file was found, but licenses were detected in source scan.

#
OWNERS - Code Ownership
#
For information on the purpose and format of this file see:
https://polaris-git.cisco.com/csg/polaris/wiki/Code-Reviews
#
Copyright (c) 2019-2021 by Cisco Systems, Inc.
All rights reserved.
#

* @csg/polaris-selinux-dev

#iox team related files
polariscontainer* @csg/polaris-selinux-dev @csg/iox-selinux
polariscaf* @csg/polaris-selinux-dev @csg/iox-selinux
polarisgdsdrp* @csg/polaris-selinux-dev @csg/iox-selinux
polarisioxman* @csg/polaris-selinux-dev @csg/iox-selinux
polarisvman* @csg/polaris-selinux-dev @csg/iox-selinux

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/OWNERS
No license file was found, but licenses were detected in source scan.

#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#

<summary>Polaris Im Policy Rules.</summary>

```

```
#####
<summary>
Read files of type polaris_lm_tmp_t (e.g., /tmp/iosd_level)
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_lm_tmp_read`,`
 gen_require(`
 type polaris_lm_tmp_t;
 `)
 read_files_pattern($1, polaris_lm_tmp_t, polaris_lm_tmp_t)
`)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarislm.if

No license file was found, but licenses were detected in source scan.

```
#
August 2017, Shawn Lu
#
Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved
#
```

```
<summary>Polaris nmspd Policy Rules.</summary>
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisnmspd.if

No license file was found, but licenses were detected in source scan.

```
dnl
dnl April 2018, Victor Kamensky
dnl
dnl Copyright (c) 2018-2019 by Cisco Systems, Inc.
dnl All rights reserved
dnl
```

```
define(`polaris_database_aux',`dnl
#####
<summary>
Use $2 database.
</summary>
<param name="domain">
<summary>
Domain allowed access.
```

```

</summary>
</param>
<infoflow type="none"/>
#
interface(`polaris_db_tdldb_$1_use`,`
 gen_require(
 type $2;
)

 polaris_tdldb_use(dollarone, $2, $3)
)
)

define(`polaris_database`,`dnl
polaris_database_aux(database_stem($1), database_label($1), $1)dnl
)

define(`polaris_database_process`,`)

```

Found in path(s):

```

* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/polaris_database_db_if.m4
No license file was found, but licenses were detected in source scan.

```

```

#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2021 by Cisco Systems, Inc.
All rights reserved
#

```

```

policy_module(polarishm, 1.0);

```

```

gen_require(
 type polaris_hm_t;
)

```

```

polaris_btrace_data_manage(polaris_hm_t)
polaris_chasfs_manage(polaris_hm_t)
polaris_tdlresolve_read(polaris_hm_t)
polaris_tdldb_list_dirs(polaris_hm_t)
polaris_cpld_read(polaris_hm_t)
polaris_lua_read(polaris_hm_t)
polaris_flashlib_read(polaris_hm_t)

```

```

polaris_ripc_sman_ui_serv_connect(polaris_hm_t)

```

```

polaris_db_tdldb_dir_use(polaris_hm_t)

```

```

files_getattr_all_files(polaris_hm_t)
files_getattr_all_dirs(polaris_hm_t)
gen_require(
 attribute non_security_file_type;
)
allow polaris_hm_t { non_security_file_type } :dir list_dir_perms;

hman need to read proc for all processes to collect CPU
utilization information
domain_read_all_domains_state(polaris_hm_t)
domain_signull_all_domains(polaris_hm_t)

kernel_read_system_state(polaris_hm_t)

hman needs to run "df /dev/shm" command
corecmd_exec_bin(polaris_hm_t)
corecmd_exec_shell(polaris_hm_t)

hman needs to operate on all maroon files
polaris_maroon_data_manage_all(polaris_hm_t)

allow read of /etc/group and /etc/passwd
auth_use_nsswitch(polaris_hm_t)

fs_getattr_tmpfs(polaris_hm_t)

work with /tmp files (/tmp/myhostname)
type polaris_hm_tmp_t;
files_tmp_file(polaris_hm_tmp_t)
manage_files_pattern(polaris_hm_t, tmp_t, polaris_hm_tmp_t)
files_tmp_filetrans(polaris_hm_t, polaris_hm_tmp_t, file, "myhostname")

allow polaris_hm_t self:capability { chown fsetid dac_override kill sys_resource sys_ptrace };
allow polaris_hm_t self:process setsched;
allow polaris_hm_t self:unix_dgram_socket create;
allow polaris_hm_t self:cap_userns { kill sys_ptrace };

polaris_boot_tmp_read(polaris_hm_t)

Allow write to flash. Needed for usb disable feature
ifdef(`ngwc_family',`
polaris_flashlib_write(polaris_hm_t)
')

"show platform software mount RP active" command needs attributes of
all file systems
fs_getattr_all_fs(polaris_hm_t)
above show command accesses /var/run/netns/2

```



```

fs_read_nsfs_files(polaris_hm_t)
reads /scratch link which is labeled as polaris_disk_bootflash_t
polaris_disk_bootflash_read_lnk(polaris_hm_t)
polaris_disk_harddisk_read_lnk(polaris_hm_t)

needed for "show platform software bound-uds RP active"
kernel_read_network_state(polaris_hm_t)

"show rom-monitor R0" needs content of /proc/rmonbifo/bootver;
please refer to hman_ui.tpp file
polaris_proc_rmonbifo_read(polaris_hm_t)

"show plat soft yang-management process r0" invokes hm_show_yang_proc_cb;
"show plat soft iox-service" invokes hm_iox_srvc_show_cb;
They invoke "ps -C" which needs access to /sys/devices/system/cpu/online
TODO: should we replace system() with something like hm_get_procs_with_name_running
dev_read_sysfs(polaris_hm_t)
"show platform software yang-management process state" invokes /bin/mcp_pkg_wrap,
which sources /tmp/sw/boot/rmonbifo/env_var.sh
polaris_rmonbifo_tmp_read(polaris_hm_t)
show iox-service requires reading of libvirt_ver of created under CAF context
optional_policy(
polaris_caf_tmp_files_read(polaris_hm_t)
)
hardcoded policy for hm to df, per Victor
optional_policy(
 gen_require(
 type polaris_iosd_portal_dmi_lipc_t;
 type polaris_iosd_portal_app_lipc_t;
)
 allow polaris_hm_t { polaris_iosd_portal_dmi_lipc_t polaris_iosd_portal_app_lipc_t }:sock_file getattr;
)

during "show version installed" command
"grep -q srdriver /tmp/sw/rp/local/0/rp_base/iso" which is link to the universal image
polaris_bootflash_read(polaris_hm_t)
this is for calcsha.sh (invoked by the command above) but might work for others too
polaris_install_engine_domtrans(polaris_hm_t)
this if for hman to read and delete /tmp/version.info created by calcsha.sh in prev context type
polaris_install_tmp_read(polaris_hm_t)
gen_require(
 type polaris_install_tmp_t;
)
allow polaris_hm_t polaris_install_tmp_t:file unlink;

need open, read on /bootflash/packages.conf (grep sha1sum: /tmp/packages.conf)
polaris_read_packages_conf(polaris_hm_t)

```

```

This is created for hman to grant it access to /bootflash/topnmemuse
polaris_bootflash_manage(polaris_hm_t)

read /tmp/pkg_summary.txt file
polaris_pkg_summary_tmp_read(polaris_hm_t)

polaris_zram_getattr(polaris_hm_t)

optional_policy(`
polaris_ssd_auth_domtrans(polaris_hm_t)
`)

optional_policy(`
polaris_ssd_unmount_domtrans(polaris_hm_t)
`)

optional_policy(`
polaris_conf_d_domtrans(polaris_hm_t)
`)

#####
show platform software process slot R0 monitor
mcp_monitor_process_batchmode.sh
/bin/sh /usr/binos/conf/bexec.sh -c /usr/binos/conf/mcp_monitor_process_batchmode.sh -n 1 -d 3 -l 0
#####

polaris_utility_domain_template(monitor_process)

polaris_bexecute_domtrans(polaris_hm_t)
polaris_bexecute_domain(polaris_monitor_process_t, polaris_monitor_process_exec_t)

mcp_monitor_process_batchmode.sh calls "top" command
"top" needs read/getattr access of various files in the system
domain_read_all_domains_state(polaris_monitor_process_t)

"top" needs access to /sys/devices/system/cpu/online, etc
dev_read_sysfs(polaris_monitor_process_t)

"top" need read access to /proc/meminfo, /proc/stat
kernel_read_system_state(polaris_monitor_process_t)

allow read of /etc/passwd
auth_use_nsswitch(polaris_monitor_process_t)

need write/ioctl/getattr access for pipes like "pipe:[118396]"
polaris_hman_use_fifo(polaris_monitor_process_t)

corecmd_exec_bin(polaris_monitor_process_t)

```

```

gen_require(
 type admin_home_t;
)
#top -b -n3 -d3 needs permission to create dir /.config ,write
#to files and add files
allow polaris_monitor_process_t admin_home_t.dir { add_name create write };
allow polaris_monitor_process_t self:capability sys_ptrace;
#####

#####
pkg_summary.sh : show version R0 installed
/bin/bash /usr/binos/conf/pkg_summary.sh -o /tmp/pkg_summary.txt -d model -P
#####

polaris_utility_domain_template(pkg_summary)

polaris_pkg_summary_domtrans(polaris_hm_t)

it executes find /tmp/sw -maxdepth 5 -mindepth 5 -name mount
files_getattr_all_dirs(polaris_pkg_summary_t)
files_getattr_all_files(polaris_pkg_summary_t)
files_read_all_dirs_except(polaris_pkg_summary_t)

polaris_chasfs_read(polaris_pkg_summary_t)
polaris_cpld_read(polaris_pkg_summary_t)
polaris_use_btrace_fifo(polaris_pkg_summary_t)
polaris_rmonbifo_tmp_read(polaris_pkg_summary_t)
polaris_btrace_data_manage(polaris_pkg_summary_t)
polaris_boot_tmp_read(polaris_pkg_summary_t)

need open, read on /bootflash/debug.conf
polaris_read_debug_conf(polaris_pkg_summary_t)

polaris_read_packages_conf(polaris_pkg_summary_t)

allow polaris_pkg_summary_t self:capability sys_resource;

corecmd_exec_bin(polaris_pkg_summary_t)

auth_use_nsswitch(polaris_pkg_summary_t)

polaris_disk_crashinfo_getattr(polaris_pkg_summary_t)

read /proc/cmdline
kernel_read_system_state(polaris_pkg_summary_t)

handle /tmp/pkg_summary.txt file

```

```
type polaris_pkg_summary_tmp_t;
files_tmp_file(polaris_pkg_summary_tmp_t)
files_tmp_filetrans(polaris_pkg_summary_t, polaris_pkg_summary_tmp_t, file)
manage_files_pattern(polaris_pkg_summary_t, polaris_pkg_summary_tmp_t, polaris_pkg_summary_tmp_t)
```

```
#####
```

```
#####
```

```
pkg_to_tree.sh : Generates a software tree based on a provisioning file.
```

```
/bin/bash /usr/binos/conf/pkg_to_tree.sh -c /tmp/packages.conf
```

```
-t /tmp/show_patch_provision_temp -p /tmp/sw/isos
```

```
-r /tmp/show_provision_temp -a -q
```

```
#####
```

```
polaris_utility_domain_template(pkg_to_tree)
```

```
gen_require(`
```

```
type unconfined_service_t;
```

```
')
```

```
polaris_pkg_to_tree_domtrans({unconfined_service_t polaris_hm_t})
```

```
files_getattr_all_files(polaris_pkg_to_tree_t)
```

```
polaris_harddisk_read(polaris_pkg_to_tree_t)
```

```
polaris_cpuld_read(polaris_pkg_to_tree_t)
```

```
polaris_use_btrace_fifo(polaris_pkg_to_tree_t)
```

```
polaris_rmonbifo_tmp_read(polaris_pkg_to_tree_t)
```

```
polaris_btrace_data_manage(polaris_pkg_to_tree_t)
```

```
polaris_boot_tmp_read(polaris_pkg_to_tree_t)
```

```
polaris_patch_data_manage(polaris_pkg_to_tree_t)
```

```
if being executed on other node, telnet /dev/ptsN might be used
```

```
as stdin/stdout
```

```
telnet_use_ptys(polaris_pkg_to_tree_t)
```

```
pkg_to_tree.sh creates/deletes directories and files under
```

```
/tmp/show_provision_temp
```

```
type polaris_show_provision_tmp_t;
```

```
files_tmp_file(polaris_show_provision_tmp_t)
```

```
polaris_show_provision_temp_manage(polaris_pkg_to_tree_t)
```

```
pkg_to_tree.sh verifies each package as it is mounted
```

```
polaris_code_verify_domtrans(polaris_pkg_to_tree_t)
```

```
corecmd_exec_bin(polaris_pkg_to_tree_t)
```

```
polaris_disk_crashinfo_getattr(polaris_pkg_to_tree_t)
```

```
manage the /tmp/lf symbolic link
```

```

type polaris_pkg_to_tree_tmp_t;
files_tmp_file(polaris_pkg_to_tree_tmp_t)
files_tmp_filetrans(polaris_pkg_to_tree_t, polaris_pkg_to_tree_tmp_t, lnk_file, "lf")
manage_lnk_files_pattern(polaris_pkg_to_tree_t, polaris_pkg_to_tree_tmp_t, polaris_pkg_to_tree_tmp_t)

permit pkg_to_tree.sh mounting to use conf/pkg files in bootflash
polaris_bootflash_read(polaris_pkg_to_tree_t)
polaris_disk_bootflash_search(polaris_pkg_to_tree_t)

we want to read the existing mounts in chasfs
polaris_chasfs_read(polaris_pkg_to_tree_t)

pkg_to_tree.sh interfaces with installer data, including ISSU files
polaris_install_tmp_log_write(polaris_pkg_to_tree_t)
polaris_sw_data_manage(polaris_pkg_to_tree_t)
polaris_read_packages_conf(polaris_pkg_to_tree_t)
polaris_issu_tmp_files_manage(polaris_pkg_to_tree_t)
polaris_install_tmp_manage(polaris_pkg_to_tree_t)

allow pkg_to_tree.sh to do the loopback mounts of packages and manage
mount links in tmp. This includes mapping mounted passwd file and
mounting sysfs. This is also needed to mount /mnt/sd3/iox_alt_hdd.dsk
mount_domtrans(polaris_pkg_to_tree_t)
auth_map_passwd(polaris_pkg_to_tree_t)
dev_list_sysfs(polaris_pkg_to_tree_t)
allow polaris_pkg_to_tree_t sysfs_t:file { getattr open read };
allow polaris_pkg_to_tree_t tmp_t:lnk_file { create rename unlink };

when expanding/installing super images, pkg_to_tree uses install_engine_exec_t
utilities like issu_check
polaris_install_engine_domtrans(polaris_pkg_to_tree_t)

#####
misc hman cli(s)
#####

hman needs access to /bootflash/.issu_loc_lock
polaris_issu_files_manage(polaris_hm_t)

hman process creates/deletes directories and files under
/tmp/show_provision_temp
polaris_show_provision_temp_manage(polaris_hm_t)

signal send during show platform software process slot R0 monitor
polaris_send_signal_to_bexecute(polaris_hm_t)

polaris_dyncfg_tmp_read(polaris_hm_t)

```

```

polaris_disk_crashinfo_getattr(polaris_hm_t)

setting up /dev/ttyS0 speed from hman_handle_console_baud_rate_change
term_use_unallocated_ttys(polaris_hm_t)

allow to send message to /dev/log
logging_send_syslog_msg(polaris_hm_t)

run ldd, which in turns execve "ld.so --verify"
libs_exec_ld_so(polaris_hm_t)

hman starts agetty-iosd.service in case of nyquist stack
getty_systemctl(polaris_hm_t)

This block is policies for "sh pla so filesystem bootflash: de" CLI
polaris_utility_domain_template(cli_fs_cmds)

gen_require(
 type polaris_bexecute_t;
)
polaris_bexecute_domtrans(polaris_cli_fs_cmds_t)
polaris_cli_fs_cmds_domtrans(polaris_bexecute_t)
telnet_use_ptys(polaris_cli_fs_cmds_t)

Blanket permission for disk management for cli_fs_cmds (for show/erase fs)
polaris_persistent_manage(polaris_cli_fs_cmds_t)
permission to manage removable (seems pretty safe)
polaris_removable_manage(polaris_cli_fs_cmds_t)
polaris_getattr_removable(polaris_cli_fs_cmds_t)
fs_read_removable_symlinks(polaris_cli_fs_cmds_t)
btrace.sh needs these
polaris_boot_tmp_read(polaris_cli_fs_cmds_t)
polaris_btrace_tmppub_read(polaris_cli_fs_cmds_t)
this is for NFS access mounted in a dir of ncd context
optional_policy(
 polaris_ncd_tmp_read(polaris_cli_fs_cmds_t)
)

#need to access pipes like pipe:[107820]
polaris_hman_use_fifo(polaris_cli_fs_cmds_t)

df or stat the mount point
fs_getattr_nfs(polaris_cli_fs_cmds_t)
mkfs permissions via domtrans
fstools_domtrans(polaris_cli_fs_cmds_t)
runs NFS exportfs (copied from ncd)
rpc_read_exports(polaris_cli_fs_cmds_t)
rpc_write_exports(polaris_cli_fs_cmds_t)

```

```

rpc_manage_nfs_state_data_dir(polaris_cli_fs_cmds_t)
rpc_manage_nfs_state_data(polaris_cli_fs_cmds_t)
fs_rw_nfsd_fs(polaris_cli_fs_cmds_t)
kernel_rw_rpc_sysctls(polaris_cli_fs_cmds_t)
fs_getattr_xattr_fs(polaris_cli_fs_cmds_t)
rsync/remote_format perms (rsync borrowed from polariscrft.te)
polaris_udev_tmp_list_dirs(polaris_cli_fs_cmds_t)
gen_require(`
 type rsync_exec_t;
 type rsync_port_t;
 type rsync_tmp_t;
`)
allow polaris_cli_fs_cmds_t rsync_port_t:tcp_socket name_connect;
allow polaris_cli_fs_cmds_t rsync_exec_t:file { execute execute_no_trans getattr map open read };

allow polaris_cli_fs_cmds_t rsync_tmp_t:file open;

allow polaris_cli_fs_cmds_t self:capability { chown fsetid setgid };

Need to access /proc/self/fd/1 by platform_fs_operation.sh which is invoked by
/bin/bash/usr/binos/conf/mcp_cli_fs_cmds.sh show bootflash:all
fs_associate_proc(polaris_cli_fs_cmds_t)

polaris_cli_fs_cmds_domtrans(polaris_hm_t)

corecmd_exec_bin(polaris_cli_fs_cmds_t)
polaris_cpld_read(polaris_cli_fs_cmds_t)
polaris_chasfs_manage(polaris_cli_fs_cmds_t)
polaris_use_btrace_fifo(polaris_cli_fs_cmds_t)
polaris_rmonbifo_tmp_read(polaris_cli_fs_cmds_t)

auth_use_nsswitch(polaris_cli_fs_cmds_t)

allow polaris_cli_fs_cmds_t polaris_udev_tmp_files_t:file open;
polaris_udev_tmp_read(polaris_cli_fs_cmds_t)
#watch on modify /tmp/udev/etc/udev/usbflash1-2/udev-info for remote/stby usb device
polaris_udev_tmp_watch(polaris_cli_fs_cmds_t)

allow to run mount in its own domain
mount_domtrans(polaris_cli_fs_cmds_t)
runs systemctl to remount file system.
usb[01] fs_target remount service used.
systemd_exec_systemctl(polaris_cli_fs_cmds_t)
systemd_config_generic_services(polaris_cli_fs_cmds_t)

allow to run readlink -f /dev/bootflash1
storage_getattr_fixed_disk_dev(polaris_cli_fs_cmds_t)

```

```

allow "format" CLI to add/delete links in /dev/, and /; e.g., /dev/harddisk1 /harddisk
ifdef(`crankshaft_family',`
 gen_require(`
 type device_t;
 type root_t;
 type udev_t;
 ')
 #/dev/harddisk1 /dev/harddisk1 -> /dev/dm-0
 filetrans_pattern({udev_t polaris_cli_fs_cmds_t}, device_t, fixed_disk_device_t, lnk_file, "harddisk1")
 filetrans_pattern({udev_t polaris_cli_fs_cmds_t}, device_t, fixed_disk_device_t, lnk_file, "harddisk")
 #/harddisk -> /misc/scratch
 filetrans_pattern(polaris_cli_fs_cmds_t, root_t, polaris_disk_bootflash_t, lnk_file, "harddisk")

 manage_lnks_pattern(polaris_cli_fs_cmds_t, fixed_disk_device_t, fixed_disk_device_t)
')
seutil_domtrans_setfiles(polaris_cli_fs_cmds_t)
polaris_hman_use_fifo(setfiles_t)
need open, read on /bootflash/packages.conf
polaris_read_packages_conf(polaris_cli_fs_cmds_t)

"sed" needs access to /proc/cmdline
kernel_read_system_state(polaris_cli_fs_cmds_t)

work with /tmp files (/tmp/fs_lock_bootflash)
type polaris_cli_fs_cmds_tmp_t;
gen_require(`
 type tmp_t;
')
files_tmp_file(polaris_cli_fs_cmds_tmp_t)
manage_files_pattern(polaris_cli_fs_cmds_t, tmp_t, polaris_cli_fs_cmds_tmp_t)
files_tmp_filetrans(polaris_cli_fs_cmds_t, polaris_cli_fs_cmds_tmp_t, file)

#"find /vol/disk0/caf" when show CLI is excuted
polaris_caf_tmp_files_read(polaris_cli_fs_cmds_t)

#Caf and IOxMan-CLI interaction
polaris_caf_tmp_files_manage(polaris_cli_fs_cmds_t)

mcp_cli_fs_cmds.sh show webui: all runs df -P /webui
fs_getattr_tmpfs(polaris_cli_fs_cmds_t)

polaris_persistent_getattr(polaris_cli_fs_cmds_t)
fs_getattr_xattr_fs(polaris_cli_fs_cmds_t)
allow polaris_cli_fs_cmds_t self:capability dac_override;
allow polaris_cli_fs_cmds_t self:dir { add_name write };

allow caf access to mcp_cli_fs_cmds.sh for fsck on ngwc platforms
ifdef(`ngwc_family',`

```



```

domain_read_all_domains_state(polaris_cli_fs_cmds_t)
polaris_caf_domtrans(polaris_cli_fs_cmds_t)
polaris_caf_files_read(polaris_cli_fs_cmds_t)
dev_read_sysfs(polaris_cli_fs_cmds_t)
')

#####
fsck CLI using mcp_cli_fs_cmds.sh as tested on sparrow
#####
allow fsck in mcp_cli_fs_cmds.sh to execute udev in the udev domain
udev_domtrans(polaris_cli_fs_cmds_t)
allow crypsetup to be executed
lvm_domtrans(polaris_cli_fs_cmds_t)
allow fsck to run on bootflash
polaris_nvram_getattr(polaris_cli_fs_cmds_t)

during SDWAN admin-tech generation, fs_display_*(*) in mcp_cli_fs_cmds.sh is
invoked; this tries to find files like /bootflash/tracelogs/cia-netcon* with
LABEL polaris_conf_d_var_log_t
polaris_conf_d_var_log_read(polaris_cli_fs_cmds_t)
#####
hm calls df to figure out tmpfs size, on some platforms
where configfs is mounted it needs statfs access to it
gen_require(
 type configfs_t;
)
allow polaris_hm_t configfs_t:dir getattr;

hm populates vrf_shm on behalf of iosd, and may create
and delete vrf-based netns
polaris_vrf_netns_manage(polaris_hm_t)
fs_unmount_nsfs(polaris_hm_t)

#read udev_info
polaris_udev_tmp_read(polaris_hm_t)

gen_require(
 type rsync_t;
)
allow rsync_t polaris_hm_t:fifo_file read;

#####
show platform software yang-management process monitor
mcp_monitor_dmi_proc.sh
/bin/bash /bin/mcp_pkg_wrap rp_daemons /usr/binos/conf/mcp_monitor_dmi_proc.sh
#####

polaris_utility_domain_template(monitor_dmi_process)

```

```

polaris_bexecute_domain(polaris_monitor_dmi_process_t, polaris_monitor_dmi_process_exec_t)

mcp_monitor_dmi_proc.sh calls "ps" command
"ps" needs read/getattr access of various files in the system
ps -eo comm,pid,s,vsize,rssize,%cpu,%mem,etime --sort=comm
domain_read_all_domains_state(polaris_monitor_dmi_process_t)

"ps" needs access to /proc/uptime
kernel_read_system_state(polaris_monitor_dmi_process_t)

"ps" needs access to /sys/devices/system/cpu/online, etc
dev_read_sysfs(polaris_monitor_dmi_process_t)

"ps" need read access to /proc
kernel_list_proc(polaris_monitor_dmi_process_t)

allow read of /etc/passwd
auth_use_nsswitch(polaris_monitor_dmi_process_t)

executes head command
corecmd_exec_bin(polaris_monitor_dmi_process_t)

sources cyan_api.sh
files_exec_usr_files(polaris_monitor_dmi_process_t)

/bin/bash /tmp/sw/rp/0/0/rp_daemons/mount/usr/binos/conf/mcp_monitor_dmi_proc.sh
corecmd_shell_entry_type(polaris_monitor_dmi_process_t)

need write/ioctl/getattr access for pipes like "pipe:[79843]"
polaris_hman_use_fifo(polaris_monitor_dmi_process_t)

read /etc/init.d/quad_sup_usb_infra.sh
init_read_script_files(polaris_cli_fs_cmds_t)
#This triggers access to /tmp/.flashlock and /dev/sda3
polaris_flashlib_lock(polaris_cli_fs_cmds_t)
#allow flash utility
polaris_flashlib_read(polaris_cli_fs_cmds_t)
/sys/bus/usb/drivers/usb/*/authorized is accessed (read and write) from hman.
For USB disable feature across all ngwc platforms needs authorized file to
be accessed.
#ifdef(^ngwc_family'`
gen_require(
type sysfs_t;
)
allow polaris_hm_t sysfs_t:file create;
dev_rw_sysfs(polaris_hm_t)
dev_manage_sysfs_dirs(polaris_hm_t)

```

```

')

work with /tmp files (/tmp/usb-disable)
polaris_iosd_usb_disable_tmp_manage(polaris_hm_t)

#need access to tmp files created under issu directory
polaris_issu_tmp_files_read(polaris_hm_t)

HMMAN calls for checking database compactability
tdlldb_db_epoch_test is requires access to /tmp/issu/provision/sw-running.txt
polaris_install_tmp_read(polaris_hm_t)

optional_policy(`
 polaris_efi_files_list_dirs(polaris_cli_fs_cmds_t)
`)

Execute hdparam in its own domain
fstools_domtrans(polaris_hm_t)

Allow polaris_hm to get attributes of fixed disk
storage_getattr_fixed_disk_dev(polaris_hm_t)

Allow read to ssd auth tmp files /tmp/ssd_blk_device
polaris_read_ssd_tmp_files(polaris_hm_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarishm.te
No license file was found, but licenses were detected in source scan.

#
March 2017, Victor Kamensky
#
Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved
#

<summary>Polaris ngwc_tbl_mgr Policy Rules.</summary>

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisngwctblmgr.if
No license file was found, but licenses were detected in source scan.

#
September 2017, Victor Kamensky
#
Copyright (c) 2017-2020 by Cisco Systems, Inc.
All rights reserved
#

```

```
<summary>Polaris polarisbtman Policy Rules.</summary>
```

```
#####
```

```
<summary>
```

```
Execute fs tools in the btrace_rotate domain.
```

```
</summary>
```

```
<param name="domain">
```

```
<summary>
```

```
Domain allowed to transition.
```

```
</summary>
```

```
</param>
```

```
#
```

```
interface(`polaris_btrace_rotate_domtrans`,`
```

```
 gen_require(`
```

```
 type polaris_btman_t, polaris_btman_exec_t;
```

```
 `)
```

```
 corecmd_search_bin($1)
```

```
 domtrans_pattern($1, polaris_btman_exec_t, polaris_btman_t)
```

```
 `)
```

```
#####
```

```
<summary>
```

```
Read /tmp/tmppub files/dirs
```

```
</summary>
```

```
<param name="domain">
```

```
<summary>
```

```
Domain allowed access.
```

```
</summary>
```

```
</param>
```

```
#
```

```
interface(`polaris_btrace_tmppub_read`,`
```

```
 gen_require(`
```

```
 type polaris_btrace_tmppub_t;
```

```
 `)
```

```
 read_files_pattern($1, polaris_btrace_tmppub_t, polaris_btrace_tmppub_t)
```

```
 read_lnk_files_pattern($1, polaris_btrace_tmppub_t, polaris_btrace_tmppub_t)
```

```
 list_dirs_pattern($1, polaris_btrace_tmppub_t, polaris_btrace_tmppub_t)
```

```
 `)
```

```
#####
```

```
<summary>
```

```
Manage /tmp/tmppub files/dirs
```

```
</summary>
```

```
<param name="domain">
```

```
<summary>
```

```

Domain allowed access.
</summary>
</param>
#
interface(`polaris_btrace_tmppub_manage',`
 gen_require(`
 type polaris_btrace_tmppub_t;
 `)

 manage_files_pattern($1, polaris_btrace_tmppub_t, polaris_btrace_tmppub_t)
 manage_dirs_pattern($1, polaris_btrace_tmppub_t, polaris_btrace_tmppub_t)
)

#####
<summary>
Read and write all btman's fifo file, used as
standard input/output.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolecap/>
#
interface(`polaris_use_btman_fifo',`
 gen_require(`
 type polaris_btman_t;
 `)

 allow $1 polaris_btman_t:fifo_file { rw_term_perms lock append create unlink };
)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisbtman.if

No license file was found, but licenses were detected in source scan.

```

#
June 2017, Victor Kamensky
#
Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved
#
<summary>Polaris webui Policy Rules.</summary>

#####
<summary>

```

```

Read files under /webui/..., these are webui odm file
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_read_webui_files`,`
 gen_require(`
 type polaris_webui_file_t;
 `)

 read_files_pattern($1, polaris_webui_file_t , polaris_webui_file_t)
 read_lnk_files_pattern($1, polaris_webui_file_t, polaris_webui_file_t)
)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariswebui.if

No license file was found, but licenses were detected in source scan.

```

#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#

```

```

/tmp/fp/tdldb(/.*)? gen_context(system_u:object_r:polaris_tdldb_t,s0)
/tmp/rp/tdldb(/.*)? gen_context(system_u:object_r:polaris_tdldb_t,s0)
/tmp/cc/tdldb(/.*)? gen_context(system_u:object_r:polaris_tdldb_t,s0)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polaristdldb.fc

No license file was found, but licenses were detected in source scan.

```

#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#

```

```

<summary>Polaris NVRAM Policy Rules.</summary>

```

```

#####
Polaris lsmpi
#####

```

```

#####
<summary>
Work (read, write, ioctl) with /dev/lsmapi device.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolebase/>
#
interface(`polaris_lsmapi_dev_use`,`
gen_require(`
 type device_t;
 type polaris_lsmapi_device_t;
`)
 write_chr_files_pattern($1, device_t, polaris_lsmapi_device_t)
 read_chr_files_pattern($1, device_t, polaris_lsmapi_device_t)
 allow $1 polaris_lsmapi_device_t:chr_file map;
`)

#####
<summary>
Read lsmapi sysctl file, ie one under /proc/sys/lsmapi and
/proc/sys/lsmapi_lodrv directories.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolebase/>
#
interface(`polaris_lsmapi_sysctl_read`,`
gen_require(`
 type polaris_sysctl_lsmapi_t;
`)
 read_files_pattern($1, polaris_sysctl_lsmapi_t, polaris_sysctl_lsmapi_t)
`)

#####
<summary>
Read from /sys/devices/virtual/contdev sysfs files.
sys files.
</summary>
<param name="domain">
<summary>

```

```

Domain allowed access.
</summary>
</param>
#
interface(`polaris_contdev_dev_read`,`
gen_require(`
type polaris_sysfs_contdev_t;
type sysfs_t;
`)
read_files_pattern($1, polaris_sysfs_contdev_t, polaris_sysfs_contdev_t)
list_dirs_pattern($1, polaris_sysfs_contdev_t, polaris_sysfs_contdev_t)
genfscon statement specifically excludes symbolic links from
genfscon path specific entries. To workaround, let us allow
to follow sysfs_t symbolic links
allow $1 sysfs_t:lnk_file read;
`)

```

```
#####
```

```

<summary>
Write into /sys/devices/virtual/contdev sysfs files.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#

```

```

interface(`polaris_contdev_dev_write`,`
gen_require(`
type polaris_sysfs_contdev_t;
type sysfs_t;
`)
write_files_pattern($1, polaris_sysfs_contdev_t, polaris_sysfs_contdev_t)
genfscon statement specifically excludes symbolic links from
genfscon path specific entries. To workaround, let us allow
to follow sysfs_t symbolic links
allow $1 sysfs_t:lnk_file read;
`)

```

```
#####
```

```

<summary>
Manage /sys/devices/virtual/contdev sysfs files.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>

```



```

#
interface(`polaris_manage_contdev_dev`,`
gen_require(`
type polaris_sysfs_contdev_t;
type sysfs_t;
`)
manage_files_pattern($1, polaris_sysfs_contdev_t, polaris_sysfs_contdev_t)
manage_dirs_pattern($1, polaris_sysfs_contdev_t, polaris_sysfs_contdev_t)
genfscon statement specifically excludes symbolic links from
genfscon path specific entries. To workaround, let us allow
to follow sysfs_t symbolic links
allow $1 sysfs_t:lnk_file read;
`)

```

```
#####
```

```

<summary>
Allow the specified domain to manage punt/inject socket
files. I.e /tmp/pi/dp_2_iosd_pi and /tmp/pi/iosd_2_dp_pi
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#

```

```

interface(`polaris_pi_uds_manage`,`
gen_require(`
type polaris_pi_uds_t;
`)

manage_sock_files_pattern($1, polaris_pi_uds_t, polaris_pi_uds_t)
`)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarislsmpi.if

No license file was found, but licenses were detected in source scan.

```

#
March 2017, Victor Kamensky
#
Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved
#

```

```
/usr/binos/conf/issu_stack.sh -- gen_context(system_u:object_r:polaris_issu_stack_exec_t,s0)
```

```
/tmp/issu_stk(/.*)? gen_context(system_u:object_r:polaris_issu_stack_tmp_t,s0)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisissustack.fc

No license file was found, but licenses were detected in source scan.

#

# August 2017, Shawn Lu

#

# Copyright (c) 2017-2019 by Cisco Systems, Inc.

# All rights reserved

#

# polarisnmspd file contexts place holder

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisnmspd.fc

No license file was found, but licenses were detected in source scan.

#

# Aug 2020, Sridhar C

#

# Copyright (c) 2020 by Cisco Systems, Inc.

# All rights reserved

#

policy\_module(polarisxcopy, 1.0);

#####

## xcopy\_script.sh

#####

polaris\_utility\_domain\_template(xcopy\_script)

polaris\_bexecute\_domain(polaris\_xcopy\_script\_t, polaris\_xcopy\_script\_exec\_t)

# xcopy\_script.sh call other scripts through brelay.sh

polaris\_bexecute\_domtrans(polaris\_xcopy\_script\_t)

polaris\_chasfs\_manage(polaris\_xcopy\_script\_t)

# xcopy calls curl/sshpas/scp command and support scp/http/https

gen\_require(`

type polaris\_curl\_t;

type ssh\_exec\_t;

type ssh\_home\_t;

type devpts\_t;

`)

polaris\_curl\_domtrans(polaris\_xcopy\_script\_t)

corenet\_tcp\_connect\_ssh\_port(polaris\_curl\_t)

corenet\_tcp\_connect\_http\_port(polaris\_curl\_t)

corenet\_tcp\_connect\_ssh\_port(polaris\_xcopy\_script\_t)

```

allow read of /etc/passwd
auth_use_nsswitch(polaris_xcopy_script_t)

read polaris vrf net namespace file
fs_read_nsfs_files(polaris_xcopy_script_t)

curl needs access to bootflash
polaris_bootflash_manage(polaris_curl_t)
polaris_bootflash_manage(polaris_xcopy_script_t)

also need to be able to ls /tmp/ufs/ on ngwc
optional_policy(`
polaris_ncd_tmp_read(polaris_xcopy_script_t)
')

Execute
corecmd_exec_bin(polaris_xcopy_script_t)

#uses kernel utilities like pidof, stat
domain_read_all_domains_state(polaris_xcopy_script_t)
kernel_list_proc(polaris_xcopy_script_t)

read /proc/cmdline
kernel_read_system_state(polaris_xcopy_script_t)
fs_getattr_tmpfs(polaris_xcopy_script_t)
fs_getattr_xattr_fs(polaris_xcopy_script_t)

xcopy started from the smand and needs fifo
polaris_smand_use_fifo(polaris_xcopy_script_t)

ping to check reachability
netutils_domtrans_ping(polaris_xcopy_script_t)
#
calls mcp_chvrf.sh for ping and curl
polaris_chvrf_domtrans(polaris_xcopy_script_t)

xcopy uses ps to find the curl process state
"ps" needs read access to /sys/devices/system/cpu/online
"ps" needs read access to /proc/uptime
dev_read_sysfs(polaris_xcopy_script_t)

Started by bexecute so it has its stdin set to telnet pty file
telnet_use_ptys(polaris_xcopy_script_t)

stdout is set to fifo set by rotte to capture output into btrace
btrace also need these policies :)
btrace_init also refer to /tmp/sw/boot/..

```

```

polaris_use_btrace_fifo(polaris_xcopy_script_t)
polaris_cpld_read(polaris_xcopy_script_t)
polaris_boot_tmp_read(polaris_xcopy_script_t)

Allow /tmp/xcopy/
type polaris_xcopy_tmp_t;
files_tmp_file(polaris_xcopy_tmp_t)
files_tmp_filetrans(polaris_xcopy_script_t, polaris_xcopy_tmp_t, { dir file })
polaris_xcopy_tmp_manage(polaris_xcopy_script_t)

Curl writes the progress...
polaris_xcopy_tmp_manage(polaris_curl_t)

PS command access ttyS1
term_getattr_unallocated_ttys(polaris_xcopy_script_t)

sshpass/scp
ssh_getattr_user_home_dir(polaris_xcopy_script_t)

sshpass uses the ptmx
term_use_ptmx(polaris_xcopy_script_t)
term_getattr_pty_fs(polaris_xcopy_script_t)

scp uses ssh
#allow polaris_xcopy_script_t ssh_exec_t:file { execute execute_no_trans map open read };
ssh_exec(polaris_xcopy_script_t)

allow polaris_xcopy_script_t self:capability {sys_resource fsetid};
allow polaris_xcopy_script_t self:process setfscreate;
allow polaris_xcopy_script_t ssh_home_t:dir { create search };
allow polaris_xcopy_script_t devpts_t:chr_file { getattr open read setattr write };

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisxcopy.te
No license file was found, but licenses were detected in source scan.

#
April 2017, Victor Kamensky
#
Copyright (c) 2017-2020 by Cisco Systems, Inc.
All rights reserved
#

<summary>Polaris dmi_ncsshd_fwd Policy Rules.</summary>

#####
<summary>
Connect to and send messages to dmi_ncsshd_bp

```

```

tmp/.ncsshd_bp.sock unix datagram sockets.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_dmi_ncsshd_fwd_dgram_send`,`
 gen_require(`
 type polaris_dmi_ncsshd_log_t;
 type polaris_dmi_ncsshd_fwd_t;
 `)

 allow $1 self:unix_stream_socket {create_socket_perms};
 allow $1 polaris_dmi_ncsshd_fwd_t:unix_stream_socket {connectto};
 write_sock_files_pattern($1, polaris_dmi_ncsshd_log_t,polaris_dmi_ncsshd_log_t)
)

```

```

#####
<summary>
Write into fifo file created by dmi_ncsshd_fwd, typical case when
hman starts script under popen.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolecap/>
#
interface(`polaris_dmi_ncsshd_fwd_use_fifo`,`
 gen_require(`
 type polaris_dmi_ncsshd_fwd_t;
 `)

 write_fifo_files_pattern($1, polaris_dmi_ncsshd_fwd_t, polaris_dmi_ncsshd_fwd_t)
)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisdmincshdfwd.if

No license file was found, but licenses were detected in source scan.

dnl

dnl April 2018, Victor Kamensky

dnl

dnl Copyright (c) 2018-2019 by Cisco Systems, Inc.

dnl All rights reserved

```

dnl
define(`polaris_database_aux',`dnl
/tmp/rp/tdlddb/[0-9]/$2 -- gen_context(system_u:object_r:$1,s0)
/tmp/fp/tdlddb/[0-9]/$2 -- gen_context(system_u:object_r:$1,s0)
/tmp/cc/tdlddb/[0-9]/$2 -- gen_context(system_u:object_r:$1,s0)
/tmp/rp/tdlddb/[0-9]/$2.lock -- gen_context(system_u:object_r:$1,s0)
/tmp/fp/tdlddb/[0-9]/$2.lock -- gen_context(system_u:object_r:$1,s0)
/tmp/cc/tdlddb/[0-9]/$2.lock -- gen_context(system_u:object_r:$1,s0)
')

```

```

define(`polaris_database',`dnl
polaris_database_aux(database_label($1), $1)
')

```

```

define(`polaris_database_process',`)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/m4/polaris\_database\_db\_fc.m4

No license file was found, but licenses were detected in source scan.

```

#
June 2017, Victor Kamensky
#
Copyright (c) 2017-2020 by Cisco Systems, Inc.
All rights reserved
#
<summary>Polaris ioxman Policy Rules.</summary>

```

```

#####
<summary>
Manage ioxman temporary files and directories in /tmp.
Like /tmp/ios_xml.dat.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_iox_manage_tmp_files',`
 gen_require(`
 type polaris_iox_tmp_t;
 ')

```

```

 manage_files_pattern($1, polaris_iox_tmp_t, polaris_iox_tmp_t)
 files_tmp_filetrans($1, polaris_iox_tmp_t, file, "iox_xml.dat")
 files_tmp_filetrans($1, polaris_iox_tmp_t, file, "iox_override.conf")

```

```

/tmp/trace/resource.log can be created by ioxman/vman/caf
through sourcing in the family of the pvsm_*.sh scripts
files_tmp_filetrans($1, polaris_iox_tmp_t, file, "resource.log")
)

```

```
#####
```

```

<summary>
Read ioxman temporary files and directories in /tmp.
Like /tmp/ios_xml.dat and /tmp/iox_override.conf
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_iox_read_tmp_files`,`
 gen_require(`
 type polaris_iox_tmp_t;
 `)

 read_files_pattern($1, polaris_iox_tmp_t, polaris_iox_tmp_t)
)

```

```
#####
```

```

<summary>
Make the specified domain able to work with iosd2iox files
</summary>
<param name="type">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_iox2iosd_tmp_manage`,`
 gen_require(`
 type polaris_iox2iosd_tmp_t;
 `)

 manage_dirs_pattern($1, polaris_iox2iosd_tmp_t, polaris_iox2iosd_tmp_t)
 manage_files_pattern($1, polaris_iox2iosd_tmp_t, polaris_iox2iosd_tmp_t)
)

```

```
#####
```

```

<summary>
Read ioxman executable file. Used by caf to read iosman
version.
</summary>

```

```

<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_ioxman_exec_read`,`
 gen_require(`
 type polaris_ioxman_exec_t;
 type bin_t;
 `)

 read_files_pattern($1, bin_t, polaris_ioxman_exec_t)
`)

#####
<summary>
Allow the specified domain to get show_version information
from ioxman executable
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_ioxman_show_version`,`
 gen_require(`
 type polaris_ioxman_exec_t;
 `)
 polaris_show_version($1, polaris_ioxman_exec_t)
`)

#####
<summary>
Allow the specified domain to get show_version information
from dockerd and other container_runtime_t executables
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_container_runtime_show_version`,`
 gen_require(`
 type container_runtime_exec_t;
 `)

```



```

 polaris_show_version($1, container_runtime_exec_t)
)

#####
<summary>
Execute a domain transition to run cat9k_ssd_auth_cmds.sh
</summary>
<param name="domain">
<summary>
Domain allowed to transition.
</summary>
</param>
#
interface(`polaris_ssd_auth_domtrans`,`
 gen_require(`
 type polaris_ssd_auth_t, polaris_ssd_auth_exec_t;
 `)

 domtrans_pattern($1, polaris_ssd_auth_exec_t, polaris_ssd_auth_t)
)

#####
<summary>
Read ssd files in /tmp/ssd_blk_device
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_read_ssd_tmp_files`,`
 gen_require(`
 type polaris_ssd_auth_tmp_t;
 `)

 read_files_pattern($1, polaris_ssd_auth_tmp_t, polaris_ssd_auth_tmp_t)
)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisioxman.if

No license file was found, but licenses were detected in source scan.

```

#
Nov 2020, Swati Kumaro
#
Copyright (c) 2020 by Cisco Systems, Inc.
All rights reserved

```

#

```
/dev/blzi_fpga -c gen_context(system_u:object_r:polaris_blzi_device_t,s0)
/dev/blzi_ts_1pps -c gen_context(system_u:object_r:polaris_blzi_device_t,s0)
/dev/blzi_gps_1pps -c gen_context(system_u:object_r:polaris_blzi_device_t,s0)
/dev/blzi_lol_1pps -c gen_context(system_u:object_r:polaris_blzi_device_t,s0)
/dev/blzi_ts_interest_0 -c gen_context(system_u:object_r:polaris_blzi_device_t,s0)
/dev/blzi_ts_interest_1 -c gen_context(system_u:object_r:polaris_blzi_device_t,s0)
/dev/blzi_ts_interest_2 -c gen_context(system_u:object_r:polaris_blzi_device_t,s0)
/dev/blzi_ts_interest_3 -c gen_context(system_u:object_r:polaris_blzi_device_t,s0)
/dev/blzi_ts_interest_4 -c gen_context(system_u:object_r:polaris_blzi_device_t,s0)
/dev/blzi_ts_interest_5 -c gen_context(system_u:object_r:polaris_blzi_device_t,s0)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisptpdrp.fc

No license file was found, but licenses were detected in source scan.

#

# January 2021, Gabriel Lee, Shawn Liu

#

# Copyright (c) 2021 by Cisco Systems, Inc.

# All rights reserved

#

policy\_module(polarisezmanage, 1.0);

type polaris\_ezmanage\_file\_t;

files\_type(polaris\_ezmanage\_file\_t)

polaris\_pfile\_type(polaris\_ezmanage\_file\_t)

polaris\_process\_domain\_template(ezmanage)

# Allow ezManage script to be executed by systemd

gen\_require(`

type unconfined\_service\_t;

`)

polaris\_ezmanage\_domtrans(unconfined\_service\_t)

# Allow ezManage file and directory access

polaris\_manage\_ezmanage\_files(polaris\_ezmanage\_t)

# Allow ezManage socket access

allow polaris\_ezmanage\_t self:unix\_dgram\_socket { connected\_socket\_perms sendto };

# Allow read of /etc/passwd

auth\_use\_nsswitch(polaris\_ezmanage\_t)

```

ezManage python script needs access to USB ttys for modem AT channel
term_use_usb_ttys(polaris_ezmanage_t)

ezManage python script needs /usr/bin/python3 execution and may also call other generic system bin utilities
corecmd_exec_bin(polaris_ezmanage_t)

ezManage needs to access /bootflash/ciscosdwan.cfg and a variably named tar file in /bootflash/modem_firmware
polaris_bootflash_filetrans(polaris_ezmanage_t, polaris_ezmanage_file_t, file, "ciscosdwan.cfg")
polaris_bootflash_filetrans(polaris_ezmanage_t, polaris_ezmanage_file_t, file, "modem_firmware.tar.gz")

ezManage socket file is created in /var/run
type polaris_ezmanage_var_run_t;
files_pid_file(polaris_ezmanage_var_run_t)
files_pid_filetrans(polaris_ezmanage_t, polaris_ezmanage_var_run_t, sock_file, "cwan_ezmanage_py_server")

Allow ezManage to access its socket file in /var/run
polaris_manage_ezmanage_var_run_files(polaris_ezmanage_t)

Allow ezManage to access ngiolite socket file in /var/run
gen_require(
 type polaris_cwan_svr_var_run_t;
)
rw_sock_files_pattern(polaris_ezmanage_t, polaris_cwan_svr_var_run_t, polaris_cwan_svr_var_run_t)

Allow ezManage to access ngiolite dgram_socket
gen_require(
 type polaris_ngiolite_t;
)
allow polaris_ezmanage_t polaris_ngiolite_t:unix_dgram_socket sendto;

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisezmanage.te
No license file was found, but licenses were detected in source scan.

#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#

<summary>Polaris dbm Policy Rules.</summary>

#####
<summary>
Setup /bootflash/.dbpersist directory and content.
</summary>
<param name="domain">

```

```

<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_tdlldbpersist_setup`,
 gen_require(`
 type polaris_disk_bootflash_t;
 type polaris_disk_dbm_t;
 `)
 filetrans_pattern($1, polaris_disk_bootflash_t, polaris_disk_dbm_t, dir, ".dbpersist")
 # allow creation of /bootflash/.dbpersist directory
 manage_dirs_pattern($1, polaris_disk_bootflash_t, polaris_disk_dbm_t)
 # dbm can manage files inside of its own polaris_disk_dbm_t directories
 manage_files_pattern($1, polaris_disk_dbm_t, polaris_disk_dbm_t)
)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisdbm.if

No license file was found, but licenses were detected in source scan.

```

#
May 2017, Victor Kamensky
#
Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved
#

```

# polarismdtpubd file contexts place holder

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarismdtpubd.fc

No license file was found, but licenses were detected in source scan.

```

#
February 2020, Victor Kamensky
#
Copyright (c) 2020-2021 by Cisco Systems, Inc.
All rights reserved
#

```

policy\_module(polaristtm, 1.0);

```

gen_require(`
 type polaris_ttm_t;
`)
polaris_chasfs_read(polaris_ttm_t)
polaris_cpuld_read(polaris_ttm_t)

```

```

logging_send_syslog_msg(polaris_ttm_t)

vconfd_load_shared_schemas
polaris_confd_shared_schema_read(polaris_ttm_t)

/var/run/.ttmd socket and pid
type polaris_ttm_var_run_t;
files_pid_file(polaris_ttm_var_run_t)
manage_files_pattern(polaris_ttm_t, polaris_ttm_var_run_t, polaris_ttm_var_run_t)
manage_sock_files_pattern(polaris_ttm_t, polaris_ttm_var_run_t, polaris_ttm_var_run_t)
files_pid_filetrans(polaris_ttm_t, polaris_ttm_var_run_t, { file sock_file })

allow /usr/binos/bin/ttmd to acces polaris_tdlresolve_t and
polaris_global_service_t
polaris_tdlresolve_manage(polaris_ttm_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polaristtm.te
No license file was found, but licenses were detected in source scan.

#
February 2020, Victor Kamensky
#
Copyright (c) 2020-2021 by Cisco Systems, Inc.
All rights reserved
#

policy_module(polarissdavcproxy, 1.0);

gen_require(
 type polaris_sdavc_proxy_t;
)

btrace_application_start
polaris_chasfs_read(polaris_sdavc_proxy_t)
polaris_tdlresolve_read(polaris_sdavc_proxy_t)
polaris_cpld_read(polaris_sdavc_proxy_t)

Allow SDAVC exports using UDP socket.
allow polaris_sdavc_proxy_t self:udp_socket create_socket_perms;

Change namespace to allow network communication with vManage
(process_namespace_network_change_internal - opens /var/run/netns/*)
polaris_cedge_set_ns(polaris_sdavc_proxy_t)

Reset the anamespace back to default (process_namespace_network_default opens /proc/1/ns/net)
polaris_cedge_reset_ns(polaris_sdavc_proxy_t)

```

```

type polaris_sdavc_proxy_files_t;
files_type(polaris_sdavc_proxy_files_t)
polaris_pfile_type(polaris_sdavc_proxy_files_t)

Create /bootflash/sdavc directory, Write, Read & Removed files (For SDAVC imports)
polaris_bootflash_filetrans(polaris_sdavc_proxy_t, polaris_sdavc_proxy_files_t, dir, "sdavc")
polaris_bootflash_filetrans(polaris_iosd_t, polaris_sdavc_proxy_files_t, dir, "sdavc")
polaris_sdavc_proxy_manage(polaris_sdavc_proxy_t)

IOSd process also should have access to /bootflash/sdavc directory
gen_require(
 type polaris_iosd_t;
)
polaris_sdavc_proxy_manage(polaris_iosd_t)

Allow SDAVC imports (HTTP GET, PUT) we use /usr/bin/curl executable.
Exe: curl -f -s --connect-time 10 -o /bootflash/sdavc/.... -w% {http_code} http://<user>:<pw>@<vManage system
ip>:<port>
Run CURL in its domain so it wont have all sdavcproxy permissions.

gen_require(
 type polaris_curl_t;
)
polaris_curl_domtrans(polaris_sdavc_proxy_t)
corenet_tcp_connect_generic_port(polaris_curl_t)

cURL process also should have access to /bootflash/sdavc directory
polaris_sdavc_proxy_manage(polaris_curl_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisssdavcproxy.te
No license file was found, but licenses were detected in source scan.

#
Sep 2020, Sridhar C
#
Copyright (c) 2020 by Cisco Systems, Inc.
All rights reserved
#

/usr/binos/conf/xcopy_script.sh -- gen_context(system_u:object_r:polaris_xcopy_script_exec_t,s0)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisxcopy.fc
No license file was found, but licenses were detected in source scan.

```

```

dnl
dnl April 2018, Victor Kamensky
dnl
dnl Copyright (c) 2018-2019 by Cisco Systems, Inc.
dnl All rights reserved
dnl
divert(-1)

include(`polaris_process.m4')
dnl Stub out plaris process
define(`polaris_process',`)

dnl Stub out mqipc
define(`polaris_mqipc_service_server',`)
define(`polaris_mqipc_service_client',`)
define(`polaris_mqipc_service_server_elastic_client',`)

dnl Stub out lipc
define(`polaris_lipc_service_server',`)
define(`polaris_lipc_service_client',`)

include(`polaris_ipc_ripc.m4')
include(`polaris_ipc_base_ripc_te.m4')

dnl Stub out non existent one
define(`polaris_websocket_service_server',`)
define(`polaris_cipc_service_server',`)

include(`polaris_max_scope.m4')

divert(0)dnl
#
This is a generated file! Instead of modifying this file,
modify proper platform TDL file.
#

policy_module(autopolarisplatformipcbase, 1.0);

gen_require(`
 attribute port_type;
 attribute defined_port_type;
")

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/polaris_ipc_base_te.m4
No license file was found, but licenses were detected in source scan.

#

```

```

March 2017, Victor Kamensky
#
Copyright (c) 2016-2020 by Cisco Systems, Inc.
All rights reserved
#

policy_module(polarisdroputil, 1.0);

polaris_process_domain_template(droputil)

corecmd_exec_bin(polaris_droputil_t)

allow to read /proc/meminfo
kernel_read_system_state(polaris_droputil_t)

allow read of /etc/passwd
auth_use_nsswitch(polaris_droputil_t)

run ldd, which in turns execve "ld.so --verify"
libs_exec_ld_so(polaris_droputil_t)

work with /tmp files
type polaris_droputil_tmp_t;
files_tmp_file(polaris_droputil_tmp_t)
manage_dirs_pattern(polaris_droputil_t, tmp_t, polaris_droputil_tmp_t)
manage_files_pattern(polaris_droputil_t, polaris_droputil_tmp_t, polaris_droputil_tmp_t)
manage_fifo_files_pattern(polaris_droputil_t, polaris_droputil_tmp_t, polaris_droputil_tmp_t)
manage_lnk_files_pattern(polaris_droputil_t, polaris_droputil_tmp_t, polaris_droputil_tmp_t)
files_tmp_filetrans(polaris_droputil_t, polaris_droputil_tmp_t, { file dir })

on some platform /tmp/rp/dropbox is created by binos service
that runs under initrc_t
gen_require(
 type initrc_t;
)
files_tmp_filetrans(initrc_t, polaris_droputil_tmp_t, dir, "dropbox")

allow polaris_droputil_t self:capability { sys_resource dac_override };
allow polaris_droputil_t self:process setpgid;

polaris_btrace_data_manage(polaris_droputil_t)
polaris_cpuid_read(polaris_droputil_t)
polaris_chasfs_manage(polaris_droputil_t)
polaris_boot_tmp_read(polaris_droputil_t)
polaris_read_debug_conf(polaris_droputil_t)
polaris_disk_crashinfo_getattr(polaris_droputil_t)
polaris_rmonbifo_tmp_read(polaris_droputil_t)

```



```

runs systemctl start reflector.service
systemd_exec_systemctl(polaris_droputil_t)

PLEASE LOOK AT ME need to have separate label for reflector.service
allow only to start if, do it once copy of reflector.service is fixed
systemd_config_generic_services(polaris_droputil_t)

droputil.sh deletes /tmp/rp/droputil/so-del-stage/rp/0
fs_getattr_tmpfs(polaris_droputil_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisdroputil.te
No license file was found, but licenses were detected in source scan.

#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#

policy_module(polarisofa, 1.0);

gen_require(
 type polaris_ofa_t;
)

polaris_btrace_data_manage(polaris_ofa_t)
polaris_crft_data_manage(polaris_ofa_t)
polaris_chasfs_manage(polaris_ofa_t)
polaris_tdlresolve_read(polaris_ofa_t)
polaris_tdlldb_list_dirs(polaris_ofa_t)
polaris_cpld_read(polaris_ofa_t)
polaris_flashlib_read(polaris_ofa_t)

allow polaris_ofa_t self:capability sys_admin;

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisofa.te
No license file was found, but licenses were detected in source scan.

#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2021 by Cisco Systems, Inc.
All rights reserved
#

```

```

/bootflash labels
/bootflash(/.*)? gen_context(system_u:object_r:polaris_disk_bootflash_t,s0)
/bootflash/.ssh(/.*)? gen_context(system_u:object_r:ssh_home_t,s0)
/bootflash/.ssh/ssh_host.*_key\.\pub gen_context(system_u:object_r:sshd_key_t,s0)
/bootflash/.ssh/ssh_host.*_key gen_context(system_u:object_r:sshd_key_t,s0)
/bootflash/tracelogs(/.*)? gen_context(system_u:object_r:polaris_btrace_data_t,s0)
/bootflash/tan(/.*)? gen_context(system_u:object_r:polaris_btrace_data_t,s0)
/bootflash/core(/.*)? gen_context(system_u:object_r:polaris_core_file_t,s0)
/bootflash/debug.conf gen_context(system_u:object_r:polaris_debug_conf_t,s0)
/bootflash/packages.conf gen_context(system_u:object_r:polaris_packages_conf_t,s0)

/objstore
/objstore(/.*)? gen_context(system_u:object_r:polaris_disk_objstore_t,s0)
/dev/shm/sem\objstore_sem gen_context(system_u:object_r:polaris_objstore_sem_t,s0)

hanet driver used by vpcgw platform of VXE family
#ifdef(`vpcgw_platform',`
/dev/hanet -c gen_context(system_u:object_r:polaris_hanet_device_t,s0)
')

/csl_p_0
/csl_p_0(/.*)? gen_context(system_u:object_r:polaris_disk_csl_p_t,s0)

/csl_p_1.context
/csl_p_1(/.*)? gen_context(system_u:object_r:polaris_disk_csl_p_t,s0)

/csl_s_0.context
/csl_s_0(/.*)? gen_context(system_u:object_r:polaris_disk_csl_s_t,s0)

/csl_s_1.context
/csl_s_1(/.*)? gen_context(system_u:object_r:polaris_disk_csl_s_t,s0)

/varied
/varied(/.*)? gen_context(system_u:object_r:polaris_disk_varied_t,s0)
/varied/.install_info gen_context(system_u:object_r:polaris_vxeinstall_info_t,s0)
/varied/obfl.* gen_context(system_u:object_r:polaris_obfl_data_t,s0)
/varied/grub_cisco_version gen_context(system_u:object_r:polaris_grubver_t,s0)
/varied/grub(/.*)? gen_context(system_u:object_r:boot_t,s0)
/varied/grub2(/.*)? gen_context(system_u:object_r:polaris_grub_bios_t,s0)
/varied/vcpu_template.txt gen_context(system_u:object_r:polaris_iosd_vcpu_t,s0)

/sbin/grub* gen_context(system_u:object_r:bootloader_exec_t,s0)

/grubenv
/bootefi(/.*)? gen_context(system_u:object_r:polaris_grub_efi_t,s0)

from /lib/tmpfiles.d/binos-vxe.conf
/lic0 -l gen_context(system_u:object_r:polaris_disk_csl_p_t,s0)

```

```

/lic1 -l gen_context(system_u:object_r:polaris_disk_csl_s_t,s0)

umbrella_ini.sh executable label
/usr/bin/os/conf/umbrella_init.sh -- gen_context(system_u:object_r:polaris_umbrella_init_exec_t,s0)

#
On ultra_us /cpld_util.sh creates /tmp/chassis. Put this script into the initexec_t domain so
chasfs transitions properly.
#
/cpld_util.sh gen_context(system_u:object_r:initrc_exec_t,s0)

/config labels
/config(/.*)? gen_context(system_u:object_r:polaris_disk_config_t,s0)
/config/.ssh(/.*)? gen_context(system_u:object_r:ssh_home_t,s0)
/config/.ssh/ssh_host.*_key\pub gen_context(system_u:object_r:sshd_key_t,s0)
/config/.ssh/ssh_host.*_key gen_context(system_u:object_r:sshd_key_t,s0)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisvxe.fc

No license file was found, but licenses were detected in source scan.

```

#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2020 by Cisco Systems, Inc.
All rights reserved
#

```

```
policy_module(polarisboot, 1.0);
```

```

#####
/tmp/sw/boot policy
#####
type polaris_boot_tmp_t;
files_tmp_file(polaris_boot_tmp_t)
gen_require(
 attribute domain;
)
files_tmp_filetrans(domain, polaris_boot_tmp_t, dir, "boot")
/tmp/sw/isos
files_tmp_filetrans(domain, polaris_boot_tmp_t, dir, "isos")

dmesg command is executed in its own domain and result is store
into /tmp/sw/boot/dmesg file
gen_require(
 type dmesg_t;
)
polaris_boot_tmp_write(dmesg_t)

```

```

/tmp/reload_reason copied from /bootflash/.prst_sync/reload_info
files_tmp_filetrans(domain, polaris_boot_tmp_t, file, "reload_reason")

/tmp/bootup_timestamp created by /etc/init.d/binos
gen_require(
 type initrc_t;
 type init_t;
)
files_tmp_filetrans({ initrc_t init_t }, polaris_boot_tmp_t, file, "bootup_timestamp")

type polaris_boot_file_t;
files_type(polaris_boot_file_t)
polaris_pfile_type(polaris_boot_file_t)
gen_require(
 type polaris_disk_bootflash_t;
)
filetrans_pattern(domain, polaris_disk_bootflash_t, polaris_boot_file_t, file, "reload_info")
filetrans_pattern(domain, polaris_disk_bootflash_t, polaris_boot_file_t, file, "stack_reload_info")

```

Found in path(s):

```

* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisboot.te
No license file was found, but licenses were detected in source scan.

```

```

#
February 2020, Victor Kamensky
#
Copyright (c) 2020 by Cisco Systems, Inc.
All rights reserved
#

```

Found in path(s):

```

* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscfgmgr.fc
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscxp.fc
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisdmiportsfetch.fc
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisftm.fc
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisdbgd.fc
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisfpm.fc
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisvdaemon.fc
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polaristtm.fc
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisomp.fc
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisinstallmgr.fc
No license file was found, but licenses were detected in source scan.

```

```

#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2021 by Cisco Systems, Inc.

```

```

All rights reserved
#

<summary>Polaris Common Policy Rules.</summary>

#####
Polaris common
#####

#####
<summary>
Create a domain for long running Polaris processes in
confined mode.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<param name="entry_point">
<summary>
Type of the program to be used as an entry point to this domain.
</summary>
</param>
#
interface(`polaris_process_domain_confined`,`
 gen_require(`
 type unconfined_service_t;
 `)
 init_daemon_domain($1, $2)

 # polaris process now started by pman, which still runs
 # under unconfined label
 type_transition unconfined_service_t $2:process $1;
 allow unconfined_service_t $1:process transition;
 allow $1 unconfined_service_t:process sigchld;

 polaris_pman_entry($1, $2)

 gen_require(`
 attribute polaris_domain;
 attribute polaris_exec_domain;
 attribute polaris_extended_domain;
 `)
 typeattribute $1 polaris_domain, polaris_extended_domain;
 typeattribute $2 polaris_exec_domain;

 # allow all process to check whether kernel ksm is enabled

```

```

 polaris_ksm_run_check($1
)

#####
<summary>
Create a domain for long running Polaris processes. Note
depending on policy build setting it could be confined or
not confined
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<param name="entry_point">
<summary>
Type of the program to be used as an entry point to this domain.
</summary>
</param>
#
interface(`polaris_process_domain`,`

 # the default is to confine all domains
 polaris_process_domain_confined($1, $2)

 #
 # if the domain is in the permissive map, then set it to be confined
 # permissive. if the domain is in the confined map, then there really
 # isnt much else to do but leave it confined. if the domain isnt in
 # the permissive or confined maps then determine if the domain should
 # be unconfined.
 #
 ifelse(permissive_domain($1), $1, `polaris_permissive_domain_setup($1)',
 confined_domain($1), $1, `',
 `polaris_domain_maybe_unconfined($1)')
)

#####
<summary>
Create a domain for utility Polaris processes in
confined mode.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<param name="entry_point">

```

```

<summary>
Type of the program to be used as an entry point to this domain.
</summary>
</param>
#
interface(`polaris_utility_domain_confined`,`
domain_type($1)
domain_entry_file($1, $2)
 role system_r types $1;

 gen_require(`
 attribute polaris_domain;
 attribute polaris_exec_domain;
 attribute polaris_extended_domain;
 `)
typeattribute $1 polaris_domain, polaris_extended_domain;
typeattribute $2 polaris_exec_domain;

 # allow all process to check whether kernel ksm is enabled
 polaris_ksm_run_check($1)
)

#####
<summary>
Create a domain for utility Polaris processes. Note
depending on policy build setting it could be confined or
not confined
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<param name="entry_point">
<summary>
Type of the program to be used as an entry point to this domain.
</summary>
</param>
#
interface(`polaris_utility_domain`,`

 # the default is to confine all domains
 polaris_utility_domain_confined($1, $2)

 #
 # if the domain is in the permissive map, then set it to be confined
 # permissive. if the domain is in the confined map, then there really
 # isnt much else to do but leave it confined. if the domain isnt in

```

```

the permissive or confined maps then determine if the domain should
be unconfined.
#
ifelse(permissive_domain($1), $1, `polaris_permissive_domain_setup($1)',
 confined_domain($1), $1, `',
 `polaris_domain_maybe_unconfined($1)')
)

```

```
#####
```

```

<summary>
Creates types and rules for a basic
polaris process domain.
</summary>
<param name="stem">
<summary>
Stem for the domain. Name is constructed as polaris_stem_t
</summary>
</param>
#

```

```

template(`polaris_process_domain_template',`
 type polaris_${1}_t;
 type polaris_${1}_exec_t;

 polaris_process_domain(polaris_${1}_t, polaris_${1}_exec_t)
 ifdef(polaris_permissive,`
 permissive polaris_${1}_t;
 `)
)

```

```

 polaris_btrace_data_client_template($1)
 polaris_maroon_data_client_template($1)
 polaris_crft_data_client_template($1)
 polaris_process_proc_kpageflags_template($1)
 polaris_process_uswap_access(polaris_${1}_t, $1, "$1")
)

```

```
#####
```

```

<summary>
Creates types and rules for a basic
polaris process domain.
</summary>
<param name="stem">
<summary>
Stem for the domain. Name is constructed as polaris_stem_t
</summary>
</param>
#

```

```

template(`polaris_utility_domain_template',`
 type polaris_${1}_t;

```



```

type polaris_$1_exec_t;

polaris_utility_domain(polaris_$1_t, polaris_$1_exec_t)
ifdef(polaris_permissive,`
 permissive polaris_$1_t;
`)

polaris_btrace_data_client_template($1)
polaris_maroon_data_client_template($1)
polaris_crft_data_client_template($1)
polaris_process_proc_kpageflags_template($1)
)

```

```

#####
<summary>
Allow the specified domain to execute polaris domain
process in the caller domain.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_exec',`
 gen_require(`
 attribute polaris_exec_domain;
 `)

 can_exec($1, polaris_exec_domain)
)

```

```

#####
<summary>
Allow the specified domain to read polaris domain
executable file. I.e to get information from executables
like binary trace info, trace key etc
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_read_exec_domain',`
 gen_require(`
 attribute polaris_exec_domain;
 `)

```

```

 type bin_t;
 ')

 read_files_pattern($1, bin_t, polaris_exec_domain)
')

#####
<summary>
Allow the specified domain to receive signals from any
polaris process.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_receive_signal_from_domain',`
 gen_require(`
 attribute polaris_domain;
 ')

 allow polaris_domain $1:process signal_perms;
')

#####
<summary>
Systemd-tmpfiles utility creates an object
in the tmp directories, with a private type using a type
transition.
Note rules to create files and directories which are
performed by systemd-tmpfiles reside in /lib/tmpfiles.d/
directory. And polaris specific rules are in bins.conf file.
Note systemd-tmpfiles utility would use label from file_contexts
to restore proper label. I.e the same effect could be achived by
placing proper .fc expression.
</summary>
<param name="private type">
<summary>
The type of the object to be created.
</summary>
</param>
<param name="object">
<summary>
The object class of the object being created.
</summary>
</param>
<param name="name">

```

```

<summary>
The name of the object being created.
</summary>
</param>
#
interface(`polaris_systemd_tmpfiles_tmp_filetrans`,`
 gen_require(`
 type systemd_tmpfiles_t;
 `)
 files_tmp_filetrans(systemd_tmpfiles_t, $1, $2, $3)
`)

#####
<summary>
socketat through get_netns_fd function call access
/proc/pid/ns/net file
##
Implementation notes:
##
wants to read /proc/pid/ns/net but gets denial because our 3.10 kernel
does not support nsfs yet, so /proc/pid/ns/net is marked as proc_t instead
of be nsfs_t. For now allow read access to proc_t through
kernel_system_state_reader attribute. Try to drop it in latter kernels
type=AVC msg=audit(1479574148.450:70): avc: denied { open } for pid=27619 comm="smd"
path="net:[4026531957]" dev="proc" ino=4026531957 scontext=system_u:system_r:polaris_smd_t:s0
tcontext=system_u:object_r:proc_t:s0 tclass=file
in 4.4 /proc/pid/ns/net inode is under nsfs_t, polaris_smd_t needs to
open, getattr, and read from it
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_socketat_nsfs_read`,`
 kernel_read_system_state($1)
 fs_read_nsfs_files($1)
 gen_require(`
 type ifconfig_var_run_t;
 `)
 list_dirs_pattern($1, ifconfig_var_run_t, ifconfig_var_run_t)
`)

#####
<summary>
All namespace related operation to switch name space
is covered under this macro.

```

```

</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_namespace_set_netns_with_etc`,`
 files_mounon_isid($1)
 files_mounon_rootfs($1)
 dev_mount_sysfs_fs($1)
 dev_unmount_sysfs_fs($1)
 sysnet_read_config($1)
 sysnet_write_config($1)
 sysnet_manage_config_dirs($1)
 files_rw_etc_files($1)
 allow $1 net_conf_t:file mounon;
 allow $1 etc_t:file mounon;
 allow $1 self:capability sys_chroot;
)

#####
<summary>
process can execute libeiutil build_config_directory function
##
Implementation notes:
build_config_directory function from mgmt/libeiutil/src/eiutil.c
calls glibc nftw function, which effectively walks whole file tree
and execute given call back. While function is executed it needs
access to all files and directories attributes also it wants to
search all directories. But we will not grant search access to
security_file_type, instead we will dontaudit those. Anyway no
relevant config file should be under security_file_type directory.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_libeiutil_build_config_directory`,`
 files_getattr_all_files($1)
 files_getattr_all_dirs($1)
 files_read_all_symlinks($1)

 files_list_non_security($1)
 files_dontaudit_list_security_dirs($1)
)

```

```

#####
<summary>
Allow the specified domain to read write from i2c device.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_i2c_use`,`
 gen_require(`
 type device_t;
 type polaris_i2c_device_t;
 `)

 rw_chr_files_pattern($1, device_t, polaris_i2c_device_t)
)

#####
<summary>
Work (read, write, ioctl) with /dev/remap_mem0
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_remap_mem_dev_use`,`
 gen_require(`
 type device_t;
 type polaris_remap_mem_device_t;
 `)
 write_chr_files_pattern($1, device_t, polaris_remap_mem_device_t)
 read_chr_files_pattern($1, device_t, polaris_remap_mem_device_t)
 allow $1 polaris_remap_mem_device_t:chr_file map;
)

#####
<summary>
Allow the specified domain to read firmware files
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>

```

```

</param>
#
interface(`polaris_firmware_read',`
 gen_require(`
 type polaris_firmware_t;
 `)

 read_files_pattern($1, polaris_firmware_t, polaris_firmware_t)
 # /firmware/* are link files, allow to follow symbolic link
 allow $1 polaris_firmware_t:lnk_file read;
 allow $1 polaris_firmware_t:dir read;
)

#####
<summary>
Allow the specified domain to manage firmware files
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_firmware_manage',`
 gen_require(`
 type polaris_firmware_t;
 `)

 manage_files_pattern($1, polaris_firmware_t, polaris_firmware_t)
 manage_lnk_files_pattern($1, polaris_firmware_t, polaris_firmware_t)
 manage_dirs_pattern($1, polaris_firmware_t, polaris_firmware_t)
)

#####
<summary>
Allow the specified domain to getattr of firmware files
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_firmware_getattr',`
 gen_require(`
 type polaris_firmware_t;
 `)

```

```

 getattr_files_pattern($1, polaris_firmware_t, polaris_firmware_t)
)

#####
<summary>
Allow the specified domain to map of firmware files
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_firmware_map`,`
 gen_require(`
 type polaris_firmware_t;
 `)

 read_files_pattern($1, polaris_firmware_t, polaris_firmware_t)
 allow $1 polaris_firmware_t:file map;
)

#####
<summary>
Allow the specified domain to write relocations into text segment, deals
with icc broken relocations.
##
LOOK AT ME:
Basically it deals with denials like this:
type=AVC msg=audit(1475815369.598:3): avc: denied { execmod } for pid=4929 comm="cman_fp"
path="/tmp/sw/mount/csr1000v-mono-universalk9.2016-10-
06_20.15_kamensky.SSA.pkg/usr/cpp/lib64/libcpp_client_ha_oor.so" dev="loop0" ino=7683
scontext=system_u:system_r:unconfined_service_t:s0 tcontext=system_u:object_r:lib_t:s0 tclass=file
It happens because icc generates code with relocations in text segment and
run-time linker is dealing with it by doing mprotect(WRITE), relocatings,
mprotect(NO WRITE). Remove once icc compiled is fixed
##
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_icc_broken_relocations`,`
 gen_require(`
 type lib_t;
 `)
)

```

```

 allow $1 lib_t:file execmod;
)

#####
<summary>
Allow the specified domain to work with /dev/mem
##
LOOK AT ME!!! LOOK AT ME!!! Missing driver: application works
with /dev/mem directly
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_dev_mem_use',`
 dev_read_raw_memory($1)
 dev_write_raw_memory($1)
 allow $1 self:capability sys_rawio;
 gen_require(`
 type memory_device_t;
 `)
 allow $1 memory_device_t:chr_file map;
)

#####
<summary>
Append to /tmp/etc file. First usage to update xinetd.conf
files.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_etc_append',`
 gen_require(`
 type polaris_etc_t;
 `)
 append_files_pattern($1, polaris_etc_t, polaris_etc_t)
)

#####
<summary>
Search /tmp/etc directory

```



```

</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_etc_search`,`
 gen_require(`
 type polaris_etc_t;
 `)
 search_dirs_pattern($1, polaris_etc_t, polaris_etc_t)
`)

#####
<summary>
List the contents of /etc directories.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_etc_list`,`
 gen_require(`
 type polaris_etc_t;
 `)

 allow $1 polaris_etc_t:dir list_dir_perms;
`)

#####
<summary>
Allow domain to attach to TUN devices created by ifconfig_t subject.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`ifconfig_attach_tun_iface`,`
 gen_require(`
 type ifconfig_t;
 `)

 allow $1 ifconfig_t:tun_socket relabelfrom;

```

```

allow $1 self:tun_socket relabelto;
')

#####
<summary>
Perms used by pidof
binos/infra/systemd/scripts/errmsg.sh, might needs /dev/ttyS0
access.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolebase/>
#
interface(`pidof_use',`
 # FIXME or fix labeling
 # /sys/devices/system/cpu/online should be labeled cpu_online_t
 # but for some reason this did not happen, grant perms for both
 dev_read_sysfs($1)
 dev_read_cpu_online($1)
 # /proc scan
 domain_read_all_domains_state($1)
 kernel_list_proc($1)
')

#####
<summary>
Script can execute errmsg function from
binos/infra/systemd/scripts/errmsg.sh, might needs /dev/ttyS0
access.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolebase/>
#
interface(`polaris_script_errmsg_use',`
 # send to syslog (journal), iosd outputs to console if up
 logging_send_syslog_msg($1)
 # check if iosd is up and find its pid and if ttyS0 is opened
 pidof_use($1)
 # if FDs dont have ttyS0 it sends to console itself
 term_use_unallocated_ttys($1)
')

```

```
#####
<summary>
Allow the specified domain to read ebf (explicit
bindind) files
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_ebf_map',`
 gen_require(`
 type polaris_ebf_t;
 `)

 read_files_pattern($1, polaris_ebf_t, polaris_ebf_t)
 allow $1 polaris_ebf_t:file map;
)

```

```
#####
<summary>
Allow the specified domain to execute show_version command
for given executable label
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<param name="subject_exec">
<summary>
Domain of executable that version can be checked
</summary>
</param>
#
interface(`polaris_show_version',`
 read_files_pattern($1, $2, $2)
 allow $1 $2:file map;
)

```

```
#####
<summary>
Configure the polaris domain as permissive
</summary>
<param name="domain">

```

```

<summary>
Domain allowed access.
</summary>
</param>
<rolebase/>
#
interface(`polaris_permissive_domain_setup`,`
 gen_require(`
 type $1;
 `)

 permissive $1;

)

#####
<summary>
Creates types and rules for process access to uswap feature.
Ability to create file/folder under /bootflash/.USWAP/"FRU", and
map file.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<param name="stem">
<summary>
Stem for the object label. Name is constructed as
polaris_"stem"_uswap_files_t. It should be the short
form of the process name.
E.g., for IOSd polaris_iosd_uswap_files_t.
</summary>
</param>
<param name="name">
<summary>
The name of the object being created.
Name of the folder created by the process for
creating the uswap files.
</summary>
</param>
#
template(`polaris_process_uswap_access`,`
 gen_require(`
 type polaris_uswap_files_t;
 `)
 type polaris_$2_uswap_files_t;
)

```

```

files_type(polaris_$2_uswap_files_t)
polaris_pfile_type(polaris_$2_uswap_files_t)

filetrans_pattern($1, polaris_uswap_files_t, polaris_$2_uswap_files_t, { file dir})
manage_dirs_pattern($1, polaris_$2_uswap_files_t, polaris_$2_uswap_files_t)
manage_files_pattern($1, polaris_$2_uswap_files_t, polaris_$2_uswap_files_t)
manage_lnk_files_pattern($1, polaris_$2_uswap_files_t, polaris_$2_uswap_files_t)
allow $1 polaris_$2_uswap_files_t:file map;

allow access to pvp to clean-up the process related uswap file/folder
gen_require(
 type polaris_pvp_t;
)
allow polaris_pvp_t polaris_$2_uswap_files_t:dir { read remove_name rmdir write };
allow polaris_pvp_t polaris_$2_uswap_files_t:file unlink;
)

#####
<summary>
Allow process access to to access page related files such as "/proc/kpageflags"
</summary>
<param name="stem">
<summary>
Stem for the domain. Name is constructed as polaris_stem_t
</summary>
</param>
#
template(`polaris_process_proc_kpageflags_template`,`
 gen_require(
 type proc_t;
)
 allow polaris_$1_t proc_t:file { open read };
)

#####
<summary>
transition context of fman(rp/fp) created iptbl tmp files related to acl mgmt.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_fman_acl_iptbl_tmp_file`,`
 gen_require(
 type polaris_iptbl_tmp_t;

```

```
)
files_tmp_filetrans($1, polaris_iptbl_tmp_t, file, "iptbl.v4")
files_tmp_filetrans($1, polaris_iptbl_tmp_t, file, "iptbl.v6")
manage_files_pattern($1, polaris_iptbl_tmp_t, polaris_iptbl_tmp_t)
)
```

```
#####
```

```
<summary>
Manage files/folders in /tmp/rsync_log_dir.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
```

```
interface(`polaris_manage_rsync_tmplog_dir`,
 gen_require(`
 type polaris_rsync_tmp_t;
 `)
 manage_files_pattern($1, polaris_rsync_tmp_t, polaris_rsync_tmp_t)
 manage_dirs_pattern($1, polaris_rsync_tmp_t, polaris_rsync_tmp_t)
)
```

```
#####
```

```
<summary>
Manage cerr shared memory /dev/shm/cerrno_dll.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
```

```
interface(`polaris_cerr_shm_manage`,
 gen_require(`
 type tmpfs_t;
 type polaris_cerr_shm_t;
 `)
 fs_getattr_tmpfs($1)
 manage_files_pattern($1, tmpfs_t, polaris_cerr_shm_t)
 allow $1 polaris_cerr_shm_t:file map;
 fs_tmpfs_filetrans($1, polaris_cerr_shm_t, file, "cerrno_dll")
)
```

```
#####
```

```
<summary>
```

```

Manage shared memory for vrf - /dev/shm/vrf_shm.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_vrf_shm_manage',`
 gen_require(`
 type tmpfs_t;
 type polaris_vrf_shm_t;
 `)
 fs_getattr_tmpfs($1)
 manage_files_pattern($1, tmpfs_t, polaris_vrf_shm_t)
 allow $1 polaris_vrf_shm_t:file map;
 filetrans_pattern($1, tmpfs_t, polaris_vrf_shm_t, file, "vrf_shm")
)

```

```
#####
```

```

<summary>
On-demand creation of vrf-based netns using "ip netns".
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_vrf_netns_manage',`
 polaris_vrf_shm_manage($1)

 kernel_rw_net_sysctls($1)
 polaris_lfts_dev_use($1)

 sysnet_exec_ifconfig($1)
 sysnet_manage_ifconfig_run($1)
 gen_require(`
 type ifconfig_var_run_t;
 `)
 allow $1 ifconfig_var_run_t:file { create mounon open read };
 allow $1 ifconfig_var_run_t:dir mounon;

 gen_require(`
 type polaris_ip_linux_port_var_t;
 `)
 read_files_pattern($1, var_t, polaris_ip_linux_port_var_t)
 getattr_files_pattern($1, var_t, polaris_ip_linux_port_var_t)
)

```

```

)

#####
<summary>
Allow read/write of network state directory files
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
##
#
interface(`polaris_kernel_rw_network_state_files`,`
gen_require(`
type proc_net_t;
`)

rw_files_pattern($1, proc_net_t, proc_net_t)
`)
#
#####
<summary>
Allow the specified domain to send signals to
Binos shell
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_send_signal_to_shell`,`
gen_require(`
type polaris_shell_t;
`)

allow $1 polaris_shell_t:process signal_perms;
`)

#####
<summary>
Execute curl in the curl domain.
</summary>
<param name="domain">
<summary>
Domain allowed to transition.
</summary>

```



```

</param>
#
interface(`polaris_curl_domtrans`,`
gen_require(`
type polaris_curl_t, polaris_curl_exec_t;
`)

corecmd_search_bin($1)
domtrans_pattern($1, polaris_curl_exec_t, polaris_curl_t)
`)

#####
<summary>
Manage files and directories in /tmp directory with rsync_tmp_t
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`rsync_tmp_manage`,`
gen_require(`
type rsync_tmp_t;
`)
manage_dirs_pattern($1, rsync_tmp_t, rsync_tmp_t)
manage_files_pattern($1, rsync_tmp_t, rsync_tmp_t)
manage_lnk_files_pattern($1, rsync_tmp_t, rsync_tmp_t)
manage_fifo_files_pattern($1, rsync_tmp_t, rsync_tmp_t)
`)

#####
<summary>
Allow the specified domain to read /tmp/ldwm_envelope file
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
interface(`polaris_ldwm_envelope_read`,`
gen_require(`
type polaris_ldwm_envelope_tmp_t;
`)

read_files_pattern($1, polaris_ldwm_envelope_tmp_t, polaris_ldwm_envelope_tmp_t)
`)

```

```
#####
<summary>
This is copied from polarisngwc.if since other platforms may also
read/write /sys/devices files. In addition to ngwc, tsn requires it.
Write into /sys/devices/virtual/misc/ggpiio/gpio_out_assert sysfs files.
or /sys/devices/platform/cpn-110-master/cpn-110-master sysfs
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
interface(`polaris_ggpiio_dev_read_write`,`
 gen_require(`
 type polaris_sysfs_ggpiio_t;
 `)
 read_files_pattern($1, polaris_sysfs_ggpiio_t, polaris_sysfs_ggpiio_t)
 write_files_pattern($1, polaris_sysfs_ggpiio_t, polaris_sysfs_ggpiio_t)
`)
```

```
#####
<summary>
Manage files under /bootflash/certs , cert files for AP
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_wlc_ap_cert_manage`,`
 gen_require(`
 type polaris_ap_cert_file_t;
 `)

 manage_files_pattern($1, polaris_ap_cert_file_t, polaris_ap_cert_file_t)
 manage_dirs_pattern($1, polaris_ap_cert_file_t, polaris_ap_cert_file_t)
`)
```

```
#####
<summary>
Manage SERDES key directoy and files
SERDES library stores info in /tmp/serdes_asic_key_dir/*
</summary>
<param name="domain">
<summary>
Domain allowed access.
```

```

</summary>
</param>
#
interface(`polaris_serdes_asic_key_tmp_manage`,`
 gen_require(`
 type polaris_serdes_asic_key_tmp_t;
 `)

 files_tmp_filetrans($1, polaris_serdes_asic_key_tmp_t, {dir file}, "serdes_asic_key_dir")

 manage_dirs_pattern($1, {tmp_t polaris_serdes_asic_key_tmp_t}, polaris_serdes_asic_key_tmp_t)
 manage_files_pattern($1, polaris_serdes_asic_key_tmp_t, polaris_serdes_asic_key_tmp_t)
)

```

```
#####
```

```

<summary>
Manage polaris_tech_support_tmp_t in /tmp.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
interface(`polaris_tech_support_tmp_read`,`
 gen_require(`
 type polaris_tech_support_tmp_t;
 `)

 read_files_pattern($1, polaris_tech_support_tmp_t, polaris_tech_support_tmp_t)
)

```

```
#####
```

```

<summary>
Getattr of any file under /proc/*/fd/*. Typically
run by lsof.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
interface(`polaris_proc_fd_all_getattr`,`

 domain_read_all_domains_state($1)
 files_getattr_all_files($1)
 files_getattr_all_dirs($1)
 files_getattr_all_sockets($1)
 files_getattr_all_pipes($1)
)

```

```

files_getattr_all_chr_files($1)
files_getattr_all_symlinks($1)
files_read_all_dirs_except($1)
dev_getattr_all_chr_files($1)
dev_getattr_all_blk_files($1)
dev_getattr_mtrr_dev($1)

misc socket and fifo files got created under label of its process domain
and since domain lables are not in file_type attribute, need special
permission
gen_require(`
 attribute domain;
`)
allow $1 domain:{socket socket_class_set fifo_file} getattr;
access sysctl_rpc_t
kernel_read_rpc_sysctls($1)
`)

```

```

#####
<summary>
Manage files and directories sysfs, This should only be used
if the interface needs sysfs_t create access. Otherwise please use
dev_rw_sysfs
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolebase/>
#
interface(`polaris_sysfs_manage`,`
 gen_require(`
 type sysfs_t;
 `)
 manage_files_pattern($1, sysfs_t, sysfs_t)
`)

```

```

#####
<summary>
Check access to the init/systemd executable.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#

```

```

interface(`polaris_init_access_check',`
 gen_require(`
 type init_exec_t;
 `)
 init_access_check($1)
 allow $1 init_exec_t:file {open read};
 allow $1 init_exec_t:lnk_file read_lnk_file_perms;
)

#####
<summary>
Manage polaris_manage_rommon_info in /tmp.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
interface(`polaris_manage_rommon_info',`
 gen_require(`
 type polaris_rommon_info_tmp_t;
 `)
 manage_files_pattern($1, polaris_rommon_info_tmp_t, polaris_rommon_info_tmp_t)
)

#####
<summary>
Allow the specified domain to manage tamlib debug file /bootflash/tamlib_dbg_log
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_tamlib_dbg_file_manage',`
 gen_require(`
 type polaris_tamlib_dbg_file_t;
 `)
 filetrans_pattern($1, polaris_disk_bootflash_t, polaris_tamlib_dbg_file_t, file, "tamlib_dbg_log")
 manage_files_pattern($1, polaris_tamlib_dbg_file_t, polaris_tamlib_dbg_file_t)
)

#####
<summary>
Allow access to /dev/DDR
</summary>
<param name="domain">

```

```

<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_dds_dev_use`,`
 gen_require(`
 type device_t;
 type polaris_dds_device_t;
 `)
 write_chr_files_pattern($1, device_t, polaris_dds_device_t)
 read_chr_files_pattern($1, device_t, polaris_dds_device_t)
`)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscommon.if  
No license file was found, but licenses were detected in source scan.

```

#
July 2017, Victor Kamensky
#
Copyright (c) 2017-2020 by Cisco Systems, Inc.
All rights reserved
#
<summary>Polaris tams_rp Policy Rules.</summary>

```

```

#####
<summary>
Allow polaris_tams_rp_t unix stream socket connect
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_tams_rp_socket_connect`,`
 gen_require(`
 type polaris_tams_rp_t;
 `)
 allow $1 polaris_tams_rp_t:unix_stream_socket connectto;
`)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polaristamsrp.if  
No license file was found, but licenses were detected in source scan.

```
#
August 2017, Shawn Lu
#
Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved
#

polariswncd file contexts place holder

/mnt/images(/.*)? gen_context(system_u:object_r:polaris_wlc_ap_images_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariswncd.fc
No license file was found, but licenses were detected in source scan.
```

```
#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#
```

```
/harddisk /harddisk -> /misc/scratch
/harddisk gen_context(system_u:object_r:polaris_disk_harddisk_t,s0)
/misc/scratch gen_context(system_u:object_r:polaris_disk_bootflash_t,s0)

/usb0 gen_context(system_u:object_r:removable_t,s0)
/usb1 gen_context(system_u:object_r:removable_t,s0)
/misc/usb0 gen_context(system_u:object_r:removable_t,s0)
/misc/usb1 gen_context(system_u:object_r:removable_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisstorage.fc
No license file was found, but licenses were detected in source scan.
```

```
#
July 2017, Victor Kamensky
#
Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved
#
```

```
/tmp/tam_cfg_done(/.*)? gen_context(system_u:object_r:polaris_tam_tmp_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisesgtamcfg.fc
No license file was found, but licenses were detected in source scan.
```

```
#
February 2020, Victor Kamensky
#
Copyright (c) 2020 by Cisco Systems, Inc.
All rights reserved
#

<summary>Polaris omp Policy Rules.</summary>
```

```
Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisomp.if
No license file was found, but licenses were detected in source scan.
```

```
#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2020 by Cisco Systems, Inc.
All rights reserved
#
```

```
<summary>Polaris TDLDB Policy Rules.</summary>
```

```
#####
Polaris tdldb (infra/tdllib)
#####
```

```
#####
<summary>
Make specified domain as one of tdldb types.
</summary>
<param name="domain">
<summary>
The domain serving as polaris_tdldb type
</summary>
</param>
#
interface(`polaris_tdldb_type`,`
 gen_require(`
 attribute polaris_tdldb;
 `)
 typeattribute $1 polaris_tdldb;
files_type($1)
`)
```

```
#####
<summary>
List directories in /tmp/[rp|fp|cc]/tdldb directories.
</summary>
```



```

<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_tdlldb_list_dirs`,`
gen_require(`
type polaris_tdlldb_t;
`)
list_dirs_pattern($1, polaris_tdlldb_t, polaris_tdlldb_t)
`)

#####
<summary>
Use tdlldb database files in /tmp/[rp|fp|cc]/tdlldb
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<param name="database_label">
<summary>
Database file label.
</summary>
</param>
<param name="object">
<summary>
Database file name. Also used to derive lock file name.
</summary>
</param>
#
interface(`polaris_tdlldb_use`,`
gen_require(`
type polaris_tdlldb_t;
type tmp_t;
`)
manage_dirs_pattern($1, polaris_tdlldb_t, polaris_tdlldb_t)
manage_files_pattern($1, polaris_tdlldb_t, $2)
allow $1 $2:file map;
allow $1 polaris_tdlldb_t:file lock;
type_transition $1 polaris_tdlldb_t : file $2 "$3";
type_transition $1 polaris_tdlldb_t : file $2 "$3.lock";

manage /var/tmp/tdlldb_ene_fifo.0xYYYYYY files - it seems there is
no way to assign separate label to them
manage_fifo_files_pattern($1, tmp_t, tmp_t)

```

```

tdlldb_database_handle_open_internal through libuuid calls
uuid_generate_time_generic, which needs access to udp socket
once it reaches get_node_id function
allow $1 self:udp_socket { create ioctl };
)

#####
<summary>
Setup tdlldb database persistent files in
/tmp/[rp|fp|cc]/tdlldb/persist-config
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<param name="database_label">
<summary>
Database file label.
</summary>
</param>
<param name="object">
<summary>
Database file name. Also used to derive lock file name.
</summary>
</param>
#
interface(`polaris_tmp_tdlldb_persist_setup`,`
gen_require(`
type polaris_tdlldb_t;
type polaris_tdlldb_persist_t;
)
filetrans_pattern($1, polaris_tdlldb_t, polaris_tdlldb_persist_t, dir, "persistent-config")
allow creation of /tmp/rp/tdlldb/persistent-config
manage_dirs_pattern($1, polaris_tdlldb_t, polaris_tdlldb_persist_t)
Manage files inside of its own polaris_tdlldb_persist_t directories
manage_files_pattern($1, polaris_tdlldb_persist_t, polaris_tdlldb_persist_t)
)

#####
<summary>
Manage tdlldb directories
</summary>
<param name="domain">
<summary>
The domain serving as polaris_tdlldb type
</summary>

```

```
</param>
#
interface(`polaris_tdldb_manage_dirs`,`
 gen_require(`
 type polaris_tdldb_t;
 `)
 manage_dirs_pattern($1, polaris_tdldb_t, polaris_tdldb_t)
`)
```

```
#####
```

```
<summary>
Use polaris_dir_db_tdldb_t database.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<infoflow type="none"/>
#
```

```
interface(`polaris_db_tdldb_dir_use`,`
 gen_require(`
 type polaris_dir_db_tdldb_t;
 `)

 polaris_tdldb_use($1, polaris_dir_db_tdldb_t, DB_DIR)
`)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polaristdldb.if
No license file was found, but licenses were detected in source scan.
```

```
#
August 2017, Shawn Lu
#
Copyright (c) 2017-2020 by Cisco Systems, Inc.
All rights reserved
#
```

```
policy_module(polariswncd, 1.0);
```

```
gen_require(`
 type polaris_wncd_t;
`)
```

```
polaris_btrace_data_manage(polaris_wncd_t)
polaris_crft_data_manage(polaris_wncd_t)
polaris_chasfs_manage(polaris_wncd_t)
```

```

polaris_tdlresolve_read(polaris_wncd_t)
polaris_tdlldb_list_dirs(polaris_wncd_t)
polaris_cpld_read(polaris_wncd_t)
polaris_lua_read(polaris_wncd_t)
polaris_flashlib_read(polaris_wncd_t)

polaris_ripc_sman_ui_serv_connect(polaris_wncd_t)

polaris_db_tdlldb_dir_use(polaris_wncd_t)

#wncd need setrlimit to change limit of resource
allow polaris_wncd_t self:process setrlimit;
allow polaris_wncd_t self:capability sys_resource;

#allow tcp connection from http port
allow polaris_wncd_t self:capability net_bind_service;
corenet_tcp_bind_http_port(polaris_wncd_t)

#allow udp for dhcpd
corenet_udp_bind_dhcpd_port(polaris_wncd_t)
corenet_udp_bind_generic_node(polaris_wncd_t)
allow polaris_wncd_t self:udp_socket { create_socket_perms recv_msg send_msg };

#allow AF_PACKET
allow polaris_wncd_t self:capability net_raw;
allow polaris_wncd_t self:packet_socket { create_socket_perms recv_msg send_msg };

required in function ewlc_capwap_dgram_srvr_state_update()
allow polaris_wncd_t self:rawip_socket { create_socket_perms setopt ioctl };

corenet_raw_bind_generic_node(polaris_wncd_t)

gen_require(
 type port_t;
)
allow polaris_wncd_t port_t:rawip_socket name_bind;

#allow to read /etc/passwd
auth_use_nsswitch(polaris_wncd_t)

#stuff related to vrf support of the socket
polaris_lfts_dev_use(polaris_wncd_t)
polaris_socketat_nsfs_read(polaris_wncd_t)

#each instance of wncd has a devshell support
corenet_tcp_bind_polaris_wncd_devshell_port(polaris_wncd_t)

extra instances of wncd do set up cyan database for given elastic number

```

```

polaris_dyncfg_setup(polaris_wncd_t)

allow polaris_wncd_t self:capability dac_override;

wncd does ionotify for /bootflash/apple_device_map.xml file in
wsa_notif_register_filepath function
polaris_bootflash_read(polaris_wncd_t)
polaris_persistent_watch(polaris_wncd_t)

manage pem certificates on /bootflash
polaris_persistent_manage(polaris_wncd_t)

for /dev/shm/cerrno_dll
polaris_cerr_shm_manage(polaris_wncd_t)

#####
For ewlc, wncd and wncmgrd needs access to files under /mnt/images/...these
are related to AccessPoint images
#####

type polaris_wlc_ap_images_t;
files_type(polaris_wlc_ap_images_t)

wncd calls ewlc_get_ap_sw_version() to open/read
/tmp/sw/rp/0/0/rp_wlc/mount/mnt/images/ap.pri/version.info
call-chain: main -> ewlc_app_context_init -> wncd_evlib_app_init_cb ->
ewlc_capwapac_lib_init -> capwapac_init_default_config -> ewlc_get_ap_sw_version
polaris_wlc_ap_images_read(polaris_wncd_t)

polaris_odm_clnt2svr_mqipc_create(polaris_wncd_t)

wncd works with AF_NETLINK NLMSG_APP_SIP ewlc_sip_netlink_sock_init
allow polaris_wncd_t self:netlink_socket create_socket_perms;

logging_send_syslog_msg(polaris_wncd_t)

binds to mdns port from mdns_ipv4_socket_init function
corenet_udp_bind_mdns_port(polaris_wncd_t)

bind CAPWAP control and data
corenet_udp_bind_polaris_capwap_ctr_port(polaris_wncd_t)
corenet_udp_bind_polaris_capwap_data_port(polaris_wncd_t)

#allow read/write/mmap access to awips file
gen_require(
type polaris_awips_signature_file_t;
)
allow polaris_wncd_t polaris_awips_signature_file_t:file { map read open getattr unlink};

```

```

allow read / write / unlink access to /bootflash/certs
polaris_wlc_ap_cert_manage(polaris_wncd_t)

wncd ewlc-lisp interaction module, connect to lisp map-server on port 4342
corenet_tcp_connect_lisp_cons_control_port(polaris_wncd_t)

binds to mdns bcp port from mdns bcp function
corenet_udp_bind_mdns_bcp_port(polaris_wncd_t)

#DB persistence
polaris_tdlbpbersist_setup(polaris_wncd_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariswncd.te
No license file was found, but licenses were detected in source scan.

```

```

#
July 2018, Victor Kamensky
#
Copyright (c) 2018-2019 by Cisco Systems, Inc.
All rights reserved
#

```

```

<summary>Polaris ngwc_fed_debug Policy Rules.</summary>

```

```

#####
<summary>
Connect to and send messages to /tmp/idope_svr and
/tmp/shfwd_svr unix datagram sockets.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#

```

```

interface(`polaris_fed_debug_sock_write`,
 gen_require(`
 type polaris_fed_debug_sock_t;
 type polaris_ngwc_fed_debug_mgr_t;
 type tmp_t;
 `)

 allow $1 self:unix_stream_socket {create_socket_perms};
 allow $1 polaris_ngwc_fed_debug_mgr_t:unix_stream_socket {connectto};
 write_sock_files_pattern($1, tmp_t, polaris_fed_debug_sock_t)
)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisngwcfeddebug.if

No license file was found, but licenses were detected in source scan.

#

# March 2017, Victor Kamensky

#

# Copyright (c) 2016-2020 by Cisco Systems, Inc.

# All rights reserved

#

policy\_module(polarispsd, 1.0);

```
gen_require(
 type polaris_psd_t;
)
```

polaris\_btrace\_data\_manage(polaris\_psd\_t)

polaris\_crft\_data\_manage(polaris\_psd\_t)

polaris\_chasfs\_manage(polaris\_psd\_t)

polaris\_tdlresolve\_read(polaris\_psd\_t)

polaris\_tdlldb\_list\_dirs(polaris\_psd\_t)

polaris\_cpld\_read(polaris\_psd\_t)

polaris\_flashlib\_read(polaris\_psd\_t)

polaris\_ripc\_sman\_ui\_serv\_connect(polaris\_psd\_t)

polaris\_db\_tdlldb\_dir\_use(polaris\_psd\_t)

# allow read of /etc/passwd

auth\_use\_nsswitch(polaris\_psd\_t)

# allow to read /proc/meminfo

kernel\_read\_system\_state(polaris\_psd\_t)

# psd wants to run /usr/binos/bin/cfgwr command

corecmd\_exec\_bin(polaris\_psd\_t)

corecmd\_exec\_shell(polaris\_psd\_t)

# provide objstore access

polaris\_disk\_objstore\_read(polaris\_psd\_t)

# work with /tmp files (/tmp/sh-thd-\*)

type polaris\_psd\_tmp\_t;

files\_tmp\_file(polaris\_psd\_tmp\_t)

files\_tmp\_filetrans(polaris\_psd\_t, polaris\_psd\_tmp\_t, file)

manage\_files\_pattern(polaris\_psd\_t, polaris\_psd\_tmp\_t, polaris\_psd\_tmp\_t)

```

polaris_obfl_data_read(polaris_psd_t)

allow polaris_psd_t self:capability { fsetid };

allow polaris_psd_t self:capability { dac_override chown };
allow polaris_psd_t self:netlink_route_socket rw_netlink_socket_perms;

logging_send_syslog_msg(polaris_psd_t)

#psd need detect which terminal to use as console, need read permission to ttyS*
psd need read/write grub configure file /boot/grub/menu.*: read /boot/grub/menu.bak
, generate /boot/grub/menu.list
read access to bootflash for bin file loading
ifdef(`vxe_family',`
term_use_unallocated_ttys(polaris_psd_t)
polaris_legacy_grub_manage(polaris_psd_t)
polaris_bootflash_read(polaris_psd_t)
polaris_disk_varied_read(polaris_psd_t)
')
ifdef(`wlc_family',`
term_use_unallocated_ttys(polaris_psd_t)
bootloader_rw_config(polaris_psd_t)
polaris_disk_varied_read(polaris_psd_t)
')
ifdef(`vwlc_platform',`
polaris_legacy_grub_manage(polaris_psd_t)
polaris_bootflash_read(polaris_psd_t)
')

polaris_disk_csl_manage(polaris_psd_t)

fs_read_nsfs_files(polaris_psd_t)

polaris_dyncfg_tmp_read(polaris_psd_t)

polaris_read_packages_conf(polaris_psd_t)

handling /tmp/restconf
type polaris_restconf_t;
files_tmp_file(polaris_restconf_t)

files_tmp_filetrans(polaris_psd_t, polaris_restconf_t, dir, "restconf")
polaris_restconf_manage(polaris_psd_t)

handling /tmp.ncsshd_authorized_keys
type polaris_ncsshd_keys_t;
files_tmp_file(polaris_ncsshd_keys_t);

```



```

files_tmp_filetrans(polaris_psd_t, polaris_ncsshd_keys_t, dir, ".ncsshd_authorized_keys")
polaris_ncsshd_keys_manage(polaris_psd_t)

polaris_tmp_tdlldb_persist_setup(polaris_psd_t)

polaris_tdlldbpersist_setup(polaris_psd_t)

write mem updates the grub config files
optional_policy('
polaris_grubcfg_manage(polaris_psd_t)
')

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarispsd.te

No license file was found, but licenses were detected in source scan.

```

#
February 2020, Victor Kamensky
#
Copyright (c) 2020 by Cisco Systems, Inc.
All rights reserved
#

```

## <summary>Polaris fpm Policy Rules.</summary>

#####

## <summary>

## Write fpm /var/run socket file

## </summary>

## <param name="domain">

## <summary>

## Domain allowed access.

## </summary>

## </param>

#

```
interface(`polaris_fpm_var_sock_write`,`
```

```
 gen_require(`
```

```
 type polaris_fpm_t;
```

```
 type polaris_fpm_var_run_t;
```

```
 type var_run_t;
```

```
 `)
```

```
 write_sock_files_pattern($1, var_run_t, polaris_fpm_var_run_t)
```

```
 allow $1 polaris_fpm_t:unix_stream_socket { connectto };
```

```
`)
```

#####

## <summary>

```

Manage mqipc fpm2fmrp shared memory file in /dev/shm directory
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_fpm2fmrp_mqipc_use`,`
gen_require(`
type polaris_fpm2fmrp_mqipc_t;
`)
polaris_mqipc_use($1, polaris_fpm2fmrp_mqipc_t)
`)

```

Found in path(s):

```

* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisfpm.if
No license file was found, but licenses were detected in source scan.

```

```

#
Oct 2020, Xin Xiang
#
Copyright (c) 2020 by Cisco Systems, Inc.
All rights reserved
#

```

```

<summary>Polaris Doppler Policy Rules.</summary>

```

```

#####
<summary>
Work (read, write, ioctl) with /dev/dmabap
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_dmabap_dev_use`,`
gen_require(`
type device_t;
type polaris_dmabap_device_t;
`)
write_chr_files_pattern($1, device_t, polaris_dmabap_device_t)
read_chr_files_pattern($1, device_t, polaris_dmabap_device_t)
allow $1 polaris_dmabap_device_t:chr_file map;
`)

```

```
#####
<summary>
Work (read, write, ioctl) with /dev/dmabap
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_dplr_dev_use`,`
 gen_require(`
 type device_t;
 type polaris_dplr_device_t;
 `)
 write_chr_files_pattern($1, device_t, polaris_dplr_device_t)
 read_chr_files_pattern($1, device_t, polaris_dplr_device_t)
 allow $1 polaris_dplr_device_t:chr_file map;
)`)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisdoppler.if

No license file was found, but licenses were detected in source scan.

```
#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2020 by Cisco Systems, Inc.
All rights reserved
#
```

```
/usr/binos/conf/pvp.sh -- gen_context(system_u:object_r:polaris_pvp_exec_t,s0)
/tmp/sw/rp/max_elastic_bays -- gen_context(system_u:object_r:polaris_pvp_tmp_t,s0)
/tmp/iosd_memory_share -- gen_context(system_u:object_r:polaris_pvp_tmp_t,s0)

/tmp/cc/0(/.*)? gen_context(system_u:object_r:polaris_pvp_tmp_t,s0)
/tmp/cc/.*pvp(/.*)? gen_context(system_u:object_r:polaris_pvp_tmp_t,s0)
/tmp/fp/pvp(/.*)? gen_context(system_u:object_r:polaris_pvp_tmp_t,s0)
/tmp/rp/pvp/oir/sw_lic_service(/.*)? gen_context(system_u:object_r:polaris_chasfs_t,s0)
/tmp/rp/pvp/oir/sw_cs1_service(/.*)? gen_context(system_u:object_r:polaris_chasfs_t,s0)
/tmp/rp/pvp/oir/rp_(.*)/(.*)? gen_context(system_u:object_r:polaris_chasfs_t,s0)
/tmp/rp/pvp(/.*)? gen_context(system_u:object_r:polaris_pvp_tmp_t,s0)

/tmp/rp/pvp/sai_process(/.*)? gen_context(system_u:object_r:polaris_pvp_sai_t,s0)
/tmp/fp/pvp/sai_process(/.*)? gen_context(system_u:object_r:polaris_pvp_sai_t,s0)
/tmp/cc/.*pvp/sai_process(/.*)? gen_context(system_u:object_r:polaris_pvp_sai_t,s0)

/tmp/rp/pvp/process_state(/.*)? gen_context(system_u:object_r:polaris_process_state_t,s0)

```

```
/tmp/fp/pvp/process_state(/.*)? gen_context(system_u:object_r:polaris_process_state_t,s0)
/tmp/cc/pvp/process_state(/.*)? gen_context(system_u:object_r:polaris_process_state_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarispvp.fc
```

No license file was found, but licenses were detected in source scan.

```
#
```

```
August 2017, Shawn Lu
```

```
#
```

```
Copyright (c) 2017-2021 by Cisco Systems, Inc.
```

```
All rights reserved
```

```
#
```

```
policy_module(polariswlc, 1.0);
```

```
hanet driver used by vwlc, is there better place for it?
```

```
type polaris_hanet_device_t;
```

```
dev_node(polaris_hanet_device_t)
```

```
gen_require(^
```

```
 type polaris_wlc_ap_images_t;
```

```
 type mnt_t;
```

```
 attribute polaris_extended_domain;
```

```
')
```

```
transition when /mnt/images is created
```

```
filetrans_pattern(polaris_extended_domain, mnt_t, polaris_wlc_ap_images_t, dir, "images")
```

```
epaN and epactrlN devices
```

```
type polaris_epa_device_t;
```

```
dev_node(polaris_epa_device_t)
```

```
luna_fpgs device
```

```
type polaris_luna_mbfpga_device_t;
```

```
dev_node(polaris_luna_mbfpga_device_t)
```

```
astro device
```

```
type polaris_astro_device_t;
```

```
dev_node(polaris_astro_device_t)
```

```
cpp_il device
```

```
type polaris_cpp_il_device_t;
```

```
dev_node(polaris_cpp_il_device_t)
```

```
oob_evfc device
```

```
type polaris_oob_evfc_device_t;
```

```
dev_node(polaris_oob_evfc_device_t)
```

```

on vwlc all processes read grub_cisco_version in polaris_disk_varied_t
gen_require(
 attribute polaris_domain;
)
polaris_disk_varied_search(polaris_domain)

/dev/sfp-ktr device
type polaris_sfp_katar_device_t;
dev_node(polaris_sfp_katar_device_t)

handle /tmp/vxe_disk_XXX_YYY files
ifdef(`vwlc_platform',`
gen_require(
 type unconfined_service_t;
)
polaris_boot_tmp_filetrans(unconfined_service_t, file, "vxe_disk_mbr_v1")
polaris_boot_tmp_filetrans(unconfined_service_t, file, "vxe_disk_mbr_v2")
polaris_boot_tmp_filetrans(unconfined_service_t, file, "vxe_disk_mbr_v3")
polaris_boot_tmp_filetrans(unconfined_service_t, file, "vxe_disk_mbr_v4")
polaris_boot_tmp_filetrans(unconfined_service_t, file, "vxe_disk_gpt_v1")
polaris_boot_tmp_filetrans(unconfined_service_t, file, "vxe_disk_gpt_v2")
polaris_boot_tmp_filetrans(unconfined_service_t, file, "vxe_disk_gpt_v3")
polaris_boot_tmp_manage(unconfined_service_t)
)
type polaris_grubver_t;
polaris_pfile_type(polaris_grubver_t)

type polaris_grub_bios_t;
polaris_pfile_type(polaris_grub_bios_t)

#on vWLC, all processes read grubenv from EFI disk partition.
gen_require(
 attribute polaris_domain;
)
polaris_vwlc_grub_efi_search(polaris_domain)

type polaris_vwlcinstall_info_t;
polaris_pfile_type(polaris_vwlcinstall_info_t)

gen_require(
 type unconfined_service_t;
 type polaris_disk_varied_t;
)
unconfined service create /boot/.install_info if does not exist yet
filetrans_pattern(unconfined_service_t, polaris_disk_varied_t, polaris_vwlcinstall_info_t, file, ".install_info")

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariswlc.te

No license file was found, but licenses were detected in source scan.

#

# March 2017, Victor Kamensky

#

# Copyright (c) 2016-2019 by Cisco Systems, Inc.

# All rights reserved

#

/tmp/sw/boot/rmonbifo(/.\*)? gen\_context(system\_u:object\_r:polaris\_rmonbifo\_tmp\_t,s0)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisrmonbifo.fc

No license file was found, but licenses were detected in source scan.

#

# March 2017, Victor Kamensky

#

# Copyright (c) 2017-2019 by Cisco Systems, Inc.

# All rights reserved

#

# polarisbtlogger file contexts place holder

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisbtlogger.fc

No license file was found, but licenses were detected in source scan.

#

# March 2017, Victor Kamensky

#

# Copyright (c) 2017-2020 by Cisco Systems, Inc.

# All rights reserved

#

policy\_module(polarisnifmgr, 1.0);

```
gen_require(
 type polaris_nif_mgr_t;
)
```

polaris\_ripc\_sman\_ui\_serv\_connect(polaris\_nif\_mgr\_t)

polaris\_btrace\_data\_manage(polaris\_nif\_mgr\_t)

polaris\_crft\_data\_manage(polaris\_nif\_mgr\_t)

polaris\_chasfs\_manage(polaris\_nif\_mgr\_t)

```

polaris_tdlresolve_read(polaris_nif_mgr_t)
polaris_tdlldb_list_dirs(polaris_nif_mgr_t)
polaris_cpld_read(polaris_nif_mgr_t)
polaris_lua_read(polaris_nif_mgr_t)
polaris_flashlib_read(polaris_nif_mgr_t)

#If romvar is not set, Set Rommon env variable needs write permission
polaris_flashlib_write(polaris_nif_mgr_t)

logging_send_syslog_msg(polaris_nif_mgr_t)

set out of band interface mac set_oobndif_mac
allow polaris_nif_mgr_t self:tcp_socket ioctl;

communication between the nif manager and fed use directories under /tmp/sv
polaris_sv_tmp_use(polaris_nif_mgr_t)

/dev/shm/sdm access
optional_policy(`
polaris_sdm_shm_manage(polaris_nif_mgr_t)
`)

open /dev/ttyS0 console in sco_sys_init_sw_params
term_use_unallocated_ttys(polaris_nif_mgr_t)

allow create and write access to the /proc/*_sesa file

gen_require(`
type polaris_proc_sesa_t;
`)
polaris_proc_sesa_create_write(polaris_nif_mgr_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisnifmgr.te
No license file was found, but licenses were detected in source scan.

#
April 2017, Victor Kamensky
#
Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved
#

policy_module(polarisdmiopdatamgrd, 1.0);

gen_require(`
 type polaris_dmi_opdatamgrd_t;
`)

```

```

allow to get attr of /proc file system
domain_read_all_domains_state(polaris_dmi_opdatamgrd_t)

work with /var/log/dmi/ files
type polaris_dmi_var_log_t;
logging_log_file(polaris_dmi_var_log_t)
manage_files_pattern(polaris_dmi_opdatamgrd_t, polaris_dmi_var_log_t, polaris_dmi_var_log_t)
manage_dirs_pattern(polaris_dmi_opdatamgrd_t, polaris_dmi_var_log_t, polaris_dmi_var_log_t)
logging_log_filetrans(polaris_dmi_opdatamgrd_t, polaris_dmi_var_log_t, dir, "dmi")

polaris_chasfs_manage(polaris_dmi_opdatamgrd_t)
polaris_btrace_data_manage(polaris_dmi_opdatamgrd_t)
polaris_cpld_read(polaris_dmi_opdatamgrd_t)
polaris_boot_tmp_read(polaris_dmi_opdatamgrd_t)

run ldd, which in turns execve "ld.so --verify"
libs_exec_ld_so(polaris_dmi_opdatamgrd_t)

this (opdatamgrd.sh) process is shell script need permission to execute shell
and variety of small util commands under bin_t
corecmd_exec_shell(polaris_dmi_opdatamgrd_t)
corecmd_exec_bin(polaris_dmi_opdatamgrd_t)

allow read of /etc/passwd
passwd_file_t:file { getattr open read };
auth_use_nsswitch(polaris_dmi_opdatamgrd_t)

opdatamgrd.sh calls ps command
ps needs access to /sys/devices/system/cpu/online
dev_read_sysfs(polaris_dmi_opdatamgrd_t)
ps needs access to proc_t
kernel_read_system_state(polaris_dmi_opdatamgrd_t)

allow polaris_dmi_opdatamgrd_t self:capability { sys_resource dac_override };

handling of /tmp/stream-parsers
type polaris_dmi_parser_t;
files_tmp_file(polaris_dmi_parser_t)
files_tmp_filetrans(polaris_dmi_opdatamgrd_t, polaris_dmi_parser_t, dir, "stream-parsers")
manage_dirs_pattern(polaris_dmi_opdatamgrd_t, tmp_t, polaris_dmi_parser_t)
manage_files_pattern(polaris_dmi_opdatamgrd_t, polaris_dmi_parser_t, polaris_dmi_parser_t)

mount_domtrans(polaris_dmi_opdatamgrd_t)

confd_cli runs under our label
allow polaris_dmi_opdatamgrd_t self:tcp_socket create_socket_perms;

```



```

runs ps that wants to have access to containers files
optional_policy(`
polaris_disk_vman_dir_list(polaris_dmi_opdatamgrd_t)
`)
polaris_sandbox_file_dir_list(polaris_dmi_opdatamgrd_t)
polaris_sandbox_file_getattr(polaris_dmi_opdatamgrd_t)

runs find to search all 'parse.*' files
find . -perm /111 -name parse.* -exec basename {} ;
LOOK AT ME it seems that it does search on customer visible
directories, can and whether customer supposed to be
able give parse.* files to dmi opdatamgrd, could it
be exploited?
files_getattr_all_files(polaris_dmi_opdatamgrd_t)
files_getattr_all_dirs(polaris_dmi_opdatamgrd_t)

access to /dev/pts/0
ssh_use_ptys(polaris_dmi_opdatamgrd_t)

directly work with to /dev/ttyS1
term_use_unallocated_ttys(polaris_dmi_opdatamgrd_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisdmiopdatamgrd.te
No license file was found, but licenses were detected in source scan.

#
March 2017, Victor Kamensky
#
Copyright (c) 2017-2020 by Cisco Systems, Inc.
All rights reserved
#

<summary>Polaris ngwc_fed Policy Rules.</summary>

#####
<summary>
Connect to and send messages to /tmp/dbgmn_log_sv unit
datagram socket.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_fed_sock_write`,`

```

```

gen_require(
 type polaris_fed_sock_t;
 type polaris_ngwc_fed_t;
 type tmp_t;
)

allow $1 self:unix_stream_socket {create_socket_perms};
allow $1 polaris_ngwc_fed_t:unix_stream_socket {connectto};
write_sock_files_pattern($1, tmp_t, polaris_fed_sock_t)
)

#####
<summary>
Allow the specified domain able to read fed /tmp files.
</summary>
<param name="type">
<summary>
Domain allowed access.
</summary>
</param>
<param name="object">
<summary>
File name in /tmp that the fed domain creates and other domains
access.
</summary>
</param>
#
interface(`polaris_fed_tmp_files_read`,`
 gen_require(
 type polaris_fed_tmp_t;
)

 read_files_pattern($1, polaris_fed_tmp_t, polaris_fed_tmp_t)
)

#####
<summary>
Allow to read and write /tmp/epc_ws/fed_to_wif_pipe file.
</summary>
<param name="domain">
<summary>
epc_ws_liaison and ngwc-fed pipe interaction.
</summary>
</param>
#
interface(`polaris_fed_shm_file_read`,`
 gen_require(
 type polaris_ngwc_fed_t;

```

```
)

allow $1 polaris_ngwc_fed_t:shm { associate read unix_read unix_write write };
)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisngwcfed.if
```

No license file was found, but licenses were detected in source scan.

```

August 2017, Shawn Lu

Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved
#
```

```
polarismobilityd file contexts place holder
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarismobilityd.fc
```

No license file was found, but licenses were detected in source scan.

```

April 2017, Victor Kamensky

Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved
#
```

```
policy_module(polarisdmi_vtys_serverutild, 1.0);
```

```
gen_require(
 type polaris_dmi_vtys_serverutild_t;
)
```

```
polaris_btrace_data_manage(polaris_dmi_vtys_serverutild_t)
polaris_chasfs_manage(polaris_dmi_vtys_serverutild_t)
polaris_tdlresolve_read(polaris_dmi_vtys_serverutild_t)
polaris_tdlldb_list_dirs(polaris_dmi_vtys_serverutild_t)
polaris_cpld_read(polaris_dmi_vtys_serverutild_t)
polaris_flashlib_read(polaris_dmi_vtys_serverutild_t)
```

```
allow polaris_dmi_vtys_serverutild_t self:socket { connect create read write };
```

```
type polaris_dmi_vtys_serverutild_tmp_t;
files_tmp_file(polaris_dmi_vtys_serverutild_tmp_t)
files_tmp_filetrans(polaris_dmi_vtys_serverutild_t, polaris_dmi_vtys_serverutild_tmp_t, fifo_file, ".DMI_FIFO")
manage_fifo_files_pattern(polaris_dmi_vtys_serverutild_t,
```

polaris\_dmi\_vtyserverutild\_tmp\_t,polaris\_dmi\_vtyserverutild\_tmp\_t)

logging\_send\_syslog\_msg(polaris\_dmi\_vtyserverutild\_t)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisdmi\_vtyserverutild.te

No license file was found, but licenses were detected in source scan.

dnl

dnl April 2018, Victor Kamensky

dnl

dnl Copyright (c) 2018-2019 by Cisco Systems, Inc.

dnl All rights reserved

dnl

define(`mqipc\_stem', `translit(patsubst(\$1, `mqipc\$', `'), `-', `\_'))

define(`mqipc\_label', `format(`polaris\_%s\_mqipc\_t', mqipc\_stem(\$1))')

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/m4/polaris\_ipc\_mqipc.m4

No license file was found, but licenses were detected in source scan.

#

# November 2020, Christine Hwang

#

# Copyright (c) 2017-2021 by Cisco Systems, Inc.

# All rights reserved

#

## <summary>Polaris Cabo GNSS Policy Rules.</summary>

#####

## <summary>

## Work (read, write, ioctl) with /dev/ttyS1

## </summary>

## <param name="domain">

## <summary>

## Domain allowed access.

## </summary>

## </param>

#

interface(`polaris\_cabo\_gnss\_dev\_use',`

gen\_require(`

type device\_t;

type polaris\_cabo\_gnss\_device\_t;

`)

write\_chr\_files\_pattern(\$1, device\_t, polaris\_cabo\_gnss\_device\_t)

read\_chr\_files\_pattern(\$1, device\_t, polaris\_cabo\_gnss\_device\_t)

allow \$1 polaris\_cabo\_gnss\_device\_t:chr\_file map;

')

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscabognss.if

No license file was found, but licenses were detected in source scan.

#

# June 2017, Victor Kamensky

#

# Copyright (c) 2017-2019 by Cisco Systems, Inc.

# All rights reserved

#

policy\_module(polaristservice, 1.0);

polaris\_process\_domain\_template(tservice\_telnet)

polaris\_process\_domain\_template(tservice\_ssh)

gen\_require(^

    type inetd\_exec\_t, inetd\_t;

')

domtrans\_pattern(polaris\_tservice\_telnet\_t, inetd\_exec\_t, inetd\_t)

polaris\_chasfs\_manage(polaris\_tservice\_telnet\_t)

polaris\_btrace\_data\_manage(polaris\_tservice\_telnet\_t)

polaris\_cpld\_read(polaris\_tservice\_telnet\_t)

polaris\_boot\_tmp\_read(polaris\_tservice\_telnet\_t)

polaris\_rmonbifo\_tmp\_read(polaris\_tservice\_telnet\_t)

corecmd\_exec\_shell(polaris\_tservice\_telnet\_t)

corecmd\_exec\_bin(polaris\_tservice\_telnet\_t)

# allow read of /etc/passwd

auth\_use\_nsswitch(polaris\_tservice\_telnet\_t)

dmidecode\_domtrans(polaris\_tservice\_telnet\_t)

allow polaris\_tservice\_telnet\_t self:capability sys\_resource;

kernel\_read\_system\_state(polaris\_tservice\_telnet\_t)

gen\_require(^

    type initrc\_exec\_t, initrc\_t;

')

domtrans\_pattern(polaris\_tservice\_telnet\_t, initrc\_exec\_t, initrc\_t)

# run ldd, which in turns execve "ld.so --verify"

libs\_exec\_ld\_so(polaris\_tservice\_telnet\_t)

```
/bin/sh /usr/binos/conf/mcp_chvrf.sh eobc /usr/sbin/xinetd -f
/tmp/chassis/local/rp/chasfs/rp/0/0/etc/telnet/xinetd_telnetd.conf
polaris_chvrf_domtrans(polaris_tservice_telnet_t)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polaristservice.te
No license file was found, but licenses were detected in source scan.
```

```
#
August 2017, Shawn Lu
#
Copyright (c) 2017-2019, 2021 by Cisco Systems, Inc.
All rights reserved
#
```

```
<summary>Polaris WLC Platform Policy Rules.</summary>
```

```
#####
```

```
<summary>
```

```
Work (read, write, ioctl) with /dev/hanet
```

```
</summary>
```

```
<param name="domain">
```

```
<summary>
```

```
Domain allowed access.
```

```
</summary>
```

```
</param>
```

```
#
```

```
interface(`polaris_hanet_dev_use`,`
```

```
gen_require(`
```

```
 type device_t;
```

```
 type polaris_hanet_device_t;
```

```
`)
```

```
 write_chr_files_pattern($1, device_t, polaris_hanet_device_t)
```

```
 read_chr_files_pattern($1, device_t, polaris_hanet_device_t)
```

```
`)
```

```
#####
```

```
<summary>
```

```
Work (read, write, ioctl) with /dev/epa[0-9]* and
```

```
/dev/epactrl[0-9]*
```

```
</summary>
```

```
<param name="domain">
```

```
<summary>
```

```
Domain allowed access.
```

```
</summary>
```

```
</param>
```

```
#
```

```

interface(`polaris_epa_dev_use`,`
gen_require(`
 type device_t;
 type polaris_epa_device_t;
`)
 write_chr_files_pattern($1, device_t, polaris_epa_device_t)
 read_chr_files_pattern($1, device_t, polaris_epa_device_t)
 allow $1 polaris_epa_device_t:chr_file map;
`)

#####
<summary>
Work (read, write, ioctl) with /dev/luna_mbfpga device
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_luna_mbfpga_dev_use`,`
gen_require(`
 type device_t;
 type polaris_luna_mbfpga_device_t;
`)
 write_chr_files_pattern($1, device_t, polaris_luna_mbfpga_device_t)
 read_chr_files_pattern($1, device_t, polaris_luna_mbfpga_device_t)
`)

#####
<summary>
Work (read, write, ioctl) with /dev/astro device
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_astro_dev_use`,`
gen_require(`
 type device_t;
 type polaris_astro_device_t;
`)
 write_chr_files_pattern($1, device_t, polaris_astro_device_t)
 read_chr_files_pattern($1, device_t, polaris_astro_device_t)
`)

```

```
#####
<summary>
Work (read, write, ioctl) with /dev/cpp_il device
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_cpp_il_dev_use`,`
gen_require(`
 type device_t;
 type polaris_cpp_il_device_t;
`)
 write_chr_files_pattern($1, device_t, polaris_cpp_il_device_t)
 read_chr_files_pattern($1, device_t, polaris_cpp_il_device_t)
')
```

```
#####
<summary>
Work (read, write, ioctl) with /dev/oob_evfc device
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_oob_evfc_dev_use`,`
gen_require(`
 type device_t;
 type polaris_oob_evfc_device_t;
`)
 write_chr_files_pattern($1, device_t, polaris_oob_evfc_device_t)
 read_chr_files_pattern($1, device_t, polaris_oob_evfc_device_t)
')
```

```
#####
<summary>
Work (read, write, ioctl) with /dev/sfp-ktr device
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
```



```

interface(`polaris_sfp_katar_dev_use`,`
gen_require(`
 type device_t;
 type polaris_sfp_katar_device_t;
`)
 write_chr_files_pattern($1, device_t, polaris_sfp_katar_device_t)
 read_chr_files_pattern($1, device_t, polaris_sfp_katar_device_t)
`)

#####
<summary>
Read vWLC install info files
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_vwlcinstall_info_read`,`
gen_require(`
type polaris_vwlcinstall_info_t;
`)
read_files_pattern($1, polaris_vwlcinstall_info_t, polaris_vwlcinstall_info_t)
list_dirs_pattern($1, polaris_vwlcinstall_info_t, polaris_vwlcinstall_info_t)
`)

#####
<summary>
Read /dev/vda1 device the efi partition
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_vwlc_grub_info_read`,`
gen_require(`
type polaris_grubver_t;
type polaris_grub_bios_t;
type polaris_grub_efi_t;
`)
read_files_pattern($1, polaris_grubver_t, polaris_grubver_t)
read_files_pattern($1, polaris_grub_bios_t, polaris_grub_bios_t)
read_files_pattern($1, polaris_grub_efi_t, polaris_grub_efi_t)
list_dirs_pattern($1, polaris_grubver_t, polaris_grubver_t)
list_dirs_pattern($1, polaris_grub_bios_t, polaris_grub_bios_t)

```

```

list_dirs_pattern($1, polaris_grub_efi_t, polaris_grub_efi_t)
')

#####
<summary>
Search /dev/vda1 device the efi partition
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_vwlc_grub_efi_search`,`
gen_require(`
type polaris_grub_efi_t;
`)
search_dirs_pattern($1, polaris_grub_efi_t, polaris_grub_efi_t)
')

```

```

#####
<summary>
Work (read, write, ioctl) with /dev/vda1 device
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_vwlc_grub_efi_use`,`
gen_require(`
type polaris_grub_efi_t;
`)
write_chr_files_pattern($1, polaris_grub_efi_t, polaris_grub_efi_t)
read_chr_files_pattern($1, polaris_grub_efi_t, polaris_grub_efi_t)
')

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariswlc.if

No license file was found, but licenses were detected in source scan.

dnl

dnl April 2018, Victor Kamensky

dnl

dnl Copyright (c) 2018-2019 by Cisco Systems, Inc.

dnl All rights reserved

dnl

```

define(`database_stem', `translit(patsubst($1, `_DB$', ``), `A-Z', `a-z'))
define(`database_label', `format(`polaris_%s_db_tdlldb_t', database_stem($1)))

define(`database_use_map', `defn(format(``database_use_map[%s-%s]", `$1', `$2'))')
define(`database_use_map_set', `define(format(``database_use_map[%s-%s]", `$1', `$2'), `$3'))

```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/polaris_database_db.m4
```

No license file was found, but licenses were detected in source scan.

```

#
April 2017, Victor Kamensky
#
Copyright (c) 2017-2020 by Cisco Systems, Inc.
All rights reserved
#

policy_module(polarisdmi_dmi_authd, 1.0);

gen_require(
 type polaris_dmi_dmi_authd_t;
)

polaris_btrace_data_manage(polaris_dmi_dmi_authd_t)
polaris_crft_data_manage(polaris_dmi_dmi_authd_t)
polaris_chasfs_manage(polaris_dmi_dmi_authd_t)
polaris_tdlresolve_read(polaris_dmi_dmi_authd_t)
polaris_tdlldb_list_dirs(polaris_dmi_dmi_authd_t)
polaris_cpld_read(polaris_dmi_dmi_authd_t)
polaris_flashlib_read(polaris_dmi_dmi_authd_t)

polaris_rpc_sman_ui_serv_connect(polaris_dmi_dmi_authd_t)

polaris_db_tdlldb_dir_use(polaris_dmi_dmi_authd_t)

dmi_authd creates and binds to /tmp/.DmiAuth.socket unix socket
type polaris_dmi_dmi_authd_tmp_t;
files_tmp_file(polaris_dmi_dmi_authd_tmp_t)
files_tmp_filetrans(polaris_dmi_dmi_authd_t, polaris_dmi_dmi_authd_tmp_t, { sock_file fifo_file })
manage_sock_files_pattern(polaris_dmi_dmi_authd_t, polaris_dmi_dmi_authd_tmp_t, polaris_dmi_dmi_authd_tmp_t)
manage_fifo_files_pattern(polaris_dmi_dmi_authd_t, polaris_dmi_dmi_authd_tmp_t, polaris_dmi_dmi_authd_tmp_t)

dmi_authd creates diagnostic files in /tmp/netconf-yang-diag
type polaris_dmi_dmi_authd_tmp_diags_t;
files_tmp_file(polaris_dmi_dmi_authd_tmp_diags_t)
files_tmp_filetrans(polaris_dmi_dmi_authd_t, polaris_dmi_dmi_authd_tmp_diags_t, dir, "netconf-yang-diag")
polaris_dmi_authd_tmp_diags_manage(polaris_dmi_dmi_authd_t)

```

```

logging_send_syslog_msg(polaris_dmi_dmiauthd_t)

read confd log file and push into btrace
polaris_confd_log_read(polaris_dmi_dmiauthd_t)

from dmilib iospl_connect through libiospl iospl_token_read_from_file
iospl_token_read_from_file reads /tmp/rp/.iospl_dmiauthd
polaris_dmiauthd_token_read(polaris_dmi_dmiauthd_t)

gen_require(
 type polaris_confd_tmp_t;
)
This is applicable to wireless platforms running in standby monitoring mode
wherein dmiauthd create temporary files in /tmp/confd upon switchover and
trigger ConfD restart.
manage_files_pattern(polaris_dmi_dmiauthd_t, polaris_confd_tmp_t, polaris_confd_tmp_t)
manage_dirs_pattern(polaris_dmi_dmiauthd_t, polaris_confd_tmp_t, polaris_confd_tmp_t)

#####
"show netconf-yang diagnostics [all | last | message]" invokes
/usr/binos/conf/dmid_diag_logs.sh
#####

polaris_utility_domain_template(dmid_diag_logs)

polaris_bexecute_domtrans(polaris_dmi_dmiauthd_t)
polaris_bexecute_domain(polaris_dmid_diag_logs_t, polaris_dmid_diag_logs_exec_t)

signal sent during the show cmd
polaris_send_signal_to_bexecute(polaris_dmi_dmiauthd_t)

read files in /tmp/netconf-yang-diag
polaris_dmiauthd_tmp_diags_read(polaris_dmid_diag_logs_t)

need write/ioctl/getattr access for pipes
polaris_dmiauthd_use_fifo(polaris_dmid_diag_logs_t)

polaris_use_btrace_fifo(polaris_dmid_diag_logs_t)
polaris_btrace_data_manage(polaris_dmid_diag_logs_t)
polaris_chasfs_read(polaris_dmid_diag_logs_t)
polaris_cpld_read(polaris_dmid_diag_logs_t)
dev_read_sysfs(polaris_dmid_diag_logs_t)
auth_use_nsswitch(polaris_dmid_diag_logs_t)
polaris_boot_tmp_read(polaris_dmid_diag_logs_t)
fs_getattr_tmpfs(polaris_dmid_diag_logs_t)

bash tmp files, such as /tmp/sh-thd-1599654988
type polaris_dmid_diag_logs_tmp_t;

```

```
files_tmp_file(polaris_dmid_diag_logs_tmp_t)
files_tmp_filetrans(polaris_dmid_diag_logs_t, polaris_dmid_diag_logs_tmp_t, file)
manage_files_pattern(polaris_dmid_diag_logs_t, polaris_dmid_diag_logs_tmp_t, polaris_dmid_diag_logs_tmp_t)
```

```
execute /bin/sed
corecmd_exec_bin(polaris_dmid_diag_logs_t)
```

```
#####
Allow diagnostics feature to create log file in bootflash
#####
```

```
execute /bin/tar
corecmd_exec_bin(polaris_dmi_dmiauthd_t)
tar reads /etc/passwd
auth_use_nsswitch(polaris_dmi_dmiauthd_t)
create log file in bootflash
polaris_bootflash_manage(polaris_dmi_dmiauthd_t)
```

```
#####
```

```
allow polaris_dmi_dmiauthd_t self:capability sys_resource;
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisdmidmiauthd.te

No license file was found, but licenses were detected in source scan.

```
#
May 2017, Victor Kamensky
#
Copyright (c) 2017-2020 by Cisco Systems, Inc.
All rights reserved
#
```

```
/opt/confd/bin/confd -- gen_context(system_u:object_r:polaris_conf_d_exec_t,s0)
/opt/confd/lib/confd/lib/core/confd/priv/mmap_schema --
gen_context(system_u:object_r:polaris_mmap_schema_exec_t,s0)
/usr/binos/bin/vip-confd-startup.sh -- gen_context(system_u:object_r:polaris_conf_d_exec_t,s0)
/usr/bin/vconfd_script_cdb_backup.sh -- gen_context(system_u:object_r:polaris_conf_d_exec_t,s0)
/usr/binos/conf/execute_conf_d_cli.sh -- gen_context(system_u:object_r:polaris_conf_d_cli_exec_t,s0)
/usr/binos/conf/conf_d_logs.sh -- gen_context(system_u:object_r:polaris_conf_d_exec_t,s0)
/var/confd0(/.*)? gen_context(system_u:object_r:polaris_conf_d_var_t,s0)
/dev/shm/confd(/.*)? gen_context(system_u:object_r:polaris_conf_d_shm_t,s0)
/tmp/confd(/.*)? gen_context(system_u:object_r:polaris_conf_d_tmp_t,s0)
/tmp/confd_cli(/.*)? gen_context(system_u:object_r:polaris_conf_d_cli_tmp_t,s0)
/tmp/vconfd(/.*)? gen_context(system_u:object_r:polaris_vconf_d_tmp_t,s0)
```

```
/usr/bin/vconfd_script_*.admin_tech.*.sh -- gen_context(system_u:object_r:polaris_admin_tech_exec_t,s0)
/var/tech(/.*)? gen_context(system_u:object_r:polaris_admin_tech_var_t,s0)
```

```
/bootflash/admintech gen_context(system_u:object_r:polaris_admin_tech_data_t,s0)
/bootflash/admintech_trace gen_context(system_u:object_r:polaris_admin_tech_data_t,s0)
/bootflash/MEMORY_LOG_*.text gen_context(system_u:object_r:polaris_admin_tech_data_t,s0)
/bootflash/collated_log_* gen_context(system_u:object_r:polaris_admin_tech_data_t,s0)

/bootflash/tracelogs/cia-netconf-trace\.* gen_context(system_u:object_r:polaris_confid_var_log_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisconfd.fc
```

No license file was found, but licenses were detected in source scan.

```
#
September 2017, Victor Kamensky
#
Copyright (c) 2017-2020 by Cisco Systems, Inc.
All rights reserved
#
```

```
policy_module(polarisunconfined, 1.0);
```

```
<desc>
<p>
IOSd runs in unconfined mode
</p>
</desc>
gen_tunable(polaris_unconfined_iosd, true)
```

```
<desc>
<p>
All polaris processes except IOSd runs in unconfined mode
</p>
</desc>
gen_tunable(polaris_unconfined_all, true)
```

```
gen_require(^
 type apmd_t;
 type auditd_t;
 type inetd_t;
 type init_t;
 type initrc_t;
 type journalctl_t;
 type rpcbind_t;
 type rpcd_t;
 type sshd_t;
 type syslogd_t;
 type telnetd_t;
 type udev_t;
```

```
type virtd_t;
type virtlogd_t;
type vmtools_t;
type ifconfig_t;
type setfiles_t;
type iptables_t;
type virsh_t;
type svirt_t;
type svirt_lxc_net_t;
type virtd_lxc_t;
')
```

```
polaris_domain_maybe_unconfined(apmd_t)
polaris_domain_maybe_unconfined(auditd_t)
polaris_domain_maybe_unconfined/inetd_t)
polaris_domain_maybe_unconfined(init_t)
polaris_domain_maybe_unconfined(initrc_t)
polaris_domain_maybe_unconfined(journalctl_t)
polaris_domain_maybe_unconfined(rpcbind_t)
polaris_domain_maybe_unconfined(rpcd_t)
polaris_domain_maybe_unconfined(sshd_t)
polaris_domain_maybe_unconfined(syslogd_t)
polaris_domain_maybe_unconfined(telnetd_t)
polaris_domain_maybe_unconfined(udev_t)
polaris_domain_maybe_unconfined(virt_d_t)
polaris_domain_maybe_unconfined(virtlogd_t)
polaris_domain_maybe_unconfined(vmtools_t)
polaris_domain_maybe_unconfined(ifconfig_t)
polaris_domain_maybe_unconfined(setfiles_t)
polaris_domain_maybe_unconfined(iptables_t)
polaris_domain_maybe_unconfined(virsh_t)
polaris_domain_maybe_unconfined(svirt_t)
polaris_domain_maybe_unconfined(svirt_lxc_net_t)
polaris_domain_maybe_unconfined(virt_d_lxc_t)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisunconfined.te

No license file was found, but licenses were detected in source scan.

```
#
July 2020, Victor Kamensky
#
Copyright (c) 2020 by Cisco Systems, Inc.
All rights reserved
#
```

```
/tmp/HTX-IOX(/.*)? gen_context(system_u:object_r:polaris_htx_iox_tmp_t,s0)
```

```
/dev/sppi_memif htx works with
/dev/sppi_memif -c gen_context(system_u:object_r:polaris_sppi_memif_device_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarishtx.fc
No license file was found, but licenses were detected in source scan.
```

```
#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#
```

```
/usr/binos/conf/periodic.sh -- gen_context(system_u:object_r:polaris_periodic_exec_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisperiodic.fc
No license file was found, but licenses were detected in source scan.
```

```
#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#
```

```
policy_module(polarislua, 1.0);
```

```
#####
Lua policy
#####
type polaris_lua_file_t;
files_type(polaris_lua_file_t)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarislua.te
No license file was found, but licenses were detected in source scan.
```

```
#
November 2020, Christine Hwang
#
Copyright (c) 2017-2021 by Cisco Systems, Inc.
All rights reserved
#
```

```
policy_module(polariscabogss, 1.0);
```



```

gen_require(
 type polaris_cabo_gnss_t;
)

polaris_btrace_data_manage(polaris_cabo_gnss_t)
polaris_chasfs_manage(polaris_cabo_gnss_t)
polaris_tdlresolve_read(polaris_cabo_gnss_t)
polaris_cpld_read(polaris_cabo_gnss_t)

polaris_ripc_sman_ui_serv_connect(polaris_cabo_gnss_t)

Allow sysfs read for platform ID and
r/w on /sys/class/gpio/export
polaris_sysfs_manage(polaris_cabo_gnss_t)
dev_manage_sysfs_dirs(polaris_cabo_gnss_t)

Allow Cabo GNSS to access/modify to GPS GPIO
polaris_ggpio_dev_read_write(polaris_cabo_gnss_t)

Allow Cabo GNSS access to /dev/ppp0
dev_rw_realtime_clock(polaris_cabo_gnss_t)

allow system time capability to check for system timeout
allow polaris_cabo_gnss_t self:capability sys_time;

Label Cabo GNSS TTY device
type polaris_cabo_gnss_device_t;
dev_node(polaris_cabo_gnss_device_t)

polaris_cabo_gnss_dev_use(polaris_cabo_gnss_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscabognss.te
No license file was found, but licenses were detected in source scan.

dnl
dnl April 2018, Victor Kamensky
dnl
dnl Copyright (c) 2018-2019 by Cisco Systems, Inc.
dnl All rights reserved
dnl
dnl WLC Platform Max Bay Limits
max_bay_map_set(rp, `per_bay', 0)
max_bay_map_set(cc, `per_bay', 1)
max_bay_map_set(fp, `per_bay', 0)

max_bay_ripc_map_set(rp, `per_bay', 0)
max_bay_ripc_map_set(cc, `per_bay', 1)

```

```
max_bay_ripc_map_set(`fp', `per_bay', 0)
```

```
max_bay_ripc_map_set(`rp', `global', 0)
```

```
max_bay_ripc_map_set(`cc', `global', 1)
```

```
max_bay_ripc_map_set(`fp', `global', 0)
```

dnl in elastic scope each process has its own value

```
max_elastic_map_set(`rp', `elastic', BPROC_ODM, 1)
```

```
max_elastic_map_set(`cc', `elastic', BPROC_ODM, 1)
```

```
max_elastic_map_set(`fp', `elasitc', BPROC_ODM, 1)
```

```
max_elastic_map_set(`rp', `elastic', BPROC_WNCD, 7)
```

```
max_elastic_map_set(`cc', `elastic', BPROC_WNCD, 7)
```

```
max_elastic_map_set(`fp', `elastic', BPROC_WNCD, 7)
```

```
max_elastic_ripc_map_set(`rp', `elastic', BPROC_ODM, 1)
```

```
max_elastic_ripc_map_set(`cc', `elastic', BPROC_ODM, 1)
```

```
max_elastic_ripc_map_set(`fp', `elasitc', BPROC_ODM, 1)
```

```
max_elastic_ripc_map_set(`rp', `elastic', BPROC_WNCD, 7)
```

```
max_elastic_ripc_map_set(`cc', `elastic', BPROC_WNCD, 7)
```

```
max_elastic_ripc_map_set(`fp', `elastic', BPROC_WNCD, 7)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/wlcmaps.m4
```

No license file was found, but licenses were detected in source scan.

```
#
```

```
August 2017, Shawn Lu
```

```
#
```

```
Copyright (c) 2017-2019 by Cisco Systems, Inc.
```

```
All rights reserved
```

```
#
```

```
<summary>Polaris rogued Policy Rules.</summary>
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisrogued.if
```

No license file was found, but licenses were detected in source scan.

```
#
```

```
August 2017, Victor Kamensky
```

```
#
```

```
Copyright (c) 2017-2019 by Cisco Systems, Inc.
```

```
All rights reserved
```

```
#
```

```
<summary>Polaris flashcheck Policy Rules.</summary>
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisflashcheck.if

No license file was found, but licenses were detected in source scan.

```
#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2021 by Cisco Systems, Inc.
All rights reserved
#

policy_module(polarissmd, 1.0);

gen_require(
 type polaris_smd_t;
)

#####
mqipc manual, one that missing in platform tdl file
#####

polaris_btrace_data_manage(polaris_smd_t)
polaris_crft_data_manage(polaris_smd_t)
polaris_chasfs_manage(polaris_smd_t)
polaris_tdlresolve_read(polaris_smd_t)
polaris_tdlldb_list_dirs(polaris_smd_t)
polaris_cpld_read(polaris_smd_t)
polaris_lua_read(polaris_smd_t)
polaris_flashlib_read(polaris_smd_t)

polaris_ripc_sman_ui_serv_connect(polaris_smd_t)

working with smd persistent/ disk files
type polaris_smd_disk_t;
polaris_disk_type(polaris_smd_disk_t)

manage_files_pattern(polaris_smd_t, polaris_smd_disk_t, polaris_smd_disk_t)

polaris_db_tdlldb_dir_use(polaris_smd_t)

access to persist tdlldb (e.g. .dbpersist)
polaris_tdlldbpersist_setup(polaris_smd_t)

for /dev/shm/cerrno_dell
polaris_cerr_shm_manage(polaris_smd_t)

ifdef(`nyquist_platform',`
```

```

gen_require(
 type polaris_bt_logger_smd_mqipc_t;
)
smd may start first and create this mqipc channel
polaris_mqipc_create_name(polaris_smd_t, polaris_bt_logger_smd_mqipc_t, bt_logger_smd)
)

polaris_lfts_dev_use(polaris_smd_t)

allow polaris_smd_t self:capability { sys_resource net_bind_service };

polaris_socketat_nsfs_read(polaris_smd_t)

allow polaris_smd_t self:process setrlimit;

corenet_tcp_bind_polaris_smd_devshell_port(polaris_smd_t)
corenet_tcp_bind_generic_node(polaris_smd_t)
allow polaris_smd_t self:tcp_socket { getattr setopt getopt bind create listen accept connect read write
name_connect };
allow polaris_smd_t self:capability { net_admin sys_admin };

allow polaris_smd_t self:udp_socket { create_socket_perms recv_msg send_msg };
#smutil_msg_event_cb_handler() uses netlink
allow polaris_smd_t self:netlink_socket { bind create };

LOOK AT ME: now smd may open arbitrary port on forwarding VRF (16)
but in SELinux there is no way to differentiate between port spaces
accross VRFs or namespaces. For now let's grant smd_t access to all ports
regardless of VRF. In future investigate ways to be more restrictive
corenet_udp_bind_generic_port(polaris_smd_t)
corenet_udp_sendrecv_generic_port(polaris_smd_t)
LOOK AT ME: grants access to udp_bind on any node, but if we can
be more specific and bind only to forwarding VRF related interfaces
corenet_udp_bind_generic_node(polaris_smd_t)

smd want to listent on http port 80 on VRF_FWD, for webauth code please see
smd/webauth/src/webauth_io.c
corenet_tcp_bind_http_port(polaris_smd_t)

allow polaris_smd_t self:capability dac_override;

logging_send_syslog_msg(polaris_smd_t)

allow polaris_smd_t self:capability net_raw;
allow polaris_smd_t self:packet_socket { create_socket_perms recv_msg send_msg };

for access to disk html files (for webauth)
polaris_persistent_read(polaris_smd_t)

```

```
transition for dc_profile_dir to polaris_smd_disk_t
gen_require(
 type initrc_t;
)
polaris_bootflash_filetrans(initrc_t, polaris_smd_disk_t, dir, "dc_profile_dir")
```

```
SANET is listening on http port(CSCvb41802)
Hence, it needs to follow the same rule as nginx is using in polarisnginx.te
FIXME: add interface to allow bind to port 1025-65535
corenet_tcp_bind_all_ports(polaris_smd_t)
```

```
polaris_issu_tmp_files_read(polaris_smd_t)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarissmd.te
No license file was found, but licenses were detected in source scan.
```

```
#
February 2020, Victor Kamensky
#
Copyright (c) 2020 by Cisco Systems, Inc.
All rights reserved
#
```

```
/usr/binos/conf/cedge-tanman.sh -- gen_context(system_u:object_r:polaris_cedge_tanman_exec_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscedgetanman.fc
No license file was found, but licenses were detected in source scan.
```

```
#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#
```

```
/usr/binos/conf/droputil.sh -- gen_context(system_u:object_r:polaris_droputil_exec_t,s0)
```

```
/tmp/rp/dropbox(/.*)? gen_context(system_u:object_r:polaris_droputil_tmp_t,s0)
/tmp/rp/droputil(/.*)? gen_context(system_u:object_r:polaris_droputil_tmp_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisdroputil.fc
No license file was found, but licenses were detected in source scan.
```

```
#
```

```
March 2017, Victor Kamensky
#
Copyright (c) 2016-2021 by Cisco Systems, Inc.
All rights reserved
#

policy_module(polarisvman, 1.0);

gen_require(
 type polaris_vman_t;
)

polaris_btrace_data_manage(polaris_vman_t)
polaris_crft_data_manage(polaris_vman_t)
polaris_chasfs_manage(polaris_vman_t)
polaris_tdlresolve_read(polaris_vman_t)
polaris_tdlldb_list_dirs(polaris_vman_t)
polaris_cpld_read(polaris_vman_t)
polaris_flashlib_read(polaris_vman_t)

polaris_ripc_sman_ui_serv_connect(polaris_vman_t)

polaris_db_tdlldb_dir_use(polaris_vman_t)

allow read of /etc/passwd
auth_use_nsswitch(polaris_vman_t)

polaris_rmonbifo_tmp_read(polaris_vman_t)
polaris_boot_tmp_read(polaris_vman_t)

logging_send_syslog_msg(polaris_vman_t)

modutils_read_module_deps(polaris_vman_t)
modutils_read_module_config(polaris_vman_t)
modutils_manage_module_config(polaris_vman_t)
modutils_domtrans_insmod(polaris_vman_t)
files_read_kernel_modules(polaris_vman_t)

corecmd_exec_bin(polaris_vman_t)
corecmd_exec_shell(polaris_vman_t)

ifconfig related, ifconfig is executed in its own context
sysnet_domtrans_ifconfig(polaris_vman_t)

VMAN calls vman_set_congestion_control_multiplex when the count
of the bridge users reaches 2 and needs write permissions on
contdev_multiplex
dev_rw_sysfs(polaris_vman_t)
```

```

fs_getattr_xattr_fs(polaris_vman_t)

virt_stream_connect(polaris_vman_t)
virt_read_pid_files(polaris_vman_t)

fs_rw_cgroup_files(polaris_vman_t)
kernel_read_system_state(polaris_vman_t)
allow vman to read /dev/pts/*
term_use_generic_ptys(polaris_vman_t)
#allow polaris_vman_t polaris_udev_tmp_files_t:file open;
polaris_udev_tmp_read(polaris_vman_t)
#allow vman to run brctl in it's own domain
brctl_domtrans(polaris_vman_t)
#allow vman to run /sbin/fsck in script
fstools_domtrans(polaris_vman_t)
#allow vman to mount rootfs on polaris_disk_vman_t
allow polaris_vman_t polaris_disk_vman_t:dir mounton;
fs_mount_xattr_fs(polaris_vman_t)
#allow vman have capability for modify owner of the file
allow polaris_vman_t self:capability { chown fowner fsetid };
#allow vman to bind to unreserved tcp ports while it searches for
#port available to guest console to listen on
corenet_tcp_bind_unreserved_ports(polaris_vman_t)

working with vman /var/ files
type polaris_var_vman_t;
files_tmp_file(polaris_var_vman_t)
files_var_filetrans(polaris_vman_t, polaris_var_vman_t, dir, "virtual-instance")
manage_files_pattern(polaris_vman_t, polaris_var_vman_t, polaris_var_vman_t)
manage_dirs_pattern(polaris_vman_t, polaris_var_vman_t, polaris_var_vman_t)
manage_sock_files_pattern(polaris_vman_t, polaris_var_vman_t, polaris_var_vman_t)

working with vman persitsten files
type polaris_disk_vman_t;
polaris_disk_type(polaris_disk_vman_t)

gen_require(
 type polaris_disk_bootflash_t;
 type polaris_disk_harddisk_t;
)
filetrans_pattern(polaris_vman_t, { polaris_disk_bootflash_t polaris_disk_harddisk_t }, polaris_disk_vman_t, dir,
"virtual-instance")
filetrans_pattern(polaris_vman_t, { polaris_disk_bootflash_t polaris_disk_harddisk_t }, polaris_disk_vman_t, file,
"virtual-instance.conf")
filetrans_pattern(polaris_vman_t, { polaris_disk_bootflash_t polaris_disk_harddisk_t }, polaris_disk_vman_t, dir,
"vman_fdb")

allow creation of /bootflash/virtual-instance.conf file

```

```

manage_files_pattern(polaris_vman_t, { polaris_disk_bootflash_t polaris_disk_harddisk_t }, polaris_disk_vman_t)
allow creation of /bootflash/virtual-instance and /bootflash/vman_fdb directories
manage_dirs_pattern(polaris_vman_t, { polaris_disk_bootflash_t polaris_disk_harddisk_t }, polaris_disk_vman_t)
vman can manage files inside of its own polaris_disk_vman_t directories
manage_files_pattern(polaris_vman_t, polaris_disk_vman_t, polaris_disk_vman_t)

after all above transition we need to grant vman right to work with any
persistent storage file since it needs to access and write .ova files
polaris_persistent_manage(polaris_vman_t)

vman uses netlink socket to talk to lxc watchdog driver
please see binos/vman/src/vman_lxc_wd.c
allow polaris_vman_t self:netlink_generic_socket { create_socket_perms sendto recvfrom};

vman calls tipc-config which in turns wants to create AF_TIPC socket
allow polaris_vman_t self:socket create_socket_perms;

vman uses 'ip netns exec 0 ifconfig -a' command which in turns switches
network namespace and need access to /proc/pid/ns/net file
fs_read_nsfs_files(polaris_vman_t)

this label is created to exchange log related information between container and host.
type polaris_vman_log_t;
By making this label belong to polaris persistent storage combined with vman inheriting rights
to manage polaris_disk via polaris_persistent_manage(), vman gains rights to manage below dirs.
polaris_disk_type(polaris_vman_log_t)
filetrans_pattern(polaris_vman_t, polaris_vman_tmp_t, polaris_vman_log_t, dir, "UtdIpsAlert-IOX")
filetrans_pattern(polaris_vman_t, polaris_vman_tmp_t, polaris_vman_log_t, dir, "UtdUrf-IOX")
filetrans_pattern(polaris_vman_t, polaris_vman_tmp_t, polaris_vman_log_t, dir, "UtdAmp-IOX")
filetrans_pattern(polaris_vman_t, polaris_vman_tmp_t, polaris_vman_log_t, dir, "UtdTls-IOX")
filetrans_pattern(polaris_vman_t, polaris_vman_tmp_t, polaris_vman_log_t, dir, "UtdLogMappings-IOX")
allow polaris_vman_t polaris_vman_log_t:dir mounton;

Allow vman to work with /bootflash/virtual-instance/UTD/rootfs
optional_policy(
 gen_require(
 type container_file_t;
)
 allow polaris_vman_t container_file_t:filesystem { getattr unmount };
)

Allow vman/ioxman to work with /tmp/HTX-IOX
optional_policy(
 gen_require(
 type polaris_htx_iox_tmp_t;
)
 allow polaris_vman_t polaris_htx_iox_tmp_t:dir { getattr mounton open read };
)

```



```

Allow vman to mount /tmp/binos-IOX
optional_policy(
 gen_require(
 type polaris_qfp_memif_t;
)
 allow polaris_vman_t polaris_qfp_memif_t:dir mounton;
)

vman_init.sh operates on /tmp/vman files
type polaris_vman_tmp_t;
files_tmp_file(polaris_vman_tmp_t)
files_tmp_filetrans(polaris_vman_t, polaris_vman_tmp_t, { file dir })
polaris_systemd_tmpfiles_tmp_filetrans(polaris_vman_tmp_t, dir, "vman")
manage_files_pattern(polaris_vman_t, polaris_vman_tmp_t, polaris_vman_tmp_t)
manage_dirs_pattern(polaris_vman_t, polaris_vman_tmp_t, polaris_vman_tmp_t)

allow vman to work with /tmp/xml
fs_remount_tmpfs(polaris_vman_t)
fs_unmount_tmpfs(polaris_vman_t)
fs_unmount_xattr_fs(polaris_vman_t)
allow polaris_vman_t polaris_vman_tmp_t:dir mounton;
optional_policy(
 polaris_cedge_xml_tmp_manage(polaris_vman_t)
)

relabel /bootflash/virtual-instance/UTD/tmpstaging to /dev/loopX
gen_require(
 type iso9660_t;
)
allow polaris_vman_t iso9660_t:filesystem { relabelfrom };

configure /proc/sys/net/ipv4/conf/dpbr_0/arp_announce
kernel_search_network_sysctl(polaris_vman_t)
kernel_rw_net_sysctls(polaris_vman_t)
#configure e.g. /proc/sys/vm/nr_hugepages
kernel_rw_vm_sysctls(polaris_vman_t)

need to do bind mount of /bootflash/SHARED-IOX
mount_domtrans(polaris_vman_t)

vman accessing files under /tmp created by initrc like /tmp/gdev/md0/gdev-info
init_read_script_tmp_files(polaris_vman_t)

#DB persistence
polaris_tldbpersist_setup(polaris_vman_t)

polaris_tmp_tldbpersist_setup(polaris_vman_t)

```

```

gen_require(
 type initrc_t;
)
files_tmp_filetrans(initrc_t, polaris_vman_tmp_t, file, "cgroup.log")

dmidecode_domtrans(polaris_vman_t)

read /etc/libvirt/libvirt.conf
virt_read_config(polaris_vman_t)

vman_cgroup_yaml.sh through prep_csr_kumo (binos_functions-pd) checks for
ovf-env.xml file existence in variety of directories including
/cdrom0/ovf-env.xml
fs_read_iso9660_files(polaris_vman_t)

allow vman to manage loop device: finding free /dev/loopN device
note vman code iterated over all /dev/loop* devices and try to lock
them. As part of that iteration it tries /dev/loop_control
what it should do instead is to use /dev/loop_control to get free
device
dev_rw_loop_control(polaris_vman_t)

PLEASE LOOK AT ME
allow vman to read, write /dev/loopN devices that are
under fixed_disk_device_t label. It is pretty strong permission
and at this point it is only done for /dev/loopN devices.
Can we do better? i.e move /dev/loopN to some other label?
storage_manage_fixed_disk(polaris_vman_t)

when /bootflash or /harddisk are 100% full
allow polaris_vman_t self:capability sys_resource;

allow VMAN to move disk.img to the disk
allow polaris_vman_t self:process setfscreate;

vman mounts directories on behalf of guest containers, it uses
specified context for guest directories, need permission to
relabel, mount, etc.
fs_relabelfrom_xattr_fs(polaris_vman_t)
virt_relabel_sandbox_filesystem(polaris_vman_t)
virt_mouton_sandbox_file(polaris_vman_t)
virt_manage_sandbox_files(polaris_vman_t)
gen_require(
 type svirt_sandbox_file_t;
)
allow polaris_vman_t svirt_sandbox_file_t:filesystem mount;

```

```

/tmp/.flashlock operations from tdllib_startup_cfg_ignored, mcp_getmonvar
allow polaris_vman_t self:capability dac_override;

allow vman to stat /dev/kvm, executed by vman_common_init function
dev_getattr_kvm_dev(polaris_vman_t)

vman in getfs_info_by_mediatype function inspects files in /tmp/gdev
gen_require(
 type udev_tmp_t;
)
read_files_pattern(polaris_vman_t, udev_tmp_t, udev_tmp_t)

/usr/binos/conf/vman_exec.sh policy

polaris_utility_domain_template(vman_shell)

polaris_bexecute_domain(polaris_vman_shell_t, polaris_vman_shell_exec_t)
vman_exec.sh calls mcp_chvrf.sh
polaris_chvrf_domtrans(polaris_vman_shell_t)
mcp_chvrf.sh calls vman_exec.sh back and then it call bexec.sh
polaris_bexecute_domtrans(polaris_vman_shell_t)
corecmd_exec_bin(polaris_vman_shell_t)

inherits stdin from telnetd
telnet_use_ptys(polaris_vman_shell_t)
#allow use of ptys for vman tech support
telnet_use_ptys(polaris_vman_tech_t)

optional_policy(
reads /opt/cisco/caf/config/system-config.ini
polaris_caf_files_read(polaris_vman_t)
)

vman_is_machine_type_initialized clone needs cap_userns sys_admin
allow polaris_vman_t self:cap_userns sys_admin;

vman_cgroup_yaml.sh searches for ovf-env.xml on cdrom0
fs_read_removable_files(polaris_vman_t)

vman starts vman_init.sh that in turns calls virsh
gen_require(
 type virsh_t;
 type virsh_exec_t;
)
domtrans_pattern(polaris_vman_t, virsh_exec_t, virsh_t)

polaris_bexecute_domtrans(polaris_vman_t)
polaris_send_signal_to_bexecute(polaris_vman_t)

```

```

gen_require(
 type polaris_chvrf_t;
)
inherited as stdin/sdtout from vman
polaris_vman_use_fifo(polaris_chvrf_t)

vman calls code_sign_verify VmanPackage
polaris_code_verify_domtrans(polaris_vman_t)

vm_net_dev_utilization reads /proc/2962/net/dev
kernel_read_network_state(polaris_vman_t)

polaris_iosd_vcpu_read(polaris_vman_t)

/usr/binos/conf/cgroup_reports.sh
polaris_utility_domain_template(cgroup_reports)

polaris_bexecute_domain(polaris_cgroup_reports_t, polaris_cgroup_reports_exec_t)
polaris_bexecute_domtrans(polaris_cgroup_reports_t)
inherited as stdin/sdtout from vman
polaris_vman_use_fifo(polaris_cgroup_reports_t)

corecmd_exec_bin(polaris_cgroup_reports_t)
auth_use_nsswitch(polaris_cgroup_reports_t)

fs_read_cgroup_files(polaris_cgroup_reports_t)
fs_list_cgroup_dirs(polaris_cgroup_reports_t)

cgroup_reports.sh creates misc files under /tmp
type polaris_cgroup_reports_tmp_t;
files_type(polaris_cgroup_reports_tmp_t)
files_tmp_filetrans(polaris_cgroup_reports_t, polaris_cgroup_reports_tmp_t, file)
manage_files_pattern(polaris_cgroup_reports_t, polaris_cgroup_reports_tmp_t, polaris_cgroup_reports_tmp_t)
fs_getattr_tmpfs(polaris_cgroup_reports_t)

/usr/binos/conf/vman_techsupport.sh
polaris_utility_domain_template(vman_tech)

polaris_bexecute_domain(polaris_vman_tech_t, polaris_vman_tech_exec_t)
polaris_bexecute_domtrans(polaris_vman_tech_t)
inherited as stdin/sdtout from vman
polaris_vman_use_fifo(polaris_vman_tech_t)

vman_techsupport.sh starts virsh -c qemu:///system list --all
gen_require(
 type virsh_t;
 type virsh_exec_t;

```

```

')
domtrans_pattern(polaris_vman_tech_t, virsh_exec_t, virsh_t)

starts ip link show
sysnet_domtrans_ifconfig(polaris_vman_tech_t)

starts brctl show
brctl_domtrans(polaris_vman_tech_t)

corecmd_exec_bin(polaris_vman_tech_t)
auth_use_nsswitch(polaris_vman_tech_t)

polaris_proc_rmonbifo_read(polaris_vman_tech_t)
polaris_chasfs_read(polaris_vman_tech_t)
polaris_cpld_read(polaris_vman_tech_t)

starts ps aux
kernel_read_system_state(polaris_vman_tech_t)
domain_read_all_domains_state(polaris_vman_tech_t)
dev_read_sysfs(polaris_vman_tech_t)
getattr of stdin/stdout of misc processes
term_getattr_unallocated_ttys(polaris_vman_tech_t)
term_read_console(polaris_vman_tech_t)

reads /bootflash/virtual-instance/
polaris_disk_vman_read(polaris_vman_tech_t)

find /etc/libvirt/lxc -name *.xml -print
virt_read_config(polaris_vman_tech_t)
no interface that lists virt_etc_rw_t dir
gen_require(^
 type virt_etc_rw_t;
')
list_dirs_pattern(polaris_vman_tech_t, virt_etc_rw_t, virt_etc_rw_t)

find /var/run/libvirt -name *.xml -maxdepth 2 -print
virt_read_pid_files(polaris_vman_tech_t)
no interface that lists virt_var_run_t dir
gen_require(^
 type virt_var_run_t;
')
list_dirs_pattern(polaris_vman_tech_t, virt_var_run_t, virt_var_run_t)
no interface that lists virt_lxc_var_run_t dir
gen_require(^
 type virt_lxc_var_run_t;
')
list_dirs_pattern(polaris_vman_tech_t, virt_lxc_var_run_t, virt_lxc_var_run_t)
no interface that lists qemu_var_run_t dir

```

```

gen_require(
 type qemu_var_run_t;
)
list_dirs_pattern(polaris_vman_tech_t, qemu_var_run_t, qemu_var_run_t)
#allow read of /run/libvirt/qemu
read_files_pattern(polaris_vman_tech_t, qemu_var_run_t, qemu_var_run_t)

by some strange reason /var/run/libvirt/network is under dnsmasq_var_run_t label
dnsmasq_read_pid_files(polaris_vman_tech_t)
no interface that lists dnsmasq_var_run_t dir
gen_require(
 type dnsmasq_var_run_t;
)
list_dirs_pattern(polaris_vman_tech_t, dnsmasq_var_run_t, dnsmasq_var_run_t)

polaris_vman_var_read(polaris_vman_tech_t)

cat /proc/net/dev
kernel_read_network_state(polaris_vman_tech_t)

find /sys/class/net -name intsvc* -type d -print
dev_list_sysfs(polaris_vman_tech_t)

grep over /varied/ovf-env.xml
polaris_disk_varied_read(polaris_vman_tech_t)

writes into /tmp/vman_techsupport
polaris_vman_tmp_manage(polaris_vman_tech_t)

find over /sys/fs/cgroup/memory/machine
fs_list_cgroup_dirs(polaris_vman_tech_t)
cat /sys/fs/cgroup/memory/machine/memory.limit_in_bytes
fs_read_cgroup_files(polaris_vman_tech_t)

runs df command
fs_getattr_xattr_fs(polaris_vman_tech_t)
fs_getattr_all_fs(polaris_vman_tech_t)
files_getattr_all_dirs(polaris_vman_tech_t)
getattr over /run/netns/2
fs_read_nsfs_files(polaris_vman_tech_t)

check existence of vman btrace file before passing it to btdecode
polaris_vman_bt_getattr(polaris_vman_tech_t)
check existence of pman btrace file for vman before passing it to btdecode
polaris_pman_bt_getattr(polaris_vman_tech_t)

vman_techsupport.sh creates misc files under /tmp
type polaris_vman_tech_tmp_t;

```

```

files_type(polaris_vman_tech_tmp_t)
files_tmp_filetrans(polaris_vman_tech_t, polaris_vman_tech_tmp_t, file)
manage_files_pattern(polaris_vman_tech_t, polaris_vman_tech_tmp_t, polaris_vman_tech_tmp_t)

#allow vman tech support to read container logs including listing dirs
gen_require(
 type virt_log_t;
)
list_dirs_pattern(polaris_vman_tech_t, virt_log_t, virt_log_t)
virt_read_log(polaris_vman_tech_t)

allow vman to access /etc/passwd
auth_map_passwd(polaris_vman_shell_t)

#vman does lvm storage management e.g. vman_libvirt_strg_available_by_pool
lvm_domtrans(polaris_vman_t)

#Allow read of pid files e.g. /run/udev/data/b7:34
udev_read_pid_files(polaris_vman_t)

#allow vman to connect to the WAAS container for serial vman_register_socket
polaris_waas_stream_connect(polaris_vman_t)

allow vman to pgrep
allow to get getattr of /proc file system
domain_read_all_domains_state(polaris_vman_t)

allow vman to kill LXC container process that hasn't shutdown
inspite of a shutdown command
gen_require(
 type virtd_lxc_t;
)
polaris_vman_kill_process(virtd_lxc_t)

allow vman to rsync using ioxman_syslib.sh
rsync_entry_type(polaris_vman_t)
corenet_tcp_connect_rsync_port(polaris_vman_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisvman.te
No license file was found, but licenses were detected in source scan.

#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved

```

#

/tmp/.ncsshd\_authorized\_keys(/.\*)? gen\_context(system\_u:object\_r:polaris\_ncsshd\_keys\_t,s0)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarispsd.fc

No license file was found, but licenses were detected in source scan.

#

# March 2017, Victor Kamensky

#

# Copyright (c) 2016-2019 by Cisco Systems, Inc.

# All rights reserved

#

## <summary>Polaris Btrace Policy Rules.</summary>

#####

# Obfl policy

#####

#####

## <summary>

## Read obfl files (under /obfl, /varied/obfl, etc)

## </summary>

## <param name="domain">

## <summary>

## Domain allowed access.

## </summary>

## </param>

## <rolebase/>

#

interface(`polaris\_obfl\_data\_read',`

gen\_require(`

type polaris\_obfl\_data\_t;

type root\_t;

')

read\_lnk\_files\_pattern(\$1, root\_t, polaris\_obfl\_data\_t)

read\_files\_pattern(\$1, polaris\_obfl\_data\_t, polaris\_obfl\_data\_t)

list\_dirs\_pattern(\$1, polaris\_obfl\_data\_t, polaris\_obfl\_data\_t)

allow \$1 polaris\_obfl\_data\_t:file map;

')

#####

## <summary>

## Manage obfl files (under /obfl, /varied/obfl, etc

## </summary>



```

<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolebase/>
#
interface(`polaris_obfl_data_manage`,`
 gen_require(`
 type polaris_obfl_data_t;
 type root_t;
 type var_t;
 `)

 read_lnk_files_pattern($1, root_t, polaris_obfl_data_t)
 manage_files_pattern($1, { var_t polaris_obfl_data_t }, polaris_obfl_data_t)
 manage_dirs_pattern($1, { var_t polaris_obfl_data_t }, polaris_obfl_data_t)
 allow $1 polaris_obfl_data_t:file map;
)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisobfl.if

No license file was found, but licenses were detected in source scan.

```

#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#

```

```

<summary>Polaris Btrace Policy Rules.</summary>

```

```

#####
RPC policy
#####

```

```

#####

```

```

<summary>
Work with ripc
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolebase/>
#

```

```

interface(`polaris_ripc`,
 corenet_tcp_bind_generic_node($1)
 allow $1 self:tcp_socket { getattr setopt getopt bind create listen accept connect read write };
 # bipc would like to issue "setsockopt(sock, SOL_SOCKET, SO_VRF,", which requires
 # net_admin and sys_admin capabilities
 allow $1 self:capability { net_admin sys_admin };

 polaris_socketat_nsfs_read($1)
)

```

Found in path(s):

```

* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisripc.if
No license file was found, but licenses were detected in source scan.

```

```

#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#

```

```

/tmp/sw/boot(/.*)? gen_context(system_u:object_r:polaris_boot_tmp_t,s0)
/tmp/sw/isos(/.*)? gen_context(system_u:object_r:polaris_boot_tmp_t,s0)
/tmp/bootup_timestamp gen_context(system_u:object_r:polaris_boot_tmp_t,s0)

```

Found in path(s):

```

* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisboot.fc
No license file was found, but licenses were detected in source scan.

```

```

#
December 2019, Victor Kamensky
#
Copyright (c) 2019 by Cisco Systems, Inc.
All rights reserved
#

```

```

polarisservicemgr file contexts place holder

```

Found in path(s):

```

* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisservicemgr.fc
No license file was found, but licenses were detected in source scan.

```

```

#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2020 by Cisco Systems, Inc.
All rights reserved
#

```

```
<summary>Polaris polarisboothelper Policy Rules.</summary>
```

```
#####
```

```
<summary>
```

```
Read any regular file/directory from /tmp/udev.
```

```
</summary>
```

```
<param name="domain">
```

```
<summary>
```

```
Domain allowed access.
```

```
</summary>
```

```
</param>
```

```
#
```

```
interface(`polaris_udev_tmp_read`,`
```

```
gen_require(`
```

```
type polaris_udev_tmp_files_t;
```

```
`)
```

```
read_files_pattern($1, polaris_udev_tmp_files_t, polaris_udev_tmp_files_t)
```

```
list_dirs_pattern($1, polaris_udev_tmp_files_t, polaris_udev_tmp_files_t)
```

```
`)
```

```
#####
```

```
<summary>
```

```
Manage any regular file/directory from /tmp/udev.
```

```
</summary>
```

```
<param name="domain">
```

```
<summary>
```

```
Domain allowed access.
```

```
</summary>
```

```
</param>
```

```
#
```

```
interface(`polaris_udev_tmp_manage`,`
```

```
gen_require(`
```

```
type polaris_udev_tmp_files_t;
```

```
`)
```

```
manage_dirs_pattern($1, polaris_udev_tmp_files_t, polaris_udev_tmp_files_t)
```

```
manage_files_pattern($1, polaris_udev_tmp_files_t, polaris_udev_tmp_files_t)
```

```
`)
```

```
#####
```

```
<summary>
```

```
Listdir of any regular directory from /tmp/udev.
```

```
</summary>
```

```
<param name="domain">
```

```
<summary>
```

```
Domain allowed access.
```

```
</summary>
```

```
</param>
```

```
#
interface(`polaris_udev_tmp_list_dirs',`
 gen_require(`
 type polaris_udev_tmp_files_t;
 ')
 list_dirs_pattern($1, polaris_udev_tmp_files_t, polaris_udev_tmp_files_t)
')
```

```
#####
```

```
<summary>
Watch udev_tmp_files directories and files
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolebase/>
#
```

```
interface(`polaris_udev_tmp_watch',`
 gen_require(`
 type polaris_udev_tmp_files_t;
 ')
 allow $1 polaris_udev_tmp_files_t:{dir file} watch;
')
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisboothelper.if

No license file was found, but licenses were detected in source scan.

```
#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#
```

```
/usr/cpp/bin/cpp_driver -- gen_context(system_u:object_r:polaris_cpp_driver_exec_t,s0)
/usr/cpp/bin/cpp_driver_ledp -- gen_context(system_u:object_r:polaris_cpp_driver_exec_t,s0)
/usr/cpp/bin/cpp_driver_us_ledp -- gen_context(system_u:object_r:polaris_cpp_driver_exec_t,s0)
/usr/cpp/bin/cpp_driver_vwlc -- gen_context(system_u:object_r:polaris_cpp_driver_exec_t,s0)
/usr/cpp/bin/cpp_driver_vwlc_ledp -- gen_context(system_u:object_r:polaris_cpp_driver_exec_t,s0)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscppdriver.fc

No license file was found, but licenses were detected in source scan.

```
#
```

```

March 2017, Victor Kamensky
#
Copyright (c) 2016-2020 by Cisco Systems, Inc.
All rights reserved
#

/usr/binos/conf/mcp_monitor_process_batchmode.sh --
gen_context(system_u:object_r:polaris_monitor_process_exec_t,s0)
/usr/binos/conf/pkg_summary.sh -- gen_context(system_u:object_r:polaris_pkg_summary_exec_t,s0)
/usr/binos/conf/pkg_to_tree.sh -- gen_context(system_u:object_r:polaris_pkg_to_tree_exec_t,s0)

/tmp/myhostname gen_context(system_u:object_r:polaris_hm_tmp_t,s0)
/tmp/show_provision_temp(/.*)? gen_context(system_u:object_r:polaris_show_provision_tmp_t,s0)
/tmp/fs_lock_bootflash gen_context(system_u:object_r:polaris_cli_fs_cmds_tmp_t,s0)
used by "sh pla so filesystem bootflash: de" CLI
/usr/binos/conf/mcp_cli_fs_cmds.sh -- gen_context(system_u:object_r:polaris_cli_fs_cmds_exec_t,s0)
used by "show platform software yang-management process monitor" CLI
/usr/binos/conf/mcp_monitor_dmi_proc.sh --
gen_context(system_u:object_r:polaris_monitor_dmi_process_exec_t,s0)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarishm.fc

No license file was found, but licenses were detected in source scan.

```

#
August 2017, Shawn Lu
#
Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved
#

```

## <summary>Polaris odm Policy Rules.</summary>

#####

## <summary>

## Mqipc channel in sub directory and multiple servers on TDL  
## channel is not supported by autogen code. ODM odm\_clnt2svr\_data  
## channel is one of those. Allow domain to be one server on it.  
## ODM elastic value is 2 now, add more if need in the future.

## </summary>

## <param name="domain">

## <summary>

## Domain allowed access.

## </summary>

## </param>

## <param name="mqipc\_label">

## <summary>

## Mqipc channel file label.

```

</summary>
</param>
#
interface(`polaris_odm_clnt2svr_mqipc_create`,`
 gen_require(`
 type polaris_odm_client2server_data_mqipc_t;
 `)
 polaris_mqipc_create_name_dir($1, polaris_odm_client2server_data_mqipc_t, odm_clnt2svr_data-b1)
 polaris_mqipc_create_name_dir($1, polaris_odm_client2server_data_mqipc_t, odm_clnt2svr_data-b0)
 polaris_mqipc_create_name_dir($1, polaris_odm_client2server_data_mqipc_t, odm_clnt2svr_data)
`)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisodm.if

No license file was found, but licenses were detected in source scan.

```

#
February 2020, Victor Kamensky
#
Copyright (c) 2020 by Cisco Systems, Inc.
All rights reserved
#

```

## <summary>Polaris install\_mgr Policy Rules.</summary>

#####

## <summary>

## Read /tmp/sw/inst\_tmp\_1 files and directories

## </summary>

## <param name="domain">

## <summary>

## Domain allowed access.

## </summary>

## </param>

#

```
interface(`polaris_install_mgr_tmp_read`,`
```

```
gen_require(`
```

```
type polaris_install_mgr_tmp_t;
```

```
`)
```

```
list_dirs_pattern($1, polaris_install_mgr_tmp_t, polaris_install_mgr_tmp_t)
```

```
read_files_pattern($1, polaris_install_mgr_tmp_t, polaris_install_mgr_tmp_t)
```

```
read_lnk_files_pattern($1, polaris_install_mgr_tmp_t, polaris_install_mgr_tmp_t)
```

```
`)
```

#####

## <summary>

## Read/Write /.installer files and directories

## </summary>

```

<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_install_disk_manage`,`
gen_require(`
type polaris_disk_bootflash_t;
type polaris_disk_install_t;
`)

filetrans_pattern(polaris_install_mgr_t,polaris_disk_bootflash_t, polaris_disk_install_t, dir, ".installer")
filetrans_pattern(polaris_install_mgr_t,polaris_disk_bootflash_t, polaris_disk_install_t, fifo_file, "inot_fifo")
manage_dirs_pattern($1, {polaris_disk_bootflash_t polaris_disk_install_t}, polaris_disk_install_t)
manage_files_pattern($1, polaris_disk_install_t, polaris_disk_install_t)
manage_fifo_files_pattern($1, polaris_disk_install_t, polaris_disk_install_t)
)

#####
<summary>
Read /bootflash/.installer files and directories
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_install_disk_read`,`
gen_require(`
type polaris_disk_install_t;
`)

read_files_pattern($1, polaris_disk_install_t, polaris_disk_install_t)
)

#####
<summary>
Read copylog files (location varies by platform)
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolebase/>
#

```

```

interface(`polaris_read_user_file`,`
 gen_require(`
 type polaris_user_file_t;
 type device_t;
 `)

 read_blk_files_pattern($1, device_t, polaris_user_file_t)
 read_files_pattern($1, polaris_user_file_t, polaris_user_file_t)
 read_lnk_files_pattern($1, polaris_user_file_t, polaris_user_file_t)
)

```

```

#####
<summary>
getattr for copylog files (location varies by platform)
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolebase/>
#

```

```

interface(`polaris_user_file_getattr`,`
 gen_require(`
 type polaris_user_file_t;
 type device_t;
 `)

 getattr_files_pattern($1, polaris_user_file_t, polaris_user_file_t)
)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisinstallmgr.if

No license file was found, but licenses were detected in source scan.

```

#
March 2020, Victor Kamensky
#
Copyright (c) 2020 by Cisco Systems, Inc.
All rights reserved
#

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisjvm.fc

No license file was found, but licenses were detected in source scan.

dnl

dnl April 2018, Victor Kamensky



```
dnl
dnl Copyright (c) 2018-2019 by Cisco Systems, Inc.
dnl All rights reserved
dnl
dnl Crankshaft (Overlord, Utah, Goldbeach, Neptune, TSN and Supernova) Platform Max Bay Limits
max_bay_map_set(`rp', `per_bay', 0)
max_bay_map_set(`cc', `per_bay', 19)
max_bay_map_set(`fp', `per_bay', 0)

max_bay_ripc_map_set(`rp', `per_bay', 0)
max_bay_ripc_map_set(`cc', `per_bay', 19)
max_bay_ripc_map_set(`fp', `per_bay', 0)

max_bay_ripc_map_set(`rp', `global', 0)
max_bay_ripc_map_set(`cc', `global', 19)
max_bay_ripc_map_set(`fp', `global', 0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/crankshaftmaps.m4
```

No license file was found, but licenses were detected in source scan.

```
#
February 2020, Victor Kamensky
#
Copyright (c) 2020-2021 by Cisco Systems, Inc.
All rights reserved
#

/usr/bin/vconfd_script_reboot\sh -- gen_context(system_u:object_r:polaris_vconfd_reboot_exec_t,s0)
/usr/bin/vconfd_script_if_reset\sh -- gen_context(system_u:object_r:polaris_vconfd_ifreset_exec_t,s0)
/usr/bin/vconfd_script_get_config\sh -- gen_context(system_u:object_r:polaris_vconfd_cfg_exec_t,s0)
/usr/bin/vconfd_script_vmanage_list_stats\sh --
gen_context(system_u:object_r:polaris_vconfd_history_exec_t,s0)
/usr/bin/vconfd_script_vmanage_clear_stats\sh --
gen_context(system_u:object_r:polaris_vconfd_history_exec_t,s0)
/usr/bin/vconfd_script_activate\sh -- gen_context(system_u:object_r:polaris_vconfd_software_exec_t,s0)
/usr/bin/mcp_upgrade_wrapper\sh -- gen_context(system_u:object_r:polaris_vconfd_software_exec_t,s0)
/usr/bin/vconfd_script_nms_action\sh -- gen_context(system_u:object_r:polaris_vconfd_nms_exec_t,s0)
/usr/bin/vconfd_script_add_chassis_numbers_to_ztp\sh --
gen_context(system_u:object_r:polaris_vconfd_device_exec_t,s0)
/usr/bin/vconfd_script_remove_chassis_numbers_from_ztp\sh --
gen_context(system_u:object_r:polaris_vconfd_device_exec_t,s0)
/usr/bin/vconfd_script_upload_chassis_number_file\sh --
gen_context(system_u:object_r:polaris_vconfd_device_exec_t,s0)
/usr/bin/reset-conf -- gen_context(system_u:object_r:polaris_vconfd_reset_exec_t,s0)
/usr/bin/reset-logs -- gen_context(system_u:object_r:polaris_vconfd_reset_exec_t,s0)
/usr/bin/patch\sh -- gen_context(system_u:object_r:polaris_vconfd_software_exec_t,s0)
```

```

/usr/bin/vconfd_script_reset_vsmart_serial_list\sh --
gen_context(system_u:object_r:polaris_vconfd_reset_exec_t,s0)

/usr/bin/vconfd_script_cert\sh -- gen_context(system_u:object_r:polaris_vconfd_cert_exec_t,s0)
/usr/bin/vconfd_script_show_cert\sh -- gen_context(system_u:object_r:polaris_vconfd_cert_exec_t,s0)
/usr/bin/vconfd_script_show_root_ca_cert\sh --
gen_context(system_u:object_r:polaris_vconfd_cert_exec_t,s0)
/usr/bin/vconfd_script_upload_root_ca_cert_chain\sh --
gen_context(system_u:object_r:polaris_vconfd_cert_exec_t,s0)
/usr/bin/vconfd_script_uninstall_root_ca_cert_chain\sh --
gen_context(system_u:object_r:polaris_vconfd_cert_exec_t,s0)
/usr/bin/vconfd_script_tlsproxy_install_certs\sh --
gen_context(system_u:object_r:polaris_vconfd_cert_exec_t,s0)
/usr/bin/vconfd_script_tlsproxy_remove_certs\sh --
gen_context(system_u:object_r:polaris_vconfd_cert_exec_t,s0)

/usr/bin/vconfd_script_csr\sh -- gen_context(system_u:object_r:polaris_vconfd_csr_exec_t,s0)
/usr/bin/vconfd_script_show_csr\sh -- gen_context(system_u:object_r:polaris_vconfd_csr_exec_t,s0)
/usr/bin/vconfd_script_sign_csr\sh -- gen_context(system_u:object_r:polaris_vconfd_csr_exec_t,s0)
/usr/bin/vconfd_script_upload_vsmart_serial_numbers\sh --
gen_context(system_u:object_r:polaris_vconfd_serialnum_exec_t,s0)
/usr/bin/vconfd_script_upload_vedge_serial_numbers\sh --
gen_context(system_u:object_r:polaris_vconfd_serialnum_exec_t,s0)
/usr/bin/vconfd_script_fetch_core_info\sh -- gen_context(system_u:object_r:polaris_vconfd_crash_exec_t,s0)
admin-tech scripts skipped defined in some other place
/usr/bin/list_crashtech_files\sh -- gen_context(system_u:object_r:polaris_vconfd_crash_exec_t,s0)
/usr/bin/vconfd_script_unlock_user\sh -- gen_context(system_u:object_r:polaris_vconfd_aaa_exec_t,s0)
/usr/bin/vconfd_script_set_password\sh -- gen_context(system_u:object_r:polaris_vconfd_aaa_exec_t,s0)
/usr/bin/vconfd_script_container\sh -- gen_context(system_u:object_r:polaris_vconfd_contr_exec_t,s0)
/usr/bin/polaris_iox_precheck\sh -- gen_context(system_u:object_r:polaris_vconfd_iox_exec_t,s0)
/usr/bin/polaris_iox_install\sh -- gen_context(system_u:object_r:polaris_vconfd_iox_exec_t,s0)
/usr/bin/polaris_iox_upgrade\sh -- gen_context(system_u:object_r:polaris_vconfd_iox_exec_t,s0)
/usr/bin/polaris_iox_uninstall\sh -- gen_context(system_u:object_r:polaris_vconfd_iox_exec_t,s0)
/usr/bin/polaris_iox_reset\sh -- gen_context(system_u:object_r:polaris_vconfd_iox_exec_t,s0)
/usr/bin/polaris_iox_postcheck\sh -- gen_context(system_u:object_r:polaris_vconfd_iox_exec_t,s0)
/usr/bin/polaris_iox_download\sh -- gen_context(system_u:object_r:polaris_vconfd_iox_exec_t,s0)
/usr/bin/polaris_iox_remove\sh -- gen_context(system_u:object_r:polaris_vconfd_iox_exec_t,s0)
/usr/bin/polaris_iox_activate\sh -- gen_context(system_u:object_r:polaris_vconfd_iox_exec_t,s0)
/usr/bin/polaris_utd_sigupdate\sh -- gen_context(system_u:object_r:polaris_vconfd_utd_exec_t,s0)
/usr/bin/polaris_geo_db_update\sh -- gen_context(system_u:object_r:polaris_vconfd_geo_exec_t,s0)
/usr/bin/vconfd_script_vping\sh -- gen_context(system_u:object_r:polaris_vconfd_net_exec_t,s0)
/usr/bin/vconfd_script_vnping\sh -- gen_context(system_u:object_r:polaris_vconfd_net_exec_t,s0)
/usr/bin/vconfd_script_vtraceroute\sh -- gen_context(system_u:object_r:polaris_vconfd_net_exec_t,s0)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscedge.fc

No license file was found, but licenses were detected in source scan.

```

#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2020 by Cisco Systems, Inc.
All rights reserved
#

policy_module(polaristdresolve, 1.0);

#####
TDLresolve policy
#####
gen_require(
 attribute polaris_extended_domain;
)

type polaris_tdlresolve_t;
files_type(polaris_tdlresolve_t)

files_tmp_filetrans(polaris_extended_domain, polaris_tdlresolve_t, dir, "tdlresolve")
tdl_boottime.sh uses /tmp/tdlresolve_tmp for some temp files
which are moved into /tmp/tdlresolve latter
files_tmp_filetrans(polaris_extended_domain, polaris_tdlresolve_t, dir, "tdlresolve_tmp")

type polaris_global_service_t;
files_type(polaris_global_service_t);

#####
rsync policy
#####
gen_require(
 type rsync_t;
 type polaris_btrace_base_t;
)
#tdl_cleanup_epochs.sh uses btrace
allow rsync_t polaris_btrace_base_t:file map;
#rsync invokes tdl_cleanup_epochs.sh as part of this set /proc/[pid]/oom_score_adj is done
allow rsync_t self:capability sys_resource;

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polaristdresolve.te
No license file was found, but licenses were detected in source scan.

#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2021 by Cisco Systems, Inc.
All rights reserved

```

```

#

policy_module(polarisqfp, 1.0);

polaris_process_domain_template(qfp)

polaris_cpp_process(polaris_qfp_t)
polaris_cpp_dev_use(polaris_qfp_t)
polaris_btrace_data_manage(polaris_qfp_t)
polaris_crft_data_manage(polaris_qfp_t)
polaris_chasfs_manage(polaris_qfp_t)
polaris_lsmpi_dev_use(polaris_qfp_t)
polaris_persistent_list_dirs(polaris_qfp_t);

allow for hot add on azure
kernel_read_irq_sysctls(polaris_iodbd_t)
kernel_rw_irq_sysctls(polaris_iodbd_t)

allow read variety of system information from sysfs, as well as write
into configuration of some pcie devices
type=AVC msg=audit(1479597040.739:218): avc: denied { write } for pid=30997 comm="ucode_ctl_rx"
name="config" dev="sysfs" ino=22363 scontext=system_u:system_r:polaris_qfp_t:s0
tcontext=system_u:object_r:sysfs_t:s0 tclass=file
dev_rw_sysfs(polaris_qfp_t)

allow to send message to /dev/log
logging_send_syslog_msg(polaris_qfp_t)

allow access to uio devices like /dev/ui0
dev_rw_userio_dev(polaris_qfp_t)

Platforms with QAT v1.7 need map permission also
qae device (/dev/icp_adf_ctl)
type polaris_icp_device_t;
dev_node(polaris_icp_device_t)

allow polaris_qfp_t userio_device_t:chr_file map;

allow to read /proc/meminfo
kernel_read_system_state(polaris_qfp_t)

qfp FIA (Feature Invocation Array) resides in /dev/shm/cpp_ucode_dram
Those are set of instructions assembled by cpp control plane and passed
to qfp to execute.
polaris_cpp_tmpfs_exec(polaris_qfp_t)

qfp /var/run pid file
type polaris_qfp_var_run_t;

```

```

files_pid_file(polaris_qfp_var_run_t)
manage_files_pattern(polaris_qfp_t, polaris_qfp_var_run_t, polaris_qfp_var_run_t)
manage_dirs_pattern(polaris_qfp_t, polaris_qfp_var_run_t, polaris_qfp_var_run_t)
files_pid_filetrans(polaris_qfp_t, polaris_qfp_var_run_t, { file dir })
mmap /var/run/dpdk/rte/config
allow polaris_qfp_t polaris_qfp_var_run_t:file map;

qfp memif directory and file
type polaris_qfp_memif_t;
files_tmp_file(polaris_qfp_memif_t);
qfp memif interface for binos clients in /tmp/memif
files_tmp_filetrans(polaris_qfp_t, polaris_qfp_memif_t, dir, "memif")
creates /tmp/binos-IOX/memif
files_tmp_filetrans(polaris_qfp_t, polaris_qfp_memif_t, dir, "binos-IOX")
polaris_qfp_memif_manage(polaris_qfp_t)
qfp memif interface for container in /bootflash/SHARED-IOX/memif
polaris_disk_type(polaris_qfp_memif_t)
gen_require(
 type polaris_disk_bootflash_t;
)
filetrans_pattern(polaris_qfp_t, polaris_disk_bootflash_t, polaris_qfp_memif_t, dir, "memif")

work with /bootflash/SHARED-IOX/memif/memif-dp-svr
polaris_utdl_container_dgram_send(polaris_qfp_t)

work (create/open/read/write) with hugetlbf files
fs_manage_hugetlbf_dirs(polaris_qfp_t)
fs_rw_hugetlbf_files(polaris_qfp_t)
gen_require(
 type hugetlbf_t;
)
allow polaris_qfp_t hugetlbf_t:file create;
dpdk may unlinks unneeded pages in unmap_unneeded_hugepages function
allow polaris_qfp_t hugetlbf_t:file unlink;

allow polaris_qfp_t self:capability { sys_rawio sys_nice sys_admin };
allow polaris_qfp_t self:process setsched;

is_nic_netmap_capable function, which is used by vnic_cfg_port, needs socket to
work with interface parameters
allow polaris_qfp_t self:udp_socket create_socket_perms;

ifdef(`crankshaft_family',`
polaris_icc_broken_relocations(polaris_qfp_t)
')

access to /dev/dash_xxx devices on cranshaft platforms
optional_policy(

```

```

 polaris_dash_dev_use(polaris_qfp_t)
)

netmap device (/dev/netmap)
type polaris_netmap_device_t;
dev_node(polaris_netmap_device_t)

polaris_netmap_dev_use(polaris_qfp_t)

access to /dev/icp_XXX device on crankshaft platforms
optional_policy(`
 polaris_icp_dev_use(polaris_qfp_t)
)

netmap device (/dev/svc_eng_puntNN)
type polaris_sep_device_t;
dev_node(polaris_sep_device_t)

polaris_svc_eng_punt_dev_use(polaris_qfp_t)

transition and access to /var/log/cdal-tsn-info.log
ifdef(`tsn_platform',`
 polaris_qfp_log_manage("cdal-tsn-info.log")
)

transition and access to /var/log/cdal-tsn-info.log
ifdef(`blackheart_platform',`
 polaris_qfp_log_manage("cdal-tsn-info.log")
)

aventus needs access to /sys/devices/platform/cpn-110-master/cpn-110-master
for boot configuration
transition and access to /var/log/cdal-tsn-info.log
ifdef(`aventus_platform',`
gen_require(`
 type syslogd_t;
 ')
polaris_qfp_log_manage("cdal-tsn-info.log")
polaris_ggpio_dev_read_write(polaris_qfp_t)
polaris_ggpio_dev_read_write(syslogd_t)
)

transition and access to /var/log/cdal-tsn-info.log
ifdef(`cabo_platform',`
 polaris_qfp_log_manage("cdal-tsn-info.log")
)

transition and access to /var/log/cdal-tsn-info.log

```

```

ifdef(`supernova_platform',`
 polaris_qfp_log_manage("cdal-tsn-info.log")
`)

LOOK AT ME: qfp process links libcrypto.so.1.0.0 which has DT_TEXTREL
that should be addressed by CSCvj99896, once that is fixed remove below
under CSCvj99905.
gen_require(`
 type lib_t;
`)

allow polaris_qfp_t lib_t:file execmod;

LOOK AT ME: qfp process on TSN LE has executable stack with GNU_STACK marked RWE
that should be addressed by CSCvk66808, once that is fixed remove below
under CSCvk66832.
ifdef(`tsn_platform',`
 allow polaris_qfp_t self:process execmem;
`)

lsmpi replacement punt/inject over domain sockets
polaris_pi_uds_manage(polaris_qfp_t)
polaris_iosd_dgram_send(polaris_qfp_t)

dpdk code reads CPU model specific register (MSR)
dev_read_cpuid(polaris_qfp_t)

dpdk code in rte_mp_channel_init function creates and works
with /var/run/dpdk/rte/mp_socket socket
manage_sock_files_pattern(polaris_qfp_t, polaris_qfp_var_run_t, polaris_qfp_var_run_t)

dpdk code in dev_uev_socket_fd_create creates and work with
netlink_kobject_uevent_socket socket
Note: radium with QAT v1.7 requires getattr and setopt
allow polaris_qfp_t self:netlink_kobject_uevent_socket { getattr setopt bind create };

hal_random32_init calls hw_random32_init and it opens /dev/random
dev_read_rand(polaris_qfp_t)

gen_require(`
 type sysfs_t;
`)
mmap_files_pattern(polaris_qfp_t, sysfs_t, sysfs_t)

LOOK AT ME: remove after CSCvs34007 fixed
qfp runs hidendir hide /bootflash/SHARED-IOX/memif
corecmd_exec_bin(polaris_qfp_t)
corecmd_exec_shell(polaris_qfp_t)

```

```

auth_use_nsswitch(polaris_qfp_t)

CSR & C8KV use infiniband and tun/tap devices for Azure
type polaris_infiniband_device_t;
dev_node(polaris_infiniband_device_t)

polaris_infiniband_dev_use(polaris_qfp_t)

kernel_request_load_module(polaris_qfp_t)
allow polaris_qfp_t self:netlink_rdma_socket { bind create setopt };
allow polaris_qfp_t self:capability { ipc_lock net_admin net_raw };
allow polaris_qfp_t self:netlink_route_socket rw_netlink_socket_perms;
allow polaris_qfp_t self:tun_socket { create relabelfrom relabelto };
corenet_rw_tun_tap_dev(polaris_qfp_t)

CSR Azure IO model requires read access
gen_require(`
 type proc_net_t;
`)
allow polaris_qfp_t proc_net_t:file { read };

manage MLX NIC socket files in /var/tmp/net_mlx5*
type polaris_qfp_var_tmp_t;
files_tmp_file(polaris_qfp_var_tmp_t);
files_tmp_filetrans(polaris_qfp_t, polaris_qfp_var_tmp_t, { sock_file })
manage_sock_files_pattern(polaris_qfp_t, polaris_qfp_var_tmp_t, polaris_qfp_var_tmp_t)

rm from coreutils-8.30 wants to know filesystem type
fs_getattr_xattr_fs(polaris_qfp_t)

allow create of dir /bootflash/SHARED-IOX on first install of VM
create_dirs_pattern(polaris_qfp_t, polaris_disk_bootflash_t, polaris_disk_bootflash_t)

polaris_cpld_read(polaris_qfp_t, polaris_sysfs_cpld_t, polaris_sysfs_cpld_t)

tsn needs access to /sys/devices/platform/cpn-110-master/cpn-110-master
for boot configuration
ifdef(`tsn_platform',`
 polaris_ggpio_dev_read_write(polaris_qfp_t)
`)

blackheart needs access to /sys/devices/platform/cpn-110-master/cpn-110-master
for boot configuration
ifdef(`blackheart_platform',`
 polaris_ggpio_dev_read_write(polaris_qfp_t)
`)

```



```

sparrow needs access to /sys/devices/platform/cpn-110-master/cpn-110-master
for boot configuration
Also needs access to cdal-tsn-info.log
ifdef(`sparrow_platform',`
 polaris_qfp_log_manage("cdal-tsn-info.log")
 polaris_ggpio_dev_read_write(polaris_qfp_t)
`)

ucode also needs access to ttyUSB4
ifdef(`cabo_platform',`
 term_use_usb_ttys(polaris_qfp_t)
`)

qfp starts /usr/binos/bin/net_hotremove-vxe.sh
init_read_script_files(polaris_qfp_t)

access to /dev/dash_xxx devices on cranshaft platforms
optional_policy(`
 polaris_htx_dgram_send(polaris_qfp_t)
`)

net_hotremove-vxe.sh that works with /tmp/iodb
polaris_iodb_tmp_manage(polaris_qfp_t)
net_hotremove-vxe.sh sends signal to iodbd.sh
gen_require(`
 type polaris_iodbd_t;
`)
allow polaris_qfp_t polaris_iodbd_t:process signal;
net_hotremove-vxe.sh reads /proc/sys/vm/nr_hugepages
kernel_read_vm_sysctls(polaris_qfp_t)

long running helper script iodbd.sh
polaris_process_domain_template(iodbd)

iodbd.sh started by /etc/init.d/binos that runs under initrc_t
gen_require(`
 type initrc_t;
`)
polaris_iodbd_domtrans(initrc_t)

polaris_boot_tmp_read(polaris_iodbd_t)
polaris_chasfs_manage(polaris_iodbd_t)
polaris_cpld_read(polaris_iodbd_t)
polaris_rmonbifo_tmp_read(polaris_iodbd_t)

auth_use_nsswitch(polaris_iodbd_t)
corecmd_exec_bin(polaris_iodbd_t)

```

```

hot add interfaces virtio/sriov
dev_manage_sysfs_dirs(polaris_iodbd_t)
polaris_sysfs_manage(polaris_iodbd_t)

write into sysfs file like /sys/devices/pci0000:00/0000:00:03.2/config
dev_rw_sysfs(polaris_iodbd_t)

read/write /run/dpdk/rte/config
manage_files_pattern(polaris_iodbd_t, polaris_qfp_var_run_t, polaris_qfp_var_run_t)

lspci reads /etc/modprobe.d
modutils_read_module_config(polaris_iodbd_t)
lspci reads /lib/modules/5.4.40/modules.softdep
files_read_kernel_modules(polaris_iodbd_t)
files_map_kernel_modules(polaris_iodbd_t)

runs dmidecode
dmidecode_domtrans(polaris_iodbd_t)
dmidecode when run in this context needs access initrc stdin/stdout
gen_require(
 type dmidecode_t;
)
init_rw_stream_sockets(dmidecode_t)

calls ethtool -i intsvc0
sysnet_domtrans_ifconfig(polaris_iodbd_t)

reads /etc/rc.d/init.d/binos_functions-pd-iodb
init_read_script_files(polaris_iodbd_t)

read /proc/sys/vm/nr_hugepages
kernel_read_vm_sysctls(polaris_iodbd_t)

cat /sys/class/net/intsvc0/address
dev_read_sysfs(polaris_iodbd_t)

read /proc/cmdline
kernel_read_system_state(polaris_iodbd_t)

polaris_iodb_tmp_manage(polaris_iodbd_t)

type polaris_iodb_tmp_t;
files_tmp_file(polaris_iodb_tmp_t)

/tmp/iodb is created by /etc/init.d/binos that runs under initrc_t
gen_require(
 type initrc_t;

```

```

)
files_tmp_filetrans(initrc_t, polaris_iodb_tmp_t, dir, "iodb")
polaris_iodb_tmp_manage(initrc_t)

udev_t can drop entries into /tmp/iodb to process
gen_require(
 type udev_t;
)
polaris_iodb_tmp_manage(udev_t)

Radium and Thallium need to check rommon version when initializing static
interface table (access /proc/rmonbifo).
optional_policy(
 polaris_proc_rmonbifo_read(polaris_qfp_t)
)

```

Found in path(s):

```

* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisqfp.te
No license file was found, but licenses were detected in source scan.

```

```

#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#

```

```

<summary>Polaris cpp_ha Policy Rules.</summary>

```

Found in path(s):

```

* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscppha.if
No license file was found, but licenses were detected in source scan.

```

```

#
March 2017, Victor Kamensky
#
Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved
#

```

```

policy_module(polarisngwctblmgr, 1.0);

```

```

gen_require(
 type polaris_ngwc_tbl_mgr_t;
)

```

```

polaris_btrace_data_manage(polaris_ngwc_tbl_mgr_t)
polaris_crft_data_manage(polaris_ngwc_tbl_mgr_t)

```

```
polaris_chasfs_manage(polaris_ngwc_tbl_mgr_t)
polaris_tdlresolve_read(polaris_ngwc_tbl_mgr_t)
polaris_tdlldb_list_dirs(polaris_ngwc_tbl_mgr_t)
polaris_cpld_read(polaris_ngwc_tbl_mgr_t)
polaris_lua_read(polaris_ngwc_tbl_mgr_t)
polaris_flashlib_read(polaris_ngwc_tbl_mgr_t)
```

```
polaris_ripc_sman_ui_serv_connect(polaris_ngwc_tbl_mgr_t)
```

```
allow polaris_ngwc_tbl_mgr_t self:capability dac_override;
```

```
polaris_dyncfg_tmp_read(polaris_ngwc_tbl_mgr_t)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisngwctblmgr.te
```

No license file was found, but licenses were detected in source scan.

```
#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#
```

```
polarisfmanrp file contexts place holder
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisfmanrp.fc
```

No license file was found, but licenses were detected in source scan.

```
dnl
dnl April 2018, Victor Kamensky
dnl
dnl Copyright (c) 2018-2019 by Cisco Systems, Inc.
dnl All rights reserved
dnl
```

```
define(^ polaris_ripc_service_server_aux',`dnl
polaris_ripc_$2_bind($3)
polaris_ripc($3)
')
```

```
define(^ polaris_ripc_service_server_full',`dnl
polaris_ripc_service_server_aux(ripc_label($1), ripc_stem($1), process_label($2))
')
```

```
define(^ polaris_ripc_service_server',`dnl
ifelse(ripc_type_map($1), `', `polaris_ripc_service_server_full($1, $2, $3, $4, $5)')
ripc_type_map_set(ripc_label($1), process_label($2))
```

)

```
define(`polaris_ripc_service_client_aux',`dnl
polaris_ripc($3)
polaris_ripc_$2_connect($3)
`)
```

```
define(`polaris_ripc_service_client',`dnl
polaris_ripc_service_client_aux(ripc_label($1), ripc_stem($1), process_label($2))dnl
`)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/m4/polaris\_ipc\_ripc\_te.m4  
No license file was found, but licenses were detected in source scan.

#

# August 2017, Victor Kamensky

#

# Copyright (c) 2017-2021 by Cisco Systems, Inc.

# All rights reserved

#

```
/usr/binos/conf/audit_log.sh -- gen_context(system_u:object_r:polaris_audit_log_exec_t,s0)
/usr/binos/conf/audit_snapshot.sh -- gen_context(system_u:object_r:polaris_audit_log_exec_t,s0)
/tmp/package_biv_sums -- gen_context(system_u:object_r:polaris_kgv_data_t,s0)
/usr/bin/code_sign_verify -- gen_context(system_u:object_r:polaris_code_verify_exec_t,s0)
/usr/sbin/boot_verify_package -- gen_context(system_u:object_r:polaris_code_verify_exec_t,s0)
/usr/sbin/kgv_update -- gen_context(system_u:object_r:polaris_code_verify_exec_t,s0)
```

```
/dev/shm/sem\,updatepcr8d_msg_sem gen_context(system_u:object_r:polaris_code_verify_tmpfs_t,s0)
```

# /dev/aikido

```
/dev/aikido -c gen_context(system_u:object_r:polaris_aikido_device_t,s0)
```

```
/usr/binos/conf/mcp_upgrade_hwprg.sh gen_context(system_u:object_r:polaris_hw_upgrade_exec_t,s0)
/usr/binos/conf/mcp_upgrade_hwprg_fpga.sh gen_context(system_u:object_r:polaris_hw_upgrade_exec_t,s0)
/usr/binos/conf/mcp_upgrade_hwprg_cpld.sh gen_context(system_u:object_r:polaris_hw_upgrade_exec_t,s0)
/usr/binos/conf/mcp_upgrade_hwprg_cmds.sh gen_context(system_u:object_r:polaris_hw_upgrade_exec_t,s0)
/usr/binos/conf/mcp_upgrade_hwprg_utils.sh gen_context(system_u:object_r:polaris_hw_upgrade_exec_t,s0)
/usr/binos/bin/tam_fw_upgrade gen_context(system_u:object_r:polaris_hw_upgrade_exec_t,s0)
```

```
/usr/binos/conf/mcp_upgrade_rommon.sh gen_context(system_u:object_r:polaris_rom_upgrade_exec_t,s0)
/usr/binos/conf/mcp_upgrade_rommon_cmds.sh gen_context(system_u:object_r:polaris_rom_upgrade_exec_t,s0)
/usr/binos/conf/mcp_upgrade_rommon_helper.sh gen_context(system_u:object_r:polaris_rom_upgrade_exec_t,s0)
/usr/binos/conf/mcp_upgrade_rommon_x86.sh gen_context(system_u:object_r:polaris_rom_upgrade_exec_t,s0)
```

```
/dev/scansta -c gen_context(system_u:object_r:polaris_scansta_device_t,s0)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polaristws.fc

No license file was found, but licenses were detected in source scan.

#

# June 2020, Cuiyan Ma

#

# Copyright (c) 2020 by Cisco Systems, Inc.

# All rights reserved

#

policy\_module(polarisissucompcheck, 1.0);

polaris\_process\_domain\_template(issu\_comp\_check)

corecmd\_exec\_bin(polaris\_issu\_comp\_check\_t)

corecmd\_exec\_shell(polaris\_issu\_comp\_check\_t)

polaris\_chasfs\_manage(polaris\_issu\_comp\_check\_t)

# allow read of /etc/passwd

auth\_use\_nsswitch(polaris\_issu\_comp\_check\_t)

# For reading tracekey from /tmp/tmppub/tracekey\_cache/usr/bin/rotee

polaris\_btrace\_tmppub\_read(polaris\_issu\_comp\_check\_t)

# For reading /sys/devices/platform/cpld/platform\_type

polaris\_cpld\_read(polaris\_issu\_comp\_check\_t)

# For reading /tmp/sw/boot/pkginfo

polaris\_boot\_tmp\_read(polaris\_issu\_comp\_check\_t)

# For ls on /tmp/ufs/crashinfo

optional\_policy(`

polaris\_ncd\_tmp\_read(polaris\_issu\_comp\_check\_t)

')

# work with /tmp files

type polaris\_issu\_comp\_check\_tmp\_t;

files\_tmp\_file(polaris\_issu\_comp\_check\_tmp\_t)

manage\_dirs\_pattern(polaris\_issu\_comp\_check\_t, tmp\_t, polaris\_issu\_comp\_check\_tmp\_t)

manage\_files\_pattern(polaris\_issu\_comp\_check\_t, polaris\_issu\_comp\_check\_tmp\_t,

polaris\_issu\_comp\_check\_tmp\_t)

files\_tmp\_filetrans(polaris\_issu\_comp\_check\_t, polaris\_issu\_comp\_check\_tmp\_t, { file dir })

# For using push\_using\_rsync

polaris\_chvrf\_domtrans(polaris\_issu\_comp\_check\_t)

gen\_require(`

```

 type rsync_t;
 ')
rsync_entry_domtrans(polaris_issu_comp_check_t, rsync_t)
polaris_manage_rsync_tmplog_dir(polaris_issu_comp_check_t)

rsync inherits issu_comp_check.sh's stdout/stderr fifo files
allow rsync_t polaris_issu_comp_check_t:fifo_file write;

allow polaris_issu_comp_check_t self:capability sys_resource;

reads /tmp/remote_sw_verinfo.txt
gen_require(
 type rsync_tmp_t;
)
read_files_pattern(polaris_issu_comp_check_t, rsync_tmp_t, rsync_tmp_t)

use of errmsg.sh
polaris_script_errmsg_use(polaris_issu_comp_check_t)

hwutil modifies /sys/bus/i2c/drivers/pca9548/1-0076/reg_control
TODO: label sysfs so that reg control gets its own label
dev_rw_sysfs(polaris_issu_comp_check_t)

allow locking of /tmp/sysctrl_i2c.lck
TODO: this file probably deserves its own label when created by cm_rp
polaris_cm_rp_tmp_manage(polaris_issu_comp_check_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisissucompcheck.te
No license file was found, but licenses were detected in source scan.

#
April 2017, Victor Kamensky
#
Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved
#

<summary>Polaris dmi_opdatamgrd Policy Rules.</summary>

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisdmiopdatamgrd.if
No license file was found, but licenses were detected in source scan.

#
May 2017, Victor Kamensky
#
Copyright (c) 2017-2019 by Cisco Systems, Inc.

```

```

All rights reserved
#

policy_module(polarisptcd, 1.0);

gen_require(
 type polaris_pttcd_t;
)

polaris_btrace_data_manage(polaris_pttcd_t)
polaris_crft_data_manage(polaris_pttcd_t)
polaris_chasfs_manage(polaris_pttcd_t)
polaris_tdlresolve_read(polaris_pttcd_t)
polaris_tdlldb_list_dirs(polaris_pttcd_t)
polaris_lua_read(polaris_pttcd_t)
polaris_flashlib_read(polaris_pttcd_t)

auth_use_nsswitch(polaris_pttcd_t)
polaris_cpld_read(polaris_pttcd_t)

allow polaris_pttcd_t self:netlink_route_socket r_netlink_socket_perms;

polaris_disk_bootflash_search(polaris_pttcd_t)
polaris_bootflash_manage(polaris_pttcd_t)
polaris_persistent_getattr(polaris_pttcd_t)

type polaris_pttcd_tmp_t;
files_tmp_file(polaris_pttcd_tmp_t)
polaris_systemd_tmpfiles_tmp_filetrans(polaris_pttcd_tmp_t, dir, "interceptor")
gen_require(
 type polaris_btrace_tmppub_t;
)
manage_dirs_pattern(polaris_pttcd_t, { polaris_pttcd_tmp_t polaris_btrace_tmppub_t }, polaris_pttcd_tmp_t)
manage_files_pattern(polaris_pttcd_t, { polaris_pttcd_tmp_t polaris_btrace_tmppub_t }, polaris_pttcd_tmp_t)
manage_lnk_files_pattern(polaris_pttcd_t, { polaris_pttcd_tmp_t polaris_btrace_tmppub_t }, polaris_pttcd_tmp_t)

allow polaris_pttcd_t self:tcp_socket create_stream_socket_perms;
allow polaris_pttcd_t self:udp_socket create_socket_perms;

corenet_tcp_bind_generic_node(polaris_pttcd_t)
corenet_tcp_bind_polaris_pttcd_port(polaris_pttcd_t)
corenet_tcp_connect_polaris_pttcd_port(polaris_pttcd_t)
corenet_udp_sendrecv_polaris_pttcd_port(polaris_pttcd_t)

sysnet_read_config(polaris_pttcd_t)

allow polaris_pttcd_t self:capability sys_resource;

```



Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisptcd.te

No license file was found, but licenses were detected in source scan.

#

# August 2017, Shawn Lu

#

# Copyright (c) 2017-2020 by Cisco Systems, Inc.

# All rights reserved

#

policy\_module(polarisrrmmgr, 1.0);

gen\_require(`

type polaris\_rrm\_mgr\_t;

`)

polaris\_btrace\_data\_manage(polaris\_rrm\_mgr\_t)

polaris\_chasfs\_manage(polaris\_rrm\_mgr\_t)

polaris\_tdlresolve\_read(polaris\_rrm\_mgr\_t)

polaris\_tdldb\_list\_dirs(polaris\_rrm\_mgr\_t)

polaris\_cpld\_read(polaris\_rrm\_mgr\_t)

polaris\_lua\_read(polaris\_rrm\_mgr\_t)

polaris\_flashlib\_read(polaris\_rrm\_mgr\_t)

polaris\_ripc\_sman\_ui\_serv\_connect(polaris\_rrm\_mgr\_t)

polaris\_db\_tdldb\_dir\_use(polaris\_rrm\_mgr\_t)

# allow to use setrlimit

allow polaris\_rrm\_mgr\_t self:process setrlimit;

allow polaris\_rrm\_mgr\_t self:capability sys\_resource;

allow polaris\_rrm\_mgr\_t self:capability dac\_override;

# stuff related to vrf support of the socket

polaris\_lfts\_dev\_use(polaris\_rrm\_mgr\_t)

polaris\_socketat\_nsfs\_read(polaris\_rrm\_mgr\_t)

# allow to open udp socket on port 12134

corenet\_udp\_bind\_polaris\_rrm\_mgr\_port(polaris\_rrm\_mgr\_t)

corenet\_udp\_bind\_generic\_node(polaris\_rrm\_mgr\_t)

allow polaris\_rrm\_mgr\_t self:udp\_socket { create\_socket\_perms recv\_msg send\_msg };

corenet\_udp\_bind\_polaris\_rrm\_clnt\_port(polaris\_rrm\_mgr\_t)

polaris\_odm\_clnt2svr\_mqipc\_create(polaris\_rrm\_mgr\_t)

# access "/bootflash/.dbpersist"

```
polaris_tdldbpersist_setup(polaris_rrm_mgr_t)

access /tmp/rp/tdldb/persistent-config/ dir and files in this dir
polaris_tmp_tdldb_persist_setup(polaris_rrm_mgr_t)

logging_send_syslog_msg(polaris_rrm_mgr_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisrrmmgr.te
No license file was found, but licenses were detected in source scan.

#
April 2017, Victor Kamensky
#
Copyright (c) 2017-2021 by Cisco Systems, Inc.
All rights reserved
#

policy_module(polariscyan, 1.0);

dyncfg_setup.sh runs under cmand label

polaris_process_domain_template(dyncfg)

polaris_btrace_data_manage(polaris_dyncfg_t)
polaris_cpld_read(polaris_dyncfg_t)
polaris_lua_read(polaris_dyncfg_t)
polaris_cpld_dev_use(polaris_dyncfg_t)
polaris_rmonbifo_tmp_read(polaris_dyncfg_t)
polaris_chasfs_read(polaris_dyncfg_t)

this script works with /tmp/dyncfg files
type polaris_dyncfg_tmp_t;
files_tmp_file(polaris_dyncfg_tmp_t)

files_tmp_filetrans(polaris_dyncfg_t, polaris_dyncfg_tmp_t, dir, "cyan")
files_tmp_filetrans(polaris_dyncfg_t, polaris_dyncfg_tmp_t, file)

manage_files_pattern(polaris_dyncfg_t, polaris_dyncfg_tmp_t, polaris_dyncfg_tmp_t)
manage_dirs_pattern(polaris_dyncfg_t, polaris_dyncfg_tmp_t, polaris_dyncfg_tmp_t)
manage_lnk_files_pattern(polaris_dyncfg_t, polaris_dyncfg_tmp_t, polaris_dyncfg_tmp_t)

corecmd_exec_bin(polaris_dyncfg_t)
corecmd_exec_shell(polaris_dyncfg_t)

allow read of /etc/group and /etc/passwd
auth_use_nsswitch(polaris_dyncfg_t)
```

```

allow to read /proc/meminfo
kernel_read_system_state(polaris_dynconf_t)

dynconf_setup calls luajit and luajit needs execute JIT generated code
allow polaris_dynconf_t self:process execmem;

allow objstore access
polaris_disk_objstore_read(polaris_dynconf_t)

type polaris_dynconf_log_t;
files_tmp_file(polaris_dynconf_log_t)

gen_require(
 attribute polaris_domain;
)

filetrans_pattern(polaris_domain, polaris_dynconf_tmp_t, polaris_dynconf_log_t, file, "cyan.log")
filetrans_pattern(polaris_domain, polaris_dynconf_tmp_t, polaris_dynconf_log_t, file, "cyan_runtime.log")
files_tmp_filetrans(polaris_domain, polaris_dynconf_log_t, file, "cyan.lock")
manage_files_pattern(polaris_domain, polaris_dynconf_tmp_t, polaris_dynconf_log_t)

polaris_dynconf_tmp_read(polaris_domain)

on utah need to get model info
optional_policy(
 polaris_dash_dev_use(polaris_dynconf_t)
)

#access to /dev/dash_fpga device on fugazi platform
ifdef(^fugazi_platform',`
 polaris_dash_dev_mcp_use(polaris_dynconf_t)
)

allow search and read under /tmp/boot directory
polaris_boot_tmp_read(polaris_dynconf_t)

logging_send_syslog_msg(polaris_dynconf_t)

dynconf needs access to idprom. Idprom is accessed differently depending on
platform

on utah idprom is in quack chip: hw_esg_read_midplane_idprom
on platforms with idprom in quack chip need access to
quack device as part of hw_esg_read_midplane_idprom call.
ifdef(^crankshaft_family',`
 polaris_quack_dev_use(polaris_dynconf_t)
)
ifdef(^starfleet_platform',`

```

```

polaris_quack_dev_use(polaris_dyncfg_t)
')

on 1ng idprom is i2c device in sysfs like:
/sys/devices/pci0000:00/0000:00:1f.3/i2c-0/i2c-1/1-0056/eeprom
on ultra it is still emulated by i2c driver like:
/sys/devices/i2c-0/i2c-1/1-0056/eeprom
dev_rw_sysfs(polaris_dyncfg_t)

on nyquist and 1ng idprom value retrieved by flashlib and needs dac_override
allow polaris_dyncfg_t self:capability dac_override;
polaris_flashlib_read(polaris_dyncfg_t)

LOOK AT ME on quake even rommon var read operation needs write access
i.e flashutil -c getvar -N MODEL_NUM does open with O_RDWR
ifdef(`quake_platform',`
polaris_flashlib_write(polaris_dyncfg_t)
')

In chassis_attr.lua method THIS.WIRELESS checks whether wireless package is installed
by opening (why open, not stat) wncmgrd binary.
optional_policy(`
 gen_require(`
 type polaris_wncmgrd_exec_t;
 ')
 read_files_pattern(polaris_dyncfg_t, bin_t, polaris_wncmgrd_exec_t)
')

lua/cyan/vwlc_chassis_attr.lua needs to read /bootflash/rommon_vars file on vwlc
ifdef(`wlc_family',`
polaris_bootflash_read(polaris_dyncfg_t)
')

lua/cyan/vwlc_chassis_attr.lua needs to read /boot/vcpu_template file on vwlc
ifdef(`wlc_family',`
polaris_disk_varied_read(polaris_dyncfg_t)
')

on macallan passport SUP card idprom is in act2 chip.
hw_passport_read_midplane_idprom invoked from cyan_init
reads /dev/act2 device.
ifdef(`ngwc_family',`
polaris_act2_dev_use(polaris_dyncfg_t)
')

ifdef(`passport_platform',`
open /dev/ttyS0 console in hw_passport_read_midplane_idprom, invoked by

```

```

cyaninit
term_use_unallocated_ttys(polaris_dyncfg_t)
')

during wlc subpackage install cyan_init.sh called from
C9800-Wireless_startup_script.sh script and output redirected
into some install_tmp file
ifdef(^ngwc_family',`
polaris_install_tmp_log_write(polaris_dyncfg_t)
')

/dev/aikido access
polaris_aikido_dev_use(polaris_dyncfg_t)

gen_require(
 type rsync_t;
)

rsync_entry_domtrans(polaris_dyncfg_t, rsync_t)
corenet_tcp_connect_rsync_port(polaris_dyncfg_t)

ifdef(^sumatra_platform',`
LOOK AT ME: After direct usage of /dev/mem is removed (CSCvw80796)
/dev/mem
polaris_dev_mem_use(polaris_dyncfg_t)
')

For Cabo, allow for stronger permissions to access env_var
ifdef(^cabo_platform',`
polaris_proc_rmonbifo_read(polaris_dyncfg_t)
')

For Cabo, also allow access to i2c-0
ifdef(^cabo_platform',`
polaris_i2c_use(polaris_dyncfg_t)
')

/dev/i2c-0 access
ifdef(^petra_platform',`
polaris_i2c_use(polaris_dyncfg_t)
')

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscyan.te
No license file was found, but licenses were detected in source scan.

#
August 2017, Victor Kamensky

```

```

#
Copyright (c) 2017-2020 by Cisco Systems, Inc.
All rights reserved
#

policy_module(polarisflashcheck, 1.0);

gen_require(
 type polaris_flashcheck_t;
)

allow read of /etc/passwd
auth_use_nsswitch(polaris_flashcheck_t)

corecmd_exec_bin(polaris_flashcheck_t)

allow to read /proc/meminfo
kernel_read_system_state(polaris_flashcheck_t)

uses pidof
domain_read_all_domains_state(polaris_flashcheck_t)
dev_read_sysfs(polaris_flashcheck_t)

df on "/" needs fs_t:filesystem getattr
fs_getattr_xattr_fs(polaris_flashcheck_t)

polaris_btrace_data_manage(polaris_flashcheck_t)
polaris_chasfs_manage(polaris_flashcheck_t)
polaris_cpld_read(polaris_flashcheck_t)

polaris_read_debug_conf(polaris_flashcheck_t)
polaris_boot_tmp_read(polaris_flashcheck_t)

logging_send_syslog_msg(polaris_flashcheck_t)

directly output to /dev/ttyS0
term_use_unallocated_ttys(polaris_flashcheck_t)

polaris_bootflash_read(polaris_flashcheck_t)

allow polaris_flashcheck_t self:capability { sys_resource dac_override };

pidof needs below
allow polaris_flashcheck_t self:capability sys_ptrace;

run ldd, which in turns execve "ld.so --verify"
libs_exec_ld_so(polaris_flashcheck_t)

```

```

access of crashinfo dir for flash_check.sh, it does source of pglobals.sh
which needs acces to /crashinfo
polaris_disk_crashinfo_getattr(polaris_flashcheck_t)

this is for NFS access mounted in a dir of ncd context
optional_policy(
 polaris_ncd_tmp_read(polaris_flashcheck_t)
)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisflashcheck.te
No license file was found, but licenses were detected in source scan.

#
June 2017, Victor Kamensky
#
Copyright (c) 2017-2021 by Cisco Systems, Inc.
All rights reserved
#

<summary>Polaris caf Policy Rules.</summary>

#####
<summary>
Read /bootflash/iox/ files or harddisk IOX files
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_iox_files_read`,
 gen_require(`
 type polaris_iox_files_t;
 type polaris_disk_bootflash_t;
 type polaris_disk_harddisk_t;
 type polaris_iox_shared_files_t;
 type polaris_iox_alt_hdd_files_t;
 `)

 read_files_pattern($1, { polaris_iox_files_t polaris_disk_bootflash_t polaris_disk_harddisk_t
polaris_iox_shared_files_t polaris_iox_alt_hdd_files_t }, polaris_iox_files_t)
 list_dirs_pattern($1, { polaris_iox_files_t polaris_disk_bootflash_t polaris_disk_harddisk_t
polaris_iox_shared_files_t polaris_iox_alt_hdd_files_t }, polaris_iox_files_t)
 allow $1 polaris_iox_files_t:file map;

)

```

```

#####
<summary>
Manage /bootflash/iox/ files or harddisk IOX files
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolebase/>
#
interface(`polaris_iox_files_manage`,`
 gen_require(`
 type polaris_iox_files_t;
 type polaris_disk_bootflash_t;
 type polaris_disk_harddisk_t;
 type polaris_iox_shared_files_t;
 type polaris_iox_alt_hdd_files_t;
 `)

 manage_files_pattern($1, { polaris_iox_files_t polaris_disk_bootflash_t polaris_disk_harddisk_t
 polaris_iox_shared_files_t polaris_iox_alt_hdd_files_t }, polaris_iox_files_t)
 manage_dirs_pattern($1, { polaris_iox_files_t polaris_disk_bootflash_t polaris_disk_harddisk_t
 polaris_iox_shared_files_t polaris_iox_alt_hdd_files_t }, polaris_iox_files_t)
 manage_lnk_files_pattern($1, { polaris_iox_files_t polaris_disk_bootflash_t polaris_disk_harddisk_t
 polaris_iox_shared_files_t polaris_iox_alt_hdd_files_t }, polaris_iox_files_t)
 allow $1 polaris_iox_files_t:file map;

)

#####
<summary>
List /bootflash/iox/ dir or harddisk IOX dir
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_iox_dir_list`,`
 gen_require(`
 type polaris_iox_files_t;
 type polaris_disk_bootflash_t;
 type polaris_disk_harddisk_t;
 type httpd_var_run_t;
 type polaris_caf_var_run_t;
 `)

```



```

 type polaris_iox_shared_files_t;
 type polaris_iox_alt_hdd_files_t;
)

 list_dirs_pattern($1, { polaris_iox_files_t polaris_disk_bootflash_t polaris_disk_harddisk_t
polaris_iox_shared_files_t polaris_iox_alt_hdd_files_t }, polaris_iox_files_t)
 list_dirs_pattern($1, { polaris_iox_files_t polaris_disk_bootflash_t polaris_disk_harddisk_t
polaris_iox_shared_files_t polaris_iox_alt_hdd_files_t }, httpd_var_run_t)
 list_dirs_pattern($1, { polaris_iox_files_t polaris_disk_bootflash_t polaris_disk_harddisk_t
polaris_iox_shared_files_t polaris_iox_alt_hdd_files_t }, polaris_caf_var_run_t)

)

#####
<summary>
Search /bootflash/iox/ dir or harddisk IOX
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_iox_dir_search',`
 gen_require(`
 type polaris_iox_files_t;
 type polaris_iox_shared_files_t;
 `)

 search_dirs_pattern($1, polaris_iox_files_t, polaris_iox_files_t)
)

#####
<summary>
Read files like /guestshell/guestshell_set_netns.sh
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_guestshell_files_read',`
 gen_require(`
 type polaris_guestshell_t;
 type polaris_iox_shared_files_t;
 `)
)

```

```

read_files_pattern($1, { polaris_guestshell_t polaris_iox_shared_files_t }, polaris_guestshell_t)
read_lnk_files_pattern($1, { polaris_guestshell_t polaris_iox_shared_files_t }, polaris_guestshell_t)
')

#####
<summary>
Execute files with polaris_guestshell_exec_t type
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolecap/>
#
interface(`polaris_guestshell_exec_files_exec`,`
 gen_require(`
 type polaris_guestshell_exec_t;
 `)

 exec_files_pattern($1, polaris_guestshell_exec_t, polaris_guestshell_exec_t)
')

#####
<summary>
Manage /var/run/netns/guestshell files
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolebase/>
#
interface(`polaris_guestshell_var_run_files_manage`,`
 gen_require(`
 type polaris_guestshell_var_run_t;
 type var_run_t;
 `)

 manage_files_pattern($1, { polaris_guestshell_var_run_t var_run_t }, polaris_guestshell_var_run_t)
 manage_dirs_pattern($1, { polaris_guestshell_var_run_t var_run_t }, polaris_guestshell_var_run_t)
')

#####
<summary>
Read CAF tmp files
</summary>

```

```

<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_caf_tmp_files_read`,`
gen_require(`
type polaris_caf_tmp_files_t;
`)
read_files_pattern($1, polaris_caf_tmp_files_t, polaris_caf_tmp_files_t)
read_lnk_files_pattern($1, polaris_caf_tmp_files_t, polaris_caf_tmp_files_t)
list_dirs_pattern($1, polaris_caf_tmp_files_t, polaris_caf_tmp_files_t)
`)

#####
<summary>
Manage CAF tmp files
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_caf_tmp_files_manage`,`
gen_require(`
type polaris_caf_tmp_files_t;
`)
manage_files_pattern($1, polaris_caf_tmp_files_t, polaris_caf_tmp_files_t)
manage_dirs_pattern($1, polaris_caf_tmp_files_t, polaris_caf_tmp_files_t)
`)

#####
<summary>
Getattr CAF tmp files
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_caf_tmp_files_getattr`,`
gen_require(`
type polaris_caf_tmp_files_t;
`)
getattr_files_pattern($1, polaris_caf_tmp_files_t, polaris_caf_tmp_files_t)
`)

```

```

')

#####
<summary>
Read CAF files. Typically at /opt/cisco/caf/
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_caf_files_read`,`
 gen_require(`
 type polaris_caf_files_t;
 `)

 read_files_pattern($1, polaris_caf_files_t, polaris_caf_files_t)
 read_lnk_files_pattern($1, polaris_caf_files_t, polaris_caf_files_t)
 list_dirs_pattern($1, polaris_caf_files_t, polaris_caf_files_t)
)

#####
<summary>
Manage ../guestshell/rootfs_mnt/cisco/cisco_cli/
This files are used to communicate between guestshell container
iosd, and shell_exec.sh
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolebase/>
#
interface(`polaris_caf_var_run_files_manage`,`
optional_policy(`
 gen_require(`
 type polaris_caf_var_run_t;
 `)

 manage_files_pattern($1, polaris_caf_var_run_t, polaris_caf_var_run_t)
 manage_dirs_pattern($1, polaris_caf_var_run_t, polaris_caf_var_run_t)
)
)

#####
<summary>

```

```

Read /etc/guestshell_rsa_key file
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolebase/>
#
interface(`polaris_guestshell_key_read`,`
 gen_require(`
 type etc_t;
 type polaris_guestshell_ssh_key_t;
 `)

 read_files_pattern($1, etc_t, polaris_guestshell_ssh_key_t)
`)

#####
<summary>
Manage ../local/local1/core_dir/
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolebase/>
#
interface(`polaris_caf_local_core_files_manage`,`
 optional_policy(`
 gen_require(`
 type polaris_caf_core_files_t;
 `)

 manage_files_pattern($1, polaris_caf_core_files_t, polaris_caf_core_files_t)
 manage_dirs_pattern($1, polaris_caf_core_files_t, polaris_caf_core_files_t)
 manage_lnk_files_pattern($1, polaris_caf_core_files_t, polaris_caf_core_files_t)
 `)
`)

#####
<summary>
Manage /mnt/sd3/iox_alt_hdd.dsk and
/mnt/sd3/iox_alt_hdd_mount_dir
</summary>
<param name="domain">
<summary>

```

```

Domain allowed access.
</summary>
</param>
<rolebase/>
#
interface(`polaris_iox_alt_hdd_manage',`
optional_policy(`
gen_require(`
type polaris_disk_bootflash_t;
type polaris_disk_harddisk_t;
type polaris_iox_alt_hdd_files_t;
`)

manage_files_pattern($1, polaris_iox_alt_hdd_files_t, polaris_iox_alt_hdd_files_t)
manage_dirs_pattern($1, polaris_iox_alt_hdd_files_t, polaris_iox_alt_hdd_files_t)
)
)

```

```
#####
```

```

<summary>
Getattr alternate harddisk files
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_iox_alt_hdd_getattr',`
gen_require(`
type polaris_iox_alt_hdd_files_t;
`)

allow $1 polaris_iox_alt_hdd_files_t:filesystem getattr;
)

```

```
#####
```

```

<summary>
Manage tty device link files. Typically at /dev/
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_caf_tty_lnk_manage',`
gen_require(`

```

```

 type polaris_caf_tty_file_t;
 ')

 create_lnk_files_pattern($1, polaris_caf_tty_file_t, polaris_caf_tty_file_t)
 read_lnk_files_pattern($1, polaris_caf_tty_file_t, polaris_caf_tty_file_t)
 delete_lnk_files_pattern($1, polaris_caf_tty_file_t, polaris_caf_tty_file_t)
')

```

```
#####
```

```
<summary>
Manage tty device chr files.
</summary>
```

```
<param name="domain">
```

```
<summary>
```

```
Domain allowed access.
```

```
</summary>
```

```
</param>
```

```
#
```

```
interface(`polaris_caf_chr_file_read`,`
```

```
 gen_require(`
```

```
 type devpts_t;
```

```
 `)
```

```
 setattr_chr_files_pattern($1, devpts_t, devpts_t)
```

```
 read_chr_files_pattern($1, devpts_t, devpts_t)
```

```
')
```

```
#####
```

```
<summary>
```

```
Execute caf in the polaris_caf domain.
```

```
</summary>
```

```
<param name="domain">
```

```
<summary>
```

```
Domain allowed to transition.
```

```
</summary>
```

```
</param>
```

```
#
```

```
interface(`polaris_caf_domtrans`,`
```

```
 gen_require(`
```

```
 type polaris_caf_t, polaris_caf_exec_t;
```

```
 `)
```

```
 domtrans_pattern($1, polaris_caf_exec_t, polaris_caf_t)
```

```
')
```

```
#####
```

```
<summary>
```

```
Provide process signal perms.
```

```

</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_caf_proc_signal_perms`,`
 gen_require(`
 type polaris_caf_t;
 `)

 allow $1 polaris_caf_t:process sigkill;
)

#####
<summary>
Write/read /tmp/ioxss_up file
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_ioxss_rp_tmp_manage`,`
 gen_require(`
 type polaris_ioxss_rp_tmp_t;
 `)
 manage_files_pattern($1,{polaris_ioxss_rp_tmp_t }, polaris_ioxss_rp_tmp_t)
)

#####
<summary>
Getattr of iosd_portal_app_lipc socket file
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolebase/>
#
interface(`polaris_iosd_portal_app_lipc_getattr`,`
 gen_require(`
 type polaris_iosd_portal_app_lipc_t;
 `)

```



```
getattr_sock_files_pattern($1, polaris_iosd_portal_app_lipc_t, polaris_iosd_portal_app_lipc_t)
')
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscaf.if

No license file was found, but licenses were detected in source scan.

```
#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#
```

```
/usr/cpp/bin/cpp_cp_svr -- gen_context(system_u:object_r:polaris_cpp_cp_exec_t,s0)
/usr/cpp/bin/cpp_cp_svr_ledp -- gen_context(system_u:object_r:polaris_cpp_cp_exec_t,s0)
/usr/cpp/bin/cpp_cp_svr_us_ledp -- gen_context(system_u:object_r:polaris_cpp_cp_exec_t,s0)
/usr/cpp/bin/cpp_cp_svr_vwlc -- gen_context(system_u:object_r:polaris_cpp_cp_exec_t,s0)
/usr/cpp/bin/cpp_cp_svr_vwlc_ledp -- gen_context(system_u:object_r:polaris_cpp_cp_exec_t,s0)
/usr/binos/conf/geo_ipv4_db -- gen_context(system_u:object_r:polaris_geodb_files_t,s0)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscppcp.fc

No license file was found, but licenses were detected in source scan.

```
#
March 2017, Victor Kamensky
#
Copyright (c) 2017-2020 by Cisco Systems, Inc.
All rights reserved
#
```

```
polarisnifmgr file contexts place holder
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisnifmgr.fc

No license file was found, but licenses were detected in source scan.

```
#
November 2017, Victor Kamensky
#
Copyright (c) 2017-2021 by Cisco Systems, Inc.
All rights reserved
#
```

```
policy_module(polarisgnmib, 1.0);
```

```
gen_require(`
```

```

 type polaris_gnmib_t;
)

polaris_btrace_data_manage(polaris_gnmib_t)
polaris_crft_data_manage(polaris_gnmib_t)
polaris_chasfs_manage(polaris_gnmib_t)
polaris_tdlresolve_read(polaris_gnmib_t)
polaris_tdlldb_list_dirs(polaris_gnmib_t)
polaris_cpld_read(polaris_gnmib_t)
polaris_lua_read(polaris_gnmib_t)
polaris_flashlib_read(polaris_gnmib_t)

polaris_db_tdlldb_dir_use(polaris_gnmib_t)

optional_policy(
deals with /dev/shm/confd setup (schema and pid)
polaris_conf_d_shm_setup(polaris_gnmib_t)
and allow read shared schema
polaris_conf_d_shared_schema_read(polaris_gnmib_t)
from evconfd_dynamic_load
polaris_conf_d_shared_schema_watch(polaris_gnmib_t)
read /proc/confd_pid/exe file
polaris_conf_d_read(polaris_gnmib_t)
)

allow polaris_gnmib_t self:capability dac_override;

logging_send_syslog_msg(polaris_gnmib_t)

create ndbutil directory under /var/lock
polaris_conf_d_ndbutil_create(polaris_gnmib_t)

polaris_ndbutil_lock_template(polaris_gnmib_t, gnmib, ".l.schema_use.gnmib")

grpc library through sysconf accesses /sys/devices/system/cpu
to get number of CPUs
dev_read_sysfs(polaris_gnmib_t)

gnmib uses multiple (configurable) tcp ports for secure and insecure mode
corenet_tcp_bind_generic_port(polaris_gnmib_t)
allow polaris_gnmib_t self:tcp_socket { shutdown };
corenet_tcp_connect_all_ports(polaris_gnmib_t)

iospl_token_read_from_file reads /tmp/rp/.iospl_gnmib
polaris_gnmib_token_read(polaris_gnmib_t)

gnmib creates /var/tmp/gnmib.pid
type polaris_gnmib_var_t;

```

```

files_tmp_file(polaris_gnmib_var_t);
files_tmp_filetrans(polaris_gnmib_t, polaris_gnmib_var_t, file, "gnmib.pid");
manage_files_pattern(polaris_gnmib_t, polaris_gnmib_var_t, polaris_gnmib_var_t)
manage_dirs_pattern(polaris_gnmib_t, polaris_gnmib_var_t, polaris_gnmib_var_t)
manage_lnk_files_pattern(polaris_gnmib_t, polaris_gnmib_var_t, polaris_gnmib_var_t)

read access to /dev/random
dev_read_rand(polaris_gnmib_t)

kernel_read_net_sysctls(polaris_gnmib_t)

type polaris_gnmib_gnoi_images_t;
files_type(polaris_gnmib_gnoi_images_t);
polaris_bootflash_filetrans(polaris_gnmib_t, polaris_gnmib_gnoi_images_t, file,);
manage_files_pattern(polaris_gnmib_t, polaris_disk_bootflash_t, polaris_gnmib_gnoi_images_t)

need to execute install engine scripts
polaris_install_engine_domtrans(polaris_gnmib_t)

need access to shell to execute install scripts
corecmd_exec_shell(polaris_gnmib_t)
corecmd_exec_bin(polaris_gnmib_t)

install script needs rmonbifo
polaris_rmonbifo_tmp_read(polaris_gnmib_t)

not sure why this is needed
auth_map_passwd(polaris_gnmib_t)

#DB persistence
polaris_tldbpersist_setup(polaris_gnmib_t)
polaris_tmp_tlddb_persist_setup(polaris_gnmib_t)

allow polaris_gnmib_t self:capability sys_resource;

needed to fstat and check space when transferring image for os.proto install rpc
fs_getattr_xattr_fs(polaris_gnmib_t)

needed by gnmib ui because uipeer heartbeat timer accesses TDL epoch files
polaris_issu_tmp_files_read(polaris_gnmib_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisgnmib.te
No license file was found, but licenses were detected in source scan.

#
October 2019, Patrick O'Halloran
#

```

# Copyright (c) 2016-2020 by Cisco Systems, Inc.

# All rights reserved

#

/usr/binos/conf/mcp\_crft\_request.sh -- gen\_context(system\_u:object\_r:polaris\_crft\_request\_exec\_t,s0)

#NGWC - nyquist, edison, bigbang

/mnt/sd3/user/.CRFT(/.\*)? gen\_context(system\_u:object\_r:polaris\_crft\_data\_t,s0)

/mnt/sd3/user/.CRFT/[0-9]\*(.\*)? gen\_context(system\_u:object\_r:polaris\_crft\_data\_t,s0)

/mnt/sd3/user/.CRFT/archive(/.\*)? gen\_context(system\_u:object\_r:polaris\_crft\_data\_t,s0)

#NGWC - macallan, starfleet

/flash1/user/.CRFT(/.\*)? gen\_context(system\_u:object\_r:polaris\_crft\_data\_t,s0)

/flash1/user/.CRFT/[0-9]\*(.\*)? gen\_context(system\_u:object\_r:polaris\_crft\_data\_t,s0)

/flash1/user/.CRFT/archive(/.\*)? gen\_context(system\_u:object\_r:polaris\_crft\_data\_t,s0)

#MCP, QWLC

/vol/harddisk/.CRFT(/.\*)? gen\_context(system\_u:object\_r:polaris\_crft\_data\_t,s0)

/vol/harddisk/.CRFT/[0-9]\*(.\*)? gen\_context(system\_u:object\_r:polaris\_crft\_data\_t,s0)

/vol/harddisk/.CRFT/archive(/.\*)? gen\_context(system\_u:object\_r:polaris\_crft\_data\_t,s0)

#VXE, WLC, CRANKSHAFT, MCP

/bootflash/.CRFT(/.\*)? gen\_context(system\_u:object\_r:polaris\_crft\_data\_t,s0)

/bootflash/.CRFT/[0-9]\*(.\*)? gen\_context(system\_u:object\_r:polaris\_crft\_data\_t,s0)

/bootflash/.CRFT/archive(/.\*)? gen\_context(system\_u:object\_r:polaris\_crft\_data\_t,s0)

#CRANKSHAFT - blackheart, sparrow

/flash1/.CRFT(/.\*)? gen\_context(system\_u:object\_r:polaris\_crft\_data\_t,s0)

/flash1/.CRFT/[0-9]\*(.\*)? gen\_context(system\_u:object\_r:polaris\_crft\_data\_t,s0)

/flash1/.CRFT/archive(/.\*)? gen\_context(system\_u:object\_r:polaris\_crft\_data\_t,s0)

#PETRA - petra

# USER is a reserved selinux keyword - escape it like this

/flash10/USE[R]/.CRFT(/.\*)? gen\_context(system\_u:object\_r:polaris\_crft\_data\_t,s0)

/flash10/USE[R]/.CRFT/[0-9]\*(.\*)? gen\_context(system\_u:object\_r:polaris\_crft\_data\_t,s0)

/flash10/USE[R]/.CRFT/archive(/.\*)? gen\_context(system\_u:object\_r:polaris\_crft\_data\_t,s0)

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscrft.fc

No license file was found, but licenses were detected in source scan.

#

# March 2017, Victor Kamensky

#

# Copyright (c) 2017-2019 by Cisco Systems, Inc.

# All rights reserved

#

# polariscmm file contexts place holder

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscmm.fc

No license file was found, but licenses were detected in source scan.

#

# July 2017, Victor Kamensky

#

# Copyright (c) 2017-2020 by Cisco Systems, Inc.

# All rights reserved

#

## <summary>Polaris install Policy Rules.</summary>

#####

## <summary>

## Read polaris\_sw\_data\_t, effectively path to read polaris

## base image packages

## </summary>

## <param name="domain">

## <summary>

## Domain allowed access.

## </summary>

## </param>

#

interface(`polaris\_sw\_data\_read`,`

gen\_require(`

type polaris\_sw\_data\_t;

type tmp\_t;

`)

read\_files\_pattern(\$1, { tmp\_t polaris\_sw\_data\_t }, polaris\_sw\_data\_t)

read\_lnk\_files\_pattern(\$1, { tmp\_t polaris\_sw\_data\_t }, polaris\_sw\_data\_t)

list\_dirs\_pattern(\$1, { tmp\_t polaris\_sw\_data\_t }, polaris\_sw\_data\_t)

`)

#####

## <summary>

## Map polaris\_sw\_data\_t, effectively path to map polaris

## base image packages

## </summary>

## <param name="domain">

## <summary>

## Domain allowed access.

## </summary>

## </param>

#

interface(`polaris\_sw\_data\_map`,`

```

gen_require(
 type polaris_sw_data_t;
)
 allow $1 polaris_sw_data_t:file map;
)

#####
<summary>
Manage polaris_sw_data_t, effectively path to set up polaris
base image packages house holding
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(polaris_sw_data_manage')
 gen_require(
 type polaris_sw_data_t;
 type tmp_t;
)
 manage_files_pattern($1, { tmp_t polaris_sw_data_t }, polaris_sw_data_t)
 manage_lnk_files_pattern($1, { tmp_t polaris_sw_data_t }, polaris_sw_data_t)
 manage_dirs_pattern($1, { tmp_t polaris_sw_data_t }, polaris_sw_data_t)
 allow $1 polaris_sw_data_t:dir mounton;
)

#####
<summary>
Read polaris_patch_data_t, effectively path to read polaris
smu patch or optional packages
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(polaris_patch_data_read')
 gen_require(
 type polaris_patch_data_t;
 type tmp_t;
)
 read_files_pattern($1, { tmp_t polaris_patch_data_t }, polaris_patch_data_t)
 read_lnk_files_pattern($1, { tmp_t polaris_patch_data_t }, polaris_patch_data_t)
 list_dirs_pattern($1, { tmp_t polaris_patch_data_t }, polaris_patch_data_t)

```

```

)

#####
<summary>
Manage polaris_patch_data_t, effectively path to set up polaris
smu patch or optional packages house holding
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_patch_data_manage',`
gen_require(`
type polaris_patch_data_t;
type tmp_t;
)
manage_files_pattern($1, { tmp_t polaris_patch_data_t }, polaris_patch_data_t)
manage_lnk_files_pattern($1, { tmp_t polaris_patch_data_t }, polaris_patch_data_t)
manage_dirs_pattern($1, { tmp_t polaris_patch_data_t }, polaris_patch_data_t)
)

```

```

#####
<summary>
Watch patch_data directories
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolebase/>
#
interface(`polaris_patch_data_watch',`
gen_require(`
type polaris_patch_data_t;
)
allow $1 polaris_patch_data_t:dir watch;
)

```

```

#####
<summary>
Write into tmp files created by install_show.sh
</summary>
<param name="domain">
<summary>
Domain allowed to transition.

```

```

</summary>
</param>
#
interface(`polaris_install_show_tmp_write`,`
gen_require(`
type polaris_install_show_tmp_t;
type tmp_t;
`)
write_files_pattern($1, { tmp_t polaris_install_show_tmp_t }, polaris_install_show_tmp_t)
`)

```

```
#####
```

```

<summary>
Read tmp files created by install_show.sh
</summary>
<param name="domain">
<summary>
Domain allowed to transition.
</summary>
</param>
#
interface(`polaris_install_show_tmp_read`,`
gen_require(`
type polaris_install_show_tmp_t;
type tmp_t;
`)
read_files_pattern($1, { tmp_t polaris_install_show_tmp_t }, polaris_install_show_tmp_t)
`)

```

```
#####
```

```

<summary>
Manage tmp installer files and directories
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_install_show_tmp_manage`,`
gen_require(`
type polaris_install_show_tmp_t;
`)
manage_dirs_pattern($1, polaris_install_show_tmp_t, polaris_install_show_tmp_t)
manage_files_pattern($1, polaris_install_show_tmp_t, polaris_install_show_tmp_t)
manage_lnk_files_pattern($1, polaris_install_show_tmp_t, polaris_install_show_tmp_t)
`)

```



```
#####
<summary>
Manage /bootflash/.issu_loc_lock files
TODO: provfunc.sh and hman have reference to /bootflash/$ISSU_LOCAL_LOCK_FILE.
For now, I am keeping manage_dirs_pattern for polaris_disk_bootflash_t.
Need to re-visit so that callers to this macro do not have write-permission
to all of bootflash..
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolebase/>
#
interface(`polaris_issu_files_manage',`
 gen_require(`
 type polaris_issu_files_t;
 type polaris_disk_bootflash_t;
 `)

 filetrans_pattern($1, polaris_disk_bootflash_t, polaris_issu_files_t, file, ".issu_loc_lock")
 manage_files_pattern($1, polaris_issu_files_t, polaris_issu_files_t)
 manage_dirs_pattern($1, polaris_disk_bootflash_t, polaris_issu_files_t)
)

#####
<summary>
Manage ISSU tmp files, allowing to record and
check upgrade progress
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_issu_tmp_files_manage',`
 gen_require(`
 type polaris_issu_tmp_files_t;
 type tmp_t;
 `)

 manage_files_pattern($1, { tmp_t polaris_issu_tmp_files_t }, polaris_issu_tmp_files_t)
 manage_lnk_files_pattern($1, { tmp_t polaris_issu_tmp_files_t }, polaris_issu_tmp_files_t)
 manage_dirs_pattern($1, { tmp_t polaris_issu_tmp_files_t }, polaris_issu_tmp_files_t)
)

```

```
#####
<summary>
Write/read any regular file/directory from /bootflash/.install
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_disk_install_manage',`
 gen_require(`
 type polaris_disk_install_t;
 `)
 manage_dirs_pattern($1, polaris_disk_install_t, polaris_disk_install_t)
 manage_files_pattern($1, polaris_disk_install_t, polaris_disk_install_t)
 manage_lnk_files_pattern($1, polaris_disk_install_t, polaris_disk_install_t)
 allow $1 polaris_disk_install_t:dir watch;
`)
```

```
#####
<summary>
Read any regular file/directory from /bootflash/.install
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_disk_install_read',`
 gen_require(`
 type polaris_disk_install_t;
 `)
 search_dirs_pattern($1, polaris_disk_install_t, polaris_disk_install_t)
 read_files_pattern($1, polaris_disk_install_t, polaris_disk_install_t)
 read_lnk_files_pattern($1, polaris_disk_install_t, polaris_disk_install_t)
 allow $1 polaris_disk_install_t:dir {watch read};
`)
```

```
#####
<summary>
Get attributes of any regular file/directory from /bootflash/.install
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
```

```

</param>
#
interface(`polaris_disk_install_fs_getattr`,`
 gen_require(`
 type polaris_disk_install_t;
 `)
 allow $1 polaris_disk_install_t:filesystem getattr;
)

#####
<summary>
Manage /tmp/installer files and directories
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_install_tmp_manage`,`
 gen_require(`
 type polaris_install_tmp_t;
 `)
 manage_dirs_pattern($1, polaris_install_tmp_t, polaris_install_tmp_t)
 manage_files_pattern($1, polaris_install_tmp_t, polaris_install_tmp_t)
 manage_lnk_files_pattern($1, polaris_install_tmp_t, polaris_install_tmp_t)
 manage_fifo_files_pattern($1, polaris_install_tmp_t, polaris_install_tmp_t)
)

#####
<summary>
Read /tmp/installer files and directories
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_install_tmp_read`,`
 gen_require(`
 type polaris_install_tmp_t;
 `)
 list_dirs_pattern($1, polaris_install_tmp_t, polaris_install_tmp_t)
 read_files_pattern($1, polaris_install_tmp_t, polaris_install_tmp_t)
 read_lnk_files_pattern($1, polaris_install_tmp_t, polaris_install_tmp_t)
 allow $1 polaris_install_tmp_t:dir watch;
 allow $1 polaris_install_tmp_t:file map;
)

```

```

')

#####
<summary>
Execute install related scripts in its own domain.
</summary>
<param name="domain">
<summary>
Domain allowed to transition.
</summary>
</param>
#
interface(`polaris_install_engine_domtrans`,`
 gen_require(`
 type polaris_install_engine_t, polaris_install_engine_exec_t;
 `)

 domtrans_pattern($1, polaris_install_engine_exec_t, polaris_install_engine_t)
`)

```

```

#####
<summary>
Write into tmp log files created by install engine
</summary>
<param name="domain">
<summary>
Domain allowed to transition.
</summary>
</param>
#
interface(`polaris_install_tmp_log_write`,`
 gen_require(`
 type polaris_install_tmp_log_t;
 `)

 write_files_pattern($1, polaris_install_tmp_log_t, polaris_install_tmp_log_t)
`)

```

```

#####
<summary>
Execute install selinux related scripts in its own domain.
</summary>
<param name="domain">
<summary>
Domain allowed to transition.
</summary>
</param>
#
interface(`polaris_install_selinux_domtrans`,`

```

```

gen_require(
 type polaris_install_selinux_t, polaris_install_selinux_exec_t;
)

domtrans_pattern($1, polaris_install_selinux_exec_t, polaris_install_selinux_t)
)

#####
<summary>
Execute wireless install related scripts in its own domain.
</summary>
<param name="domain">
<summary>
Domain allowed to transition.
</summary>
</param>
#
interface(`polaris_install_wireless_domtrans',`
 gen_require(
 type polaris_install_wireless_t, polaris_install_wireless_exec_t;
)

 domtrans_pattern($1, polaris_install_wireless_exec_t, polaris_install_wireless_t)
)

#####
<summary>
Execute install show scripts in its own domain.
</summary>
<param name="domain">
<summary>
Domain allowed to transition.
</summary>
</param>
#
interface(`polaris_install_show_domtrans',`
 gen_require(
 type polaris_install_show_t, polaris_install_show_exec_t;
)

 domtrans_pattern($1, polaris_install_show_exec_t, polaris_install_show_t)
)

#####
<summary>
Allow the specified domain to manage KGV data files
I.e under /tmp/pkg_cs_debug created by function verify_pkg
common scripts file.

```

```

</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_pkg_cs_debug_manage`,`
 gen_require(`
 type polaris_pkg_cs_debug_t;
 `)
 files_tmp_filetrans($1, polaris_pkg_cs_debug_t, dir, "pkg_cs_debug")
 fs_tmpfs_filetrans($1, polaris_pkg_cs_debug_t, dir, "pkg_cs_debug")
 manage_dirs_pattern($1, polaris_pkg_cs_debug_t, polaris_pkg_cs_debug_t)
 manage_files_pattern($1, polaris_pkg_cs_debug_t, polaris_pkg_cs_debug_t)
`)

```

```

#####
<summary>
Manage /file which is generated on "flock -u file /tmp/sysctrl_i2c.lck"
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#

```

```

interface(`polaris_i2c_lock_file_manage`,`
 gen_require(`
 type polaris_i2c_lock_file_t;
 `)
 manage_dirs_pattern($1, polaris_i2c_lock_file_t, polaris_i2c_lock_file_t)
 manage_files_pattern($1, polaris_i2c_lock_file_t, polaris_i2c_lock_file_t)
`)

```

```

#####
<summary>
write /tmp/installer files and directories
</summary>
<param name="domain">
<summary>
Domain allowed to transition.
</summary>
</param>
#

```

```

interface(`polaris_install_tmp_write`,`
 gen_require(`
 type polaris_install_tmp_t;
 `)

```

```

)
 write_files_pattern($1, polaris_install_tmp_t, polaris_install_tmp_t)
 allow $1 polaris_install_tmp_t:dir watch;
)

#####
<summary>
Read/Write /.images files and directories
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_install_images_manage`,`
 gen_require(`
 type polaris_install_images_t;
 `)

 manage_dirs_pattern($1, polaris_install_images_t, polaris_install_images_t)
 manage_files_pattern($1, polaris_install_images_t, polaris_install_images_t)
)

#####
<summary>
Read ISSU tmp files
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_issu_tmp_files_read`,`
 gen_require(`
 type polaris_issu_tmp_files_t;
 type tmp_t;
 `)

 list_dirs_pattern($1, { tmp_t polaris_issu_tmp_files_t }, polaris_issu_tmp_files_t)
 read_files_pattern($1, { tmp_t polaris_issu_tmp_files_t }, polaris_issu_tmp_files_t)
 read_lnk_files_pattern($1, { tmp_t polaris_issu_tmp_files_t }, polaris_issu_tmp_files_t)
 allow $1 polaris_issu_tmp_files_t:file map;
)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisinstall.if

No license file was found, but licenses were detected in source scan.

```
#
August 2017, Shawn Lu
#
Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved
#

policy_module(polarisodm, 1.0);

gen_require(
 type polaris_odm_t;
)

polaris_btrace_data_manage(polaris_odm_t)
polaris_crft_data_manage(polaris_odm_t)
polaris_chasfs_manage(polaris_odm_t)
polaris_tdlresolve_read(polaris_odm_t)
polaris_tdlldb_list_dirs(polaris_odm_t)
polaris_cpld_read(polaris_odm_t)
polaris_lua_read(polaris_odm_t)
polaris_flashlib_read(polaris_odm_t)

polaris_ripc_sman_ui_serv_connect(polaris_odm_t)

polaris_db_tdlldb_dir_use(polaris_odm_t)

allow setrlimit
allow polaris_odm_t self:capability sys_resource;
allow polaris_odm_t self:process setrlimit;
allow polaris_odm_t self:capability dac_override;

odm_svr2clnt_data uses subdirectory for channels needs explicit rule
to allow it. ODM elastic value is 2 now, add more if need in the
future.
gen_require(
 type polaris_odm_server2client_data_mqipc_t;
)
polaris_mqipc_create_name_dir(polaris_odm_t, polaris_odm_server2client_data_mqipc_t, odm_svr2clnt_data-b1)
polaris_mqipc_create_name_dir(polaris_odm_t, polaris_odm_server2client_data_mqipc_t, odm_svr2clnt_data-b0)
polaris_mqipc_create_name_dir(polaris_odm_t, polaris_odm_server2client_data_mqipc_t, odm_svr2clnt_data)

logging_send_syslog_msg(polaris_odm_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisodm.te
```



No license file was found, but licenses were detected in source scan.

```

March 2017, Victor Kamensky

Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved

<summary>Polaris polarisreflector Policy Rules.</summary>
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisreflector.if
No license file was found, but licenses were detected in source scan.
```

```

June 2017, Victor Kamensky

Copyright (c) 2017-2021 by Cisco Systems, Inc.
All rights reserved

policy_module(polariscontainer, 1.0);

polaris_default_container_t type for not labeled container
polaris_container_domain_template(default)

polaris_utd_container_t type for snort container
polaris_container_domain_template(utd)
polaris_utd_container(polaris_utd_container_t)

polaris_utdl_container_t type for snort container, that has
legacy configuration, need more permissions
polaris_container_domain_template(utdl)
polaris_utd_container(polaris_utdl_container_t)

manage /tmp/xml/{Utd*} dirs
polaris_vman_log_files_manage(polaris_utdl_container_t)
optional_policy(
 polaris_cedge_xml_tmp_manage(polaris_utdl_container_t)
)

allow polaris_utdl_container_t ramfs_t:file map;

polaris_iox_container_watch(polaris_utdl_container_t)

work with memif
optional_policy(
```

```

 polaris_qfp_dgram_send(polaris_utdl_container_t)
)

creates /tmp/HTX-IOX/sw-htx-service
optional_policy(
 polaris_htx_iox_tmp_manage(polaris_utdl_container_t)
)
optional_policy(
 polaris_htx_use_client_socket(polaris_utdl_container_t)
)

allow container to work with /tmp/binos-IOX
optional_policy(
 polaris_qfp_memif_manage(polaris_utdl_container_t)
)

snort works with /dev/shm/SPO_DAQ_MMAP_OBJ_
fs_exec_tmpfs_files(polaris_utdl_container_t)

allow container to work with /tmp/xml/* files
optional_policy(
 polaris_vman_tmp_manage(polaris_utdl_container_t)
)

gen_require(
 type container_file_t;
)
polaris_disk_type(container_file_t)

legacy utd (snort) container in /etc/init.d/rc.local does unconditional
mount of ramfs on /tmp/snortlogs
fs_mount_ramfs(polaris_utdl_container_t)
legacy utd (snort) container in /etc/init.d/rc.local does unconditional
mount of tmpfs on /dev/shm
fs_mount_tmpfs(polaris_utdl_container_t)
fs_manage_tmpfs_dirs(polaris_utdl_container_t)
fs_manage_tmpfs_files(polaris_utdl_container_t)
fs_manage_tmpfs_symlinks(polaris_utdl_container_t)

Allow ramfs access to utd container
fs_manage_ramfs_dirs(polaris_utdl_container_t)
fs_manage_ramfs_files(polaris_utdl_container_t)

Allow link file access from cron to crond
kernel_read_state(polaris_utdl_container_t)

Allow Snort
allow polaris_utdl_container_t self:packet_socket map;

```

```

polaris_iox_container_t type for generic IOx containers
polaris_container_domain_template(iox)

fs_mount_tmpfs(polaris_iox_container_t)
fs_manage_tmpfs_dirs(polaris_iox_container_t)
fs_manage_tmpfs_files(polaris_iox_container_t)
fs_manage_tmpfs_symlinks(polaris_iox_container_t)
fs_manage_tmpfs_sockets(polaris_iox_container_t)
fs_manage_tmpfs_fifo_files is missing
gen_require(
 type tmpfs_t;
)
manage_fifo_files_pattern(polaris_iox_container_t, tmpfs_t, tmpfs_t)
fs_mounon_tmpfs(polaris_iox_container_t)
container systemd file mmmaps tmpfs_t, i.e /usr/lib/systemd/systemd-journald
allow polaris_iox_container_t tmpfs_t:file map;

container reads ip netns identity <pid>
fs_read_nsfs_files(polaris_iox_container_t)

container systemd does remount of some file systems
gen_require(
 type svirt_sandbox_file_t;
)
allow polaris_iox_container_t svirt_sandbox_file_t:filesystem { remount };

polaris_caf_var_run_files_manage(polaris_iox_container_t)
permit access to /local core files between host and container
polaris_caf_local_core_files_manage(polaris_iox_container_t)

allow polaris_iox_container_t self:cap_users { chown dac_override dac_read_search fsetid setgid setpcap setuid
sys_admin sys_boot };

gen_require(
 type devpts_t;
 type polaris_iox_container_t;
 type container_runtime_t;
 class fifo_file { getattr ioctl read write };
 class chr_file { getattr ioctl open read setattr write };
)

#===== polaris_iox_container_t =====
allow polaris_iox_container_t container_runtime_t:fifo_file { getattr setattr ioctl open read write };
allow polaris_iox_container_t devpts_t:chr_file { getattr ioctl open read setattr write };

Normally lipc denials are addressed by code that is generated from TDL.
I.e if process need to access lipc service it just need to be listed as 'client' of proper TDL service.

```

```

If in this case iox_container process does not have its own TDL proc_def entry,
therefore we use autogenerated polaris_lipc_iosd_portal_app_write macro/interface.
Marking this policy optional, so that if platform TDL does not have proper service defined
then polaris_lipc_iosd_portal_app_write won't be generated, but container policy still would compile.
optional_policy(
 gen_require(
 type polaris_iosd_t;
)
 polaris_lipc_iosd_portal_app_write(polaris_iox_container_t, polaris_iosd_t)
)

docker_exec_lib(polaris_iox_container_t)
fs_exec_hugetlbfs_files(polaris_iox_container_t)
kernel_read_ring_buffer(polaris_iox_container_t)
dev_read_sysfs(polaris_iox_container_t)
polaris_iox_container_watch(polaris_iox_container_t)

polaris_sdavc_container_t type for SDAVC container, that has
legacy configuration, need more permissions

polaris_container_domain_template(sdavc)
polaris_utd_container(polaris_sdavc_container_t)

manage /tmp/xml/{SDAVC*} dirs
polaris_vman_log_files_manage(polaris_sdavc_container_t)

legacy SDAVC container in /etc/init.d/rc.local does unconditional
mount of tmpfs on /dev/shm
fs_mount_tmpfs(polaris_sdavc_container_t)

container systemd mounton tmpfs_t & tmpfs_st management
fs_mounton_tmpfs(polaris_sdavc_container_t)
fs_manage_tmpfs_dirs(polaris_sdavc_container_t)
fs_manage_tmpfs_files(polaris_sdavc_container_t)
fs_manage_tmpfs_symlinks(polaris_sdavc_container_t)
fs_manage_tmpfs_sockets(polaris_sdavc_container_t)
manage_fifo_files_pattern(polaris_sdavc_container_t, tmpfs_t, tmpfs_t)
container systemd file mmaps tmpfs_t, i.e /usr/lib/systemd/systemd-journald
allow polaris_sdavc_container_t tmpfs_t:file map;
Add watch on tmpfs_t/container_t dir/files
polaris_iox_container_watch(polaris_sdavc_container_t)

map/mount/write hugetlbfs files
gen_require(
 type hugetlbfs_t;
)
allow polaris_sdavc_container_t hugetlbfs_t:filesystem mount;
allow polaris_sdavc_container_t hugetlbfs_t:file map;

```

```

fs_manage_hugetlbfs_dirs(polaris_sdavc_container_t)

Allow syslog_mod operation on kernel_t
kernel_clear_ring_buffer(polaris_sdavc_container_t)

Allow tcpdump
allow polaris_sdavc_container_t self:packet_socket map;
allow polaris_utdl_container_t self:packet_socket map;

add in the docker files labels to polaris_disk_type
gen_require(
 type container_var_lib_t;
 type container_share_t;
 type container_log_t;
)
polaris_disk_type(container_var_lib_t)
polaris_disk_type(container_share_t)
polaris_disk_type(container_log_t)

polaris_waas_container_t type for WAAS KVM
polaris_kvm_domain_template(waas)

#Allow rw block files access to /dev/lvm_raid
storage_dontaudit_write_fixed_disk(polaris_waas_container_t)
storage_dontaudit_read_fixed_disk(polaris_waas_container_t)
#Manage hugetlbfs files/dirs
fs_manage_hugetlbfs_dirs(polaris_waas_container_t)
manage_files_pattern(polaris_waas_container_t, hugetlbfs_t, hugetlbfs_t)
fs_exec_hugetlbfs_files(polaris_waas_container_t)

#allow access of /dev/kvm device
dev_rw_kvm(polaris_waas_container_t)

#allow domain to search/write to virlogd_t
polaris_vman_virtlog_allow(polaris_waas_container_t)

Allow for guest-share
gen_require(
 type polaris_iox_shared_files_t;
)
manage_files_pattern(polaris_iox_container_t, polaris_iox_shared_files_t, polaris_iox_shared_files_t)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariscontainer.te

No license file was found, but licenses were detected in source scan.

```

#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2020 by Cisco Systems, Inc.
All rights reserved
#

<summary>Polaris polarispvp Policy Rules.</summary>

#####
<summary>
Execute a domain transition to run pvp.
</summary>
<param name="domain">
<summary>
Domain allowed to transition.
</summary>
</param>
#
interface(`polaris_pvp_domtrans`,`
 gen_require(`
 type polaris_pvp_t, polaris_pvp_exec_t;
 `)

 domtrans_pattern($1, polaris_pvp_exec_t, polaris_pvp_t)
`)

#####
<summary>
Manage pvp temporary files and directories in /tmp.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_pvp_manage_tmp_files`,`
 gen_require(`
 type polaris_pvp_tmp_t;
 `)

 manage_files_pattern($1, polaris_pvp_tmp_t, polaris_pvp_tmp_t)
 manage_dirs_pattern($1, polaris_pvp_tmp_t, polaris_pvp_tmp_t)
 manage_fifo_files_pattern($1, polaris_pvp_tmp_t, polaris_pvp_tmp_t)
`)

#####

```

```

<summary>
Manage pvp process_state files and directories in
/tmp/[rp|fp|cc]/pvp/process_state.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_pvp_manage_process_state_files`,`
 gen_require(`
 type polaris_process_state_t;
 `)

 manage_files_pattern($1, polaris_process_state_t, polaris_process_state_t)
`)

```

```

#####
<summary>
Getattr dirs pvp temporary files and directories in /tmp.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_pvp_getattrs_tmp_dirs`,`
 gen_require(`
 type tmp_t;
 type polaris_pvp_tmp_t;
 `)

 getattr_dirs_pattern($1, tmp_t, polaris_pvp_tmp_t)
`)

```

```

#####
<summary>
Read from pvp stdin. Should be granted to scripts spawned
from pvp with domain transition. pvp stdin (0) points to fifo
file like /tmp/rp/pvp/work/inot_fifo
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>

```

```

#
interface(`polaris_pvp_stdin_read`,`
 gen_require(`
 type polaris_pvp_tmp_t;
 `)

 read_fifo_files_pattern($1, polaris_pvp_tmp_t, polaris_pvp_tmp_t)
)

#####
<summary>
Read pvp temporary files and directories in /tmp.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_pvp_read_tmp_files`,`
 gen_require(`
 type tmp_t;
 type polaris_pvp_tmp_t;
 `)

 rw_files_pattern($1, { tmp_t polaris_pvp_tmp_t }, polaris_pvp_tmp_t)
)

#####
<summary>
Read pvp SAI files under
/tmp/[rp|fp|cc/*]/pvp/sai_process.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_pvp_read_sai_files`,`
 gen_require(`
 type polaris_pvp_sai_t;
 `)

 read_files_pattern($1, polaris_pvp_sai_t, polaris_pvp_sai_t)
 list_dirs_pattern($1, polaris_pvp_sai_t, polaris_pvp_sai_t)
 allow $1 polaris_pvp_sai_t:dir watch;
)

```



```
#####
<summary>
Delete pvp SAI dirs and files under
/tmp/[rp|fp|cc/*]/pvp/sai_process.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_pvp_delete_sai_files`,`
 gen_require(`
 type polaris_pvp_sai_t;
 `)
 allow $1 polaris_pvp_sai_t:dir { remove_name rmdir write };
 allow $1 polaris_pvp_sai_t:file unlink;
)`)

```

```
#####
<summary>
Watch pvp process_state directories
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolebase/>
#
interface(`polaris_process_state_watch`,`
 gen_require(`
 type polaris_process_state_t;
 `)
 allow $1 polaris_process_state_t:dir watch;
)`)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarispvp.if

No license file was found, but licenses were detected in source scan.

```
#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#
```

```
policy_module(polarisrmonbifo, 1.0);
```

```

Polaris Rmonbifo Driver policy
#####
```

```
note polaris_proc_rmonbifo_t is defined in kernel/kernel.te, since genfscon
statements could be only in base policy
```

```
type polaris_rmonbifo_tmp_t;
files_type(polaris_rmonbifo_tmp_t)
```

```
polaris_systemd_tmpfiles_tmp_filetrans(polaris_rmonbifo_tmp_t, dir, "rmonbifo")
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisrmonbifo.te
No license file was found, but licenses were detected in source scan.
```

```

February 2020, Victor Kamensky

Copyright (c) 2020 by Cisco Systems, Inc.
All rights reserved
#
```

```
/bootflash/sdavic(/.*)? gen_context(system_u:object_r:polaris_sdavic_proxy_files_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarissdavicproxy.fc
No license file was found, but licenses were detected in source scan.
```

```

August 2017, Shawn Lu

Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved
#
```

```
polarisodm file contexts place holder
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisodm.fc
No license file was found, but licenses were detected in source scan.
```

```

March 2017, Victor Kamensky

Copyright (c) 2016-2020 by Cisco Systems, Inc.
```

```
All rights reserved
#

/usr/binos/conf/auto_upgrade_client.sh -- gen_context(system_u:object_r:polaris_autoupgrade_exec_t,s0)
/usr/binos/conf/auto_upgrade_helper.sh -- gen_context(system_u:object_r:polaris_autoupgrade_exec_t,s0)
/usr/binos/conf/auto_upgrade_trigger.sh -- gen_context(system_u:object_r:polaris_autoupgrade_exec_t,s0)
/usr/binos/conf/auto_upgrade_client_helper.sh -- gen_context(system_u:object_r:polaris_autoupgrade_exec_t,s0)

/tmp/etc/installer gen_context(system_u:object_r:polaris_autoupgrade_tmp_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisautoupgrade.fc
No license file was found, but licenses were detected in source scan.
```

```
#
October 2017, Victor Kamensky
#
Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved
#
```

```
polariswstatsd file contexts place holder
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariswstatsd.fc
No license file was found, but licenses were detected in source scan.
```

```
#
July 2017, Victor Kamensky
#
Copyright (c) 2017-2020 by Cisco Systems, Inc.
All rights reserved
#
```

```
/usr/binos/conf/bexecute.sh -- gen_context(system_u:object_r:polaris_bexecute_exec_t,s0)
/usr/binos/bin/bexecute -- gen_context(system_u:object_r:polaris_bexecute_exec_t,s0)
still exists for backward compatibility
/tmp/etc/bexecute -- gen_context(system_u:object_r:polaris_bexecute_exec_t,s0)
/usr/binos/conf/bexec.sh -- gen_context(system_u:object_r:polaris_bexecute_exec_t,s0)
/usr/binos/conf/brelay.sh -- gen_context(system_u:object_r:polaris_bexecute_exec_t,s0)
/usr/binos/bin/brelay -- gen_context(system_u:object_r:polaris_bexecute_exec_t,s0)
/usr/binos/conf/ioucon.sh -- gen_context(system_u:object_r:polaris_bexecute_exec_t,s0)
/usr/binos/conf/runin.sh -- gen_context(system_u:object_r:polaris_bexecute_exec_t,s0)
/usr/binos/conf/runin_exec_proc.sh -- gen_context(system_u:object_r:polaris_bexecute_exec_t,s0)
/usr/binos/conf/runon.sh -- gen_context(system_u:object_r:polaris_bexecute_exec_t,s0)
/usr/binos/conf/in.telnetd.sh -- gen_context(system_u:object_r:polaris_bexecute_exec_t,s0)

/usr/binos/conf/brelay_console.sh -- gen_context(system_u:object_r:polaris_bconsole_exec_t,s0)
```

```

mcp_chvrf.sh used by some systemd units to switch vrf (ip namespace)
of xinetd that drives brelay service
/usr/binos/conf/mcp_chvrf.sh -- gen_context(system_u:object_r:polaris_chvrf_exec_t,s0)

used by "request platform software system shell" CLI
/usr/binos/conf/mcp_record_shell.sh -- gen_context(system_u:object_r:polaris_platform_shell_exec_t,s0)
/usr/binos/conf/mcp_shell.sh -- gen_context(system_u:object_r:polaris_shell_exec_t,s0)

used by "sh pla so process memory r0 name iosd maps" CLI
/usr/binos/conf/mcp_process_maps.sh -- gen_context(system_u:object_r:polaris_process_maps_exec_t,s0)

used by "req platform software console attach switch standby R0" CLI
/usr/binos/conf/mcp_console_attach.sh -- gen_context(system_u:object_r:polaris_mcp_console_attach_exec_t,s0)
/usr/binos/bin/ioucon -- gen_context(system_u:object_r:polaris_ioucon_exec_t,s0)

ngio_module_session.sh used by "hw-module session" CLI
/usr/binos/conf/ngio_module_session.sh -- gen_context(system_u:object_r:polaris_ngio_module_session_exec_t,s0)

#used by "upgrade rom-monitor capsule primary switch 1 R0" CLI
/usr/binos/conf/cat9k-primary-capsule-upgrade.sh --
gen_context(system_u:object_r:polaris_capsule_upgrade_exec_t,s0)

/usr/binos/conf/cat9k-capsule-upgrade.sh -- gen_context(system_u:object_r:polaris_capsule_upgrade_exec_t,s0)

/mnt/sd3/user/capsule-upgrade.log -- gen_context(system_u:object_r:polaris_capsule_upgrade_log_t,s0)
/usr/binos/conf/mcp_dmesg_service.sh -- gen_context(system_u:object_r:polaris_mcp_dmesg_exec_t,s0)

```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisbexecute.fc
```

No license file was found, but licenses were detected in source scan.

```

#
August 2017, Shawn Lu
#
Copyright (c) 2017-2020 by Cisco Systems, Inc.
All rights reserved
#

```

```
<summary>Polaris wncd Policy Rules.</summary>
```

```
#####
```

```
<summary>
```

```
Read files under /mnt/images/...these are related to AccessPoint images
```

```
</summary>
```

```
<param name="domain">
```

```
<summary>
```

```
Domain allowed access.
```

```

</summary>
</param>
#
interface(`polaris_wlc_ap_images_read`,`
 gen_require(`
 type polaris_wlc_ap_images_t;
 `)

 read_files_pattern($1, polaris_wlc_ap_images_t, polaris_wlc_ap_images_t)
 read_lnk_files_pattern($1, polaris_wlc_ap_images_t, polaris_wlc_ap_images_t)
 list_dirs_pattern($1, polaris_wlc_ap_images_t, polaris_wlc_ap_images_t)
 allow $1 polaris_wlc_ap_images_t:file map;
)

<summary>
Manage files under /mnt/images/...these are related to AccessPoint images
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_wlc_ap_images_manage`,`
 gen_require(`
 type polaris_wlc_ap_images_t;
 type mnt_t;
 `)

 manage_files_pattern($1, polaris_wlc_ap_images_t, polaris_wlc_ap_images_t)
 manage_lnk_files_pattern($1, polaris_wlc_ap_images_t, polaris_wlc_ap_images_t)
 manage_dirs_pattern($1, polaris_wlc_ap_images_t, polaris_wlc_ap_images_t)

 # transition when /mnt/images is created
 filetrans_pattern($1, mnt_t, polaris_wlc_ap_images_t, dir, "images")
)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polariswncd.if

No license file was found, but licenses were detected in source scan.

```

#
July 2017, Victor Kamensky
#
Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved
#

```

```
<summary>Polaris esg_tam_cfg Policy Rules.</summary>
```

```
#####
```

```
<summary>
```

```
Getattr dirs pvp temporary directories in /tmp.
```

```
</summary>
```

```
<param name="domain">
```

```
<summary>
```

```
Domain allowed access.
```

```
</summary>
```

```
</param>
```

```
#
```

```
interface(`polaris_tam_getattrs_tmp_dirs`,`
```

```
gen_require(`
```

```
type tmp_t;
```

```
type polaris_tam_tmp_t;
```

```
`)
```

```
getattr_dirs_pattern($1, tmp_t, polaris_tam_tmp_t)
```

```
)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisesgtamcfg.if

No license file was found, but licenses were detected in source scan.

```
#
```

```
March 2017, Victor Kamensky
```

```
#
```

```
Copyright (c) 2016-2019 by Cisco Systems, Inc.
```

```
All rights reserved
```

```
#
```

```
<summary>Polaris MQIPC Policy Rules.</summary>
```

```
#####
```

```
Polaris mqipc (infra/mqipc)
```

```
#####
```

```
#####
```

```
<summary>
```

```
Make specified domain as one of mqipc types.
```

```
</summary>
```

```
<param name="domain">
```

```
<summary>
```

```
The domain serving as polaris_mqipc type
```

```
</summary>
```

```
</param>
```

```
#
```

```

interface(`polaris_mqipc_type`,`
 gen_require(`
 attribute polaris_mqipc;
 `)
 typeattribute $1 polaris_mqipc;
files_type($1)
`)

#####
<summary>
Manage mqipc shared memory file in /dev/shm directory
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<param name="mqipc_label">
<summary>
Mqipc file label.
</summary>
</param>
<param name="object">
<summary>
Mqipc channel file name stem. It is used to derive set of file names
used by MQIPC.
</summary>
</param>
#
interface(`polaris_mqipc_create_name`,`
 gen_require(`
 type tmpfs_t;
 type tmp_t;
 `)
 manage_files_pattern($1, tmpfs_t, $2)
 allow $1 $2:file map;
 type_transition $1 tmpfs_t : file $2 "mq.-$3";
 manage_fifo_files_pattern($1, tmp_t, $2)
 type_transition $1 tmp_t : fifo_file $2 "mq_ene_fifo.-$3";
 type_transition $1 tmp_t : fifo_file $2 "mq_fnf_fifo.-$3";
 fs_getattr_tmpfs($1)
`)

#####
<summary>
Manage mqipc shared memory file in /dev/shm/dir directory
where dir is also derived from object parameter used as stem. It
should be used only in cases where mqipc server operates with

```

```

chanel under subdirectory. TDL autogeneration does not pick up
this so interface call should be added explicitly.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<param name="mqipc_label">
<summary>
Database file label.
</summary>
</param>
<param name="object">
<summary>
Mqipc file name stem. It is used to derive set of file names
used by MQIPC.
</summary>
</param>
#
interface(`polaris_mqipc_create_name_dir`,
gen_require(
type tmpfs_t;
 type tmp_t;
)
manage_files_pattern($1, { tmpfs_t $2 }, $2)
allow $1 $2:file map;
manage_dirs_pattern($1, tmpfs_t, $2)
type_transition $1 tmpfs_t : { file dir } $2 "mq.-$3";
manage_fifo_files_pattern($1, { tmp_t $2 }, $2)
type_transition $1 tmp_t : fifo_file $2 "mq_ene_fifo.-$3";
type_transition $1 tmp_t : fifo_file $2 "mq_fnf_fifo.-$3";
fs_getattr_tmpfs($1)
)

#####
<summary>
Manage mqipc shared memory file in /dev/shm directory
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<param name="mqipc_label">
<summary>
Mqipc channel file label.
</summary>

```



```

</param>
#
interface(`polaris_mqipc_use`,`
gen_require(
type tmpfs_t;
)
read_files_pattern($1, { tmpfs_t $2 }, $2)
write_files_pattern($1, { tmpfs_t $2 }, $2)
read_fifo_files_pattern($1, { tmp_t $2 }, $2)
write_fifo_files_pattern($1, { tmp_t $2 }, $2)
fs_getattr_tmpfs($1)
allow $1 $2:file map;
)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarismqipc.if

No license file was found, but licenses were detected in source scan.

```

#
March 2017, Victor Kamensky
#
Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved
#
<summary>Polaris issu_stack Policy Rules.</summary>

```

```
#####
```

```

<summary>
Manage tmp files created by issu_stack.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolecap/>
#
interface(`polaris_issu_stack_tmp_manage`,`
gen_require(
type polaris_issu_stack_tmp_t;
)

manage_files_pattern($1, polaris_issu_stack_tmp_t, polaris_issu_stack_tmp_t)
manage_lnk_files_pattern($1, polaris_issu_stack_tmp_t, polaris_issu_stack_tmp_t)
)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisissustack.if

No license file was found, but licenses were detected in source scan.

#

# March 2017, Victor Kamensky

#

# Copyright (c) 2016-2020 by Cisco Systems, Inc.

# All rights reserved

#

## <summary>Polaris Tmp Boot Policy Rules.</summary>

#####

# /tmp/sw/boot policy

#####

#####

## <summary>

## Read /tmp/sw/boot files. Does not cover rmonbifo file under

## /tmp/sw/boot/rmonbifo. For those use polaris\_rmonbifo\_tmp\_read interface

## </summary>

## <param name="domain">

## <summary>

## Domain allowed access.

## </summary>

## </param>

#

interface(`polaris\_boot\_tmp\_read`,`

gen\_require(`

type polaris\_boot\_tmp\_t;

`)

read\_files\_pattern(\$1, polaris\_boot\_tmp\_t, polaris\_boot\_tmp\_t)

`)

#####

## <summary>

## Write /tmp/sw/boot files.

## </summary>

## <param name="domain">

## <summary>

## Domain allowed access.

## </summary>

## </param>

#

interface(`polaris\_boot\_tmp\_write`,`

gen\_require(`

type polaris\_boot\_tmp\_t;

`)

```
write_files_pattern($1, polaris_boot_tmp_t, polaris_boot_tmp_t)
')
```

```
#####
```

```
<summary>
Map any polaris_boot_tmp_t file, needed during install.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
```

```
interface('polaris_boot_tmp_map',`
gen_require(`
type polaris_boot_tmp_t;
`)
allow $1 polaris_boot_tmp_t:file map;
')
```

```
#####
```

```
<summary>
Manage /tmp/sw/boot files.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
```

```
interface('polaris_boot_tmp_manage',`
gen_require(`
type polaris_boot_tmp_t;
`)
manage_files_pattern($1, polaris_boot_tmp_t, polaris_boot_tmp_t)
')
```

```
#####
```

```
<summary>
Create an polaris_boot_tmp_t object
in tmpfs_t, tmp_t directories.
##
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
```

```

</param>
<param name="object">
<summary>
The object class of the object being created.
</summary>
</param>
<param name="name" optional="true">
<summary>
The name of the object being created.
</summary>
</param>
#
interface(`polaris_boot_tmp_filetrans`,`
gen_require(`
type polaris_boot_tmp_t;
`)
fs_tmpfs_filetrans($1, polaris_boot_tmp_t, $2, $3)
files_tmp_filetrans($1, polaris_boot_tmp_t, $2, $3)
`)

#####
<summary>
Manage partition disk device that contains rommon image.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_rommon_device_manage`,`
gen_require(`
type device_t;
type polaris_rommon_device_t;
`)
manage_blk_files_pattern($1, device_t, polaris_rommon_device_t)
manage_chr_files_pattern($1, device_t, polaris_rommon_device_t)
`)

#####
<summary>
Read partition disk device that contains rommon image.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>

```

```

</param>
#
interface(`polaris_rommon_device_read`,`
 gen_require(`
 type device_t;
 type polaris_rommon_device_t;
 `)
 read_blk_files_pattern($1, device_t, polaris_rommon_device_t)
 read_chr_files_pattern($1, device_t, polaris_rommon_device_t)
`)

```

```
#####
```

```

<summary>
Manage /bootflash/.prst_sync/reload_info
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#

```

```

interface(`polaris_boot_file_manage`,`
 gen_require(`
 type polaris_boot_file_t;
 `)
 manage_files_pattern($1, polaris_boot_file_t, polaris_boot_file_t)
`)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisboot.if

No license file was found, but licenses were detected in source scan.

```

#
February 2020, Victor Kamensky
#
Copyright (c) 2020 by Cisco Systems, Inc.
All rights reserved
#

```

```
policy_module(polariscedgetanman, 1.0);
```

```
why /usr/binos/conf/cedge-tanman.sh is not described in TDL?
```

```
polaris_process_domain_template(cedge_tanman)
```

```
polaris_boot_tmp_read(polaris_cedge_tanman_t)
```

```
polaris_chasfs_read(polaris_cedge_tanman_t)
```

```
polaris_cpld_read(polaris_cedge_tanman_t)
```

```
polaris_read_debug_conf(polaris_cedge_tanman_t)
```

```

polaris_use_btrace_fifo(polaris_cedge_tanman_t)

corecmd_exec_bin(polaris_cedge_tanman_t)
corecmd_exec_shell(polaris_cedge_tanman_t)
auth_use_nsswitch(polaris_cedge_tanman_t)

/tmp/tan handling
type polaris_cedge_tanman_tmp_t;
files_tmp_file(polaris_cedge_tanman_tmp_t)
gen_require(
 type tmp_t;
)
manage_dirs_pattern(polaris_cedge_tanman_t, tmp_t, polaris_cedge_tanman_tmp_t)
manage_fifo_files_pattern(polaris_cedge_tanman_t, polaris_cedge_tanman_tmp_t, polaris_cedge_tanman_tmp_t)
files_tmp_filetrans(polaris_cedge_tanman_t, polaris_cedge_tanman_tmp_t, dir, "tan")

calls du -sk /tmp/xml/System
fs_getattr_tmpfs(polaris_cedge_tanman_t)

work with /tmp/xml
polaris_cedge_xml_tmp_manage(polaris_cedge_tanman_t)

work with /tmp/tmp
polaris_cedge_tmp_manage(polaris_cedge_tanman_t)

polaris_btrace_tmppub_read(polaris_cedge_tanman_t)

allow polaris_cedge_tanman_t self:capability sys_resource;

calls nice
allow polaris_cedge_tanman_t self:process setsched;

runs inotifywait -mrq --format %f: -e moved_to /bootflash/tracelogs
and removes files in /bootflash/tracelogs
polaris_btrace_persistent_data_manage(polaris_cedge_tanman_t)

runs ps -eaf
ps needs access to proc_t
kernel_read_system_state(polaris_cedge_tanman_t)
ps needs access to state of all domains
domain_read_all_domains_state(polaris_cedge_tanman_t)
"ps" needs read access to /sys/devices/system/cpu/online
"ps" needs read access to /proc/uptime
dev_read_sysfs(polaris_cedge_tanman_t)

watch over /bootflash/tracelogs
polaris_btrace_data_watch(polaris_cedge_tanman_t)

```

```
watches over /tmp for /tmp/booted appearance
gen_require(`
 type tmp_t;
`)
allow polaris_cedge_tanman_t tmp_t:dir watch;
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscedge_tanman.te
No license file was found, but licenses were detected in source scan.
```

```
#
Aug 2020, Sridhar
#
Copyright (c) 2020-2021 by Cisco Systems, Inc.
All rights reserved
#
```

```
<summary>Polaris tlscd process Policy Rules.</summary>
```

```
<summary>
Allow the specified domain to manage UDS socket
files. I.e /tmp/tlscd/
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
```

```
interface(`polaris_tlscd_uds_manage',`
 gen_require(`
 type polaris_tlscd_uds_t;
 `)

 manage_sock_files_pattern($1, polaris_tlscd_uds_t, polaris_tlscd_uds_t)
`)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polaristlscd.if
No license file was found, but licenses were detected in source scan.
```

```
dnl
dnl Copyright (c) 2020 by Cisco Systems, Inc.
dnl All rights reserved
dnl
dnl Same as Nyquist
dnl
dnl Nyquist Platform Max Bay Limits
```

```
max_bay_map_set(`rp', `per_bay', 0)
max_bay_map_set(`cc', `per_bay', 0)
max_bay_map_set(`fp', `per_bay', 0)
```

```
dnl in elastic scope each process has its own value
max_elastic_map_set(`rp', `elastic', BPROC_ODM, 0)
max_elastic_map_set(`cc', `elastic', BPROC_ODM, 0)
max_elastic_map_set(`fp', `elasitic', BPROC_ODM, 0)
```

```
max_elastic_map_set(`rp', `elastic', BPROC_WNCD, 0)
max_elastic_map_set(`cc', `elastic', BPROC_WNCD, 0)
max_elastic_map_set(`fp', `elastic', BPROC_WNCD, 0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/msmaps.m4
```

No license file was found, but licenses were detected in source scan.

```
#
September 2017, Victor Kamensky
#
Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved
#
<summary>Polaris polarisunconfined Policy Rules.</summary>
```

```
#####
<summary>
Make the specified type usable
to be conditionally unconfined.
</summary>
<param name="domain">
<summary>
Type to be used for conditionally unconfined.
</summary>
</param>
#
interface(`polaris_domain_storage_unconfined_type',`
 gen_require(`
 attribute polaris_storage_unconfined_type;
 ')
 typeattribute $1 polaris_storage_unconfined_type;
')
```

```
#####
<summary>
```



```

Mark domain unconfined, if polaris_unconfined build
macro is defined. Or if polaris_unconfined_conditional
macro is defined make domain unconfined only if
polaris_unconfined_all SELinux boolean is set on.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_domain_maybe_unconfined',`
 ifdef(`polaris_unconfined',`
 unconfined_domain($1)
 ')

 ifdef(`polaris_unconfined_conditional',`
 polaris_domain_storage_unconfined_type($1)

 tunable_policy(`polaris_unconfined_all',`
 polaris_unconfined_domain($1)
 ')
 ')
)
#implicitly confined domain being made permissive
permissive $1;
)

#####
<summary>
Mark iosd domain unconfined, if polaris_iosd_unconfined
build macro is defined. Or if polaris_iosd_unconfined_conditional
macro is defined make domain unconfined only if
polaris_unconfined_iosd SELinux boolean is set on.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_iosd_maybe_unconfined',`
 ifdef(`polaris_iosd_unconfined',`
 unconfined_domain($1)
 ')

 ifdef(`polaris_iosd_unconfined_conditional',`
 polaris_domain_storage_unconfined_type($1)

```

```

 tunable_policy(`polaris_unconfined_iosd`,`
 polaris_unconfined_domain($1)
 `)
 `)
)

#####
<summary>
Unconfined access to kernel module resources.
Like kernel_unconfined but without typeattribute use.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_kernel_unconfined`,`
gen_require(`
 attribute proc_type;
 attribute sysctl_type;
 type kernel_t;
 type unlabeled_t;
 type proc_kcore_t;
 type proc_kmsg_t;
`
)

allow $1 { proc_type - proc_kcore_t - proc_kmsg_t } :{ file } ~entrypoint;
allow $1 { proc_type - proc_kcore_t - proc_kmsg_t } :{ dir lnk_file } *;

allow $1 sysctl_type:{ file } ~entrypoint;
allow $1 sysctl_type:{ dir lnk_file } *;

allow $1 kernel_t:system *;

allow $1 unlabeled_t:{ dir lnk_file sock_file fifo_file chr_file blk_file } *;
allow $1 unlabeled_t:file ~entrypoint;
allow $1 unlabeled_t:filesystem *;
allow $1 unlabeled_t:association *;
allow $1 unlabeled_t:packet *;
allow $1 unlabeled_t:process ~{ ptrace transition dyntransition execmem execstack execheap };

LOOK AT ME
kernel_load_module($1)
)

```

```
#####
<summary>
Unconfined access to network objects.
Like corenet_unconfined but without typeattribute use.
</summary>
<param name="domain">
<summary>
The domain allowed access.
</summary>
</param>
#
interface(`polaris_corenet_unconfined',`
gen_require(`
 attribute node_type;
 attribute netif_type;
 attribute packet_type;
 attribute port_type;
`)

allow $1 node_type:node *;
allow $1 netif_type:netif *;
allow $1 packet_type:packet *;
allow $1 port_type:dccp_socket { send_msg rcv_msg name_connect };
allow $1 port_type:tcp_socket { send_msg rcv_msg name_connect };
allow $1 port_type:udp_socket { send_msg rcv_msg };

Bind to any network address.
allow $1 port_type:{ dccp_socket tcp_socket udp_socket rawip_socket } name_bind;
allow $1 node_type:{ dccp_socket tcp_socket udp_socket rawip_socket } node_bind;

)

#####
<summary>
Unconfined access to devices.
Like dev_unconfined but without typeattribute use.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_dev_unconfined',`
gen_require(`
 attribute device_node;
 type memory_device_t;
 type mtrr_device_t;
```

)

```
allow $1 self:capability sys_rawio;
allow $1 { device_node - memory_device_t } :{ blk_file lnk_file } *;
allow $1 { device_node - memory_device_t } :{ file chr_file } ~{ execmod entrypoint };
allow $1 mtrr_device_t:file ~{ execmod entrypoint };
dev_getattr_all($1)
```

)

```
#####
```

```
<summary>
Unconfined access to domains.
Like domain_unconfined but without typeattribute use.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
```

```
interface(`polaris_domain_unconfined`,
gen_require(`
 attribute domain;
`
)
```

```
Use/sendto/connectto sockets created by any domain.
allow $1 domain:{ socket_class_set socket key_socket } *;
```

```
allow $1 domain:system all_system_perms;
Use descriptors and pipes created by any domain.
allow $1 domain:fd use;
allow $1 domain:fifo_file rw_file_perms;
```

```
allow $1 $1:dbus send_msg;
```

```
Act upon any other process.
allow $1 domain:process ~{ ptrace transition dyntransition execmem execstack execheap setcurrent };
allow $1 domain:process ptrace;
```

```
Create/access any System V IPC objects.
allow $1 domain:{ sem msgq shm } *;
allow $1 domain:msg { send receive };
```

```
For /proc/pid
allow $1 domain:dir list_dir_perms;
allow $1 domain:file rw_file_perms;
```

```

allow $1 domain:lnk_file { read_lnk_file_perms ioctl lock };

act on all domains keys
allow $1 domain:key *;

pass constraints
typeattribute $1 can_change_object_identity;
typeattribute $1 set_curr_context;
typeattribute $1 process_uncond_exempt;

mcs_process_set_categories($1)

userdom_filetrans_home_content($1)
')

#####
<summary>
Unconfined access to files.
Like files_unconfined but without typeattribute use.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_files_unconfined',`
gen_require(`
 attribute file_type;
 type shadow_t;
')

Create/access any file in a labeled filesystem;
allow $1 { file_type - shadow_t }:{ file chr_file } ~{ execmod entrypoint relabelto };
allow $1 file_type:{ dir lnk_file sock_file fifo_file blk_file } *;
allow $1 file_type:service *;

Mount/unmount any filesystem with the context= option.
allow $1 file_type:filesystem all_filesystem_perms;
')

#####
<summary>
Unconfined access to filesystems
Like fs_unconfined but without typeattribute use.
</summary>
<param name="domain">

```

```

<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_fs_unconfined',`
gen_require(`
 attribute filesystem_type;
)

allow $1 filesystem_type:filesystem all_filesystem_perms;

Create/access other files. fs_type is to pick up various
pseudo filesystem types that are applied to both the filesystem
and its files.
allow $1 filesystem_type:{ file } ~entrypoint;
allow $1 filesystem_type:{ dir lnk_file sock_file fifo_file chr_file blk_file } *;
)

#####
<summary>
Unconfined access to the SELinux kernel security server.
Like selinux_unconfined but without typeattribute use.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_selinux_unconfined',`
gen_require(`
 attribute boolean_type;
 type security_t;
 type secure_mode_policyload_t;
)

use SELinuxfs
allow $1 security_t:dir list_dir_perms;
allow $1 security_t:file rw_file_perms;
allow $1 boolean_type:file read_file_perms;
allow $1 { boolean_type -secure_mode_policyload_t }:file write_file_perms;

Access the security API.
allow $1 security_t:security ~{ load_policy setenforce setbool setseccommand };

ifdef(`distro_rhel4',`

```

```

 # needed for systems without audit support
 auditallow $1 security_t:security setbool;
 ')

selinux_set_all_booleans($1)
selinux_load_policy($1)
selinux_set_parameters($1)
selinux_set_enforce_mode($1)
')

#####
<summary>
Make the specified domain unconfined.
</summary>
<param name="domain">
<summary>
Domain to make unconfined.
</summary>
</param>
#
interface(`polaris_unconfined_domain',`
gen_require(`
class dbus all_dbus_perms;
class nscd all_nscd_perms;
class passwd all_passwd_perms;
')

Use any Linux capability.

allow $1 self:capability ~{ sys_module };
allow $1 self:capability2 ~{ mac_admin mac_override };
allow $1 self:fifo_file { manage_fifo_file_perms relabelfrom relabelto };

Transition to myself, to make get_ordered_context_list happy.
allow $1 self:process { dyntransition transition };

Write access is for setting attributes under /proc/self/attr.
allow $1 self:file rw_file_perms;
allow $1 self:dir rw_dir_perms;

Userland object managers
allow $1 self:nscd all_nscd_perms;
allow $1 self:dbus all_dbus_perms;
allow $1 self:passwd all_passwd_perms;
allow $1 self:association all_association_perms;
allow $1 self:socket_class_set create_socket_perms;

```

```

polaris_kernel_unconfined($1)
polaris_corenet_unconfined($1)
polaris_dev_unconfined($1)
polaris_domain_unconfined($1)
polaris_files_unconfined($1)
polaris_fs_unconfined($1)
polaris_selinux_unconfined($1)

systemd_config_all_services($1)

in unconfined_domain_noaudit its under not deny_execmem
allow $1 self:process execmem;

domain_mmap_low($1)
#
ubac_process_exempt($1)
#
optional_policy(`
auth_unconfined($1)
')
#
optional_policy(`
Communicate via dbusd.
dbus_system_bus_unconfined($1)
dbus_unconfined($1)
')
#
optional_policy(`
ipsec_setcontext_default_spd($1)
ipsec_match_default_spd($1)
')
#
optional_policy(`
nscd_unconfined($1)
')
#
optional_policy(`
seutil_create_bin_policy($1)
seutil_relabelto_bin_policy($1)
')
#
optional_policy(`
storage_unconfined($1)
')
#
optional_policy(`
xserver_unconfined($1)

```



```

')
')

#####
<summary>
Make the specified domain able to work with cpp /tmp/cpp_ifdev_rep and
/tmp/cpp_ifdev_req pipe files.
</summary>
<param name="type">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_unconfined_service_fifo_file_manage`,
 gen_require(`
 type unconfined_service_t;
 `)

 manage_fifo_files_pattern($1, unconfined_service_t, unconfined_service_t)
)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisunconfined.if

No license file was found, but licenses were detected in source scan.

```

#
March 2019, Shikhar Dogra
#
Copyright (c) 2019-2020 by Cisco Systems, Inc.
All rights reserved
#

```

```

policy_module(polarisfmancc, 1.0);

```

```

gen_require(`
 type polaris_fman_cc_t;
`)

```

```

polaris_btrace_data_manage(polaris_fman_cc_t)
polaris_crft_data_manage(polaris_fman_cc_t)
polaris_chasfs_manage(polaris_fman_cc_t)
polaris_tdlresolve_read(polaris_fman_cc_t)
polaris_tdlldb_list_dirs(polaris_fman_cc_t)
polaris_cpld_read(polaris_fman_cc_t)
polaris_lua_read(polaris_fman_cc_t)
polaris_flashlib_read(polaris_fman_cc_t)
polaris_cpld_dev_use(polaris_fman_cc_t)

```

```
allow to send message to /dev/log
logging_send_syslog_msg(polaris_fman_cc_t)

ISR Nightwatch module accesses libraries compiled with icc
polaris_icc_broken_relocations(polaris_fman_cc_t)

cpp bleeds into switching platforms through fman_fp and fed
apparently even on nyquist fed creates /tmp/cpp_anon_db
polaris_cpp_process(polaris_fman_cc_t)
polaris_cpp_tmp_files_use(polaris_fman_cc_t)

type polaris_iosd_fmanrp_mqipc_t;
polaris_mqipc_type(polaris_iosd_fmanrp_mqipc_t)

polaris_mqipc_create_name(polaris_fman_cc_t, polaris_iosd_fmanrp_mqipc_t, iosd-thr-fmanrp-R0:0)
polaris_mqipc_create_name(polaris_fman_cc_t, polaris_iosd_fmanrp_mqipc_t, iosd-thr-fmanrp-R0:0-cc0)
polaris_mqipc_create_name(polaris_fman_cc_t, polaris_iosd_fmanrp_mqipc_t, iosd-thr-fmanrp-R0:0-cc1)
polaris_mqipc_create_name(polaris_fman_cc_t, polaris_iosd_fmanrp_mqipc_t, iosd-thr-fmanrp-R0:0-cc2)
polaris_mqipc_create_name(polaris_fman_cc_t, polaris_iosd_fmanrp_mqipc_t, iosd-thr-fmanrp-R0:0-cc3)
polaris_mqipc_create_name(polaris_fman_cc_t, polaris_iosd_fmanrp_mqipc_t, iosd-thr-fmanrp-R0:0-cc4)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisfmancc.te

No license file was found, but licenses were detected in source scan.

dnl

dnl May 2020, Swati Kumari

dnl

dnl Copyright (c) 2018-2020 by Cisco Systems, Inc.

dnl All rights reserved

dnl

dnl rpx86 Platform Max Bay Limits

max\_bay\_map\_set(`rp', `per\_bay', 0)

max\_bay\_map\_set(`cc', `per\_bay', 5)

max\_bay\_map\_set(`fp', `per\_bay', 2)

min\_bay\_ripc\_map\_set(`rp', `per\_bay', 0)

min\_bay\_ripc\_map\_set(`cc', `per\_bay', 1)

min\_bay\_ripc\_map\_set(`fp', `per\_bay', 0)

max\_bay\_ripc\_map\_set(`rp', `per\_bay', 2)

max\_bay\_ripc\_map\_set(`cc', `per\_bay', 6)

max\_bay\_ripc\_map\_set(`fp', `per\_bay', 2)

min\_bay\_ripc\_map\_set(`rp', `global', 0)

min\_bay\_ripc\_map\_set(`cc', `global', 1)

min\_bay\_ripc\_map\_set(`fp', `global', 0)

```
max_bay_ripc_map_set(`rp', `global', 2)
max_bay_ripc_map_set(`cc', `global', 6)
max_bay_ripc_map_set(`fp', `global', 2)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/m4/rpx86maps.m4
```

No license file was found, but licenses were detected in source scan.

```
#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#
```

```
<summary>Polaris polarispsvp Policy Rules.</summary>
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarispsvp.if
```

No license file was found, but licenses were detected in source scan.

```
#
September 2017, Victor Kamensky
#
Copyright (c) 2017-2020 by Cisco Systems, Inc.
All rights reserved
#
```

```
/tmp/tmppub(/.*)? gen_context(system_u:object_r:polaris_btrace_tmppub_t,s0)
```

```
btrace utility to rotate logs
```

```
/usr/binos/bin/btman_rotate_immediate -- gen_context(system_u:object_r:polaris_btman_exec_t,s0)
```

```
btrace utility to dump meta data
```

```
/usr/binos/bin/dump_btrace_meta -- gen_context(system_u:object_r:polaris_btman_exec_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisbtman.fc
```

No license file was found, but licenses were detected in source scan.

```
#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2020 by Cisco Systems, Inc.
All rights reserved
#
```

```
policy_module(polarisnvram, 1.0);
```

```

NVRAM
#####
```

```
ifdef(`ngwc_family',`
suppose that in edison case nvram is not in partition
type polaris_nvram_file_t;
files_type(polaris_nvram_file_t)
allow nvram file reside on persistent storage
polaris_pfile_type(polaris_nvram_file_t)
)
```

```
ifdef(`blackheart_platform',`
gen_require(`
 type polaris_nvram_file_t;
 type polaris_iosd_t;
)
files_type(polaris_nvram_file_t)
allow nvram file reside on persistent storage
polaris_pfile_type(polaris_nvram_file_t)
allow polaris_iosd_t polaris_nvram_file_t:filesystem getattr;
)
```

```
ifdef(`sparrow_platform',`
gen_require(`
 type polaris_nvram_file_t;
 type polaris_iosd_t;
)
files_type(polaris_nvram_file_t)
allow nvram file reside on persistent storage
polaris_pfile_type(polaris_nvram_file_t)
allow polaris_iosd_t polaris_nvram_file_t:filesystem getattr;
)
```

```
ifdef(`aventus_platform',`
gen_require(`
 type polaris_nvram_file_t;
 type polaris_iosd_t;
)
files_type(polaris_nvram_file_t)
allow nvram file reside on persistent storage
polaris_pfile_type(polaris_nvram_file_t)
allow polaris_iosd_t polaris_nvram_file_t:filesystem getattr;
)
```

```
ifdef(`cabo_platform',`
```

```
gen_require(
 type polaris_nvram_file_t;
 type polaris_iosd_t;
)
files_type(polaris_nvram_file_t)
allow nvram file reside on persistent storage
polaris_pfile_type(polaris_nvram_file_t)
allow polaris_iosd_t polaris_nvram_file_t:filesystem getattr;
)
```

```
ifdef(`petra_platform',
type polaris_nvram_file_t;
files_type(polaris_nvram_file_t)
suppose that in edison case nvram is not in partition
gen_require(
 type polaris_iosd_t;
)
allow nvram file reside on persistent storage
polaris_pfile_type(polaris_nvram_file_t)
allow polaris_iosd_t polaris_nvram_file_t:filesystem getattr;
)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisnvram.te

No license file was found, but licenses were detected in source scan.

```

February 2020, Victor Kamensky

Copyright (c) 2020 by Cisco Systems, Inc.
All rights reserved
#
```

```
<summary>Polaris exp Policy Rules.</summary>
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisexp.if

No license file was found, but licenses were detected in source scan.

```

March 2017, Victor Kamensky

Copyright (c) 2016-2021 by Cisco Systems, Inc.
All rights reserved
#
```

```
policy_module(polarischasfs, 1.0);
```

```

#####
Chasfs policy
#####
gen_require(
 attribute domain;
)

type polaris_chasfs_t;
files_type(polaris_chasfs_t)

files_tmp_filetrans(domain, polaris_chasfs_t, dir, "chassis")
files_tmp_filetrans(domain, polaris_chasfs_t, lnk_file, "chasfs")
LOOK AT ME: on ultra /tmp/cc/chasfs is created as directory, but
on other platforms it is symbolic to /tmp/chassis/local/cc/chasfs
as it happens for rp and fp. Would it be better to fix ultra
script(s)?
files_tmp_filetrans(domain, polaris_chasfs_t, dir, "chasfs")

cpld-symlink.service, creates /tmp/chassis while /tmp is
still tmpfs_t, ie before systemd-tmpfiles runs and had a
chance to set tmp_t label on /tmp
gen_require(
 type initrc_t;
)
fs_tmpfs_filetrans(initrc_t, polaris_chasfs_t, dir, "chassis")

init_script_tmp_filetrans(domain, polaris_chasfs_t, dir, "chasfs")

#####
chasync
#####

polaris_process_domain_template(chasync)

corecmd_exec_bin(polaris_chasync_t)

allow read of /etc/group and /etc/passwd
auth_use_nsswitch(polaris_chasync_t)

polaris_btrace_data_manage(polaris_chasync_t)
polaris_chasfs_manage(polaris_chasync_t)
polaris_cpld_read(polaris_chasync_t)
polaris_boot_tmp_read(polaris_chasync_t)
polaris_read_debug_conf(polaris_chasync_t)
polaris_rmonbifo_tmp_read(polaris_chasync_t)
polaris_proc_rmonbifo_read(polaris_chasync_t)

polaris_disk_bootflash_read_lnk(polaris_chasync_t)

```

```

polaris_disk_harddisk_read_lnk(polaris_chasync_t)

run ldd, which in turns execve "ld.so --verify"
libs_exec_ld_so(polaris_chasync_t)

allow polaris_chasync_t self:capability sys_resource;
allow polaris_chasync_t self:process setpgid;

access of crashinfo dir for the domain
polaris_disk_crashinfo_getattr(polaris_chasync_t)

allow access of /tmp/rp/chasync for the polaris chasync_t domain to
create/write/read dirs/files with domain specific context
type polaris_chasync_tmp_t;
files_type(polaris_chasync_tmp_t)
files_tmp_file(polaris_chasync_tmp_t)
files_tmp_filetrans(polaris_chasync_t, polaris_chasync_tmp_t, dir, "chasync")
manage_files_pattern(polaris_chasync_t, polaris_chasync_tmp_t, polaris_chasync_tmp_t)
manage_dirs_pattern(polaris_chasync_t, polaris_chasync_tmp_t, polaris_chasync_tmp_t)
manage_fifo_files_pattern(polaris_chasync_t, polaris_chasync_tmp_t, polaris_chasync_tmp_t)

allow creation/access of temporary files created by chasync.sh like
/tmp/sh-thd-1499428203 etc
files_tmp_filetrans(polaris_chasync_t, polaris_chasync_tmp_t, file)
manage_files_pattern(polaris_chasync_t, polaris_chasync_tmp_t, polaris_chasync_tmp_t)

fs_getattr_tmpfs(polaris_chasync_t)

access of flash util for the domain
polaris_flashlib_read(polaris_chasync_t)

read /proc/cmdline
kernel_read_system_state(polaris_chasync_t)

gen_require(
 type rsync_t;
 type init_t;
 type rsync_tmp_t;
)
rsync_entry_domtrans(polaris_chasync_t, rsync_t)
allow rsync_t polaris_chasync_t:process sigchld;
file descriptor leak when rsync is called
allow rsync_t init_t:unix_stream_socket ioctl;

upon exec rsync inherits chasync's stdout/stderr fifo files
allow rsync_t polaris_chasync_t:fifo_file { getattr write };
in chasync_prepost_rsync.sh, CHASYNC_PID_DIR (rsync pid files) is deleted by rsync
fs_getattr_tmpfs(rsync_t)

```

```

allow file:map for rsync_tmp_t
allow rsync_t rsync_tmp_t:file map;
dev_getattr_generic_blk_files(rsync_t)
dev_getattr_loop_control(rsync_t)
need access to /usr/bin/mount
mount_entry_type(rsync_t)
need access to dev/sda1
storage_getattr_fixed_disk_dev(rsync_t)
ifdef(`ngwc_family',`

#Read and write RPC sysctls
kernel_rw_rpc_sysctls(rsync_t)
mount_domtrans(rsync_t)
fstools_domtrans(rsync_t)
#Create/read/write on fixed device disk nodes
storage_manage_fixed_disk(rsync_t)
#stat -f -L -c %T /mnt/usb0
polaris_getattr_removable(rsync_t)
storage_filetrans_all_named_dev(rsync_t)
')
#===== polaris_dyncfg =====
polaris_dyncfg_tmp_read(rsync_t)

#===== polaris_chasync_t =====
polaris_btrace_persistent_data_search(polaris_chasync_t)
#chasync.sh code executes mv command
allow polaris_chasync_t self:process { setfscreate };
#chasync.sh code executes ping command to check if ping works before trying rsync for the first time
netutils_domtrans_ping(polaris_chasync_t)

#chasync.sh code in wlc saves logs during cleanup to /var/log/chasync
type polaris_chasync_log_t;
logging_log_file(polaris_chasync_log_t)
manage_files_pattern(polaris_chasync_t, polaris_chasync_log_t, polaris_chasync_log_t)
manage_dirs_pattern(polaris_chasync_t, polaris_chasync_log_t, polaris_chasync_log_t)
logging_log_filetrans(polaris_chasync_t, polaris_chasync_log_t, dir, "chasync")

#####
chasfs_boottime script
#####

polaris_process_domain_template(chasfs_boottime)

unconfined_domain(polaris_chasfs_boottime_t)

chasfs_boottime.sh starts cman_fp or cmand with -C option; allow its
transition to fman_fp_t type

```



```

optional_policy(
polaris_cm_rp_domtrans(polaris_chasfs_boottime_t)
')
optional_policy(
polaris_cm_fp_domtrans(polaris_chasfs_boottime_t)
')
optional_policy(
polaris_cm_cc_domtrans(polaris_chasfs_boottime_t)
')

ifndef(^ngwc_family',`

Allow iox_polaris.conf read
polaris_caf_files_read(polaris_chasync_t)

Allow losetup in helper script
fstools_domtrans(polaris_chasync_t)

Manage alternate hdd files
polaris_iox_alt_hdd_manage(polaris_chasync_t)

#Allow console logging
term_open_unallocated_ttys(polaris_chasync_t)

Allow logger which is used for syslog message
allow polaris_chasync_t self:unix_dgram_socket { connect create };
logging_send_syslog_msg(polaris_chasync_t)

logger needs to run pidof
dev_read_sysfs(polaris_chasync_t)
domain_read_all_domains_state(polaris_chasync_t)

')

type polaris_chasync_files_t;
files_type(polaris_chasync_files_t)
polaris_pfile_type(polaris_chasync_files_t)

optional_policy(
gen_require(
 type polaris_disk_harddisk_t;
 type polaris_disk_bootflash_t;
)
filetrans_pattern(polaris_chasync_t, {polaris_disk_bootflash_t polaris_disk_harddisk_t}, polaris_chasync_files_t,
dir, "sys_report")
filetrans_pattern(polaris_chasync_t, {polaris_disk_bootflash_t polaris_disk_harddisk_t}, polaris_chasync_files_t,
dir, "fp_cc_crash")

```

```
filetrans_pattern(polaris_chasync_t, polaris_disk_bootflash_t, polaris_chasync_files_t, file,
"user_input_custom.xml")
```

```
chasync can manage files inside of its own polaris_disk_chasync_t directories
manage_dirs_pattern(polaris_chasync_t, polaris_chasync_files_t, polaris_chasync_files_t)
manage_files_pattern(polaris_chasync_t, polaris_chasync_files_t, polaris_chasync_files_t)
allow polaris_chasync_t polaris_chasync_files_t:dir watch;
polaris_install_disk_read(polaris_chasync_t)
')
```

```
optional_policy(`
chansync invoked sys_report does ls /tmp/ufs/crashinfo
polaris_ncd_tmp_read(polaris_chasync_t)
')
```

```
chasync moves inv files from /tftp/inv to chasfs directory
allow polaris_chasync_t self:capability { chown fowner fsetid };
gen_require(`
type brctl_t;
')
pd_iox.sh invokes brctl which needs access to chasfs
polaris_chasfs_read(brctl_t)
```

```
#allow chasync to unmount flash partition
mount_domtrans(polaris_chasync_t)
```

```
sysnet_domtrans_ifconfig(polaris_chasync_t)
```

```
chasync.sh needs read access to /bootflash/.installer/install_issu_state
polaris_disk_install_read(polaris_chasync_t)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarischasfs.te

No license file was found, but licenses were detected in source scan.

```
#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2020 by Cisco Systems, Inc.
All rights reserved
#
```

```
policy_module(polariscpp, 1.0);
```

```
#####
Polaris cpp (ultra)
#####
```

```

type polaris_cpp_device_t;
dev_node(polaris_cpp_device_t)

deals with /dev/shm files semaphors, etc
type polaris_cpp_tmpfs_t;
files_tmpfs_file(polaris_cpp_tmpfs_t)
attribute polaris_cpp_domain;
fs_tmpfs_filetrans(polaris_cpp_domain, polaris_cpp_tmpfs_t, file)
manage_files_pattern(polaris_cpp_domain, tmpfs_t, polaris_cpp_tmpfs_t)
allow polaris_cpp_domain polaris_cpp_tmpfs_t:file map;
polaris_cpp_tmpfs_manage(polaris_cpp_domain)
polaris_cerr_shm_manage(polaris_cpp_domain)

on TSN ucode_dram lives in hugetlbfs
fs_hugetlbfs_filetrans(polaris_cpp_domain, polaris_cpp_tmpfs_t, file)
gen_require(`
 type hugetlbfs_t;
`)
manage_files_pattern(polaris_cpp_domain, hugetlbfs_t, polaris_cpp_tmpfs_t)

deals with cpp /tmp files
type polaris_cpp_tmp_t;
files_tmp_file(polaris_cpp_tmp_t)
files_tmp_filetrans(polaris_cpp_domain, polaris_cpp_tmp_t, file, "cpp_anon_db")
files_tmp_filetrans(polaris_cpp_domain, polaris_cpp_tmp_t, file, "qm_rt_dbg")
files_tmp_filetrans(polaris_cpp_domain, polaris_cpp_tmp_t, fifo_file, "cpp_ifdev_rep")
files_tmp_filetrans(polaris_cpp_domain, polaris_cpp_tmp_t, fifo_file, "cpp_ifdev_req")
manage_files_pattern(polaris_cpp_domain, tmp_t, polaris_cpp_tmp_t)
manage_fifo_files_pattern(polaris_cpp_domain, tmp_t, polaris_cpp_tmp_t)
allow polaris_cpp_domain polaris_cpp_tmp_t:file map;

fs_getattr_tmpfs(polaris_cpp_domain)

overlord/neptune access /sys/bus/pci/devices/0000:01:00.0/resource0
when initializing the CPP DMAP library
optional_policy(`
polaris_cpp_cavium_dma_map(polaris_cpp_domain)
`)

type polaris_i95_device_t;
dev_node(polaris_i95_device_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscpp.te
No license file was found, but licenses were detected in source scan.

#
March 2017, Victor Kamensky

```

```
#
Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#

some platforms have /usr/binos/bin/fman_fp as hardlink to
/usr/binos/bin/fman_fp_image
/usr/binos/bin/fman_fp -- gen_context(system_u:object_r:polaris_fman_fp_exec_t,s0)
/usr/binos/bin/fman_fp_ledp -- gen_context(system_u:object_r:polaris_fman_fp_exec_t,s0)
/usr/binos/bin/fman_fp_vwlc_ledp -- gen_context(system_u:object_r:polaris_fman_fp_exec_t,s0)
/usr/binos/bin/fman_fp_us_ledp -- gen_context(system_u:object_r:polaris_fman_fp_exec_t,s0)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisfmanfp.fc

No license file was found, but licenses were detected in source scan.

```
#
July 2017, Victor Kamensky
#
Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved
#
```

```
<summary>Polaris ngiolite Policy Rules.</summary>
```

```
#####
```

```
<summary>
```

```
Execute mcp_smartctl_cmds.sh in the polaris_smartctl domain.
```

```
</summary>
```

```
<param name="domain">
```

```
<summary>
```

```
Domain allowed to transition.
```

```
</summary>
```

```
</param>
```

```
#
```

```
interface(`polaris_smartctl_domtrans',`
```

```
 gen_require(`
```

```
 type polaris_smartctl_t, polaris_smartctl_exec_t;
```

```
 `)
```

```
 corecmd_search_bin($1)
```

```
 domtrans_pattern($1, polaris_smartctl_exec_t, polaris_smartctl_t)
```

```
')
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisngiolite.if

No license file was found, but licenses were detected in source scan.

```

February 2018, Manohar Hungund

Copyright (c) 2018-2019 by Cisco Systems, Inc.
All rights reserved

/dev/act2 -c gen_context(system_u:object_r:polaris_act2_device_t,s0)
/tmp/hw_entropy -- gen_context(system_u:object_r:polaris_hw_entropy_t,s0)
```

Found in path(s):

```
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisact2.fc
```

No license file was found, but licenses were detected in source scan.

```

July 2017, Victor Kamensky

Copyright (c) 2017-2021 by Cisco Systems, Inc.
All rights reserved
#
```

```
policy_module(polarismcc, 1.0);
```

```
gen_require(
 type polaris_cm_cc_t;
)
```

```
polaris_btrace_data_manage(polaris_cm_cc_t)
polaris_crft_data_manage(polaris_cm_cc_t)
polaris_chasfs_manage(polaris_cm_cc_t)
polaris_tdlresolve_read(polaris_cm_cc_t)
polaris_tdlldb_list_dirs(polaris_cm_cc_t)
polaris_cpld_read(polaris_cm_cc_t)
polaris_lua_read(polaris_cm_cc_t)
polaris_flashlib_read(polaris_cm_cc_t)
```

```
polaris_cpld_dev_use(polaris_cm_cc_t)
polaris_proc_rmonbifo_read(polaris_cm_cc_t)
```

```
polaris_ripc_sman_ui_serv_connect(polaris_cm_cc_t)
```

```
optional_policy(
 # access to /dev/iocp0
 polaris_spa_dev_use(polaris_cm_cc_t)
)
optional_policy(

```

```

 # access to /dev/htdb[0-9]*
 polaris_htdp_dev_use(polaris_cm_cc_t)
)
read /proc/cmdline
kernel_read_system_state(polaris_cm_cc_t)
work with /dev/i2c devices
polaris_i2c_use(polaris_cm_cc_t)

polaris_obfl_data_read(polaris_cm_cc_t)
cmcc module as part of init calls cmem_obfl_write_voltage_log(),
which writes to obfl device.
polaris_obfl_data_manage(polaris_cm_cc_t)
on vxe platform /obfl is symlink to /varied
#ifdef(^vxe_family',`
polaris_disk_varied_list(polaris_cm_cc_t)
)

on 1ng works with /dev/cpld-virtual-cc
polaris_cpp_dev_use(polaris_cm_cc_t)

polaris_i2c_use(polaris_cm_cc_t)
dev_rw_sysfs(polaris_cm_cc_t)

#ifdef(^crankshaft_family',`
read,getattr, map access to /firmware/ files for Switzer-CC
polaris_firmware_read(polaris_cm_cc_t)
polaris_firmware_getattr(polaris_cm_cc_t)
polaris_firmware_map(polaris_cm_cc_t)
)

allow objstore access
polaris_disk_objstore_read(polaris_cm_cc_t)

get interface address cmlib_if_config_addr at cman/lib/cmlib_msgs/src/cmlib_eobc.c
allow polaris_cm_cc_t self:udp_socket { create ioctl };

on utah need to get model info
optional_policy(`
 polaris_dash_dev_use(polaris_cm_cc_t)
)

#access to /dev/dash_fpga device on fugazi platform
#ifdef(^fugazi_platform',`
 polaris_dash_dev_mcp_use(polaris_cm_cc_t)
)

#access to /dev/nutella_fpga device on nutella platform
optional_policy(`

```

```

polaris_nutella_fpga_dev_use(polaris_cm_cc_t)
')

handle /tmp/pci files on utah
type polaris_pci_tmp_t;
files_tmp_file(polaris_pci_tmp_t)
/tmp/pci/bus, /tmp/pci/vendor, /tmp/pic/device created by systemd unit
gen_require(
 type initrc_t;
 type unconfined_service_t;
 type tmp_t;
)
files_tmp_filetrans({ unconfined_service_t initrc_t }, polaris_pci_tmp_t, dir, "pci")
manage_dirs_pattern(initrc_t, tmp_t, polaris_pci_tmp_t)
manage_files_pattern(initrc_t, polaris_pci_tmp_t, polaris_pci_tmp_t)
manage_files_pattern(polaris_cm_cc_t, polaris_pci_tmp_t, polaris_pci_tmp_t)

logging_send_syslog_msg(polaris_cm_cc_t)

cmcc module creates the PCI rescan shm mutex.
/dev/shm/rescan_shm file.
type polaris_cm_cc_tmpfs_t;
files_tmpfs_file(polaris_cm_cc_tmpfs_t)
fs_tmpfs_filetrans(polaris_cm_cc_t, polaris_cm_cc_tmpfs_t, file)
manage_files_pattern(polaris_cm_cc_t, tmpfs_t, polaris_cm_cc_tmpfs_t)
mmap_files_pattern(polaris_cm_cc_t, tmpfs_t, polaris_cm_cc_tmpfs_t)
dev_read_sysfs(polaris_cm_cc_t)
dev_getattr_sysfs_fs(polaris_cm_cc_t)
fs_getattr_tmpfs(polaris_cm_cc_t)

/tmp/udev-cc should it not be polaris_udev_tmp_t
type polaris_cm_cc_tmp_t;
files_tmp_file(polaris_cm_cc_tmp_t)
files_tmp_filetrans(polaris_cm_cc_t, polaris_cm_cc_tmp_t, dir, "udev-cc")
manage_files_pattern(polaris_cm_cc_t, polaris_cm_cc_tmp_t, polaris_cm_cc_tmp_t)
gen_require(
 type tmp_t;
)
manage_dirs_pattern(polaris_cm_cc_t, { tmp_t polaris_cm_cc_tmp_t }, polaris_cm_cc_tmp_t)

on tsn need access to /dev/moka_fpga
optional_policy(
polaris_mokafpga_dev_use(polaris_cm_cc_t)
)

optional_policy(
betelgeuse need access to /dev/sirius_fpga
polaris_sirius_fpga_dev_use(polaris_cm_cc_t)
)

```

```

)

on macallan need access to /dev/quack
optional_policy(`
polaris_quack_dev_use(polaris_cm_cc_t)
`)

polaris_cpld_write(polaris_cm_cc_t)

optional_policy(`
on starfleet access gettysburg_fpga
polaris_gettysburg_fpga_dev_use(polaris_cm_cc_t)
`)

/dev/epactrlN on qwlc
optional_policy(`
polaris_epa_dev_use(polaris_cm_cc_t)
`)

/dev/luna_fpga on qwlc
optional_policy(`
polaris_luna_mbfpga_dev_use(polaris_cm_cc_t)
`)

/dev/astro on qwlc
optional_policy(`
polaris_astro_dev_use(polaris_cm_cc_t)
`)

/dev/huron_fpga on Sumatra
optional_policy(`
polaris_huron_dev_use(polaris_cm_cc_t)
`)

type polaris_nim_xxd_tmp_t;
files_tmp_file(polaris_nim_xxd_tmp_t)
files_tmp_filetrans(polaris_cm_cc_t, polaris_nim_xxd_tmp_t, file, "nim_xxd_present")
manage_files_pattern(polaris_cm_cc_t, polaris_nim_xxd_tmp_t, polaris_nim_xxd_tmp_t)
ifdef(`starfleet_platform',`
In cman_cc
cmcc_starfleet_act2_authentication_udi in cman/cc/src/cmcc_starfleet.c
cmcc_starfleet_cpuboard_act2_authentication_udi cman/cc/src/cmcc_starfleet.c
tam_lib_device_open infra/act2/tam_act2/tam_lib/src/tam_lib_device.c:
polaris_act2_dev_use(polaris_cm_cc_t)
`)

ifdef(`crankshaft_family',`

```



```

modprobe sm_nim_adpt.ko for Switzer-CC
modutils_domtrans_insmod(polaris_cm_cc_t)
/dev/sm_nim_adpt device files for Switzer-CC
polaris_sm_nim_adpt_dev_use(polaris_cm_cc_t)
')

Mapping permission for /dev/shm/<name>
ifdef(`crankshaft_family',`
gen_require(`
 type systemd_tmpfiles_t;
 ')
mmap_files_pattern(systemd_tmpfiles_t, polaris_cm_cc_tmpfs_t, polaris_cm_cc_tmpfs_t)
')

on ngwc cmcc needs to access /dev/chdrvmmmap for asic memory mapping
optional_policy(`
polaris_chdrvmmmap_dev_use(polaris_cm_cc_t)
')

ifdef(`vxe_family',`
bind to BMC_AGENT_CLIENT_PORT port from cman_tlv_init
corenet_tcp_bind_polaris_bmc_agent_client_port(polaris_cm_cc_t)
')

allow /usr/binos/bin/cmcc to access /tmp/hd_sz
gen_require(`
 type udev_tmp_t;
 ')
read_files_pattern(polaris_cm_cc_t, udev_tmp_t, udev_tmp_t)

allow /usr/sbin/smartctl to be operated on fsadm_exec_t
fstools_exec(polaris_cm_cc_t)

using existing interface "polaris_cm_rp_tmp_manage" for polaris_cm_cc_t
to acces /tmp/cmlib_eeprom_sim_smartctl.out
polaris_cm_rp_tmp_manage(polaris_cm_cc_t)
files_tmp_filetrans(polaris_cm_cc_t, polaris_cm_rp_tmp_t, file, "cmlib_eeprom_sim_smartctl.out")

allow access to /dev/nvme*
dev_nvme_chr_files_manage(polaris_cm_cc_t)
dev_nvme_blk_files_manage(polaris_cm_cc_t)

access to /dev/ttyS0
term_use_unallocated_ttys(polaris_cm_cc_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarismcc.te

```

No license file was found, but licenses were detected in source scan.

```
#
June 2017, Victor Kamensky
#
Copyright (c) 2017-2019 by Cisco Systems, Inc.
All rights reserved
#

<summary>Polaris tservice Policy Rules.</summary>
```

Found in path(s):  
\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polaristSERVICE.if  
No license file was found, but licenses were detected in source scan.

```
#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#

<summary>Polaris polarissortfiles Policy Rules.</summary>
```

Found in path(s):  
\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarissortfiles.if  
No license file was found, but licenses were detected in source scan.

```
#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2021 by Cisco Systems, Inc.
All rights reserved
#

<summary>Polaris Storage Policy Rules.</summary>
```

```
#####
Persistent storage policy
#####
```

```
#####
<summary>
Make the specified type usable as default type for files
in a Polaris persistent (bootflash, hardisk, etc) filesystem.
</summary>
<param name="type">
<summary>
```

```

Type to be used for files.
</summary>
</param>
#
interface(`polaris_disk_type`,`
 files_type($1)
 gen_require(`
 attribute polaris_disk;
 `)
 typeattribute $1 polaris_disk;
`)

#####
<summary>
Make the specified type usable for files
in a Polaris persistent (bootflash, harddisk, etc)
filesystem.
</summary>
<param name="type">
<summary>
Type to be used for files.
</summary>
</param>
#
interface(`polaris_pfile_type`,`
 files_type($1)
 gen_require(`
 attribute polaris_disk;
 `)
 typeattribute $1 polaris_disk;
`)

#####
<summary>
Read any regular file/directory from persistent storage.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_persistent_read`,`
 gen_require(`
 attribute polaris_disk;
 `)
 read_files_pattern($1, polaris_disk, polaris_disk)
 read_lnk_files_pattern($1, polaris_disk, polaris_disk)
`)

```

```

 list_dirs_pattern($1, polaris_disk, polaris_disk)
)

#####
<summary>
Getattr of any regular file/directory from persistent storage.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_persistent_getattr`,`
 gen_require(`
 attribute polaris_disk;
 `)
 list_dirs_pattern($1, polaris_disk, polaris_disk)
 getattr_files_pattern($1, polaris_disk, polaris_disk)
 getattr_lnk_files_pattern($1, polaris_disk, polaris_disk)
)

#####
<summary>
Listdir of any regular directory from persistent storage.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_persistent_list_dirs`,`
 gen_require(`
 attribute polaris_disk;
 `)
 list_dirs_pattern($1, polaris_disk, polaris_disk)
)

#####
<summary>
Write/read any regular file/directory from persistent storage.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>

```

```

</param>
#
interface(`polaris_persistent_manage',`
 gen_require(`
 attribute polaris_disk;
 `)
 manage_files_pattern($1, polaris_disk, polaris_disk)
 manage_dirs_pattern($1, polaris_disk, polaris_disk)
 manage_lnk_files_pattern($1, polaris_disk, polaris_disk)
)

#####
<summary>
Map any regular file/directory from persistent storage.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_persistent_map',`
 gen_require(`
 attribute polaris_disk;
 `)
 allow $1 polaris_disk:file map;
)

#####
debug.conf
#####

#####
<summary>
Read debug.conf from persistent storage.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_read_debug_conf',`
 gen_require(`
 type polaris_debug_conf_t;
 type polaris_disk_bootflash_t;
 type polaris_disk_harddisk_t;
 type tmp_t;
 `)

```

```

 ')
 read_files_pattern($1, polaris_disk_bootflash_t, polaris_debug_conf_t)
 read_files_pattern($1, polaris_disk_harddisk_t, polaris_debug_conf_t)
 read_files_pattern($1, tmp_t, polaris_debug_conf_t)
 read_lnk_files_pattern($1, tmp_t, polaris_debug_conf_t)
 polaris_disk_bootflash_read_lnk($1)
')

#####
packages.conf
#####

#####
<summary>
Read packages.conf from persistent storage.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_read_packages_conf`,`
 gen_require(`
 type polaris_packages_conf_t;
 type polaris_disk_bootflash_t;
 type polaris_disk_harddisk_t;
 `)
 read_files_pattern($1, polaris_disk_bootflash_t, polaris_packages_conf_t)
 read_files_pattern($1, polaris_disk_harddisk_t, polaris_packages_conf_t)
')

#####
<summary>
Manage packages.conf in persistent storage.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_manage_packages_conf`,`
 gen_require(`
 type polaris_packages_conf_t;
 type polaris_disk_bootflash_t;
 type polaris_disk_harddisk_t;
 `)
')

```

```
manage_files_pattern($1, polaris_disk_bootflash_t, polaris_packages_conf_t)
manage_files_pattern($1, polaris_disk_harddisk_t, polaris_packages_conf_t)
')
```

```
#####
```

```
<summary>
Write/read any regular file/directory from /varied
```

```
</summary>
```

```
<param name="domain">
```

```
<summary>
```

```
Domain allowed access.
```

```
</summary>
```

```
</param>
```

```
#
```

```
interface(`polaris_disk_varied_manage`,`
```

```
gen_require(`
```

```
type polaris_disk_varied_t;
```

```
`)
```

```
manage_files_pattern($1, polaris_disk_varied_t, polaris_disk_varied_t)
```

```
')
```

```
#####
```

```
<summary>
```

```
read any regular file/directory from /varied
```

```
</summary>
```

```
<param name="domain">
```

```
<summary>
```

```
Domain allowed access.
```

```
</summary>
```

```
</param>
```

```
#
```

```
interface(`polaris_disk_varied_read`,`
```

```
gen_require(`
```

```
type polaris_disk_varied_t;
```

```
`)
```

```
read_files_pattern($1, polaris_disk_varied_t, polaris_disk_varied_t)
```

```
list_dirs_pattern($1, polaris_disk_varied_t, polaris_disk_varied_t)
```

```
')
```

```
#####
```

```
#####
```

```
<summary>
```

```
Search /varied directory
```

```
</summary>
```

```
<param name="domain">
```

```
<summary>
```

```
Domain allowed access.
```

```
</summary>
```

```

</param>
#
interface(`polaris_disk_varied_search`,`
 gen_require(`
 type polaris_disk_varied_t;
 `)
 search_dirs_pattern($1, polaris_disk_varied_t, polaris_disk_varied_t)
`)

```

```

#####
#####

```

```

<summary>
List/read /varied directory
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#

```

```

interface(`polaris_disk_varied_list`,`
 gen_require(`
 type polaris_disk_varied_t;
 `)
 list_dirs_pattern($1, polaris_disk_varied_t, polaris_disk_varied_t)
`)

```

```

#####

```

```

<summary>
Write/read/remove polaris_core_file_t file/directory from
persistent storage.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#

```

```

interface(`polaris_core_file_manage`,`
 gen_require(`
 type polaris_core_file_t;
 `)
 allow $1 polaris_core_file_t:dir rmdir;
 manage_files_pattern($1, polaris_core_file_t, polaris_core_file_t)

 allow $1 polaris_core_file_t:dir watch;
`)

```



```
#####
<summary>
Search polaris_core_file_t dir
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_core_file_search`,`
 gen_require(`
 type polaris_core_file_t;
 `)
 search_dirs_pattern($1, polaris_core_file_t, polaris_core_file_t)
`)
```

```
#####
<summary>
Read/Open/Search polaris_core_file_t dir
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_core_file_read`,`
 gen_require(`
 type polaris_core_file_t;
 `)
 allow $1 polaris_core_file_t:dir read;
 getattr_files_pattern($1, polaris_core_file_t, polaris_core_file_t)
`)
```

```
#####
<summary>
Get attrib of bootflash fifo file.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_disk_bootflash_fifo_file_getattr`,`
 gen_require(`
 type polaris_disk_bootflash_t;
 `)
`)
```

```
)
 getattr_fifo_files_pattern($1, polaris_disk_bootflash_t,
 polaris_disk_bootflash_t)
)
```

```
#####
```

```
<summary>
Get attrib of bootflash sock file.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
```

```
#
interface(`polaris_disk_bootflash_sock_file_getattr`,`
 gen_require(`
 type polaris_disk_bootflash_t;
 `)
 getattr_sock_files_pattern($1, polaris_disk_bootflash_t,
 polaris_disk_bootflash_t)
)
```

```
#####
```

```
<summary>
Read links of polaris_disk_bootflash_t
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
```

```
#
interface(`polaris_disk_bootflash_read_lnk`,`
 gen_require(`
 type polaris_disk_bootflash_t;
 `)
 read_lnk_files_pattern($1, polaris_disk_bootflash_t, polaris_disk_bootflash_t)
)
```

```
#####
```

```
<summary>
Search polaris_disk_bootflash_t dir
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
```

```

</param>
#
interface(`polaris_disk_bootflash_search',`
 gen_require(`
 type polaris_disk_bootflash_t;
 `)
 search_dirs_pattern($1, polaris_disk_bootflash_t, polaris_disk_bootflash_t)
`)

```

```
#####
```

```

<summary>
Write/read any regular file/directory under /csl_p_0/, /csl_p_1,
/csl_s_0, and /csl_s_1
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#

```

```

interface(`polaris_disk_csl_manage',`
 gen_require(`
 type polaris_disk_csl_p_t;
 type polaris_disk_csl_s_t;
 `)
 manage_files_pattern($1, polaris_disk_csl_p_t, polaris_disk_csl_p_t)
 manage_files_pattern($1, polaris_disk_csl_s_t, polaris_disk_csl_s_t)
 read_lnk_files_pattern($1, polaris_disk_csl_p_t, polaris_disk_csl_p_t)
 read_lnk_files_pattern($1, polaris_disk_csl_s_t, polaris_disk_csl_s_t)
`)

```

```
#####
```

```

<summary>
Write/read any regular file/directory under /csl_p_0/, /csl_p_1,
/csl_s_0, and /csl_s_1
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#

```

```

interface(`polaris_disk_csl_read',`
 gen_require(`
 type polaris_disk_csl_p_t;
 type polaris_disk_csl_s_t;
 `)

```

```

read_files_pattern($1, polaris_disk_csl_p_t, polaris_disk_csl_p_t)
read_files_pattern($1, polaris_disk_csl_s_t, polaris_disk_csl_s_t)
read_lnk_files_pattern($1, polaris_disk_csl_p_t, polaris_disk_csl_p_t)
read_lnk_files_pattern($1, polaris_disk_csl_s_t, polaris_disk_csl_s_t)
')

#####
<summary>
Write/read any regular file/directory under /objstore,
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_disk_objstore_manage`,`
 gen_require(`
 type polaris_disk_objstore_t;
 `)
 manage_files_pattern($1, polaris_disk_objstore_t, polaris_disk_objstore_t)
 read_lnk_files_pattern($1, polaris_disk_objstore_t, polaris_disk_objstore_t)
')

interface(`polaris_disk_objstore_read`,`
 gen_require(`
 type polaris_disk_objstore_t;
 `)
 read_files_pattern($1, polaris_disk_objstore_t, polaris_disk_objstore_t)
 list_dirs_pattern($1, polaris_disk_objstore_t, polaris_disk_objstore_t)
')

#####
<summary>
Read links of polaris_disk_harddisk_t
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_disk_harddisk_read_lnk`,`
 gen_require(`
 type polaris_disk_harddisk_t;
 `)
 read_lnk_files_pattern($1, polaris_disk_harddisk_t, polaris_disk_harddisk_t)
')

```

```
#####
<summary>
Read harddisk files
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_harddisk_read`,`
 gen_require(`
 type polaris_disk_harddisk_t;
 `)
 read_files_pattern($1, polaris_disk_harddisk_t, polaris_disk_harddisk_t)
 list_dirs_pattern($1, polaris_disk_harddisk_t, polaris_disk_harddisk_t)
`)
```

```
#####
<summary>
Read bootflash files
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_bootflash_read`,`
 gen_require(`
 type polaris_disk_bootflash_t;
 `)
 read_files_pattern($1, polaris_disk_bootflash_t, polaris_disk_bootflash_t)
 read_lnk_files_pattern($1, polaris_disk_bootflash_t, polaris_disk_bootflash_t)
 list_dirs_pattern($1, polaris_disk_bootflash_t, polaris_disk_bootflash_t)
`)
```

```
#####
<summary>
Manage bootflash files
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
```

```

#
interface(`polaris_bootflash_manage',`
 gen_require(`
 type polaris_disk_bootflash_t;
 ')
 manage_files_pattern($1, polaris_disk_bootflash_t, polaris_disk_bootflash_t)
 manage_lnk_files_pattern($1, polaris_disk_bootflash_t, polaris_disk_bootflash_t)
 manage_dirs_pattern($1, polaris_disk_bootflash_t, polaris_disk_bootflash_t)
')

```

```

#####
<summary>
Create an object in the polaris_disk_bootflash_t directories,
with a private type using a type transition.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<param name="private type">
<summary>
The type of the object to be created.
</summary>
</param>
<param name="object">
<summary>
The object class of the object being created.
</summary>
</param>
<param name="name" optional="true">
<summary>
The name of the object being created.
</summary>
</param>
#

```

```

interface(`polaris_bootflash_filetrans',`
 gen_require(`
 type polaris_disk_bootflash_t;
 ')

 filetrans_pattern($1, polaris_disk_bootflash_t, $2, $3, $4)
')

```

```

#####
<summary>
Manage bootflash files
</summary>

```

```

<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_harddisk_manage',`
 gen_require(`
 type polaris_disk_harddisk_t;
 `)
 manage_files_pattern($1, polaris_disk_harddisk_t, polaris_disk_harddisk_t)
 manage_lnk_files_pattern($1, polaris_disk_harddisk_t, polaris_disk_harddisk_t)
 manage_dirs_pattern($1, polaris_disk_harddisk_t, polaris_disk_harddisk_t)
)

```

```

#####
<summary>
Create an object in the polaris_disk_harddisk_t directories,
with a private type using a type transition.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<param name="private type">
<summary>
The type of the object to be created.
</summary>
</param>
<param name="object">
<summary>
The object class of the object being created.
</summary>
</param>
<param name="name" optional="true">
<summary>
The name of the object being created.
</summary>
</param>
#
interface(`polaris_harddisk_filetrans',`
 gen_require(`
 type polaris_disk_harddisk_t;
 `)

```

```

filetrans_pattern($1, polaris_disk_harddisk_t, $2, $3, $4)

```

)

#####

## <summary>

## Getattr of polaris\_disk\_crashinfo\_t (typically /crashinfo

## symbolic link and real disk it points to)

## </summary>

## <param name="domain">

## <summary>

## Domain allowed access.

## </summary>

## </param>

#

interface(`polaris\_disk\_crashinfo\_getattr`,`

gen\_require(`

type polaris\_disk\_crashinfo\_t;

`)

read\_lnk\_files\_pattern(\$1, polaris\_disk\_crashinfo\_t, polaris\_disk\_crashinfo\_t)

getattr\_lnk\_files\_pattern(\$1, polaris\_disk\_crashinfo\_t, polaris\_disk\_crashinfo\_t)

getattr\_files\_pattern(\$1, polaris\_disk\_crashinfo\_t, polaris\_disk\_crashinfo\_t)

getattr\_dirs\_pattern(\$1, polaris\_disk\_crashinfo\_t, polaris\_disk\_crashinfo\_t)

)

#####

## <summary>

## Manage polaris\_disk\_crashinfo\_t (typically /crashinfo

## symbolic link and real disk it points to)

## </summary>

## <param name="domain">

## <summary>

## Domain allowed access.

## </summary>

## </param>

#

interface(`polaris\_disk\_crashinfo\_manage`,`

gen\_require(`

type polaris\_disk\_crashinfo\_t;

`)

manage\_files\_pattern(\$1, polaris\_disk\_crashinfo\_t, polaris\_disk\_crashinfo\_t)

manage\_lnk\_files\_pattern(\$1, polaris\_disk\_crashinfo\_t, polaris\_disk\_crashinfo\_t)

manage\_dirs\_pattern(\$1, polaris\_disk\_crashinfo\_t, polaris\_disk\_crashinfo\_t)

)

#####

## <summary>

## Read links of polaris\_disk\_crashinfo\_t

## </summary>



```

<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_disk_crashinfo_read_lnk`,`
 gen_require(`
 type polaris_disk_crashinfo_t;
 `)
 read_lnk_files_pattern($1, polaris_disk_crashinfo_t, polaris_disk_crashinfo_t)
`)

```

```
#####
```

```

<summary>
Write/read polaris_disk_license_t files/directories
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_disk_license_manage`,`
 gen_require(`
 type polaris_disk_license_t;
 `)
 manage_files_pattern($1, polaris_disk_license_t, polaris_disk_license_t)
 manage_lnk_files_pattern($1, polaris_disk_license_t, polaris_disk_license_t)
 allow $1 polaris_disk_license_t:file map;
`)

```

```
#####
```

```

<summary>
Fead polaris_disk_license_t files/directories
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_disk_license_read`,`
 gen_require(`
 type polaris_disk_license_t;
 `)
 read_files_pattern($1, polaris_disk_license_t, polaris_disk_license_t)
 read_lnk_files_pattern($1, polaris_disk_license_t, polaris_disk_license_t)
`)

```

```

)

#####
<summary>
Get the attributes of an removable
filesystem.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_getattr_removable`,`
gen_require(`
type removable_t;
)

allow $1 removable_t:filesystem getattr;
allow $1 removable_t:dir getattr;
)

#####
<summary>
Create, read, write, and delete all removable files.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_removable_manage`,`
gen_require(`
type removable_t;
)

manage_files_pattern($1, removable_t, removable_t)
manage_dirs_pattern($1, removable_t, removable_t)
)

#####
<summary>
read all removable files.
</summary>
<param name="domain">
<summary>
Domain allowed access.

```

```

</summary>
</param>
#
interface(`polaris_removable_read`,`
 gen_require(`
 type removable_t;
 `)
 read_files_pattern($1, removable_t, removable_t)
 list_dirs_pattern($1, removable_t, removable_t)
 read_lnk_files_pattern($1, removable_t, removable_t)
`)

```

```
#####
```

```

<summary>
Get the attributes of silent roll partition
filesystem.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#

```

```

interface(`polaris_getattr_filesystem_disk_ucose`,`
 gen_require(`
 type polaris_disk_ucose_t;
 `)

 allow $1 polaris_disk_ucose_t:filesystem getattr;
`)

```

```
#####
```

```

<summary>
Get the attributes of an bootflash
filesystem.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#

```

```

interface(`polaris_getattr_bootflash`,`
 gen_require(`
 type polaris_disk_bootflash_t;
 `)

 allow $1 polaris_disk_bootflash_t:filesystem getattr;

```

)

#####

```
<summary>
Get the attributes of an harddisk
filesystem.
</summary>
```

```
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
```

```
#
interface(`polaris_getattr_harddisk`,`
gen_require(
 type polaris_disk_harddisk_t;
)

```

```
allow $1 polaris_disk_harddisk_t:filesystem getattr;
```

)

#####

```
<summary>
Get the attributes of an harddisk
file.
</summary>
```

```
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
```

```
#
interface(`polaris_getattr_file_harddisk`,`
gen_require(
 type polaris_disk_harddisk_t;
)
getattr_files_pattern($1, polaris_disk_harddisk_t, polaris_disk_harddisk_t)
)

```

)

#####

```
<summary>
Watch persistent file or directories
</summary>
```

```
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
```

```

<rolebase/>
#
interface(`polaris_persistent_watch',`
gen_require(
 attribute polaris_disk;
)
 allow $1 polaris_disk: { dir file } watch;
)

#####
<summary>
Create an object in the polaris_disk_crashinfo_t directories,
with a private type using a type transition.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<param name="private type">
<summary>
The type of the object to be created.
</summary>
</param>
<param name="object">
<summary>
The object class of the object being created.
</summary>
</param>
<param name="name" optional="true">
<summary>
The name of the object being created.
</summary>
</param>
#
interface(`polaris_crashinfo_filetrans',`
 gen_require(
 type polaris_disk_crashinfo_t;
)

 filetrans_pattern($1, polaris_disk_crashinfo_t, $2, $3, $4)
)

#####
<summary>
Get the attributes of an polaris_disk_config_t
file or directory.
</summary>

```

```

<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_getattr_disk_config',`
gen_require(
 type polaris_disk_config_t;
)
 getattr_files_pattern($1, polaris_disk_config_t, polaris_disk_config_t)
 getattr_dirs_pattern($1, polaris_disk_config_t, polaris_disk_config_t)
)

#####
<summary>
Create an object in the polaris_disk_config_t directories,
with a private type using a type transition.
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<param name="private type">
<summary>
The type of the object to be created.
</summary>
</param>
<param name="object">
<summary>
The object class of the object being created.
</summary>
</param>
<param name="name" optional="true">
<summary>
The name of the object being created.
</summary>
</param>
#
interface(`polaris_disk_config_filetrans',`
gen_require(
 type polaris_disk_config_t;
)

 filetrans_pattern($1, polaris_disk_config_t, $2, $3, $4)
)

```

```
#####
```

```
<summary>
```

```
Manage bootflash files mmap
```

```
</summary>
```

```
<param name="domain">
```

```
<summary>
```

```
Domain allowed access.
```

```
</summary>
```

```
</param>
```

```
#
```

```
interface(`polaris_bootflash_files_mmap`,`
```

```
gen_require(`
```

```
type polaris_disk_bootflash_t;
```

```
`)
```

```
mmap_files_pattern($1, polaris_disk_bootflash_t, polaris_disk_bootflash_t)
```

```
`)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisstorage.if

No license file was found, but licenses were detected in source scan.

```
#
```

```
March 2020, Victor Kamensky
```

```
#
```

```
Copyright (c) 2020 by Cisco Systems, Inc.
```

```
All rights reserved
```

```
#
```

```
policy_module(polarisjvm, 1.0);
```

```
gen_require(`
```

```
type polaris_jvm_t;
```

```
`)
```

```
access /etc/passwd
```

```
auth_use_nsswitch(polaris_jvm_t)
```

```
java through posix_sysconf accesses /sys/devices/system/cpu
```

```
to get number of CPUs
```

```
dev_read_sysfs(polaris_jvm_t)
```

```
checks whether IPV6 is configured accessing /proc/pid/net/if_inet6
```

```
kernel_read_network_state(polaris_jvm_t)
```

```
handling ~/.oracle_jre_usage
```

```
type polaris_jvm_home_t;
```

```
files_type(polaris_jvm_home_t)
```

```
gen_require(`
```

```

 type user_home_dir_t;
)
filetrans_pattern(polaris_jvm_t, user_home_dir_t, polaris_jvm_home_t, dir, ".oracle_jre_usage")
manage_dirs_pattern(polaris_jvm_t, user_home_dir_t, polaris_jvm_home_t)
manage_files_pattern(polaris_jvm_t, polaris_jvm_home_t, polaris_jvm_home_t)

handling /tmp/hisperfdata_root
type polaris_jvm_tmp_t;
files_type(polaris_jvm_tmp_t)
gen_require(
 type tmp_t;
)
files_tmp_filetrans(polaris_jvm_t, polaris_jvm_tmp_t, dir, "hsperfdata_root")
manage_dirs_pattern(polaris_jvm_t, tmp_t, polaris_jvm_tmp_t)
manage_files_pattern(polaris_jvm_t, polaris_jvm_tmp_t, polaris_jvm_tmp_t)
mmap_files_pattern(polaris_jvm_t, polaris_jvm_tmp_t, polaris_jvm_tmp_t)

listen on 9093 websocket tcp port
corenet_tcp_bind_polaris_poljvm_websocket_port(polaris_jvm_t)
corenet_tcp_bind_generic_node(polaris_jvm_t)
allow polaris_jvm_t self:tcp_socket create_stream_socket_perms;

java uses jit and needs executable anonymous mapping
allow polaris_jvm_t self:process execmem;

Allow JDK access to read cpu and memory utilization data on start up
gen_require(
 type proc_t;
)

allow polaris_jvm_t proc_t:file { getattr open read };
fs_read_cgroup_files(polaris_jvm_t)
fs_search_cgroup_dirs(polaris_jvm_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarisjvm.te
No license file was found, but licenses were detected in source scan.

#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#

<summary>Polaris plogd Policy Rules.</summary>

```

Found in path(s):



\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarisplogd.if

No license file was found, but licenses were detected in source scan.

#

# March 2017, Victor Kamensky

#

# Copyright (c) 2016-2020 by Cisco Systems, Inc.

# All rights reserved

#

## <summary>Polaris hm Policy Rules.</summary>

#####

## <summary>

## Write into fifo file created by hman, typical case when

## hman starts script under popen.

## </summary>

## <param name="domain">

## <summary>

## Domain allowed access.

## </summary>

## </param>

## <rolecap/>

#

interface(`polaris\_hman\_use\_fifo`,`

gen\_require(`  
type polaris\_hm\_t;  
`)

write\_fifo\_files\_pattern(\$1, polaris\_hm\_t, polaris\_hm\_t)

`)

#####

## <summary>

## Read tmp files created by hman. I.e /tmp/myhostname.

## </summary>

## <param name="domain">

## <summary>

## Domain allowed access.

## </summary>

## </param>

## <rolecap/>

#

interface(`polaris\_hm\_tmp\_read`,`

gen\_require(`  
type polaris\_hm\_tmp\_t;  
`)

```

 read_files_pattern($1, polaris_hm_tmp_t, polaris_hm_tmp_t)
)

#####
<summary>
Execute pkg_summary.sh in its own domain
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolecap/>
#
interface(`polaris_pkg_summary_domtrans`,`
 gen_require(`
 type polaris_pkg_summary_t;
 type polaris_pkg_summary_exec_t;
 `)

 corecmd_search_bin($1)
 domtrans_pattern($1, polaris_pkg_summary_exec_t, polaris_pkg_summary_t)
)

#####
<summary>
Execute pkg_to_tree.sh in its own domain
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
<rolecap/>
#
interface(`polaris_pkg_to_tree_domtrans`,`
 gen_require(`
 type polaris_pkg_to_tree_t;
 type polaris_pkg_to_tree_exec_t;
 `)

 corecmd_search_bin($1)
 domtrans_pattern($1, polaris_pkg_to_tree_exec_t, polaris_pkg_to_tree_t)
)

#####
<summary>
Execute hman in the polaris_cli_fs_cmds domain.

```

```

</summary>
<param name="domain">
<summary>
Domain allowed to transition.
</summary>
</param>
#
interface(`polaris_cli_fs_cmds_domtrans`,`
gen_require(`
type polaris_cli_fs_cmds_t, polaris_cli_fs_cmds_exec_t;
`)

corecmd_search_bin($1)
domtrans_pattern($1, polaris_cli_fs_cmds_exec_t, polaris_cli_fs_cmds_t)
`)

#####
<summary>
Read file /tmp/pkg_summary.txt file
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_pkg_summary_tmp_read`,`
gen_require(`
type polaris_pkg_summary_tmp_t;
`)
read_files_pattern($1, polaris_pkg_summary_tmp_t, polaris_pkg_summary_tmp_t)
`)

#####
<summary>
read the contents of /tmp/show_provision_temp
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_show_provision_temp_read`,`
gen_require(`
type polaris_show_provision_tmp_t;
`)
read_files_pattern($1, polaris_show_provision_tmp_t, polaris_show_provision_tmp_t)
`)

```

```

')

#####
<summary>
manage the contents of /tmp/show_provision_temp
</summary>
<param name="domain">
<summary>
Domain allowed access.
</summary>
</param>
#
interface(`polaris_show_provision_temp_manage`,`
 gen_require(`
 type polaris_show_provision_tmp_t;
 `)
 manage_files_pattern($1, polaris_show_provision_tmp_t, polaris_show_provision_tmp_t)
 manage_lnk_files_pattern($1, polaris_show_provision_tmp_t, polaris_show_provision_tmp_t)
 manage_dirs_pattern($1, polaris_show_provision_tmp_t, polaris_show_provision_tmp_t)
 files_tmp_filetrans($1, polaris_show_provision_tmp_t, { file dir })
)

```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarishm.if

No license file was found, but licenses were detected in source scan.

```

#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2020 by Cisco Systems, Inc.
All rights reserved
#

policy_module(polarispsvp, 1.0);

polaris_process_domain_template(psvp)

transition to pman domain, once pman is invoked by psvp
polaris_pman_domtrans(polaris_psvp_t)
transition to pvp domain, once pvp is invoked by psvp
polaris_pvp_domtrans(polaris_psvp_t)

corecmd_exec_bin(polaris_psvp_t)
corecmd_exec_shell(polaris_psvp_t)

can execute process in polaris domain
polaris_exec(polaris_psvp_t)

```

```

LOOK AT ME start-stop-daemon from busy box iterates all
/proc/<pid> directories and reads /proc/<pid>/cmdline
/proc/<pid>/exe. I.e it need quite a bit of priviledges
domain_read_all_domains_state(polaris_psvp_t)

another issue of running busybox start-stop-daemon under
psvp_t label
type=AVC msg=audit(1480527500.482:46): avc: denied { sys_ptrace } for pid=14853 comm="start-stop-daem"
capability=19 scontext=system_u:system_r:polaris_psvp_t:s0 tcontext=system_u:system_r:polaris_psvp_t:s0
tclass=capability
allow polaris_psvp_t self:capability sys_ptrace;

allow to read /proc/meminfo
kernel_read_system_state(polaris_psvp_t)

allow read of /etc/passwd
auth_use_nsswitch(polaris_psvp_t)

run ldd, which in turns execve "ld.so --verify"
libs_exec_ld_so(polaris_psvp_t)

work with /tmp files
type polaris_psvp_tmp_t;
files_tmp_file(polaris_psvp_tmp_t)
manage_dirs_pattern(polaris_psvp_t, tmp_t, polaris_psvp_tmp_t)
manage_files_pattern(polaris_psvp_t, polaris_psvp_tmp_t, polaris_psvp_tmp_t)
manage_fifo_files_pattern(polaris_psvp_t, polaris_psvp_tmp_t, polaris_psvp_tmp_t)
files_tmp_filetrans(polaris_psvp_t, polaris_psvp_tmp_t, { file dir })
filetrans_pattern(domain, tmp_t, polaris_psvp_tmp_t, dir, "psvp")

ifdef(^ngwc_family';`
also need to be able to ls /tmp/ufs/ on ngwc
optional_policy(`
polaris_ncd_tmp_read(polaris_psvp_t)
`)
`)

note split entry another psvp capability listed above
allow polaris_psvp_t self:capability sys_resource;

polaris_pvp_getattrtmp_dirs(polaris_psvp_t)

dmidecode_domtrans(polaris_psvp_t)

polaris_btrace_data_manage(polaris_psvp_t)
polaris_chasfs_manage(polaris_psvp_t)
polaris_cpuld_read(polaris_psvp_t)

```

```

polaris_cpld_write(polaris_psvp_t)
polaris_rmonbifo_tmp_read(polaris_psvp_t)
polaris_tdldb_list_dirs(polaris_psvp_t)
polaris_boot_tmp_read(polaris_psvp_t)
polaris_disk_crashinfo_getattr(polaris_psvp_t)
polaris_flashlib_read(polaris_psvp_t)
polaris_read_debug_conf(polaris_psvp_t)

allow polaris_psvp_t self:capability dac_override;

watch /tmp/sai/psvp
allow polaris_psvp_t polaris_psvp_tmp_t:dir watch;

creates /tmp/sai/pvp/rp/run_stg2
polaris_pvp_manage_tmp_files(polaris_psvp_t)

Allow /tmp/ufs/bootflash & /tmp/ufs/harddisk read access
ifdef(`vwlc_platform',`
optional_policy(`
polaris_ncd_tmp_read(polaris_psvp_t)
')
')

permissions during shutdown
polaris_pvp_manage_tmp_files(polaris_psvp_t);

```

Found in path(s):

```

* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polarispsvp.te
No license file was found, but licenses were detected in source scan.

```

```

#
October 2019, Patrick O'Halloran
#
Copyright (c) 2016-2020 by Cisco Systems, Inc.
All rights reserved
#

```

```

policy_module(polariscrft, 1.0);

```

```

#####
CRFT policy
#####
gen_require(`
 attribute domain;
 attribute polaris_extended_domain;
')

```

```

persistent CRFT files stored under crft_data

```

```

type polaris_crft_data_t;
files_type(polaris_crft_data_t)

allow crft data file reside on persistent storage
polaris_pfile_type(polaris_crft_data_t)

attribute polaris_crft_data_domain;

typeattribute polaris_crft_data_t polaris_crft_data_domain;

Start of mcp_crft_request context elements
polaris_utility_domain_template(crft_request)

smand calls the mcp_crft_request.sh in bexec context
polaris_bexecute_domtrans(polaris_crft_request_t)
polaris_bexecute_domain(polaris_crft_request_t, polaris_crft_request_exec_t)

read the cpld information
polaris_cpld_read(polaris_crft_request_t)

dev/pty access as part of bexec operations
telnet_use_ptys(polaris_crft_request_t)

filesystem attributes for df /
fs_getattr_xattr_fs(polaris_crft_request_t)

btrace used in script uses these
polaris_btrace_tmppub_manage(polaris_crft_request_t)
polaris_use_btrace_fifo(polaris_crft_request_t)

read /proc/rmonbifo files such as env_var.sh
polaris_rmonbifo_tmp_read(polaris_crft_request_t)

read /tmp/sw/boot/base_pkg
polaris_boot_tmp_manage(polaris_crft_request_t)

ufs information captured by the chasfs utils
ifdef(^ngwc_family';`
optional_policy(`
polaris_ncd_tmp_manage(polaris_crft_request_t)
')
')
scripts read /proc/cmdline
kernel_read_system_state(polaris_crft_request_t)

ping the vrf
netutils_domtrans_ping(polaris_crft_request_t)
sysnet_domtrans_ifconfig(polaris_crft_request_t)

```

```

rsync operations for members and standby rps
gen_require(
 type rsync_exec_t;
 type rsync_port_t;
)
allow polaris_crft_request_t rsync_exec_t:file { execute execute_no_trans getattr map open read };
allow polaris_crft_request_t rsync_port_t:tcp_socket name_connect;

access to /etc/hosts for rp/members information
gen_require(
 type net_conf_t;
)
files_etc_filetrans(polaris_crft_request_t, net_conf_t, file, "hosts")
auth_use_nsswitch(polaris_crft_request_t)

execute the bash script
corecmd_exec_bin(polaris_crft_request_t)

net namespace filesystem
fs_read_nsfs_files(polaris_crft_request_t)
polaris_chasfs_manage(polaris_crft_request_t)

script also accesses the persistent files from crft
polaris_persistent_manage(polaris_crft_request_t)
polaris_crft_data_manage_all(polaris_crft_request_t)

ping operations via ip netns
gen_require(
 type ifconfig_t;
)
netutils_domtrans_ping(ifconfig_t)

Curl accesses from IoT boxes like petra/sparrow
gen_require(
 type polaris_curl_t;
 type polaris_iosd_t;
)
allow polaris_curl_t polaris_crft_request_t:process sigchld;

handle mktemp creation and cleanup
files_manage_generic_tmp_dirs(polaris_crft_request_t)
allow polaris_crft_request_t self:capability sys_resource;

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscrft.te
No license file was found, but licenses were detected in source scan.

```



```

#
July 2017, Victor Kamensky
#
Copyright (c) 2017-2021 by Cisco Systems, Inc.
All rights reserved
#

policy_module(polaristamdrp, 1.0);

gen_require(
 type polaris_tamd_rp_t;
)

polaris_btrace_data_manage(polaris_tamd_rp_t)
polaris_crft_data_manage(polaris_tamd_rp_t)
polaris_chasfs_manage(polaris_tamd_rp_t)
polaris_tdlresolve_read(polaris_tamd_rp_t)
polaris_tdlldb_list_dirs(polaris_tamd_rp_t)
polaris_flashlib_read(polaris_tamd_rp_t)
logging_send_syslog_msg(polaris_tamd_rp_t)

allow read of /etc/passwd
auth_use_nsswitch(polaris_tamd_rp_t)

polaris_cpld_read(polaris_tamd_rp_t)
polaris_cpld_write(polaris_tamd_rp_t)

polaris_quack_dev_use(polaris_tamd_rp_t)

tmp file for udi authentication
type polaris_tamd_rp_tmp_t;
files_tmp_file(polaris_tamd_rp_tmp_t);
files_tmp_filetrans(polaris_tamd_rp_t, polaris_tamd_rp_tmp_t, file, "tam_uid_validation")
manage_files_pattern(polaris_tamd_rp_t, polaris_tamd_rp_tmp_t, polaris_tamd_rp_tmp_t)
polaris_cm_rp_tmp_manage(polaris_tamd_rp_t)

hybrid tam needs access to /objstore/.swtam
gen_require(
 type polaris_disk_objstore_t;
 type root_t;
)
filetrans_pattern(polaris_tamd_rp_t, root_t, polaris_disk_objstore_t, dir, "objstore")
manage_dirs_pattern(polaris_tamd_rp_t, polaris_disk_objstore_t, polaris_disk_objstore_t)
polaris_disk_objstore_manage(polaris_tamd_rp_t)

need access to dash fpga to read/write TAM
optional_policy(
 polaris_dash_dev_use(polaris_tamd_rp_t)
)

```

```

')

#access to /dev/dash_fpga device on fugazi platform
ifdef(^fugazi_platform',`
 polaris_dash_dev_mcp_use(polaris_tamd_rp_t)
`)

allow polaris_tamd_rp_t self:capability net_admin;

LOOK AT ME tamd_rp needs shell access to do something like this
sh -c "echo 0x04 > /sys/devices/platform/cpld/reg_rp_reset_control"
need to rework into simple open,write,close
corecmd_exec_shell(polaris_tamd_rp_t)

LOOK AT ME access should be restricted after /flash/dummy_check is removed,
which is tracked under CSCvh68866. Allow access to bootflash till then.
polaris_bootflash_read(polaris_tamd_rp_t)

optional_policy(`
Allow /dev/dmammmap access
polaris_dmammmap_dev_use(polaris_tamd_rp_t)
`)

LOOK AT ME: /dev/mem access restriction
polaris_dev_mem_use(polaris_tamd_rp_t)

optional_policy(`
polaris_ngwc_shm_manage(polaris_tamd_rp_t)
`)

optional_policy(`
polaris_remap_mem_dev_use(polaris_tamd_rp_t)
`)

polaris_cpld_dev_use(polaris_tamd_rp_t)

optional_policy(`
allow access to /sys/devices/virtual/misc/ggpio/gpio_out_assert
polaris_ggpio_dev_read_write(polaris_tamd_rp_t)
`)

optional_policy(`
 polaris_quake_i2c_manage(polaris_tamd_rp_t)
`)

/dev/aikido access
polaris_aikido_dev_use(polaris_tamd_rp_t)

```

```
tamlib debug file access
polaris_tamlib_dbg_file_manage(polaris_tamd_rp_t)
```

```
tam gpio sysfs access
optional_policy(`
dev_rw_sysfs(polaris_tamd_rp_t)
')
```

```
ifdef(`petra_platform',`
#allow access to /dev/i2c-0 for hash value
polaris_i2c_use(polaris_tamd_rp_t)
')
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polaristamdrp.te

No license file was found, but licenses were detected in source scan.

```
#
March 2017, Victor Kamensky
#
Copyright (c) 2016-2019 by Cisco Systems, Inc.
All rights reserved
#
```

```
/usr/binos/conf/sort_files_by_inode.sh -- gen_context(system_u:object_r:polaris_sort_files_exec_t,s0)
```

Found in path(s):

\* /opt/cola/permits/1103963160\_1615183271.1/0/selinux-tar/selinux/polarissortfiles.fc

No license file was found, but licenses were detected in source scan.

```
#
February 2020, Victor Kamensky
#
Copyright (c) 2020-2021 by Cisco Systems, Inc.
All rights reserved
#
```

```
policy_module(polariscdgestart, 1.0);
```

```
gen_require(`
 type polaris_cedge_start_t;
')
```

```
polaris_chasfs_manage(polaris_cedge_start_t)
polaris_boot_tmp_read(polaris_cedge_start_t)
polaris_bootflash_manage(polaris_cedge_start_t)
polaris_cpld_read(polaris_cedge_start_t)
polaris_flashlib_read(polaris_cedge_start_t)
```

```

polaris_rmonbifo_tmp_read(polaris_cedge_start_t)
polaris_btrace_tmppub_read(polaris_cedge_start_t)

needed by install_util.sh
polaris_read_packages_conf(polaris_cedge_start_t)

corecmd_exec_bin(polaris_cedge_start_t)
corecmd_exec_shell(polaris_cedge_start_t)
auth_use_nsswitch(polaris_cedge_start_t)

polaris_dmi_ports_fetch_domtrans(polaris_cedge_start_t)

runs ps -C cfgmgr -o pid=
ps needs access to proc_t
kernel_read_system_state(polaris_cedge_start_t)
ps needs access to state of all domains
domain_read_all_domains_state(polaris_cedge_start_t)
"ps" needs read access to /sys/devices/system/cpu/online
"ps" needs read access to /proc/uptime
dev_read_sysfs(polaris_cedge_start_t)

runs vip-confd-startup.sh needs transition into polaris_confd_t domain
polaris_confd_domtrans(polaris_cedge_start_t)

runs systemctl start logrotate.service
systemd_exec_systemctl(polaris_cedge_start_t)

manage /etc/viptela
polaris_cedge_etc_manage(polaris_cedge_start_t)

runs install_assist.sh
polaris_install_engine_domtrans(polaris_cedge_start_t)

write /bootflash/.installer/images/pkg_boot_17.3.01/version
polaris_disk_install_manage(polaris_cedge_start_t)
gen_require(
 type polaris_disk_install_t;
)
du -s /bootflash/.installer/images/pkg_boot_17.3.01/confd0/cdb
allow polaris_cedge_start_t polaris_disk_install_t:filesystem getattr;

chown -R binos /bootflash/sdwan
fs_getattr_xattr_fs(polaris_cedge_start_t)

allow polaris_cedge_start_t self:capability { chown fowner net_admin };

PLEASE LOOK AT ME cedge_start.sh modifies set of directories that
are supposed to be read only, like usr_t, etc_t, root_t

```

```

files_rw_usr_dirs(polaris_cedge_start_t)
gen_require(
 type usr_t;
)
manage_lnk_files_pattern(polaris_cedge_start_t, usr_t, usr_t)
libs_manage_lib_dirs(polaris_cedge_start_t)
gen_require(
 type lib_t;
)
manage_lnk_files_pattern(polaris_cedge_start_t, lib_t, lib_t)
files_manage_etc_symlinks(polaris_cedge_start_t)
files_manage_var_symlinks(polaris_cedge_start_t)
creates /home directory in root
gen_require(
 type root_t;
)
manage_dirs_pattern(polaris_cedge_start_t, root_t, root_t)
manage_lnk_files_pattern(polaris_cedge_start_t, root_t, root_t)
creates /var/log/sdwan
gen_require(
 type var_log_t;
)
manage_dirs_pattern(polaris_cedge_start_t, var_log_t, var_log_t)
manage_lnk_files_pattern(polaris_cedge_start_t, var_log_t, var_log_t)
corecmd_manage_bin_files(polaris_cedge_start_t)

PLEASE LOOK AT ME copy unit files into /lib/systemd/system
cp /tmp/sw/rp/0/0/rp_daemons/mount/lib/systemd/system/logrotate.service /lib/systemd/system
gen_require(
 type systemd_unit_file_t;
)
read_lnk_files_pattern(polaris_cedge_start_t, systemd_unit_file_t, systemd_unit_file_t)

PLEASE LOOK AT ME need to have separate label for logrotate.service
allow only to start if, do it once copy of logrotate.service is fixed
systemd_config_generic_services(polaris_cedge_start_t)
init_start(polaris_cedge_start_t)

creates /var/log/confd
polaris_conf_d_var_log_manage(polaris_cedge_start_t)

executes touch /etc/resolv.conf for case when it is missing
check create_etc_resolv_conf make sure that it becomes net_conf_t
gen_require(
 type net_conf_t;
)
files_etc_filetrans(polaris_cedge_start_t, net_conf_t, file, "resolv.conf")
sysnet_create_config(polaris_cedge_start_t)

```

```

sysnet_write_config(polaris_cedge_start_t)

creates /var/confd0 when box boots with startup config disabled
polaris_conf_d_var_filetrans(polaris_cedge_start_t, dir, "confd0")

polaris_conf_d_var_dir_manage(polaris_cedge_start_t)

#####
During controller-mode enablement/bringup,
viptela scripts are not loaded as part of the base packages.
viptela-start.sh script takes care of creating these references.
It creates softlink copies them as below to desired location depending on the packaging (mono vs subpackage).
"cp $PKG_PATH/lib/systemd/system/logrotate.service /lib/systemd/system"
Below policy statement allow copy access needed for viptela-logrotate.sh
for updating /lib/systemd/system and /usr/binos/conf path
write_files_pattern(polaris_cedge_start_t, systemd_unit_file_t, systemd_unit_file_t)

While creating softlink as below
"ln -sf $PKG_PATH/usr/binos/conf/viptela-logrotate.sh /usr/binos/conf/viptela-logrotate.sh"
As the ln command tries to create the new link, it removes the already existing link.
ln deletes the file associated with the path name if this path name is the last link to the file.
If ln can't get rid of the conflicting path name, it does not attempt to establish the new link.
If ln successfully removes the conflicting path name, it then establishes the link.
delete file permissions are hence needed for ln command to perform unlinking previous link
files_delete_etc_files(polaris_cedge_start_t)
#####

During cEdge upgrade, viptela-start.sh needs permissions to maintain the
state of roll back timer in /bootflash/.rollback_timer/*
polaris_rbtimer_bootflash_manage(polaris_cedge_start_t)

#Nutella-XE - Vedge image install
#/bin/bash /tmp/sw/rp/0/0/rp_security/mount/usr/binos/conf/viptela-start.sh
mount_domtrans(polaris_cedge_start_t)

Found in path(s):
* /opt/cola/permits/1103963160_1615183271.1/0/selinux-tar/selinux/polariscedgestart.te

```

# 1.123 byte-buddy 1.10.20

## 1.123.1 Available under license :

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

## 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent

to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. **Grant of Copyright License.** Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. **Grant of Patent License.** Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. **Redistribution.** You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work,



excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any

risks associated with Your exercise of permissions under this License.

8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
  
9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

Copyright \${project.inceptionYear} - \${current.year} \${copyright.holder}

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

## 1.124 setup 2.12.2 6.el8

### 1.124.1 Available under license :

Setup package is public domain.

You are free to use, copy, distribute or modify included files without restrictions.

# 1.125 nghttp2 1.33.0 3.e18\_2.1

## 1.125.1 Available under license :

The MIT License

Copyright (c) 2012, 2014, 2015, 2016 Tatsuhiro Tsujikawa

Copyright (c) 2012, 2014, 2015, 2016 nghttp2 contributors

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

set yrange [0:]

set terminal pngcairo font 'Sans, 8' lw 1 size 1400,1024

set xtics rotate by -45

set style histogram errorbars gap 2 lw 1

set style fill solid border -1

LEGAL NOTICE INFORMATION

-----

All the files in this distribution are covered under the MIT license (see the file MITL) except some files mentioned below:

If not otherwise noted, the extensions in this package are licensed under the following license.

Copyright (c) 2010 by the contributors (see AUTHORS file).

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## 1.126 grep 3.1 6.el8

### 1.126.1 Available under license :

@c The GNU Free Documentation License.

@center Version 1.3, 3 November 2008

@c This file is intended to be included within another document,

@c hence no sectioning command or @node.

@display

Copyright @copyright{ } 2000, 2001, 2002, 2007, 2008 Free Software Foundation, Inc.

@uref{<http://fsf.org/>}

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

@end display

@enumerate 0

@item

PREAMBLE

The purpose of this License is to make a manual, textbook, or other functional and useful document @dfn{free} in the sense of freedom: to assure everyone the effective freedom to copy and redistribute it, with or without modifying it, either commercially or noncommercially. Secondly, this License preserves for the author and publisher a way to get credit for their work, while not being considered responsible for modifications made by others.

This License is a kind of "copyleft", which means that derivative works of the document must themselves be free in the same sense. It complements the GNU General Public License, which is a copyleft license designed for free software.

We have designed this License in order to use it for manuals for free software, because free software needs free documentation: a free program should come with manuals providing the same freedoms that the software does. But this License is not limited to software manuals; it can be used for any textual work, regardless of subject matter or whether it is published as a printed book. We recommend this License principally for works whose purpose is instruction or reference.

@item

## APPLICABILITY AND DEFINITIONS

This License applies to any manual or other work, in any medium, that contains a notice placed by the copyright holder saying it can be distributed under the terms of this License. Such a notice grants a world-wide, royalty-free license, unlimited in duration, to use that work under the conditions stated herein. The "Document", below, refers to any such manual or work. Any member of the public is a licensee, and is addressed as "you". You accept the license if you copy, modify or distribute the work in a way requiring permission under copyright law.

A "Modified Version" of the Document means any work containing the Document or a portion of it, either copied verbatim, or with modifications and/or translated into another language.

A "Secondary Section" is a named appendix or a front-matter section of the Document that deals exclusively with the relationship of the publishers or authors of the Document to the Document's overall subject (or to related matters) and contains nothing that could fall directly within that overall subject. (Thus, if the Document is in part a textbook of mathematics, a Secondary Section may not explain any mathematics.) The relationship could be a matter of historical connection with the subject or with related matters, or of legal, commercial, philosophical, ethical or political position regarding them.

The "Invariant Sections" are certain Secondary Sections whose titles are designated, as being those of Invariant Sections, in the notice that says that the Document is released under this License. If a section does not fit the above definition of Secondary then it is not allowed to be designated as Invariant. The Document may contain zero Invariant Sections. If the Document does not identify any Invariant

Sections then there are none.

The ``Cover Texts" are certain short passages of text that are listed, as Front-Cover Texts or Back-Cover Texts, in the notice that says that the Document is released under this License. A Front-Cover Text may be at most 5 words, and a Back-Cover Text may be at most 25 words.

A ``Transparent" copy of the Document means a machine-readable copy, represented in a format whose specification is available to the general public, that is suitable for revising the document straightforwardly with generic text editors or (for images composed of pixels) generic paint programs or (for drawings) some widely available drawing editor, and that is suitable for input to text formatters or for automatic translation to a variety of formats suitable for input to text formatters. A copy made in an otherwise Transparent file format whose markup, or absence of markup, has been arranged to thwart or discourage subsequent modification by readers is not Transparent. An image format is not Transparent if used for any substantial amount of text. A copy that is not ``Transparent" is called ``Opaque".

Examples of suitable formats for Transparent copies include plain ASCII without markup, Texinfo input format, La@TeX{ } input format, SGML or XML using a publicly available DTD, and standard-conforming simple HTML, PostScript or PDF designed for human modification. Examples of transparent image formats include PNG, XCF and JPG@. Opaque formats include proprietary formats that can be read and edited only by proprietary word processors, SGML or XML for which the DTD and/or processing tools are not generally available, and the machine-generated HTML, PostScript or PDF produced by some word processors for output purposes only.

The ``Title Page" means, for a printed book, the title page itself, plus such following pages as are needed to hold, legibly, the material this License requires to appear in the title page. For works in formats which do not have any title page as such, ``Title Page" means the text near the most prominent appearance of the work's title, preceding the beginning of the body of the text.

The ``publisher" means any person or entity that distributes copies of the Document to the public.

A section ``Entitled XYZ" means a named subunit of the Document whose title either is precisely XYZ or contains XYZ in parentheses following text that translates XYZ in another language. (Here XYZ stands for a specific section name mentioned below, such as ``Acknowledgements", ``Dedications", ``Endorsements", or ``History".) To ``Preserve the Title"

of such a section when you modify the Document means that it remains a section ``Entitled XYZ" according to this definition.

The Document may include Warranty Disclaimers next to the notice which states that this License applies to the Document. These Warranty Disclaimers are considered to be included by reference in this License, but only as regards disclaiming warranties: any other implication that these Warranty Disclaimers may have is void and has no effect on the meaning of this License.

@item

#### VERBATIM COPYING

You may copy and distribute the Document in any medium, either commercially or noncommercially, provided that this License, the copyright notices, and the license notice saying this License applies to the Document are reproduced in all copies, and that you add no other conditions whatsoever to those of this License. You may not use technical measures to obstruct or control the reading or further copying of the copies you make or distribute. However, you may accept compensation in exchange for copies. If you distribute a large enough number of copies you must also follow the conditions in section 3.

You may also lend copies, under the same conditions stated above, and you may publicly display copies.

@item

#### COPYING IN QUANTITY

If you publish printed copies (or copies in media that commonly have printed covers) of the Document, numbering more than 100, and the Document's license notice requires Cover Texts, you must enclose the copies in covers that carry, clearly and legibly, all these Cover Texts: Front-Cover Texts on the front cover, and Back-Cover Texts on the back cover. Both covers must also clearly and legibly identify you as the publisher of these copies. The front cover must present the full title with all words of the title equally prominent and visible. You may add other material on the covers in addition. Copying with changes limited to the covers, as long as they preserve the title of the Document and satisfy these conditions, can be treated as verbatim copying in other respects.

If the required texts for either cover are too voluminous to fit legibly, you should put the first ones listed (as many as fit reasonably) on the actual cover, and continue the rest onto adjacent pages.

If you publish or distribute Opaque copies of the Document numbering

more than 100, you must either include a machine-readable Transparent copy along with each Opaque copy, or state in or with each Opaque copy a computer-network location from which the general network-using public has access to download using public-standard network protocols a complete Transparent copy of the Document, free of added material. If you use the latter option, you must take reasonably prudent steps, when you begin distribution of Opaque copies in quantity, to ensure that this Transparent copy will remain thus accessible at the stated location until at least one year after the last time you distribute an Opaque copy (directly or through your agents or retailers) of that edition to the public.

It is requested, but not required, that you contact the authors of the Document well before redistributing any large number of copies, to give them a chance to provide you with an updated version of the Document.

@item

## MODIFICATIONS

You may copy and distribute a Modified Version of the Document under the conditions of sections 2 and 3 above, provided that you release the Modified Version under precisely this License, with the Modified Version filling the role of the Document, thus licensing distribution and modification of the Modified Version to whoever possesses a copy of it. In addition, you must do these things in the Modified Version:

@enumerate A

@item

Use in the Title Page (and on the covers, if any) a title distinct from that of the Document, and from those of previous versions (which should, if there were any, be listed in the History section of the Document). You may use the same title as a previous version if the original publisher of that version gives permission.

@item

List on the Title Page, as authors, one or more persons or entities responsible for authorship of the modifications in the Modified Version, together with at least five of the principal authors of the Document (all of its principal authors, if it has fewer than five), unless they release you from this requirement.

@item

State on the Title page the name of the publisher of the Modified Version, as the publisher.

@item

Preserve all the copyright notices of the Document.



@item

Add an appropriate copyright notice for your modifications adjacent to the other copyright notices.

@item

Include, immediately after the copyright notices, a license notice giving the public permission to use the Modified Version under the terms of this License, in the form shown in the Addendum below.

@item

Preserve in that license notice the full lists of Invariant Sections and required Cover Texts given in the Document's license notice.

@item

Include an unaltered copy of this License.

@item

Preserve the section Entitled ``History'', Preserve its Title, and add to it an item stating at least the title, year, new authors, and publisher of the Modified Version as given on the Title Page. If there is no section Entitled ``History'' in the Document, create one stating the title, year, authors, and publisher of the Document as given on its Title Page, then add an item describing the Modified Version as stated in the previous sentence.

@item

Preserve the network location, if any, given in the Document for public access to a Transparent copy of the Document, and likewise the network locations given in the Document for previous versions it was based on. These may be placed in the ``History'' section. You may omit a network location for a work that was published at least four years before the Document itself, or if the original publisher of the version it refers to gives permission.

@item

For any section Entitled ``Acknowledgements'' or ``Dedications'', Preserve the Title of the section, and preserve in the section all the substance and tone of each of the contributor acknowledgements and/or dedications given therein.

@item

Preserve all the Invariant Sections of the Document, unaltered in their text and in their titles. Section numbers or the equivalent are not considered part of the section titles.

@item

Delete any section Entitled ``Endorsements''. Such a section may not be included in the Modified Version.

@item

Do not retitle any existing section to be Entitled ``Endorsements" or to conflict in title with any Invariant Section.

@item

Preserve any Warranty Disclaimers.

@end enumerate

If the Modified Version includes new front-matter sections or appendices that qualify as Secondary Sections and contain no material copied from the Document, you may at your option designate some or all of these sections as invariant. To do this, add their titles to the list of Invariant Sections in the Modified Version's license notice. These titles must be distinct from any other section titles.

You may add a section Entitled ``Endorsements", provided it contains nothing but endorsements of your Modified Version by various parties---for example, statements of peer review or that the text has been approved by an organization as the authoritative definition of a standard.

You may add a passage of up to five words as a Front-Cover Text, and a passage of up to 25 words as a Back-Cover Text, to the end of the list of Cover Texts in the Modified Version. Only one passage of Front-Cover Text and one of Back-Cover Text may be added by (or through arrangements made by) any one entity. If the Document already includes a cover text for the same cover, previously added by you or by arrangement made by the same entity you are acting on behalf of, you may not add another; but you may replace the old one, on explicit permission from the previous publisher that added the old one.

The author(s) and publisher(s) of the Document do not by this License give permission to use their names for publicity for or to assert or imply endorsement of any Modified Version.

@item

## COMBINING DOCUMENTS

You may combine the Document with other documents released under this License, under the terms defined in section 4 above for modified versions, provided that you include in the combination all of the Invariant Sections of all of the original documents, unmodified, and list them all as Invariant Sections of your combined work in its license notice, and that you preserve all their Warranty Disclaimers.

The combined work need only contain one copy of this License, and multiple identical Invariant Sections may be replaced with a single

copy. If there are multiple Invariant Sections with the same name but different contents, make the title of each such section unique by adding at the end of it, in parentheses, the name of the original author or publisher of that section if known, or else a unique number. Make the same adjustment to the section titles in the list of Invariant Sections in the license notice of the combined work.

In the combination, you must combine any sections Entitled ``History" in the various original documents, forming one section Entitled ``History"; likewise combine any sections Entitled ``Acknowledgements", and any sections Entitled ``Dedications". You must delete all sections Entitled ``Endorsements."

@item

## COLLECTIONS OF DOCUMENTS

You may make a collection consisting of the Document and other documents released under this License, and replace the individual copies of this License in the various documents with a single copy that is included in the collection, provided that you follow the rules of this License for verbatim copying of each of the documents in all other respects.

You may extract a single document from such a collection, and distribute it individually under this License, provided you insert a copy of this License into the extracted document, and follow this License in all other respects regarding verbatim copying of that document.

@item

## AGGREGATION WITH INDEPENDENT WORKS

A compilation of the Document or its derivatives with other separate and independent documents or works, in or on a volume of a storage or distribution medium, is called an ``aggregate" if the copyright resulting from the compilation is not used to limit the legal rights of the compilation's users beyond what the individual works permit. When the Document is included in an aggregate, this License does not apply to the other works in the aggregate which are not themselves derivative works of the Document.

If the Cover Text requirement of section 3 is applicable to these copies of the Document, then if the Document is less than one half of the entire aggregate, the Document's Cover Texts may be placed on covers that bracket the Document within the aggregate, or the electronic equivalent of covers if the Document is in electronic form. Otherwise they must appear on printed covers that bracket the whole aggregate.

@item

## TRANSLATION

Translation is considered a kind of modification, so you may distribute translations of the Document under the terms of section 4. Replacing Invariant Sections with translations requires special permission from their copyright holders, but you may include translations of some or all Invariant Sections in addition to the original versions of these Invariant Sections. You may include a translation of this License, and all the license notices in the Document, and any Warranty Disclaimers, provided that you also include the original English version of this License and the original versions of those notices and disclaimers. In case of a disagreement between the translation and the original version of this License or a notice or disclaimer, the original version will prevail.

If a section in the Document is Entitled "Acknowledgements", "Dedications", or "History", the requirement (section 4) to Preserve its Title (section 1) will typically require changing the actual title.

@item

## TERMINATION

You may not copy, modify, sublicense, or distribute the Document except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, or distribute it is void, and will automatically terminate your rights under this License.

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, receipt of a copy of some or all of the same material does not give you any rights to use it.

@item

## FUTURE REVISIONS OF THIS LICENSE

The Free Software Foundation may publish new, revised versions of the GNU Free Documentation License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns. See [@uref{http://www.gnu.org/copyleft/}](http://www.gnu.org/copyleft/).

Each version of the License is given a distinguishing version number. If the Document specifies that a particular numbered version of this License "or any later version" applies to it, you have the option of following the terms and conditions either of that specified version or of any later version that has been published (not as a draft) by the Free Software Foundation. If the Document does not specify a version number of this License, you may choose any version ever published (not as a draft) by the Free Software Foundation. If the Document specifies that a proxy can decide which future versions of this License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Document.

@item

## RELICENSING

"Massive Multiauthor Collaboration Site" (or "MMC Site") means any World Wide Web server that publishes copyrightable works and also provides prominent facilities for anybody to edit those works. A public wiki that anybody can edit is an example of such a server. A "Massive Multiauthor Collaboration" (or "MMC") contained in the site means any set of copyrightable works thus published on the MMC site.

"CC-BY-SA" means the Creative Commons Attribution-Share Alike 3.0 license published by Creative Commons Corporation, a not-for-profit corporation with a principal place of business in San Francisco, California, as well as future copyleft versions of that license published by that same organization.

"Incorporate" means to publish or republish a Document, in whole or in part, as part of another Document.

An MMC is "eligible for relicensing" if it is licensed under this License, and if all works that were first published under this License somewhere other than this MMC, and subsequently incorporated in whole or in part into the MMC, (1) had no cover texts or invariant sections, and (2) were thus incorporated prior to November 1, 2008.

The operator of an MMC Site may republish an MMC contained in the site under CC-BY-SA on the same site at any time before August 1, 2009, provided the MMC is eligible for relicensing.

@end enumerate

@page

@heading ADDENDUM: How to use this License for your documents

To use this License in a document you have written, include a copy of the License in the document and put the following copyright and license notices just after the title page:

@smallexample

@group

Copyright (C) @var{year} @var{your name}.

Permission is granted to copy, distribute and/or modify this document under the terms of the GNU Free Documentation License, Version 1.3 or any later version published by the Free Software Foundation; with no Invariant Sections, no Front-Cover Texts, and no Back-Cover Texts. A copy of the license is included in the section entitled ``GNU Free Documentation License''.

@end group

@end smallexample

If you have Invariant Sections, Front-Cover Texts and Back-Cover Texts, replace the ``with@dots{ }Texts.'': line with this:

@smallexample

@group

with the Invariant Sections being @var{list their titles}, with the Front-Cover Texts being @var{list}, and with the Back-Cover Texts being @var{list}.

@end group

@end smallexample

If you have Invariant Sections without Cover Texts, or some other combination of the three, merge those two alternatives to suit the situation.

If your document contains nontrivial examples of program code, we recommend releasing these examples in parallel under your choice of free software license, such as the GNU General Public License, to permit their use in free software.

@c Local Variables:

@c ispell-local-pdict: "ispell-dict"

@c End:

## GNU GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

### Preamble

The GNU General Public License is a free, copyleft license for  
software and other kinds of works.

The licenses for most software and other practical works are designed  
to take away your freedom to share and change the works. By contrast,  
the GNU General Public License is intended to guarantee your freedom to  
share and change all versions of a program--to make sure it remains free  
software for all its users. We, the Free Software Foundation, use the  
GNU General Public License for most of our software; it applies also to  
any other work released this way by its authors. You can apply it to  
your programs, too.

When we speak of free software, we are referring to freedom, not  
price. Our General Public Licenses are designed to make sure that you  
have the freedom to distribute copies of free software (and charge for  
them if you wish), that you receive source code or can get it if you  
want it, that you can change the software or use pieces of it in new  
free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you  
these rights or asking you to surrender the rights. Therefore, you have  
certain responsibilities if you distribute copies of the software, or if  
you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether  
gratis or for a fee, you must pass on to the recipients the same  
freedoms that you received. You must make sure that they, too, receive  
or can get the source code. And you must show them these terms so they  
know their rights.

Developers that use the GNU GPL protect your rights with two steps:  
(1) assert copyright on the software, and (2) offer you this License  
giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains  
that there is no warranty for this free software. For both users' and  
authors' sake, the GPL requires that modified versions be marked as  
changed, so that their problems will not be attributed erroneously to

authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

## TERMS AND CONDITIONS

### 0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying,



distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

#### 1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require,

such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

## 2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

## 3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's

users, your or third parties' legal rights to forbid circumvention of technological measures.

#### 4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

#### 5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.
- b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".
- c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.
- d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not

used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

#### 6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

- a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.
- b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.
- c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.
- d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

## 7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of

it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

## 8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently

reinstated, you do not qualify to receive new licenses for the same material under section 10.

#### 9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

#### 10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

#### 11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted



by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying

the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

#### 12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

#### 13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

#### 14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the

GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

#### 15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

#### 16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### 17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see <<http://www.gnu.org/licenses/>>.

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

<program> Copyright (C) <year> <name of author>

This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.

This is free software, and you are welcome to redistribute it under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <<http://www.gnu.org/licenses/>>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with

the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <<http://www.gnu.org/philosophy/why-not-lgpl.html>>.

## 1.127 colorama 0.3.7

### 1.127.1 Available under license :

Copyright (c) 2010 Jonathan Hartley  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of the copyright holders, nor those of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## 1.128 libdevmapper 1.02.181

### 1.128.1 Available under license :

GNU LESSER GENERAL PUBLIC LICENSE  
Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

## Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be

introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the

users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

## GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an



appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the

library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any

such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY

KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990

Ty Coon, President of Vice

That's all there is to it!

BSD 2-Clause License

Copyright (c) 2014, Red Hat, Inc.

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble



The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE  
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an

announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot

distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by

the Free Software Foundation; either version 2 of the License, or  
(at your option) any later version.

This program is distributed in the hope that it will be useful,  
but WITHOUT ANY WARRANTY; without even the implied warranty of  
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the  
GNU General Public License for more details.

You should have received a copy of the GNU General Public License  
along with this program; if not, write to the Free Software  
Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this  
when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands ``show w'` and ``show c'` should show the appropriate  
parts of the General Public License. Of course, the commands you use may  
be called something other than ``show w'` and ``show c'`; they could even be  
mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your  
school, if any, to sign a "copyright disclaimer" for the program, if  
necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into  
proprietary programs. If your program is a subroutine library, you may  
consider it more useful to permit linking proprietary applications with the  
library. If this is what you want to do, use the GNU Library General  
Public License instead of this License.

## 1.129 activation 1.1

## 1.129.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/*
 * The contents of this file are subject to the terms
 * of the Common Development and Distribution License
 * (the "License"). You may not use this file except
 * in compliance with the License.
 *
 * You can obtain a copy of the license at
 * glassfish/bootstrap/legal/CDDLv1.0.txt or
 * https://glassfish.dev.java.net/public/CDDLv1.0.html.
 * See the License for the specific language governing
 * permissions and limitations under the License.
 *
 * When distributing Covered Code, include this CDDL
 * HEADER in each file and include the License file at
 * glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
 * add the following below this CDDL HEADER, with the
 * fields enclosed by brackets "[]" replaced with your
 * own identifying information: Portions Copyright [yyyy]
 * [name of copyright owner]
 */
@(#)SecuritySupport.java 1.3 05/11/16
 *
 * Copyright 2002-2005 Sun Microsystems, Inc. All Rights Reserved.
 */
```

Found in path(s):

```
*/opt/cola/permits/1200523838_1654022813.457056/0/activation-1-1-sources-11-
jar/javax/activation/SecuritySupport.java
```

No license file was found, but licenses were detected in source scan.

```
/*
 * The contents of this file are subject to the terms
 * of the Common Development and Distribution License
 * (the "License"). You may not use this file except
 * in compliance with the License.
 *
 * You can obtain a copy of the license at
 * glassfish/bootstrap/legal/CDDLv1.0.txt or
 * https://glassfish.dev.java.net/public/CDDLv1.0.html.
 * See the License for the specific language governing
 * permissions and limitations under the License.
 *
 * When distributing Covered Code, include this CDDL
 * HEADER in each file and include the License file at
```



```
* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
* add the following below this CDDL HEADER, with the
* fields enclosed by brackets "[]" replaced with your
* own identifying information: Portions Copyright [yyyy]
* [name of copyright owner]
*/
/*
* @(#)CommandInfo.java 1.11 05/11/16
*
* Copyright 1997-2005 Sun Microsystems, Inc. All Rights Reserved.
*/
```

Found in path(s):

```
* /opt/cola/permits/1200523838_1654022813.457056/0/activation-1-1-sources-11-
jar/javax/activation/CommandInfo.java
```

No license file was found, but licenses were detected in source scan.

```
/*
* The contents of this file are subject to the terms
* of the Common Development and Distribution License
* (the "License"). You may not use this file except
* in compliance with the License.
*
* You can obtain a copy of the license at
* glassfish/bootstrap/legal/CDDLv1.0.txt or
* https://glassfish.dev.java.net/public/CDDLv1.0.html.
* See the License for the specific language governing
* permissions and limitations under the License.
*
* When distributing Covered Code, include this CDDL
* HEADER in each file and include the License file at
* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
* add the following below this CDDL HEADER, with the
* fields enclosed by brackets "[]" replaced with your
* own identifying information: Portions Copyright [yyyy]
* [name of copyright owner]
*/
/*
* @(#)ImageViewerCanvas.java 1.3 05/11/16
*
* Copyright 1997-2005 Sun Microsystems, Inc. All Rights Reserved.
*/
```

Found in path(s):

```
* /opt/cola/permits/1200523838_1654022813.457056/0/activation-1-1-sources-11-
jar/com/sun/activation/viewers/ImageViewerCanvas.java
```

No license file was found, but licenses were detected in source scan.

```
/*
 * The contents of this file are subject to the terms
 * of the Common Development and Distribution License
 * (the "License"). You may not use this file except
 * in compliance with the License.
 *
 * You can obtain a copy of the license at
 * glassfish/bootstrap/legal/CDDLv1.0.txt or
 * https://glassfish.dev.java.net/public/CDDLv1.0.html.
 * See the License for the specific language governing
 * permissions and limitations under the License.
 *
 * When distributing Covered Code, include this CDDL
 * HEADER in each file and include the License file at
 * glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
 * add the following below this CDDL HEADER, with the
 * fields enclosed by brackets "[]" replaced with your
 * own identifying information: Portions Copyright [yyyy]
 * [name of copyright owner]
 */
/*
 * @(#)DataContentHandlerFactory.java 1.6 05/11/16
 *
 * Copyright 1997-2005 Sun Microsystems, Inc. All Rights Reserved.
 */
```

Found in path(s):

```
*/opt/cola/permits/1200523838_1654022813.457056/0/activation-1-1-sources-11-
jar/javax/activation/DataContentHandlerFactory.java
```

No license file was found, but licenses were detected in source scan.

```
/*
 * The contents of this file are subject to the terms
 * of the Common Development and Distribution License
 * (the "License"). You may not use this file except
 * in compliance with the License.
 *
 * You can obtain a copy of the license at
 * glassfish/bootstrap/legal/CDDLv1.0.txt or
 * https://glassfish.dev.java.net/public/CDDLv1.0.html.
 * See the License for the specific language governing
 * permissions and limitations under the License.
 *
 * When distributing Covered Code, include this CDDL
 * HEADER in each file and include the License file at
 * glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
 * add the following below this CDDL HEADER, with the
 * fields enclosed by brackets "[]" replaced with your
```

```
* own identifying information: Portions Copyright [yyyy]
* [name of copyright owner]
*/
/*
* @(#)URLDataSource.java 1.10 05/11/16
*
* Copyright 1997-2005 Sun Microsystems, Inc. All Rights Reserved.
*/
```

Found in path(s):

```
* /opt/cola/permits/1200523838_1654022813.457056/0/activation-1-1-sources-11-
jar/javax/activation/URLDataSource.java
```

No license file was found, but licenses were detected in source scan.

```
/*
* The contents of this file are subject to the terms
* of the Common Development and Distribution License
* (the "License"). You may not use this file except
* in compliance with the License.
*
* You can obtain a copy of the license at
* glassfish/bootstrap/legal/CDDLv1.0.txt or
* https://glassfish.dev.java.net/public/CDDLv1.0.html.
* See the License for the specific language governing
* permissions and limitations under the License.
*
* When distributing Covered Code, include this CDDL
* HEADER in each file and include the License file at
* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
* add the following below this CDDL HEADER, with the
* fields enclosed by brackets "[]" replaced with your
* own identifying information: Portions Copyright [yyyy]
* [name of copyright owner]
*/
/*
* @(#)MailcapCommandMap.java 1.40 05/11/16
*
* Copyright 1997-2005 Sun Microsystems, Inc. All Rights Reserved.
*/
```

Found in path(s):

```
* /opt/cola/permits/1200523838_1654022813.457056/0/activation-1-1-sources-11-
jar/javax/activation/MailcapCommandMap.java
```

No license file was found, but licenses were detected in source scan.

```
/*
* The contents of this file are subject to the terms
* of the Common Development and Distribution License
```

```
* (the "License"). You may not use this file except
* in compliance with the License.
*
* You can obtain a copy of the license at
* glassfish/bootstrap/legal/CDDLv1.0.txt or
* https://glassfish.dev.java.net/public/CDDLv1.0.html.
* See the License for the specific language governing
* permissions and limitations under the License.
*
* When distributing Covered Code, include this CDDL
* HEADER in each file and include the License file at
* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
* add the following below this CDDL HEADER, with the
* fields enclosed by brackets "[]" replaced with your
* own identifying information: Portions Copyright [yyyy]
* [name of copyright owner]
*/
/*
* @(#)MimeTypeParameterList.java 1.11 05/11/16
*
* Copyright 1997-2005 Sun Microsystems, Inc. All Rights Reserved.
*/
```

Found in path(s):

```
* /opt/cola/permits/1200523838_1654022813.457056/0/activation-1-1-sources-11-
jar/javax/activation/MimeTypeParameterList.java
```

No license file was found, but licenses were detected in source scan.

```
/*
* The contents of this file are subject to the terms
* of the Common Development and Distribution License
* (the "License"). You may not use this file except
* in compliance with the License.
*
* You can obtain a copy of the license at
* glassfish/bootstrap/legal/CDDLv1.0.txt or
* https://glassfish.dev.java.net/public/CDDLv1.0.html.
* See the License for the specific language governing
* permissions and limitations under the License.
*
* When distributing Covered Code, include this CDDL
* HEADER in each file and include the License file at
* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
* add the following below this CDDL HEADER, with the
* fields enclosed by brackets "[]" replaced with your
* own identifying information: Portions Copyright [yyyy]
* [name of copyright owner]
*/
```

```
/*
 * @(#)CommandMap.java 1.19 05/11/16
 *
 * Copyright 1997-2005 Sun Microsystems, Inc. All Rights Reserved.
 */
```

Found in path(s):

```
*/opt/cola/permits/1200523838_1654022813.457056/0/activation-1-1-sources-11-
jar/javax/activation/CommandMap.java
No license file was found, but licenses were detected in source scan.
```

```
/*
 * The contents of this file are subject to the terms
 * of the Common Development and Distribution License
 * (the "License"). You may not use this file except
 * in compliance with the License.
 *
 * You can obtain a copy of the license at
 * glassfish/bootstrap/legal/CDDLv1.0.txt or
 * https://glassfish.dev.java.net/public/CDDLv1.0.html.
 * See the License for the specific language governing
 * permissions and limitations under the License.
 *
 * When distributing Covered Code, include this CDDL
 * HEADER in each file and include the License file at
 * glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
 * add the following below this CDDL HEADER, with the
 * fields enclosed by brackets "[]" replaced with your
 * own identifying information: Portions Copyright [yyyy]
 * [name of copyright owner]
 */
/*
 * @(#)MimeTypeParseException.java 1.6 05/11/16
 *
 * Copyright 1997-2005 Sun Microsystems, Inc. All Rights Reserved.
 */
```

Found in path(s):

```
*/opt/cola/permits/1200523838_1654022813.457056/0/activation-1-1-sources-11-
jar/javax/activation/MimeTypeParseException.java
No license file was found, but licenses were detected in source scan.
```

```
/*
 * The contents of this file are subject to the terms
 * of the Common Development and Distribution License
 * (the "License"). You may not use this file except
 * in compliance with the License.
 *
 *
```

```
* You can obtain a copy of the license at
* glassfish/bootstrap/legal/CDDLv1.0.txt or
* https://glassfish.dev.java.net/public/CDDLv1.0.html.
* See the License for the specific language governing
* permissions and limitations under the License.
*
* When distributing Covered Code, include this CDDL
* HEADER in each file and include the License file at
* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
* add the following below this CDDL HEADER, with the
* fields enclosed by brackets "[]" replaced with your
* own identifying information: Portions Copyright [yyyy]
* [name of copyright owner]
*/
/*
* @(#)DataHandler.java 1.39 05/11/16
*
* Copyright 1997-2005 Sun Microsystems, Inc. All Rights Reserved.
*/
```

Found in path(s):

```
*/opt/cola/permits/1200523838_1654022813.457056/0/activation-1-1-sources-11-
jar/javax/activation/DataHandler.java
```

No license file was found, but licenses were detected in source scan.

```
/*
* The contents of this file are subject to the terms
* of the Common Development and Distribution License
* (the "License"). You may not use this file except
* in compliance with the License.
*
* You can obtain a copy of the license at
* glassfish/bootstrap/legal/CDDLv1.0.txt or
* https://glassfish.dev.java.net/public/CDDLv1.0.html.
* See the License for the specific language governing
* permissions and limitations under the License.
*
* When distributing Covered Code, include this CDDL
* HEADER in each file and include the License file at
* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
* add the following below this CDDL HEADER, with the
* fields enclosed by brackets "[]" replaced with your
* own identifying information: Portions Copyright [yyyy]
* [name of copyright owner]
*/
/*
* @(#)UnsupportedDataException.java 1.9 05/11/16
*
*/
```

\* Copyright 1997-2005 Sun Microsystems, Inc. All Rights Reserved.

\*/

Found in path(s):

\* /opt/cola/permits/1200523838\_1654022813.457056/0/activation-1-1-sources-11-jar/javax/activation/UnsupportedDataException.java

No license file was found, but licenses were detected in source scan.

/\*

\* The contents of this file are subject to the terms  
\* of the Common Development and Distribution License  
\* (the "License"). You may not use this file except  
\* in compliance with the License.

\*

\* You can obtain a copy of the license at  
\* glassfish/bootstrap/legal/CDDLv1.0.txt or  
\* <https://glassfish.dev.java.net/public/CDDLv1.0.html>.  
\* See the License for the specific language governing  
\* permissions and limitations under the License.

\*

\* When distributing Covered Code, include this CDDL  
\* HEADER in each file and include the License file at  
\* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,  
\* add the following below this CDDL HEADER, with the  
\* fields enclosed by brackets "[]" replaced with your  
\* own identifying information: Portions Copyright [yyyy]  
\* [name of copyright owner]

\*/

/\*

\* @(#)FileTypeMap.java 1.8 05/11/16

\*

\* Copyright 1997-2005 Sun Microsystems, Inc. All Rights Reserved.

\*/

Found in path(s):

\* /opt/cola/permits/1200523838\_1654022813.457056/0/activation-1-1-sources-11-jar/javax/activation/FileTypeMap.java

No license file was found, but licenses were detected in source scan.

/\*

\* The contents of this file are subject to the terms  
\* of the Common Development and Distribution License  
\* (the "License"). You may not use this file except  
\* in compliance with the License.

\*

\* You can obtain a copy of the license at  
\* glassfish/bootstrap/legal/CDDLv1.0.txt or  
\* <https://glassfish.dev.java.net/public/CDDLv1.0.html>.

```
* See the License for the specific language governing
* permissions and limitations under the License.
*
* When distributing Covered Code, include this CDDL
* HEADER in each file and include the License file at
* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
* add the following below this CDDL HEADER, with the
* fields enclosed by brackets "[]" replaced with your
* own identifying information: Portions Copyright [yyyy]
* [name of copyright owner]
*/
/*
* @(#)MimeType.java 1.19 05/11/16
*
* Copyright 1997-2005 Sun Microsystems, Inc. All Rights Reserved.
*/
```

Found in path(s):

```
* /opt/cola/permits/1200523838_1654022813.457056/0/activation-1-1-sources-11-
jar/javax/activation/MimeType.java
```

No license file was found, but licenses were detected in source scan.

```
/*
* The contents of this file are subject to the terms
* of the Common Development and Distribution License
* (the "License"). You may not use this file except
* in compliance with the License.
*
* You can obtain a copy of the license at
* glassfish/bootstrap/legal/CDDLv1.0.txt or
* https://glassfish.dev.java.net/public/CDDLv1.0.html.
* See the License for the specific language governing
* permissions and limitations under the License.
*
* When distributing Covered Code, include this CDDL
* HEADER in each file and include the License file at
* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
* add the following below this CDDL HEADER, with the
* fields enclosed by brackets "[]" replaced with your
* own identifying information: Portions Copyright [yyyy]
* [name of copyright owner]
*/
/*
* @(#)MimeTypeEntry.java 1.4 05/11/16
*
* Copyright 1997-2005 Sun Microsystems, Inc. All Rights Reserved.
*/
```



Found in path(s):

\* /opt/cola/permits/1200523838\_1654022813.457056/0/activation-1-1-sources-11-jar/com/sun/activation/registries/MimeTypeEntry.java

No license file was found, but licenses were detected in source scan.

/\*

\* The contents of this file are subject to the terms  
\* of the Common Development and Distribution License  
\* (the "License"). You may not use this file except  
\* in compliance with the License.

\*

\* You can obtain a copy of the license at  
\* glassfish/bootstrap/legal/CDDLv1.0.txt or  
\* <https://glassfish.dev.java.net/public/CDDLv1.0.html>.  
\* See the License for the specific language governing  
\* permissions and limitations under the License.

\*

\* When distributing Covered Code, include this CDDL  
\* HEADER in each file and include the License file at  
\* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,  
\* add the following below this CDDL HEADER, with the  
\* fields enclosed by brackets "[]" replaced with your  
\* own identifying information: Portions Copyright [yyyy]  
\* [name of copyright owner]

\*/

/\*

\* @(#)TextViewer.java 1.9 05/11/16

\*

\* Copyright 1997-2005 Sun Microsystems, Inc. All Rights Reserved.

\*/

Found in path(s):

\* /opt/cola/permits/1200523838\_1654022813.457056/0/activation-1-1-sources-11-jar/com/sun/activation/viewers/TextViewer.java

No license file was found, but licenses were detected in source scan.

/\*

\* The contents of this file are subject to the terms  
\* of the Common Development and Distribution License  
\* (the "License"). You may not use this file except  
\* in compliance with the License.

\*

\* You can obtain a copy of the license at  
\* glassfish/bootstrap/legal/CDDLv1.0.txt or  
\* <https://glassfish.dev.java.net/public/CDDLv1.0.html>.  
\* See the License for the specific language governing  
\* permissions and limitations under the License.

\*

```
* When distributing Covered Code, include this CDDL
* HEADER in each file and include the License file at
* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
* add the following below this CDDL HEADER, with the
* fields enclosed by brackets "[]" replaced with your
* own identifying information: Portions Copyright [yyyy]
* [name of copyright owner]
*/
/*
* @(#)FileDataSource.java 1.9 05/11/16
*
* Copyright 1997-2005 Sun Microsystems, Inc. All Rights Reserved.
*/
```

Found in path(s):

```
* /opt/cola/permits/1200523838_1654022813.457056/0/activation-1-1-sources-11-
jar/javax/activation/FileDataSource.java
```

No license file was found, but licenses were detected in source scan.

```
/*
* The contents of this file are subject to the terms
* of the Common Development and Distribution License
* (the "License"). You may not use this file except
* in compliance with the License.
*
* You can obtain a copy of the license at
* glassfish/bootstrap/legal/CDDLv1.0.txt or
* https://glassfish.dev.java.net/public/CDDLv1.0.html.
* See the License for the specific language governing
* permissions and limitations under the License.
*
* When distributing Covered Code, include this CDDL
* HEADER in each file and include the License file at
* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
* add the following below this CDDL HEADER, with the
* fields enclosed by brackets "[]" replaced with your
* own identifying information: Portions Copyright [yyyy]
* [name of copyright owner]
*/
/*
* @(#)LogSupport.java 1.4 05/11/16
*
* Copyright 2002-2005 Sun Microsystems, Inc. All Rights Reserved.
*/
```

Found in path(s):

```
* /opt/cola/permits/1200523838_1654022813.457056/0/activation-1-1-sources-11-
jar/com/sun/activation/registries/LogSupport.java
```

No license file was found, but licenses were detected in source scan.

```
/*
 * The contents of this file are subject to the terms
 * of the Common Development and Distribution License
 * (the "License"). You may not use this file except
 * in compliance with the License.
 *
 * You can obtain a copy of the license at
 * glassfish/bootstrap/legal/CDDLv1.0.txt or
 * https://glassfish.dev.java.net/public/CDDLv1.0.html.
 * See the License for the specific language governing
 * permissions and limitations under the License.
 *
 * When distributing Covered Code, include this CDDL
 * HEADER in each file and include the License file at
 * glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
 * add the following below this CDDL HEADER, with the
 * fields enclosed by brackets "[]" replaced with your
 * own identifying information: Portions Copyright [yyyy]
 * [name of copyright owner]
 */
/*
 * @(#)DataContentHandler.java 1.16 05/11/16
 *
 * Copyright 1997-2005 Sun Microsystems, Inc. All Rights Reserved.
 */
```

Found in path(s):

```
*/opt/cola/permits/1200523838_1654022813.457056/0/activation-1-1-sources-11-
jar/javax/activation/DataContentHandler.java
```

No license file was found, but licenses were detected in source scan.

```
/*
 * The contents of this file are subject to the terms
 * of the Common Development and Distribution License
 * (the "License"). You may not use this file except
 * in compliance with the License.
 *
 * You can obtain a copy of the license at
 * glassfish/bootstrap/legal/CDDLv1.0.txt or
 * https://glassfish.dev.java.net/public/CDDLv1.0.html.
 * See the License for the specific language governing
 * permissions and limitations under the License.
 *
 * When distributing Covered Code, include this CDDL
 * HEADER in each file and include the License file at
 * glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
```

```
* add the following below this CDDL HEADER, with the
* fields enclosed by brackets "[]" replaced with your
* own identifying information: Portions Copyright [yyyy]
* [name of copyright owner]
*/
/*
* @(#)ActivationDataFlavor.java 1.14 05/11/16
*
* Copyright 1997-2005 Sun Microsystems, Inc. All Rights Reserved.
*/
```

Found in path(s):

```
* /opt/cola/permits/1200523838_1654022813.457056/0/activation-1-1-sources-11-
jar/javax/activation/ActivationDataFlavor.java
```

No license file was found, but licenses were detected in source scan.

```
/*
* The contents of this file are subject to the terms
* of the Common Development and Distribution License
* (the "License"). You may not use this file except
* in compliance with the License.
*
* You can obtain a copy of the license at
* glassfish/bootstrap/legal/CDDLv1.0.txt or
* https://glassfish.dev.java.net/public/CDDLv1.0.html.
* See the License for the specific language governing
* permissions and limitations under the License.
*
* When distributing Covered Code, include this CDDL
* HEADER in each file and include the License file at
* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
* add the following below this CDDL HEADER, with the
* fields enclosed by brackets "[]" replaced with your
* own identifying information: Portions Copyright [yyyy]
* [name of copyright owner]
*/
/*
* @(#)MimeTypeFile.java 1.8 05/11/16
*
* Copyright 1997-2005 Sun Microsystems, Inc. All Rights Reserved.
*/
```

Found in path(s):

```
* /opt/cola/permits/1200523838_1654022813.457056/0/activation-1-1-sources-11-
jar/com/sun/activation/registries/MimeTypeFile.java
```

No license file was found, but licenses were detected in source scan.

```
/*
```

```
* The contents of this file are subject to the terms
* of the Common Development and Distribution License
* (the "License"). You may not use this file except
* in compliance with the License.
*
* You can obtain a copy of the license at
* glassfish/bootstrap/legal/CDDLv1.0.txt or
* https://glassfish.dev.java.net/public/CDDLv1.0.html.
* See the License for the specific language governing
* permissions and limitations under the License.
*
* When distributing Covered Code, include this CDDL
* HEADER in each file and include the License file at
* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
* add the following below this CDDL HEADER, with the
* fields enclosed by brackets "[]" replaced with your
* own identifying information: Portions Copyright [yyyy]
* [name of copyright owner]
*/
/*
* @(#)TextEditor.java 1.8 05/11/16
*
* Copyright 1997-2005 Sun Microsystems, Inc. All Rights Reserved.
*/
```

Found in path(s):

```
*/opt/cola/permits/1200523838_1654022813.457056/0/activation-1-1-sources-11-
jar/com/sun/activation/viewers/TextEditor.java
```

No license file was found, but licenses were detected in source scan.

```
/*
* The contents of this file are subject to the terms
* of the Common Development and Distribution License
* (the "License"). You may not use this file except
* in compliance with the License.
*
* You can obtain a copy of the license at
* glassfish/bootstrap/legal/CDDLv1.0.txt or
* https://glassfish.dev.java.net/public/CDDLv1.0.html.
* See the License for the specific language governing
* permissions and limitations under the License.
*
* When distributing Covered Code, include this CDDL
* HEADER in each file and include the License file at
* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
* add the following below this CDDL HEADER, with the
* fields enclosed by brackets "[]" replaced with your
* own identifying information: Portions Copyright [yyyy]
```

```
* [name of copyright owner]
*/
/*
* @(#)MailcapFile.java 1.23 05/11/16
*
* Copyright 1997-2005 Sun Microsystems, Inc. All Rights Reserved.
*/
```

Found in path(s):

```
* /opt/cola/permits/1200523838_1654022813.457056/0/activation-1-1-sources-11-
jar/com/sun/activation/registries/MailcapFile.java
```

No license file was found, but licenses were detected in source scan.

```
/*
* The contents of this file are subject to the terms
* of the Common Development and Distribution License
* (the "License"). You may not use this file except
* in compliance with the License.
*
* You can obtain a copy of the license at
* glassfish/bootstrap/legal/CDDLv1.0.txt or
* https://glassfish.dev.java.net/public/CDDLv1.0.html.
* See the License for the specific language governing
* permissions and limitations under the License.
*
* When distributing Covered Code, include this CDDL
* HEADER in each file and include the License file at
* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
* add the following below this CDDL HEADER, with the
* fields enclosed by brackets "[]" replaced with your
* own identifying information: Portions Copyright [yyyy]
* [name of copyright owner]
```

```
*/
/*
* @(#)MailcapTokenizer.java 1.6 05/11/16
*
* Copyright 1997-2005 Sun Microsystems, Inc. All Rights Reserved.
*/
```

Found in path(s):

```
* /opt/cola/permits/1200523838_1654022813.457056/0/activation-1-1-sources-11-
jar/com/sun/activation/registries/MailcapTokenizer.java
```

No license file was found, but licenses were detected in source scan.

```
<!--
```

The contents of this file are subject to the terms  
of the Common Development and Distribution License

(the "License"). You may not use this file except in compliance with the License.

You can obtain a copy of the license at [glassfish/bootstrap/legal/CDDLv1.0.txt](https://glassfish.dev.java.net/public/CDDLv1.0.txt) or <https://glassfish.dev.java.net/public/CDDLv1.0.html>. See the License for the specific language governing permissions and limitations under the License.

When distributing Covered Code, include this CDDL HEADER in each file and include the License file at [glassfish/bootstrap/legal/CDDLv1.0.txt](https://glassfish.dev.java.net/public/CDDLv1.0.txt). If applicable, add the following below this CDDL HEADER, with the fields enclosed by brackets "[]" replaced with your own identifying information: Portions Copyright [yyyy] [name of copyright owner]

@(#)package.html 1.1 05/11/16

Copyright 2001-2005 Sun Microsystems, Inc. All Rights Reserved.

-->

Found in path(s):

\* /opt/cola/permits/1200523838\_1654022813.457056/0/activation-1-1-sources-11-jar/javax/activation/package.html

No license file was found, but licenses were detected in source scan.

/\*

\* The contents of this file are subject to the terms  
\* of the Common Development and Distribution License  
\* (the "License"). You may not use this file except  
\* in compliance with the License.

\*

\* You can obtain a copy of the license at  
\* [glassfish/bootstrap/legal/CDDLv1.0.txt](https://glassfish.dev.java.net/public/CDDLv1.0.txt) or  
\* <https://glassfish.dev.java.net/public/CDDLv1.0.html>.  
\* See the License for the specific language governing  
\* permissions and limitations under the License.

\*

\* When distributing Covered Code, include this CDDL  
\* HEADER in each file and include the License file at  
\* [glassfish/bootstrap/legal/CDDLv1.0.txt](https://glassfish.dev.java.net/public/CDDLv1.0.txt). If applicable,  
\* add the following below this CDDL HEADER, with the  
\* fields enclosed by brackets "[]" replaced with your  
\* own identifying information: Portions Copyright [yyyy]  
\* [name of copyright owner]

\*/

/\*

\* @(#)MailcapParseException.java 1.4 05/11/16  
\*  
\* Copyright 1997-2005 Sun Microsystems, Inc. All Rights Reserved.  
\*/

Found in path(s):

\* /opt/cola/permits/1200523838\_1654022813.457056/0/activation-1-1-sources-11-  
jar/com/sun/activation/registries/MailcapParseException.java

No license file was found, but licenses were detected in source scan.

/\*

\* The contents of this file are subject to the terms  
\* of the Common Development and Distribution License  
\* (the "License"). You may not use this file except  
\* in compliance with the License.

\*

\* You can obtain a copy of the license at  
\* glassfish/bootstrap/legal/CDDLv1.0.txt or  
\* <https://glassfish.dev.java.net/public/CDDLv1.0.html>.  
\* See the License for the specific language governing  
\* permissions and limitations under the License.

\*

\* When distributing Covered Code, include this CDDL  
\* HEADER in each file and include the License file at  
\* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,  
\* add the following below this CDDL HEADER, with the  
\* fields enclosed by brackets "[]" replaced with your  
\* own identifying information: Portions Copyright [yyyy]  
\* [name of copyright owner]

\*/

/\*

\* @(#)MimetypesFileTypeMap.java 1.17 05/11/16  
\*  
\* Copyright 1997-2005 Sun Microsystems, Inc. All Rights Reserved.  
\*/

Found in path(s):

\* /opt/cola/permits/1200523838\_1654022813.457056/0/activation-1-1-sources-11-  
jar/javax/activation/MimetypesFileTypeMap.java

No license file was found, but licenses were detected in source scan.

/\*

\* The contents of this file are subject to the terms  
\* of the Common Development and Distribution License  
\* (the "License"). You may not use this file except  
\* in compliance with the License.

\*

\* You can obtain a copy of the license at



```

* glassfish/bootstrap/legal/CDDLv1.0.txt or
* https://glassfish.dev.java.net/public/CDDLv1.0.html.
* See the License for the specific language governing
* permissions and limitations under the License.
*
* When distributing Covered Code, include this CDDL
* HEADER in each file and include the License file at
* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
* add the following below this CDDL HEADER, with the
* fields enclosed by brackets "[]" replaced with your
* own identifying information: Portions Copyright [yyyy]
* [name of copyright owner]
*/
/*
* @(#)DataSource.java 1.11 05/11/16
*
* Copyright 1997-2005 Sun Microsystems, Inc. All Rights Reserved.
*/

```

Found in path(s):

```

* /opt/cola/permits/1200523838_1654022813.457056/0/activation-1-1-sources-11-
jar/javax/activation/DataSource.java

```

No license file was found, but licenses were detected in source scan.

```

/*
* The contents of this file are subject to the terms
* of the Common Development and Distribution License
* (the "License"). You may not use this file except
* in compliance with the License.
*
* You can obtain a copy of the license at
* glassfish/bootstrap/legal/CDDLv1.0.txt or
* https://glassfish.dev.java.net/public/CDDLv1.0.html.
* See the License for the specific language governing
* permissions and limitations under the License.
*
* When distributing Covered Code, include this CDDL
* HEADER in each file and include the License file at
* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
* add the following below this CDDL HEADER, with the
* fields enclosed by brackets "[]" replaced with your
* own identifying information: Portions Copyright [yyyy]
* [name of copyright owner]
*/
/*
* @(#)ImageViewer.java 1.8 05/11/16
*
* Copyright 1997-2005 Sun Microsystems, Inc. All Rights Reserved.
*/

```

\*/

Found in path(s):

\* /opt/cola/permits/1200523838\_1654022813.457056/0/activation-1-1-sources-11-jar/com/sun/activation/viewers/ImageViewer.java

No license file was found, but licenses were detected in source scan.

/\*

\* The contents of this file are subject to the terms  
\* of the Common Development and Distribution License  
\* (the "License"). You may not use this file except  
\* in compliance with the License.

\*

\* You can obtain a copy of the license at  
\* glassfish/bootstrap/legal/CDDLv1.0.txt or  
\* <https://glassfish.dev.java.net/public/CDDLv1.0.html>.  
\* See the License for the specific language governing  
\* permissions and limitations under the License.

\*

\* When distributing Covered Code, include this CDDL  
\* HEADER in each file and include the License file at  
\* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,  
\* add the following below this CDDL HEADER, with the  
\* fields enclosed by brackets "[]" replaced with your  
\* own identifying information: Portions Copyright [yyyy]  
\* [name of copyright owner]

\*/

/\*

\* @(#)CommandObject.java 1.9 05/11/16

\*

\* Copyright 1997-2005 Sun Microsystems, Inc. All Rights Reserved.

\*/

Found in path(s):

\* /opt/cola/permits/1200523838\_1654022813.457056/0/activation-1-1-sources-11-jar/javax/activation/CommandObject.java

## 1.130 net-snmp 5.7.2-49.el7\_9.1

### 1.130.1 Notifications :

This product includes software written by Tim Hudson (tjh@cryptsoft.com).

This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit  
(<http://www.openssl.org>)

This product includes cryptographic software written by Eric Young (eay@cryptsoft.com).

### 1.130.2 Available under license :

Various copyrights apply to this package, listed in various separate parts below. Please make sure that you read all the parts.

---- Part 1: Sparta, Inc (BSD) ----

Copyright (c) 2003-2010, Sparta, Inc  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Sparta, Inc nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---- Part 2: ScienceLogic, LLC (BSD) ----

Copyright (c) 2006, ScienceLogic, LLC  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the

documentation and/or other materials provided with the distribution.

- \* Neither the name of ScienceLogic, LLC nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS ``AS IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

#### LICENSE ISSUES

=====

The OpenSSL toolkit stays under a dual license, i.e. both the conditions of the OpenSSL License and the original SSLeay license apply to the toolkit. See below for the actual license texts. Actually both licenses are BSD-style Open Source licenses. In case of any license issues related to OpenSSL please contact [openssl-core@openssl.org](mailto:openssl-core@openssl.org).

#### OpenSSL License

-----

/\* =====

\* Copyright (c) 1998-2008 The OpenSSL Project. All rights reserved.

\*

\* Redistribution and use in source and binary forms, with or without

\* modification, are permitted provided that the following conditions

\* are met:

\*

\* 1. Redistributions of source code must retain the above copyright

\* notice, this list of conditions and the following disclaimer.

\*

\* 2. Redistributions in binary form must reproduce the above copyright

\* notice, this list of conditions and the following disclaimer in

\* the documentation and/or other materials provided with the

\* distribution.

\*

\* 3. All advertising materials mentioning features or use of this

\* software must display the following acknowledgment:

\* "This product includes software developed by the OpenSSL Project  
 \* for use in the OpenSSL Toolkit. (<http://www.openssl.org/>)"  
 \*

\* 4. The names "OpenSSL Toolkit" and "OpenSSL Project" must not be used to  
 \* endorse or promote products derived from this software without  
 \* prior written permission. For written permission, please contact  
 \* [openssl-core@openssl.org](mailto:openssl-core@openssl.org).  
 \*

\* 5. Products derived from this software may not be called "OpenSSL"  
 \* nor may "OpenSSL" appear in their names without prior written  
 \* permission of the OpenSSL Project.  
 \*

\* 6. Redistributions of any form whatsoever must retain the following  
 \* acknowledgment:  
 \* "This product includes software developed by the OpenSSL Project  
 \* for use in the OpenSSL Toolkit (<http://www.openssl.org/>)"  
 \*

\* THIS SOFTWARE IS PROVIDED BY THE OpenSSL PROJECT ``AS IS" AND ANY  
 \* EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE  
 \* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR  
 \* PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE OpenSSL PROJECT OR  
 \* ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,  
 \* SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT  
 \* NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;  
 \* LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)  
 \* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,  
 \* STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)  
 \* ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED  
 \* OF THE POSSIBILITY OF SUCH DAMAGE.  
 \* =====  
 \*

\* This product includes cryptographic software written by Eric Young  
 \* ([ey@cryptsoft.com](mailto:ey@cryptsoft.com)). This product includes software written by Tim  
 \* Hudson ([tjh@cryptsoft.com](mailto:tjh@cryptsoft.com)).  
 \*  
 \*/

Original SSLeay License

-----

/\* Copyright (C) 1995-1998 Eric Young ([ey@cryptsoft.com](mailto:ey@cryptsoft.com))  
 \* All rights reserved.  
 \*  
 \* This package is an SSL implementation written  
 \* by Eric Young ([ey@cryptsoft.com](mailto:ey@cryptsoft.com)).  
 \* The implementation was written so as to conform with Netscapes SSL.  
 \*  
 \* This library is free for commercial and non-commercial use as long as

\* the following conditions are adhered to. The following conditions

\* apply to all code found in this distribution, be it the RC4, RSA,

\* lhash, DES, etc., code; not just the SSL code. The SSL documentation

\* included with this distribution is covered by the same copyright terms

\* except that the holder is Tim Hudson (tjh@cryptsoft.com).

\*

\* Copyright remains Eric Young's, and as such any Copyright notices in

\* the code are not to be removed.

\* If this package is used in a product, Eric Young should be given attribution

\* as the author of the parts of the library used.

\* This can be in the form of a textual message at program startup or

\* in documentation (online or textual) provided with the package.

\*

\* Redistribution and use in source and binary forms, with or without

\* modification, are permitted provided that the following conditions

\* are met:

\* 1. Redistributions of source code must retain the copyright

\* notice, this list of conditions and the following disclaimer.

\* 2. Redistributions in binary form must reproduce the above copyright

\* notice, this list of conditions and the following disclaimer in the

\* documentation and/or other materials provided with the distribution.

\* 3. All advertising materials mentioning features or use of this software

\* must display the following acknowledgement:

\* "This product includes cryptographic software written by

\* Eric Young (eay@cryptsoft.com)"

\* The word 'cryptographic' can be left out if the routines from the library

\* being used are not cryptographic related :-).

\* 4. If you include any Windows specific code (or a derivative thereof) from

\* the apps directory (application code) you must include an acknowledgement:

\* "This product includes software written by Tim Hudson (tjh@cryptsoft.com)"

\*

\* THIS SOFTWARE IS PROVIDED BY ERIC YOUNG ``AS IS" AND

\* ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE

\* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE

\* ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE

\* FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL

\* DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS

\* OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)

\* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT

\* LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY

\* OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF

\* SUCH DAMAGE.

\*

\* The licence and distribution terms for any publically available version or

\* derivative of this code cannot be changed. i.e. this code cannot simply be

\* copied and put under another distribution licence

\* [including the GNU Public Licence.]

\*/

Various copyrights apply to this package, listed in various separate parts below. Please make sure that you read all the parts.

---- Part 1: CMU/UCD copyright notice: (BSD like) ----

Copyright 1989, 1991, 1992 by Carnegie Mellon University

Derivative Work - 1996, 1998-2000

Copyright 1996, 1998-2000 The Regents of the University of California

All Rights Reserved

Permission to use, copy, modify and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appears in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of CMU and The Regents of the University of California not be used in advertising or publicity pertaining to distribution of the software without specific written permission.

CMU AND THE REGENTS OF THE UNIVERSITY OF CALIFORNIA DISCLAIM ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL CMU OR THE REGENTS OF THE UNIVERSITY OF CALIFORNIA BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM THE LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

---- Part 2: Networks Associates Technology, Inc copyright notice (BSD) ----

Copyright (c) 2001-2003, Networks Associates Technology, Inc

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of the Networks Associates Technology, Inc nor the

names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---- Part 3: Cambridge Broadband Ltd. copyright notice (BSD) ----

Portions of this code are copyright (c) 2001-2003, Cambridge Broadband Ltd.  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* The name of Cambridge Broadband Ltd. may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDER ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.



---- Part 4: Sun Microsystems, Inc. copyright notice (BSD) ----

Copyright 2003 Sun Microsystems, Inc., 4150 Network Circle, Santa Clara, California 95054, U.S.A. All rights reserved.

Use is subject to license terms below.

This distribution may include materials developed by third parties.

Sun, Sun Microsystems, the Sun logo and Solaris are trademarks or registered trademarks of Sun Microsystems, Inc. in the U.S. and other countries.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of the Sun Microsystems, Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---- Part 5: Sparta, Inc copyright notice (BSD) ----

Copyright (c) 2003-2012, Sparta, Inc  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice,

this list of conditions and the following disclaimer.

- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Sparta, Inc nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS ``AS IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---- Part 6: Cisco/BUPTNIC copyright notice (BSD) ----

Copyright (c) 2004, Cisco, Inc and Information Network  
Center of Beijing University of Posts and Telecommunications.  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Cisco, Inc, Beijing University of Posts and Telecommunications, nor the names of their contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS ``AS IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,

EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---- Part 7: Fabasoft R&D Software GmbH & Co KG copyright notice (BSD) ----

Copyright (c) Fabasoft R&D Software GmbH & Co KG, 2003

oss@fabasoft.com

Author: Bernhard Penz <bernhard.penz@fabasoft.com>

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* The name of Fabasoft R&D Software GmbH & Co KG or any of its subsidiaries, brand or product names may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDER ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---- Part 8: Apple Inc. copyright notice (BSD) ----

Copyright (c) 2007 Apple Inc. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright

notice, this list of conditions and the following disclaimer.

2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of Apple Inc. ("Apple") nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY APPLE AND ITS CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL APPLE OR ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---- Part 9: ScienceLogic, LLC copyright notice (BSD) ----

Copyright (c) 2009, ScienceLogic, LLC  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of ScienceLogic, LLC nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING,

BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## 1.131 ncurses 6.1-9.20180224.el8

### 1.131.1 Available under license :

Upstream source <https://invisible-island.net/ncurses/ncurses-examples.html>

Current ncurses maintainer: Thomas Dickey <[dickey@invisible-island.net](mailto:dickey@invisible-island.net)>

-----  
Files: \*

Copyright: 1998-2017,2018 Free Software Foundation, Inc.

Licence: X11

Files: aclocal.m4 package

Copyright: 2003-2017,2018 by Thomas E. Dickey

Licence: X11

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, distribute with modifications, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE ABOVE COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Except as contained in this notice, the name(s) of the above copyright holders shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization.

-----  
Files: install-sh  
Copyright: 1994 X Consortium  
Licence: X11

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE X CONSORTIUM BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Except as contained in this notice, the name of the X Consortium shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization from the X Consortium.

FSF changes to this file are in the public domain.

Calling this script install-sh is preferred over install.sh, to prevent `make` implicit rules from creating a file called install from it when there is no Makefile.

This script is compatible with the BSD install script, but was written from scratch. It can only install one file at a time, a restriction shared with many OS's install programs.

On Debian systems, the complete text of the GNU General Public License can be found in '/usr/share/common-licenses/GPL-2'

-- vile: txtmode file-encoding=utf-8  
Copyright (c) 1998-2017,2018 Free Software Foundation, Inc.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, distribute with modifications, sublicense, and/or sell

copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE ABOVE COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Except as contained in this notice, the name(s) of the above copyright holders shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization.

```
-- vile:txtmode fc=72
-- $Id: COPYING,v 1.6 2018/01/01 12:00:00 tom Exp $
Upstream source https://invisible-island.net/ncurses/ncurses.html
This package is used for testing builds of ncurses.
```

Current ncurses maintainer: Thomas Dickey <dickey@invisible-island.net>

-----  
Files: \*  
Copyright: 1998-2017,2018 Free Software Foundation, Inc.  
Licence: X11

Files: alocal.m4 package  
Copyright: 1996-2017,2018 by Thomas E. Dickey  
Licence: X11

Files: doc/html/NCURSES-Programming-HOWTO.html  
Copyright: 2001 by Pradeep Padala  
Licence: X11

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, distribute with modifications, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included

in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE ABOVE COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Except as contained in this notice, the name(s) of the above copyright holders shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization.

-----  
Files: install-sh  
Copyright: 1994 X Consortium  
Licence: X11

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE X CONSORTIUM BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Except as contained in this notice, the name of the X Consortium shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization from the X Consortium.

-----  
Files: progs/tset.c ncurses/tinfo/read\_termcap.c  
Copyright: 1980,1991,1992,1993 The Regents of the University of California.  
License: BSD

Redistribution and use in source and binary forms, with or without



modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the University nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

-- vile: txtmode file-encoding=utf-8

Upstream source <https://invisible-island.net/ncurses/ncurses-examples.html>

Current ncurses maintainer: Thomas Dickey <[dickey@invisible-island.net](mailto:dickey@invisible-island.net)>

-----  
Files: \*

Copyright: 1998-2017,2018 Free Software Foundation, Inc.

Licence: X11

Files: aclocal.m4 package

Copyright: 2010-2017,2018 by Thomas E. Dickey

Licence: X11

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, distribute with modifications, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE ABOVE COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Except as contained in this notice, the name(s) of the above copyright holders shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization.

-----  
Files: install-sh

Copyright: 1994 X Consortium

Licence: X11

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE X CONSORTIUM BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Except as contained in this notice, the name of the X Consortium shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization from the X Consortium.

FSF changes to this file are in the public domain.

Calling this script install-sh is preferred over install.sh, to prevent `make` implicit rules from creating a file called install from it when there is no Makefile.

This script is compatible with the BSD install script, but was written from scratch. It can only install one file at a time, a restriction

shared with many OS's install programs.

On Debian systems, the complete text of the GNU General Public License can be found in '/usr/share/common-licenses/GPL-2'

-- vile: txtmode file-encoding=utf-8

# 1.132 spring-jdbc 5.2.19.RELEASE

## 1.132.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2002-2016 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
/**
 * Close this LobCreator session and free its temporarily created BLOBs and CLOBs.
 * Will not need to do anything if using PreparedStatement's standard methods,
 * but might be necessary to free database resources if using proprietary means.
 * <p>NOTE</p>: Needs to be invoked after the involved PreparedStatements have
 * been executed or the affected O/R mapping sessions have been flushed.
 * Otherwise, the database resources for the temporary BLOBs might stay allocated.
 */
```

Found in path(s):

```
*/opt/cola/permits/1249631506_1640943585.77/0/spring-jdbc-5-2-19-release-sources-
jar/org/springframework/jdbc/support/lob/LobCreator.java
```

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2002-2018 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
```

```

*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
/**
* Implement this interface when parameters need to be customized based
* on the connection. We might need to do this to make use of proprietary
* features, available only with a specific Connection type.
*
* @author Rod Johnson
* @author Thomas Risberg
* @see CallableStatementCreatorFactory#newCallableStatementCreator(ParameterMapper)
* @see org.springframework.jdbc.object.StoredProcedure#execute(ParameterMapper)
*/
/**
* Create a Map of input parameters, keyed by name.
* @param con a JDBC connection. This is useful (and the purpose of this interface)
* if we need to do something RDBMS-specific with a proprietary Connection
* implementation class. This class conceals such proprietary details. However,
* it is best to avoid using such proprietary RDBMS features if possible.
* @return a Map of input parameters, keyed by name (never {@code null})
* @throws SQLException if an SQLException is encountered setting
* parameter values (that is, there's no need to catch SQLException)
*/

```

Found in path(s):

```

* /opt/cola/permits/1249631506_1640943585.77/0/spring-jdbc-5-2-19-release-sources-
jar/org/springframework/jdbc/core/ParameterMapper.java

```

No license file was found, but licenses were detected in source scan.

```

/*
* Copyright 2002-2008 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and

```

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/support/xml/SqlXmlValue.java

\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/support/incrementer/DB2SequenceMaxValueIncrementer.java

\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/support/incrementer/DB2MainframeSequenceMaxValueIncrementer.java

\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/core/DisposableSqlTypeValue.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2015 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/datasource/init/ScriptStatementFailedException.java

\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/datasource/embedded/EmbeddedDatabase.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2017 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

- \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- \* See the License for the specific language governing permissions and
- \* limitations under the License.
- \*/

Found in path(s):

- \* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/datasource/AbstractDriverBasedDataSource.java
- \* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/config/InitializeDatabaseBeanDefinitionParser.java
- \* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/support/lob/PassThroughBlob.java
- \* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/core/metadata/OracleCallMetaDataProvider.java
- \* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/config/EmbeddedDatabaseBeanDefinitionParser.java
- \* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/datasource/lookup/BeanFactoryDataSourceLookup.java
- \* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/core/metadata/PostgresCallMetaDataProvider.java
- \* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/core/support/SqlLobValue.java
- \* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/datasource/embedded/EmbeddedDatabaseFactoryBean.java
- \* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/datasource/init/ScriptParseException.java
- \* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/support/lob/PassThroughClob.java
- \* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/datasource/ConnectionProxy.java
- \* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/support/CustomSQLExceptionCodesTranslation.java
- \* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/core/metadata/SybaseCallMetaDataProvider.java
- \* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/support/lob/DefaultLobHandler.java
- \* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/datasource/DelegatingDataSource.java
- \* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/core/simple/SimpleJdbcInsert.java
- \* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/core/metadata/SqlServerCallMetaDataProvider.java
- \* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/support/SQLExceptionSubclassTranslator.java
- \* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/support/xml/Jdbc4SqlXmlHandler.java
- \* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/core/ParameterDisposer.java

\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/datasource/init/DataSourceInitializer.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2018 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

/\*\*

\* Strategy interface for translating between {@link SQLException SQLExceptions}

\* and Spring's data access strategy-agnostic {@link DataAccessException}

\* hierarchy.

\*

\* <p>Implementations can be generic (for example, using

\* {@link java.sql.SQLException#getSQLState() SQLState} codes for JDBC) or wholly

\* proprietary (for example, using Oracle error codes) for greater precision.

\*

\* @author Rod Johnson

\* @author Juergen Hoeller

\* @see org.springframework.dao.DataAccessException

\*/

Found in path(s):

\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/support/SQLExceptionTranslator.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2018 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

- \* distributed under the License is distributed on an "AS IS" BASIS,
- \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- \* See the License for the specific language governing permissions and
- \* limitations under the License.
- \*/

Found in path(s):

- \* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/core/CallableStatementCallback.java
- \* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/CannotGetJdbcConnectionException.java
- \* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/datasource/lookup/MapDataSourceLookup.java
- \* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/core/CallableStatementCreatorFactory.java
- \* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/core/metadata/PostgresTableMetaDataProvider.java
- \* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/support/incrementer/AbstractDataFieldMaxValueIncrementer.java
- \* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/datasource/embedded/EmbeddedDatabaseConfigurerFactory.java
- \* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/support/incrementer/PostgresSequenceMaxValueIncrementer.java
- \* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/core/namedparam/NamedParameterBatchUpdateUtils.java
- \* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/core/SqlReturnResultSet.java
- \* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/support/rowset/ResultSetWrappingSqlRowSetMetaData.java
- \* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/datasource/embedded/EmbeddedDatabaseConfigurer.java
- \* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/object/SqlUpdate.java
- \* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/core/support/JdbcDaoSupport.java
- \* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/object/GenericSqlQuery.java
- \* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/datasource/WebSphereDataSourceAdapter.java
- \* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/core/simple/SimpleJdbcCallOperations.java
- \* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/core/namedparam/NamedParameterJdbcDaoSupport.java
- \* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/support/incrementer/H2SequenceMaxValueIncrementer.java
- \* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/datasource/embedded/DerbyEmbeddedDatabaseConfigurer.java
- \* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-



jar/org/springframework/jdbc/support/incrementer/Db2MainframeMaxValueIncrementer.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/datasource/embedded/EmbeddedDatabaseFactory.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/core/ColumnMapRowMapper.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/datasource/IsolationLevelDataSourceAdapter.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/core/metadata/OracleTableMetaDataProvider.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/core/metadata/Db2CallMetaDataProvider.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/JdbcUpdateAffectedIncorrectNumberOfRowsException.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/core/metadata/TableParameterMetaData.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/datasource/embedded/EmbeddedDatabaseType.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/core/metadata/TableMetaDataProvider.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/core/SqlTypeValue.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/core/metadata/DerbyCallMetaDataProvider.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/core/RowMapper.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/support/incrementer/AbstractIdentityColumnMaxValueIncrementer.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/support/DatabaseStartupValidator.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/support/AbstractFallbackSQLExceptionTranslator.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/core/RowCountCallbackHandler.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/BadSqlGrammarException.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/datasource/DataSourceUtils.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/support/incrementer/PostgreSQLSequenceMaxValueIncrementer.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/core/SqlInOutParameter.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/datasource/embedded/H2EmbeddedDatabaseConfigurer.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/support/incrementer/DerbyMaxValueIncrementer.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/support/incrementer/AbstractColumnMaxValueIncrementer.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-

jar/org/springframework/jdbc/support/incrementer/SybaseAnywhereMaxValueIncrementer.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/support/xml/SqlXmlHandler.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/core/SqlParameter.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/object/SqlQuery.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/object/MappingSqlQueryWithParameters.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/support/SQLExceptionCodes.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/core/ParameterizedPreparedStatementSetter.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/support/incrementer/HanaSequenceMaxValueIncrementer.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/core/metadata/HanaCallMetaDataProvider.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/object/SqlOperation.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/core/support/AbstractInterruptibleBatchPreparedStatementSetter.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/core/ResultSetExtractor.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/core/ConnectionCallback.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/datasource/embedded/HsqlEmbeddedDatabaseConfigurer.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/datasource/embedded/OutputStreamFactory.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/core/CallableStatementCreator.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/core/simple/SimpleJdbcInsertOperations.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/config/DatabasePopulatorConfigUtils.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/object/MappingSqlQuery.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/core/RowMapperResultSetExtractor.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/support/incrementer/MySQLMaxValueIncrementer.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/datasource/ConnectionHolder.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/datasource/AbstractDataSource.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/core/support/JdbcBeanDefinitionReader.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-

jar/org/springframework/jdbc/object/BatchSqlUpdate.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/core/PreparedStatementCreator.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/core/SqlOutParameter.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/datasource/SimpleConnectionHandle.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/core/support/AbstractSqlTypeValue.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/InvalidResultSetAccessException.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/core/ArgumentTypePreparedStatementSetter.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/support/incrementer/SybaseMaxValueIncrementer.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/datasource/ConnectionHandle.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/support/incrementer/OracleSequenceMaxValueIncrementer.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/core/BatchUpdateUtils.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/support/incrementer/HsqlSequenceMaxValueIncrementer.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/UncategorizedSQLException.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/support/JdbcAccessor.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/LobRetrievalFailureException.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/object/StoredProcedure.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/core/metadata/CallMetaDataProvider.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/core/PreparedStatementCallback.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/IncorrectResultSetColumnCountException.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/core/SqlReturnUpdateCount.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/core/metadata/HsqlTableMetaDataProvider.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/core/namedparam/EmptySqlParameterSource.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/core/ResultSetSupportingSqlParameter.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/core/metadata/DerbyTableMetaDataProvider.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-

jar/org/springframework/jdbc/object/SqlCall.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/support/lob/TemporaryLobCreator.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/core/ArgumentPreparedStatementSetter.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/datasource/lookup/IsolationLevelDataSourceRouter.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/support/incrementer/Db2LuwMax ValueIncrementer.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/core/SqlParameterValue.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/support/GeneratedKeyHolder.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/core/SqlRowSetResultSetExtractor.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/datasource/embedded/EmbeddedDatabaseBuilder.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/datasource/UserCredentialsDataSourceAdapter.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/support/CustomSQLExceptionTranslatorRegistrar.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/core/simple/SimpleJdbcCall.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/object/UpdatableSqlQuery.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/config/SortedResourcesFactoryBean.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/core/StatementCallback.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2002-2012 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/support/xml/XmlBinaryStreamProvider.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/datasource/embedded/SimpleDriverDataSourceFactory.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/config/JdbcNamespaceHandler.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/datasource/lookup/SingleDataSourceLookup.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/support/xml/SqlXmlFeatureNotImplementedException.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/support/incrementer/AbstractSequenceMaxValueIncrementer.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/support/xml/XmlCharacterStreamProvider.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/SQLWarningException.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/core/BatchPreparedStatementSetter.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/core/InterruptibleBatchPreparedStatementSetter.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/datasource/lookup/JndiDataSourceLookup.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/support/SqlValue.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/support/xml/XmlResultProvider.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/datasource/lookup/DataSourceLookupFailureException.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/support/MetaDataAccessException.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/datasource/SmartDataSource.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/object/GenericStoredProcedure.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2007 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

- \* See the License for the specific language governing permissions and
- \* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/support/incrementer/DataFieldMaxValueIncrementer.java  
No license file was found, but licenses were detected in source scan.

/\*

- \* Copyright 2002-2016 the original author or authors.
- \*
- \* Licensed under the Apache License, Version 2.0 (the "License");
- \* you may not use this file except in compliance with the License.
- \* You may obtain a copy of the License at
- \*
- \* <https://www.apache.org/licenses/LICENSE-2.0>
- \*
- \* Unless required by applicable law or agreed to in writing, software
- \* distributed under the License is distributed on an "AS IS" BASIS,
- \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- \* See the License for the specific language governing permissions and
- \* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/datasource/init/DatabasePopulator.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/core/RowCallbackHandler.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/core/PreparedStatementSetter.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/support/lob/LobHandler.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/datasource/lookup/DataSourceLookup.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/datasource/init/CompositeDatabasePopulator.java  
No license file was found, but licenses were detected in source scan.

/\*

- \* Copyright 2002-2014 the original author or authors.
- \*
- \* Licensed under the Apache License, Version 2.0 (the "License");
- \* you may not use this file except in compliance with the License.
- \* You may obtain a copy of the License at
- \*
- \* <https://www.apache.org/licenses/LICENSE-2.0>

\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/support/incrementer/HsqlMaxValueIncrementer.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/datasource/init/UncategorizedScriptException.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/support/rowset/SqlRowSetMetaData.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/support/incrementer/SqlServerMaxValueIncrementer.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/datasource/init/ScriptException.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/datasource/embedded/ConnectionProperties.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/datasource/init/CannotReadScriptException.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2002-2021 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/core/namedparam/NamedParameterJdbcOperations.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/datasource/init/ScriptUtils.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/core/namedparam/NamedParameterUtils.java

\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/core/metadata/TableMetaDataProviderFactory.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/core/BeanPropertyRowMapper.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/core/metadata/GenericCallMetaDataProvider.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/core/JdbcOperations.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/core/metadata/TableMetaDataContext.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/core/metadata/GenericTableMetaDataProvider.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2019 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/support/SQLStateSQLExceptionTranslator.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/datasource/init/ResourceDatabasePopulator.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/support/rowset/ResultSetWrappingSqlRowSet.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/object/SqlFunction.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/support/CustomSQLExceptionTranslatorRegistry.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/support/KeyHolder.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/core/simple/AbstractJdbcInsert.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/datasource/TransactionAwareDataSourceProxy.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-



jar/org/springframework/jdbc/core/namedparam/BeanPropertySqlParameterSource.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/core/namedparam/SqlParameterSource.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/datasource/JdbcTransactionObjectSupport.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/support/rowset/SqlRowSet.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/object/RdbmsOperation.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/core/namedparam/AbstractSqlParameterSource.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/datasource/LazyConnectionDataSourceProxy.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/core/support/AbstractLobStreamingResultSetExtractor.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/core/namedparam/MapSqlParameterSource.java  
No license file was found, but licenses were detected in source scan.

```
/*
* Copyright 2002-2020 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
```

Found in path(s):

\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/datasource/lookup/AbstractRoutingDataSource.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/datasource/DriverManagerDataSource.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/core/JdbcTemplate.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/datasource/init/DatabasePopulatorUtils.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/core/simple/AbstractJdbcCall.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/core/metadata/CallParameterMetaData.java

\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/core/PreparedStatementCreatorFactory.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/support/JdbcUtils.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/core/metadata/CallMetaDataProviderFactory.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/core/SingleColumnRowMapper.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/core/StatementCreatorUtils.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/core/SqlProvider.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/support/SQLErrorCodesFactory.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/core/metadata/CallMetaDataContext.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/support/SQLErrorCodeSQLExceptionTranslator.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/core/SqlReturnType.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/datasource/DataSourceTransactionManager.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/datasource/SingleConnectionDataSource.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/support/DatabaseMetaDataCallback.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/datasource/embedded/AbstractEmbeddedDatabaseConfigurer.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/core/namedparam/NamedParameterJdbcTemplate.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/core/namedparam/ParsedSql.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/core/namedparam/SqlParameterSourceUtils.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/datasource/embedded/DataSourceFactory.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/datasource/SimpleDriverDataSource.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2013 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>

\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/core/support/AbstractLobCreatingPreparedStatementCallback.java  
\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/support/lob/AbstractLobHandler.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2002-2019 the original author or authors  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1249631506\_1640943585.77/0/spring-jdbc-5-2-19-release-sources-  
jar/org/springframework/jdbc/core/JdbcOperationsExtensions.kt  
No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2002-2017 the original author or authors  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

- \* See the License for the specific language governing permissions and
- \* limitations under the License.

Found in path(s):

`/opt/cola/permits/1249631506_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/core/namedparam/MapSqlParameterSourceExtensions.kt`  
No license file was found, but licenses were detected in source scan.

/\*\*

- \* The classes in this package make JDBC easier to use and
- \* reduce the likelihood of common errors. In particular, they:
- \*
  - \*   - <li>Simplify error handling, avoiding the need for try/catch/finally blocks in application code.
  - <li>Present exceptions to application code in a generic hierarchy of unchecked exceptions, enabling applications to catch data access exceptions without being dependent on JDBC, and to ignore fatal exceptions there is no value in catching.
  - <li>Allow the implementation of error handling to be modified to target different RDBMSes without introducing proprietary dependencies into application code.
- \* 

This package and related packages are discussed in Chapter 9 of [Expert One-On-One J2EE Design and Development](https://www.amazon.com/exec/obidos/tg/detail/-/0764543857/) by Rod Johnson (Wrox, 2002).

Found in path(s):

`/opt/cola/permits/1249631506_1640943585.77/0/spring-jdbc-5-2-19-release-sources-jar/org/springframework/jdbc/package-info.java`

## 1.133 libyaml 0.1.7 5.el8

### 1.133.1 Available under license :

Copyright (c) 2006 Kirill Simonov

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all

copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

## 1.134 jax-ws-api 2.2.2-promoted-b02

### 1.134.1 Available under license :

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2007 Sun Microsystems, Inc. All rights reserved.  
\* SUN PROPRIETARY/CONFIDENTIAL. Use is subject to license terms.  
\* \$Id: Invoker.java,v 1.1.2.5 2009/02/18 00:21:32 jitu Exp \$  
\*/

Found in path(s):

\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/spi/Invoker.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2007 Sun Microsystems, Inc. All rights reserved.  
\* SUN PROPRIETARY/CONFIDENTIAL. Use is subject to license terms.  
\*\$Id: Provider.java,v 1.9.2.15 2009/09/08 20:27:02 jitu Exp \$  
\*/

Found in path(s):

\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/spi/Provider.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2007 Sun Microsystems, Inc. All rights reserved.  
\* SUN PROPRIETARY/CONFIDENTIAL. Use is subject to license terms.  
\*/

Found in path(s):

\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/spi/http/package-info.java

\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/RequestWrapper.java

\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/handler/MessageContext.java  
\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/ResponseWrapper.java  
\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/Response.java  
\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/spi/http/HttpExchange.java  
\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/WebServiceRef.java  
\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/spi/http/HttpHandler.java  
\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/handler/Handler.java  
\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/BindingType.java  
\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/WebServiceException.java  
\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/Service.java  
\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/RespectBinding.java  
\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/soap/AddressingFeature.java  
\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/Endpoint.java  
\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/Action.java  
\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/wsaddressing/package-info.java  
\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/WebServiceRefs.java  
\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/Binding.java  
\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/EndpointReference.java  
\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/handler/HandlerResolver.java  
\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/ServiceContext.java  
\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/ServiceProvider.java  
\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/Provider.java  
\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/handler/soap/SoapMessageContext.java  
\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/handler/PortInfo.java

\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/AsyncHandler.java  
\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/WebServiceClient.java  
\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/ServiceMode.java  
\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/RespectBindingFeature.java  
\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/Dispatch.java  
\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/Holder.java  
\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/WebServiceFeature.java  
\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/spi/WebServiceFeatureAnnotation.java  
\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/wsaddressing/W3CEndpointReference.java  
\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/soap/MTOM.java  
\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/http/HTTPBinding.java  
\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/spi/ServiceDelegate.java  
\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/WebFault.java  
\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/BindingProvider.java  
\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/handler/soap/SOAPHandler.java  
\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/handler/LogicalMessageContext.java  
\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/soap/MTOMFeature.java  
\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/LogicalMessage.java  
\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/wsaddressing/W3CEndpointReferenceBuilder.java  
\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/WebEndpoint.java  
\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/handler/LogicalHandler.java  
\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/EndpointContext.java  
\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/soap/Addressing.java  
\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/spi/FactoryFinder.java

\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/FaultAction.java  
\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/soap/SOAPFaultException.java  
\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/WebServicePermission.java  
\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/soap/SOAPBinding.java  
\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/spi/http/HttpContext.java  
\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/ProtocolException.java  
\* /opt/cola/permits/1136035018\_1613662390.92/0/jaxws-api-2-2-2-promoted-b02-sources-2-jar/javax/xml/ws/http/HTTPException.java

# 1.135 cglib 3.3.0

## 1.135.1 Available under license :

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.



"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work,

where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or

for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason

of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

This product includes software developed by  
The Apache Software Foundation (<http://www.apache.org/>).

# 1.136 zstd 1.5.0

## 1.136.1 Available under license :

BSD License

For Zstandard software

Copyright (c) 2016-present, Facebook, Inc. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice,

this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

\* Neither the name Facebook nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

#### GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE

### TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's

source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License.



However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot

impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR

REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands ``show w'` and ``show c'` should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than ``show w'` and ``show c'`; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program  
`Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989  
Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

## 1.137 coreutils 8.30-12.el8

### 1.137.1 Available under license :

GNU GENERAL PUBLIC LICENSE  
Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

#### Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you

have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

## TERMS AND CONDITIONS

## 0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

## 1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of

interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

## 2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you

with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

### 3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

### 4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

### 5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.



b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".

c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.

d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

#### 6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical

medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install

and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

## 7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

## 8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

#### 9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

#### 10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered

work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

#### 11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so

available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

## 12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

### 13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

### 14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

### 15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.



## 16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## 17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

```
This program is free software: you can redistribute it and/or modify
it under the terms of the GNU General Public License as published by
the Free Software Foundation, either version 3 of the License, or
(at your option) any later version.
```

```
This program is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
GNU General Public License for more details.
```

You should have received a copy of the GNU General Public License

along with this program. If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program> Copyright (C) <year> <name of author>
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <http://www.gnu.org/licenses/>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <http://www.gnu.org/philosophy/why-not-lgpl.html>.

## 1.138 j2objc-annotations 1.3

### 1.138.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* http://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
```

Found in path(s):

- \* /opt/cola/permits/1000890861\_1651084689.86/0/j2objc-annotations-1-3-sources-jar/com/google/j2objc/annotations/RetainedWith.java
- \* /opt/cola/permits/1000890861\_1651084689.86/0/j2objc-annotations-1-3-sources-jar/com/google/j2objc/annotations/ReflectionSupport.java
- \* /opt/cola/permits/1000890861\_1651084689.86/0/j2objc-annotations-1-3-sources-jar/com/google/j2objc/annotations/RetainedLocalRef.java
- \* /opt/cola/permits/1000890861\_1651084689.86/0/j2objc-annotations-1-3-sources-jar/com/google/j2objc/annotations/Property.java
- \* /opt/cola/permits/1000890861\_1651084689.86/0/j2objc-annotations-1-3-sources-jar/com/google/j2objc/annotations/LoopTranslation.java
- \* /opt/cola/permits/1000890861\_1651084689.86/0/j2objc-annotations-1-3-sources-jar/com/google/j2objc/annotations/J2ObjCIncompatible.java
- \* /opt/cola/permits/1000890861\_1651084689.86/0/j2objc-annotations-1-3-sources-jar/com/google/j2objc/annotations/ObjectiveCName.java

No license file was found, but licenses were detected in source scan.

/\*

- \* Copyright 2012 Google Inc. All Rights Reserved.
- \*
- \* Licensed under the Apache License, Version 2.0 (the "License");
- \* you may not use this file except in compliance with the License.
- \* You may obtain a copy of the License at
- \*
- \* <http://www.apache.org/licenses/LICENSE-2.0>
- \*
- \* Unless required by applicable law or agreed to in writing, software
- \* distributed under the License is distributed on an "AS IS" BASIS,
- \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- \* See the License for the specific language governing permissions and
- \* limitations under the License.
- \*/

Found in path(s):

- \* /opt/cola/permits/1000890861\_1651084689.86/0/j2objc-annotations-1-3-sources-jar/com/google/j2objc/annotations/Weak.java
- \* /opt/cola/permits/1000890861\_1651084689.86/0/j2objc-annotations-1-3-sources-jar/com/google/j2objc/annotations/AutoreleasePool.java
- \* /opt/cola/permits/1000890861\_1651084689.86/0/j2objc-annotations-1-3-sources-jar/com/google/j2objc/annotations/WeakOuter.java

## 1.139 commons-collections 3.2.2

### 1.139.1 Available under license :

Apache Commons Collections

Copyright 2001-2015 The Apache Software Foundation

This product includes software developed by  
The Apache Software Foundation (<http://www.apache.org/>).

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of,

the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
  
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
  
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

### APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

## 1.140 xwt 3.4.2.0

### 1.140.1 Available under license :

Dojo is available under \*either\* the terms of the modified BSD license \*or\* the Academic Free License version 2.1. As a recipient of Dojo, you may choose which license to receive this code under (except as noted in per-module LICENSE files). Some modules may not be the copyright of the Dojo Foundation. These modules contain explicit declarations of copyright in both the LICENSE files in the directories in which they reside and in the code itself. No external contributions are allowed under licenses which are fundamentally incompatible with the AFL or BSD licenses that Dojo is distributed under.

The text of the AFL and BSD licenses is reproduced below.

-----  
The "New" BSD License:

\*\*\*\*\*

Copyright (c) 2005-2013, The Dojo Foundation  
All rights reserved.

Redistribution and use in source and binary forms, with or without  
modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of the Dojo Foundation nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND



ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

-----  
The Academic Free License, v. 2.1:

\*\*\*\*\*

This Academic Free License (the "License") applies to any original work of authorship (the "Original Work") whose owner (the "Licensor") has placed the following notice immediately following the copyright notice for the Original Work:

Licensed under the Academic Free License version 2.1

1) Grant of Copyright License. Licensor hereby grants You a world-wide, royalty-free, non-exclusive, perpetual, sublicenseable license to do the following:

- a) to reproduce the Original Work in copies;
- b) to prepare derivative works ("Derivative Works") based upon the Original Work;
- c) to distribute copies of the Original Work and Derivative Works to the public;
- d) to perform the Original Work publicly; and
- e) to display the Original Work publicly.

2) Grant of Patent License. Licensor hereby grants You a world-wide, royalty-free, non-exclusive, perpetual, sublicenseable license, under patent claims owned or controlled by the Licensor that are embodied in the Original Work as furnished by the Licensor, to make, use, sell and offer for sale the Original Work and Derivative Works.

3) Grant of Source Code License. The term "Source Code" means the preferred form of the Original Work for making modifications to it and all available documentation describing how to modify the Original Work. Licensor hereby agrees to provide a machine-readable copy of the Source Code of the Original Work along with each copy of the Original Work that Licensor distributes.

Licensor reserves the right to satisfy this obligation by placing a machine-readable copy of the Source Code in an information repository reasonably calculated to permit inexpensive and convenient access by You for as long as Licensor continues to distribute the Original Work, and by publishing the address of that information repository in a notice immediately following the copyright notice that applies to the Original Work.

4) Exclusions From License Grant. Neither the names of Licensor, nor the names of any contributors to the Original Work, nor any of their trademarks or service marks, may be used to endorse or promote products derived from this Original Work without express prior written permission of the Licensor. Nothing in this License shall be deemed to grant any rights to trademarks, copyrights, patents, trade secrets or any other intellectual property of Licensor except as expressly stated herein. No patent license is granted to make, use, sell or offer to sell embodiments of any patent claims other than the licensed claims defined in Section 2. No right is granted to the trademarks of Licensor even if such marks are included in the Original Work. Nothing in this License shall be interpreted to prohibit Licensor from licensing under different terms from this License any Original Work that Licensor otherwise would have a right to license.

5) This section intentionally omitted.

6) Attribution Rights. You must retain, in the Source Code of any Derivative Works that You create, all copyright, patent or trademark notices from the Source Code of the Original Work, as well as any notices of licensing and any descriptive text identified therein as an "Attribution Notice." You must cause the Source Code for any Derivative Works that You create to carry a prominent Attribution Notice reasonably calculated to inform recipients that You have modified the Original Work.

7) Warranty of Provenance and Disclaimer of Warranty. Licensor warrants that the copyright in and to the Original Work and the patent rights granted herein by Licensor are owned by the Licensor or are sublicensed to You under the terms of this License with the permission of the contributor(s) of those copyrights and patent rights. Except as expressly stated in the immediately preceding sentence, the Original Work is provided under this License on an "AS IS" BASIS and WITHOUT WARRANTY, either express or implied, including, without limitation, the warranties of NON-INFRINGEMENT, MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY OF THE ORIGINAL WORK IS WITH YOU. This DISCLAIMER OF WARRANTY constitutes an essential part of this License. No license to Original Work is granted hereunder except under this disclaimer.

8) Limitation of Liability. Under no circumstances and under no legal theory, whether in tort (including negligence), contract, or otherwise, shall the Licensor be liable to any person for any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or the use of the Original Work including, without limitation, damages for loss

of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses. This limitation of liability shall not apply to liability for death or personal injury resulting from Licensor's negligence to the extent applicable law prohibits such limitation. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so this exclusion and limitation may not apply to You.

9) Acceptance and Termination. If You distribute copies of the Original Work or a Derivative Work, You must make a reasonable effort under the circumstances to obtain the express assent of recipients to the terms of this License. Nothing else but this License (or another written agreement between Licensor and You) grants You permission to create Derivative Works based upon the Original Work or to exercise any of the rights granted in Section 1 herein, and any attempt to do so except under the terms of this License (or another written agreement between Licensor and You) is expressly prohibited by U.S. copyright law, the equivalent laws of other countries, and by international treaty. Therefore, by exercising any of the rights granted to You in Section 1 herein, You indicate Your acceptance of this License and all of its terms and conditions.

10) Termination for Patent Action. This License shall terminate automatically and You may no longer exercise any of the rights granted to You by this License as of the date You commence an action, including a cross-claim or counterclaim, against Licensor or any licensee alleging that the Original Work infringes a patent. This termination provision shall not apply for an action alleging patent infringement by combinations of the Original Work with other software or hardware.

11) Jurisdiction, Venue and Governing Law. Any action or suit relating to this License may be brought only in the courts of a jurisdiction wherein the Licensor resides or in which Licensor conducts its primary business, and under the laws of that jurisdiction excluding its conflict-of-law provisions. The application of the United Nations Convention on Contracts for the International Sale of Goods is expressly excluded. Any use of the Original Work outside the scope of this License or after its termination shall be subject to the requirements and penalties of the U.S. Copyright Act, 17 U.S.C. 101 et seq., the equivalent laws of other countries, and international treaty. This section shall survive the termination of this License.

12) Attorneys Fees. In any action to enforce the terms of this License or seeking damages relating thereto, the prevailing party shall be entitled to recover its costs and expenses, including, without limitation, reasonable attorneys' fees and costs incurred in connection with such action, including any appeal of such action. This section shall survive the termination of this License.

13) Miscellaneous. This License represents the complete agreement concerning the subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to

make it enforceable.

14) Definition of "You" in This License. "You" throughout this License, whether in upper or lower case, means an individual or a legal entity exercising rights under, and complying with all of the terms of, this License. For legal entities, "You" includes any entity that controls, is controlled by, or is under common control with you. For purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

15) Right to Use. You may use the Original Work in all ways not otherwise restricted or conditioned by this License or by law, and Licensor promises not to interfere with or be responsible for such uses by You.

This license is Copyright (C) 2003-2004 Lawrence E. Rosen. All rights reserved. Permission is hereby granted to copy and distribute this license without modification. This license may not be modified without the express written permission of its copyright owner.

The MIT License

Copyright (c) 2007 Oliver Steele

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Mozilla Rhino (js.jar from <http://www.mozilla.org/rhino/>) was initially developed by Netscape Communications Corporation and is provided by the Dojo Foundation "as is" under the MPL 1.1 license, available at <http://www.mozilla.org/MPL>

shrinksafe.jar is based on work in Rhino and is also provided under the MPL 1.1 license.

This directory contains third-party libraries available under the following licenses:

Apache Software License Version 2.0

- \* ant-apache-bsf.jar
- \* bsf.jar
- \* commons-logging-1.1.1.jar
- \* resolver.jar

Mozilla Public License 1.0 (MPL), available at <http://www.mozilla.org/MPL/MPL-1.0.html>

- \* saxon9.jar

License Disclaimer:

All contents of this directory are Copyright (c) the Dojo Foundation, with the following exceptions:

-----  
\_crypto.js - internally uses AES algorithm

- \* AES algorithm copyright Chris Veness (CLA signed and permission given to use code under BSD license)

Taken from <http://www.movable-type.co.uk/scripts/aes.html>

/\*

Copyright (c) 2004-2011, The Dojo Foundation All Rights Reserved.

Available via Academic Free License >= 2.1 OR the modified BSD license.

see: <http://dojotoolkit.org/license> for details

\*/

UNICODE, INC. LICENSE AGREEMENT - DATA FILES AND SOFTWARE

Unicode Data Files include all data files under the directories <http://www.unicode.org/Public/>,

<http://www.unicode.org/reports/>,

and <http://www.unicode.org/cldr/data/>. Unicode Software includes any source code published in the Unicode Standard or under

the directories <http://www.unicode.org/Public/>, <http://www.unicode.org/reports/>, and

<http://www.unicode.org/cldr/data/>.

NOTICE TO USER: Carefully read the following legal agreement. BY DOWNLOADING, INSTALLING, COPYING OR

OTHERWISE USING UNICODE INC.'S DATA FILES ("DATA FILES"), AND/OR SOFTWARE ("SOFTWARE"), YOU

UNEQUIVOCALLY ACCEPT, AND AGREE TO BE BOUND BY, ALL OF THE TERMS AND CONDITIONS OF THIS

AGREEMENT. IF YOU DO NOT AGREE, DO NOT DOWNLOAD, INSTALL, COPY, DISTRIBUTE OR USE THE DATA FILES OR SOFTWARE.

COPYRIGHT AND PERMISSION NOTICE

Copyright 1991-2007 Unicode, Inc. All rights reserved. Distributed under the Terms of Use in

<http://www.unicode.org/copyright.html>.

Permission is hereby granted, free of charge, to any person obtaining a copy of the Unicode data files and any associated

documentation (the "Data Files") or Unicode software and any associated documentation (the "Software") to deal in

the Data

Files or Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, and/or sell

copies of the Data Files or Software, and to permit persons to whom the Data Files or Software are furnished to do so, provided

that (a) the above copyright notice(s) and this permission notice appear with all copies of the Data Files or Software,

(b) both the

above copyright notice(s) and this permission notice appear in associated documentation, and (c) there is clear notice in each modified Data File

or in the Software as well as in the documentation associated with the Data File(s) or Software that the data or software has been modified.

THE DATA FILES AND SOFTWARE ARE PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED,

INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE

AND NONINFRINGEMENT OF THIRD PARTY RIGHTS. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR HOLDERS

INCLUDED IN THIS NOTICE BE LIABLE FOR ANY CLAIM, OR ANY SPECIAL INDIRECT OR CONSEQUENTIAL DAMAGES,

OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF

CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR

PERFORMANCE OF THE DATA FILES OR SOFTWARE.

Except as contained in this notice, the name of a copyright holder shall not be used in advertising or otherwise to promote the sale, use or other

dealings in these Data Files or Software without prior written authorization of the copyright holder.

// -----

// NOTICE file corresponding to the section 4d of The Apache License,

// Version 2.0, in this case for Commons Logging

// -----

Commons Logging

Copyright 2001-2007 The Apache Software Foundation

This product includes/uses software(s) developed by 'an unknown organization'

- Unnamed - avalon-framework:avalon-framework:jar:4.1.3

- Unnamed - log4j:log4j:jar:1.2.12

- Unnamed - logkit:logkit:jar:1.0.1

Dojo is available under \*either\* the terms of the modified BSD license \*or\* the Academic Free License version 2.1. As a recipient of Dojo, you may choose which license to receive this code under (except as noted in per-module LICENSE files). Some modules may not be the copyright of the Dojo Foundation. These modules contain explicit declarations of copyright in both the LICENSE files in the directories in which they reside and in the code itself. No external contributions are allowed under licenses which are fundamentally incompatible with the AFL or BSD licenses that Dojo is distributed under.

The text of the AFL and BSD licenses is reproduced below.

-----  
The "New" BSD License:

\*\*\*\*\*

Copyright (c) 2005-2011, The Dojo Foundation  
All rights reserved.

Redistribution and use in source and binary forms, with or without  
modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of the Dojo Foundation nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

-----  
The Academic Free License, v. 2.1:

\*\*\*\*\*

This Academic Free License (the "License") applies to any original work of authorship (the "Original Work") whose owner (the "Licensor") has placed the following notice immediately following the copyright notice for the Original Work:

Licensed under the Academic Free License version 2.1

1) Grant of Copyright License. Licensor hereby grants You a world-wide, royalty-free, non-exclusive, perpetual, sublicenseable license to do the following:

a) to reproduce the Original Work in copies;

b) to prepare derivative works ("Derivative Works") based upon the Original Work;

c) to distribute copies of the Original Work and Derivative Works to the public;

d) to perform the Original Work publicly; and

e) to display the Original Work publicly.

2) Grant of Patent License. Licensor hereby grants You a world-wide, royalty-free, non-exclusive, perpetual, sublicenseable license, under patent claims owned or controlled by the Licensor that are embodied in the Original Work as furnished by the Licensor, to make, use, sell and offer for sale the Original Work and Derivative Works.

3) Grant of Source Code License. The term "Source Code" means the preferred form of the Original Work for making modifications to it and all available documentation describing how to modify the Original Work. Licensor hereby agrees to provide a machine-readable copy of the Source Code of the Original Work along with each copy of the Original Work that Licensor distributes. Licensor reserves the right to satisfy this obligation by placing a machine-readable copy of the Source Code in an information repository reasonably calculated to permit inexpensive and convenient access by You for as long as Licensor continues to distribute the Original Work, and by publishing the address of that information repository in a notice immediately following the copyright notice that applies to the Original Work.

4) Exclusions From License Grant. Neither the names of Licensor, nor the names of any contributors to the Original Work, nor any of their trademarks or service marks, may be used to endorse or promote products derived from this Original Work without express prior written permission of the Licensor. Nothing in this License shall be deemed to grant any rights to trademarks, copyrights, patents, trade secrets or any other intellectual property of Licensor except as expressly stated herein. No patent license is granted to make, use, sell or offer to sell embodiments of any patent claims other than the licensed claims defined in Section 2. No right is granted to the trademarks of Licensor even if such marks are included in the Original Work. Nothing in this License shall be interpreted to prohibit Licensor from licensing under different terms from this License any Original Work that Licensor otherwise would have a right to license.

5) This section intentionally omitted.

6) Attribution Rights. You must retain, in the Source Code of any Derivative Works that You create, all copyright, patent or trademark notices from the Source Code of the Original Work, as well as any notices of licensing and any



descriptive text identified therein as an "Attribution Notice." You must cause the Source Code for any Derivative Works that You create to carry a prominent Attribution Notice reasonably calculated to inform recipients that You have modified the Original Work.

7) Warranty of Provenance and Disclaimer of Warranty. Licensor warrants that the copyright in and to the Original Work and the patent rights granted herein by Licensor are owned by the Licensor or are sublicensed to You under the terms of this License with the permission of the contributor(s) of those copyrights and patent rights. Except as expressly stated in the immediately preceding sentence, the Original Work is provided under this License on an "AS IS" BASIS and WITHOUT WARRANTY, either express or implied, including, without limitation, the warranties of NON-INFRINGEMENT, MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY OF THE ORIGINAL WORK IS WITH YOU. This DISCLAIMER OF WARRANTY constitutes an essential part of this License. No license to Original Work is granted hereunder except under this disclaimer.

8) Limitation of Liability. Under no circumstances and under no legal theory, whether in tort (including negligence), contract, or otherwise, shall the Licensor be liable to any person for any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or the use of the Original Work including, without limitation, damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses. This limitation of liability shall not apply to liability for death or personal injury resulting from Licensor's negligence to the extent applicable law prohibits such limitation. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so this exclusion and limitation may not apply to You.

9) Acceptance and Termination. If You distribute copies of the Original Work or a Derivative Work, You must make a reasonable effort under the circumstances to obtain the express assent of recipients to the terms of this License. Nothing else but this License (or another written agreement between Licensor and You) grants You permission to create Derivative Works based upon the Original Work or to exercise any of the rights granted in Section 1 herein, and any attempt to do so except under the terms of this License (or another written agreement between Licensor and You) is expressly prohibited by U.S. copyright law, the equivalent laws of other countries, and by international treaty. Therefore, by exercising any of the rights granted to You in Section 1 herein, You indicate Your acceptance of this License and all of its terms and conditions.

10) Termination for Patent Action. This License shall terminate automatically and You may no longer exercise any of the rights granted to You by this License as of the date You commence an action, including a cross-claim or counterclaim, against Licensor or any licensee alleging that the Original Work infringes a patent. This termination provision shall not apply for an action alleging patent infringement by combinations of the Original Work with other software or hardware.

11) Jurisdiction, Venue and Governing Law. Any action or suit relating to this License may be brought only in the courts of a jurisdiction wherein the Licensor resides or in which Licensor conducts its primary business, and under the laws of that jurisdiction excluding its conflict-of-law provisions. The application of the United Nations Convention on Contracts for the International Sale of Goods is expressly excluded. Any use of the Original Work outside the scope of this License or after its termination shall be subject to the requirements and penalties of the U.S. Copyright Act, 17 U.S.C. 101 et seq., the equivalent laws of other countries, and international treaty. This section shall survive the termination of this License.

12) Attorneys Fees. In any action to enforce the terms of this License or seeking damages relating thereto, the prevailing party shall be entitled to recover its costs and expenses, including, without limitation, reasonable attorneys' fees and costs incurred in connection with such action, including any appeal of such action. This section shall survive the termination of this License.

13) Miscellaneous. This License represents the complete agreement concerning the subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable.

14) Definition of "You" in This License. "You" throughout this License, whether in upper or lower case, means an individual or a legal entity exercising rights under, and complying with all of the terms of, this License. For legal entities, "You" includes any entity that controls, is controlled by, or is under common control with you. For purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

15) Right to Use. You may use the Original Work in all ways not otherwise restricted or conditioned by this License or by law, and Licensor promises not to interfere with or be responsible for such uses by You.

This license is Copyright (C) 2003-2004 Lawrence E. Rosen. All rights reserved. Permission is hereby granted to copy and distribute this license without modification. This license may not be modified without the express written permission of its copyright owner.

Dojo is available under \*either\* the terms of the modified BSD license \*or\* the Academic Free License version 2.1. As a recipient of Dojo, you may choose which license to receive this code under (except as noted in per-module LICENSE files). Some modules may not be the copyright of the Dojo Foundation. These modules contain explicit declarations of copyright in both the LICENSE files in the directories in which they reside and in the code itself. No external

contributions are allowed under licenses which are fundamentally incompatible with the AFL or BSD licenses that Dojo is distributed under.

The text of the AFL and BSD licenses is reproduced below.

-----  
The "New" BSD License:

\*\*\*\*\*

Copyright (c) 2005-2013, The Dojo Foundation

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of the Dojo Foundation nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

-----  
The Academic Free License, v. 2.1:

\*\*\*\*\*

This Academic Free License (the "License") applies to any original work of authorship (the "Original Work") whose owner (the "Licensor") has placed the following notice immediately following the copyright notice for the Original Work:

Licensed under the Academic Free License version 2.1

1) Grant of Copyright License. Licensor hereby grants You a world-wide, royalty-free, non-exclusive, perpetual, sublicenseable license to do the

following:

- a) to reproduce the Original Work in copies;
- b) to prepare derivative works ("Derivative Works") based upon the Original Work;
- c) to distribute copies of the Original Work and Derivative Works to the public;
- d) to perform the Original Work publicly; and
- e) to display the Original Work publicly.

2) Grant of Patent License. Licensor hereby grants You a world-wide, royalty-free, non-exclusive, perpetual, sublicenseable license, under patent claims owned or controlled by the Licensor that are embodied in the Original Work as furnished by the Licensor, to make, use, sell and offer for sale the Original Work and Derivative Works.

3) Grant of Source Code License. The term "Source Code" means the preferred form of the Original Work for making modifications to it and all available documentation describing how to modify the Original Work. Licensor hereby agrees to provide a machine-readable copy of the Source Code of the Original Work along with each copy of the Original Work that Licensor distributes. Licensor reserves the right to satisfy this obligation by placing a machine-readable copy of the Source Code in an information repository reasonably calculated to permit inexpensive and convenient access by You for as long as Licensor continues to distribute the Original Work, and by publishing the address of that information repository in a notice immediately following the copyright notice that applies to the Original Work.

4) Exclusions From License Grant. Neither the names of Licensor, nor the names of any contributors to the Original Work, nor any of their trademarks or service marks, may be used to endorse or promote products derived from this Original Work without express prior written permission of the Licensor. Nothing in this License shall be deemed to grant any rights to trademarks, copyrights, patents, trade secrets or any other intellectual property of Licensor except as expressly stated herein. No patent license is granted to make, use, sell or offer to sell embodiments of any patent claims other than the licensed claims defined in Section 2. No right is granted to the trademarks of Licensor even if such marks are included in the Original Work. Nothing in this License shall be interpreted to prohibit Licensor from licensing under different terms from this License any Original Work that Licensor otherwise would have a right to license.

5) This section intentionally omitted.

6) Attribution Rights. You must retain, in the Source Code of any Derivative Works that You create, all copyright, patent or trademark notices from the Source Code of the Original Work, as well as any notices of licensing and any descriptive text identified therein as an "Attribution Notice." You must cause the Source Code for any Derivative Works that You create to carry a prominent Attribution Notice reasonably calculated to inform recipients that You have modified the Original Work.

7) Warranty of Provenance and Disclaimer of Warranty. Licensor warrants that the copyright in and to the Original Work and the patent rights granted herein by Licensor are owned by the Licensor or are sublicensed to You under the terms of this License with the permission of the contributor(s) of those copyrights and patent rights. Except as expressly stated in the immediately preceding sentence, the Original Work is provided under this License on an "AS IS" BASIS and WITHOUT WARRANTY, either express or implied, including, without limitation, the warranties of NON-INFRINGEMENT, MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY OF THE ORIGINAL WORK IS WITH YOU. This DISCLAIMER OF WARRANTY constitutes an essential part of this License. No license to Original Work is granted hereunder except under this disclaimer.

8) Limitation of Liability. Under no circumstances and under no legal theory, whether in tort (including negligence), contract, or otherwise, shall the Licensor be liable to any person for any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or the use of the Original Work including, without limitation, damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses. This limitation of liability shall not apply to liability for death or personal injury resulting from Licensor's negligence to the extent applicable law prohibits such limitation. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so this exclusion and limitation may not apply to You.

9) Acceptance and Termination. If You distribute copies of the Original Work or a Derivative Work, You must make a reasonable effort under the circumstances to obtain the express assent of recipients to the terms of this License. Nothing else but this License (or another written agreement between Licensor and You) grants You permission to create Derivative Works based upon the Original Work or to exercise any of the rights granted in Section 1 herein, and any attempt to do so except under the terms of this License (or another written agreement between Licensor and You) is expressly prohibited by U.S. copyright law, the equivalent laws of other countries, and by international treaty. Therefore, by exercising any of the rights granted to You in Section 1 herein, You indicate Your acceptance of this License and all of its terms and conditions.

10) Termination for Patent Action. This License shall terminate automatically and You may no longer exercise any of the rights granted to You by this License as of the date You commence an action, including a cross-claim or counterclaim, against Licensor or any licensee alleging that the Original Work infringes a

patent. This termination provision shall not apply for an action alleging patent infringement by combinations of the Original Work with other software or hardware.

11) Jurisdiction, Venue and Governing Law. Any action or suit relating to this License may be brought only in the courts of a jurisdiction wherein the Licensor resides or in which Licensor conducts its primary business, and under the laws of that jurisdiction excluding its conflict-of-law provisions. The application of the United Nations Convention on Contracts for the International Sale of Goods is expressly excluded. Any use of the Original Work outside the scope of this License or after its termination shall be subject to the requirements and penalties of the U.S. Copyright Act, 17 U.S.C. 101 et seq., the equivalent laws of other countries, and international treaty. This section shall survive the termination of this License.

12) Attorneys Fees. In any action to enforce the terms of this License or seeking damages relating thereto, the prevailing party shall be entitled to recover its costs and expenses, including, without limitation, reasonable attorneys' fees and costs incurred in connection with such action, including any appeal of such action. This section shall survive the termination of this License.

13) Miscellaneous. This License represents the complete agreement concerning the subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable.

14) Definition of "You" in This License. "You" throughout this License, whether in upper or lower case, means an individual or a legal entity exercising rights under, and complying with all of the terms of, this License. For legal entities, "You" includes any entity that controls, is controlled by, or is under common control with you. For purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

15) Right to Use. You may use the Original Work in all ways not otherwise restricted or conditioned by this License or by law, and Licensor promises not to interfere with or be responsible for such uses by You.

This license is Copyright (C) 2003-2004 Lawrence E. Rosen. All rights reserved. Permission is hereby granted to copy and distribute this license without modification. This license may not be modified without the express written permission of its copyright owner.

Beans Scripting Framework (BSF)

Copyright 2002-2006 The Apache Software Foundation.

This product includes software developed at  
The Apache Software Foundation (<http://www.apache.org/>).

License Disclaimer:

All contents of this directory are Copyright (c) the Dojo Foundation, with the following exceptions:

-----  
MD5.js, SHA1.js:

\* Copyright 1998-2005, Paul Johnstone  
Distributed under the terms of the BSD License

SimpleAES.js

\* Original version by Chris Veness (CLA signed with permission  
given under the terms of the BSD license)  
<http://www.movable-type.co.uk/scripts/aes.html>

License Disclaimer:

All contents of this directory are Copyright (c) the Dojo Foundation, with the following exceptions:

-----  
firebug.html, firebug.js, errIcon.png, infoIcon.png, warningIcon.png:

\* Copyright (c) 2006-2007, Joe Hewitt, All rights reserved.  
Distributed under the terms of the BSD License (see below)

-----  
Copyright (c) 2006-2007, Joe Hewitt

All rights reserved.

Redistribution and use in source and binary forms, with or without  
modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of the Dojo Foundation nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL

DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

License Disclaimer:

All contents of this directory are Copyright (c) the Dojo Foundation, with the following exceptions:

-----  
woohoo.wav, doh.wav, dohaaa.wav:

\* Copyright original authors.

Copied from:

<http://simpson-homer.com/homer-simpson-soundboard.html>

The majority of Rhino is licensed under the MPL 2.0:

Mozilla Public License Version 2.0  
=====

## 1. Definitions

-----

### 1.1. "Contributor"

means each individual or legal entity that creates, contributes to the creation of, or owns Covered Software.

### 1.2. "Contributor Version"

means the combination of the Contributions of others (if any) used by a Contributor and that particular Contributor's Contribution.

### 1.3. "Contribution"

means Covered Software of a particular Contributor.

### 1.4. "Covered Software"

means Source Code Form to which the initial Contributor has attached the notice in Exhibit A, the Executable Form of such Source Code Form, and Modifications of such Source Code Form, in each case including portions thereof.

### 1.5. "Incompatible With Secondary Licenses"

means

(a) that the initial Contributor has attached the notice described in Exhibit B to the Covered Software; or

(b) that the Covered Software was made available under the terms of version 1.1 or earlier of the License, but not also under the



terms of a Secondary License.

1.6. "Executable Form"

means any form of the work other than Source Code Form.

1.7. "Larger Work"

means a work that combines Covered Software with other material, in a separate file or files, that is not Covered Software.

1.8. "License"

means this document.

1.9. "Licensable"

means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently, any and all of the rights conveyed by this License.

1.10. "Modifications"

means any of the following:

(a) any file in Source Code Form that results from an addition to, deletion from, or modification of the contents of Covered Software; or

(b) any new file in Source Code Form that contains any Covered Software.

1.11. "Patent Claims" of a Contributor

means any patent claim(s), including without limitation, method, process, and apparatus claims, in any patent Licensable by such Contributor that would be infringed, but for the grant of the License, by the making, using, selling, offering for sale, having made, import, or transfer of either its Contributions or its Contributor Version.

1.12. "Secondary License"

means either the GNU General Public License, Version 2.0, the GNU Lesser General Public License, Version 2.1, the GNU Affero General Public License, Version 3.0, or any later versions of those licenses.

1.13. "Source Code Form"

means the form of the work preferred for making modifications.

1.14. "You" (or "Your")

means an individual or a legal entity exercising rights under this License. For legal entities, "You" includes any entity that controls, is controlled by, or is under common control with You. For

purposes of this definition, "control" means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

## 2. License Grants and Conditions

-----

### 2.1. Grants

Each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:

- (a) under intellectual property rights (other than patent or trademark) Licensable by such Contributor to use, reproduce, make available, modify, display, perform, distribute, and otherwise exploit its Contributions, either on an unmodified basis, with Modifications, or as part of a Larger Work; and
- (b) under Patent Claims of such Contributor to make, use, sell, offer for sale, have made, import, and otherwise transfer either its Contributions or its Contributor Version.

### 2.2. Effective Date

The licenses granted in Section 2.1 with respect to any Contribution become effective for each Contribution on the date the Contributor first distributes such Contribution.

### 2.3. Limitations on Grant Scope

The licenses granted in this Section 2 are the only rights granted under this License. No additional rights or licenses will be implied from the distribution or licensing of Covered Software under this License. Notwithstanding Section 2.1(b) above, no patent license is granted by a Contributor:

- (a) for any code that a Contributor has removed from Covered Software; or
- (b) for infringements caused by: (i) Your and any other third party's modifications of Covered Software, or (ii) the combination of its Contributions with other software (except as part of its Contributor Version); or
- (c) under Patent Claims infringed by Covered Software in the absence of its Contributions.

This License does not grant any rights in the trademarks, service marks, or logos of any Contributor (except as may be necessary to comply with the notice requirements in Section 3.4).

#### 2.4. Subsequent Licenses

No Contributor makes additional grants as a result of Your choice to distribute the Covered Software under a subsequent version of this License (see Section 10.2) or under the terms of a Secondary License (if permitted under the terms of Section 3.3).

#### 2.5. Representation

Each Contributor represents that the Contributor believes its Contributions are its original creation(s) or it has sufficient rights to grant the rights to its Contributions conveyed by this License.

#### 2.6. Fair Use

This License is not intended to limit any rights You have under applicable copyright doctrines of fair use, fair dealing, or other equivalents.

#### 2.7. Conditions

Sections 3.1, 3.2, 3.3, and 3.4 are conditions of the licenses granted in Section 2.1.

### 3. Responsibilities

-----

#### 3.1. Distribution of Source Form

All distribution of Covered Software in Source Code Form, including any Modifications that You create or to which You contribute, must be under the terms of this License. You must inform recipients that the Source Code Form of the Covered Software is governed by the terms of this License, and how they can obtain a copy of this License. You may not attempt to alter or restrict the recipients' rights in the Source Code Form.

#### 3.2. Distribution of Executable Form

If You distribute Covered Software in Executable Form then:

- (a) such Covered Software must also be made available in Source Code Form, as described in Section 3.1, and You must inform recipients of

the Executable Form how they can obtain a copy of such Source Code Form by reasonable means in a timely manner, at a charge no more than the cost of distribution to the recipient; and

(b) You may distribute such Executable Form under the terms of this License, or sublicense it under different terms, provided that the license for the Executable Form does not attempt to limit or alter the recipients' rights in the Source Code Form under this License.

### 3.3. Distribution of a Larger Work

You may create and distribute a Larger Work under terms of Your choice, provided that You also comply with the requirements of this License for the Covered Software. If the Larger Work is a combination of Covered Software with a work governed by one or more Secondary Licenses, and the Covered Software is not Incompatible With Secondary Licenses, this License permits You to additionally distribute such Covered Software under the terms of such Secondary License(s), so that the recipient of the Larger Work may, at their option, further distribute the Covered Software under the terms of either this License or such Secondary License(s).

### 3.4. Notices

You may not remove or alter the substance of any license notices (including copyright notices, patent notices, disclaimers of warranty, or limitations of liability) contained within the Source Code Form of the Covered Software, except that You may alter any license notices to the extent required to remedy known factual inaccuracies.

### 3.5. Application of Additional Terms

You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Software. However, You may do so only on Your own behalf, and not on behalf of any Contributor. You must make it absolutely clear that any such warranty, support, indemnity, or liability obligation is offered by You alone, and You hereby agree to indemnify every Contributor for any liability incurred by such Contributor as a result of warranty, support, indemnity or liability terms You offer. You may include additional disclaimers of warranty and limitations of liability specific to any jurisdiction.

## 4. Inability to Comply Due to Statute or Regulation

-----

If it is impossible for You to comply with any of the terms of this License with respect to some or all of the Covered Software due to

statute, judicial order, or regulation then You must: (a) comply with the terms of this License to the maximum extent possible; and (b) describe the limitations and the code they affect. Such description must be placed in a text file included with all distributions of the Covered Software under this License. Except to the extent prohibited by statute or regulation, such description must be sufficiently detailed for a recipient of ordinary skill to be able to understand it.

## 5. Termination

-----

5.1. The rights granted under this License will terminate automatically if You fail to comply with any of its terms. However, if You become compliant, then the rights granted under this License from a particular Contributor are reinstated (a) provisionally, unless and until such Contributor explicitly and finally terminates Your grants, and (b) on an ongoing basis, if such Contributor fails to notify You of the non-compliance by some reasonable means prior to 60 days after You have come back into compliance. Moreover, Your grants from a particular Contributor are reinstated on an ongoing basis if such Contributor notifies You of the non-compliance by some reasonable means, this is the first time You have received notice of non-compliance with this License from such Contributor, and You become compliant prior to 30 days after Your receipt of the notice.

5.2. If You initiate litigation against any entity by asserting a patent infringement claim (excluding declaratory judgment actions, counter-claims, and cross-claims) alleging that a Contributor Version directly or indirectly infringes any patent, then the rights granted to You by any and all Contributors for the Covered Software under Section 2.1 of this License shall terminate.

5.3. In the event of termination under Sections 5.1 or 5.2 above, all end user license agreements (excluding distributors and resellers) which have been validly granted by You or Your distributors under this License prior to termination shall survive termination.

\*\*\*\*\*

```
*
*
* 6. Disclaimer of Warranty
* -----
*
* Covered Software is provided under this License on an "as is"
* basis, without warranty of any kind, either expressed, implied, or
* statutory, including, without limitation, warranties that the
* Covered Software is free of defects, merchantable, fit for a
* particular purpose or non-infringing. The entire risk as to the
* quality and performance of the Covered Software is with You.
```

\* Should any Covered Software prove defective in any respect, You \*  
\* (not any Contributor) assume the cost of any necessary servicing, \*  
\* repair, or correction. This disclaimer of warranty constitutes an \*  
\* essential part of this License. No use of any Covered Software is \*  
\* authorized under this License except under this disclaimer. \*

\*  
\*\*\*\*\*

\*\*\*\*\*

\* 7. Limitation of Liability \*

\* ----- \*

\* Under no circumstances and under no legal theory, whether tort \*  
\* (including negligence), contract, or otherwise, shall any \*  
\* Contributor, or anyone who distributes Covered Software as \*  
\* permitted above, be liable to You for any direct, indirect, \*  
\* special, incidental, or consequential damages of any character \*  
\* including, without limitation, damages for lost profits, loss of \*  
\* goodwill, work stoppage, computer failure or malfunction, or any \*  
\* and all other commercial damages or losses, even if such party \*  
\* shall have been informed of the possibility of such damages. This \*  
\* limitation of liability shall not apply to liability for death or \*  
\* personal injury resulting from such party's negligence to the \*  
\* extent applicable law prohibits such limitation. Some \*  
\* jurisdictions do not allow the exclusion or limitation of \*  
\* incidental or consequential damages, so this exclusion and \*  
\* limitation may not apply to You. \*

\*  
\*\*\*\*\*

8. Litigation

-----

Any litigation relating to this License may be brought only in the courts of a jurisdiction where the defendant maintains its principal place of business and such litigation shall be governed by laws of that jurisdiction, without reference to its conflict-of-law provisions. Nothing in this Section shall prevent a party's ability to bring cross-claims or counter-claims.

9. Miscellaneous

-----

This License represents the complete agreement concerning the subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable. Any law or regulation which provides

that the language of a contract shall be construed against the drafter shall not be used to construe this License against a Contributor.

## 10. Versions of the License

-----

### 10.1. New Versions

Mozilla Foundation is the license steward. Except as provided in Section 10.3, no one other than the license steward has the right to modify or publish new versions of this License. Each version will be given a distinguishing version number.

### 10.2. Effect of New Versions

You may distribute the Covered Software under the terms of the version of the License under which You originally received the Covered Software, or under the terms of any subsequent version published by the license steward.

### 10.3. Modified Versions

If you create software not governed by this License, and you want to create a new license for such software, you may create and use a modified version of this License if you rename the license and remove any references to the name of the license steward (except to note that such modified license differs from this License).

### 10.4. Distributing Source Code Form that is Incompatible With Secondary Licenses

If You choose to distribute Source Code Form that is Incompatible With Secondary Licenses under the terms of this version of the License, the notice described in Exhibit B of this License must be attached.

#### Exhibit A - Source Code Form License Notice

-----

This Source Code Form is subject to the terms of the Mozilla Public License, v. 2.0. If a copy of the MPL was not distributed with this file, You can obtain one at <http://mozilla.org/MPL/2.0/>.

If it is not possible or desirable to put the notice in a particular file, then You may include the notice in a location (such as a LICENSE file in a relevant directory) where a recipient would be likely to look for such a notice.

You may add additional accurate notices of copyright ownership.

Exhibit B - "Incompatible With Secondary Licenses" Notice

-----

This Source Code Form is "Incompatible With Secondary Licenses", as defined by the Mozilla Public License, v. 2.0. "Olson Database", available for download from <ftp://elsie.nci.nih.gov/pub/>

These comments were included in each file.

# This file is in the public domain, so clarified as of  
# 2009-05-17 by Arthur David Olson.

# This data is by no means authoritative; if you think you know better,  
# go ahead and edit the file (and please send any changes to  
# tz@elsie.nci.nih.gov for general use in the future).

Dojo is available under \*either\* the terms of the modified BSD license \*or\* the Academic Free License version 2.1. As a recipient of Dojo, you may choose which license to receive this code under (except as noted in per-module LICENSE files). Some modules may not be the copyright of the Dojo Foundation. These modules contain explicit declarations of copyright in both the LICENSE files in the directories in which they reside and in the code itself. No external contributions are allowed under licenses which are fundamentally incompatible with the AFL or BSD licenses that Dojo is distributed under.

The text of the AFL and BSD licenses is reproduced below.

-----

The "New" BSD License:

\*\*\*\*\*

Copyright (c) 2005-2014, The Dojo Foundation  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of the Dojo Foundation nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED



WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

-----  
The Academic Free License, v. 2.1:

\*\*\*\*\*

This Academic Free License (the "License") applies to any original work of authorship (the "Original Work") whose owner (the "Licensor") has placed the following notice immediately following the copyright notice for the Original Work:

Licensed under the Academic Free License version 2.1

1) Grant of Copyright License. Licensor hereby grants You a world-wide, royalty-free, non-exclusive, perpetual, sublicenseable license to do the following:

a) to reproduce the Original Work in copies;

b) to prepare derivative works ("Derivative Works") based upon the Original Work;

c) to distribute copies of the Original Work and Derivative Works to the public;

d) to perform the Original Work publicly; and

e) to display the Original Work publicly.

2) Grant of Patent License. Licensor hereby grants You a world-wide, royalty-free, non-exclusive, perpetual, sublicenseable license, under patent claims owned or controlled by the Licensor that are embodied in the Original Work as furnished by the Licensor, to make, use, sell and offer for sale the Original Work and Derivative Works.

3) Grant of Source Code License. The term "Source Code" means the preferred form of the Original Work for making modifications to it and all available documentation describing how to modify the Original Work. Licensor hereby agrees to provide a machine-readable copy of the Source Code of the Original Work along with each copy of the Original Work that Licensor distributes.

Licensor reserves the right to satisfy this obligation by placing a

machine-readable copy of the Source Code in an information repository reasonably calculated to permit inexpensive and convenient access by You for as long as Licensor continues to distribute the Original Work, and by publishing the address of that information repository in a notice immediately following the copyright notice that applies to the Original Work.

4) Exclusions From License Grant. Neither the names of Licensor, nor the names of any contributors to the Original Work, nor any of their trademarks or service marks, may be used to endorse or promote products derived from this Original Work without express prior written permission of the Licensor. Nothing in this License shall be deemed to grant any rights to trademarks, copyrights, patents, trade secrets or any other intellectual property of Licensor except as expressly stated herein. No patent license is granted to make, use, sell or offer to sell embodiments of any patent claims other than the licensed claims defined in Section 2. No right is granted to the trademarks of Licensor even if such marks are included in the Original Work. Nothing in this License shall be interpreted to prohibit Licensor from licensing under different terms from this License any Original Work that Licensor otherwise would have a right to license.

5) This section intentionally omitted.

6) Attribution Rights. You must retain, in the Source Code of any Derivative Works that You create, all copyright, patent or trademark notices from the Source Code of the Original Work, as well as any notices of licensing and any descriptive text identified therein as an "Attribution Notice." You must cause the Source Code for any Derivative Works that You create to carry a prominent Attribution Notice reasonably calculated to inform recipients that You have modified the Original Work.

7) Warranty of Provenance and Disclaimer of Warranty. Licensor warrants that the copyright in and to the Original Work and the patent rights granted herein by Licensor are owned by the Licensor or are sublicensed to You under the terms of this License with the permission of the contributor(s) of those copyrights and patent rights. Except as expressly stated in the immediately preceding sentence, the Original Work is provided under this License on an "AS IS" BASIS and WITHOUT WARRANTY, either express or implied, including, without limitation, the warranties of NON-INFRINGEMENT, MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY OF THE ORIGINAL WORK IS WITH YOU. This DISCLAIMER OF WARRANTY constitutes an essential part of this License. No license to Original Work is granted hereunder except under this disclaimer.

8) Limitation of Liability. Under no circumstances and under no legal theory, whether in tort (including negligence), contract, or otherwise, shall the Licensor be liable to any person for any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or the use of the Original Work including, without limitation, damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all

other commercial damages or losses. This limitation of liability shall not apply to liability for death or personal injury resulting from Licensor's negligence to the extent applicable law prohibits such limitation. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so this exclusion and limitation may not apply to You.

9) Acceptance and Termination. If You distribute copies of the Original Work or a Derivative Work, You must make a reasonable effort under the circumstances to obtain the express assent of recipients to the terms of this License. Nothing else but this License (or another written agreement between Licensor and You) grants You permission to create Derivative Works based upon the Original Work or to exercise any of the rights granted in Section 1 herein, and any attempt to do so except under the terms of this License (or another written agreement between Licensor and You) is expressly prohibited by U.S. copyright law, the equivalent laws of other countries, and by international treaty. Therefore, by exercising any of the rights granted to You in Section 1 herein, You indicate Your acceptance of this License and all of its terms and conditions.

10) Termination for Patent Action. This License shall terminate automatically and You may no longer exercise any of the rights granted to You by this License as of the date You commence an action, including a cross-claim or counterclaim, against Licensor or any licensee alleging that the Original Work infringes a patent. This termination provision shall not apply for an action alleging patent infringement by combinations of the Original Work with other software or hardware.

11) Jurisdiction, Venue and Governing Law. Any action or suit relating to this License may be brought only in the courts of a jurisdiction wherein the Licensor resides or in which Licensor conducts its primary business, and under the laws of that jurisdiction excluding its conflict-of-law provisions. The application of the United Nations Convention on Contracts for the International Sale of Goods is expressly excluded. Any use of the Original Work outside the scope of this License or after its termination shall be subject to the requirements and penalties of the U.S. Copyright Act, 17 U.S.C. 101 et seq., the equivalent laws of other countries, and international treaty. This section shall survive the termination of this License.

12) Attorneys Fees. In any action to enforce the terms of this License or seeking damages relating thereto, the prevailing party shall be entitled to recover its costs and expenses, including, without limitation, reasonable attorneys' fees and costs incurred in connection with such action, including any appeal of such action. This section shall survive the termination of this License.

13) Miscellaneous. This License represents the complete agreement concerning the subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable.

14) Definition of "You" in This License. "You" throughout this License, whether in upper or lower case, means an individual or a legal entity exercising rights under, and complying with all of the terms of, this License. For legal entities, "You" includes any entity that controls, is controlled by, or is under common control with you. For purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

15) Right to Use. You may use the Original Work in all ways not otherwise restricted or conditioned by this License or by law, and Licensor promises not to interfere with or be responsible for such uses by You.

This license is Copyright (C) 2003-2004 Lawrence E. Rosen. All rights reserved. Permission is hereby granted to copy and distribute this license without modification. This license may not be modified without the express written permission of its copyright owner.

License Disclaimer:

All contents of this directory are Copyright (c) the Dojo Foundation, with the following exceptions:

-----

dojo.css:

\* parts Copyright (c) 2007, Yahoo! Inc. All rights reserved.  
Distributed under the terms of the BSD License

The Program includes all or portions of the following software which was obtained under the terms and conditions of the BSD License.

<http://developer.yahoo.com/yui/license.html>

Copyright (c) 2007, Yahoo! Inc.  
All rights reserved.

Redistribution and use of this software in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Yahoo! Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission of Yahoo! Inc.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY

EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

UNICODE, INC. LICENSE AGREEMENT - DATA FILES AND SOFTWARE

Unicode Data Files include all data files under the directories <http://www.unicode.org/Public/>, <http://www.unicode.org/reports/>, and <http://www.unicode.org/cldr/data/>. Unicode Data Files do not include PDF online code charts under the directory <http://www.unicode.org/Public/>. Software includes any source code published in the Unicode Standard or under the directories <http://www.unicode.org/Public/>, <http://www.unicode.org/reports/>, and <http://www.unicode.org/cldr/data/>.

NOTICE TO USER: Carefully read the following legal agreement. BY DOWNLOADING, INSTALLING, COPYING OR OTHERWISE USING UNICODE INC.'S DATA FILES ("DATA FILES"), AND/OR SOFTWARE ("SOFTWARE"), YOU UNEQUIVOCALLY ACCEPT, AND AGREE TO BE BOUND BY, ALL OF THE TERMS AND CONDITIONS OF THIS AGREEMENT. IF YOU DO NOT AGREE, DO NOT DOWNLOAD, INSTALL, COPY, DISTRIBUTE OR USE THE DATA FILES OR SOFTWARE.

#### COPYRIGHT AND PERMISSION NOTICE

Copyright 1991-2014 Unicode, Inc. All rights reserved. Distributed under the Terms of Use in <http://www.unicode.org/copyright.html>.

Permission is hereby granted, free of charge, to any person obtaining a copy of the Unicode data files and any associated documentation (the "Data Files") or Unicode software and any associated documentation (the "Software") to deal in the Data Files or Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, and/or sell copies of the Data Files or Software, and to permit persons to whom the Data Files or Software are furnished to do so, provided that (a) the above copyright notice(s) and this permission notice appear with all copies of the Data Files or Software, (b) both the above copyright notice(s) and this permission notice appear in associated documentation, and (c) there is clear notice in each modified Data File or in the Software as well as in the documentation associated with the Data File(s) or Software that the data or software has been modified.

THE DATA FILES AND SOFTWARE ARE PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF THIRD PARTY RIGHTS. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR HOLDERS INCLUDED IN THIS NOTICE BE LIABLE FOR ANY CLAIM, OR ANY SPECIAL INDIRECT OR CONSEQUENTIAL DAMAGES, OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THE DATA FILES OR SOFTWARE.

Except as contained in this notice, the name of a copyright holder shall not be used in advertising or otherwise to promote the sale, use or other dealings in these Data Files or Software without prior written authorization of the copyright holder.

/\*

Copyright (c) 2004-2014, The Dojo Foundation All Rights Reserved.  
Available via Academic Free License >= 2.1 OR the modified BSD license.  
see: <http://dojotoolkit.org/license> for details

\*/

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation

source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable

(except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and



may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify,

defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

Copyright (c) 2009-2010 Alexis Sellier

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object

form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a

file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

## 1.141 libtasn 4.13-3.el8

### 1.141.1 Available under license :

@c The GNU Free Documentation License.

@center Version 1.3, 3 November 2008

@c This file is intended to be included within another document,

@c hence no sectioning command or @node.

@display

Copyright @copyright{ } 2000, 2001, 2002, 2007, 2008 Free Software Foundation, Inc.

@uref{<http://fsf.org/>}

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

@end display

@enumerate 0

@item

PREAMBLE

The purpose of this License is to make a manual, textbook, or other functional and useful document @dfn{free} in the sense of freedom: to assure everyone the effective freedom to copy and redistribute it, with or without modifying it, either commercially or noncommercially. Secondly, this License preserves for the author and publisher a way to get credit for their work, while not being considered responsible for modifications made by others.

This License is a kind of ``copyleft'', which means that derivative works of the document must themselves be free in the same sense. It complements the GNU General Public License, which is a copyleft license designed for free software.

We have designed this License in order to use it for manuals for free software, because free software needs free documentation: a free program should come with manuals providing the same freedoms that the software does. But this License is not limited to software manuals; it can be used for any textual work, regardless of subject matter or whether it is published as a printed book. We recommend this License principally for works whose purpose is instruction or reference.

@item

## APPLICABILITY AND DEFINITIONS

This License applies to any manual or other work, in any medium, that contains a notice placed by the copyright holder saying it can be distributed under the terms of this License. Such a notice grants a world-wide, royalty-free license, unlimited in duration, to use that work under the conditions stated herein. The ``Document'', below, refers to any such manual or work. Any member of the public is a licensee, and is addressed as ``you''. You accept the license if you copy, modify or distribute the work in a way requiring permission under copyright law.

A ``Modified Version'' of the Document means any work containing the Document or a portion of it, either copied verbatim, or with modifications and/or translated into another language.

A ``Secondary Section'' is a named appendix or a front-matter section of the Document that deals exclusively with the relationship of the publishers or authors of the Document to the Document's overall subject (or to related matters) and contains nothing that could fall directly within that overall subject. (Thus, if the Document is in part a textbook of mathematics, a Secondary Section may not explain any mathematics.) The relationship could be a matter of historical connection with the subject or with related matters, or of legal, commercial, philosophical, ethical or political position regarding them.

The ``Invariant Sections'' are certain Secondary Sections whose titles are designated, as being those of Invariant Sections, in the notice that says that the Document is released under this License. If a section does not fit the above definition of Secondary then it is not allowed to be designated as Invariant. The Document may contain zero Invariant Sections. If the Document does not identify any Invariant Sections then there are none.

The ``Cover Texts" are certain short passages of text that are listed, as Front-Cover Texts or Back-Cover Texts, in the notice that says that the Document is released under this License. A Front-Cover Text may be at most 5 words, and a Back-Cover Text may be at most 25 words.

A ``Transparent" copy of the Document means a machine-readable copy, represented in a format whose specification is available to the general public, that is suitable for revising the document straightforwardly with generic text editors or (for images composed of pixels) generic paint programs or (for drawings) some widely available drawing editor, and that is suitable for input to text formatters or for automatic translation to a variety of formats suitable for input to text formatters. A copy made in an otherwise Transparent file format whose markup, or absence of markup, has been arranged to thwart or discourage subsequent modification by readers is not Transparent. An image format is not Transparent if used for any substantial amount of text. A copy that is not ``Transparent" is called ``Opaque".

Examples of suitable formats for Transparent copies include plain ASCII without markup, Texinfo input format, `La@TeX{ }` input format, SGML or XML using a publicly available DTD, and standard-conforming simple HTML, PostScript or PDF designed for human modification. Examples of transparent image formats include PNG, XCF and JPG@. Opaque formats include proprietary formats that can be read and edited only by proprietary word processors, SGML or XML for which the DTD and/or processing tools are not generally available, and the machine-generated HTML, PostScript or PDF produced by some word processors for output purposes only.

The ``Title Page" means, for a printed book, the title page itself, plus such following pages as are needed to hold, legibly, the material this License requires to appear in the title page. For works in formats which do not have any title page as such, ``Title Page" means the text near the most prominent appearance of the work's title, preceding the beginning of the body of the text.

The ``publisher" means any person or entity that distributes copies of the Document to the public.

A section ``Entitled XYZ" means a named subunit of the Document whose title either is precisely XYZ or contains XYZ in parentheses following text that translates XYZ in another language. (Here XYZ stands for a specific section name mentioned below, such as ``Acknowledgements", ``Dedications", ``Endorsements", or ``History".) To ``Preserve the Title" of such a section when you modify the Document means that it remains a



section ``Entitled XYZ" according to this definition.

The Document may include Warranty Disclaimers next to the notice which states that this License applies to the Document. These Warranty Disclaimers are considered to be included by reference in this License, but only as regards disclaiming warranties: any other implication that these Warranty Disclaimers may have is void and has no effect on the meaning of this License.

@item

#### VERBATIM COPYING

You may copy and distribute the Document in any medium, either commercially or noncommercially, provided that this License, the copyright notices, and the license notice saying this License applies to the Document are reproduced in all copies, and that you add no other conditions whatsoever to those of this License. You may not use technical measures to obstruct or control the reading or further copying of the copies you make or distribute. However, you may accept compensation in exchange for copies. If you distribute a large enough number of copies you must also follow the conditions in section 3.

You may also lend copies, under the same conditions stated above, and you may publicly display copies.

@item

#### COPYING IN QUANTITY

If you publish printed copies (or copies in media that commonly have printed covers) of the Document, numbering more than 100, and the Document's license notice requires Cover Texts, you must enclose the copies in covers that carry, clearly and legibly, all these Cover Texts: Front-Cover Texts on the front cover, and Back-Cover Texts on the back cover. Both covers must also clearly and legibly identify you as the publisher of these copies. The front cover must present the full title with all words of the title equally prominent and visible. You may add other material on the covers in addition. Copying with changes limited to the covers, as long as they preserve the title of the Document and satisfy these conditions, can be treated as verbatim copying in other respects.

If the required texts for either cover are too voluminous to fit legibly, you should put the first ones listed (as many as fit reasonably) on the actual cover, and continue the rest onto adjacent pages.

If you publish or distribute Opaque copies of the Document numbering more than 100, you must either include a machine-readable Transparent

copy along with each Opaque copy, or state in or with each Opaque copy a computer-network location from which the general network-using public has access to download using public-standard network protocols a complete Transparent copy of the Document, free of added material. If you use the latter option, you must take reasonably prudent steps, when you begin distribution of Opaque copies in quantity, to ensure that this Transparent copy will remain thus accessible at the stated location until at least one year after the last time you distribute an Opaque copy (directly or through your agents or retailers) of that edition to the public.

It is requested, but not required, that you contact the authors of the Document well before redistributing any large number of copies, to give them a chance to provide you with an updated version of the Document.

@item

## MODIFICATIONS

You may copy and distribute a Modified Version of the Document under the conditions of sections 2 and 3 above, provided that you release the Modified Version under precisely this License, with the Modified Version filling the role of the Document, thus licensing distribution and modification of the Modified Version to whoever possesses a copy of it. In addition, you must do these things in the Modified Version:

@enumerate A

@item

Use in the Title Page (and on the covers, if any) a title distinct from that of the Document, and from those of previous versions (which should, if there were any, be listed in the History section of the Document). You may use the same title as a previous version if the original publisher of that version gives permission.

@item

List on the Title Page, as authors, one or more persons or entities responsible for authorship of the modifications in the Modified Version, together with at least five of the principal authors of the Document (all of its principal authors, if it has fewer than five), unless they release you from this requirement.

@item

State on the Title page the name of the publisher of the Modified Version, as the publisher.

@item

Preserve all the copyright notices of the Document.

@item

Add an appropriate copyright notice for your modifications adjacent to the other copyright notices.

@item

Include, immediately after the copyright notices, a license notice giving the public permission to use the Modified Version under the terms of this License, in the form shown in the Addendum below.

@item

Preserve in that license notice the full lists of Invariant Sections and required Cover Texts given in the Document's license notice.

@item

Include an unaltered copy of this License.

@item

Preserve the section Entitled ``History'', Preserve its Title, and add to it an item stating at least the title, year, new authors, and publisher of the Modified Version as given on the Title Page. If there is no section Entitled ``History'' in the Document, create one stating the title, year, authors, and publisher of the Document as given on its Title Page, then add an item describing the Modified Version as stated in the previous sentence.

@item

Preserve the network location, if any, given in the Document for public access to a Transparent copy of the Document, and likewise the network locations given in the Document for previous versions it was based on. These may be placed in the ``History'' section. You may omit a network location for a work that was published at least four years before the Document itself, or if the original publisher of the version it refers to gives permission.

@item

For any section Entitled ``Acknowledgements'' or ``Dedications'', Preserve the Title of the section, and preserve in the section all the substance and tone of each of the contributor acknowledgements and/or dedications given therein.

@item

Preserve all the Invariant Sections of the Document, unaltered in their text and in their titles. Section numbers or the equivalent are not considered part of the section titles.

@item

Delete any section Entitled ``Endorsements''. Such a section may not be included in the Modified Version.

@item

Do not retitle any existing section to be Entitled ``Endorsements" or to conflict in title with any Invariant Section.

@item

Preserve any Warranty Disclaimers.

@end enumerate

If the Modified Version includes new front-matter sections or appendices that qualify as Secondary Sections and contain no material copied from the Document, you may at your option designate some or all of these sections as invariant. To do this, add their titles to the list of Invariant Sections in the Modified Version's license notice. These titles must be distinct from any other section titles.

You may add a section Entitled ``Endorsements", provided it contains nothing but endorsements of your Modified Version by various parties---for example, statements of peer review or that the text has been approved by an organization as the authoritative definition of a standard.

You may add a passage of up to five words as a Front-Cover Text, and a passage of up to 25 words as a Back-Cover Text, to the end of the list of Cover Texts in the Modified Version. Only one passage of Front-Cover Text and one of Back-Cover Text may be added by (or through arrangements made by) any one entity. If the Document already includes a cover text for the same cover, previously added by you or by arrangement made by the same entity you are acting on behalf of, you may not add another; but you may replace the old one, on explicit permission from the previous publisher that added the old one.

The author(s) and publisher(s) of the Document do not by this License give permission to use their names for publicity for or to assert or imply endorsement of any Modified Version.

@item

## COMBINING DOCUMENTS

You may combine the Document with other documents released under this License, under the terms defined in section 4 above for modified versions, provided that you include in the combination all of the Invariant Sections of all of the original documents, unmodified, and list them all as Invariant Sections of your combined work in its license notice, and that you preserve all their Warranty Disclaimers.

The combined work need only contain one copy of this License, and multiple identical Invariant Sections may be replaced with a single copy. If there are multiple Invariant Sections with the same name but

different contents, make the title of each such section unique by adding at the end of it, in parentheses, the name of the original author or publisher of that section if known, or else a unique number. Make the same adjustment to the section titles in the list of Invariant Sections in the license notice of the combined work.

In the combination, you must combine any sections Entitled ``History" in the various original documents, forming one section Entitled ``History"; likewise combine any sections Entitled ``Acknowledgements", and any sections Entitled ``Dedications". You must delete all sections Entitled ``Endorsements."

@item

## COLLECTIONS OF DOCUMENTS

You may make a collection consisting of the Document and other documents released under this License, and replace the individual copies of this License in the various documents with a single copy that is included in the collection, provided that you follow the rules of this License for verbatim copying of each of the documents in all other respects.

You may extract a single document from such a collection, and distribute it individually under this License, provided you insert a copy of this License into the extracted document, and follow this License in all other respects regarding verbatim copying of that document.

@item

## AGGREGATION WITH INDEPENDENT WORKS

A compilation of the Document or its derivatives with other separate and independent documents or works, in or on a volume of a storage or distribution medium, is called an ``aggregate" if the copyright resulting from the compilation is not used to limit the legal rights of the compilation's users beyond what the individual works permit. When the Document is included in an aggregate, this License does not apply to the other works in the aggregate which are not themselves derivative works of the Document.

If the Cover Text requirement of section 3 is applicable to these copies of the Document, then if the Document is less than one half of the entire aggregate, the Document's Cover Texts may be placed on covers that bracket the Document within the aggregate, or the electronic equivalent of covers if the Document is in electronic form. Otherwise they must appear on printed covers that bracket the whole aggregate.

@item

## TRANSLATION

Translation is considered a kind of modification, so you may distribute translations of the Document under the terms of section 4. Replacing Invariant Sections with translations requires special permission from their copyright holders, but you may include translations of some or all Invariant Sections in addition to the original versions of these Invariant Sections. You may include a translation of this License, and all the license notices in the Document, and any Warranty Disclaimers, provided that you also include the original English version of this License and the original versions of those notices and disclaimers. In case of a disagreement between the translation and the original version of this License or a notice or disclaimer, the original version will prevail.

If a section in the Document is Entitled ``Acknowledgements'', ``Dedications'', or ``History'', the requirement (section 4) to Preserve its Title (section 1) will typically require changing the actual title.

@item

## TERMINATION

You may not copy, modify, sublicense, or distribute the Document except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, or distribute it is void, and will automatically terminate your rights under this License.

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, receipt of a copy of some or all of the same material does not give you any rights to use it.

@item

## FUTURE REVISIONS OF THIS LICENSE

The Free Software Foundation may publish new, revised versions of the GNU Free Documentation License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns. See [@uref{http://www.gnu.org/copyleft/}](http://www.gnu.org/copyleft/).

Each version of the License is given a distinguishing version number. If the Document specifies that a particular numbered version of this License "or any later version" applies to it, you have the option of following the terms and conditions either of that specified version or of any later version that has been published (not as a draft) by the Free Software Foundation. If the Document does not specify a version number of this License, you may choose any version ever published (not as a draft) by the Free Software Foundation. If the Document specifies that a proxy can decide which future versions of this License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Document.

@item

### RELICENSING

"Massive Multiauthor Collaboration Site" (or "MMC Site") means any World Wide Web server that publishes copyrightable works and also provides prominent facilities for anybody to edit those works. A public wiki that anybody can edit is an example of such a server. A "Massive Multiauthor Collaboration" (or "MMC") contained in the site means any set of copyrightable works thus published on the MMC site.

"CC-BY-SA" means the Creative Commons Attribution-Share Alike 3.0 license published by Creative Commons Corporation, a not-for-profit corporation with a principal place of business in San Francisco, California, as well as future copyleft versions of that license published by that same organization.

"Incorporate" means to publish or republish a Document, in whole or in part, as part of another Document.

An MMC is "eligible for relicensing" if it is licensed under this License, and if all works that were first published under this License somewhere other than this MMC, and subsequently incorporated in whole or in part into the MMC, (1) had no cover texts or invariant sections, and (2) were thus incorporated prior to November 1, 2008.

The operator of an MMC Site may republish an MMC contained in the site

under CC-BY-SA on the same site at any time before August 1, 2009, provided the MMC is eligible for relicensing.

@end enumerate

@page

@heading ADDENDUM: How to use this License for your documents

To use this License in a document you have written, include a copy of the License in the document and put the following copyright and license notices just after the title page:

@smallexample

@group

Copyright (C) @var{year} @var{your name}.

Permission is granted to copy, distribute and/or modify this document under the terms of the GNU Free Documentation License, Version 1.3 or any later version published by the Free Software Foundation; with no Invariant Sections, no Front-Cover Texts, and no Back-Cover Texts. A copy of the license is included in the section entitled ``GNU Free Documentation License".

@end group

@end smallexample

If you have Invariant Sections, Front-Cover Texts and Back-Cover Texts, replace the ``with@dots{ }Texts."@: line with this:

@smallexample

@group

with the Invariant Sections being @var{list their titles}, with the Front-Cover Texts being @var{list}, and with the Back-Cover Texts being @var{list}.

@end group

@end smallexample

If you have Invariant Sections without Cover Texts, or some other combination of the three, merge those two alternatives to suit the situation.

If your document contains nontrivial examples of program code, we recommend releasing these examples in parallel under your choice of free software license, such as the GNU General Public License, to permit their use in free software.

@c Local Variables:

@c ispell-local-pdict: "ispell-dict"

@c End:



## GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts  
as the successor of the GNU Library Public License, version 2, hence  
the version number 2.1.]

### Preamble

The licenses for most software are designed to take away your  
freedom to share and change it. By contrast, the GNU General Public  
Licenses are intended to guarantee your freedom to share and change  
free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some  
specially designated software packages--typically libraries--of the  
Free Software Foundation and other authors who decide to use it. You  
can use it too, but we suggest you first think carefully about whether  
this license or the ordinary General Public License is the better  
strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use,  
not price. Our General Public Licenses are designed to make sure that  
you have the freedom to distribute copies of free software (and charge  
for this service if you wish); that you receive source code or can get  
it if you want it; that you can change the software and use pieces of  
it in new free programs; and that you are informed that you can do  
these things.

To protect your rights, we need to make restrictions that forbid  
distributors to deny you these rights or to ask you to surrender these  
rights. These restrictions translate to certain responsibilities for  
you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis  
or for a fee, you must give the recipients all the rights that we gave  
you. You must make sure that they, too, receive or can get the source  
code. If you link other code with the library, you must provide  
complete object files to the recipients, so that they can relink them  
with the library after making changes to the library and recompiling  
it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the

library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

## GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from

such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in

themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the

Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under

Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on

the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
- b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to



refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing

and reuse of software generally.

## NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful,  
but WITHOUT ANY WARRANTY; without even the implied warranty of  
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU  
Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public  
License along with this library; if not, write to the Free Software  
Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your  
school, if any, to sign a "copyright disclaimer" for the library, if  
necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the  
library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!

GNU GENERAL PUBLIC LICENSE  
Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

#### Preamble

The GNU General Public License is a free, copyleft license for  
software and other kinds of works.

The licenses for most software and other practical works are designed  
to take away your freedom to share and change the works. By contrast,  
the GNU General Public License is intended to guarantee your freedom to  
share and change all versions of a program--to make sure it remains free  
software for all its users. We, the Free Software Foundation, use the  
GNU General Public License for most of our software; it applies also to  
any other work released this way by its authors. You can apply it to  
your programs, too.

When we speak of free software, we are referring to freedom, not  
price. Our General Public Licenses are designed to make sure that you  
have the freedom to distribute copies of free software (and charge for  
them if you wish), that you receive source code or can get it if you  
want it, that you can change the software or use pieces of it in new

free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

## TERMS AND CONDITIONS

### 0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

#### 1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

## 2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works

for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

### 3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

### 4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

### 5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

a) The work must carry prominent notices stating that you modified it, and giving a relevant date.

b) The work must carry prominent notices stating that it is released under this License and any conditions added under section

7. This requirement modifies the requirement in section 4 to "keep intact all notices".

c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.

d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

## 6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the



Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object

code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

## 7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of

that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

## 8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or

modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

#### 9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

#### 10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could

give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

## 11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent

license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

#### 12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

#### 13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have

permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

#### 14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

#### 15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

#### 16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING

WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### 17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

```
This program is free software: you can redistribute it and/or modify
it under the terms of the GNU General Public License as published by
the Free Software Foundation, either version 3 of the License, or
(at your option) any later version.
```

```
This program is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
GNU General Public License for more details.
```

```
You should have received a copy of the GNU General Public License
along with this program. If not, see <http://www.gnu.org/licenses/>.
```

Also add information on how to contact you by electronic and paper mail.



If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program> Copyright (C) <year> <name of author>
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <http://www.gnu.org/licenses/>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <http://www.gnu.org/philosophy/why-not-lgpl.html>.

## 1.142 jackson-datatype-jsr310 2.12.6

### 1.142.1 Available under license :

This copy of Jackson JSON processor streaming parser/generator is licensed under the Apache (Software) License, version 2.0 ("the License"). See the License for details about distribution rights, and the specific rights regarding derivate works.

You may obtain a copy of the License at:

<http://www.apache.org/licenses/LICENSE-2.0>

## 1.143 error\_prone\_annotations 2.3.4

### 1.143.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2015 The Error Prone Authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
```

\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <http://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1349040975\_1655882556.5391665/0/error-prone-annotations-2-3-4-sources-11-jar/com/google/errorprone/annotations/concurrent/LazyInit.java  
\* /opt/cola/permits/1349040975\_1655882556.5391665/0/error-prone-annotations-2-3-4-sources-11-jar/com/google/errorprone/annotations/Immutable.java  
\* /opt/cola/permits/1349040975\_1655882556.5391665/0/error-prone-annotations-2-3-4-sources-11-jar/com/google/errorprone/annotations/ForOverride.java  
\* /opt/cola/permits/1349040975\_1655882556.5391665/0/error-prone-annotations-2-3-4-sources-11-jar/com/google/errorprone/annotations/IncompatibleModifiers.java  
\* /opt/cola/permits/1349040975\_1655882556.5391665/0/error-prone-annotations-2-3-4-sources-11-jar/com/google/errorprone/annotations/CanIgnoreReturnValue.java  
\* /opt/cola/permits/1349040975\_1655882556.5391665/0/error-prone-annotations-2-3-4-sources-11-jar/com/google/errorprone/annotations/CompileTimeConstant.java  
\* /opt/cola/permits/1349040975\_1655882556.5391665/0/error-prone-annotations-2-3-4-sources-11-jar/com/google/errorprone/annotations/RequiredModifiers.java  
\* /opt/cola/permits/1349040975\_1655882556.5391665/0/error-prone-annotations-2-3-4-sources-11-jar/com/google/errorprone/annotations/Var.java  
\* /opt/cola/permits/1349040975\_1655882556.5391665/0/error-prone-annotations-2-3-4-sources-11-jar/com/google/errorprone/annotations/SuppressPackageLocation.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2017 The Error Prone Authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <http://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

- \* /opt/cola/permits/1349040975\_1655882556.5391665/0/error-prone-annotations-2-3-4-sources-11-jar/com/google/errorprone/annotations/concurrent/GuardedBy.java
- \* /opt/cola/permits/1349040975\_1655882556.5391665/0/error-prone-annotations-2-3-4-sources-11-jar/com/google/errorprone/annotations/CheckReturnValue.java
- \* /opt/cola/permits/1349040975\_1655882556.5391665/0/error-prone-annotations-2-3-4-sources-11-jar/com/google/errorprone/annotations/DoNotCall.java
- \* /opt/cola/permits/1349040975\_1655882556.5391665/0/error-prone-annotations-2-3-4-sources-11-jar/com/google/errorprone/annotations/OverridingMethodsMustInvokeSuper.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2016 The Error Prone Authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

- \* /opt/cola/permits/1349040975\_1655882556.5391665/0/error-prone-annotations-2-3-4-sources-11-jar/com/google/errorprone/annotations/RestrictedApi.java
- \* /opt/cola/permits/1349040975\_1655882556.5391665/0/error-prone-annotations-2-3-4-sources-11-jar/com/google/errorprone/annotations/MustBeClosed.java
- \* /opt/cola/permits/1349040975\_1655882556.5391665/0/error-prone-annotations-2-3-4-sources-11-jar/com/google/errorprone/annotations/CompatibleWith.java
- \* /opt/cola/permits/1349040975\_1655882556.5391665/0/error-prone-annotations-2-3-4-sources-11-jar/com/google/errorprone/annotations/DoNotMock.java
- \* /opt/cola/permits/1349040975\_1655882556.5391665/0/error-prone-annotations-2-3-4-sources-11-jar/com/google/errorprone/annotations/FormatMethod.java
- \* /opt/cola/permits/1349040975\_1655882556.5391665/0/error-prone-annotations-2-3-4-sources-11-jar/com/google/errorprone/annotations/FormatString.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2014 The Error Prone Authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

- \* You may obtain a copy of the License at
- \*
- \* <http://www.apache.org/licenses/LICENSE-2.0>
- \*
- \* Unless required by applicable law or agreed to in writing, software
- \* distributed under the License is distributed on an "AS IS" BASIS,
- \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- \* See the License for the specific language governing permissions and
- \* limitations under the License.
- \*/

Found in path(s):

- \* /opt/cola/permits/1349040975\_1655882556.5391665/0/error-prone-annotations-2-3-4-sources-11-jar/com/google/errorprone/annotations/concurrent/UnlockMethod.java
- \* /opt/cola/permits/1349040975\_1655882556.5391665/0/error-prone-annotations-2-3-4-sources-11-jar/com/google/errorprone/annotations/concurrent/LockMethod.java
- \* /opt/cola/permits/1349040975\_1655882556.5391665/0/error-prone-annotations-2-3-4-sources-11-jar/com/google/errorprone/annotations/NoAllocation.java

# 1.144 cxf-rt-frontend-simple 3.4.5

## 1.144.1 Available under license :

Apache CXF  
Copyright 2006-2021 The Apache Software Foundation

This product includes software developed at  
The Apache Software Foundation (<http://www.apache.org/>).

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition,

"control" means (i) the power, direct or indirect, to cause the

direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of

this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and

wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor

has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

## 1.145 jsr305 1.3.9

### 1.145.1 Available under license :

Apache License  
Version 2.0, January 2004  
<https://www.apache.org/licenses/>



## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner

or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. **Grant of Copyright License.** Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. **Grant of Patent License.** Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. **Redistribution.** You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and

- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions

of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
  
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

#### APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

## 1.146 python-six 1.11.0 8.el8

### 1.146.1 Available under license :

Copyright (c) 2010-2017 Benjamin Peterson

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

## 1.147 xmlschema 2.2.5

### 1.147.1 Available under license :

Apache WebServices - XmlSchema  
Copyright 2004-2020 The Apache Software Foundation

This product includes software developed at  
The Apache Software Foundation (<http://www.apache.org/>).

Portions Copyright 2006 International Business Machines Corp.

Portions Copyright (C) World Wide Web Consortium 2006, 2007 and licensed under the three-part BSD license.

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and

- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or



agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");

you may not use this file except in compliance with the License.

You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

## 1.148 argparse 0.7.0

### 1.148.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
Redistribution and use in source and binary forms, with or without
modification, are permitted under the terms of the 3-clause BSD
```

Found in path(s):

```
* /opt/cola/permits/1000038828_1646171452.21/0/argparse-0-7-0-zip/argparse-0.7.0/setup.py
* /opt/cola/permits/1000038828_1646171452.21/0/argparse-0-7-0-zip/argparse-0.7.0/argparse.py
* /opt/cola/permits/1000038828_1646171452.21/0/argparse-0-7-0-zip/argparse-0.7.0/test_argparse.py
```

No license file was found, but licenses were detected in source scan.

Metadata-Version: 1.0

Name: argparse

Version: 0.7.0

Summary: An optparse-inspired command-line parsing library

Home-page: <http://argparse.python-hosting.com/>

Author: Steven Bethard

Author-email: [steven.bethard@gmail.com](mailto:steven.bethard@gmail.com)

License: BSD

Description: Argparse takes the best of the optparse command-line parsing module and brings it new life. Argparse adds positional as well as optional arguments, the ability to create parsers for sub-commands, more informative help and usage messages, and much more. At the same time, it retains the ease and flexibility of use that made optparse so popular.

Platform: UNKNOWN

Classifier: Development Status :: 3 - Alpha

Classifier: Environment :: Console

Classifier: Intended Audience :: Developers

Classifier: License :: OSI Approved :: BSD License

Classifier: Operating System :: OS Independent

Classifier: Programming Language :: Python

Classifier: Topic :: Software Development

Found in path(s):

\* /opt/cola/permits/1000038828\_1646171452.21/0/argparse-0-7-0-zip/argparse-0.7.0/PKG-INFO

# 1.149 langpacks 1.0 12.el8

## 1.149.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that

redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A

PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

## 1.150 zstd-jni 1.5.0-4

### 1.150.1 Available under license :

BSD-2-Clause

## 1.151 activation-api 1.2.2

### 1.151.1 Available under license :

Copyright (c) 2018 Oracle and/or its affiliates. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- Neither the name of the Eclipse Foundation, Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO,

PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

# Notices for Jakarta Activation

This content is produced and maintained by Jakarta Activation project.

\* Project home: <https://projects.eclipse.org/projects/ee4j.jaf>

## Copyright

All content is the property of the respective authors or their employers. For more information regarding authorship of content, please consult the listed source code repository logs.

## Declared Project Licenses

This program and the accompanying materials are made available under the terms of the Eclipse Distribution License v. 1.0, which is available at <http://www.eclipse.org/org/documents/edl-v10.php>.

SPDX-License-Identifier: BSD-3-Clause

## Source Code

The project maintains the following source code repositories:

\* <https://github.com/eclipse-ee4j/jaf>

## Third-party Content

This project leverages the following third party content.

JUnit (4.12)

\* License: Eclipse Public License

## 1.152 jackson-mapper-asl 1.9.13.redhat-00007

### 1.152.1 Available under license :

This copy of Jackson JSON processor is licensed under the Apache (Software) License, version 2.0 ("the License"). See the License for details about distribution rights, and the specific rights regarding derivate works.



You may obtain a copy of the License at:

<http://www.apache.org/licenses/>

A copy is also included with both the the downloadable source code package and jar that contains class bytecodes, as file "ASL 2.0". In both cases, that file should be located next to this file: in source distribution the location should be "release-notes/asl"; and in jar "META-INF/"

This product currently only contains code developed by authors of specific components, as identified by the source code files; if such notes are missing files have been created by Tatu Saloranta.

For additional credits (generally to people who reported problems) see CREDITS file.

## 1.153 commons-cli 1.4

### 1.153.1 Available under license :

Apache Commons CLI  
Copyright 2001-2017 The Apache Software Foundation

This product includes software developed at  
The Apache Software Foundation (<http://www.apache.org/>).

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

##### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity

exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided

that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity,

or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

# 1.154 openjdk-jre 1.8.0u352

## 1.154.1 Available under license :

Copyright (c) 1999-2003 David Corcoran <corcoran@muscard.com>  
Copyright (c) 2001-2011 Ludovic Rousseau <ludovic.rousseau@free.fr>  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright

notice, this list of conditions and the following disclaimer.

2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Some files are under GNU GPL v3 or any later version

- doc/example/pcsc\_demo.c
- the files in src/spy/
- the files in UnitaryTests/

Copyright (C) 2003-2014 Ludovic Rousseau

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see <<http://www.gnu.org/licenses/>>.

Files src/auth.c and src/auth.h are:

- \* Copyright (C) 2013 Red Hat
- \*
- \* All rights reserved.
- \* Redistribution and use in source and binary forms, with or without
- \* modification, are permitted provided that the following conditions
- \* are met:
- \*

- \* 1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \*
- \* 2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \*
- \* THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
- \*
- \* Author: Nikos Mavrogiannopoulos <nmav@redhat.com>

Files src/simelist.c and src/simelist.h are:

- \* Copyright (c) 2007,2008,2009,2010,2011 Mij <mij@bitchx.it>
- \*
- \* Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.
- \*
- \* THE SOFTWARE IS PROVIDED "AS IS" AND THE AUTHOR DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

The GIFLIB distribution is Copyright (c) 1997 Eric S. Raymond

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Within this directory, each of the file listed below is licensed under the terms given in the file LICENSE-MPL, also in this directory.

#### PRIMES

Copyright (c) %YEARS%, Oracle and/or its affiliates. All rights reserved.

DO NOT ALTER OR REMOVE COPYRIGHT NOTICES OR THIS FILE HEADER.

This code is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License version 2 only, as published by the Free Software Foundation.

This code is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License version 2 for more details (a copy is included in the LICENSE file that accompanied this code).

You should have received a copy of the GNU General Public License version 2 along with this work; if not, write to the Free Software Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA.

Please contact Oracle, 500 Oracle Parkway, Redwood Shores, CA 94065 USA or visit [www.oracle.com](http://www.oracle.com) if you need additional information or have any questions.

COPYRIGHT NOTICE, DISCLAIMER, and LICENSE

=====

PNG Reference Library License version 2

-----

- \* Copyright (c) 1995-2019 The PNG Reference Library Authors.
- \* Copyright (c) 2018-2019 Cosmin Truta.
- \* Copyright (c) 2000-2002, 2004, 2006-2018 Glenn Randers-Pehrson.
- \* Copyright (c) 1996-1997 Andreas Dilger.
- \* Copyright (c) 1995-1996 Guy Eric Schalnat, Group 42, Inc.

The software is supplied "as is", without warranty of any kind, express or implied, including, without limitation, the warranties of merchantability, fitness for a particular purpose, title, and non-infringement. In no event shall the Copyright owners, or



anyone distributing the software, be liable for any damages or other liability, whether in contract, tort or otherwise, arising from, out of, or in connection with the software, or the use or other dealings in the software, even if advised of the possibility of such damage.

Permission is hereby granted to use, copy, modify, and distribute this software, or portions hereof, for any purpose, without fee, subject to the following restrictions:

1. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated, but is not required.
2. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
3. This Copyright notice may not be removed or altered from any source or altered source distribution.

PNG Reference Library License version 1 (for libpng 0.5 through 1.6.35)

-----  
libpng versions 1.0.7, July 1, 2000, through 1.6.35, July 15, 2018 are Copyright (c) 2000-2002, 2004, 2006-2018 Glenn Randers-Pehrson, are derived from libpng-1.0.6, and are distributed according to the same disclaimer and license as libpng-1.0.6 with the following individuals added to the list of Contributing Authors:

Simon-Pierre Cadieux  
Eric S. Raymond  
Mans Rullgard  
Cosmin Truta  
Gilles Vollant  
James Yu  
Mandar Sahastrabudde  
Google Inc.  
Vadim Barkov

and with the following additions to the disclaimer:

There is no warranty against interference with your enjoyment of the library or against infringement. There is no warranty that our efforts or the library will fulfill any of your particular purposes or needs. This library is provided with all faults, and the entire risk of satisfactory quality, performance, accuracy, and effort is

with the user.

Some files in the "contrib" directory and some configure-generated files that are distributed with libpng have other copyright owners, and are released under other open source licenses.

libpng versions 0.97, January 1998, through 1.0.6, March 20, 2000, are Copyright (c) 1998-2000 Glenn Randers-Pehrson, are derived from libpng-0.96, and are distributed according to the same disclaimer and license as libpng-0.96, with the following individuals added to the list of Contributing Authors:

Tom Lane  
Glenn Randers-Pehrson  
Willem van Schaik

libpng versions 0.89, June 1996, through 0.96, May 1997, are Copyright (c) 1996-1997 Andreas Dilger, are derived from libpng-0.88, and are distributed according to the same disclaimer and license as libpng-0.88, with the following individuals added to the list of Contributing Authors:

John Bowler  
Kevin Bracey  
Sam Bushell  
Magnus Holmgren  
Greg Roelofs  
Tom Tanner

Some files in the "scripts" directory have other copyright owners, but are released under this license.

libpng versions 0.5, May 1995, through 0.88, January 1996, are Copyright (c) 1995-1996 Guy Eric Schalnat, Group 42, Inc.

For the purposes of this copyright and license, "Contributing Authors" is defined as the following set of individuals:

Andreas Dilger  
Dave Martindale  
Guy Eric Schalnat  
Paul Schmidt  
Tim Wegner

The PNG Reference Library is supplied "AS IS". The Contributing Authors and Group 42, Inc. disclaim all warranties, expressed or implied, including, without limitation, the warranties of merchantability and of fitness for any purpose. The Contributing

Authors and Group 42, Inc. assume no liability for direct, indirect, incidental, special, exemplary, or consequential damages, which may result from the use of the PNG Reference Library, even if advised of the possibility of such damage.

Permission is hereby granted to use, copy, modify, and distribute this source code, or portions hereof, for any purpose, without fee, subject to the following restrictions:

1. The origin of this source code must not be misrepresented.
2. Altered versions must be plainly marked as such and must not be misrepresented as being the original source.
3. This Copyright notice may not be removed or altered from any source or altered source distribution.

The Contributing Authors and Group 42, Inc. specifically permit, without fee, and encourage the use of this source code as a component to supporting the PNG file format in commercial products. If you use this source code in a product, acknowledgment is not required but would be appreciated.

Within this directory, each of the file listed below is licensed under the terms given in the file LICENSE-MPL, also in this directory.

basecvt.pod

gcd.pod

invmod.pod

isprime.pod

lap.pod

mpi-test.pod

prime.txt

prng.pod

This is the copyright file

The GNU General Public License (GPL)

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to

guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program

or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably

considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy

from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that

system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE



THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

One line to give the program's name and a brief idea of what it does.

Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

Gnomovision version 69, Copyright (C) year name of author Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type 'show w'. This is free software, and you are welcome to redistribute it under certain conditions; type 'show c' for details.

The hypothetical commands 'show w' and 'show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than 'show w' and 'show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program 'Gnomovision' (which makes passes at compilers) written by James Hacker.

signature of Ty Coon, 1 April 1989

Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

#### "CLASSPATH" EXCEPTION TO THE GPL

Certain source files distributed by Oracle America and/or its affiliates are subject to the following clarification and special exception to the GPL, but only where Oracle has expressly included in the particular source file's header the words "Oracle designates this particular file as subject to the "Classpath" exception as provided by Oracle in the LICENSE file that accompanied this code."

Linking this library statically or dynamically with other modules is making a combined work based on this library. Thus, the terms and conditions of the GNU General Public License cover the whole combination.

As a special exception, the copyright holders of this library give you permission to link this library with independent modules to produce an executable, regardless of the license terms of these independent modules, and to copy and distribute the resulting executable under terms of your choice, provided that you also meet, for each linked independent module, the terms and conditions of the license of that module. An independent module is a module which is not derived from or based on this library. If you modify this library, you may extend this exception to your version of the library, but you are not obligated to do so. If you do not wish to do so, delete this exception statement from your version.

NSS is available under the Mozilla Public License, version 2, a copy of which is below.

## Note on GPL Compatibility

-----

The MPL 2, section 3.3, permits you to combine NSS with code under the GNU General Public License (GPL) version 2, or any later version of that license, to make a Larger Work, and distribute the result under the GPL. The only condition is that you must also make NSS, and any changes you have made to it, available to recipients under the terms of the MPL 2 also.

Anyone who receives the combined code from you does not have to continue to dual licence in this way, and may, if they wish, distribute under the terms of either of the two licences - either the MPL alone or the GPL alone. However, we discourage people from distributing copies of NSS under the GPL alone, because it means that any improvements they make cannot be reincorporated into the main version of NSS. There is never a need to do this for license compatibility reasons.

## Note on LGPL Compatibility

-----

The above also applies to combining MPLed code in a single library with code under the GNU Lesser General Public License (LGPL) version 2.1, or any later version of that license. If the LGPLed code and the MPLed code are not in the same library, then the copyleft coverage of the two licences does not overlap, so no issues arise.

## Mozilla Public License Version 2.0

=====

### 1. Definitions

-----

#### 1.1. "Contributor"

means each individual or legal entity that creates, contributes to the creation of, or owns Covered Software.

#### 1.2. "Contributor Version"

means the combination of the Contributions of others (if any) used by a Contributor and that particular Contributor's Contribution.

#### 1.3. "Contribution"

means Covered Software of a particular Contributor.

#### 1.4. "Covered Software"

means Source Code Form to which the initial Contributor has attached the notice in Exhibit A, the Executable Form of such Source Code

Form, and Modifications of such Source Code Form, in each case including portions thereof.

1.5. "Incompatible With Secondary Licenses"

means

(a) that the initial Contributor has attached the notice described in Exhibit B to the Covered Software; or

(b) that the Covered Software was made available under the terms of version 1.1 or earlier of the License, but not also under the terms of a Secondary License.

1.6. "Executable Form"

means any form of the work other than Source Code Form.

1.7. "Larger Work"

means a work that combines Covered Software with other material, in a separate file or files, that is not Covered Software.

1.8. "License"

means this document.

1.9. "Licensable"

means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently, any and all of the rights conveyed by this License.

1.10. "Modifications"

means any of the following:

(a) any file in Source Code Form that results from an addition to, deletion from, or modification of the contents of Covered Software; or

(b) any new file in Source Code Form that contains any Covered Software.

1.11. "Patent Claims" of a Contributor

means any patent claim(s), including without limitation, method, process, and apparatus claims, in any patent Licensable by such Contributor that would be infringed, but for the grant of the License, by the making, using, selling, offering for sale, having made, import, or transfer of either its Contributions or its Contributor Version.

1.12. "Secondary License"

means either the GNU General Public License, Version 2.0, the GNU

Lesser General Public License, Version 2.1, the GNU Affero General Public License, Version 3.0, or any later versions of those licenses.

#### 1.13. "Source Code Form"

means the form of the work preferred for making modifications.

#### 1.14. "You" (or "Your")

means an individual or a legal entity exercising rights under this License. For legal entities, "You" includes any entity that controls, is controlled by, or is under common control with You. For purposes of this definition, "control" means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

### 2. License Grants and Conditions

-----

#### 2.1. Grants

Each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:

- (a) under intellectual property rights (other than patent or trademark) Licensable by such Contributor to use, reproduce, make available, modify, display, perform, distribute, and otherwise exploit its Contributions, either on an unmodified basis, with Modifications, or as part of a Larger Work; and
- (b) under Patent Claims of such Contributor to make, use, sell, offer for sale, have made, import, and otherwise transfer either its Contributions or its Contributor Version.

#### 2.2. Effective Date

The licenses granted in Section 2.1 with respect to any Contribution become effective for each Contribution on the date the Contributor first distributes such Contribution.

#### 2.3. Limitations on Grant Scope

The licenses granted in this Section 2 are the only rights granted under this License. No additional rights or licenses will be implied from the distribution or licensing of Covered Software under this License. Notwithstanding Section 2.1(b) above, no patent license is granted by a Contributor:

- (a) for any code that a Contributor has removed from Covered Software;  
or
- (b) for infringements caused by: (i) Your and any other third party's modifications of Covered Software, or (ii) the combination of its Contributions with other software (except as part of its Contributor Version); or
- (c) under Patent Claims infringed by Covered Software in the absence of its Contributions.

This License does not grant any rights in the trademarks, service marks, or logos of any Contributor (except as may be necessary to comply with the notice requirements in Section 3.4).

#### 2.4. Subsequent Licenses

No Contributor makes additional grants as a result of Your choice to distribute the Covered Software under a subsequent version of this License (see Section 10.2) or under the terms of a Secondary License (if permitted under the terms of Section 3.3).

#### 2.5. Representation

Each Contributor represents that the Contributor believes its Contributions are its original creation(s) or it has sufficient rights to grant the rights to its Contributions conveyed by this License.

#### 2.6. Fair Use

This License is not intended to limit any rights You have under applicable copyright doctrines of fair use, fair dealing, or other equivalents.

#### 2.7. Conditions

Sections 3.1, 3.2, 3.3, and 3.4 are conditions of the licenses granted in Section 2.1.

### 3. Responsibilities

-----

#### 3.1. Distribution of Source Form

All distribution of Covered Software in Source Code Form, including any Modifications that You create or to which You contribute, must be under the terms of this License. You must inform recipients that the Source

Code Form of the Covered Software is governed by the terms of this License, and how they can obtain a copy of this License. You may not attempt to alter or restrict the recipients' rights in the Source Code Form.

### 3.2. Distribution of Executable Form

If You distribute Covered Software in Executable Form then:

- (a) such Covered Software must also be made available in Source Code Form, as described in Section 3.1, and You must inform recipients of the Executable Form how they can obtain a copy of such Source Code Form by reasonable means in a timely manner, at a charge no more than the cost of distribution to the recipient; and
- (b) You may distribute such Executable Form under the terms of this License, or sublicense it under different terms, provided that the license for the Executable Form does not attempt to limit or alter the recipients' rights in the Source Code Form under this License.

### 3.3. Distribution of a Larger Work

You may create and distribute a Larger Work under terms of Your choice, provided that You also comply with the requirements of this License for the Covered Software. If the Larger Work is a combination of Covered Software with a work governed by one or more Secondary Licenses, and the Covered Software is not Incompatible With Secondary Licenses, this License permits You to additionally distribute such Covered Software under the terms of such Secondary License(s), so that the recipient of the Larger Work may, at their option, further distribute the Covered Software under the terms of either this License or such Secondary License(s).

### 3.4. Notices

You may not remove or alter the substance of any license notices (including copyright notices, patent notices, disclaimers of warranty, or limitations of liability) contained within the Source Code Form of the Covered Software, except that You may alter any license notices to the extent required to remedy known factual inaccuracies.

### 3.5. Application of Additional Terms

You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Software. However, You may do so only on Your own behalf, and not on behalf of any Contributor. You must make it absolutely clear that any such warranty, support, indemnity, or liability obligation is offered by

You alone, and You hereby agree to indemnify every Contributor for any liability incurred by such Contributor as a result of warranty, support, indemnity or liability terms You offer. You may include additional disclaimers of warranty and limitations of liability specific to any jurisdiction.

#### 4. Inability to Comply Due to Statute or Regulation

-----

If it is impossible for You to comply with any of the terms of this License with respect to some or all of the Covered Software due to statute, judicial order, or regulation then You must: (a) comply with the terms of this License to the maximum extent possible; and (b) describe the limitations and the code they affect. Such description must be placed in a text file included with all distributions of the Covered Software under this License. Except to the extent prohibited by statute or regulation, such description must be sufficiently detailed for a recipient of ordinary skill to be able to understand it.

#### 5. Termination

-----

5.1. The rights granted under this License will terminate automatically if You fail to comply with any of its terms. However, if You become compliant, then the rights granted under this License from a particular Contributor are reinstated (a) provisionally, unless and until such Contributor explicitly and finally terminates Your grants, and (b) on an ongoing basis, if such Contributor fails to notify You of the non-compliance by some reasonable means prior to 60 days after You have come back into compliance. Moreover, Your grants from a particular Contributor are reinstated on an ongoing basis if such Contributor notifies You of the non-compliance by some reasonable means, this is the first time You have received notice of non-compliance with this License from such Contributor, and You become compliant prior to 30 days after Your receipt of the notice.

5.2. If You initiate litigation against any entity by asserting a patent infringement claim (excluding declaratory judgment actions, counter-claims, and cross-claims) alleging that a Contributor Version directly or indirectly infringes any patent, then the rights granted to You by any and all Contributors for the Covered Software under Section 2.1 of this License shall terminate.

5.3. In the event of termination under Sections 5.1 or 5.2 above, all end user license agreements (excluding distributors and resellers) which have been validly granted by You or Your distributors under this License prior to termination shall survive termination.



```

*
*
* 6. Disclaimer of Warranty *
* ----- *
*
* Covered Software is provided under this License on an "as is" *
* basis, without warranty of any kind, either expressed, implied, or *
* statutory, including, without limitation, warranties that the *
* Covered Software is free of defects, merchantable, fit for a *
* particular purpose or non-infringing. The entire risk as to the *
* quality and performance of the Covered Software is with You. *
* Should any Covered Software prove defective in any respect, You *
* (not any Contributor) assume the cost of any necessary servicing, *
* repair, or correction. This disclaimer of warranty constitutes an *
* essential part of this License. No use of any Covered Software is *
* authorized under this License except under this disclaimer. *
*
*

```

```

*
*
* 7. Limitation of Liability *
* ----- *
*
* Under no circumstances and under no legal theory, whether tort *
* (including negligence), contract, or otherwise, shall any *
* Contributor, or anyone who distributes Covered Software as *
* permitted above, be liable to You for any direct, indirect, *
* special, incidental, or consequential damages of any character *
* including, without limitation, damages for lost profits, loss of *
* goodwill, work stoppage, computer failure or malfunction, or any *
* and all other commercial damages or losses, even if such party *
* shall have been informed of the possibility of such damages. This *
* limitation of liability shall not apply to liability for death or *
* personal injury resulting from such party's negligence to the *
* extent applicable law prohibits such limitation. Some *
* jurisdictions do not allow the exclusion or limitation of *
* incidental or consequential damages, so this exclusion and *
* limitation may not apply to You. *
*
*

```

8. Litigation  
-----

Any litigation relating to this License may be brought only in the courts of a jurisdiction where the defendant maintains its principal place of business and such litigation shall be governed by laws of that

jurisdiction, without reference to its conflict-of-law provisions.  
Nothing in this Section shall prevent a party's ability to bring  
cross-claims or counter-claims.

## 9. Miscellaneous

-----

This License represents the complete agreement concerning the subject  
matter hereof. If any provision of this License is held to be  
unenforceable, such provision shall be reformed only to the extent  
necessary to make it enforceable. Any law or regulation which provides  
that the language of a contract shall be construed against the drafter  
shall not be used to construe this License against a Contributor.

## 10. Versions of the License

-----

### 10.1. New Versions

Mozilla Foundation is the license steward. Except as provided in Section  
10.3, no one other than the license steward has the right to modify or  
publish new versions of this License. Each version will be given a  
distinguishing version number.

### 10.2. Effect of New Versions

You may distribute the Covered Software under the terms of the version  
of the License under which You originally received the Covered Software,  
or under the terms of any subsequent version published by the license  
steward.

### 10.3. Modified Versions

If you create software not governed by this License, and you want to  
create a new license for such software, you may create and use a  
modified version of this License if you rename the license and remove  
any references to the name of the license steward (except to note that  
such modified license differs from this License).

### 10.4. Distributing Source Code Form that is Incompatible With Secondary Licenses

If You choose to distribute Source Code Form that is Incompatible With  
Secondary Licenses under the terms of this version of the License, the  
notice described in Exhibit B of this License must be attached.

Exhibit A - Source Code Form License Notice

-----

This Source Code Form is subject to the terms of the Mozilla Public License, v. 2.0. If a copy of the MPL was not distributed with this file, You can obtain one at <http://mozilla.org/MPL/2.0/>.

If it is not possible or desirable to put the notice in a particular file, then You may include the notice in a location (such as a LICENSE file in a relevant directory) where a recipient would be likely to look for such a notice.

You may add additional accurate notices of copyright ownership.

#### Exhibit B - "Incompatible With Secondary Licenses" Notice

-----

This Source Code Form is "Incompatible With Secondary Licenses", as defined by the Mozilla Public License, v. 2.0.

Copyright 2005 Sun Microsystems, Inc. All rights reserved.

Use is subject to license terms.

This Source Code Form is subject to the terms of the Mozilla Public License, v. 2.0. If a copy of the MPL was not distributed with this file, You can obtain one at <http://mozilla.org/MPL/2.0/>.

Copyright (c) %YEARS% Oracle and/or its affiliates. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- Neither the name of Oracle nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF

LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Mozilla Public License Version 2.0

=====

## 1. Definitions

-----

### 1.1. "Contributor"

means each individual or legal entity that creates, contributes to the creation of, or owns Covered Software.

### 1.2. "Contributor Version"

means the combination of the Contributions of others (if any) used by a Contributor and that particular Contributor's Contribution.

### 1.3. "Contribution"

means Covered Software of a particular Contributor.

### 1.4. "Covered Software"

means Source Code Form to which the initial Contributor has attached the notice in Exhibit A, the Executable Form of such Source Code Form, and Modifications of such Source Code Form, in each case including portions thereof.

### 1.5. "Incompatible With Secondary Licenses"

means

(a) that the initial Contributor has attached the notice described in Exhibit B to the Covered Software; or

(b) that the Covered Software was made available under the terms of version 1.1 or earlier of the License, but not also under the terms of a Secondary License.

### 1.6. "Executable Form"

means any form of the work other than Source Code Form.

### 1.7. "Larger Work"

means a work that combines Covered Software with other material, in a separate file or files, that is not Covered Software.

### 1.8. "License"

means this document.

### 1.9. "Licensable"

means having the right to grant, to the maximum extent possible,

whether at the time of the initial grant or subsequently, any and all of the rights conveyed by this License.

1.10. "Modifications"

means any of the following:

(a) any file in Source Code Form that results from an addition to, deletion from, or modification of the contents of Covered Software; or

(b) any new file in Source Code Form that contains any Covered Software.

1.11. "Patent Claims" of a Contributor

means any patent claim(s), including without limitation, method, process, and apparatus claims, in any patent Licensable by such Contributor that would be infringed, but for the grant of the License, by the making, using, selling, offering for sale, having made, import, or transfer of either its Contributions or its Contributor Version.

1.12. "Secondary License"

means either the GNU General Public License, Version 2.0, the GNU Lesser General Public License, Version 2.1, the GNU Affero General Public License, Version 3.0, or any later versions of those licenses.

1.13. "Source Code Form"

means the form of the work preferred for making modifications.

1.14. "You" (or "Your")

means an individual or a legal entity exercising rights under this License. For legal entities, "You" includes any entity that controls, is controlled by, or is under common control with You. For purposes of this definition, "control" means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

2. License Grants and Conditions

-----

2.1. Grants

Each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:

- (a) under intellectual property rights (other than patent or trademark) Licensable by such Contributor to use, reproduce, make available, modify, display, perform, distribute, and otherwise exploit its Contributions, either on an unmodified basis, with Modifications, or as part of a Larger Work; and
- (b) under Patent Claims of such Contributor to make, use, sell, offer for sale, have made, import, and otherwise transfer either its Contributions or its Contributor Version.

## 2.2. Effective Date

The licenses granted in Section 2.1 with respect to any Contribution become effective for each Contribution on the date the Contributor first distributes such Contribution.

## 2.3. Limitations on Grant Scope

The licenses granted in this Section 2 are the only rights granted under this License. No additional rights or licenses will be implied from the distribution or licensing of Covered Software under this License. Notwithstanding Section 2.1(b) above, no patent license is granted by a Contributor:

- (a) for any code that a Contributor has removed from Covered Software; or
- (b) for infringements caused by: (i) Your and any other third party's modifications of Covered Software, or (ii) the combination of its Contributions with other software (except as part of its Contributor Version); or
- (c) under Patent Claims infringed by Covered Software in the absence of its Contributions.

This License does not grant any rights in the trademarks, service marks, or logos of any Contributor (except as may be necessary to comply with the notice requirements in Section 3.4).

## 2.4. Subsequent Licenses

No Contributor makes additional grants as a result of Your choice to distribute the Covered Software under a subsequent version of this License (see Section 10.2) or under the terms of a Secondary License (if permitted under the terms of Section 3.3).

## 2.5. Representation

Each Contributor represents that the Contributor believes its Contributions are its original creation(s) or it has sufficient rights to grant the rights to its Contributions conveyed by this License.

## 2.6. Fair Use

This License is not intended to limit any rights You have under applicable copyright doctrines of fair use, fair dealing, or other equivalents.

## 2.7. Conditions

Sections 3.1, 3.2, 3.3, and 3.4 are conditions of the licenses granted in Section 2.1.

## 3. Responsibilities

-----

### 3.1. Distribution of Source Form

All distribution of Covered Software in Source Code Form, including any Modifications that You create or to which You contribute, must be under the terms of this License. You must inform recipients that the Source Code Form of the Covered Software is governed by the terms of this License, and how they can obtain a copy of this License. You may not attempt to alter or restrict the recipients' rights in the Source Code Form.

### 3.2. Distribution of Executable Form

If You distribute Covered Software in Executable Form then:

- (a) such Covered Software must also be made available in Source Code Form, as described in Section 3.1, and You must inform recipients of the Executable Form how they can obtain a copy of such Source Code Form by reasonable means in a timely manner, at a charge no more than the cost of distribution to the recipient; and
- (b) You may distribute such Executable Form under the terms of this License, or sublicense it under different terms, provided that the license for the Executable Form does not attempt to limit or alter the recipients' rights in the Source Code Form under this License.

### 3.3. Distribution of a Larger Work

You may create and distribute a Larger Work under terms of Your choice, provided that You also comply with the requirements of this License for the Covered Software. If the Larger Work is a combination of Covered

Software with a work governed by one or more Secondary Licenses, and the Covered Software is not Incompatible With Secondary Licenses, this License permits You to additionally distribute such Covered Software under the terms of such Secondary License(s), so that the recipient of the Larger Work may, at their option, further distribute the Covered Software under the terms of either this License or such Secondary License(s).

### 3.4. Notices

You may not remove or alter the substance of any license notices (including copyright notices, patent notices, disclaimers of warranty, or limitations of liability) contained within the Source Code Form of the Covered Software, except that You may alter any license notices to the extent required to remedy known factual inaccuracies.

### 3.5. Application of Additional Terms

You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Software. However, You may do so only on Your own behalf, and not on behalf of any Contributor. You must make it absolutely clear that any such warranty, support, indemnity, or liability obligation is offered by You alone, and You hereby agree to indemnify every Contributor for any liability incurred by such Contributor as a result of warranty, support, indemnity or liability terms You offer. You may include additional disclaimers of warranty and limitations of liability specific to any jurisdiction.

## 4. Inability to Comply Due to Statute or Regulation

-----

If it is impossible for You to comply with any of the terms of this License with respect to some or all of the Covered Software due to statute, judicial order, or regulation then You must: (a) comply with the terms of this License to the maximum extent possible; and (b) describe the limitations and the code they affect. Such description must be placed in a text file included with all distributions of the Covered Software under this License. Except to the extent prohibited by statute or regulation, such description must be sufficiently detailed for a recipient of ordinary skill to be able to understand it.

## 5. Termination

-----

5.1. The rights granted under this License will terminate automatically if You fail to comply with any of its terms. However, if You become compliant, then the rights granted under this License from a particular



Contributor are reinstated (a) provisionally, unless and until such Contributor explicitly and finally terminates Your grants, and (b) on an ongoing basis, if such Contributor fails to notify You of the non-compliance by some reasonable means prior to 60 days after You have come back into compliance. Moreover, Your grants from a particular Contributor are reinstated on an ongoing basis if such Contributor notifies You of the non-compliance by some reasonable means, this is the first time You have received notice of non-compliance with this License from such Contributor, and You become compliant prior to 30 days after Your receipt of the notice.

5.2. If You initiate litigation against any entity by asserting a patent infringement claim (excluding declaratory judgment actions, counter-claims, and cross-claims) alleging that a Contributor Version directly or indirectly infringes any patent, then the rights granted to You by any and all Contributors for the Covered Software under Section 2.1 of this License shall terminate.

5.3. In the event of termination under Sections 5.1 or 5.2 above, all end user license agreements (excluding distributors and resellers) which have been validly granted by You or Your distributors under this License prior to termination shall survive termination.

\*\*\*\*\*

```
*
*
* 6. Disclaimer of Warranty
* -----
*
* Covered Software is provided under this License on an "as is"
* basis, without warranty of any kind, either expressed, implied, or
* statutory, including, without limitation, warranties that the
* Covered Software is free of defects, merchantable, fit for a
* particular purpose or non-infringing. The entire risk as to the
* quality and performance of the Covered Software is with You.
* Should any Covered Software prove defective in any respect, You
* (not any Contributor) assume the cost of any necessary servicing,
* repair, or correction. This disclaimer of warranty constitutes an
* essential part of this License. No use of any Covered Software is
* authorized under this License except under this disclaimer.
*
```

\*\*\*\*\*

\*\*\*\*\*

```
*
*
* 7. Limitation of Liability
* -----
*
* Under no circumstances and under no legal theory, whether tort
```

\* (including negligence), contract, or otherwise, shall any \*

\* Contributor, or anyone who distributes Covered Software as \*

\* permitted above, be liable to You for any direct, indirect, \*

\* special, incidental, or consequential damages of any character \*

\* including, without limitation, damages for lost profits, loss of \*

\* goodwill, work stoppage, computer failure or malfunction, or any \*

\* and all other commercial damages or losses, even if such party \*

\* shall have been informed of the possibility of such damages. This \*

\* limitation of liability shall not apply to liability for death or \*

\* personal injury resulting from such party's negligence to the \*

\* extent applicable law prohibits such limitation. Some \*

\* jurisdictions do not allow the exclusion or limitation of \*

\* incidental or consequential damages, so this exclusion and \*

\* limitation may not apply to You. \*

\* \*

\*\*\*\*\*

## 8. Litigation

-----

Any litigation relating to this License may be brought only in the courts of a jurisdiction where the defendant maintains its principal place of business and such litigation shall be governed by laws of that jurisdiction, without reference to its conflict-of-law provisions. Nothing in this Section shall prevent a party's ability to bring cross-claims or counter-claims.

## 9. Miscellaneous

-----

This License represents the complete agreement concerning the subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not be used to construe this License against a Contributor.

## 10. Versions of the License

-----

### 10.1. New Versions

Mozilla Foundation is the license steward. Except as provided in Section 10.3, no one other than the license steward has the right to modify or publish new versions of this License. Each version will be given a distinguishing version number.

### 10.2. Effect of New Versions

You may distribute the Covered Software under the terms of the version of the License under which You originally received the Covered Software, or under the terms of any subsequent version published by the license steward.

### 10.3. Modified Versions

If you create software not governed by this License, and you want to create a new license for such software, you may create and use a modified version of this License if you rename the license and remove any references to the name of the license steward (except to note that such modified license differs from this License).

### 10.4. Distributing Source Code Form that is Incompatible With Secondary Licenses

If You choose to distribute Source Code Form that is Incompatible With Secondary Licenses under the terms of this version of the License, the notice described in Exhibit B of this License must be attached.

#### Exhibit A - Source Code Form License Notice

-----

This Source Code Form is subject to the terms of the Mozilla Public License, v. 2.0. If a copy of the MPL was not distributed with this file, You can obtain one at <http://mozilla.org/MPL/2.0/>.

If it is not possible or desirable to put the notice in a particular file, then You may include the notice in a location (such as a LICENSE file in a relevant directory) where a recipient would be likely to look for such a notice.

You may add additional accurate notices of copyright ownership.

#### Exhibit B - "Incompatible With Secondary Licenses" Notice

-----

This Source Code Form is "Incompatible With Secondary Licenses", as defined by the Mozilla Public License, v. 2.0.

Copyright (c) %YEARS% Oracle and/or its affiliates. All rights reserved.

**DO NOT ALTER OR REMOVE COPYRIGHT NOTICES OR THIS FILE HEADER.**

This code is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License version 2 only, as published by the Free Software Foundation.

This code is distributed in the hope that it will be useful, but WITHOUT

ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License version 2 for more details (a copy is included in the LICENSE file that accompanied this code).

You should have received a copy of the GNU General Public License version 2 along with this work; if not, write to the Free Software Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA.

Please contact Oracle, 500 Oracle Parkway, Redwood Shores, CA 94065 USA or visit [www.oracle.com](http://www.oracle.com) if you need additional information or have any questions.

Copyright (c) %YEARS%, Oracle and/or its affiliates. All rights reserved.

DO NOT ALTER OR REMOVE COPYRIGHT NOTICES OR THIS FILE HEADER.

This code is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License version 2 only, as published by the Free Software Foundation. Oracle designates this particular file as subject to the "Classpath" exception as provided by Oracle in the LICENSE file that accompanied this code.

This code is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License version 2 for more details (a copy is included in the LICENSE file that accompanied this code).

You should have received a copy of the GNU General Public License version 2 along with this work; if not, write to the Free Software Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA.

Please contact Oracle, 500 Oracle Parkway, Redwood Shores, CA 94065 USA or visit [www.oracle.com](http://www.oracle.com) if you need additional information or have any questions.

#### SAX COPYRIGHT STATUS

Version 1.0 of the Simple API for XML (SAX), created collectively by the membership of the XML-DEV mailing list, is hereby released into the public domain.

No one owns SAX: you may use it freely in both commercial and non-commercial applications, bundle it with your software distribution, include it on a CD-ROM, list the source code in a book, mirror the documentation at your own web site, or use it in any other way you see fit.

NO WARRANTY

Because SAX is released to the public domain, there is no warranty for the design or for the software implementation, to the extent permitted by applicable law. Except when otherwise stated in writing the copyright holders and/or other parties provide SAX "as is" without warranty of any kind, either expressed or implied, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. The entire risk as to the quality and performance of SAX is with you. Should SAX prove defective, you assume the cost of all necessary servicing, repair or correction.

In no event unless required by applicable law or agreed to in writing will any copyright holder, or any other party who may modify and/or redistribute SAX, be liable to you for damages, including any general, special, incidental or consequential damages arising out of the use or inability to use SAX (including but not limited to loss of data or data being rendered inaccurate or losses sustained by you or third parties or a failure of the SAX to operate with any other programs), even if such holder or other party has been advised of the possibility of such damages.

David Megginson <sax@megginson.com>

1998-05-11

\*\*\*\*\* BEGIN LICENSE BLOCK \*\*\*\*\*

Version: MPL 1.1/GPL 2.0/LGPL 2.1

The contents of this file are subject to the Mozilla Public License Version 1.1 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at <http://www.mozilla.org/MPL/>

Software distributed under the License is distributed on an "AS IS" basis, WITHOUT WARRANTY OF ANY KIND, either express or implied. See the License for the specific language governing rights and limitations under the License.

The Original Code is the Netscape security libraries.

The Initial Developer of the Original Code is Netscape Communications Corporation. Portions created by Netscape are Copyright (C) 1994-2000 Netscape Communications Corporation. All Rights Reserved.

Contributor(s):

Alternatively, the contents of this file may be used under the terms of either the GNU General Public License Version 2 or later (the "GPL"), or

the GNU Lesser General Public License Version 2.1 or later (the "LGPL"), in which case the provisions of the GPL or the LGPL are applicable instead of those above. If you wish to allow use of your version of this file only under the terms of either the GPL or the LGPL, and not to allow others to use your version of this file under the terms of the MPL, indicate your decision by deleting the provisions above and replace them with the notice and other provisions required by the GPL or the LGPL. If you do not delete the provisions above, a recipient may use your version of this file under the terms of any one of the MPL, the GPL or the LGPL.

\*\*\*\*\* END LICENSE BLOCK \*\*\*\*\*

#### UNICODE, INC. LICENSE AGREEMENT - DATA FILES AND SOFTWARE

Unicode Data Files include all data files under the directories <http://www.unicode.org/Public/>, <http://www.unicode.org/reports/>, and <http://www.unicode.org/cldr/data/>. Unicode Data Files do not include PDF online code charts under the directory <http://www.unicode.org/Public/>. Software includes any source code published in the Unicode Standard or under the directories <http://www.unicode.org/Public/>, <http://www.unicode.org/reports/>, and <http://www.unicode.org/cldr/data/>.

NOTICE TO USER: Carefully read the following legal agreement. BY DOWNLOADING, INSTALLING, COPYING OR OTHERWISE USING UNICODE INC.'S DATA FILES ("DATA FILES"), AND/OR SOFTWARE ("SOFTWARE"), YOU UNEQUIVOCALLY ACCEPT, AND AGREE TO BE BOUND BY, ALL OF THE TERMS AND CONDITIONS OF THIS AGREEMENT. IF YOU DO NOT AGREE, DO NOT DOWNLOAD, INSTALL, COPY, DISTRIBUTE OR USE THE DATA FILES OR SOFTWARE.

#### COPYRIGHT AND PERMISSION NOTICE

Copyright 1991-2012 Unicode, Inc. All rights reserved. Distributed under the Terms of Use in <http://www.unicode.org/copyright.html>.

Permission is hereby granted, free of charge, to any person obtaining a copy of the Unicode data files and any associated documentation (the "Data Files") or Unicode software and any associated documentation (the "Software") to deal in the Data Files or Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, and/or sell copies of the Data Files or Software, and to permit persons to whom the Data Files or Software are furnished to do so, provided that (a) the above copyright notice(s) and this permission notice appear with all copies of the Data Files or Software, (b) both the above copyright notice(s) and this permission notice appear in associated documentation, and (c) there is clear notice in each modified Data File or in the Software as well as in the documentation associated with the Data File(s) or Software that the data or software has been modified.

THE DATA FILES AND SOFTWARE ARE PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,

EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF THIRD PARTY RIGHTS. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR HOLDERS INCLUDED IN THIS NOTICE BE LIABLE FOR ANY CLAIM, OR ANY SPECIAL INDIRECT OR CONSEQUENTIAL DAMAGES, OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THE DATA FILES OR SOFTWARE.

Except as contained in this notice, the name of a copyright holder shall not be used in advertising or otherwise to promote the sale, use or other dealings in these Data Files or Software without prior written authorization of the copyright holder.

Copyright 2005 Sun Microsystems, Inc. All rights reserved.

Use is subject to license terms.

\*\*\*\*\* BEGIN LICENSE BLOCK \*\*\*\*\*

Version: MPL 1.1/GPL 2.0/LGPL 2.1

The contents of this package are subject to the Mozilla Public License Version 1.1 (the "License"); you may not use this package except in compliance with the License. You may obtain a copy of the License at <http://www.mozilla.org/MPL/>

Software distributed under the License is distributed on an "AS IS" basis, WITHOUT WARRANTY OF ANY KIND, either express or implied. See the License for the specific language governing rights and limitations under the License.

The Original Code is the Netscape Portable Runtime (NSPR).

The Initial Developer of the Original Code is  
Netscape Communications Corporation.

Portions created by the Initial Developer are Copyright (C) 1998-2000  
the Initial Developer. All Rights Reserved.

Contributor(s):

Alternatively, the contents of this file may be used under the terms of either the GNU General Public License Version 2 or later (the "GPL"), or the GNU Lesser General Public License Version 2.1 or later (the "LGPL"), in which case the provisions of the GPL or the LGPL are applicable instead of those above. If you wish to allow use of your version of this file only under the terms of either the GPL or the LGPL, and not to allow others to use your version of this file under the terms of the MPL, indicate your decision by deleting the provisions above and replace them with the notice and other provisions required by the GPL or the LGPL. If you do not delete the provisions above, a recipient may use your version of this file under

the terms of any one of the MPL, the GPL or the LGPL.

\*\*\*\*\* END LICENSE BLOCK \*\*\*\*\*

COMMON DEVELOPMENT AND DISTRIBUTION LICENSE (CDDL) Version 1.0

1. Definitions.

1.1. Contributor. means each individual or entity that creates or contributes to the creation of Modifications.

1.2. Contributor Version. means the combination of the Original Software, prior Modifications used by a Contributor (if any), and the Modifications made by that particular Contributor.

1.3. Covered Software. means (a) the Original Software, or (b) Modifications, or (c) the combination of files containing Original Software with files containing Modifications, in each case including portions thereof.

1.4. Executable. means the Covered Software in any form other than Source Code.

1.5. Initial Developer. means the individual or entity that first makes Original Software available under this License.

1.6. Larger Work. means a work which combines Covered Software or portions thereof with code not governed by the terms of this License.

1.7. License. means this document.

1.8. Licensable. means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently acquired, any and all of the rights conveyed herein.

1.9. Modifications. means the Source Code and Executable form of any of the following:

A. Any file that results from an addition to, deletion from or modification of the contents of a file containing Original Software or previous Modifications;

B. Any new file that contains any part of the Original Software or previous Modification; or

C. Any new file that is contributed or otherwise made available under the terms of this License.

1.10. Original Software. means the Source Code and Executable form of computer software code that is originally released under this License.

1.11. Patent Claims. means any patent claim(s), now owned or hereafter acquired, including without limitation, method, process, and apparatus claims, in any patent Licensable by grantor.

1.12. Source Code. means (a) the common form of computer software code in which modifications are made and (b) associated documentation included in or with such code.

1.13. You. (or .Your.) means an individual or a legal entity exercising rights under, and complying with all of the terms of, this License. For legal entities, .You. includes any entity which controls, is controlled by, or is under



common control with You. For purposes of this definition, .control. means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

## 2. License Grants.

### 2.1. The Initial Developer Grant.

Conditioned upon Your compliance with Section 3.1 below and subject to third party intellectual property claims, the Initial Developer hereby grants You a world-wide, royalty-free, non-exclusive license:

(a) under intellectual property rights (other than patent or trademark) Licensable by Initial Developer, to use, reproduce, modify, display, perform, sublicense and distribute the Original Software (or portions thereof), with or without Modifications, and/or as part of a Larger Work; and

(b) under Patent Claims infringed by the making, using or selling of Original Software, to make, have made, use, practice, sell, and offer for sale, and/or otherwise dispose of the Original Software (or portions thereof).

(c) The licenses granted in Sections 2.1(a) and (b) are effective on the date Initial Developer first distributes or otherwise makes the Original Software available to a third party under the terms of this License.

(d) Notwithstanding Section 2.1(b) above, no patent license is granted: (1) for code that You delete from the Original Software, or (2) for infringements caused by: (i) the modification of the Original Software, or (ii) the combination of the Original Software with other software or devices.

### 2.2. Contributor Grant.

Conditioned upon Your compliance with Section 3.1 below and subject to third party intellectual property claims, each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:

(a) under intellectual property rights (other than patent or trademark) Licensable by Contributor to use, reproduce, modify, display, perform, sublicense and distribute the Modifications created by such Contributor (or portions thereof), either on an unmodified basis, with other Modifications, as Covered Software and/or as part of a Larger Work; and

(b) under Patent Claims infringed by the making, using, or selling of Modifications made by that Contributor either alone and/or in combination with its Contributor Version (or portions of such combination), to make, use, sell, offer for sale, have made, and/or otherwise dispose of: (1) Modifications made by that Contributor (or portions thereof); and (2) the combination of Modifications made by that Contributor with its Contributor Version (or portions of such combination).

(c) The licenses granted in Sections 2.2(a) and 2.2(b) are effective on the date Contributor first distributes or otherwise makes the Modifications available to a third party.

(d) Notwithstanding Section 2.2(b) above, no patent license is granted: (1) for any code that Contributor has deleted from the Contributor Version; (2) for infringements caused by: (i) third party modifications of Contributor Version, or (ii) the combination of Modifications made by that Contributor with other software (except as part of the Contributor Version) or other devices; or (3) under Patent Claims infringed by Covered Software in the absence of

Modifications made by that Contributor.

### 3. Distribution Obligations.

#### 3.1. Availability of Source Code.

Any Covered Software that You distribute or otherwise make available in Executable form must also be made available in Source Code form and that Source Code form must be distributed only under the terms of this License. You must include a copy of this License with every copy of the Source Code form of the Covered Software You distribute or otherwise make available. You must inform recipients of any such Covered Software in Executable form as to how they can obtain such Covered Software in Source Code form in a reasonable manner on or through a medium customarily used for software exchange.

#### 3.2. Modifications.

The Modifications that You create or to which You contribute are governed by the terms of this License. You represent that You believe Your Modifications are Your original creation(s) and/or You have sufficient rights to grant the rights conveyed by this License.

#### 3.3. Required Notices.

You must include a notice in each of Your Modifications that identifies You as the Contributor of the Modification. You may not remove or alter any copyright, patent or trademark notices contained within the Covered Software, or any notices of licensing or any descriptive text giving attribution to any Contributor or the Initial Developer.

#### 3.4. Application of Additional Terms.

You may not offer or impose any terms on any Covered Software in Source Code form that alters or restricts the applicable version of this License or the recipients' rights hereunder. You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Software. However, you may do so only on Your own behalf, and not on behalf of the Initial Developer or any Contributor. You must make it absolutely clear that any such warranty, support, indemnity or liability obligation is offered by You alone, and You hereby agree to indemnify the Initial Developer and every Contributor for any liability incurred by the Initial Developer or such Contributor as a result of warranty, support, indemnity or liability terms You offer.

#### 3.5. Distribution of Executable Versions.

You may distribute the Executable form of the Covered Software under the terms of this License or under the terms of a license of Your choice, which may contain terms different from this License, provided that You are in compliance with the terms of this License and that the license for the Executable form does not attempt to limit or alter the recipient's rights in the Source Code form from the rights set forth in this License. If You distribute the Covered Software in Executable form under a different license, You must make it absolutely clear that any terms which differ from this License are offered by You alone, not by the Initial Developer or Contributor. You hereby agree to indemnify the Initial Developer and every Contributor for any liability incurred by the Initial Developer or such Contributor as a result of any such terms You offer.

#### 3.6. Larger Works.

You may create a Larger Work by combining Covered Software with other code not governed by the terms of this License and distribute the Larger Work as a single product. In such a case, You must make sure the requirements of this License are fulfilled for the Covered Software.

### 4. Versions of the License.

#### 4.1. New Versions.

Sun Microsystems, Inc. is the initial license steward and may publish revised and/or new versions of this License from time to time. Each version will be given a distinguishing version number. Except as provided in Section 4.3, no one other than the license steward has the right to modify this License.

#### 4.2. Effect of New Versions.

You may always continue to use, distribute or otherwise make the Covered Software available under the terms of the version of the License under which You originally received the Covered Software. If the Initial Developer includes a notice in the Original Software prohibiting it from being distributed or otherwise made available under any subsequent version of the License, You must distribute and make the Covered Software available under the terms of the version of the License under which You originally received the Covered Software. Otherwise, You may also choose to use, distribute or otherwise make the Covered Software available under the terms of any subsequent version of the License published by the license steward.

#### 4.3. Modified Versions.

When You are an Initial Developer and You want to create a new license for Your Original Software, You may create and use a modified version of this License if You: (a) rename the license and remove any references to the name of the license steward (except to note that the license differs from this License); and (b) otherwise make it clear that the license contains terms which differ from this License.

### 5. DISCLAIMER OF WARRANTY.

COVERED SOFTWARE IS PROVIDED UNDER THIS LICENSE ON AN .AS IS. BASIS, WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTIES THAT THE COVERED SOFTWARE IS FREE OF DEFECTS, MERCHANTABLE, FIT FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE COVERED SOFTWARE IS WITH YOU. SHOULD ANY COVERED SOFTWARE PROVE DEFECTIVE IN ANY RESPECT, YOU (NOT THE INITIAL DEVELOPER OR ANY OTHER CONTRIBUTOR) ASSUME THE COST OF ANY NECESSARY SERVICING, REPAIR OR CORRECTION. THIS DISCLAIMER OF WARRANTY CONSTITUTES AN ESSENTIAL PART OF THIS LICENSE. NO USE OF ANY COVERED SOFTWARE IS AUTHORIZED HEREUNDER EXCEPT UNDER THIS DISCLAIMER.

### 6. TERMINATION.

6.1. This License and the rights granted hereunder will terminate automatically if You fail to comply with terms herein and fail to cure such breach within 30 days of becoming aware of the breach. Provisions which, by their nature, must remain in effect beyond the termination of this License shall survive.

6.2. If You assert a patent infringement claim (excluding declaratory judgment actions) against Initial Developer or a Contributor (the Initial Developer or Contributor against whom You assert such claim is referred to as .Participant.) alleging that the Participant Software (meaning the Contributor Version where the Participant is a Contributor or the Original Software where the Participant is the Initial Developer) directly or indirectly infringes any patent, then any and all rights granted directly or indirectly to You by such Participant, the Initial Developer (if the Initial Developer is not the Participant) and all Contributors under Sections 2.1 and/or 2.2 of this License shall, upon 60 days notice from Participant terminate prospectively and automatically at the expiration of such 60 day notice period, unless if within such 60 day period You withdraw Your claim with respect to the Participant Software against such Participant either unilaterally or pursuant to a written agreement with Participant.

6.3. In the event of termination under Sections 6.1 or 6.2 above, all end user licenses that have been validly granted by You or any distributor hereunder prior to termination (excluding licenses granted to You by any distributor) shall survive termination.

## 7. LIMITATION OF LIABILITY.

UNDER NO CIRCUMSTANCES AND UNDER NO LEGAL THEORY, WHETHER TORT (INCLUDING NEGLIGENCE), CONTRACT, OR OTHERWISE, SHALL YOU, THE INITIAL DEVELOPER, ANY OTHER CONTRIBUTOR, OR ANY DISTRIBUTOR OF COVERED SOFTWARE, OR ANY SUPPLIER OF ANY OF SUCH PARTIES, BE LIABLE TO ANY PERSON FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES OF ANY CHARACTER INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOST PROFITS, LOSS OF GOODWILL, WORK STOPPAGE, COMPUTER FAILURE OR MALFUNCTION, OR ANY AND ALL OTHER COMMERCIAL DAMAGES OR LOSSES, EVEN IF SUCH PARTY SHALL HAVE BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. THIS LIMITATION OF LIABILITY SHALL NOT APPLY TO LIABILITY FOR DEATH OR PERSONAL INJURY RESULTING FROM SUCH PARTY'S NEGLIGENCE TO THE EXTENT APPLICABLE LAW PROHIBITS SUCH LIMITATION. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THIS EXCLUSION AND LIMITATION MAY NOT APPLY TO YOU.

## 8. U.S. GOVERNMENT END USERS.

The Covered Software is a .commercial item., as that term is defined in 48 C.F.R. 2.101 (Oct. 1995), consisting of .commercial computer software. (as that term is defined at 48 C.F.R. 252.227-7014(a)(1)) and .commercial computer software documentation. as such terms are used in 48 C.F.R. 12.212 (Sept. 1995). Consistent with 48 C.F.R. 12.212 and 48 C.F.R. 227.7202-1 through 227.7202-4 (June 1995), all U.S. Government End Users acquire Covered Software with only those rights set forth herein. This U.S. Government Rights clause is in lieu of, and supersedes, any other FAR, DFAR, or other clause or provision that addresses Government rights in computer software under this License.

## 9. MISCELLANEOUS.

This License represents the complete agreement concerning subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable. This License shall be governed by the law of the jurisdiction specified in a notice contained within the Original Software (except to the extent applicable law, if any, provides otherwise), excluding such jurisdiction's conflict-of-law provisions. Any litigation relating to this License shall be subject to the jurisdiction of the courts located in the jurisdiction and venue specified in a notice contained within the Original Software, with the losing party responsible for costs, including, without limitation, court costs and reasonable attorneys' fees and expenses. The application of the United Nations Convention on Contracts for the International Sale of Goods is expressly excluded. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not apply to this License. You agree that You alone are responsible for compliance with the United States export administration regulations (and the export control laws and regulation of any other countries) when You use, distribute or otherwise make available any Covered Software.

## 10. RESPONSIBILITY FOR CLAIMS.

As between Initial Developer and the Contributors, each party is responsible for claims and damages arising, directly or indirectly, out of its utilization of rights under this License and You agree to work with Initial Developer and Contributors to distribute such responsibility on an equitable basis. Nothing herein is intended or shall be deemed to constitute any admission of liability.

#### NOTICE PURSUANT TO SECTION 9 OF THE COMMON DEVELOPMENT AND DISTRIBUTION LICENSE (CDDL)

The code released under the CDDL shall be governed by the laws of the State of California (excluding conflict-of-law provisions). Any litigation relating to this License shall be subject to the jurisdiction of the Federal Courts of the Northern District of California and the state courts of the State of California, with venue lying in Santa Clara County, California.

The GNU General Public License (GPL) Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc. 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no

warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this

License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software



Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

## NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

One line to give the program's name and a brief idea of what it does.

Copyright (C)

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
```

```
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'. This is free software, and you are welcome to redistribute it under certain conditions; type `show c' for details.
```

The hypothetical commands ``show w'` and ``show c'` should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than ``show w'` and ``show c'`; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program `Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
signature of Ty Coon, 1 April 1989
```

```
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

## "CLASSPATH" EXCEPTION TO THE GPL VERSION 2

Certain source files distributed by Sun Microsystems, Inc. are subject to the following clarification and special exception to the GPL Version 2, but only where Sun has expressly included in the particular source file's header the words

```
"Sun designates this particular file as subject to the "Classpath" exception as provided by Sun in the License file that accompanied this code."
```

Linking this library statically or dynamically with other modules is making a combined work based on this library. Thus, the terms and conditions of the GNU General Public License Version 2 cover the whole combination.

As a special exception, the copyright holders of this library give you permission to link this library with independent modules to produce an executable, regardless of the license terms of these independent modules, and to copy and distribute the resulting executable under terms of your choice, provided that you also meet, for each linked independent module, the terms and conditions of the license of that module.? An independent module is a module which is not derived from or based on this library.? If you modify this library, you may extend this exception to your version of the library, but you are not obligated to do so.? If you do not wish to do so, delete this exception statement from your version.

Copyright (c) %YEARS% Oracle and/or its affiliates. All rights reserved.  
DO NOT ALTER OR REMOVE COPYRIGHT NOTICES OR THIS FILE HEADER.

This code is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License version 2 only, as published by the Free Software Foundation. Oracle designates this particular file as subject to the "Classpath" exception as provided by Oracle in the LICENSE file that accompanied this code.

This code is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License version 2 for more details (a copy is included in the LICENSE file that accompanied this code).

You should have received a copy of the GNU General Public License version 2 along with this work; if not, write to the Free Software Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA.

Please contact Oracle, 500 Oracle Parkway, Redwood Shores, CA 94065 USA or visit [www.oracle.com](http://www.oracle.com) if you need additional information or have any questions.

SAX IS FREE

-----

I hereby abandon any property rights to SAX 2.0 (the Simple API for XML), and release all of the SAX 2.0 source code, compiled code, and documentation contained in this distribution into the Public Domain. SAX comes with NO WARRANTY or guarantee of fitness for any purpose.

David Megginson  
david@megginson.com  
2000-01-14

## 1.155 swagger-annotations 1.5.20

### 1.155.1 Available under license :

No license file was found, but licenses were detected in source scan.

/\*\*

- \* Copyright 2016 SmartBear Software
- \* <p>
- \* Licensed under the Apache License, Version 2.0 (the "License");
- \* you may not use this file except in compliance with the License.
- \* You may obtain a copy of the License at
- \* <p>

- \* <http://www.apache.org/licenses/LICENSE-2.0>
- \* <p>
- \* Unless required by applicable law or agreed to in writing, software
- \* distributed under the License is distributed on an "AS IS" BASIS,
- \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- \* See the License for the specific language governing permissions and
- \* limitations under the License.
- \*/

Found in path(s):

- \* /opt/cola/permits/1177939701\_1625570671.31/0/swagger-annotations-1-5-20-sources-1-jar/io/swagger/annotations/ApiResponses.java
- \* /opt/cola/permits/1177939701\_1625570671.31/0/swagger-annotations-1-5-20-sources-1-jar/io/swagger/annotations/Extension.java
- \* /opt/cola/permits/1177939701\_1625570671.31/0/swagger-annotations-1-5-20-sources-1-jar/io/swagger/annotations/ExampleProperty.java
- \* /opt/cola/permits/1177939701\_1625570671.31/0/swagger-annotations-1-5-20-sources-1-jar/io/swagger/annotations/ApiResponse.java
- \* /opt/cola/permits/1177939701\_1625570671.31/0/swagger-annotations-1-5-20-sources-1-jar/io/swagger/annotations/ApiImplicitParam.java
- \* /opt/cola/permits/1177939701\_1625570671.31/0/swagger-annotations-1-5-20-sources-1-jar/io/swagger/annotations/ApiParam.java
- \* /opt/cola/permits/1177939701\_1625570671.31/0/swagger-annotations-1-5-20-sources-1-jar/io/swagger/annotations/Api.java
- \* /opt/cola/permits/1177939701\_1625570671.31/0/swagger-annotations-1-5-20-sources-1-jar/io/swagger/annotations/Tag.java
- \* /opt/cola/permits/1177939701\_1625570671.31/0/swagger-annotations-1-5-20-sources-1-jar/io/swagger/annotations/AuthorizationScope.java
- \* /opt/cola/permits/1177939701\_1625570671.31/0/swagger-annotations-1-5-20-sources-1-jar/io/swagger/annotations/ApiModelProperty.java
- \* /opt/cola/permits/1177939701\_1625570671.31/0/swagger-annotations-1-5-20-sources-1-jar/io/swagger/annotations/Contact.java
- \* /opt/cola/permits/1177939701\_1625570671.31/0/swagger-annotations-1-5-20-sources-1-jar/io/swagger/annotations/ExternalDocs.java
- \* /opt/cola/permits/1177939701\_1625570671.31/0/swagger-annotations-1-5-20-sources-1-jar/io/swagger/annotations/Authorization.java
- \* /opt/cola/permits/1177939701\_1625570671.31/0/swagger-annotations-1-5-20-sources-1-jar/io/swagger/annotations/ResponseHeader.java
- \* /opt/cola/permits/1177939701\_1625570671.31/0/swagger-annotations-1-5-20-sources-1-jar/io/swagger/annotations/Info.java
- \* /opt/cola/permits/1177939701\_1625570671.31/0/swagger-annotations-1-5-20-sources-1-jar/io/swagger/annotations/ApiImplicitParams.java
- \* /opt/cola/permits/1177939701\_1625570671.31/0/swagger-annotations-1-5-20-sources-1-jar/io/swagger/annotations/ApiOperation.java
- \* /opt/cola/permits/1177939701\_1625570671.31/0/swagger-annotations-1-5-20-sources-1-jar/io/swagger/annotations/ApiModel.java
- \* /opt/cola/permits/1177939701\_1625570671.31/0/swagger-annotations-1-5-20-sources-1-jar/io/swagger/annotations/ExtensionProperty.java

\* /opt/cola/permits/1177939701\_1625570671.31/0/swagger-annotations-1-5-20-sources-1-jar/io/swagger/annotations/Example.java  
\* /opt/cola/permits/1177939701\_1625570671.31/0/swagger-annotations-1-5-20-sources-1-jar/io/swagger/annotations/SwaggerDefinition.java  
\* /opt/cola/permits/1177939701\_1625570671.31/0/swagger-annotations-1-5-20-sources-1-jar/io/swagger/annotations/License.java

# 1.156 six 1.11.0

## 1.156.1 Available under license :

The primary author and maintainer of six is Benjamin Peterson. He would like to acknowledge the following people who submitted bug reports, pull requests, and otherwise worked to improve six:

Marc Abramowitz  
Alexander Artemenko  
Aymeric Augustin  
Ned Batchelder  
Wouter Bolsterlee  
Brett Cannon  
Jason R. Coombs  
Julien Danjou  
Ben Darnell  
Ben Davis  
Tim Graham  
Thomas Grainger  
Max Grender-Jones  
Joshua Harlow  
Anselm Kruis  
Alexander Lukanin  
James Mills  
Berker Peksag  
Sridhar Ratnakumar  
Erik Rose  
Mirko Rossini  
Peter Ruibal  
Miroslav Shubernetskiy  
Anthony Sottile  
Lucas Wiman  
Jordan Moldow

If you think you belong on this list, please let me know! --Benjamin  
Copyright (c) 2010-2017 Benjamin Peterson

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to

use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

## 1.157 commons-lang3 2.6

### 1.157.1 Available under license :

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

##### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work,

where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or



for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason

of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Apache Commons Lang

Copyright 2001-2011 The Apache Software Foundation

This product includes software developed by  
The Apache Software Foundation (<http://www.apache.org/>).

# 1.158 iniparse 0.4

## 1.158.1 Available under license :

Copyright (c) 2001, 2002, 2003 Python Software Foundation  
Copyright (c) 2004-2008 Paramjit Oberoi <param.cs.wisc.edu>  
Copyright (c) 2007 Tim Lauridsen <tla@rasmil.dk>  
All Rights Reserved.

iniparse/compat.py and tests/test\_compat.py contain code derived from lib/python-2.3/ConfigParser.py and lib/python-2.3/test/test\_cfgparse.py respectively. Other code may contain small snippets from those two files as well. The Python license (LICENSE-PSF) applies to that code.

-----  
The MIT License

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

A. HISTORY OF THE SOFTWARE

=====

Python was created in the early 1990s by Guido van Rossum at Stichting Mathematisch Centrum (CWI, see <http://www.cwi.nl>) in the Netherlands as a successor of a language called ABC. Guido remains Python's principal author, although it includes many contributions from others.

In 1995, Guido continued his work on Python at the Corporation for National Research Initiatives (CNRI, see <http://www.cnri.reston.va.us>) in Reston, Virginia where he released several versions of the software.

In May 2000, Guido and the Python core development team moved to BeOpen.com to form the BeOpen PythonLabs team. In October of the same year, the PythonLabs team moved to Digital Creations (now Zope Corporation, see <http://www.zope.com>). In 2001, the Python Software Foundation (PSF, see <http://www.python.org/psf/>) was formed, a non-profit organization created specifically to own Python-related Intellectual Property. Zope Corporation is a sponsoring member of the PSF.

All Python releases are Open Source (see <http://www.opensource.org> for the Open Source Definition). Historically, most, but not all, Python releases have also been GPL-compatible; the table below summarizes the various releases.

| Release | Derived | Year | Owner | GPL- |
|---------|---------|------|-------|------|
|---------|---------|------|-------|------|

| from           | compatible? (1) |           |            |         |
|----------------|-----------------|-----------|------------|---------|
| 0.9.0 thru 1.2 | 1991-1995       | CWI       |            | yes     |
| 1.3 thru 1.5.2 | 1.2             | 1995-1999 | CNRI       | yes     |
| 1.6            | 1.5.2           | 2000      | CNRI       | no      |
| 2.0            | 1.6             | 2000      | BeOpen.com | no      |
| 1.6.1          | 1.6             | 2001      | CNRI       | yes (2) |
| 2.1            | 2.0+1.6.1       | 2001      | PSF        | no      |
| 2.0.1          | 2.0+1.6.1       | 2001      | PSF        | yes     |
| 2.1.1          | 2.1+2.0.1       | 2001      | PSF        | yes     |
| 2.2            | 2.1.1           | 2001      | PSF        | yes     |
| 2.1.2          | 2.1.1           | 2002      | PSF        | yes     |
| 2.1.3          | 2.1.2           | 2002      | PSF        | yes     |
| 2.2.1          | 2.2             | 2002      | PSF        | yes     |
| 2.2.2          | 2.2.1           | 2002      | PSF        | yes     |
| 2.2.3          | 2.2.2           | 2003      | PSF        | yes     |
| 2.3            | 2.2.2           | 2002-2003 | PSF        | yes     |
| 2.3.1          | 2.3             | 2002-2003 | PSF        | yes     |
| 2.3.2          | 2.3.1           | 2002-2003 | PSF        | yes     |
| 2.3.3          | 2.3.2           | 2002-2003 | PSF        | yes     |

Footnotes:

(1) GPL-compatible doesn't mean that we're distributing Python under the GPL. All Python licenses, unlike the GPL, let you distribute a modified version without making your changes open source. The GPL-compatible licenses make it possible to combine Python with other software that is released under the GPL; the others don't.

(2) According to Richard Stallman, 1.6.1 is not GPL-compatible, because its license has a choice of law clause. According to CNRI, however, Stallman's lawyer has told CNRI's lawyer that 1.6.1 is "not incompatible" with the GPL.

Thanks to the many outside volunteers who have worked under Guido's direction to make these releases possible.

**B. TERMS AND CONDITIONS FOR ACCESSING OR OTHERWISE USING PYTHON**

=====

**PSF LICENSE AGREEMENT FOR PYTHON 2.3**

-----

1. This LICENSE AGREEMENT is between the Python Software Foundation ("PSF"), and the Individual or Organization ("Licensee") accessing and otherwise using Python 2.3 software in source or binary form and its associated documentation.

2. Subject to the terms and conditions of this License Agreement, PSF hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use Python 2.3 alone or in any derivative version, provided, however, that PSF's License Agreement and PSF's notice of copyright, i.e., "Copyright (c) 2001, 2002, 2003 Python Software Foundation; All Rights Reserved" are retained in Python 2.3 alone or in any derivative version prepared by Licensee.

3. In the event Licensee prepares a derivative work that is based on or incorporates Python 2.3 or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of the changes made to Python 2.3.

4. PSF is making Python 2.3 available to Licensee on an "AS IS" basis. PSF MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, PSF MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON 2.3 WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.

5. PSF SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON 2.3 FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON 2.3, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.

6. This License Agreement will automatically terminate upon a material breach of its terms and conditions.

7. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between PSF and Licensee. This License Agreement does not grant permission to use PSF trademarks or trade name in a trademark sense to endorse or promote products or services of Licensee, or any third party.

8. By copying, installing or otherwise using Python 2.3, Licensee agrees to be bound by the terms and conditions of this License Agreement.

BEOPEN.COM LICENSE AGREEMENT FOR PYTHON 2.0  
-----

BEOPEN PYTHON OPEN SOURCE LICENSE AGREEMENT VERSION 1

1. This LICENSE AGREEMENT is between BeOpen.com ("BeOpen"), having an office at 160 Saratoga Avenue, Santa Clara, CA 95051, and the Individual or Organization ("Licensee") accessing and otherwise using this software in source or binary form and its associated documentation ("the Software").
2. Subject to the terms and conditions of this BeOpen Python License Agreement, BeOpen hereby grants Licensee a non-exclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use the Software alone or in any derivative version, provided, however, that the BeOpen Python License is retained in the Software, alone or in any derivative version prepared by Licensee.
3. BeOpen is making the Software available to Licensee on an "AS IS" basis. BEOPEN MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, BEOPEN MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF THE SOFTWARE WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.
4. BEOPEN SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF THE SOFTWARE FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF USING, MODIFYING OR DISTRIBUTING THE SOFTWARE, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.
5. This License Agreement will automatically terminate upon a material breach of its terms and conditions.
6. This License Agreement shall be governed by and interpreted in all respects by the law of the State of California, excluding conflict of law provisions. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between BeOpen and Licensee. This License Agreement does not grant permission to use BeOpen trademarks or trade names in a trademark sense to endorse or promote products or services of Licensee, or any third party. As an exception, the "BeOpen Python" logos available at <http://www.pythonlabs.com/logos.html> may be used according to the permissions granted on that web page.
7. By copying, installing or otherwise using the software, Licensee agrees to be bound by the terms and conditions of this License Agreement.

CNRI LICENSE AGREEMENT FOR PYTHON 1.6.1

-----

1. This LICENSE AGREEMENT is between the Corporation for National Research Initiatives, having an office at 1895 Preston White Drive, Reston, VA 20191 ("CNRI"), and the Individual or Organization ("Licensee") accessing and otherwise using Python 1.6.1 software in source or binary form and its associated documentation.

2. Subject to the terms and conditions of this License Agreement, CNRI hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use Python 1.6.1 alone or in any derivative version, provided, however, that CNRI's License Agreement and CNRI's notice of copyright, i.e., "Copyright (c) 1995-2001 Corporation for National Research Initiatives; All Rights Reserved" are retained in Python 1.6.1 alone or in any derivative version prepared by Licensee. Alternately, in lieu of CNRI's License Agreement, Licensee may substitute the following text (omitting the quotes): "Python 1.6.1 is made available subject to the terms and conditions in CNRI's License Agreement. This Agreement together with Python 1.6.1 may be located on the Internet using the following unique, persistent identifier (known as a handle): 1895.22/1013. This Agreement may also be obtained from a proxy server on the Internet using the following URL: <http://hdl.handle.net/1895.22/1013>".

3. In the event Licensee prepares a derivative work that is based on or incorporates Python 1.6.1 or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of the changes made to Python 1.6.1.

4. CNRI is making Python 1.6.1 available to Licensee on an "AS IS" basis. CNRI MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, CNRI MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON 1.6.1 WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.

5. CNRI SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON 1.6.1 FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON 1.6.1, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.

6. This License Agreement will automatically terminate upon a material breach of its terms and conditions.

7. This License Agreement shall be governed by the federal intellectual property law of the United States, including without limitation the federal copyright law, and, to the extent such U.S. federal law does not apply, by the law of the Commonwealth of

Virginia, excluding Virginia's conflict of law provisions. Notwithstanding the foregoing, with regard to derivative works based on Python 1.6.1 that incorporate non-separable material that was previously distributed under the GNU General Public License (GPL), the law of the Commonwealth of Virginia shall govern this License Agreement only as to issues arising under or with respect to Paragraphs 4, 5, and 7 of this License Agreement. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between CNRI and Licensee. This License Agreement does not grant permission to use CNRI trademarks or trade name in a trademark sense to endorse or promote products or services of Licensee, or any third party.

8. By clicking on the "ACCEPT" button where indicated, or by copying, installing or otherwise using Python 1.6.1, Licensee agrees to be bound by the terms and conditions of this License Agreement.

ACCEPT

CWI LICENSE AGREEMENT FOR PYTHON 0.9.0 THROUGH 1.2

-----  
Copyright (c) 1991 - 1995, Stichting Mathematisch Centrum Amsterdam, The Netherlands. All rights reserved.

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of Stichting Mathematisch Centrum or CWI not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission.

STICHTING MATHEMATISCH CENTRUM DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS, IN NO EVENT SHALL STICHTING MATHEMATISCH CENTRUM BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

## 1.159 jsr305 3.0.2



## 1.159.1 Available under license :

No license file was found, but licenses were detected in source scan.

/\*

- \* Copyright (c) 2005 Brian Goetz
  - \* Released under the Creative Commons Attribution License
  - \* (<http://creativecommons.org/licenses/by/2.5>)
  - \* Official home: <http://www.jcip.net>
- \*/

Found in path(s):

- \* /opt/cola/permits/1334730768\_1653653249.5131547/0/jsr305-3-0-2-sources-8-jar/javax/annotation/concurrent/GuardedBy.java
- \* /opt/cola/permits/1334730768\_1653653249.5131547/0/jsr305-3-0-2-sources-8-jar/javax/annotation/concurrent/NotThreadSafe.java
- \* /opt/cola/permits/1334730768\_1653653249.5131547/0/jsr305-3-0-2-sources-8-jar/javax/annotation/concurrent/Immutable.java
- \* /opt/cola/permits/1334730768\_1653653249.5131547/0/jsr305-3-0-2-sources-8-jar/javax/annotation/concurrent/ThreadSafe.java

# 1.160 python-ethtool 0.14-5.el8

## 1.160.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it

if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not

covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of

this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as

distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any

such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF

MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this

when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

## 1.161 jose4j 0.7.8

### 1.161.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2012-2017 Brian Campbell
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
```



\*/

Found in path(s):

\* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwk/SimpleJwkFilter.java

\* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwk/DecryptionJwkSelector.java

\* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/lang/InvalidKeyException.java

\* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwk/SelectorSupport.java

No license file was found, but licenses were detected in source scan.

/\*

\* Licensed to the Apache Software Foundation (ASF) under one or more

\* contributor license agreements. See the NOTICE file distributed with

\* this work for additional information regarding copyright ownership.

\* The ASF licenses this file to You under the Apache License, Version 2.0

\* (the "License"); you may not use this file except in compliance with

\* the License. You may obtain a copy of the License at

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-

jar/org/jose4j/base64url/internal/apache/commons/codec/binary/BaseNCodec.java

\* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-

jar/org/jose4j/base64url/internal/apache/commons/codec/binary/Base64.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2012-2018 Brian Campbell

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwk/HttpsJwks.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2012-2021 Brian Campbell

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwe/kdf/ConcatKeyDerivationFunctionFactory.java

\* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwe/kdf/ConcatenationKeyDerivationFunctionWithSha256.java

\* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwe/kdf/KdfUtil.java

\* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwe/kdf/ConcatKeyDerivationFunction.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2012-2017 Brian Campbell

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwt/consumer/JwtConsumerBuilder.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jws/AlgorithmIdentifiers.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwt/consumer/NumericDateValidator.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwt/consumer/JweCustomizer.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwt/consumer/SubValidator.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwt/consumer/JwtConsumer.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwe/ContentEncryptionParts.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/keys/HmacKey.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwe/JsonWebEncryption.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/keys/BigEndianBigInteger.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/lang/IntegrityException.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwe/ContentEncryptionHelp.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwt/consumer/JwsCustomizer.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwx/CompactSerialization.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwx/KeyValidationSupport.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwe/CipherStrengthSupport.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/lang/ExceptionHelp.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwk/Use.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwk/JsonWebKeySet.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/keys/resolvers/JwksDecryptionKeyResolver.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/keys/AesKey.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwk/RsaJsonWebKey.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/lang/ByteUtil.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/zip/CompressionAlgorithm.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwt/consumer/Validator.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwe/kdf/PasswordBasedKeyDerivationFunction2.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwe/EcdhKeyAgreementAlgorithm.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwa/Algorithm.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwx/Headers.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-

jar/org/jose4j/jwe/AesKeyWrapManagementAlgorithm.java  
 \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-  
 jar/org/jose4j/jwe/EcdhKeyAgreementWithAesKeyWrapManagementAlgorithm.java  
 \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-  
 jar/org/jose4j/jws/UnsecuredNoneAlgorithm.java  
 \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-  
 jar/org/jose4j/jwk/OctetSequenceJsonWebKey.java  
 \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jca/ProviderContext.java  
 \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-  
 jar/org/jose4j/jwt/ReservedClaimNames.java  
 \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-  
 jar/org/jose4j/jws/JsonWebSignatureAlgorithm.java  
 \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-  
 jar/org/jose4j/keys/resolvers/DecryptionKeyResolver.java  
 \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/base64url/Base64Url.java  
 \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/lang/JsonHelp.java  
 \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-  
 jar/org/jose4j/jwe/KeyManagementAlgorithmIdentifiers.java  
 \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-  
 jar/org/jose4j/jwt/consumer/ErrorCodeValidatorAdapter.java  
 \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwk/PublicJsonWebKey.java  
 \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/keys/EcKeyUtil.java  
 \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-  
 jar/org/jose4j/zip/CompressionAlgorithmIdentifiers.java  
 \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/keys/KeyPersuasion.java  
 \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/http/SimpleGet.java  
 \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwx/CompactSerializer.java  
 \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-  
 jar/org/jose4j/keys/resolvers/X509VerificationKeyResolver.java  
 \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-  
 jar/org/jose4j/base64url/SimplePEMEncoder.java  
 \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/mac/MacUtil.java  
 \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-  
 jar/org/jose4j/jwa/AlgorithmAvailability.java  
 \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwt/IntDate.java  
 \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-  
 jar/org/jose4j/jwt/consumer/ErrorCodeValidator.java  
 \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-  
 jar/org/jose4j/jwt/MalformedClaimException.java  
 \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-  
 jar/org/jose4j/jwt/consumer/AudValidator.java  
 \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwk/EcJwkGenerator.java  
 \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-  
 jar/org/jose4j/jwt/GeneralJwtException.java  
 \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-  
 jar/org/jose4j/jwe/DirectKeyManagementAlgorithm.java  
 \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-  
 jar/org/jose4j/jwt/consumer/InvalidJwtException.java

- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/json/JsonHeaderUtil.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/keys/PbkdfKey.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/keys/resolvers/HttpsJwksVerificationKeyResolver.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/keys/EllipticCurves.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwe/RsaKeyManagementAlgorithm.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwt/consumer/SimpleKeyResolver.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwt/consumer/JtiValidator.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwk/EllipticCurveJsonWebKey.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jws/RsaUsingShaAlgorithm.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwt/consumer/IssValidator.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/zip/DeflateRFC1951CompressionAlgorithm.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwe/ContentEncryptionKeys.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwe/InitializationVectorHelp.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/lang/ByteGenerator.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jws/JsonWebSignature.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwe/CipherUtil.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwk/RsaJwkGenerator.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwe/Pbes2HmacShaWithAesKeyWrapAlgorithm.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwk/KeyOperations.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwa/AlgorithmConstraints.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/lang/BouncyCastleProviderHelp.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwe/AesCbcHmacSha2ContentEncryptionAlgorithm.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwx/HeaderParameterNames.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/keys/resolvers/JwksVerificationKeyResolver.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwk/OctJwkGenerator.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwe/SimpleAeadCipher.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwe/AesGcmKeyEncryptionAlgorithm.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwa/AlgorithmFactory.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/keys/KeyPairUtil.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwe/ContentEncryptionAlgorithmIdentifiers.java

- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/keys/resolvers/VerificationKeyResolver.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jws/BaseSignatureAlgorithm.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwt/consumer/JwtContext.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwa/AlgorithmFactoryFactory.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwa/AlgorithmInfo.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwt/JwtClaims.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwe/KeyManagementAlgorithm.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/lang/HashUtil.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwk/JsonWebKey.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwe/WrappingKeyManagementAlgorithm.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/lang/UncheckedJoseException.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/lang/DefaultByteGenerator.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/lang/JoseException.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwx/JsonWebStructure.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwt/consumer/ErrorCodes.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/lang/StringUtil.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwe/ContentEncryptionAlgorithm.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwe/AesGcmContentEncryptionAlgorithm.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/keys/RsaKeyUtil.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/lang/UnresolvableKeyException.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jws/EcdsaUsingShaAlgorithm.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwk/VerificationJwkSelector.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwt/NumericDate.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/lang/InvalidAlgorithmException.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/keys/X509Util.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jwe/ContentEncryptionKeyDescriptor.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/json/JsonUtil.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/jws/HmacUsingShaAlgorithm.java
- \* /opt/cola/permits/1224864821\_1636156620.99/0/jose4j-0-7-8-sources-jar/org/jose4j/http/Get.java

# 1.162 rhino 1.7R3

## 1.162.1 Available under license :

Found license 'General Public License 2.0' in '\* The contents of this file are subject to the Mozilla Public License Version \* 1.1 (the "License"); you may not use this file except in compliance with \* the License. You may obtain a copy of the License at \* Software distributed under the License is distributed on an "AS IS" basis, \* the Initial Developer. All Rights Reserved. \* Alternatively, the contents of this file may be used under the terms of \* the GNU General Public License Version 2 or later (the "GPL"), in which \* version...'

Found license 'General Public License 2.0' in '\* The contents of this file are subject to the Mozilla Public License Version \* 1.1 (the "License"); you may not use this file except in compliance with \* the License. You may obtain a copy of the License at \* Software distributed under the License is distributed on an "AS IS" basis, \* the Initial Developer. All Rights Reserved. \* Alternatively, the contents of this file may be used under the terms of \* the GNU General Public License Version 2 or later (the "GPL"), in which \* but the client is free to use the AST to determine the affected'

Found license 'General Public License 2.0' in '\* The contents of this file are subject to the Mozilla Public License Version \* 1.1 (the "License"); you may not use this file except in compliance with \* the License. You may obtain a copy of the License at \* Software distributed under the License is distributed on an "AS IS" basis, \* Alternatively, the contents of this file may be used under the terms of \* the GNU General Public License Version 2 or later (the "GPL"), in which // throws a special exception. This ensures execution of all pending'

Found license 'General Public License 2.0' in '\* The contents of this file are subject to the Mozilla Public License Version \* 1.1 (the "License"); you may not use this file except in compliance with \* the License. You may obtain a copy of the License at \* Software distributed under the License is distributed on an "AS IS" basis, \* the Initial Developer. All Rights Reserved. \* Alternatively, the contents of this file may be used under the terms of \* the GNU General Public License Version 2 or later (the "GPL"), in which \* Permission to use, copy, modify, and distribute this software for any \* purpose without fee is hereby granted, provided that this entire notice'

Found license 'General Public License 2.0' in '# The contents of this file are subject to the Mozilla Public License Version # 1.1 (the "License"); you may not use this file except in compliance with # the License. You may obtain a copy of the License at # Software distributed under the License is distributed on an "AS IS" basis, # the Initial Developer. All Rights Reserved. # Alternatively, the contents of this file may be used under the terms of # the GNU General Public License Version 2 or later (the "GPL"), in which'

Found license 'General Public License 2.0' in '\* The contents of this file are subject to the Mozilla Public License Version \* 1.1 (the "License"); you may not use this file except in compliance with \* the License. You may obtain a copy of the License at \* Software distributed under the License is distributed on an "AS IS" basis, \* the Initial Developer. All Rights Reserved. \* Alternatively, the contents of this file may be used under the terms of \* the GNU General Public License Version 2 or later (the "GPL"), in which'

Found license 'General Public License 2.0' in '\* The contents of this file are subject to the Mozilla Public License Version \* 1.1 (the "License"); you may not use this file except in compliance with \* the License. You may obtain a copy of the License at \* Software distributed under the License is distributed on an "AS IS" basis, \* Alternatively, the contents of this file may be used under the terms of \* the GNU General Public License Version 2 or later (the "GPL"), in which'

# 1.163 jackson-annotations 2.14.0-rc2

## 1.163.1 Available under license :

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.



"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or

Derivative Works a copy of this License; and

- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
  
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
  
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

## 1.164 crypto-policies 20211116-

### 1.gitae470d6.el8

#### 1.164.1 Available under license :

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.

51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts  
as the successor of the GNU Library Public License, version 2, hence  
the version number 2.1.]

#### Preamble

The licenses for most software are designed to take away your  
freedom to share and change it. By contrast, the GNU General Public  
Licenses are intended to guarantee your freedom to share and change  
free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some  
specially designated software packages--typically libraries--of the  
Free Software Foundation and other authors who decide to use it. You  
can use it too, but we suggest you first think carefully about whether  
this license or the ordinary General Public License is the better  
strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use,  
not price. Our General Public Licenses are designed to make sure that  
you have the freedom to distribute copies of free software (and charge  
for this service if you wish); that you receive source code or can get

it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with

the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

#### GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.



This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the

Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
- b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the

Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time.

Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest

possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990

Ty Coon, President of Vice

That's all there is to it!

# 1.165 dnf 4.7.0-8.el8

## 1.165.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free

program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any



part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any

later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

<signature of Ty Coon>, 1 April 1989

Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

# 1.166 tzdata 2022c-1.el8

## 1.166.1 Available under license :

Unless specified below, all files in the tz code and data (including this LICENSE file) are in the public domain.

If the files date.c, newstrftime.3, and strftime.c are present, they contain material derived from BSD and use the BSD 3-clause license.

# 1.167 virt-what 1.18-13.el8

## 1.167.1 Available under license :

GNU GENERAL PUBLIC LICENSE  
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether

gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate

copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program



with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such

parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING

OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may

be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program `Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989

Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

## 1.168 activation-api 1.1

### 1.168.1 Available under license :

# Notices for Eclipse Project for JAF

This content is produced and maintained by the Eclipse Project for JAF project.

\* Project home: <https://projects.eclipse.org/projects/ee4j.jaf>

## Copyright

All content is the property of the respective authors or their employers. For more information regarding authorship of content, please consult the listed source code repository logs.

## Declared Project Licenses

This program and the accompanying materials are made available under the terms of the Eclipse Distribution License v. 1.0, which is available at <http://www.eclipse.org/org/documents/edl-v10.php>.

SPDX-License-Identifier: BSD-3-Clause

## Source Code

The project maintains the following source code repositories:

\* <https://github.com/eclipse-ee4j/jaf>

## ## Third-party Content

This project leverages the following third party content.

JUnit (4.12)

\* License: Eclipse Public License

Copyright (c) 2018 Oracle and/or its affiliates. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- Neither the name of the Eclipse Foundation, Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## 1.169 rxtx 2.1-7r2

### 1.169.1 Available under license :

psmisc (fuser, killall and pstree) program code, documentation and auxiliary programs are

Copyright 1993-1998 Werner Almesberger.

All rights reserved.

Redistribution and use in source and binary forms of parts of or the

whole original or derived work are permitted provided that the original work is properly attributed to the author. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission. This work is provided "as is" and without any express or implied warranties.

#### GNU LIBRARY GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1991 Free Software Foundation, Inc.

59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the library GPL. It is numbered 2 because it goes with version 2 of the ordinary GPL.]

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Library General Public License, applies to some specially designated Free Software Foundation software, and to any other libraries whose authors decide to use it. You can use it for your libraries, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library, or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link a program with the library, you must provide complete object files to the recipients so that they can relink them with the library, after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

Our method of protecting your rights has two steps: (1) copyright the library, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the library.

Also, for each distributor's protection, we want to make certain that everyone understands that there is no warranty for this free library. If the library is modified by someone else and passed on, we want its recipients to know that what they have is not the original version, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that companies distributing free software will individually obtain patent licenses, thus in effect transforming the program into proprietary software. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License, which was designed for utility programs. This license, the GNU Library General Public License, applies to certain designated libraries. This license is quite different from the ordinary one; be sure to read it in full, and don't assume that anything in it is the same as in the ordinary license.

The reason we have a separate public license for some libraries is that they blur the distinction we usually make between modifying or adding to a program and simply using it. Linking a program with a library, without changing the library, is in some sense simply using the library, and is analogous to running a utility program or application program. However, in a textual and legal sense, the linked executable is a combined work, a derivative of the original library, and the ordinary General Public License treats it as such.

Because of this blurred distinction, using the ordinary General Public License for libraries did not effectively promote software sharing, because most developers did not use the libraries. We concluded that weaker conditions might promote sharing better.

However, unrestricted linking of non-free programs would deprive the users of those programs of all benefit from the free status of the libraries themselves. This Library General Public License is intended to permit developers of non-free programs to use free libraries, while preserving your freedom as a user of such programs to change the free libraries that are incorporated in them. (We have not seen how to achieve this as regards changes in header files, but we have achieved it as regards changes in the actual functions of the Library.) The hope is that this will lead to faster development of free libraries.



The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, while the latter only works together with the library.

Note that it is possible for a library to be covered by the ordinary General Public License rather than by this special one.

## GNU LIBRARY GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Library General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an

appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the

library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also compile or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

c) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

d) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your

rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Library General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY

AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Library General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Library General Public License for more details.

You should have received a copy of the GNU Library General Public License along with this library; if not, write to the Free Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the



library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!

# 1.170 python-requests 2.20.0 2.1.el8\_1

## 1.170.1 Available under license :

Copyright 2018 Kenneth Reitz

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

Modifications:

Copyright (c) 2011 Kenneth Reitz.

Original Project:

Copyright (c) 2010 by Armin Ronacher.

Some rights reserved.

Redistribution and use in source and binary forms of the theme, with or  
without modification, are permitted provided that the following conditions  
are met:

\* Redistributions of source code must retain the above copyright  
notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above  
copyright notice, this list of conditions and the following  
disclaimer in the documentation and/or other materials provided  
with the distribution.

\* The names of the contributors may not be used to endorse or promote products derived from this software without specific prior written permission.

We kindly ask you to only use these themes in an unmodified manner just for Flask and Flask-related products, not for unrelated projects. If you like the visual style and want to use it for your own projects, please consider making some larger changes to the themes (such as changing font faces, sizes, colors or margins).

THIS THEME IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS THEME, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## 1.171 bsf 2.4.0-4.1.el6

### 1.171.1 Available under license :

Beans Scripting Framework (BSF)  
Copyright 2002-2006 The Apache Software Foundation.

This product includes software developed at  
The Apache Software Foundation (<http://www.apache.org/>).

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

##### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common

control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
  
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
  
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or

documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill,

work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

# 1.172 log4j-api 2.17.1

## 1.172.1 Available under license :

Apache Log4j 1.x Compatibility API  
Copyright 1999-1969 The Apache Software Foundation

This product includes software developed at  
The Apache Software Foundation (<http://www.apache.org/>).

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object

form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.



4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a

file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License.

You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

## 1.173 gnupg 2.2.20-3.el8\_6

### 1.173.1 Available under license :

#### LICENSE TERMS

Copyright (c) 2000, Dimitrios Souflis  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

Neither the name of Dimitrios Souflis nor the names of the contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO,

PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Here is a list with collected copyright notices. For details see the description of each individual package. [Compiled by wk 2017-11-07]

GNUPG is

Copyright (C) 1997-2017 Werner Koch  
Copyright (C) 1994-2017 Free Software Foundation, Inc.  
Copyright (C) 2003-2017 g10 Code GmbH  
Copyright (C) 2002 Klarlvdalens Datakonsult AB  
Copyright (C) 1995-1997, 2000-2007 Ulrich Drepper <drepper@gnu.ai.mit.edu>  
Copyright (C) 1994 X Consortium  
Copyright (C) 1998 by The Internet Society.  
Copyright (C) 1998-2004 The OpenLDAP Foundation  
Copyright (C) 1998-2004 Kurt D. Zeilenga.  
Copyright (C) 1998-2004 Net Boolean Incorporated.  
Copyright (C) 2001-2004 IBM Corporation.  
Copyright (C) 1999-2003 Howard Y.H. Chu.  
Copyright (C) 1999-2003 Symas Corporation.  
Copyright (C) 1998-2003 Hallvard B. Furuseth.  
Copyright (C) 1992-1996 Regents of the University of Michigan.  
Copyright (C) 2000 Dimitrios Souflis  
Copyright (C) 2008,2009,2010,2012-2016 William Ahern

GnuPG is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 3 of the License, or (at your option) any later version.

GnuPG is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, see <<https://www.gnu.org/licenses/>>.

LIBGCRYPT is

Copyright (C) 1989,1991-2017 Free Software Foundation, Inc.  
Copyright (C) 1994 X Consortium  
Copyright (C) 1996 L. Peter Deutsch

Copyright (C) 1997 Werner Koch  
Copyright (C) 1998 The Internet Society  
Copyright (C) 1996-1999 Peter Gutmann, Paul Kendall, and Chris Wedgwood  
Copyright (C) 1996-2006 Peter Gutmann, Matt Thomlinson and Blake Coverett  
Copyright (C) 2003 Nikos Mavroyanopoulos  
Copyright (C) 2006-2007 NTT (Nippon Telegraph and Telephone Corporation)  
Copyright (C) 2012-2017 g10 Code GmbH  
Copyright (C) 2012 Simon Josefsson, Niels Mller  
Copyright (c) 2012 Intel Corporation  
Copyright (C) 2013 Christian Grothoff  
Copyright (C) 2013-2017 Jussi Kivilinna  
Copyright (C) 2013-2014 Dmitry Eremin-Solenikov  
Copyright (C) 2014 Stephan Mueller  
Copyright (C) 2017 Bundesamt fr Sicherheit in der Informationstechnik

Libgcrypt is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

Libgcrypt is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this program; if not, see <<http://www.gnu.org/licenses/>>.

LIBGPG-ERROR is

Copyright (C) 2003-2004, 2010, 2013-2017 g10 Code GmbH

libgpg-error is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

libgpg-error is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this program; if not, see <<http://www.gnu.org/licenses/>>.

LIBASSUAN is

Copyright (C) 1992-2013 Free Software Foundation, Inc.

Copyright (C) 1994 X Consortium

Copyright (C) 2000 Werner Koch (dd9jn)

Copyright (C) 2001-2016 g10 Code GmbH

Copyright (C) 2004 Simon Josefsson

Assuan is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

Assuan is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this program; if not, see <<http://www.gnu.org/licenses/>>.

LIBKSBA is

Copyright (C) 2001, 2002, 2003, 2004, 2005, 2006, 2010, 2011

2012, 2013, 2014, 2015 g10 Code GmbH

Copyright (C) 2001, 2002, 2003, 2007 Free Software Foundation, Inc.

Copyright (C) 2000, 2001 Fabio Fiorina

The library and the header files are distributed under the following terms (LGPLv3+/GPLv2+):

KSBA is free software; you can redistribute it and/or modify it under the terms of either

- the GNU Lesser General Public License as published by the Free Software Foundation; either version 3 of the License, or (at your option) any later version.

or

- the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

or both in parallel, as here.

KSBA is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY

or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

The other parts (e.g. manual, build system, tests) are distributed under the following terms (GPLv3):

KSBA is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 3 of the License, or (at your option) any later version.

KSBA is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

NPTH is

Copyright (C) 2011, 2012, 2014, 2015, 2017 g10 Code GmbH

nPth is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

nPth is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this program; if not, see <<https://www.gnu.org/licenses/>>.

NTBTLS is

Copyright (C) 2006-2014 Brainspark B.V.  
Copyright (C) 2014-2017 g10 Code GmbH

NTBTLS is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 3 of the License, or (at your option) any later version.

NTBTLS is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the

GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, see <<http://www.gnu.org/licenses/>>.

PINENTRY is

Copyright (C) 1999 Robert Bihlmeyer <[robbe@orcus.priv.at](mailto:robbe@orcus.priv.at)>  
Copyright (C) 2001-2004, 2007-2008, 2010, 2015-2016 g10 Code GmbH  
Copyright (C) 2002, 2008 Klarlvdalens Datakonsult AB (KDAB)  
Copyright (C) 2004 by Albrecht Dre <[albrecht.dress@arcor.de](mailto:albrecht.dress@arcor.de)>  
Copyright 2007 Ingo Klcker  
Copyright (C) 2014 Serge Voilokov  
Copyright (C) 2015 Daiki Ueno  
Copyright (C) 2015 Daniel Kahn Gillmor <[dkg@fifthhorseman.net](mailto:dkg@fifthhorseman.net)>  
Copyright 2016 Intevation GmbH

PINENTRY is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

PINENTRY is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, see <<https://www.gnu.org/licenses/>>.

GPGME is

Copyright (C) 1991-2013 Free Software Foundation, Inc.  
Copyright (C) 2000-2001 Werner Koch  
Copyright (C) 2001-2017 g10 Code GmbH  
Copyright (C) 2002 Klarlvdalens Datakonsult AB  
Copyright (C) 2004-2008 Igor Belyi  
Copyright (C) 2002 John Goerzen  
Copyright (C) 2014, 2015 Martin Albrecht  
Copyright (C) 2015 Ben McGinnes  
Copyright (C) 2015-2016 Bundesamt fr Sicherheit in der Informationstechnik  
Copyright (C) 2016 Intevation GmbH

GPGME is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of



the License, or (at your option) any later version.

GPGME is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this program; if not, see <<http://www.gnu.org/licenses/>>.

NSIS is

Copyright 1999-2009 Nullsoft and Contributors  
Copyright 2002-2008 Amir Szekely  
Copyright 2003 Ramon

This license applies to everything in the NSIS package, except where otherwise noted.

This software is provided 'as-is', without any express or implied warranty. In no event will the authors be held liable for any damages arising from the use of this software.

Permission is granted to anyone to use this software for any purpose, including commercial applications, and to alter it and redistribute it freely, subject to the following restrictions:

1. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated but is not required.
2. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
3. This notice may not be removed or altered from any source distribution.

The user interface used with the installer is

Copyright 2002-2009 Joost Verburg

[It is distributed along with NSIS and the same conditions as stated above apply]

TinySCHEME is part of the GnuPG package and is

Copyright (c) 2000, Dimitrios Souflis  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

Neither the name of Dimitrios Souflis nor the names of the contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

LIBDNS is part of the GnuPG package and is

Copyright (c) 2008, 2009, 2010, 2012-2016 William Ahern

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS

OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

ZLIB is

(C) 1995-2013 Jean-loup Gailly and Mark Adler

This software is provided 'as-is', without any express or implied warranty. In no event will the authors be held liable for any damages arising from the use of this software.

Permission is granted to anyone to use this software for any purpose, including commercial applications, and to alter it and redistribute it freely, subject to the following restrictions:

1. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated but is not required.
2. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
3. This notice may not be removed or altered from any source distribution.

Jean-loup Gailly      Mark Adler  
jloup@gzip.org      madler@alumni.caltech.edu

BZIP2 is

This program, "bzip2", the associated library "libbzip2", and all documentation, are copyright (C) 1996-2010 Julian R Seward. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product

documentation would be appreciated but is not required.

3. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
4. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

SQLITE has

been put into the public-domain by its author D. Richard Hipp:  
The author disclaims copyright to this source code. In place of a legal notice, here is a blessing:

May you do good and not evil.

May you find forgiveness for yourself and forgive others.

May you share freely, never taking more than you give.

[Note that only a few files are distributed under this license.]

Creative Commons Legal Code

CC0 1.0 Universal

CREATIVE COMMONS CORPORATION IS NOT A LAW FIRM AND DOES NOT PROVIDE LEGAL SERVICES. DISTRIBUTION OF THIS DOCUMENT DOES NOT CREATE AN ATTORNEY-CLIENT RELATIONSHIP. CREATIVE COMMONS PROVIDES THIS INFORMATION ON AN "AS-IS" BASIS. CREATIVE COMMONS MAKES NO WARRANTIES REGARDING THE USE OF THIS DOCUMENT OR THE INFORMATION OR WORKS PROVIDED HEREUNDER, AND DISCLAIMS LIABILITY FOR DAMAGES RESULTING FROM THE USE OF THIS DOCUMENT OR THE INFORMATION OR WORKS PROVIDED HEREUNDER.

Statement of Purpose

The laws of most jurisdictions throughout the world automatically confer exclusive Copyright and Related Rights (defined below) upon the creator and subsequent owner(s) (each and all, an "owner") of an original work of authorship and/or a database (each, a "Work").

Certain owners wish to permanently relinquish those rights to a Work for the purpose of contributing to a commons of creative, cultural and scientific works ("Commons") that the public can reliably and without fear of later claims of infringement build upon, modify, incorporate in other works, reuse and redistribute as freely as possible in any form whatsoever and for any purposes, including without limitation commercial purposes. These owners may contribute to the Commons to promote the ideal of a free culture and the further production of creative, cultural and scientific works, or to gain reputation or greater distribution for their Work in part through the use and efforts of others.

For these and/or other purposes and motivations, and without any expectation of additional consideration or compensation, the person associating CC0 with a Work (the "Affirmer"), to the extent that he or she is an owner of Copyright and Related Rights in the Work, voluntarily elects to apply CC0 to the Work and publicly distribute the Work under its terms, with knowledge of his or her Copyright and Related Rights in the Work and the meaning and intended legal effect of CC0 on those rights.

1. Copyright and Related Rights. A Work made available under CC0 may be protected by copyright and related or neighboring rights ("Copyright and Related Rights"). Copyright and Related Rights include, but are not limited to, the following:

- i. the right to reproduce, adapt, distribute, perform, display, communicate, and translate a Work;
- ii. moral rights retained by the original author(s) and/or performer(s);
- iii. publicity and privacy rights pertaining to a person's image or likeness depicted in a Work;
- iv. rights protecting against unfair competition in regards to a Work, subject to the limitations in paragraph 4(a), below;
- v. rights protecting the extraction, dissemination, use and reuse of data in a Work;
- vi. database rights (such as those arising under Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996 on the legal protection of databases, and under any national implementation thereof, including any amended or successor version of such directive); and
- vii. other similar, equivalent or corresponding rights throughout the world based on applicable law or treaty, and any national implementations thereof.

2. Waiver. To the greatest extent permitted by, but not in contravention

of, applicable law, Affirmer hereby overtly, fully, permanently, irrevocably and unconditionally waives, abandons, and surrenders all of Affirmer's Copyright and Related Rights and associated claims and causes of action, whether now known or unknown (including existing as well as future claims and causes of action), in the Work (i) in all territories worldwide, (ii) for the maximum duration provided by applicable law or treaty (including future time extensions), (iii) in any current or future medium and for any number of copies, and (iv) for any purpose whatsoever, including without limitation commercial, advertising or promotional purposes (the "Waiver"). Affirmer makes the Waiver for the benefit of each member of the public at large and to the detriment of Affirmer's heirs and successors, fully intending that such Waiver shall not be subject to revocation, rescission, cancellation, termination, or any other legal or equitable action to disrupt the quiet enjoyment of the Work by the public as contemplated by Affirmer's express Statement of Purpose.

3. Public License Fallback. Should any part of the Waiver for any reason be judged legally invalid or ineffective under applicable law, then the Waiver shall be preserved to the maximum extent permitted taking into account Affirmer's express Statement of Purpose. In addition, to the extent the Waiver is so judged Affirmer hereby grants to each affected person a royalty-free, non transferable, non sublicensable, non exclusive, irrevocable and unconditional license to exercise Affirmer's Copyright and Related Rights in the Work (i) in all territories worldwide, (ii) for the maximum duration provided by applicable law or treaty (including future time extensions), (iii) in any current or future medium and for any number of copies, and (iv) for any purpose whatsoever, including without limitation commercial, advertising or promotional purposes (the "License"). The License shall be deemed effective as of the date CC0 was applied by Affirmer to the Work. Should any part of the License for any reason be judged legally invalid or ineffective under applicable law, such partial invalidity or ineffectiveness shall not invalidate the remainder of the License, and in such case Affirmer hereby affirms that he or she will not (i) exercise any of his or her remaining Copyright and Related Rights in the Work or (ii) assert any associated claims and causes of action with respect to the Work, in either case contrary to Affirmer's express Statement of Purpose.

4. Limitations and Disclaimers.

- a. No trademark or patent rights held by Affirmer are waived, abandoned, surrendered, licensed or otherwise affected by this document.
- b. Affirmer offers the Work as-is and makes no representations or warranties of any kind concerning the Work, express, implied, statutory or otherwise, including without limitation warranties of title, merchantability, fitness for a particular purpose, non infringement, or the absence of latent or other defects, accuracy, or the present or absence of errors, whether or not discoverable, all to

- the greatest extent permissible under applicable law.
- c. Affirmer disclaims responsibility for clearing rights of other persons that may apply to the Work or any use thereof, including without limitation any person's Copyright and Related Rights in the Work. Further, Affirmer disclaims responsibility for obtaining any necessary consents, permissions or other rights required for any use of the Work.
  - d. Affirmer understands and acknowledges that Creative Commons is not a party to this document and has no duty or obligation with respect to this CC0 or use of the Work.
- [Note that only a few files are distributed under this license.]

GNU LESSER GENERAL PUBLIC LICENSE  
Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.  
59 Temple Place, Suite 330, Boston, MA 02111-1307 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts  
as the successor of the GNU Library Public License, version 2, hence  
the version number 2.1.]

Preamble

The licenses for most software are designed to take away your  
freedom to share and change it. By contrast, the GNU General Public  
Licenses are intended to guarantee your freedom to share and change  
free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some  
specially designated software packages--typically libraries--of the  
Free Software Foundation and other authors who decide to use it. You  
can use it too, but we suggest you first think carefully about whether  
this license or the ordinary General Public License is the better  
strategy to use in any particular case, based on the explanations  
below.

When we speak of free software, we are referring to freedom of use,  
not price. Our General Public Licenses are designed to make sure that  
you have the freedom to distribute copies of free software (and charge  
for this service if you wish); that you receive source code or can get  
it if you want it; that you can change the software and use pieces of  
it in new free programs; and that you are informed that you can do  
these things.

To protect your rights, we need to make restrictions that forbid

distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

^L

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less



of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

^L

## GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a

portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or

table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

^L

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or

derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.  
^L

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse

engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on

which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

^L

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with

this License.

^L

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library

specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

^L

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

^L

#### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).



To apply these terms, attach the following notices to the library.  
It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!

GNU GENERAL PUBLIC LICENSE  
Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<https://fsf.org/>>  
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those

products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

## TERMS AND CONDITIONS

### 0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible

feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

#### 1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

## 2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

## 3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

## 4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any

non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

#### 5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.
- b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".
- c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.
- d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

#### 6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the

machine-readable Corresponding Source under the terms of this License, in one of these ways:

a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

## 7. Additional Terms.



"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains

a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

## 8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

## 9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However,

nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

#### 10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

#### 11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to

make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting

any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

#### 12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

#### 13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

#### 14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different

permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

#### 15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

#### 16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### 17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see <<https://www.gnu.org/licenses/>>.

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program> Copyright (C) <year> <name of author>
```

```
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
```

```
This is free software, and you are welcome to redistribute it under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <<https://www.gnu.org/licenses/>>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <<https://www.gnu.org/philosophy/why-not-lgpl.html>>.

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies

of this license document, but changing it is not allowed.

## Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.



The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE  
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is

allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues),

conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of

this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands ``show w'` and ``show c'` should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than ``show w'` and ``show c'`; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

[Note that only a few files are distributed under this license.]

GNU LESSER GENERAL PUBLIC LICENSE

Copyright (C) 2007 Free Software Foundation, Inc. <<https://fsf.org/>>  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

This version of the GNU Lesser General Public License incorporates  
the terms and conditions of version 3 of the GNU General Public  
License, supplemented by the additional permissions listed below.

#### 0. Additional Definitions.

As used herein, "this License" refers to version 3 of the GNU Lesser  
General Public License, and the "GNU GPL" refers to version 3 of the GNU  
General Public License.

"The Library" refers to a covered work governed by this License,  
other than an Application or a Combined Work as defined below.

An "Application" is any work that makes use of an interface provided  
by the Library, but which is not otherwise based on the Library.  
Defining a subclass of a class defined by the Library is deemed a mode  
of using an interface provided by the Library.

A "Combined Work" is a work produced by combining or linking an  
Application with the Library. The particular version of the Library  
with which the Combined Work was made is also called the "Linked  
Version".

The "Minimal Corresponding Source" for a Combined Work means the  
Corresponding Source for the Combined Work, excluding any source code  
for portions of the Combined Work that, considered in isolation, are  
based on the Application, and not on the Linked Version.

The "Corresponding Application Code" for a Combined Work means the  
object code and/or source code for the Application, including any data  
and utility programs needed for reproducing the Combined Work from the  
Application, but excluding the System Libraries of the Combined Work.

#### 1. Exception to Section 3 of the GNU GPL.

You may convey a covered work under sections 3 and 4 of this License  
without being bound by section 3 of the GNU GPL.

#### 2. Conveying Modified Versions.

If you modify a copy of the Library, and, in your modifications, a

facility refers to a function or data to be supplied by an Application that uses the facility (other than as an argument passed when the facility is invoked), then you may convey a copy of the modified version:

- a) under this License, provided that you make a good faith effort to ensure that, in the event an Application does not supply the function or data, the facility still operates, and performs whatever part of its purpose remains meaningful, or
- b) under the GNU GPL, with none of the additional permissions of this License applicable to that copy.

### 3. Object Code Incorporating Material from Library Header Files.

The object code form of an Application may incorporate material from a header file that is part of the Library. You may convey such object code under terms of your choice, provided that, if the incorporated material is not limited to numerical parameters, data structure layouts and accessors, or small macros, inline functions and templates (ten or fewer lines in length), you do both of the following:

- a) Give prominent notice with each copy of the object code that the Library is used in it and that the Library and its use are covered by this License.
- b) Accompany the object code with a copy of the GNU GPL and this license document.

### 4. Combined Works.

You may convey a Combined Work under terms of your choice that, taken together, effectively do not restrict modification of the portions of the Library contained in the Combined Work and reverse engineering for debugging such modifications, if you also do each of the following:

- a) Give prominent notice with each copy of the Combined Work that the Library is used in it and that the Library and its use are covered by this License.
- b) Accompany the Combined Work with a copy of the GNU GPL and this license document.
- c) For a Combined Work that displays copyright notices during execution, include the copyright notice for the Library among these notices, as well as a reference directing the user to the copies of the GNU GPL and this license document.



d) Do one of the following:

0) Convey the Minimal Corresponding Source under the terms of this License, and the Corresponding Application Code in a form suitable for, and under terms that permit, the user to recombine or relink the Application with a modified version of the Linked Version to produce a modified Combined Work, in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.

1) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (a) uses at run time a copy of the Library already present on the user's computer system, and (b) will operate properly with a modified version of the Library that is interface-compatible with the Linked Version.

e) Provide Installation Information, but only if you would otherwise be required to provide such information under section 6 of the GNU GPL, and only to the extent that such information is necessary to install and execute a modified version of the Combined Work produced by recombining or relinking the Application with a modified version of the Linked Version. (If you use option 4d0, the Installation Information must accompany the Minimal Corresponding Source and Corresponding Application Code. If you use option 4d1, you must provide the Installation Information in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.)

## 5. Combined Libraries.

You may place library facilities that are a work based on the Library side by side in a single library together with other library facilities that are not Applications and are not covered by this License, and convey such a combined library under terms of your choice, if you do both of the following:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities, conveyed under the terms of this License.

b) Give prominent notice with the combined library that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

## 6. Revised Versions of the GNU Lesser General Public License.

The Free Software Foundation may publish revised and/or new versions of the GNU Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library as you received it specifies that a certain numbered version of the GNU Lesser General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that published version or of any later version published by the Free Software Foundation. If the Library as you received it does not specify a version number of the GNU Lesser General Public License, you may choose any version of the GNU Lesser General Public License ever published by the Free Software Foundation.

If the Library as you received it specifies that a proxy can decide whether future versions of the GNU Lesser General Public License shall apply, that proxy's public statement of acceptance of any version is permanent authorization for you to choose that version for the Library.

```
COPYING.other -*- org -*-
#+TITLE: List of code with permissive licenses as used by GnuPG.
#+STARTUP: showall
```

\* DNS resolver (dirmngr/dns.c)

dns.c - Recursive, Reentrant DNS Resolver.

-----  
Copyright (c) 2008, 2009, 2010, 2012-2016 William Ahern

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

\* TinySCHEME (tests/gpgscm/LICENSE.TinySCHEME)

Copyright (c) 2000, Dimitrios Souflis  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

Neither the name of Dimitrios Souflis nor the names of the contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS ``AS IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## 1.174 gson 2.8.9

### 1.174.1 Available under license :

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright (C) 2010 Google Inc.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1231335344\_1637640927.1/0/gson-2-8-9-sources-jar/com/google/gson/internal/Streams.java  
\* /opt/cola/permits/1231335344\_1637640927.1/0/gson-2-8-9-sources-jar/com/google/gson/JsonSyntaxException.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright (C) 2008 Google Inc.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1231335344\_1637640927.1/0/gson-2-8-9-sources-jar/com/google/gson/internal/bind/DefaultDateTypeAdapter.java

\* /opt/cola/permits/1231335344\_1637640927.1/0/gson-2-8-9-sources-jar/com/google/gson/JsonParseException.java

\* /opt/cola/permits/1231335344\_1637640927.1/0/gson-2-8-9-sources-jar/com/google/gson/FieldNamingPolicy.java

\* /opt/cola/permits/1231335344\_1637640927.1/0/gson-2-8-9-sources-jar/com/google/gson/FieldNamingStrategy.java

\* /opt/cola/permits/1231335344\_1637640927.1/0/gson-2-8-9-sources-jar/com/google/gson/reflect/TypeToken.java

\* /opt/cola/permits/1231335344\_1637640927.1/0/gson-2-8-9-sources-jar/com/google/gson/JsonIOException.java

\* /opt/cola/permits/1231335344\_1637640927.1/0/gson-2-8-9-sources-jar/com/google/gson/internal/Excluder.java

\* /opt/cola/permits/1231335344\_1637640927.1/0/gson-2-8-9-sources-jar/com/google/gson/Gson.java

\* /opt/cola/permits/1231335344\_1637640927.1/0/gson-2-8-9-sources-jar/com/google/gson/internal/Primitives.java

\* /opt/cola/permits/1231335344\_1637640927.1/0/gson-2-8-9-sources-jar/com/google/gson/JsonDeserializer.java

\* /opt/cola/permits/1231335344\_1637640927.1/0/gson-2-8-9-sources-jar/com/google/gson/JsonArray.java

\* /opt/cola/permits/1231335344\_1637640927.1/0/gson-2-8-9-sources-jar/com/google/gson/GsonBuilder.java

\* /opt/cola/permits/1231335344\_1637640927.1/0/gson-2-8-9-sources-jar/com/google/gson/annotations/Expose.java

\* /opt/cola/permits/1231335344\_1637640927.1/0/gson-2-8-9-sources-jar/com/google/gson/ExclusionStrategy.java

\* /opt/cola/permits/1231335344\_1637640927.1/0/gson-2-8-9-sources-jar/com/google/gson/JsonDeserializationContext.java



\* <http://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1231335344\_1637640927.1/0/gson-2-8-9-sources-jar/com/google/gson/ToNumberPolicy.java  
\* /opt/cola/permits/1231335344\_1637640927.1/0/gson-2-8-9-sources-jar/com/google/gson/ToNumberStrategy.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright (C) 2010 The Android Open Source Project  
\* Copyright (C) 2012 Google Inc.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <http://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1231335344\_1637640927.1/0/gson-2-8-9-sources-jar/com/google/gson/internal/LinkedTreeMap.java  
\* /opt/cola/permits/1231335344\_1637640927.1/0/gson-2-8-9-sources-jar/com/google/gson/internal/LinkedHashMap.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright (C) 2011 Google Inc.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <http://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1231335344\_1637640927.1/0/gson-2-8-9-sources-jar/com/google/gson/internal/bind/DateTypeAdapter.java  
\* /opt/cola/permits/1231335344\_1637640927.1/0/gson-2-8-9-sources-jar/com/google/gson/internal/sql/SqlDateTypeAdapter.java  
\* /opt/cola/permits/1231335344\_1637640927.1/0/gson-2-8-9-sources-jar/com/google/gson/internal/LazilyParsedNumber.java  
\* /opt/cola/permits/1231335344\_1637640927.1/0/gson-2-8-9-sources-jar/com/google/gson/internal/ConstructorConstructor.java  
\* /opt/cola/permits/1231335344\_1637640927.1/0/gson-2-8-9-sources-jar/com/google/gson/internal/UnsafeAllocator.java  
\* /opt/cola/permits/1231335344\_1637640927.1/0/gson-2-8-9-sources-jar/com/google/gson/internal/sql/SqlTimeTypeAdapter.java  
\* /opt/cola/permits/1231335344\_1637640927.1/0/gson-2-8-9-sources-jar/com/google/gson/internal/bind/TreeTypeAdapter.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright (C) 2010 Google Inc.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <http://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1231335344\_1637640927.1/0/gson-2-8-9-sources-jar/com/google/gson/stream/JsonReader.java  
\* /opt/cola/permits/1231335344\_1637640927.1/0/gson-2-8-9-sources-jar/com/google/gson/stream/JsonWriter.java  
\* /opt/cola/permits/1231335344\_1637640927.1/0/gson-2-8-9-sources-jar/com/google/gson/stream/MalformedJsonException.java  
\* /opt/cola/permits/1231335344\_1637640927.1/0/gson-2-8-9-sources-jar/com/google/gson/stream/JsonScope.java  
\* /opt/cola/permits/1231335344\_1637640927.1/0/gson-2-8-9-sources-jar/com/google/gson/stream/JsonToken.java  
No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright (C) 2017 The Gson authors
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1231335344_1637640927.1/0/gson-2-8-9-sources-
jar/com/google/gson/internal/reflect/ReflectionAccessor.java
* /opt/cola/permits/1231335344_1637640927.1/0/gson-2-8-9-sources-
jar/com/google/gson/internal/JavaVersion.java
* /opt/cola/permits/1231335344_1637640927.1/0/gson-2-8-9-sources-
jar/com/google/gson/internal/PreJava9DateFormatProvider.java
* /opt/cola/permits/1231335344_1637640927.1/0/gson-2-8-9-sources-
jar/com/google/gson/internal/reflect/PreJava9ReflectionAccessor.java
* /opt/cola/permits/1231335344_1637640927.1/0/gson-2-8-9-sources-
jar/com/google/gson/internal/reflect/UnsafeReflectionAccessor.java
No license file was found, but licenses were detected in source scan.
```

```
/**
 * Copyright (C) 2008 Google Inc.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1231335344_1637640927.1/0/gson-2-8-9-sources-
jar/com/google/gson/internal/$Gson$Types.java
```



No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright (C) 2011 Google Inc.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1231335344_1637640927.1/0/gson-2-8-9-sources-
jar/com/google/gson/internal/bind/ArrayTypeAdapter.java
* /opt/cola/permits/1231335344_1637640927.1/0/gson-2-8-9-sources-
jar/com/google/gson/internal/bind/CollectionTypeAdapterFactory.java
* /opt/cola/permits/1231335344_1637640927.1/0/gson-2-8-9-sources-
jar/com/google/gson/internal/bind/ReflectiveTypeAdapterFactory.java
* /opt/cola/permits/1231335344_1637640927.1/0/gson-2-8-9-sources-
jar/com/google/gson/internal/JsonReaderInternalAccess.java
* /opt/cola/permits/1231335344_1637640927.1/0/gson-2-8-9-sources-
jar/com/google/gson/TypeAdapterFactory.java
* /opt/cola/permits/1231335344_1637640927.1/0/gson-2-8-9-sources-
jar/com/google/gson/internal/bind/JsonTreeReader.java
* /opt/cola/permits/1231335344_1637640927.1/0/gson-2-8-9-sources-jar/com/google/gson/TypeAdapter.java
* /opt/cola/permits/1231335344_1637640927.1/0/gson-2-8-9-sources-
jar/com/google/gson/internal/bind/MapTypeAdapterFactory.java
* /opt/cola/permits/1231335344_1637640927.1/0/gson-2-8-9-sources-
jar/com/google/gson/internal/bind/JsonTreeWriter.java
* /opt/cola/permits/1231335344_1637640927.1/0/gson-2-8-9-sources-
jar/com/google/gson/internal/bind/TypeAdapterRuntimeTypeWrapper.java
* /opt/cola/permits/1231335344_1637640927.1/0/gson-2-8-9-sources-
jar/com/google/gson/internal/bind/ObjectTypeAdapter.java
* /opt/cola/permits/1231335344_1637640927.1/0/gson-2-8-9-sources-
jar/com/google/gson/internal/bind/TypeAdapters.java
```

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright (C) 2009 Google Inc.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
```

\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <http://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1231335344\_1637640927.1/0/gson-2-8-9-sources-jar/com/google/gson/LongSerializationPolicy.java  
\* /opt/cola/permits/1231335344\_1637640927.1/0/gson-2-8-9-sources-jar/com/google/gson/JsonParser.java  
\* /opt/cola/permits/1231335344\_1637640927.1/0/gson-2-8-9-sources-jar/com/google/gson/JsonStreamParser.java  
\* /opt/cola/permits/1231335344\_1637640927.1/0/gson-2-8-9-sources-jar/com/google/gson/FieldAttributes.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright (C) 2020 Google Inc.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <http://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1231335344\_1637640927.1/0/gson-2-8-9-sources-jar/com/google/gson/internal/bind/NumberTypeAdapter.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright (C) 2018 The Gson authors  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <http://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

- \* <http://www.apache.org/licenses/LICENSE-2.0>
- \*
- \* Unless required by applicable law or agreed to in writing, software
- \* distributed under the License is distributed on an "AS IS" BASIS,
- \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- \* See the License for the specific language governing permissions and
- \* limitations under the License.
- \*/

Found in path(s):

\* /opt/cola/permits/1231335344\_1637640927.1/0/gson-2-8-9-sources-jar/com/google/gson/internal/GsonBuildConfig.java

# 1.175 cxf-rt-transport-http 3.4.5

## 1.175.1 Available under license :

Apache CXF  
Copyright 2006-2021 The Apache Software Foundation

This product includes software developed at  
The Apache Software Foundation (<http://www.apache.org/>).

This project includes Public Suffix List copied from  
[https://publicsuffix.org/list/effective\\_tld\\_names.dat](https://publicsuffix.org/list/effective_tld_names.dat)  
licensed under the terms of the Mozilla Public License, v. 2.0  
Full license text: <<http://mozilla.org/MPL/2.0/>>

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition,

"control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
  
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
  
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or,

within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all

other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

## 1.176 scala-logging\_2.13 3.9.3

### 1.176.1 Available under license :

Apache License  
Version 2.0, January 2004

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally



submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

(a) You must give any other recipients of the Work or Derivative Works a copy of this License; and

(b) You must cause any modified files to carry prominent notices stating that You changed the files; and

- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or

implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
  
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

### APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

# 1.177 gdbm 1.18 1.e18

## 1.177.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

Copyright (C) 2007, 2011 Free Software Foundation, Inc. <<http://fsf.org/>>  
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

### Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive

or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

## TERMS AND CONDITIONS

### 0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work

in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

#### 1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

## 2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

## 3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

#### 4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

#### 5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

a) The work must carry prominent notices stating that you modified it, and giving a relevant date.

b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".

c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.



d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

#### 6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the

Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply

if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

#### 7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or

requiring that modified versions of such material be marked in reasonable ways as different from the original version; or

d) Limiting the use for publicity purposes of names of licensors or authors of the material; or

e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or

f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

## 8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

#### 9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

#### 10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for

sale, or importing the Program or any portion of it.

## 11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify

or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

#### 12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

#### 13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

#### 14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

#### 15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

#### 16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### 17. Interpretation of Sections 15 and 16.



If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program> Copyright (C) <year> <name of author>
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate

parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <<http://www.gnu.org/licenses/>>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <<http://www.gnu.org/philosophy/why-not-lgpl.html>>.

## 1.178 jackson-module-scala\_2.13 2.12.6

### 1.178.1 Available under license :

This copy of Jackson JSON processor Scala module is licensed under the Apache (Software) License, version 2.0 ("the License"). See the License for details about distribution rights, and the specific rights regarding derivate works.

You may obtain a copy of the License at:

<http://www.apache.org/licenses/LICENSE-2.0>

## 1.179 keyutils 1.5.10-9.el8

### 1.179.1 Available under license :

GNU LESSER GENERAL PUBLIC LICENSE  
Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc. <<http://fsf.org/>>  
51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public

Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must

be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE  
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under

the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The

threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.



c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your

rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY

AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the

library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990

Ty Coon, President of Vice

That's all there is to it!

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc. <<http://fsf.org/>>

51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion

of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable

source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying



the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates

the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

Appendix: How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) 19yy <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 675 Mass Ave, Cambridge, MA 02139, USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) 19yy name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

<signature of Ty Coon>, 1 April 1989

Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

## 1.180 net-snmp 4.2.1

### 1.180.1 Available under license :

Various copyrights apply to this package, listed in various separate parts below. Please make sure that you read all the parts.

---- Part 1: Sparta, Inc (BSD) ----

Copyright (c) 2003-2010, Sparta, Inc  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Sparta, Inc nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---- Part 2: ScienceLogic, LLC (BSD) ----

Copyright (c) 2006, ScienceLogic, LLC  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of ScienceLogic, LLC nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Various copyrights apply to this package, listed in various separate parts below. Please make sure that you read all the parts.

---- Part 1: CMU/UCD copyright notice: (BSD like) ----

Copyright 1989, 1991, 1992 by Carnegie Mellon University

Derivative Work - 1996, 1998-2000

Copyright 1996, 1998-2000 The Regents of the University of California

All Rights Reserved

Permission to use, copy, modify and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appears in all copies and

that both that copyright notice and this permission notice appear in supporting documentation, and that the name of CMU and The Regents of the University of California not be used in advertising or publicity pertaining to distribution of the software without specific written permission.

CMU AND THE REGENTS OF THE UNIVERSITY OF CALIFORNIA DISCLAIM ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL CMU OR THE REGENTS OF THE UNIVERSITY OF CALIFORNIA BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM THE LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

---- Part 2: Networks Associates Technology, Inc copyright notice (BSD) ----

Copyright (c) 2001-2003, Networks Associates Technology, Inc  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of the Networks Associates Technology, Inc nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---- Part 3: Cambridge Broadband Ltd. copyright notice (BSD) ----

Portions of this code are copyright (c) 2001-2003, Cambridge Broadband Ltd.  
All rights reserved.

Redistribution and use in source and binary forms, with or without  
modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice,  
this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright  
notice, this list of conditions and the following disclaimer in the  
documentation and/or other materials provided with the distribution.
- \* The name of Cambridge Broadband Ltd. may not be used to endorse or  
promote products derived from this software without specific prior  
written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDER ``AS IS" AND ANY  
EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE  
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR  
PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER BE  
LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR  
CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF  
SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR  
BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY,  
WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE  
OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN  
IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---- Part 4: Sun Microsystems, Inc. copyright notice (BSD) ----

Copyright (c) 2003 Sun Microsystems, Inc., 4150 Network Circle, Santa Clara,  
California 95054, U.S.A. All rights reserved.

Use is subject to license terms below.

This distribution may include materials developed by third parties.

Sun, Sun Microsystems, the Sun logo and Solaris are trademarks or registered  
trademarks of Sun Microsystems, Inc. in the U.S. and other countries.

Redistribution and use in source and binary forms, with or without  
modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice,

this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

\* Neither the name of the Sun Microsystems, Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS ``AS IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---- Part 5: Sparta, Inc copyright notice (BSD) ----

Copyright (c) 2003-2013, Sparta, Inc  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

\* Neither the name of Sparta, Inc nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS ``AS IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO,



PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---- Part 6: Cisco/BUPTNIC copyright notice (BSD) ----

Copyright (c) 2004, Cisco, Inc and Information Network  
Center of Beijing University of Posts and Telecommunications.  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Cisco, Inc, Beijing University of Posts and Telecommunications, nor the names of their contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---- Part 7: Fabasoft R&D Software GmbH & Co KG copyright notice (BSD) ----

Copyright (c) Fabasoft R&D Software GmbH & Co KG, 2003  
oss@fabasoft.com  
Author: Bernhard Penz <bernhard.penz@fabasoft.com>

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

\* The name of Fabasoft R&D Software GmbH & Co KG or any of its subsidiaries, brand or product names may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDER ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---- Part 8: Apple Inc. copyright notice (BSD) ----

Copyright (c) 2007 Apple Inc. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of Apple Inc. ("Apple") nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY APPLE AND ITS CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL APPLE OR ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF

USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---- Part 9: ScienceLogic, LLC copyright notice (BSD) ----

Copyright (c) 2009, ScienceLogic, LLC  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of ScienceLogic, LLC nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---- Part 10: Lennart Poettering copyright notice (BSD-like) ----

Copyright 2010 Lennart Poettering

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software,

and to permit persons to whom the Software is furnished to do so,  
subject to the following conditions:

The above copyright notice and this permission notice shall be  
included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,  
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF  
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND  
NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS  
BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN  
ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN  
CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE  
SOFTWARE.

---- Part 11: IETF copyright notice (BSD) ----

Copyright (c) 2013 IETF Trust and the persons identified as authors of  
the code. All rights reserved.

Redistribution and use in source and binary forms, with or without  
modification, are permitted provided that the following conditions are  
met:

- \* Redistributions of source code must retain the above copyright notice,  
this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright  
notice, this list of conditions and the following disclaimer in the  
documentation and/or other materials provided with the distribution.
- \* Neither the name of Internet Society, IETF or IETF Trust, nor the  
names of specific contributors, may be used to endorse or promote  
products derived from this software without specific prior written  
permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS  
IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED  
TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A  
PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER  
OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,  
EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO,  
PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR  
PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF  
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING  
NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS  
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---- Part 12: Arista Networks copyright notice (BSD) ----

Copyright (c) 2013, Arista Networks, Inc.  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Arista Networks, Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---- Part 13: VMware, Inc. copyright notice (BSD) ----

Copyright (c) 2016, VMware, Inc.  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

\* Neither the name of VMware, Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---- Part 14: USC/Information Sciences Institute copyright notice (BSD) ----

Copyright (c) 2017-2018, Information Sciences Institute  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Information Sciences Institute nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

LICENSE ISSUES

=====  
The OpenSSL toolkit stays under a dual license, i.e. both the conditions of the OpenSSL License and the original SSLeay license apply to the toolkit. See below for the actual license texts. Actually both licenses are BSD-style Open Source licenses. In case of any license issues related to OpenSSL please contact openssl-core@openssl.org.

#### OpenSSL License

-----

```
/* =====
* Copyright (c) 1998-2008 The OpenSSL Project. All rights reserved.
*
* Redistribution and use in source and binary forms, with or without
* modification, are permitted provided that the following conditions
* are met:
*
* 1. Redistributions of source code must retain the above copyright
* notice, this list of conditions and the following disclaimer.
*
* 2. Redistributions in binary form must reproduce the above copyright
* notice, this list of conditions and the following disclaimer in
* the documentation and/or other materials provided with the
* distribution.
*
* 3. All advertising materials mentioning features or use of this
* software must display the following acknowledgment:
* "This product includes software developed by the OpenSSL Project
* for use in the OpenSSL Toolkit. (http://www.openssl.org/)"
*
* 4. The names "OpenSSL Toolkit" and "OpenSSL Project" must not be used to
* endorse or promote products derived from this software without
* prior written permission. For written permission, please contact
* openssl-core@openssl.org.
*
* 5. Products derived from this software may not be called "OpenSSL"
* nor may "OpenSSL" appear in their names without prior written
* permission of the OpenSSL Project.
*
* 6. Redistributions of any form whatsoever must retain the following
* acknowledgment:
* "This product includes software developed by the OpenSSL Project
* for use in the OpenSSL Toolkit (http://www.openssl.org/)"
*
* THIS SOFTWARE IS PROVIDED BY THE OpenSSL PROJECT ``AS IS'' AND ANY
* EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
```

\* PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE OpenSSL PROJECT OR  
\* ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,  
\* SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT  
\* NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;  
\* LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)  
\* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,  
\* STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)  
\* ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED  
\* OF THE POSSIBILITY OF SUCH DAMAGE.

\* =====

\*

\* This product includes cryptographic software written by Eric Young  
\* (eay@cryptsoft.com). This product includes software written by Tim  
\* Hudson (tjh@cryptsoft.com).

\*

\*/

#### Original SSLeay License

-----

/\* Copyright (C) 1995-1998 Eric Young (eay@cryptsoft.com)

\* All rights reserved.

\*

\* This package is an SSL implementation written

\* by Eric Young (eay@cryptsoft.com).

\* The implementation was written so as to conform with Netscapes SSL.

\*

\* This library is free for commercial and non-commercial use as long as

\* the following conditions are aheared to. The following conditions

\* apply to all code found in this distribution, be it the RC4, RSA,

\* lhash, DES, etc., code; not just the SSL code. The SSL documentation

\* included with this distribution is covered by the same copyright terms

\* except that the holder is Tim Hudson (tjh@cryptsoft.com).

\*

\* Copyright remains Eric Young's, and as such any Copyright notices in

\* the code are not to be removed.

\* If this package is used in a product, Eric Young should be given attribution

\* as the author of the parts of the library used.

\* This can be in the form of a textual message at program startup or

\* in documentation (online or textual) provided with the package.

\*

\* Redistribution and use in source and binary forms, with or without

\* modification, are permitted provided that the following conditions

\* are met:

\* 1. Redistributions of source code must retain the copyright

\* notice, this list of conditions and the following disclaimer.

\* 2. Redistributions in binary form must reproduce the above copyright

\* notice, this list of conditions and the following disclaimer in the



- \* documentation and/or other materials provided with the distribution.
- \* 3. All advertising materials mentioning features or use of this software
- \* must display the following acknowledgement:
- \* "This product includes cryptographic software written by
- \* Eric Young (eay@cryptsoft.com)"
- \* The word 'cryptographic' can be left out if the routines from the library
- \* being used are not cryptographic related :-).
- \* 4. If you include any Windows specific code (or a derivative thereof) from
- \* the apps directory (application code) you must include an acknowledgement:
- \* "This product includes software written by Tim Hudson (tjh@cryptsoft.com)"
- \*
- \* THIS SOFTWARE IS PROVIDED BY ERIC YOUNG ``AS IS'' AND
- \* ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
- \* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
- \* ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE
- \* FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
- \* DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS
- \* OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
- \* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
- \* LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
- \* OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
- \* SUCH DAMAGE.
- \*
- \* The licence and distribution terms for any publically available version or
- \* derivative of this code cannot be changed. i.e. this code cannot simply be
- \* copied and put under another distribution licence
- \* [including the GNU Public Licence.]
- \*/

# 1.181 commons-dbcp 2.9.0

## 1.181.1 Available under license :

Apache Commons DBCP  
Copyright 2001-2021 The Apache Software Foundation

This product includes software developed at  
The Apache Software Foundation (<https://www.apache.org/>).

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction,

and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the

Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory,

whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

# 1.182 xml-commons-resolver 1.2

## 1.182.1 Available under license :

### LEGAL NOTICE

This notice is issued to fulfil the requirements of the Mozilla Public License version 1.0 ("MPL 1.0") sections 3.4(a) and 3.6. MPL 1.0 can be found at <http://www.mozilla.org/MPL/MPL-1.0.html>.

Section 3.4(a) of MPL 1.0 states that any third party intellectual property rights in particular functionality or code must be notified in a text file named LEGAL that is issued with the source code. Saxon includes a number of such third party components, and the relevant claims are included in notices included in the same directory as this notice. Although MPL 1.0 requires this notice to be included only with source code, some of the third parties may also require notices to be included with executable code. Therefore, Saxon executable code must not be distributed separately from this notice and all the accompanying third party notices. The term "Distribution" here includes making the code available for download, and its inclusion in download repositories such as Maven.

Section 3.6 of MPL 1.0 states:

You may distribute Covered Code in Executable form only if the requirements of Section 3.1-3.5 have been met for that Covered Code, and if You include a notice stating that the Source Code version of the Covered Code is available under the terms of this License, including a description of how and where You have fulfilled the obligations of Section 3.2.

Section 3.2 requires the Source Code of Covered Code to be made available via an accepted Electronic Distribution Mechanism.

The Source Code version of the Covered Code (that is, the source code of Saxon-B) is available under the terms of the Mozilla Public License version 1.0, and may be obtained from the Subversion repository for the Saxon project on SourceForge, at [https://sourceforge.net/svn/?group\\_id=29872](https://sourceforge.net/svn/?group_id=29872).

The precise version of the Subversion source for a particular Saxon maintenance release can be determined by referring to the release notes for the particular release in the SourceForge download area.

Note that MPL 1.0 requires that any modifications to this source code must be made available under the terms of the MPL "to anyone to whom you made an executable version available". As a courtesy, it is also requested that you make such modifications available to Saxonica Limited.

The GNU General Public License (GPL)

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.  
59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

## Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

**TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION**

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is



not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on)

of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this

section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE,

YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

One line to give the program's name and a brief idea of what it does.

Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

Gnomovision version 69, Copyright (C) year name of author Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type 'show w'. This is free software, and you are welcome to redistribute it under certain conditions; type 'show c' for details.

The hypothetical commands 'show w' and 'show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than 'show w' and 'show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program 'Gnomovision' (which makes passes at compilers) written by James Hacker.

signature of Ty Coon, 1 April 1989

Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

#### "CLASSPATH" EXCEPTION TO THE GPL

Certain source files distributed by Sun Microsystems, Inc. are subject to the following clarification and special exception to the GPL, but only where Sun has expressly included in the particular source file's header the words "Sun designates this particular file as subject to the "Classpath" exception as provided by Sun in the LICENSE file that accompanied this code."

Linking this library statically or dynamically with other modules is making a combined work based on this library. Thus, the terms and conditions of the GNU General Public License cover the whole combination.

As a special exception, the copyright holders of this library give you permission to link this library with independent modules to produce an executable, regardless of the license terms of these independent modules, and to copy and distribute the resulting executable under terms of your choice, provided that you also meet, for each linked independent module, the terms and conditions of the license of that module. An independent module is a module which is not derived from or based on this library. If you modify this library, you may extend this exception to your version of

the library, but you are not obligated to do so. If you do not wish to do so, delete this exception statement from your version.

Apache XML Commons Resolver

Copyright 2006 The Apache Software Foundation.

This product includes software developed at  
The Apache Software Foundation <http://www.apache.org/>

Portions of this code are derived from classes placed in the public domain by Arbortext on 10 Apr 2000. See: [http://www.arbortext.com/customer\\_support/updates\\_and\\_technical\\_notes/catalogs/docs/README.htm](http://www.arbortext.com/customer_support/updates_and_technical_notes/catalogs/docs/README.htm)  
The contents of these file are subject to the Mozilla Public License Version 1.0 (the "License"); you may not use these files except in compliance with the License. You may obtain a copy of the License at <http://www.mozilla.org/MPL/>

Software distributed under the License is distributed on an "AS IS" basis, WITHOUT WARRANTY OF ANY KIND, either express or implied. See the License for the specific language governing rights and limitations under the License.

The Original Code is all Saxon modules labelled with a notice referring to this license.

The Initial Developer of the Original Code is Michael Kay, except where otherwise specified in an individual module.

Portions created by other named contributors are copyright as identified in the relevant module. All Rights Reserved.

Contributor(s) are listed in the documentation: see notices/contributors.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the

outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable

copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and



do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

# 1.183 subscription-manager 1.28.29-3.el8

## 1.183.1 Available under license :

GNU GENERAL PUBLIC LICENSE  
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies

of this license document, but changing it is not allowed.

## Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE  
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is

allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues),

conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of

this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>



This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

GNU LESSER GENERAL PUBLIC LICENSE  
Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts  
as the successor of the GNU Library Public License, version 2, hence  
the version number 2.1.]

### Preamble

The licenses for most software are designed to take away your  
freedom to share and change it. By contrast, the GNU General Public  
Licenses are intended to guarantee your freedom to share and change  
free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some  
specially designated software packages--typically libraries--of the  
Free Software Foundation and other authors who decide to use it. You  
can use it too, but we suggest you first think carefully about whether  
this license or the ordinary General Public License is the better  
strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use,  
not price. Our General Public Licenses are designed to make sure that  
you have the freedom to distribute copies of free software (and charge  
for this service if you wish); that you receive source code or can get  
it if you want it; that you can change the software and use pieces of  
it in new free programs; and that you are informed that you can do  
these things.

To protect your rights, we need to make restrictions that forbid  
distributors to deny you these rights or to ask you to surrender these  
rights. These restrictions translate to certain responsibilities for  
you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis  
or for a fee, you must give the recipients all the rights that we gave  
you. You must make sure that they, too, receive or can get the source  
code. If you link other code with the library, you must provide  
complete object files to the recipients, so that they can relink them  
with the library after making changes to the library and recompiling  
it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the  
library, and (2) we offer you this license, which gives you legal  
permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in

non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

## GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does

and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based

on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and

therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License.

Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the

user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:



a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any

particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU

Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!

Format: <https://www.debian.org/doc/packaging-manuals/copyright-format/1.0/>  
Upstream-Name: subscription-manager  
Source: <url://example.com>

Files: \*

Copyright: <years> <put author's name and email here>  
<years> <likewise for another author>

License: <special license>  
<Put the license of the package here indented by 1 space>  
<This follows the format of Description: lines in control file>

.

<Including paragraphs>

# If you want to use GPL v2 or later for the /debian/\* files use  
# the following clauses, or change it to suit. Delete these two lines

Files: debian/\*  
Copyright: 2017 Matthias Dellweg <dellweg@atix.de>  
License: GPL-2+

This package is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

.

This package is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

.

You should have received a copy of the GNU General Public License

along with this program. If not, see <<https://www.gnu.org/licenses/>>

On Debian systems, the complete text of the GNU General Public License version 2 can be found in "/usr/share/common-licenses/GPL-2".

```
Please also look if there are files or directories which have a
different copyright/license attached and list them here.
Please avoid picking licenses with terms that are more restrictive than the
packaged work, as it may make Debian's contributions unacceptable upstream.
```

# 1.184 python-pysocks 1.6.8 3.e18

## 1.184.1 Available under license :

Copyright 2006 Dan-Haim. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of Dan Haim nor the names of his contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY DAN HAIM "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL DAN HAIM OR HIS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

3proxy 0.7 Public License Agreement

(c) 2000-2014 by 3APA3A (3APA3A@security.nnov.ru)

(c) 2000-2014 by SecurityVulns.com (<http://3proxy.ru/>)

(c) 2000-2014 by Vladimir Dubrovin (vlad@sandy.ru)

This software uses:

RSA Data Security, Inc. MD4 Message-Digest Algorithm

RSA Data Security, Inc. MD5 Message-Digest Algorithm

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT

LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

This software is FREEWARE.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that following conditions are met (BSD style license):

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of the SecurityVulns.COM nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

Instead of this license, you can also use and redistribute this software under terms of compatible license, including:

1. Apache License, Version 2.0

You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

2. GNU General Public License as published by

the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

You may obtain a copy of the License at

<http://www.gnu.org/licenses/gpl.txt>

3. GNU Lesser General Public License as published by the

Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

You may obtain a copy of the License at

<http://www.gnu.org/licenses/lgpl.txt>

# 1.185 jaxb-core 2.3.4

## 1.185.1 Available under license :

Copyright (c) 2018 Oracle and/or its affiliates. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- Neither the name of the Eclipse Foundation, Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

# Notices for Eclipse Implementation of JAXB

This content is produced and maintained by the Eclipse Implementation of JAXB project.

\* Project home: <https://projects.eclipse.org/projects/ee4j.jaxb-impl>

## Trademarks

Eclipse Implementation of JAXB is a trademark of the Eclipse Foundation.

## Copyright

All content is the property of the respective authors or their employers. For more information regarding authorship of content, please consult the listed

source code repository logs.

## ## Declared Project Licenses

This program and the accompanying materials are made available under the terms of the Eclipse Distribution License v. 1.0 which is available at <http://www.eclipse.org/org/documents/edl-v10.php>.

SPDX-License-Identifier: BSD-3-Clause

## ## Source Code

The project maintains the following source code repositories:

- \* <https://github.com/eclipse-ee4j/jaxb-ri>
- \* <https://github.com/eclipse-ee4j/jaxb-istack-commons>
- \* <https://github.com/eclipse-ee4j/jaxb-dtd-parser>
- \* <https://github.com/eclipse-ee4j/jaxb-fi>
- \* <https://github.com/eclipse-ee4j/jaxb-stax-ex>
- \* <https://github.com/eclipse-ee4j/jax-rpc-ri>

## ## Third-party Content

This project leverages the following third party content.

Apache Ant (1.10.2)

- \* License: Apache-2.0 AND W3C AND LicenseRef-Public-Domain

Apache Ant (1.10.2)

- \* License: Apache-2.0 AND W3C AND LicenseRef-Public-Domain

Apache Felix (1.2.0)

- \* License: Apache License, 2.0

args4j (2.33)

- \* License: MIT License

dom4j (1.6.1)

- \* License: Custom license based on Apache 1.1

file-management (3.0.0)

- \* License: Apache-2.0



\* Project: <https://maven.apache.org/shared/file-management/>  
\* Source:  
<https://svn.apache.org/viewvc/maven/shared/tags/file-management-3.0.0/>

JUnit (4.12)

\* License: Eclipse Public License

JUnit (4.12)

\* License: Eclipse Public License

maven-compat (3.5.2)

\* License: Apache-2.0  
\* Project: <https://maven.apache.org/ref/3.5.2/maven-compat/>  
\* Source:  
<https://mvnrepository.com/artifact/org.apache.maven/maven-compat/3.5.2>

maven-core (3.5.2)

\* License: Apache-2.0  
\* Project: <https://maven.apache.org/ref/3.5.2/maven-core/index.html>  
\* Source: <https://mvnrepository.com/artifact/org.apache.maven/maven-core/3.5.2>

maven-plugin-annotations (3.5)

\* License: Apache-2.0  
\* Project: <https://maven.apache.org/plugin-tools/maven-plugin-annotations/>  
\* Source:  
<https://github.com/apache/maven-plugin-tools/tree/master/maven-plugin-annotations>

maven-plugin-api (3.5.2)

\* License: Apache-2.0

maven-resolver-api (1.1.1)

\* License: Apache-2.0

maven-resolver-api (1.1.1)

\* License: Apache-2.0

maven-resolver-connector-basic (1.1.1)

\* License: Apache-2.0

maven-resolver-impl (1.1.1)

\* License: Apache-2.0

maven-resolver-spi (1.1.1)

\* License: Apache-2.0

maven-resolver-transport-file (1.1.1)

\* License: Apache-2.0

\* Project: <https://maven.apache.org/resolver/maven-resolver-transport-file/>

\* Source:

<https://github.com/apache/maven-resolver/tree/master/maven-resolver-transport-file>

maven-resolver-util (1.1.1)

\* License: Apache-2.0

maven-settings (3.5.2)

\* License: Apache-2.0

\* Source:

<https://mvnrepository.com/artifact/org.apache.maven/maven-settings/3.5.2>

OSGi Service Platform Core Companion Code (6.0)

\* License: Apache License, 2.0

plexus-archiver (3.5)

\* License: Apache-2.0

\* Project: <https://codehaus-plexus.github.io/plexus-archiver/>

\* Source: <https://github.com/codehaus-plexus/plexus-archiver>

plexus-io (3.0.0)

\* License: Apache-2.0

plexus-utils (3.1.0)

\* License: Apache- 2.0 or Apache- 1.1 or BSD or Public Domain or Indiana University Extreme! Lab Software License V1.1.1 (Apache 1.1 style)

relaxng-datatype (1.0)

\* License: New BSD license

Sax (0.2)

- \* License: SAX-PD
- \* Project: <http://www.megginson.com/downloads/SAX/>
- \* Source: [http://sourceforge.net/project/showfiles.php?group\\_id=29449](http://sourceforge.net/project/showfiles.php?group_id=29449)

testng (6.14.2)

- \* License: Apache-2.0 AND (MIT OR GPL-1.0+)
- \* Project: <https://testng.org/doc/index.html>
- \* Source: <https://github.com/cbeust/testng>

wagon-http-lightweight (3.0.0)

- \* License: Pending
- \* Project: <https://maven.apache.org/wagon/>
- \* Source:  
<https://mvnrepository.com/artifact/org.apache.maven.wagon/wagon-http-lightweight/3.0.0>

xz for java (1.8)

- \* License: LicenseRef-Public-Domain

## Cryptography

Content may contain encryption software. The country in which you are currently may have restrictions on the import, possession, and use, and/or re-export to another country, of encryption software. BEFORE using any encryption software, please check the country's laws, regulations and policies concerning the import, possession, or use, and re-export of encryption software, to see if this is permitted.

# 1.186 spring-expression 5.3.21

## 1.186.1 Available under license :

No license file was found, but licenses were detected in source scan.

/\*

- \* Copyright 2002-2017 the original author or authors.
- \*
- \* Licensed under the Apache License, Version 2.0 (the "License");
- \* you may not use this file except in compliance with the License.
- \* You may obtain a copy of the License at
- \*
- \* <https://www.apache.org/licenses/LICENSE-2.0>
- \*
- \* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-jar/org/springframework/expression/Expression.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-jar/org/springframework/expression/spel/SpelParseException.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-jar/org/springframework/expression/AccessException.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-jar/org/springframework/expression/spel/support/ReflectiveConstructorExecutor.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-jar/org/springframework/expression/ParserContext.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-jar/org/springframework/expression/spel/CompiledExpression.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-jar/org/springframework/expression/common/ExpressionUtils.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-jar/org/springframework/expression/OperatorOverloader.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-jar/org/springframework/expression/ParseException.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2021 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-jar/org/springframework/expression/spel/support/ReflectionHelper.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-jar/org/springframework/expression/spel/ast/InlineMap.java

\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-jar/org/springframework/expression/spel/standard/Token.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-jar/org/springframework/expression/ExpressionException.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-jar/org/springframework/expression/spel/ast/TypeReference.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-jar/org/springframework/expression/BeanResolver.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-jar/org/springframework/expression/spel/ast/BeanReference.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-jar/org/springframework/expression/spel/ast/Operator.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-jar/org/springframework/expression/spel/support/ReflectiveConstructorResolver.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-jar/org/springframework/expression/spel/CodeFlow.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-jar/org/springframework/expression/spel/ast/QualifiedIdentifier.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-jar/org/springframework/expression/spel/support/StandardTypeConverter.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-jar/org/springframework/expression/TypeConverter.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-jar/org/springframework/expression/TypeComparator.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-jar/org/springframework/expression/MethodResolver.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-jar/org/springframework/expression/spel/SpelParserConfiguration.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2018 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-

jar/org/springframework/expression/spel/ast/FormatHelper.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-  
jar/org/springframework/expression/spel/support/DataBindingPropertyAccessor.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-  
jar/org/springframework/expression/common/CompositeStringExpression.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-  
jar/org/springframework/expression/spel/support/DataBindingMethodResolver.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-  
jar/org/springframework/expression/spel/support/BooleanTypedValue.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-  
jar/org/springframework/expression/TypedValue.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-  
jar/org/springframework/expression/spel/SpelEvaluationException.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-  
jar/org/springframework/expression/common/TemplateAwareExpressionParser.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-  
jar/org/springframework/expression/EvaluationContext.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-  
jar/org/springframework/expression/common/LiteralExpression.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-  
jar/org/springframework/expression/Operation.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-  
jar/org/springframework/expression/spel/ExpressionState.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-  
jar/org/springframework/expression/spel/support/StandardOperatorOverloader.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-  
jar/org/springframework/expression/spel/support/SimpleEvaluationContext.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-  
jar/org/springframework/expression/spel/support/StandardEvaluationContext.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-  
jar/org/springframework/expression/spel/SpelNode.java

No license file was found, but licenses were detected in source scan.

```
/*
* Copyright 2002-2016 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
```

Found in path(s):

- \* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-jar/org/springframework/expression/EvaluationException.java
- \* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-jar/org/springframework/expression/ConstructorResolver.java
- \* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-jar/org/springframework/expression/MethodFilter.java
- \* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-jar/org/springframework/expression/TypeLocator.java
- \* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-jar/org/springframework/expression/spel/standard/TokenKind.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2020 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

- \* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-jar/org/springframework/expression/spel/ast/Indexer.java
- \* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-jar/org/springframework/expression/spel/ast/MethodReference.java
- \* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-jar/org/springframework/expression/spel/ast/AstUtils.java
- \* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-jar/org/springframework/expression/spel/support/StandardTypeLocator.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2009 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-jar/org/springframework/expression/ExpressionParser.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2002-2019 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-jar/org/springframework/expression/spel/ast/OperatorMatches.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-jar/org/springframework/expression/spel/ast/InlineList.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-jar/org/springframework/expression/spel/ast/TypeCode.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-jar/org/springframework/expression/spel/ast/SpelNodeImpl.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-jar/org/springframework/expression/spel/ast/OpLE.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-jar/org/springframework/expression/spel/ast/OpOr.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-jar/org/springframework/expression/spel/ast/Identifier.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-jar/org/springframework/expression/spel/ast/BooleanLiteral.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-



jar/org/springframework/expression/spel/ast/OpModulus.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-  
jar/org/springframework/expression/spel/ast/OpLT.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-  
jar/org/springframework/expression/spel/ast/OperatorNot.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-  
jar/org/springframework/expression/spel/ast/IntLiteral.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-  
jar/org/springframework/expression/spel/ast/PropertyOrFieldReference.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-  
jar/org/springframework/expression/spel/ast/OpMultiply.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-  
jar/org/springframework/expression/spel/ast/RealLiteral.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-  
jar/org/springframework/expression/spel/standard/Tokenizer.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-  
jar/org/springframework/expression/spel/ast/OperatorPower.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-  
jar/org/springframework/expression/spel/ast/OpPlus.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-  
jar/org/springframework/expression/spel/ast/OperatorInstanceof.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-  
jar/org/springframework/expression/spel/ast/Assign.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-  
jar/org/springframework/expression/spel/ast/OpInc.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-  
jar/org/springframework/expression/spel/ast/StringLiteral.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-  
jar/org/springframework/expression/spel/support/StandardTypeComparator.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-  
jar/org/springframework/expression/spel/ast/Literal.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-  
jar/org/springframework/expression/spel/ast/ValueRef.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-  
jar/org/springframework/expression/spel/ast/OpEQ.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-  
jar/org/springframework/expression/spel/ast/Elvis.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-  
jar/org/springframework/expression/spel/ast/Projection.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-  
jar/org/springframework/expression/spel/ast/OperatorBetween.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-  
jar/org/springframework/expression/spel/ast/FunctionReference.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-  
jar/org/springframework/expression/spel/ast/OpAnd.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-  
jar/org/springframework/expression/spel/ast/OpMinus.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-

jar/org/springframework/expression/spel/ast/OpGE.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-  
jar/org/springframework/expression/spel/ast/CompoundExpression.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-  
jar/org/springframework/expression/spel/ast/FloatLiteral.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-  
jar/org/springframework/expression/spel/standard/InternalSpelExpressionParser.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-  
jar/org/springframework/expression/spel/ast/LongLiteral.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-  
jar/org/springframework/expression/PropertyAccessor.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-  
jar/org/springframework/expression/spel/ast/OpNE.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-  
jar/org/springframework/expression/spel/ast/OpDivide.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-  
jar/org/springframework/expression/spel/ast/VariableReference.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-  
jar/org/springframework/expression/spel/ast/NullLiteral.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-  
jar/org/springframework/expression/spel/ast/Selection.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-  
jar/org/springframework/expression/spel/ast/Ternary.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-  
jar/org/springframework/expression/spel/ast/OpDec.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-  
jar/org/springframework/expression/spel/ast/OpGT.java  
No license file was found, but licenses were detected in source scan.

```
/*
* Copyright 2002-2013 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
```

Found in path(s):

\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-  
jar/org/springframework/expression/ExpressionInvocationTargetException.java

```
* /opt/cola/permits/1347859609_1655733795.8299563/0/spring-expression-5-3-21-sources-
jar/org/springframework/expression/MethodExecutor.java
* /opt/cola/permits/1347859609_1655733795.8299563/0/spring-expression-5-3-21-sources-
jar/org/springframework/expression/common/TemplateParserContext.java
* /opt/cola/permits/1347859609_1655733795.8299563/0/spring-expression-5-3-21-sources-
jar/org/springframework/expression/ConstructorExecutor.java
No license file was found, but licenses were detected in source scan.
```

```
/*
* Copyright 2002-2022 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
```

Found in path(s):

```
* /opt/cola/permits/1347859609_1655733795.8299563/0/spring-expression-5-3-21-sources-
jar/org/springframework/expression/spel/SpelMessage.java
* /opt/cola/permits/1347859609_1655733795.8299563/0/spring-expression-5-3-21-sources-
jar/org/springframework/expression/spel/standard/SpelExpression.java
* /opt/cola/permits/1347859609_1655733795.8299563/0/spring-expression-5-3-21-sources-
jar/org/springframework/expression/spel/support/ReflectiveMethodExecutor.java
* /opt/cola/permits/1347859609_1655733795.8299563/0/spring-expression-5-3-21-sources-
jar/org/springframework/expression/spel/ast/ConstructorReference.java
* /opt/cola/permits/1347859609_1655733795.8299563/0/spring-expression-5-3-21-sources-
jar/org/springframework/expression/spel/support/ReflectiveMethodResolver.java
* /opt/cola/permits/1347859609_1655733795.8299563/0/spring-expression-5-3-21-sources-
jar/org/springframework/expression/spel/standard/SpelCompiler.java
* /opt/cola/permits/1347859609_1655733795.8299563/0/spring-expression-5-3-21-sources-
jar/org/springframework/expression/spel/support/ReflectivePropertyAccessor.java
No license file was found, but licenses were detected in source scan.
```

```
/*
* Copyright 2002-2014 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
*
```

\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-jar/org/springframework/expression/spel/CompilablePropertyAccessor.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-jar/org/springframework/expression/spel/SpelCompilerMode.java  
\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-jar/org/springframework/expression/spel/standard/SpelExpressionParser.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2002-2012 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1347859609\_1655733795.8299563/0/spring-expression-5-3-21-sources-jar/org/springframework/expression/spel/InternalParseException.java

# 1.187 gawk 4.2.1-4.el8

## 1.187.1 Available under license :

GNU GENERAL PUBLIC LICENSE  
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies

of this license document, but changing it is not allowed.

## Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE  
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is

allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues),



conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of

this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

GNU LESSER GENERAL PUBLIC LICENSE  
Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts  
as the successor of the GNU Library Public License, version 2, hence  
the version number 2.1.]

### Preamble

The licenses for most software are designed to take away your  
freedom to share and change it. By contrast, the GNU General Public  
Licenses are intended to guarantee your freedom to share and change  
free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some  
specially designated software packages--typically libraries--of the  
Free Software Foundation and other authors who decide to use it. You  
can use it too, but we suggest you first think carefully about whether  
this license or the ordinary General Public License is the better  
strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use,  
not price. Our General Public Licenses are designed to make sure that  
you have the freedom to distribute copies of free software (and charge  
for this service if you wish); that you receive source code or can get  
it if you want it; that you can change the software and use pieces of  
it in new free programs; and that you are informed that you can do  
these things.

To protect your rights, we need to make restrictions that forbid  
distributors to deny you these rights or to ask you to surrender these  
rights. These restrictions translate to certain responsibilities for  
you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis  
or for a fee, you must give the recipients all the rights that we gave  
you. You must make sure that they, too, receive or can get the source  
code. If you link other code with the library, you must provide  
complete object files to the recipients, so that they can relink them  
with the library after making changes to the library and recompiling  
it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the  
library, and (2) we offer you this license, which gives you legal  
permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in

non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

## GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does

and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based

on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and



therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License.

Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the

user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any

particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU

Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!

GNU GENERAL PUBLIC LICENSE  
Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>  
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

#### Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you

these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

## TERMS AND CONDITIONS

### 0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of

works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

#### 1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major



Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

## 2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

### 3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

### 4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

### 5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.
- b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".

c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.

d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

#### 6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the

written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

## 7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the

terms of sections 15 and 16 of this License; or

- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

## 8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

#### 9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

#### 10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

#### 11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work



in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

#### 12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

#### 13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this

License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

#### 14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

#### 15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

#### 16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE

USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### 17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

```
This program is free software: you can redistribute it and/or modify
it under the terms of the GNU General Public License as published by
the Free Software Foundation, either version 3 of the License, or
(at your option) any later version.
```

```
This program is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
GNU General Public License for more details.
```

```
You should have received a copy of the GNU General Public License
along with this program. If not, see <http://www.gnu.org/licenses/>.
```

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

<program> Copyright (C) <year> <name of author>

This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.

This is free software, and you are welcome to redistribute it under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary.

For more information on this, and how to apply and follow the GNU GPL, see <<http://www.gnu.org/licenses/>>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <<http://www.gnu.org/philosophy/why-not-lgpl.html>>.

Copyright (c) 1983, 1993

The Regents of the University of California. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of the <ORGANIZATION> nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

GNU LIBRARY GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1991 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

[This is the first released version of the library GPL. It is  
numbered 2 because it goes with version 2 of the ordinary GPL.]

#### Preamble

The licenses for most software are designed to take away your  
freedom to share and change it. By contrast, the GNU General Public  
Licenses are intended to guarantee your freedom to share and change  
free software--to make sure the software is free for all its users.

This license, the Library General Public License, applies to some  
specially designated Free Software Foundation software, and to any  
other libraries whose authors decide to use it. You can use it for  
your libraries, too.

When we speak of free software, we are referring to freedom, not  
price. Our General Public Licenses are designed to make sure that you  
have the freedom to distribute copies of free software (and charge for  
this service if you wish), that you receive source code or can get it  
if you want it, that you can change the software or use pieces of it  
in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid  
anyone to deny you these rights or to ask you to surrender the rights.  
These restrictions translate to certain responsibilities for you if  
you distribute copies of the library, or if you modify it.

For example, if you distribute copies of the library, whether gratis  
or for a fee, you must give the recipients all the rights that we gave  
you. You must make sure that they, too, receive or can get the source  
code. If you link a program with the library, you must provide  
complete object files to the recipients so that they can relink them  
with the library, after making changes to the library and recompiling  
it. And you must show them these terms so they know their rights.

Our method of protecting your rights has two steps: (1) copyright  
the library, and (2) offer you this license which gives you legal  
permission to copy, distribute and/or modify the library.

Also, for each distributor's protection, we want to make certain  
that everyone understands that there is no warranty for this free  
library. If the library is modified by someone else and passed on, we

want its recipients to know that what they have is not the original version, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that companies distributing free software will individually obtain patent licenses, thus in effect transforming the program into proprietary software. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License, which was designed for utility programs. This license, the GNU Library General Public License, applies to certain designated libraries. This license is quite different from the ordinary one; be sure to read it in full, and don't assume that anything in it is the same as in the ordinary license.

The reason we have a separate public license for some libraries is that they blur the distinction we usually make between modifying or adding to a program and simply using it. Linking a program with a library, without changing the library, is in some sense simply using the library, and is analogous to running a utility program or application program. However, in a textual and legal sense, the linked executable is a combined work, a derivative of the original library, and the ordinary General Public License treats it as such.

Because of this blurred distinction, using the ordinary General Public License for libraries did not effectively promote software sharing, because most developers did not use the libraries. We concluded that weaker conditions might promote sharing better.

However, unrestricted linking of non-free programs would deprive the users of those programs of all benefit from the free status of the libraries themselves. This Library General Public License is intended to permit developers of non-free programs to use free libraries, while preserving your freedom as a user of such programs to change the free libraries that are incorporated in them. (We have not seen how to achieve this as regards changes in header files, but we have achieved it as regards changes in the actual functions of the Library.) The hope is that this will lead to faster development of free libraries.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, while the latter only works together with the library.

Note that it is possible for a library to be covered by the ordinary General Public License rather than by this special one.

## GNU LIBRARY GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Library General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a

fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of



a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be

linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also compile or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

c) If distribution of the work is made by offering access to copy

from a designated place, offer equivalent access to copy the above specified materials from the same place.

d) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are

prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add

an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Library General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH

DAMAGES.

## END OF TERMS AND CONDITIONS

### Appendix: How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Library General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Library General Public License for more details.

You should have received a copy of the GNU Library General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!

# 1.188 springfox-spring-web 3.0.0

## 1.188.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/*
 *
 * Copyright 2015-2016 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 *
 *
 */
```

Found in path(s):

```
* /opt/ws_local/PERMITS_SQL/1082517923_1597960332.64/0/springfox-spring-web-3-0-0-sources-
jar/springfox/documentation/spring/web/scanners/ApiDescriptionLookup.java
* /opt/ws_local/PERMITS_SQL/1082517923_1597960332.64/0/springfox-spring-web-3-0-0-sources-
jar/springfox/documentation/spring/web/plugins/ApiSelectorBuilder.java
* /opt/ws_local/PERMITS_SQL/1082517923_1597960332.64/0/springfox-spring-web-3-0-0-sources-
jar/springfox/documentation/spring/web/readers/operation/OperationDeprecatedReader.java
* /opt/ws_local/PERMITS_SQL/1082517923_1597960332.64/0/springfox-spring-web-3-0-0-sources-
jar/springfox/documentation/spring/web/OperationCachingEquivalence.java
* /opt/ws_local/PERMITS_SQL/1082517923_1597960332.64/0/springfox-spring-web-3-0-0-sources-
jar/springfox/documentation/spring/web/readers/operation/OperationModelsProvider.java
* /opt/ws_local/PERMITS_SQL/1082517923_1597960332.64/0/springfox-spring-web-3-0-0-sources-
jar/springfox/documentation/spring/web/readers/operation/DefaultOperationReader.java
```

No license file was found, but licenses were detected in source scan.

```
/*
 *
 * Copyright 2016-2019 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
```

```
*
* http://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*
*
*/
```

Found in path(s):

```
* /opt/ws_local/PERMITS_SQL/1082517923_1597960332.64/0/springfox-spring-web-3-0-0-sources-
jar/springfox/documentation/spring/web/readers/operation/AbstractOperationParameterRequestConditionReader.java
a
* /opt/ws_local/PERMITS_SQL/1082517923_1597960332.64/0/springfox-spring-web-3-0-0-sources-
jar/springfox/documentation/spring/web/plugins/CombinedRequestHandler.java
No license file was found, but licenses were detected in source scan.
```

```
/*
*
* Copyright 2016-2017 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* http://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*
*
*/
```

Found in path(s):

```
* /opt/ws_local/PERMITS_SQL/1082517923_1597960332.64/0/springfox-spring-web-3-0-0-sources-
jar/springfox/documentation/spring/web/plugins/AbstractDocumentationPluginsBootstrapper.java
No license file was found, but licenses were detected in source scan.
```

```
/*
*
* Copyright 2017-2018 the original author or authors.
*
*/
```



\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <http://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*  
\*  
\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/scanners/ResourcePathProvider.java

No license file was found, but licenses were detected in source scan.

/\*  
\*  
\* Copyright 2019 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <http://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*  
\*  
\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/scanners/MergingContext.java

\* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/scanners/ComparisonCondition.java

No license file was found, but licenses were detected in source scan.

/\*  
\*

- \* Copyright 2015 the original author or authors.
- \*
- \* Licensed under the Apache License, Version 2.0 (the "License");
- \* you may not use this file except in compliance with the License.
- \* You may obtain a copy of the License at
- \*
- \* <http://www.apache.org/licenses/LICENSE-2.0>
- \*
- \* Unless required by applicable law or agreed to in writing, software
- \* distributed under the License is distributed on an "AS IS" BASIS,
- \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- \* See the License for the specific language governing permissions and
- \* limitations under the License.
- \*
- \*
- \*/

Found in path(s):

- \* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/json/JsonSerializer.java
- \* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/json/JacksonModuleRegistrar.java
- \* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/scanners/CachingOperationReader.java
- \* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/paths/OperationPathDecorator.java
- \* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/scanners/ApiListingReferenceScanResult.java
- \* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/paths/PathSanitizer.java
- \* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/readers/operation/OperationTagsReader.java
- \* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/readers/parameter/ParameterMultiplesReader.java
- \* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/scanners/ApiListingReader.java
- \* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/readers/operation/OperationReader.java
- \* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/paths/PathMappingAdjuster.java
- \* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/readers/parameter/ParameterDefaultReader.java
- \* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/plugins/DefaultConfiguration.java
- \* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/DocumentationCache.java
- \* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/json/Json.java

\* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/scanners/ApiListingScanningContext.java  
\* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/paths/DefaultPathProvider.java  
\* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/paths/PathMappingDecorator.java  
No license file was found, but licenses were detected in source scan.

```
/*
 *
 * Copyright 2016 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 *
 */
```

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/readers/operation/OperationParameterRequestConditionReader.java  
\* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/readers/operation/OperationParameterHeadersConditionReader.java  
No license file was found, but licenses were detected in source scan.

```
/*
 *
 * Copyright 2015-2018 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
```

\* limitations under the License.

\*  
\*  
\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/readers/parameter/ModelAttributeParameterExpander.java  
\* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/SpringfoxWebConfiguration.java  
\* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/readers/operation/ResponseMessagesReader.java  
\* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/readers/parameter/ParameterDataTypeReader.java  
\* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/scanners/MediaTypeReader.java

No license file was found, but licenses were detected in source scan.

/\*

\*

\* Copyright 2015-2019 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*

\*

\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/readers/operation/HandlerMethodResolver.java  
\* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/readers/parameter/ParameterNameReader.java  
\* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/scanners/ApiListingReferenceScanner.java  
\* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/plugins/DuplicateGroupsDetector.java  
\* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/DescriptionResolver.java

\* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/readers/parameter/ModelAttributeField.java  
\* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/readers/operation/ApiOperationReader.java  
\* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/scanners/ApiModelReader.java  
\* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/plugins/Docket.java  
\* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/readers/operation/OperationResponseClassReader.java  
\* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/readers/parameter/ExpandedParameterBuilder.java  
\* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/readers/operation/OperationParameterReader.java  
\* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/readers/operation/CachingOperationNameGenerator.java  
\* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/scanners/ApiListingScanner.java  
\* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/readers/parameter/ParameterRequiredReader.java  
\* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/scanners/ApiDescriptionReader.java  
\* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/ControllerNamingUtils.java  
\* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/paths/Paths.java  
\* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/plugins/DocumentationPluginsBootstrapper.java  
\* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/scanners/ApiDocumentationScanner.java  
\* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/paths/QueryStringUriTemplateDecorator.java  
\* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/plugins/DocumentationPluginsManager.java  
No license file was found, but licenses were detected in source scan.

/\*  
\*  
\* Copyright 2017-2019 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <http://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,

- \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- \* See the License for the specific language governing permissions and
- \* limitations under the License.
- \*
- \*
- \*/

Found in path(s):

- \* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/plugins/SpringIntegrationPluginNotPresentInClassPathCondition.java
- \* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/scanners/ResourceGroups.java
- \* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/readers/parameter/ExpansionContext.java
- \* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/plugins/DefaultRequestHandlerCombiner.java
- \* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/readers/parameter/ModelAttributeParameterMetadataAccessor.java
- \* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/plugins/JacksonSerializerConvention.java
- \* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/readers/parameter/ParameterTypeDeterminer.java
- \* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/plugins/PathAndParametersEquivalence.java
- \* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/plugins/ResolvedMethodParameterEquivalence.java

No license file was found, but licenses were detected in source scan.

- /\*
- \*
- \* Copyright 2018 the original author or authors.
- \*
- \* Licensed under the Apache License, Version 2.0 (the "License");
- \* you may not use this file except in compliance with the License.
- \* You may obtain a copy of the License at
- \*
- \* <http://www.apache.org/licenses/LICENSE-2.0>
- \*
- \* Unless required by applicable law or agreed to in writing, software
- \* distributed under the License is distributed on an "AS IS" BASIS,
- \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- \* See the License for the specific language governing permissions and
- \* limitations under the License.
- \*
- \*
- \*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1082517923\_1597960332.64/0/springfox-spring-web-3-0-0-sources-jar/springfox/documentation/spring/web/readers/parameter/ParameterTypeReader.java

## 1.189 classmate 1.5.1

### 1.189.1 Available under license :

Java ClassMate library was originally written by Tatu Saloranta (tatu.saloranta@iki.fi)

Other developers who have contributed code are:

\* Brian Langel

This copy of Java ClassMate library is licensed under Apache (Software) License, version 2.0 ("the License").

See the License for details about distribution rights, and the specific rights regarding derivate works.

You may obtain a copy of the License at:

<http://www.apache.org/licenses/LICENSE-2.0>

## 1.190 libcap 2.26-5.el8

### 1.190.1 Available under license :

Unless otherwise \*explicitly\* stated the following text describes the licensed conditions under which the contents of this module release may be distributed:

-----  
Redistribution and use in source and binary forms of this module, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain any existing copyright notice, and this entire permission notice in its entirety, including the disclaimer of warranties.
2. Redistributions in binary form must reproduce all prior and current copyright notices, this list of conditions, and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of any author may not be used to endorse or promote products derived from this software without their specific prior written permission.

ALTERNATIVELY, this product may be distributed under the terms of the GNU Library General Public License, in which case the provisions of

the GNU LGPL are required INSTEAD OF the above restrictions. (This clause is necessary due to a potential conflict between the GNU LGPL and the restrictions contained in a BSD-style copyright.)

THIS SOFTWARE IS PROVIDED ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR(S) BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

-----  
Unless otherwise \*explicitly\* stated, the following text describes the licensed conditions under which the contents of this libcap release may be used and distributed:

-----  
Redistribution and use in source and binary forms of libcap, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain any existing copyright notice, and this entire permission notice in its entirety, including the disclaimer of warranties.
2. Redistributions in binary form must reproduce all prior and current copyright notices, this list of conditions, and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of any author may not be used to endorse or promote products derived from this software without their specific prior written permission.

ALTERNATIVELY, this product may be distributed under the terms of the GNU General Public License (v2.0 - see below), in which case the provisions of the GNU GPL are required INSTEAD OF the above restrictions. (This clause is necessary due to a potential conflict between the GNU GPL and the restrictions contained in a BSD-style copyright.)

THIS SOFTWARE IS PROVIDED ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED.



IN NO EVENT SHALL THE AUTHOR(S) BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

-----

-----  
Full text of gpl-2.0.txt:  
-----

## GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that

you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the

notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of

a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to

be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED

TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be

mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program  
'Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989  
Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

# 1.191 scala 2.13.9.v20220913-140622-VFINAL-986dcc1

## 1.191.1 Available under license :

Scala includes the JLine library, which includes the JNA library, which is made available under multiple licenses, including the Apache 2 license:

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the



outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable

copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and

do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

not-a-legal-formal-parameter-tuple.scala:2: error: not a legal formal parameter.

Note: Tuples cannot be directly destructured in method or function parameters.

```
Either create a single parameter accepting the Tuple2,
or consider a pattern matching anonymous function: ` { case (a, b) => ... }
val x: ((Int, Int) => Int) = (((a, b)) => a)
 ^
```

not-a-legal-formal-parameter-tuple.scala:3: error: not a legal formal parameter.

Note: Tuples cannot be directly destructured in method or function parameters.

```
Either create a single parameter accepting the Tuple2,
or consider a pattern matching anonymous function: ` { case (param1, param2) => ... }
val y: ((Int, Int, Int) => Int) = (((a, !!)) => a)
```

^

not-a-legal-formal-parameter-tuple.scala:4: error: not a legal formal parameter.

Note: Tuples cannot be directly deconstructed in method or function parameters.

Either create a single parameter accepting the Tuple3,

or consider a pattern matching anonymous function: `{ case (param1, ..., param3) => ... }`

`val z: ((Int, Int, Int) => Int) = (((a, NotAPatternVariableName, c)) => a)`

^

3 errors

Scala is licensed under the [Apache License Version 2.0](https://www.apache.org/licenses/LICENSE-2.0).

## Scala License

Copyright (c) 2002-2022 EPFL

Copyright (c) 2011-2022 Lightbend, Inc.

All rights reserved.

Licensed under the Apache License, Version 2.0 (the "License");

you may not use this file except in compliance with the License.

You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

# Other Licenses

This software includes projects with the following licenses, which are also included in the `licenses/`` directory:

### [Apache License](http://www.apache.org/licenses/LICENSE-2.0.html)

This license is used by the following third-party libraries:

\* JNA

### [BSD 3-Clause License](http://opensource.org/licenses/BSD-3-Clause)

This license is used by the following third-party libraries:

\* ASM

\* JLine 3

### [MIT License](http://www.opensource.org/licenses/MIT)

This license is used by the following third-party libraries:

\* jQuery

Scala includes the jQuery library:

Copyright JS Foundation and other contributors, <https://js.foundation/>

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Scala

Copyright (c) 2002-2022 EPFL

Copyright (c) 2011-2022 Lightbend, Inc.

Scala includes software developed at  
LAMP/EPFL (<https://lamp.epfl.ch/>) and  
Lightbend, Inc. (<https://www.lightbend.com/>).

Licensed under the Apache License, Version 2.0 (the "License").  
Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

This software includes projects with other licenses -- see `doc/LICENSE.md`.  
(c) 2012-2014 GitHub

When using the GitHub logos, be sure to follow the GitHub logo guidelines (<https://github.com/logos>)

Font License: SIL OFL 1.1 (<http://scripts.sil.org/OFL>)

Applies to all font files

Code License: MIT (<http://choosealicense.com/licenses/mit/>)

Applies to all other files

Copyright (c) 2006, Ivan Sagalaev

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of highlight.js nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS AND CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

```
{% if site.thisScalaVersion != site.latestScalaVersion % }
```

```
<div class="version-notice">This is the specification of {{ site.versionCompareMessage }} version of Scala. See the Scala {{ site.latestScalaVersion }} spec.</div>
```

```
{% endif % }
```

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition,

"control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or

otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual,



worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

(a) You must give any other recipients of the Work or Derivative Works a copy of this License; and

(b) You must cause any modified files to carry prominent notices stating that You changed the files; and

(c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents

of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

See the License for the specific language governing permissions and limitations under the License.

Scala includes the ASM library.

Copyright (c) 2000-2011 INRIA, France Telecom  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright

notice, this list of conditions and the following disclaimer.

2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the copyright holders nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Scala includes the JLine 3 library:

Copyright (c) 2002-2018, the original author or authors.

All rights reserved.

<https://opensource.org/licenses/BSD-3-Clause>

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

Neither the name of JLine nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO

EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

(The MIT License)

Copyright (c) 2013 Greg Allen

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the 'Software'), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED 'AS IS', WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

## 1.192 ant-apache-bsf 1.6.5

### 1.192.1 Available under license :

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

##### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all

other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and

subsequently incorporated within the Work.

2. **Grant of Copyright License.** Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. **Grant of Patent License.** Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. **Redistribution.** You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed

as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the



Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

## 1.193 openorb 1.8.0.312

## 1.193.1 Notifications :

This product includes software developed by the Apache Software Foundation (<http://www.apache.org/>).

## 1.193.2 Available under license :

/\*

=====  
The Apache Software License, Version 1.1  
=====

Copyright (C) 1999-2002 The Apache Software Foundation. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The end-user documentation included with the redistribution, if any, must include the following acknowledgment: "This product includes software developed by the Apache Software Foundation (<http://www.apache.org/>)."  
Alternately, this acknowledgment may appear in the software itself, if and wherever such third-party acknowledgments normally appear.
4. The names "Jakarta", "Apache Avalon", "Avalon Framework" and "Apache Software Foundation" must not be used to endorse or promote products derived from this software without prior written permission. For written permission, please contact [apache@apache.org](mailto:apache@apache.org).
5. Products derived from this software may not be called "Apache", nor may "Apache" appear in their name, without prior written permission of the Apache Software Foundation.

THIS SOFTWARE IS PROVIDED ``AS IS'' AND ANY EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE APACHE SOFTWARE FOUNDATION OR ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

This software consists of voluntary contributions made by many individuals on behalf of the Apache Software Foundation. For more information on the Apache Software Foundation, please see <<http://www.apache.org/>>.

\*/  
/\*

---

---

The Apache Software License, Version 1.1

---

---

Copyright (C) 1999-2002 The Apache Software Foundation. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The end-user documentation included with the redistribution, if any, must include the following acknowledgment: "This product includes software developed by the Apache Software Foundation (<http://www.apache.org/>)."  
Alternately, this acknowledgment may appear in the software itself, if and wherever such third-party acknowledgments normally appear.
4. The names "Jakarta", "Avalon", "Excalibur" and "Apache Software Foundation" must not be used to endorse or promote products derived from this software without prior written permission. For written permission, please contact [apache@apache.org](mailto:apache@apache.org).
5. Products derived from this software may not be called "Apache", nor may "Apache" appear in their name, without prior written permission of the Apache Software Foundation.

THIS SOFTWARE IS PROVIDED ``AS IS'' AND ANY EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE APACHE SOFTWARE FOUNDATION OR ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

This software consists of voluntary contributions made by many individuals on behalf of the Apache Software Foundation. For more information on the Apache Software Foundation, please see <<http://www.apache.org/>>.

\*/  
/\*

---

---

The OpenORB Community Software License, Version 1.0

---

---

Copyright (C) 2002 The OpenORB Project. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The end-user documentation included with the redistribution, if any, must include the following acknowledgment: "This product includes software developed by the OpenORB Community Project (<http://sourceforge.net/projects/openorb/>)." together with the due credit statements listed below.  
Alternately, this acknowledgment and due credits may appear in the software itself, if and wherever such third-party acknowledgments normally appear.

THIS SOFTWARE IS PROVIDED ``AS IS" AND ANY EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE MEMBERS OF THE OPENORB COMMUNITY PROJECT OR ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

This software consists of voluntary contributions made by many individuals to the OpenORB Community Project. For more information on the OpenORB Community Project, please refer to <<http://sourceforge.net/projects/openorb/>>.

---

---

## Due Credits

---

---

This product includes software developed by the Apache Software Foundation (<http://www.apache.org/>), including the Avalon Framework, Avalon Logkit, and related Excalibur utilities. Due credit to the Apache Software Foundation is hereby acknowledged.

This product is derived from initial works published under the Exolab Group, (<http://www.exolab.org/>). Due credit to the Exolab Group is hereby acknowledged. Parts of this software are derived from and subject to the terms of the Exolab license. A copy of the Exolab license is contained in respective distributions.

\*/

# 1.194 libgcrypto 1.8.5-7.el8\_6

## 1.194.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the

Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.



4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made

generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING,

## REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

Gnomovision version 69, Copyright (C) year name of author  
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.  
This is free software, and you are welcome to redistribute it  
under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program  
`Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989  
Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

## GNU LESSER GENERAL PUBLIC LICENSE Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.  
59 Temple Place, Suite 330, Boston, MA 02111-1307 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You

can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

^L

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use

this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

^L

GNU LESSER GENERAL PUBLIC LICENSE  
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so



that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

^L

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object

file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

^L

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

^L

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not

signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

^L

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

^L

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING

RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

^L

#### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990

Ty Coon, President of Vice

That's all there is to it!

Additional license notices for Libgcrypt.                    - \*- org - \*-

This file contains the copying permission notices for various files in the Libgcrypt distribution which are not covered by the GNU Lesser General Public License (LGPL) or the GNU General Public License (GPL).

These notices all require that a copy of the notice be included in the accompanying documentation and be distributed with binary distributions of the code, so be sure to include this file along with any binary distributions derived from the GNU C Library.

\* BSD\_3Clause

For files:

- cipher/sha256-avx-amd64.S
- cipher/sha256-avx2-bmi2-amd64.S
- cipher/sha256-ssse3-amd64.S
- cipher/sha512-avx-amd64.S
- cipher/sha512-avx2-bmi2-amd64.S
- cipher/sha512-ssse3-amd64.S

#+begin\_quote

Copyright (c) 2012, Intel Corporation

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of the Intel Corporation nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY INTEL CORPORATION "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL INTEL CORPORATION OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

#+end\_quote

For files:

- random/jitterentropy-base.c
- random/jitterentropy.h
- random/rndjent.c (plus common Libgcrypt copyright holders)

#+begin\_quote

\* Copyright Stephan Mueller <smueller@chronox.de>, 2013

\*

\* License

\* =====

\*

\* Redistribution and use in source and binary forms, with or without  
\* modification, are permitted provided that the following conditions  
\* are met:

\* 1. Redistributions of source code must retain the above copyright

\* notice, and the entire permission notice in its entirety,

\* including the disclaimer of warranties.

\* 2. Redistributions in binary form must reproduce the above copyright

\* notice, this list of conditions and the following disclaimer in the

\* documentation and/or other materials provided with the distribution.

\* 3. The name of the author may not be used to endorse or promote

\* products derived from this software without specific prior

\* written permission.

\*

\* ALTERNATIVELY, this product may be distributed under the terms of

\* the GNU General Public License, in which case the provisions of the GPL are

\* required INSTEAD OF the above restrictions. (This clause is

\* necessary due to a potential bad interaction between the GPL and

\* the restrictions contained in a BSD-style copyright.)

\*

\* THIS SOFTWARE IS PROVIDED ``AS IS" AND ANY EXPRESS OR IMPLIED

\* WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES

\* OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ALL OF

\* WHICH ARE HEREBY DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE



\* LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR  
\* CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT  
\* OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR  
\* BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF  
\* LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT  
\* (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE  
\* USE OF THIS SOFTWARE, EVEN IF NOT ADVISED OF THE POSSIBILITY OF SUCH  
\* DAMAGE.

#+end\_quote

\* X License

For files:

- install.sh

#+begin\_quote

Copyright (C) 1994 X Consortium

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE X CONSORTIUM BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Except as contained in this notice, the name of the X Consortium shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization from the X Consortium.

#+end\_quote

\* Public domain

For files:

- cipher/arcfour-amd64.S

#+begin\_quote

Author: Marc Bevand <bevand\_m (at) epita.fr>

Licence: I hereby disclaim the copyright on this code and place it in the public domain.

#+end\_quote

\* OCB license 1

For files:

- cipher/cipher-ocb.c

#+begin\_quote

OCB is covered by several patents but may be used freely by most software. See <http://web.cs.ucdavis.edu/~rogaway/ocb/license.htm> .

In particular license 1 is suitable for Libgcrypt: See

<http://web.cs.ucdavis.edu/~rogaway/ocb/license1.pdf> for the full license document; it basically says:

License 1 License for Open-Source Software Implementations of OCB  
(Jan 9, 2013)

Under this license, you are authorized to make, use, and distribute open-source software implementations of OCB. This license terminates for you if you sue someone over their open-source software implementation of OCB claiming that you have a patent covering their implementation.

License for Open Source Software Implementations of OCB  
January 9, 2013

1 Definitions

1.1 Licensor means Phillip Rogaway.

1.2 Licensed Patents means any patent that claims priority to United States Patent Application No. 09/918,615 entitled Method and Apparatus for Facilitating Efficient Authenticated Encryption, and any utility, divisional, provisional, continuation, continuations-in-part, reexamination, reissue, or foreign counterpart patents that may issue with respect to the aforesaid patent application. This includes, but is not limited to, United States Patent No. 7,046,802; United States Patent No. 7,200,227; United States Patent No. 7,949,129; United States Patent No. 8,321,675 ; and any patent that issues out of United States Patent Application No. 13/669,114.

1.3 Use means any practice of any invention claimed in the Licensed Patents.

1.4 Software Implementation means any practice of any invention claimed in the Licensed Patents that takes the form of software executing on

a user-programmable, general-purpose computer or that takes the form of a computer-readable medium storing such software. Software Implementation does not include, for example, application-specific integrated circuits (ASICs), field-programmable gate arrays (FPGAs), embedded systems, or IP cores.

1.5 Open Source Software means software whose source code is published and made available for inspection and use by anyone because either (a) the source code is subject to a license that permits recipients to copy, modify, and distribute the source code without payment of fees or royalties, or (b) the source code is in the public domain, including code released for public use through a CC0 waiver. All licenses certified by the Open Source Initiative at [opensource.org](http://opensource.org) as of January 9, 2013 and all Creative Commons licenses identified on the [creativecommons.org](http://creativecommons.org) website as of January 9, 2013, including the Public License Fallback of the CC0 waiver, satisfy these requirements for the purposes of this license.

1.6 Open Source Software Implementation means a Software Implementation in which the software implicating the Licensed Patents is Open Source Software. Open Source Software Implementation does not include any Software Implementation in which the software implicating the Licensed Patents is combined, so as to form a larger program, with software that is not Open Source Software.

## 2 License Grant

2.1 License. Subject to your compliance with the terms of this license, including the restriction set forth in Section 2.2, Licensor hereby grants to you a perpetual, worldwide, non-exclusive, non-transferable, non-sublicenseable, no-charge, royalty-free, irrevocable license to practice any invention claimed in the Licensed Patents in any Open Source Software Implementation.

2.2 Restriction. If you or your affiliates institute patent litigation (including, but not limited to, a cross-claim or counterclaim in a lawsuit) against any entity alleging that any Use authorized by this license infringes another patent, then any rights granted to you under this license automatically terminate as of the date such litigation is filed.

## 3 Disclaimer

YOUR USE OF THE LICENSED PATENTS IS AT YOUR OWN RISK AND UNLESS REQUIRED BY APPLICABLE LAW, LICENSOR MAKES NO REPRESENTATIONS OR WARRANTIES OF ANY KIND CONCERNING THE LICENSED PATENTS OR ANY PRODUCT EMBODYING ANY LICENSED PATENT, EXPRESS OR IMPLIED, STATUTORY OR OTHERWISE, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF TITLE, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT. IN NO EVENT WILL LICENSOR BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN CONTRACT, TORT OR OTHERWISE, ARISING FROM OR RELATED TO ANY USE OF THE LICENSED PATENTS, INCLUDING, WITHOUT LIMITATION, DIRECT, INDIRECT, INCIDENTAL, CONSEQUENTIAL, PUNITIVE

OR SPECIAL DAMAGES, EVEN IF LICENSOR HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES PRIOR TO SUCH AN OCCURRENCE.

#+end\_quote

# 1.195 openssl 1.0.2u

## 1.195.1 Available under license :

Copyright (C) 1995-1997 Eric Young (eay@cryptsoft.com)

All rights reserved.

This package is an DES implementation written by Eric Young (eay@cryptsoft.com). The implementation was written so as to conform with MIT's libdes.

This library is free for commercial and non-commercial use as long as the following conditions are adhered to. The following conditions apply to all code found in this distribution.

Copyright remains Eric Young's, and as such any Copyright notices in the code are not to be removed.

If this package is used in a product, Eric Young should be given attribution as the author of that the SSL library. This can be in the form of a textual message at program startup or in documentation (online or textual) provided with the package.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. All advertising materials mentioning features or use of this software must display the following acknowledgement:

This product includes software developed by Eric Young (eay@cryptsoft.com)

THIS SOFTWARE IS PROVIDED BY ERIC YOUNG ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.



\* 5. Products derived from this software may not be called "OpenSSL"  
 \* nor may "OpenSSL" appear in their names without prior written  
 \* permission of the OpenSSL Project.  
 \*  
 \* 6. Redistributions of any form whatsoever must retain the following  
 \* acknowledgment:  
 \* "This product includes software developed by the OpenSSL Project  
 \* for use in the OpenSSL Toolkit (<http://www.openssl.org/>)"  
 \*  
 \* THIS SOFTWARE IS PROVIDED BY THE OpenSSL PROJECT ``AS IS" AND ANY  
 \* EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE  
 \* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR  
 \* PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE OpenSSL PROJECT OR  
 \* ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,  
 \* SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT  
 \* NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;  
 \* LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)  
 \* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,  
 \* STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)  
 \* ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED  
 \* OF THE POSSIBILITY OF SUCH DAMAGE.  
 \* =====  
 \*  
 \* This product includes cryptographic software written by Eric Young  
 \* (eay@cryptsoft.com). This product includes software written by Tim  
 \* Hudson (tjh@cryptsoft.com).  
 \*  
 \*/

Original SSLeay License

-----

/\* Copyright (C) 1995-1998 Eric Young (eay@cryptsoft.com)  
 \* All rights reserved.  
 \*  
 \* This package is an SSL implementation written  
 \* by Eric Young (eay@cryptsoft.com).  
 \* The implementation was written so as to conform with Netscapes SSL.  
 \*  
 \* This library is free for commercial and non-commercial use as long as  
 \* the following conditions are aheared to. The following conditions  
 \* apply to all code found in this distribution, be it the RC4, RSA,  
 \* lhash, DES, etc., code; not just the SSL code. The SSL documentation  
 \* included with this distribution is covered by the same copyright terms  
 \* except that the holder is Tim Hudson (tjh@cryptsoft.com).  
 \*  
 \* Copyright remains Eric Young's, and as such any Copyright notices in  
 \* the code are not to be removed.

- \* If this package is used in a product, Eric Young should be given attribution
- \* as the author of the parts of the library used.
- \* This can be in the form of a textual message at program startup or
- \* in documentation (online or textual) provided with the package.
- \*
- \* Redistribution and use in source and binary forms, with or without
- \* modification, are permitted provided that the following conditions
- \* are met:
- \* 1. Redistributions of source code must retain the copyright
- \* notice, this list of conditions and the following disclaimer.
- \* 2. Redistributions in binary form must reproduce the above copyright
- \* notice, this list of conditions and the following disclaimer in the
- \* documentation and/or other materials provided with the distribution.
- \* 3. All advertising materials mentioning features or use of this software
- \* must display the following acknowledgement:
- \* "This product includes cryptographic software written by
- \* Eric Young (eay@cryptsoft.com)"
- \* The word 'cryptographic' can be left out if the routines from the library
- \* being used are not cryptographic related :-).
- \* 4. If you include any Windows specific code (or a derivative thereof) from
- \* the apps directory (application code) you must include an acknowledgement:
- \* "This product includes software written by Tim Hudson (tjh@cryptsoft.com)"
- \*
- \* THIS SOFTWARE IS PROVIDED BY ERIC YOUNG ``AS IS" AND
- \* ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
- \* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
- \* ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE
- \* FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
- \* DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS
- \* OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
- \* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
- \* LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
- \* OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
- \* SUCH DAMAGE.
- \*
- \* The licence and distribution terms for any publically available version or
- \* derivative of this code cannot be changed. i.e. this code cannot simply be
- \* copied and put under another distribution licence
- \* [including the GNU Public Licence.]
- \*/

Copyright (C) 1995-1997 Eric Young (eay@cryptsoft.com)  
 All rights reserved.

This package is an Blowfish implementation written  
 by Eric Young (eay@cryptsoft.com).

This library is free for commercial and non-commercial use as long as  
 the following conditions are adhered to. The following conditions

apply to all code found in this distribution.

Copyright remains Eric Young's, and as such any Copyright notices in the code are not to be removed.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. All advertising materials mentioning features or use of this software must display the following acknowledgement:

This product includes software developed by Eric Young (eay@cryptsoft.com)

THIS SOFTWARE IS PROVIDED BY ERIC YOUNG ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The license and distribution terms for any publically available version or derivative of this code cannot be changed. i.e. this code cannot simply be copied and put under another distribution license [including the GNU Public License.]

The reason behind this being stated in this direct manner is past experience in code simply being copied and the attribution removed from it and then being distributed as part of other packages. This implementation was a non-trivial and unpaid effort.

## 1.196 glib 2.56.4-158.el8

### 1.196.1 Available under license :

This work may be reproduced and distributed in whole or in part, in any medium, physical or electronic, so as long as this copyright notice remains intact and unchanged on all copies. Commercial redistribution is permitted and encouraged, but you may not redistribute, in whole or in part, under terms more restrictive than



those under which you received it. If you redistribute a modified or translated version of this work, you must also make the source code to the modified or translated version available in electronic form without charge. However, mere aggregation as part of a larger work shall not count as a modification for this purpose.

All code examples in this work are placed into the public domain, and may be used, modified and redistributed without restriction.

BECAUSE THIS WORK IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE WORK, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE WORK "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. SHOULD THE WORK PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY REPAIR OR CORRECTION.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE WORK AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE WORK, EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

PCRE LICENCE

Please see the file LICENCE in the PCRE distribution for licensing details.

End

#### GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the

ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE  
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion

of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at

least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses



terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to

be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR

CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!

# 1.197 elfutils 0.186-1.el8

## 1.197.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and

(2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

#### GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and

you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of

Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by

modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License



may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program  
'Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989  
Ty Coon, President of Vice

This General Public License does not permit incorporating your program into  
proprietary programs. If your program is a subroutine library, you may  
consider it more useful to permit linking proprietary applications with the  
library. If this is what you want to do, use the GNU Lesser General  
Public License instead of this License.

GNU GENERAL PUBLIC LICENSE  
Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

Preamble

The GNU General Public License is a free, copyleft license for  
software and other kinds of works.

The licenses for most software and other practical works are designed  
to take away your freedom to share and change the works. By contrast,  
the GNU General Public License is intended to guarantee your freedom to  
share and change all versions of a program--to make sure it remains free  
software for all its users. We, the Free Software Foundation, use the  
GNU General Public License for most of our software; it applies also to  
any other work released this way by its authors. You can apply it to  
your programs, too.

When we speak of free software, we are referring to freedom, not  
price. Our General Public Licenses are designed to make sure that you  
have the freedom to distribute copies of free software (and charge for  
them if you wish), that you receive source code or can get it if you  
want it, that you can change the software or use pieces of it in new  
free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you  
these rights or asking you to surrender the rights. Therefore, you have  
certain responsibilities if you distribute copies of the software, or if  
you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether  
gratis or for a fee, you must pass on to the recipients the same  
freedoms that you received. You must make sure that they, too, receive

or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

## TERMS AND CONDITIONS

### 0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work

in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

#### 1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

## 2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

## 3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

#### 4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

#### 5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.
- b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".
- c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.

d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

#### 6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the



Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply

if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

#### 7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or

requiring that modified versions of such material be marked in reasonable ways as different from the original version; or

d) Limiting the use for publicity purposes of names of licensors or authors of the material; or

e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or

f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

## 8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

#### 9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

#### 10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for

sale, or importing the Program or any portion of it.

## 11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify

or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

#### 12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

#### 13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

#### 14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

#### 15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

#### 16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### 17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program> Copyright (C) <year> <name of author>
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate



parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <http://www.gnu.org/licenses/>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <http://www.gnu.org/philosophy/why-not-lgpl.html>. This license applies to the eu-readelf.1 man page which was forked from the binutils readelf version of the man page. The rest of the documentation is provided under the license found in the top level directory.

GNU Free Documentation License  
Version 1.3, 3 November 2008

Copyright (C) 2000, 2001, 2002, 2007, 2008 Free Software Foundation, Inc.  
<https://fsf.org/>

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

## 0. PREAMBLE

The purpose of this License is to make a manual, textbook, or other functional and useful document "free" in the sense of freedom: to assure everyone the effective freedom to copy and redistribute it, with or without modifying it, either commercially or noncommercially. Secondly, this License preserves for the author and publisher a way to get credit for their work, while not being considered responsible for modifications made by others.

This License is a kind of "copyleft", which means that derivative works of the document must themselves be free in the same sense. It complements the GNU General Public License, which is a copyleft license designed for free software.

We have designed this License in order to use it for manuals for free software, because free software needs free documentation: a free program should come with manuals providing the same freedoms that the software does. But this License is not limited to software manuals; it can be used for any textual work, regardless of subject matter or

whether it is published as a printed book. We recommend this License principally for works whose purpose is instruction or reference.

## 1. APPLICABILITY AND DEFINITIONS

This License applies to any manual or other work, in any medium, that contains a notice placed by the copyright holder saying it can be distributed under the terms of this License. Such a notice grants a world-wide, royalty-free license, unlimited in duration, to use that work under the conditions stated herein. The "Document", below, refers to any such manual or work. Any member of the public is a licensee, and is addressed as "you". You accept the license if you copy, modify or distribute the work in a way requiring permission under copyright law.

A "Modified Version" of the Document means any work containing the Document or a portion of it, either copied verbatim, or with modifications and/or translated into another language.

A "Secondary Section" is a named appendix or a front-matter section of the Document that deals exclusively with the relationship of the publishers or authors of the Document to the Document's overall subject (or to related matters) and contains nothing that could fall directly within that overall subject. (Thus, if the Document is in part a textbook of mathematics, a Secondary Section may not explain any mathematics.) The relationship could be a matter of historical connection with the subject or with related matters, or of legal, commercial, philosophical, ethical or political position regarding them.

The "Invariant Sections" are certain Secondary Sections whose titles are designated, as being those of Invariant Sections, in the notice that says that the Document is released under this License. If a section does not fit the above definition of Secondary then it is not allowed to be designated as Invariant. The Document may contain zero Invariant Sections. If the Document does not identify any Invariant Sections then there are none.

The "Cover Texts" are certain short passages of text that are listed, as Front-Cover Texts or Back-Cover Texts, in the notice that says that the Document is released under this License. A Front-Cover Text may be at most 5 words, and a Back-Cover Text may be at most 25 words.

A "Transparent" copy of the Document means a machine-readable copy, represented in a format whose specification is available to the general public, that is suitable for revising the document straightforwardly with generic text editors or (for images composed of

pixels) generic paint programs or (for drawings) some widely available drawing editor, and that is suitable for input to text formatters or for automatic translation to a variety of formats suitable for input to text formatters. A copy made in an otherwise Transparent file format whose markup, or absence of markup, has been arranged to thwart or discourage subsequent modification by readers is not Transparent. An image format is not Transparent if used for any substantial amount of text. A copy that is not "Transparent" is called "Opaque".

Examples of suitable formats for Transparent copies include plain ASCII without markup, Texinfo input format, LaTeX input format, SGML or XML using a publicly available DTD, and standard-conforming simple HTML, PostScript or PDF designed for human modification. Examples of transparent image formats include PNG, XCF and JPG. Opaque formats include proprietary formats that can be read and edited only by proprietary word processors, SGML or XML for which the DTD and/or processing tools are not generally available, and the machine-generated HTML, PostScript or PDF produced by some word processors for output purposes only.

The "Title Page" means, for a printed book, the title page itself, plus such following pages as are needed to hold, legibly, the material this License requires to appear in the title page. For works in formats which do not have any title page as such, "Title Page" means the text near the most prominent appearance of the work's title, preceding the beginning of the body of the text.

The "publisher" means any person or entity that distributes copies of the Document to the public.

A section "Entitled XYZ" means a named subunit of the Document whose title either is precisely XYZ or contains XYZ in parentheses following text that translates XYZ in another language. (Here XYZ stands for a specific section name mentioned below, such as "Acknowledgements", "Dedications", "Endorsements", or "History".) To "Preserve the Title" of such a section when you modify the Document means that it remains a section "Entitled XYZ" according to this definition.

The Document may include Warranty Disclaimers next to the notice which states that this License applies to the Document. These Warranty Disclaimers are considered to be included by reference in this License, but only as regards disclaiming warranties: any other implication that these Warranty Disclaimers may have is void and has no effect on the meaning of this License.

## 2. VERBATIM COPYING

You may copy and distribute the Document in any medium, either

commercially or noncommercially, provided that this License, the copyright notices, and the license notice saying this License applies to the Document are reproduced in all copies, and that you add no other conditions whatsoever to those of this License. You may not use technical measures to obstruct or control the reading or further copying of the copies you make or distribute. However, you may accept compensation in exchange for copies. If you distribute a large enough number of copies you must also follow the conditions in section 3.

You may also lend copies, under the same conditions stated above, and you may publicly display copies.

### 3. COPYING IN QUANTITY

If you publish printed copies (or copies in media that commonly have printed covers) of the Document, numbering more than 100, and the Document's license notice requires Cover Texts, you must enclose the copies in covers that carry, clearly and legibly, all these Cover Texts: Front-Cover Texts on the front cover, and Back-Cover Texts on the back cover. Both covers must also clearly and legibly identify you as the publisher of these copies. The front cover must present the full title with all words of the title equally prominent and visible. You may add other material on the covers in addition. Copying with changes limited to the covers, as long as they preserve the title of the Document and satisfy these conditions, can be treated as verbatim copying in other respects.

If the required texts for either cover are too voluminous to fit legibly, you should put the first ones listed (as many as fit reasonably) on the actual cover, and continue the rest onto adjacent pages.

If you publish or distribute Opaque copies of the Document numbering more than 100, you must either include a machine-readable Transparent copy along with each Opaque copy, or state in or with each Opaque copy a computer-network location from which the general network-using public has access to download using public-standard network protocols a complete Transparent copy of the Document, free of added material. If you use the latter option, you must take reasonably prudent steps, when you begin distribution of Opaque copies in quantity, to ensure that this Transparent copy will remain thus accessible at the stated location until at least one year after the last time you distribute an Opaque copy (directly or through your agents or retailers) of that edition to the public.

It is requested, but not required, that you contact the authors of the Document well before redistributing any large number of copies, to

give them a chance to provide you with an updated version of the Document.

#### 4. MODIFICATIONS

You may copy and distribute a Modified Version of the Document under the conditions of sections 2 and 3 above, provided that you release the Modified Version under precisely this License, with the Modified Version filling the role of the Document, thus licensing distribution and modification of the Modified Version to whoever possesses a copy of it. In addition, you must do these things in the Modified Version:

- A. Use in the Title Page (and on the covers, if any) a title distinct from that of the Document, and from those of previous versions (which should, if there were any, be listed in the History section of the Document). You may use the same title as a previous version if the original publisher of that version gives permission.
- B. List on the Title Page, as authors, one or more persons or entities responsible for authorship of the modifications in the Modified Version, together with at least five of the principal authors of the Document (all of its principal authors, if it has fewer than five), unless they release you from this requirement.
- C. State on the Title page the name of the publisher of the Modified Version, as the publisher.
- D. Preserve all the copyright notices of the Document.
- E. Add an appropriate copyright notice for your modifications adjacent to the other copyright notices.
- F. Include, immediately after the copyright notices, a license notice giving the public permission to use the Modified Version under the terms of this License, in the form shown in the Addendum below.
- G. Preserve in that license notice the full lists of Invariant Sections and required Cover Texts given in the Document's license notice.
- H. Include an unaltered copy of this License.
- I. Preserve the section Entitled "History", Preserve its Title, and add to it an item stating at least the title, year, new authors, and publisher of the Modified Version as given on the Title Page. If there is no section Entitled "History" in the Document, create one stating the title, year, authors, and publisher of the Document as given on its Title Page, then add an item describing the Modified Version as stated in the previous sentence.
- J. Preserve the network location, if any, given in the Document for public access to a Transparent copy of the Document, and likewise the network locations given in the Document for previous versions it was based on. These may be placed in the "History" section. You may omit a network location for a work that was published at least four years before the Document itself, or if the original publisher of the version it refers to gives permission.

- K. For any section Entitled "Acknowledgements" or "Dedications", Preserve the Title of the section, and preserve in the section all the substance and tone of each of the contributor acknowledgements and/or dedications given therein.
- L. Preserve all the Invariant Sections of the Document, unaltered in their text and in their titles. Section numbers or the equivalent are not considered part of the section titles.
- M. Delete any section Entitled "Endorsements". Such a section may not be included in the Modified Version.
- N. Do not retitle any existing section to be Entitled "Endorsements" or to conflict in title with any Invariant Section.
- O. Preserve any Warranty Disclaimers.

If the Modified Version includes new front-matter sections or appendices that qualify as Secondary Sections and contain no material copied from the Document, you may at your option designate some or all of these sections as invariant. To do this, add their titles to the list of Invariant Sections in the Modified Version's license notice. These titles must be distinct from any other section titles.

You may add a section Entitled "Endorsements", provided it contains nothing but endorsements of your Modified Version by various parties--for example, statements of peer review or that the text has been approved by an organization as the authoritative definition of a standard.

You may add a passage of up to five words as a Front-Cover Text, and a passage of up to 25 words as a Back-Cover Text, to the end of the list of Cover Texts in the Modified Version. Only one passage of Front-Cover Text and one of Back-Cover Text may be added by (or through arrangements made by) any one entity. If the Document already includes a cover text for the same cover, previously added by you or by arrangement made by the same entity you are acting on behalf of, you may not add another; but you may replace the old one, on explicit permission from the previous publisher that added the old one.

The author(s) and publisher(s) of the Document do not by this License give permission to use their names for publicity for or to assert or imply endorsement of any Modified Version.

## 5. COMBINING DOCUMENTS

You may combine the Document with other documents released under this License, under the terms defined in section 4 above for modified versions, provided that you include in the combination all of the Invariant Sections of all of the original documents, unmodified, and list them all as Invariant Sections of your combined work in its

license notice, and that you preserve all their Warranty Disclaimers.

The combined work need only contain one copy of this License, and multiple identical Invariant Sections may be replaced with a single copy. If there are multiple Invariant Sections with the same name but different contents, make the title of each such section unique by adding at the end of it, in parentheses, the name of the original author or publisher of that section if known, or else a unique number. Make the same adjustment to the section titles in the list of Invariant Sections in the license notice of the combined work.

In the combination, you must combine any sections Entitled "History" in the various original documents, forming one section Entitled "History"; likewise combine any sections Entitled "Acknowledgements", and any sections Entitled "Dedications". You must delete all sections Entitled "Endorsements".

## 6. COLLECTIONS OF DOCUMENTS

You may make a collection consisting of the Document and other documents released under this License, and replace the individual copies of this License in the various documents with a single copy that is included in the collection, provided that you follow the rules of this License for verbatim copying of each of the documents in all other respects.

You may extract a single document from such a collection, and distribute it individually under this License, provided you insert a copy of this License into the extracted document, and follow this License in all other respects regarding verbatim copying of that document.

## 7. AGGREGATION WITH INDEPENDENT WORKS

A compilation of the Document or its derivatives with other separate and independent documents or works, in or on a volume of a storage or distribution medium, is called an "aggregate" if the copyright resulting from the compilation is not used to limit the legal rights of the compilation's users beyond what the individual works permit. When the Document is included in an aggregate, this License does not apply to the other works in the aggregate which are not themselves derivative works of the Document.

If the Cover Text requirement of section 3 is applicable to these copies of the Document, then if the Document is less than one half of the entire aggregate, the Document's Cover Texts may be placed on

covers that bracket the Document within the aggregate, or the electronic equivalent of covers if the Document is in electronic form. Otherwise they must appear on printed covers that bracket the whole aggregate.

## 8. TRANSLATION

Translation is considered a kind of modification, so you may distribute translations of the Document under the terms of section 4. Replacing Invariant Sections with translations requires special permission from their copyright holders, but you may include translations of some or all Invariant Sections in addition to the original versions of these Invariant Sections. You may include a translation of this License, and all the license notices in the Document, and any Warranty Disclaimers, provided that you also include the original English version of this License and the original versions of those notices and disclaimers. In case of a disagreement between the translation and the original version of this License or a notice or disclaimer, the original version will prevail.

If a section in the Document is Entitled "Acknowledgements", "Dedications", or "History", the requirement (section 4) to Preserve its Title (section 1) will typically require changing the actual title.

## 9. TERMINATION

You may not copy, modify, sublicense, or distribute the Document except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, or distribute it is void, and will automatically terminate your rights under this License.

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.



Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, receipt of a copy of some or all of the same material does not give you any rights to use it.

## 10. FUTURE REVISIONS OF THIS LICENSE

The Free Software Foundation may publish new, revised versions of the GNU Free Documentation License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns. See <https://www.gnu.org/licenses/>.

Each version of the License is given a distinguishing version number. If the Document specifies that a particular numbered version of this License "or any later version" applies to it, you have the option of following the terms and conditions either of that specified version or of any later version that has been published (not as a draft) by the Free Software Foundation. If the Document does not specify a version number of this License, you may choose any version ever published (not as a draft) by the Free Software Foundation. If the Document specifies that a proxy can decide which future versions of this License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Document.

## 11. RELICENSING

"Massive Multiauthor Collaboration Site" (or "MMC Site") means any World Wide Web server that publishes copyrightable works and also provides prominent facilities for anybody to edit those works. A public wiki that anybody can edit is an example of such a server. A "Massive Multiauthor Collaboration" (or "MMC") contained in the site means any set of copyrightable works thus published on the MMC site.

"CC-BY-SA" means the Creative Commons Attribution-Share Alike 3.0 license published by Creative Commons Corporation, a not-for-profit corporation with a principal place of business in San Francisco, California, as well as future copyleft versions of that license published by that same organization.

"Incorporate" means to publish or republish a Document, in whole or in part, as part of another Document.

An MMC is "eligible for relicensing" if it is licensed under this License, and if all works that were first published under this License

somewhere other than this MMC, and subsequently incorporated in whole or in part into the MMC, (1) had no cover texts or invariant sections, and (2) were thus incorporated prior to November 1, 2008.

The operator of an MMC Site may republish an MMC contained in the site under CC-BY-SA on the same site at any time before August 1, 2009, provided the MMC is eligible for relicensing.

#### ADDENDUM: How to use this License for your documents

To use this License in a document you have written, include a copy of the License in the document and put the following copyright and license notices just after the title page:

Copyright (c) YEAR YOUR NAME.

Permission is granted to copy, distribute and/or modify this document under the terms of the GNU Free Documentation License, Version 1.3 or any later version published by the Free Software Foundation; with no Invariant Sections, no Front-Cover Texts, and no Back-Cover Texts. A copy of the license is included in the section entitled "GNU Free Documentation License".

If you have Invariant Sections, Front-Cover Texts and Back-Cover Texts, replace the "with...Texts." line with this:

with the Invariant Sections being LIST THEIR TITLES, with the Front-Cover Texts being LIST, and with the Back-Cover Texts being LIST.

If you have Invariant Sections without Cover Texts, or some other combination of the three, merge those two alternatives to suit the situation.

If your document contains nontrivial examples of program code, we recommend releasing these examples in parallel under your choice of free software license, such as the GNU General Public License, to permit their use in free software.

GNU LESSER GENERAL PUBLIC LICENSE  
Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>  
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

This version of the GNU Lesser General Public License incorporates the terms and conditions of version 3 of the GNU General Public License, supplemented by the additional permissions listed below.

## 0. Additional Definitions.

As used herein, "this License" refers to version 3 of the GNU Lesser General Public License, and the "GNU GPL" refers to version 3 of the GNU General Public License.

"The Library" refers to a covered work governed by this License, other than an Application or a Combined Work as defined below.

An "Application" is any work that makes use of an interface provided by the Library, but which is not otherwise based on the Library. Defining a subclass of a class defined by the Library is deemed a mode of using an interface provided by the Library.

A "Combined Work" is a work produced by combining or linking an Application with the Library. The particular version of the Library with which the Combined Work was made is also called the "Linked Version".

The "Minimal Corresponding Source" for a Combined Work means the Corresponding Source for the Combined Work, excluding any source code for portions of the Combined Work that, considered in isolation, are based on the Application, and not on the Linked Version.

The "Corresponding Application Code" for a Combined Work means the object code and/or source code for the Application, including any data and utility programs needed for reproducing the Combined Work from the Application, but excluding the System Libraries of the Combined Work.

### 1. Exception to Section 3 of the GNU GPL.

You may convey a covered work under sections 3 and 4 of this License without being bound by section 3 of the GNU GPL.

### 2. Conveying Modified Versions.

If you modify a copy of the Library, and, in your modifications, a facility refers to a function or data to be supplied by an Application that uses the facility (other than as an argument passed when the facility is invoked), then you may convey a copy of the modified version:

- a) under this License, provided that you make a good faith effort to ensure that, in the event an Application does not supply the function or data, the facility still operates, and performs whatever part of its purpose remains meaningful, or

b) under the GNU GPL, with none of the additional permissions of this License applicable to that copy.

### 3. Object Code Incorporating Material from Library Header Files.

The object code form of an Application may incorporate material from a header file that is part of the Library. You may convey such object code under terms of your choice, provided that, if the incorporated material is not limited to numerical parameters, data structure layouts and accessors, or small macros, inline functions and templates (ten or fewer lines in length), you do both of the following:

- a) Give prominent notice with each copy of the object code that the Library is used in it and that the Library and its use are covered by this License.
- b) Accompany the object code with a copy of the GNU GPL and this license document.

### 4. Combined Works.

You may convey a Combined Work under terms of your choice that, taken together, effectively do not restrict modification of the portions of the Library contained in the Combined Work and reverse engineering for debugging such modifications, if you also do each of the following:

- a) Give prominent notice with each copy of the Combined Work that the Library is used in it and that the Library and its use are covered by this License.
- b) Accompany the Combined Work with a copy of the GNU GPL and this license document.
- c) For a Combined Work that displays copyright notices during execution, include the copyright notice for the Library among these notices, as well as a reference directing the user to the copies of the GNU GPL and this license document.
- d) Do one of the following:
  - 0) Convey the Minimal Corresponding Source under the terms of this License, and the Corresponding Application Code in a form suitable for, and under terms that permit, the user to recombine or relink the Application with a modified version of the Linked Version to produce a modified Combined Work, in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.

1) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (a) uses at run time a copy of the Library already present on the user's computer system, and (b) will operate properly with a modified version of the Library that is interface-compatible with the Linked Version.

e) Provide Installation Information, but only if you would otherwise be required to provide such information under section 6 of the GNU GPL, and only to the extent that such information is necessary to install and execute a modified version of the Combined Work produced by recombining or relinking the Application with a modified version of the Linked Version. (If you use option 4d0, the Installation Information must accompany the Minimal Corresponding Source and Corresponding Application Code. If you use option 4d1, you must provide the Installation Information in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.)

#### 5. Combined Libraries.

You may place library facilities that are a work based on the Library side by side in a single library together with other library facilities that are not Applications and are not covered by this License, and convey such a combined library under terms of your choice, if you do both of the following:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities, conveyed under the terms of this License.
- b) Give prominent notice with the combined library that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

#### 6. Revised Versions of the GNU Lesser General Public License.

The Free Software Foundation may publish revised and/or new versions of the GNU Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library as you received it specifies that a certain numbered version of the GNU Lesser General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that published version or of any later version

published by the Free Software Foundation. If the Library as you received it does not specify a version number of the GNU Lesser General Public License, you may choose any version of the GNU Lesser General Public License ever published by the Free Software Foundation.

If the Library as you received it specifies that a proxy can decide whether future versions of the GNU Lesser General Public License shall apply, that proxy's public statement of acceptance of any version is permanent authorization for you to choose that version for the Library.

## 1.198 guava 14.0

### 1.198.1 Available under license :

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

##### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You

institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.



5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.  
Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

## APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

# 1.199 lz4 1.8.3-3.el8\_4

## 1.199.1 Available under license :

This repository uses 2 different licenses :

- all files in the `lib` directory use a BSD 2-Clause license
- all other files use a GPLv2 license, unless explicitly stated otherwise

Relevant license is reminded at the top of each source file,  
and with presence of COPYING or LICENSE file in associated directories.

This model is selected to emphasize that files in the `lib` directory are designed to be included into 3rd party applications, while all other files, in `programs`, `tests` or `examples`, receive more limited attention and support for such scenario.

LZ4 Library

Copyright (c) 2011-2016, Yann Collet

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this

list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

#### GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE

### TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you

conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under

this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES,



INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

```
This program is free software; you can redistribute it and/or modify
it under the terms of the GNU General Public License as published by
the Free Software Foundation; either version 2 of the License, or
(at your option) any later version.
```

```
This program is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
GNU General Public License for more details.
```

```
You should have received a copy of the GNU General Public License along
with this program; if not, write to the Free Software Foundation, Inc.,
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.
```

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate

parts of the General Public License. Of course, the commands you use may be called something other than `show w` and `show c`; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program  
`Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989  
Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

Copyright (c) 2014, Ipsantil  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Format: <http://www.debian.org/doc/packaging-manuals/copyright-format/1.0/>

Upstream-Name: liblz4

Upstream-Contact: Yann Collet <Cyan4973@github.com>

Source: <https://github.com/lz4/lz4>

Files: \*

Copyright: (C) 2011+ Yann Collet

License: GPL-2+

The full text of license: <https://github.com/Cyan4973/lz4/blob/master/lib/LICENSE>

# 1.200 lua 5.3.4-12.el8

## 1.200.1 Available under license :

No license file was found, but licenses were detected in source scan.

Lua is free software distributed under the terms of the

<A HREF="http://www.opensource.org/licenses/mit-license.html">MIT license</A>

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal to use, copy, modify, merge, publish, distribute, sublicense, and/or sell furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

Found in path(s):

\* /opt/cola/permits/1236666229\_1638573382.89/0/lua-5.3.4-12.el8.src.rpm-cosi-expand-archive-A0EuhZkO/lua-5.3.4.tar.gz-cosi-expand-archive-KIn84GUS/lua-5.3.4/doc/readme.html

No license file was found, but licenses were detected in source scan.

/\*\*\*\*\*

\* Copyright (C) 1994-2017 Lua.org, PUC-Rio.

\*

\* Permission is hereby granted, free of charge, to any person obtaining  
\* a copy of this software and associated documentation files (the  
\* "Software"), to deal in the Software without restriction, including  
\* without limitation the rights to use, copy, modify, merge, publish,  
\* distribute, sublicense, and/or sell copies of the Software, and to  
\* permit persons to whom the Software is furnished to do so, subject to  
\* the following conditions:

\*

\* The above copyright notice and this permission notice shall be  
\* included in all copies or substantial portions of the Software.

\*

\* THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,  
\* EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF  
\* MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.  
\* IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY  
\* CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,  
\* TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE  
\* SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

\*\*\*\*\*/

Found in path(s):

\* /opt/cola/permits/1236666229\_1638573382.89/0/lu-5.3.4-12.el8.src.rpm-cosi-expand-archive-A0EuhZkO/lu-5.3.4.tar.gz-cosi-expand-archive-KIn84GUS/lu-5.3.4/src/lu.h

No license file was found, but licenses were detected in source scan.

--[[

\*\*\*\*\*

\* Copyright (C) 1994-2016 Lua.org, PUC-Rio.

\*

\* Permission is hereby granted, free of charge, to any person obtaining  
\* a copy of this software and associated documentation files (the  
\* "Software"), to deal in the Software without restriction, including  
\* without limitation the rights to use, copy, modify, merge, publish,  
\* distribute, sublicense, and/or sell copies of the Software, and to  
\* permit persons to whom the Software is furnished to do so, subject to  
\* the following conditions:

\*

\* The above copyright notice and this permission notice shall be  
\* included in all copies or substantial portions of the Software.

\*

\* THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,  
\* EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF  
\* MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.  
\* IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY  
\* CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,  
\* TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE  
\* SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

\*\*\*\*\*

]]

Found in path(s):

\* /opt/cola/permits/1236666229\_1638573382.89/0/lu-5.3.4-12.el8.src.rpm-cosi-expand-archive-A0EuhZkO/lu-5.3.4-tests.tar.gz-cosi-expand-archive-QNgjJMp0/lu-5.3.4-tests/all.lua

No license file was found, but licenses were detected in source scan.

Freely available under the terms of the

Lua is free software,

Found in path(s):

\* /opt/cola/permits/1236666229\_1638573382.89/0/lu-5.3.4-12.el8.src.rpm-cosi-expand-archive-A0EuhZkO/lu-5.3.4.tar.gz-cosi-expand-archive-KIn84GUS/lu-5.3.4/doc/manual.html

No license file was found, but licenses were detected in source scan.

License: MIT

general-purpose, stand-alone language. Lua is free software.

Found in path(s):

\* /opt/cola/permits/1236666229\_1638573382.89/0/lu-5.3.4-12.el8.src.rpm-cosi-expand-archive-A0EuhZkO/lu.spec

No license file was found, but licenses were detected in source scan.

Freely available under the terms of the

Found in path(s):

\* /opt/cola/permits/1236666229\_1638573382.89/0/lua-5.3.4-12.el8.src.rpm-cosi-expand-archive-A0EuhZkO/lua-5.3.4.tar.gz-cosi-expand-archive-KIn84GUS/lua-5.3.4/doc/contents.html

No license file was found, but licenses were detected in source scan.

Copyright (c) 1994-2013 Lua.org, PUC-Rio.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Found in path(s):

\* /opt/cola/permits/1236666229\_1638573382.89/0/lua-5.3.4-12.el8.src.rpm-cosi-expand-archive-A0EuhZkO/mit.txt

## 1.201 lz4-java 1.8.0

### 1.201.1 Available under license :

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2020 Adrien Grand and the lz4-java contributors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

- \* distributed under the License is distributed on an "AS IS" BASIS,
- \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- \* See the License for the specific language governing permissions and
- \* limitations under the License.
- \*/

Found in path(s):

- \* /opt/cola/permits/1387819351\_1660201690.8918307/0/lz4-java-1-8-0-sources-2-jar/net/jpountz/xxhash/XXHash32JNI.java
- \* /opt/cola/permits/1387819351\_1660201690.8918307/0/lz4-java-1-8-0-sources-2-jar/net/jpountz/lz4/LZ4SafeUtils.java
- \* /opt/cola/permits/1387819351\_1660201690.8918307/0/lz4-java-1-8-0-sources-2-jar/net/jpountz/lz4/LZ4SafeDecompressor.java
- \* /opt/cola/permits/1387819351\_1660201690.8918307/0/lz4-java-1-8-0-sources-2-jar/net/jpountz/xxhash/StreamingXXHash32.java
- \* /opt/cola/permits/1387819351\_1660201690.8918307/0/lz4-java-1-8-0-sources-2-jar/net/jpountz/xxhash/XXHash32.java
- \* /opt/cola/permits/1387819351\_1660201690.8918307/0/lz4-java-1-8-0-sources-2-jar/net/jpountz/util/Native.java
- \* /opt/cola/permits/1387819351\_1660201690.8918307/0/lz4-java-1-8-0-sources-2-jar/net/jpountz/lz4/LZ4FastDecompressor.java
- \* /opt/cola/permits/1387819351\_1660201690.8918307/0/lz4-java-1-8-0-sources-2-jar/net/jpountz/util/Utils.java
- \* /opt/cola/permits/1387819351\_1660201690.8918307/0/lz4-java-1-8-0-sources-2-jar/net/jpountz/xxhash/XXHashConstants.java
- \* /opt/cola/permits/1387819351\_1660201690.8918307/0/lz4-java-1-8-0-sources-2-jar/net/jpountz/util/ByteBufferUtils.java
- \* /opt/cola/permits/1387819351\_1660201690.8918307/0/lz4-java-1-8-0-sources-2-jar/net/jpountz/lz4/LZ4ByteBufferUtils.java
- \* /opt/cola/permits/1387819351\_1660201690.8918307/0/lz4-java-1-8-0-sources-2-jar/net/jpountz/xxhash/XXHashFactory.java
- \* /opt/cola/permits/1387819351\_1660201690.8918307/0/lz4-java-1-8-0-sources-2-jar/net/jpountz/util/SafeUtils.java
- \* /opt/cola/permits/1387819351\_1660201690.8918307/0/lz4-java-1-8-0-sources-2-jar/net/jpountz/lz4/LZ4Constants.java
- \* /opt/cola/permits/1387819351\_1660201690.8918307/0/lz4-java-1-8-0-sources-2-jar/net/jpountz/lz4/LZ4BlockOutputStream.java
- \* /opt/cola/permits/1387819351\_1660201690.8918307/0/lz4-java-1-8-0-sources-2-jar/net/jpountz/lz4/LZ4HCJNICompressor.java
- \* /opt/cola/permits/1387819351\_1660201690.8918307/0/lz4-java-1-8-0-sources-2-jar/net/jpountz/xxhash/AbstractStreamingXXHash32Java.java
- \* /opt/cola/permits/1387819351\_1660201690.8918307/0/lz4-java-1-8-0-sources-2-jar/net/jpountz/lz4/LZ4JNISafeDecompressor.java
- \* /opt/cola/permits/1387819351\_1660201690.8918307/0/lz4-java-1-8-0-sources-2-jar/net/jpountz/lz4/LZ4JNICompressor.java
- \* /opt/cola/permits/1387819351\_1660201690.8918307/0/lz4-java-1-8-0-sources-2-jar/net/jpountz/lz4/LZ4JNIFastDecompressor.java
- \* /opt/cola/permits/1387819351\_1660201690.8918307/0/lz4-java-1-8-0-sources-2-jar/net/jpountz/lz4/LZ4Decompressor.java
- \* /opt/cola/permits/1387819351\_1660201690.8918307/0/lz4-java-1-8-0-sources-2-jar/net/jpountz/lz4/LZ4UnsafeUtils.java

\* /opt/cola/permits/1387819351\_1660201690.8918307/0/lz4-java-1-8-0-sources-2-jar/net/jpountz/lz4/LZ4UnknownSizeDecompressor.java  
\* /opt/cola/permits/1387819351\_1660201690.8918307/0/lz4-java-1-8-0-sources-2-jar/net/jpountz/lz4/LZ4BlockInputStream.java  
\* /opt/cola/permits/1387819351\_1660201690.8918307/0/lz4-java-1-8-0-sources-2-jar/net/jpountz/xxhash/StreamingXXHash32JNI.java  
\* /opt/cola/permits/1387819351\_1660201690.8918307/0/lz4-java-1-8-0-sources-2-jar/net/jpountz/lz4/LZ4Compressor.java  
\* /opt/cola/permits/1387819351\_1660201690.8918307/0/lz4-java-1-8-0-sources-2-jar/net/jpountz/lz4/LZ4JNI.java  
\* /opt/cola/permits/1387819351\_1660201690.8918307/0/lz4-java-1-8-0-sources-2-jar/net/jpountz/util/UnsafeUtils.java  
\* /opt/cola/permits/1387819351\_1660201690.8918307/0/lz4-java-1-8-0-sources-2-jar/net/jpountz/lz4/LZ4Factory.java  
\* /opt/cola/permits/1387819351\_1660201690.8918307/0/lz4-java-1-8-0-sources-2-jar/net/jpountz/lz4/LZ4Exception.java  
\* /opt/cola/permits/1387819351\_1660201690.8918307/0/lz4-java-1-8-0-sources-2-jar/net/jpountz/lz4/LZ4Utils.java  
\* /opt/cola/permits/1387819351\_1660201690.8918307/0/lz4-java-1-8-0-sources-2-jar/net/jpountz/xxhash/XXHashJNI.java

No license file was found, but licenses were detected in source scan.

<!--

Copyright 2020 Adrien Grand and the lz4-java contributors.

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

-->

Found in path(s):

\* /opt/cola/permits/1387819351\_1660201690.8918307/0/lz4-java-1-8-0-sources-2-jar/net/jpountz/util/package.html  
\* /opt/cola/permits/1387819351\_1660201690.8918307/0/lz4-java-1-8-0-sources-2-jar/net/jpountz/lz4/package.html  
\* /opt/cola/permits/1387819351\_1660201690.8918307/0/lz4-java-1-8-0-sources-2-jar/net/jpountz/xxhash/package.html  
\* /opt/cola/permits/1387819351\_1660201690.8918307/0/lz4-java-1-8-0-sources-2-jar/overview.html

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2020 The Apache Software Foundation and the lz4-java contributors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <http://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1387819351\_1660201690.8918307/0/lz4-java-1-8-0-sources-2-jar/net/jpountz/lz4/LZ4FrameOutputStream.java  
\* /opt/cola/permits/1387819351\_1660201690.8918307/0/lz4-java-1-8-0-sources-2-jar/net/jpountz/lz4/LZ4FrameInputStream.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2020 Linnaea Von Lavia and the lz4-java contributors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <http://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1387819351\_1660201690.8918307/0/lz4-java-1-8-0-sources-2-jar/net/jpountz/xxhash/AbstractStreamingXXHash64Java.java  
\* /opt/cola/permits/1387819351\_1660201690.8918307/0/lz4-java-1-8-0-sources-2-jar/net/jpountz/xxhash/StreamingXXHash64.java  
\* /opt/cola/permits/1387819351\_1660201690.8918307/0/lz4-java-1-8-0-sources-2-jar/net/jpountz/xxhash/XXHash64JNI.java  
\* /opt/cola/permits/1387819351\_1660201690.8918307/0/lz4-java-1-8-0-sources-2-jar/net/jpountz/xxhash/StreamingXXHash64JNI.java  
\* /opt/cola/permits/1387819351\_1660201690.8918307/0/lz4-java-1-8-0-sources-2-jar/net/jpountz/xxhash/XXHash64.java  
No license file was found, but licenses were detected in source scan.



```
/*
 * Copyright 2020 Rei Odaira and the lz4-java contributors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1387819351_1660201690.8918307/0/lz4-java-1-8-0-sources-2-
jar/net/jpountz/lz4/LZ4DecompressorWithLength.java
* /opt/cola/permits/1387819351_1660201690.8918307/0/lz4-java-1-8-0-sources-2-
jar/net/jpountz/lz4/LZ4CompressorWithLength.java
```

## 1.202 python-requests 2.18.4

### 1.202.1 Available under license :

Copyright 2017 Kenneth Reitz

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

## 1.203 springfoxswagger 3.0.0

### 1.203.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/*
 *
```

\* Copyright 2015-2019 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <http://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*  
\*  
\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1082517914\_1597960315.48/0/springfox-swagger2-3-0-0-sources-jar/springfox/documentation/swagger2/mappers/SerializableParameterFactories.java  
\* /opt/ws\_local/PERMITS\_SQL/1082517914\_1597960315.48/0/springfox-swagger2-3-0-0-sources-jar/springfox/documentation/swagger2/mappers/EnumMapper.java  
\* /opt/ws\_local/PERMITS\_SQL/1082517914\_1597960315.48/0/springfox-swagger2-3-0-0-sources-jar/springfox/documentation/swagger2/mappers/ApiKeyAuthFactory.java  
\* /opt/ws\_local/PERMITS\_SQL/1082517914\_1597960315.48/0/springfox-swagger2-3-0-0-sources-jar/springfox/documentation/swagger2/configuration/Swagger2JacksonModule.java  
\* /opt/ws\_local/PERMITS\_SQL/1082517914\_1597960315.48/0/springfox-swagger2-3-0-0-sources-jar/springfox/documentation/swagger2/mappers/ParameterMapper.java  
\* /opt/ws\_local/PERMITS\_SQL/1082517914\_1597960315.48/0/springfox-swagger2-3-0-0-sources-jar/springfox/documentation/swagger2/mappers/VendorExtensionsMapper.java  
\* /opt/ws\_local/PERMITS\_SQL/1082517914\_1597960315.48/0/springfox-swagger2-3-0-0-sources-jar/springfox/documentation/swagger2/mappers/ServiceModelToSwagger2Mapper.java  
\* /opt/ws\_local/PERMITS\_SQL/1082517914\_1597960315.48/0/springfox-swagger2-3-0-0-sources-jar/springfox/documentation/swagger2/mappers/ModelMapper.java  
\* /opt/ws\_local/PERMITS\_SQL/1082517914\_1597960315.48/0/springfox-swagger2-3-0-0-sources-jar/springfox/documentation/swagger2/mappers/SecurityMapper.java

No license file was found, but licenses were detected in source scan.

/\*  
\*  
\* Copyright 2017-2018 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <http://www.apache.org/licenses/LICENSE-2.0>  
\*  
\*/

\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*  
\*  
\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1082517914\_1597960315.48/0/springfox-swagger2-3-0-0-sources-jar/springfox/documentation/swagger2/web/Swagger2ControllerWebFlux.java  
\* /opt/ws\_local/PERMITS\_SQL/1082517914\_1597960315.48/0/springfox-swagger2-3-0-0-sources-jar/springfox/documentation/swagger2/web/Swagger2ControllerWebMvc.java  
No license file was found, but licenses were detected in source scan.

/\*  
\*  
\* Copyright 2015-2018 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <http://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*  
\*  
\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1082517914\_1597960315.48/0/springfox-swagger2-3-0-0-sources-jar/springfox/documentation/swagger2/mappers/BasicAuthFactory.java  
\* /opt/ws\_local/PERMITS\_SQL/1082517914\_1597960315.48/0/springfox-swagger2-3-0-0-sources-jar/springfox/documentation/swagger2/mappers/ExamplesMapper.java  
\* /opt/ws\_local/PERMITS\_SQL/1082517914\_1597960315.48/0/springfox-swagger2-3-0-0-sources-jar/springfox/documentation/swagger2/mappers/OAuth2AuthFactory.java  
No license file was found, but licenses were detected in source scan.

/\*  
\*  
\* Copyright 2017-2019 the original author or authors.  
\*  
\*/

\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <http://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*  
\*  
\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1082517914\_1597960315.48/0/springfox-swagger2-3-0-0-sources-  
jar/springfox/documentation/swagger2/mappers/InheritanceDeterminer.java

No license file was found, but licenses were detected in source scan.

/\*  
\*  
\* Copyright 2015 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <http://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*  
\*  
\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1082517914\_1597960315.48/0/springfox-swagger2-3-0-0-sources-  
jar/springfox/documentation/swagger2/annotations/EnableSwagger2WebFlux.java

\* /opt/ws\_local/PERMITS\_SQL/1082517914\_1597960315.48/0/springfox-swagger2-3-0-0-sources-  
jar/springfox/documentation/swagger2/annotations/EnableSwagger2.java

\* /opt/ws\_local/PERMITS\_SQL/1082517914\_1597960315.48/0/springfox-swagger2-3-0-0-sources-  
jar/springfox/documentation/swagger2/mappers/SerializableParameterFactory.java

\* /opt/ws\_local/PERMITS\_SQL/1082517914\_1597960315.48/0/springfox-swagger2-3-0-0-sources-  
jar/springfox/documentation/swagger2/annotations/EnableSwagger2WebMvc.java

```
* /opt/ws_local/PERMITS_SQL/1082517914_1597960315.48/0/springfox-swagger2-3-0-0-sources-
jar/springfox/documentation/swagger2/mappers/LicenseMapper.java
* /opt/ws_local/PERMITS_SQL/1082517914_1597960315.48/0/springfox-swagger2-3-0-0-sources-
jar/springfox/documentation/swagger2/mappers/SecuritySchemeFactory.java
No license file was found, but licenses were detected in source scan.
```

```
/*
*
* Copyright 2015-2017 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* http://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*
*
*/
```

Found in path(s):

```
* /opt/ws_local/PERMITS_SQL/1082517914_1597960315.48/0/springfox-swagger2-3-0-0-sources-
jar/springfox/documentation/swagger2/mappers/Properties.java
```

## 1.204 acl 2.2.53-1.el8

### 1.204.1 Available under license :

Most components of the "acl" package are licensed under  
Version 2.1 of the GNU Lesser General Public License (see COPYING.LGPL).

Some components (as annotated in the source) are licensed  
under Version 2 of the GNU General Public License (see below),

-----  
GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

## Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE  
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively

when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you



received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or

otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software

Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands ``show w'` and ``show c'` should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than ``show w'` and ``show c'`; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

Most components of the "acl" package are licensed under Version 2.1 of the GNU Lesser General Public License (see below).  
below.

Some components (as annotated in the source) are licensed under Version 2 of the GNU General Public License (see COPYING).

-----

## GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide

complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be

allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

#### GNU LESSER GENERAL PUBLIC LICENSE

#### TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation

and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square



root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the

source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one

of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this

License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these,

write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!

## 1.205 commons-lang3 3.7

### 1.205.1 Available under license :

Apache Commons Lang  
Copyright 2001-2018 The Apache Software Foundation

This product includes software developed at  
The Apache Software Foundation (<http://www.apache.org/>).

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

##### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but



excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. **Grant of Copyright License.** Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. **Grant of Patent License.** Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. **Redistribution.** You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its

distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise,

unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

### APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

# 1.206 expat 2.2.5-8.el8\_6.2

## 1.206.1 Available under license :

Copyright (c) 1998-2000 Thai Open Source Software Center Ltd and Clark Cooper

Copyright (c) 2001-2017 Expat maintainers

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

# 1.207 python-pip 9.0.3

## 1.207.1 Available under license :

Copyright (c) 2008-2016 The pip developers (see AUTHORS.txt file)

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE

LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

## 1.208 cryptix 3.2.0

### 1.208.1 Available under license :

Cryptix General License

Copyright (c) 1995, 1996, 1997, 1998, 1999, 2000 The Cryptix Foundation Limited. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE CRYPTIX FOUNDATION LIMITED AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE CRYPTIX FOUNDATION LIMITED OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## 1.209 jctools-core 3.1.0

### 1.209.1 Available under license :

No license file was found, but licenses were detected in source scan.

/\*

- \* Licensed under the Apache License, Version 2.0 (the "License");
- \* you may not use this file except in compliance with the License.
- \* You may obtain a copy of the License at
- \*

- \* <http://www.apache.org/licenses/LICENSE-2.0>
- \*
- \* Unless required by applicable law or agreed to in writing, software
- \* distributed under the License is distributed on an "AS IS" BASIS,
- \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- \* See the License for the specific language governing permissions and
- \* limitations under the License.
- \*/

Found in path(s):

- \* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/spec/Ordering.java
- \* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/atomic/SpSCUnboundedAtomicArrayQueue.java
- \* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/atomic/SpmcAtomicArrayQueue.java
- \* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/MessagePassingQueueUtil.java
- \* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/atomic/MpmcAtomicArrayQueue.java
- \* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/util/UnsafeJvmInfo.java
- \* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/atomic/LinkedQueueAtomicNode.java
- \* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/SpSCLinkedQueue.java
- \* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/MpscUnboundedXaddArrayQueue.java
- \* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/spec/Preference.java
- \* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/atomic/MpscAtomicArrayQueue.java
- \* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/MessagePassingQueue.java
- \* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/SupportsIterator.java
- \* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/MpmcUnboundedXaddArrayQueue.java
- \* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/MpscGrowArrayQueue.java
- \* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/atomic/BaseSpSCLinkedAtomicArrayQueue.java
- \* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/atomic/AtomicQueueFactory.java
- \* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/MpmcArrayQueue.java
- \* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/atomic/SpSCAtomicArrayQueue.java

\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/atomic/SpSCLinkedAtomicQueue.java  
\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/SpSCArrayQueue.java  
\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/maps/AbstractEntry.java  
\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/MpscUnboundedXaddChunk.java  
\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/MpscChunkedArrayQueue.java  
\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/maps/NonBlockingHashMapLong.java  
\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/atomic/MpscChunkedAtomicArrayQueue.java  
\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/ConcurrentSequencedCircularArrayQueue.java  
\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/util/UnsafeLongArrayAccess.java  
\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/MpscBlockingConsumerArrayQueue.java  
\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/atomic/BaseMpscLinkedAtomicArrayQueue.java  
\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/maps/NonBlockingHashMap.java  
\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/BaseMpscLinkedArrayQueue.java  
\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/atomic/MpscGrowableAtomicArrayQueue.java  
\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/maps/NonBlockingIdentityHashMap.java  
\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/BaseLinkedQueue.java  
\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/util/InternalAPI.java  
\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/maps/NonBlockingHashSet.java  
\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/util/Pow2.java  
\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/spec/ConcurrentQueueSpec.java  
\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/atomic/SpSCChunkedAtomicArrayQueue.java  
\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/maps/ConcurrentAutoTable.java  
\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/MpscUnboundedXaddChunk.java  
\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/atomic/MpscUnboundedAtomicArrayQueue.java

\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/LinkedQueueNode.java  
\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/SpSCUnboundedArrayQueue.java  
\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/util/PortableJvmInfo.java  
\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/ConcurrentCircularArrayQueue.java  
\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/maps/NonBlockingSetInt.java  
\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/atomic/BaseLinkedAtomicQueue.java  
\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/atomic/SequencedAtomicReferenceArrayQueue.java  
\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/MpscLinkedQueue.java  
\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/util/UnsafeRefArrayAccess.java  
\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/MpscCompoundQueue.java  
\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/SpSCChunkedArrayQueue.java  
\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/SpSCArrayQueue.java  
\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/atomic/AtomicReferenceArrayQueue.java  
\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/QueueFactory.java  
\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/MpscArrayQueue.java  
\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/util/UnsafeAccess.java  
\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/MpscUnboundedArrayQueue.java  
\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/atomic/SpSCGrowableAtomicArrayQueue.java  
\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/IndexedQueueSizeUtil.java  
\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/atomic/MpscLinkedAtomicQueue.java  
\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/SpSCGrowableArrayQueue.java  
\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/util/RangeUtil.java  
\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/org/jctools/queues/BaseSpSCLinkedArrayQueue.java



No license file was found, but licenses were detected in source scan.

```
<project xmlns="http://maven.apache.org/POM/4.0.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://maven.apache.org/POM/4.0.0 http://maven.apache.org/maven-v4_0_0.xsd">
 <modelVersion>4.0.0</modelVersion>
```

```
 <artifactId>jctools-core</artifactId>
 <groupId>org.jctools</groupId>
 <version>3.1.0</version>
 <name>Java Concurrency Tools Core Library</name>
 <description>Java Concurrency Tools Core Library</description>
 <packaging>bundle</packaging>
```

```
 <dependencies>
 <dependency>
 <groupId>org.hamcrest</groupId>
 <artifactId>hamcrest-all</artifactId>
 <version>${hamcrest.version}</version>
 <scope>test</scope>
 </dependency>
```

```
 <dependency>
 <groupId>junit</groupId>
 <artifactId>junit</artifactId>
 <version>${junit.version}</version>
 <scope>test</scope>
 </dependency>
```

```
 <dependency>
 <groupId>com.google.guava</groupId>
 <artifactId>guava-testlib</artifactId>
 <version>${guava-testlib.version}</version>
 <scope>test</scope>
 </dependency>
 </dependencies>
```

```
 <build>
 <plugins>
 <plugin>
 <groupId>org.apache.maven.plugins</groupId>
 <artifactId>maven-surefire-plugin</artifactId>
 <version>3.0.0-M3</version>
 <configuration>
 <includes>
 <include>*</include>
 </includes>
 </configuration>
 </plugin>
 </plugins>
```

```

<groupId>org.apache.felix</groupId>
<artifactId>maven-bundle-plugin</artifactId>
<version>4.2.1</version>
<extensions>>true</extensions>
<configuration>
 <instructions>
 <Import-Package>sun.misc;resolution:=optional</Import-Package>
 </instructions>
</configuration>
</plugin>
<plugin>
<groupId>org.apache.maven.plugins</groupId>
<artifactId>maven-source-plugin</artifactId>
<version>3.2.0</version>
<executions>
 <execution>
 <id>attach-sources</id>
 <phase>verify</phase>
 <goals>
 <goal>jar-no-fork</goal>
 </goals>
 </execution>
</executions>
</plugin>
<plugin>
<groupId>org.apache.maven.plugins</groupId>
<artifactId>maven-javadoc-plugin</artifactId>
<version>3.1.1</version>
<configuration>
 <additionalOptions>
 <additionalOption>-Xdoclint:none</additionalOption>
 </additionalOptions>
 <source>8</source>
</configuration>
<executions>
 <execution>
 <id>attach-javadocs</id>
 <goals>
 <goal>jar</goal>
 </goals>
 </execution>
</executions>
</plugin>
</plugins>
</build>

<distributionManagement>
 <repository>

```

```
<id>bintray-jctools-jctools</id>
<name>jctools-jctools</name>
<url>https://api.bintray.com/maven/jctools/jctools/jctools-core/?publish=1</url>
</repository>
</distributionManagement>
```

```
<url>https://github.com/JCTools</url>
<inceptionYear>2013</inceptionYear>
```

```
<licenses>
<license>
<name>Apache License, Version 2.0</name>
<url>http://www.apache.org/licenses/LICENSE-2.0.txt</url>
<distribution>repo</distribution>
</license>
</licenses>
```

```
<scm>
<url>https://github.com/JCTools/JCTools</url>
<connection>scm:git:https://github.com/JCTools/JCTools</connection>
<tag>HEAD</tag>
</scm>
```

```
<developers>
<developer>
<url>https://github.com/nitsanw</url>
</developer>
<developer>
<url>https://github.com/mjpt777</url>
</developer>
<developer>
<url>https://github.com/RichardWarburton</url>
</developer>
<developer>
<url>https://github.com/kay</url>
</developer>
<developer>
<url>https://github.com/franz1981</url>
</developer>
</developers>
```

```
<prerequisites>
<maven>3.5.0</maven>
</prerequisites>
```

```
<properties>
<project.build.sourceEncoding>UTF-8</project.build.sourceEncoding>
<java.version>1.6</java.version>
```

```
<java.test.version>1.8</java.test.version>

<maven.compiler.source>${java.version}</maven.compiler.source>
<maven.compiler.target>${java.version}</maven.compiler.target>
<maven.compiler.testSource>${java.test.version}</maven.compiler.testSource>
<maven.compiler.testTarget>${java.test.version}</maven.compiler.testTarget>

<hamcrest.version>1.3</hamcrest.version>
<junit.version>4.12</junit.version>
<guava-testlib.version>21.0</guava-testlib.version>
</properties>
</project>
```

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1093815924\_1601014602.33/0/jctools-core-3-1-0-sources-jar/META-INF/maven/org.jctools/jctools-core/pom.xml

## 1.210 tpm2-tss-tcti 2.3.2-4.el8

### 1.210.1 Available under license :

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## 1.211 bcel 5.2

## 1.211.1 Available under license :

/\*

\* Apache License  
\* Version 2.0, January 2004  
\* <http://www.apache.org/licenses/>  
\*

\* TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

\*

\* 1. Definitions.

\*

\* "License" shall mean the terms and conditions for use, reproduction,  
\* and distribution as defined by Sections 1 through 9 of this document.

\*

\* "Licensor" shall mean the copyright owner or entity authorized by  
\* the copyright owner that is granting the License.

\*

\* "Legal Entity" shall mean the union of the acting entity and all  
\* other entities that control, are controlled by, or are under common  
\* control with that entity. For the purposes of this definition,  
\* "control" means (i) the power, direct or indirect, to cause the  
\* direction or management of such entity, whether by contract or  
\* otherwise, or (ii) ownership of fifty percent (50%) or more of the  
\* outstanding shares, or (iii) beneficial ownership of such entity.

\*

\* "You" (or "Your") shall mean an individual or Legal Entity  
\* exercising permissions granted by this License.

\*

\* "Source" form shall mean the preferred form for making modifications,  
\* including but not limited to software source code, documentation  
\* source, and configuration files.

\*

\* "Object" form shall mean any form resulting from mechanical  
\* transformation or translation of a Source form, including but  
\* not limited to compiled object code, generated documentation,  
\* and conversions to other media types.

\*

\* "Work" shall mean the work of authorship, whether in Source or  
\* Object form, made available under the License, as indicated by a  
\* copyright notice that is included in or attached to the work  
\* (an example is provided in the Appendix below).

\*

\* "Derivative Works" shall mean any work, whether in Source or Object  
\* form, that is based on (or derived from) the Work and for which the  
\* editorial revisions, annotations, elaborations, or other modifications  
\* represent, as a whole, an original work of authorship. For the purposes  
\* of this License, Derivative Works shall not include works that remain  
\* separable from, or merely link (or bind by name) to the interfaces of,  
\* the Work and Derivative Works thereof.

\*  
\* "Contribution" shall mean any work of authorship, including  
\* the original version of the Work and any modifications or additions  
\* to that Work or Derivative Works thereof, that is intentionally  
\* submitted to Licensor for inclusion in the Work by the copyright owner  
\* or by an individual or Legal Entity authorized to submit on behalf of  
\* the copyright owner. For the purposes of this definition, "submitted"  
\* means any form of electronic, verbal, or written communication sent  
\* to the Licensor or its representatives, including but not limited to  
\* communication on electronic mailing lists, source code control systems,  
\* and issue tracking systems that are managed by, or on behalf of, the  
\* Licensor for the purpose of discussing and improving the Work, but  
\* excluding communication that is conspicuously marked or otherwise  
\* designated in writing by the copyright owner as "Not a Contribution."  
\*

\* "Contributor" shall mean Licensor and any individual or Legal Entity  
\* on behalf of whom a Contribution has been received by Licensor and  
\* subsequently incorporated within the Work.  
\*

\* 2. Grant of Copyright License. Subject to the terms and conditions of  
\* this License, each Contributor hereby grants to You a perpetual,  
\* worldwide, non-exclusive, no-charge, royalty-free, irrevocable  
\* copyright license to reproduce, prepare Derivative Works of,  
\* publicly display, publicly perform, sublicense, and distribute the  
\* Work and such Derivative Works in Source or Object form.  
\*

\* 3. Grant of Patent License. Subject to the terms and conditions of  
\* this License, each Contributor hereby grants to You a perpetual,  
\* worldwide, non-exclusive, no-charge, royalty-free, irrevocable  
\* (except as stated in this section) patent license to make, have made,  
\* use, offer to sell, sell, import, and otherwise transfer the Work,  
\* where such license applies only to those patent claims licensable  
\* by such Contributor that are necessarily infringed by their  
\* Contribution(s) alone or by combination of their Contribution(s)  
\* with the Work to which such Contribution(s) was submitted. If You  
\* institute patent litigation against any entity (including a  
\* cross-claim or counterclaim in a lawsuit) alleging that the Work  
\* or a Contribution incorporated within the Work constitutes direct  
\* or contributory patent infringement, then any patent licenses  
\* granted to You under this License for that Work shall terminate  
\* as of the date such litigation is filed.  
\*

\* 4. Redistribution. You may reproduce and distribute copies of the  
\* Work or Derivative Works thereof in any medium, with or without  
\* modifications, and in Source or Object form, provided that You  
\* meet the following conditions:  
\*

\* (a) You must give any other recipients of the Work or

- \* Derivative Works a copy of this License; and
- \*
- \* (b) You must cause any modified files to carry prominent notices
- \* stating that You changed the files; and
- \*
- \* (c) You must retain, in the Source form of any Derivative Works
- \* that You distribute, all copyright, patent, trademark, and
- \* attribution notices from the Source form of the Work,
- \* excluding those notices that do not pertain to any part of
- \* the Derivative Works; and
- \*
- \* (d) If the Work includes a "NOTICE" text file as part of its
- \* distribution, then any Derivative Works that You distribute must
- \* include a readable copy of the attribution notices contained
- \* within such NOTICE file, excluding those notices that do not
- \* pertain to any part of the Derivative Works, in at least one
- \* of the following places: within a NOTICE text file distributed
- \* as part of the Derivative Works; within the Source form or
- \* documentation, if provided along with the Derivative Works; or,
- \* within a display generated by the Derivative Works, if and
- \* wherever such third-party notices normally appear. The contents
- \* of the NOTICE file are for informational purposes only and
- \* do not modify the License. You may add Your own attribution
- \* notices within Derivative Works that You distribute, alongside
- \* or as an addendum to the NOTICE text from the Work, provided
- \* that such additional attribution notices cannot be construed
- \* as modifying the License.
- \*
- \* You may add Your own copyright statement to Your modifications and
- \* may provide additional or different license terms and conditions
- \* for use, reproduction, or distribution of Your modifications, or
- \* for any such Derivative Works as a whole, provided Your use,
- \* reproduction, and distribution of the Work otherwise complies with
- \* the conditions stated in this License.
- \*
- \* 5. Submission of Contributions. Unless You explicitly state otherwise,
- \* any Contribution intentionally submitted for inclusion in the Work
- \* by You to the Licensor shall be under the terms and conditions of
- \* this License, without any additional terms or conditions.
- \* Notwithstanding the above, nothing herein shall supersede or modify
- \* the terms of any separate license agreement you may have executed
- \* with Licensor regarding such Contributions.
- \*
- \* 6. Trademarks. This License does not grant permission to use the trade
- \* names, trademarks, service marks, or product names of the Licensor,
- \* except as required for reasonable and customary use in describing the
- \* origin of the Work and reproducing the content of the NOTICE file.
- \*

\* 7. Disclaimer of Warranty. Unless required by applicable law or  
\* agreed to in writing, Licensor provides the Work (and each  
\* Contributor provides its Contributions) on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or  
\* implied, including, without limitation, any warranties or conditions  
\* of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A  
\* PARTICULAR PURPOSE. You are solely responsible for determining the  
\* appropriateness of using or redistributing the Work and assume any  
\* risks associated with Your exercise of permissions under this License.

\* 8. Limitation of Liability. In no event and under no legal theory,  
\* whether in tort (including negligence), contract, or otherwise,  
\* unless required by applicable law (such as deliberate and grossly  
\* negligent acts) or agreed to in writing, shall any Contributor be  
\* liable to You for damages, including any direct, indirect, special,  
\* incidental, or consequential damages of any character arising as a  
\* result of this License or out of the use or inability to use the  
\* Work (including but not limited to damages for loss of goodwill,  
\* work stoppage, computer failure or malfunction, or any and all  
\* other commercial damages or losses), even if such Contributor  
\* has been advised of the possibility of such damages.

\* 9. Accepting Warranty or Additional Liability. While redistributing  
\* the Work or Derivative Works thereof, You may choose to offer,  
\* and charge a fee for, acceptance of support, warranty, indemnity,  
\* or other liability obligations and/or rights consistent with this  
\* License. However, in accepting such obligations, You may act only  
\* on Your own behalf and on Your sole responsibility, not on behalf  
\* of any other Contributor, and only if You agree to indemnify,  
\* defend, and hold each Contributor harmless for any liability  
\* incurred by, or claims asserted against, such Contributor by reason  
\* of your accepting any such warranty or additional liability.

\* END OF TERMS AND CONDITIONS

\* APPENDIX: How to apply the Apache License to your work.

\* To apply the Apache License to your work, attach the following  
\* boilerplate notice, with the fields enclosed by brackets "[]"  
\* replaced with your own identifying information. (Don't include  
\* the brackets!) The text should be enclosed in the appropriate  
\* comment syntax for the file format. We also recommend that a  
\* file or class name and description of purpose be included on the  
\* same "printed page" as the copyright notice for easier  
\* identification within third-party archives.

\* Copyright [yyyy] [name of copyright owner]



- \* Licensed under the Apache License, Version 2.0 (the "License");
- \* you may not use this file except in compliance with the License.
- \* You may obtain a copy of the License at
- \*
- \* <http://www.apache.org/licenses/LICENSE-2.0>
- \*
- \* Unless required by applicable law or agreed to in writing, software
- \* distributed under the License is distributed on an "AS IS" BASIS,
- \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- \* See the License for the specific language governing permissions and
- \* limitations under the License.
- \*/

```

=====
== NOTICE file corresponding to the section 4 d of ==
== the Apache License, Version 2.0, ==
== in this case for the Apache Jakarta-BCEL distribution. ==
=====

```

This product includes software developed by  
The Apache Software Foundation (<http://www.apache.org/>).

## 1.212 readline 7.0-10.el8

### 1.212.1 Available under license :

GNU GENERAL PUBLIC LICENSE  
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.  
59 Temple Place, Suite 330, Boston, MA 02111-1307 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for

this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based

on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent

access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any

patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED

OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

GNU GENERAL PUBLIC LICENSE  
Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>  
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

### Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to



your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

## TERMS AND CONDITIONS

### 0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

### 1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source

form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

## 2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

### 3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

### 4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

### 5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the

terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.
- b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".
- c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.
- d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

#### 6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

- a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.
- b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as

long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent

the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

## 7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of

it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the



form of a separately written license, or stated as exceptions;  
the above requirements apply either way.

#### 8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

#### 9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

#### 10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

#### 11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license,

and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

## 12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you

to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

#### 13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

#### 14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

#### 15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR

PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

```
This program is free software: you can redistribute it and/or modify
it under the terms of the GNU General Public License as published by
the Free Software Foundation, either version 3 of the License, or
(at your option) any later version.
```

```
This program is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
```

MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program> Copyright (C) <year> <name of author>
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <http://www.gnu.org/licenses/>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <http://www.gnu.org/philosophy/why-not-lgpl.html>.

```
@c The GNU Free Documentation License.
@center Version 1.3, 3 November 2008
```

```
@c This file is intended to be included within another document,
@c hence no sectioning command or @node.
```

```
@display
Copyright @copyright{ } 2000, 2001, 2002, 2007, 2008 Free Software Foundation, Inc.
@uref{http://fsf.org/}
```

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

```
@end display
```

```
@enumerate 0
@item
PREAMBLE
```

The purpose of this License is to make a manual, textbook, or other functional and useful document @dfn{free} in the sense of freedom: to assure everyone the effective freedom to copy and redistribute it, with or without modifying it, either commercially or noncommercially. Secondly, this License preserves for the author and publisher a way to get credit for their work, while not being considered responsible for modifications made by others.

This License is a kind of ``copyleft'', which means that derivative works of the document must themselves be free in the same sense. It complements the GNU General Public License, which is a copyleft license designed for free software.

We have designed this License in order to use it for manuals for free software, because free software needs free documentation: a free program should come with manuals providing the same freedoms that the software does. But this License is not limited to software manuals; it can be used for any textual work, regardless of subject matter or whether it is published as a printed book. We recommend this License principally for works whose purpose is instruction or reference.

@item

#### APPLICABILITY AND DEFINITIONS

This License applies to any manual or other work, in any medium, that contains a notice placed by the copyright holder saying it can be distributed under the terms of this License. Such a notice grants a world-wide, royalty-free license, unlimited in duration, to use that work under the conditions stated herein. The ``Document'', below, refers to any such manual or work. Any member of the public is a licensee, and is addressed as ``you''. You accept the license if you copy, modify or distribute the work in a way requiring permission under copyright law.

A ``Modified Version'' of the Document means any work containing the Document or a portion of it, either copied verbatim, or with modifications and/or translated into another language.

A ``Secondary Section'' is a named appendix or a front-matter section of the Document that deals exclusively with the relationship of the publishers or authors of the Document to the Document's overall subject (or to related matters) and contains nothing that could fall directly within that overall subject. (Thus, if the Document is in part a textbook of mathematics, a Secondary Section may not explain any mathematics.) The relationship could be a matter of historical connection with the subject or with related matters, or of legal, commercial, philosophical, ethical or political position regarding

them.

The "Invariant Sections" are certain Secondary Sections whose titles are designated, as being those of Invariant Sections, in the notice that says that the Document is released under this License. If a section does not fit the above definition of Secondary then it is not allowed to be designated as Invariant. The Document may contain zero Invariant Sections. If the Document does not identify any Invariant Sections then there are none.

The "Cover Texts" are certain short passages of text that are listed, as Front-Cover Texts or Back-Cover Texts, in the notice that says that the Document is released under this License. A Front-Cover Text may be at most 5 words, and a Back-Cover Text may be at most 25 words.

A "Transparent" copy of the Document means a machine-readable copy, represented in a format whose specification is available to the general public, that is suitable for revising the document straightforwardly with generic text editors or (for images composed of pixels) generic paint programs or (for drawings) some widely available drawing editor, and that is suitable for input to text formatters or for automatic translation to a variety of formats suitable for input to text formatters. A copy made in an otherwise Transparent file format whose markup, or absence of markup, has been arranged to thwart or discourage subsequent modification by readers is not Transparent. An image format is not Transparent if used for any substantial amount of text. A copy that is not "Transparent" is called "Opaque".

Examples of suitable formats for Transparent copies include plain `@sc{ascii}` without markup, Texinfo input format, `La@TeX{}` input format, `@acronym{SGML}` or `@acronym{XML}` using a publicly available `@acronym{DTD}`, and standard-conforming simple `@acronym{HTML}`, PostScript or `@acronym{PDF}` designed for human modification. Examples of transparent image formats include `@acronym{PNG}`, `@acronym{XCF}` and `@acronym{JPG}`. Opaque formats include proprietary formats that can be read and edited only by proprietary word processors, `@acronym{SGML}` or `@acronym{XML}` for which the `@acronym{DTD}` and/or processing tools are not generally available, and the machine-generated `@acronym{HTML}`, PostScript or `@acronym{PDF}` produced by some word processors for output purposes only.

The "Title Page" means, for a printed book, the title page itself, plus such following pages as are needed to hold, legibly, the material this License requires to appear in the title page. For works in formats which do not have any title page as such, "Title Page" means the text near the most prominent appearance of the work's title, preceding the beginning of the body of the text.



The "publisher" means any person or entity that distributes copies of the Document to the public.

A section "Entitled XYZ" means a named subunit of the Document whose title either is precisely XYZ or contains XYZ in parentheses following text that translates XYZ in another language. (Here XYZ stands for a specific section name mentioned below, such as "Acknowledgements", "Dedications", "Endorsements", or "History".) To "Preserve the Title" of such a section when you modify the Document means that it remains a section "Entitled XYZ" according to this definition.

The Document may include Warranty Disclaimers next to the notice which states that this License applies to the Document. These Warranty Disclaimers are considered to be included by reference in this License, but only as regards disclaiming warranties: any other implication that these Warranty Disclaimers may have is void and has no effect on the meaning of this License.

@item

#### VERBATIM COPYING

You may copy and distribute the Document in any medium, either commercially or noncommercially, provided that this License, the copyright notices, and the license notice saying this License applies to the Document are reproduced in all copies, and that you add no other conditions whatsoever to those of this License. You may not use technical measures to obstruct or control the reading or further copying of the copies you make or distribute. However, you may accept compensation in exchange for copies. If you distribute a large enough number of copies you must also follow the conditions in section 3.

You may also lend copies, under the same conditions stated above, and you may publicly display copies.

@item

#### COPYING IN QUANTITY

If you publish printed copies (or copies in media that commonly have printed covers) of the Document, numbering more than 100, and the Document's license notice requires Cover Texts, you must enclose the copies in covers that carry, clearly and legibly, all these Cover Texts: Front-Cover Texts on the front cover, and Back-Cover Texts on the back cover. Both covers must also clearly and legibly identify you as the publisher of these copies. The front cover must present the full title with all words of the title equally prominent and visible. You may add other material on the covers in addition. Copying with changes limited to the covers, as long as they preserve the title of the Document and satisfy these conditions, can be treated

as verbatim copying in other respects.

If the required texts for either cover are too voluminous to fit legibly, you should put the first ones listed (as many as fit reasonably) on the actual cover, and continue the rest onto adjacent pages.

If you publish or distribute Opaque copies of the Document numbering more than 100, you must either include a machine-readable Transparent copy along with each Opaque copy, or state in or with each Opaque copy a computer-network location from which the general network-using public has access to download using public-standard network protocols a complete Transparent copy of the Document, free of added material. If you use the latter option, you must take reasonably prudent steps, when you begin distribution of Opaque copies in quantity, to ensure that this Transparent copy will remain thus accessible at the stated location until at least one year after the last time you distribute an Opaque copy (directly or through your agents or retailers) of that edition to the public.

It is requested, but not required, that you contact the authors of the Document well before redistributing any large number of copies, to give them a chance to provide you with an updated version of the Document.

@item

## MODIFICATIONS

You may copy and distribute a Modified Version of the Document under the conditions of sections 2 and 3 above, provided that you release the Modified Version under precisely this License, with the Modified Version filling the role of the Document, thus licensing distribution and modification of the Modified Version to whoever possesses a copy of it. In addition, you must do these things in the Modified Version:

@enumerate A

@item

Use in the Title Page (and on the covers, if any) a title distinct from that of the Document, and from those of previous versions (which should, if there were any, be listed in the History section of the Document). You may use the same title as a previous version if the original publisher of that version gives permission.

@item

List on the Title Page, as authors, one or more persons or entities responsible for authorship of the modifications in the Modified Version, together with at least five of the principal authors of the Document (all of its principal authors, if it has fewer than five), unless they release you from this requirement.

@item

State on the Title page the name of the publisher of the Modified Version, as the publisher.

@item

Preserve all the copyright notices of the Document.

@item

Add an appropriate copyright notice for your modifications adjacent to the other copyright notices.

@item

Include, immediately after the copyright notices, a license notice giving the public permission to use the Modified Version under the terms of this License, in the form shown in the Addendum below.

@item

Preserve in that license notice the full lists of Invariant Sections and required Cover Texts given in the Document's license notice.

@item

Include an unaltered copy of this License.

@item

Preserve the section Entitled ``History'', Preserve its Title, and add to it an item stating at least the title, year, new authors, and publisher of the Modified Version as given on the Title Page. If there is no section Entitled ``History'' in the Document, create one stating the title, year, authors, and publisher of the Document as given on its Title Page, then add an item describing the Modified Version as stated in the previous sentence.

@item

Preserve the network location, if any, given in the Document for public access to a Transparent copy of the Document, and likewise the network locations given in the Document for previous versions it was based on. These may be placed in the ``History'' section. You may omit a network location for a work that was published at least four years before the Document itself, or if the original publisher of the version it refers to gives permission.

@item

For any section Entitled ``Acknowledgements'' or ``Dedications'', Preserve the Title of the section, and preserve in the section all the substance and tone of each of the contributor acknowledgements and/or dedications given therein.

@item

Preserve all the Invariant Sections of the Document, unaltered in their text and in their titles. Section numbers or the equivalent are not considered part of the section titles.

@item

Delete any section Entitled ``Endorsements''. Such a section may not be included in the Modified Version.

@item

Do not retitle any existing section to be Entitled ``Endorsements'' or to conflict in title with any Invariant Section.

@item

Preserve any Warranty Disclaimers.

@end enumerate

If the Modified Version includes new front-matter sections or appendices that qualify as Secondary Sections and contain no material copied from the Document, you may at your option designate some or all of these sections as invariant. To do this, add their titles to the list of Invariant Sections in the Modified Version's license notice. These titles must be distinct from any other section titles.

You may add a section Entitled ``Endorsements'', provided it contains nothing but endorsements of your Modified Version by various parties---for example, statements of peer review or that the text has been approved by an organization as the authoritative definition of a standard.

You may add a passage of up to five words as a Front-Cover Text, and a passage of up to 25 words as a Back-Cover Text, to the end of the list of Cover Texts in the Modified Version. Only one passage of Front-Cover Text and one of Back-Cover Text may be added by (or through arrangements made by) any one entity. If the Document already includes a cover text for the same cover, previously added by you or by arrangement made by the same entity you are acting on behalf of, you may not add another; but you may replace the old one, on explicit permission from the previous publisher that added the old one.

The author(s) and publisher(s) of the Document do not by this License give permission to use their names for publicity for or to assert or imply endorsement of any Modified Version.

@item

## COMBINING DOCUMENTS

You may combine the Document with other documents released under this

License, under the terms defined in section 4 above for modified versions, provided that you include in the combination all of the Invariant Sections of all of the original documents, unmodified, and list them all as Invariant Sections of your combined work in its license notice, and that you preserve all their Warranty Disclaimers.

The combined work need only contain one copy of this License, and multiple identical Invariant Sections may be replaced with a single copy. If there are multiple Invariant Sections with the same name but different contents, make the title of each such section unique by adding at the end of it, in parentheses, the name of the original author or publisher of that section if known, or else a unique number. Make the same adjustment to the section titles in the list of Invariant Sections in the license notice of the combined work.

In the combination, you must combine any sections Entitled ``History" in the various original documents, forming one section Entitled ``History"; likewise combine any sections Entitled ``Acknowledgements", and any sections Entitled ``Dedications". You must delete all sections Entitled ``Endorsements."

@item

#### COLLECTIONS OF DOCUMENTS

You may make a collection consisting of the Document and other documents released under this License, and replace the individual copies of this License in the various documents with a single copy that is included in the collection, provided that you follow the rules of this License for verbatim copying of each of the documents in all other respects.

You may extract a single document from such a collection, and distribute it individually under this License, provided you insert a copy of this License into the extracted document, and follow this License in all other respects regarding verbatim copying of that document.

@item

#### AGGREGATION WITH INDEPENDENT WORKS

A compilation of the Document or its derivatives with other separate and independent documents or works, in or on a volume of a storage or distribution medium, is called an ``aggregate" if the copyright resulting from the compilation is not used to limit the legal rights of the compilation's users beyond what the individual works permit. When the Document is included in an aggregate, this License does not apply to the other works in the aggregate which are not themselves derivative works of the Document.

If the Cover Text requirement of section 3 is applicable to these

copies of the Document, then if the Document is less than one half of the entire aggregate, the Document's Cover Texts may be placed on covers that bracket the Document within the aggregate, or the electronic equivalent of covers if the Document is in electronic form. Otherwise they must appear on printed covers that bracket the whole aggregate.

@item

## TRANSLATION

Translation is considered a kind of modification, so you may distribute translations of the Document under the terms of section 4. Replacing Invariant Sections with translations requires special permission from their copyright holders, but you may include translations of some or all Invariant Sections in addition to the original versions of these Invariant Sections. You may include a translation of this License, and all the license notices in the Document, and any Warranty Disclaimers, provided that you also include the original English version of this License and the original versions of those notices and disclaimers. In case of a disagreement between the translation and the original version of this License or a notice or disclaimer, the original version will prevail.

If a section in the Document is Entitled ``Acknowledgements'', ``Dedications'', or ``History'', the requirement (section 4) to Preserve its Title (section 1) will typically require changing the actual title.

@item

## TERMINATION

You may not copy, modify, sublicense, or distribute the Document except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, or distribute it is void, and will automatically terminate your rights under this License.

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after

your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, receipt of a copy of some or all of the same material does not give you any rights to use it.

@item

#### FUTURE REVISIONS OF THIS LICENSE

The Free Software Foundation may publish new, revised versions of the GNU Free Documentation License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns. See [@uref{http://www.gnu.org/copyleft/}](http://www.gnu.org/copyleft/).

Each version of the License is given a distinguishing version number. If the Document specifies that a particular numbered version of this License "or any later version" applies to it, you have the option of following the terms and conditions either of that specified version or of any later version that has been published (not as a draft) by the Free Software Foundation. If the Document does not specify a version number of this License, you may choose any version ever published (not as a draft) by the Free Software Foundation. If the Document specifies that a proxy can decide which future versions of this License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Document.

@item

#### RELICENSING

"Massive Multiauthor Collaboration Site" (or "MMC Site") means any World Wide Web server that publishes copyrightable works and also provides prominent facilities for anybody to edit those works. A public wiki that anybody can edit is an example of such a server. A "Massive Multiauthor Collaboration" (or "MMC") contained in the site means any set of copyrightable works thus published on the MMC site.

"CC-BY-SA" means the Creative Commons Attribution-Share Alike 3.0 license published by Creative Commons Corporation, a not-for-profit corporation with a principal place of business in San Francisco, California, as well as future copyleft versions of that license published by that same organization.

"Incorporate" means to publish or republish a Document, in whole or

in part, as part of another Document.

An MMC is "eligible for relicensing" if it is licensed under this License, and if all works that were first published under this License somewhere other than this MMC, and subsequently incorporated in whole or in part into the MMC, (1) had no cover texts or invariant sections, and (2) were thus incorporated prior to November 1, 2008.

The operator of an MMC Site may republish an MMC contained in the site under CC-BY-SA on the same site at any time before August 1, 2009, provided the MMC is eligible for relicensing.

@end enumerate

@page

@heading ADDENDUM: How to use this License for your documents

To use this License in a document you have written, include a copy of the License in the document and put the following copyright and license notices just after the title page:

@smallexample

@group

Copyright (C) @var{year} @var{your name}.

Permission is granted to copy, distribute and/or modify this document under the terms of the GNU Free Documentation License, Version 1.3 or any later version published by the Free Software Foundation; with no Invariant Sections, no Front-Cover Texts, and no Back-Cover Texts. A copy of the license is included in the section entitled "GNU Free Documentation License".

@end group

@end smallexample

If you have Invariant Sections, Front-Cover Texts and Back-Cover Texts, replace the "with@dots{ }Texts." line with this:

@smallexample

@group

with the Invariant Sections being @var{list their titles}, with the Front-Cover Texts being @var{list}, and with the Back-Cover Texts being @var{list}.

@end group

@end smallexample

If you have Invariant Sections without Cover Texts, or some other combination of the three, merge those two alternatives to suit the situation.





- \* <https://www.apache.org/licenses/LICENSE-2.0>
- \*
- \* Unless required by applicable law or agreed to in writing, software
- \* distributed under the License is distributed on an "AS IS" BASIS,
- \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- \* See the License for the specific language governing permissions and
- \* limitations under the License.
- \*/

Found in path(s):

- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/handler/AbstractUrlHandlerMapping.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/function/support/RouterFunctionMapping.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/resource/VersionResourceResolver.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/LocaleResolver.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/mvc/method/annotation/AbstractMessageConverterMethodArgumentResolver.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/support/RequestContextUtils.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/i18n/SessionLocaleResolver.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/resource/PathResourceResolver.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/i18n/AbstractLocaleResolver.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/i18n/CookieLocaleResolver.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/mvc/method/annotation/ExtendedServletRequestDataBinder.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/mvc/method/annotation/RequestPartMethodArgumentResolver.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/LocaleContextResolver.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/mvc/method/annotation/RequestMappingHandlerMapping.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/i18n/AbstractLocaleContextResolver.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/i18n/AcceptHeaderLocaleResolver.java

No license file was found, but licenses were detected in source scan.

- /\*
- \* Copyright 2002-2014 the original author or authors.
- \*

```
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
```

Found in path(s):

```
* /opt/cola/permits/1347861363_1655734693.0962408/0/spring-webmvc-5-3-21-sources-
jar/org/springframework/web/servlet/tags/form/PasswordInputTag.java
* /opt/cola/permits/1347861363_1655734693.0962408/0/spring-webmvc-5-3-21-sources-
jar/org/springframework/web/servlet/support/SessionFlashMapManager.java
* /opt/cola/permits/1347861363_1655734693.0962408/0/spring-webmvc-5-3-21-sources-
jar/org/springframework/web/servlet/FlashMapManager.java
* /opt/cola/permits/1347861363_1655734693.0962408/0/spring-webmvc-5-3-21-sources-
jar/org/springframework/web/servlet/mvc/method/annotation/AbstractMappingJacksonResponseBodyAdvice.java
* /opt/cola/permits/1347861363_1655734693.0962408/0/spring-webmvc-5-3-21-sources-
jar/org/springframework/web/servlet/config/annotation/UrlBasedViewResolverRegistration.java
```

No license file was found, but licenses were detected in source scan.

```
/*
* Copyright 2002-2018 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
```

```
/**
* A contract for inspecting and potentially modifying request data values such
* as URL query parameters or form field values before they are rendered by a
* view or before a redirect.
*
* <p>Implementations may use this contract for example as part of a solution
* to provide data integrity, confidentiality, protection against cross-site
```

\* request forgery (CSRF), and others or for other tasks such as automatically  
\* adding a hidden field to all forms and URLs.  
\*  
\* <p>View technologies that support this contract can obtain an instance to  
\* delegate to via { @link RequestContext#getRequestDataValueProcessor()}.  
\*  
\* @author Rossen Stoyanchev  
\* @since 3.1  
\*/

Found in path(s):

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
jar/org/springframework/web/servlet/support/RequestDataValueProcessor.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2002-2012 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
jar/org/springframework/web/servlet/tags/ParamAware.java  
\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
jar/org/springframework/web/servlet/mvc/support/RedirectAttributes.java  
\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
jar/org/springframework/web/servlet/view/tiles3/AbstractSpringPreparerFactory.java  
\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
jar/org/springframework/web/servlet/mvc/condition/MediaTypeExpression.java  
\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
jar/org/springframework/web/servlet/SmartView.java  
\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
jar/org/springframework/web/servlet/mvc/AbstractUrlViewController.java  
\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
jar/org/springframework/web/servlet/tags/form/TagIdGenerator.java  
\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
jar/org/springframework/web/servlet/view/tiles3/SpringBeanPreparerFactory.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/tags/form/RadioButtonTag.java  
\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/tags/form/OptionWriter.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2019 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/resource/WebJarsResourceResolver.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/function/DefaultRenderingResponseBuilder.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/config/annotation/AsyncSupportConfigurer.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/function/RouterFunction.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/resource/CachingResourceTransformer.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/resource/CachingResourceResolver.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/function/HandlerFunction.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/mvc/method/annotation/StreamingResponseBodyReturnValueHandler.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/view/AbstractCachingViewResolver.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/handler/BeanNameUrlHandlerMapping.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/function/ToStringVisitor.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/function/ServerResponse.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-

jar/org/springframework/web/servlet/function/HandlerFilterFunction.java  
 \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
 jar/org/springframework/web/servlet/function/EntityResponse.java  
 \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
 jar/org/springframework/web/servlet/view/script/ScriptTemplateConfig.java  
 \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
 jar/org/springframework/web/servlet/mvc/method/annotation/ViewNameMethodReturnValueHandler.java  
 \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
 jar/org/springframework/web/servlet/handler/HandlerExceptionResolverComposite.java  
 \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
 jar/org/springframework/web/servlet/config/annotation/DefaultServletHandlerConfigurer.java  
 \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
 jar/org/springframework/web/servlet/function/RouterFunctionDsl.kt  
 \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
 jar/org/springframework/web/servlet/mvc/method/annotation/DeferredResultMethodReturnValueHandler.java  
 \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
 jar/org/springframework/web/servlet/mvc/method/annotation/ViewMethodReturnValueHandler.java  
 \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
 jar/org/springframework/web/servlet/config/annotation/DelegatingWebMvcConfiguration.java  
 \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
 jar/org/springframework/web/servlet/support/RequestContext.java  
 \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
 jar/org/springframework/web/servlet/function/ServerRequestExtensions.kt  
 \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
 jar/org/springframework/web/servlet/function/ResourceHandlerFunction.java  
 \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
 jar/org/springframework/web/servlet/mvc/method/annotation/SessionAttributeMethodArgumentResolver.java  
 \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
 jar/org/springframework/web/servlet/resource/EncodedResourceResolver.java  
 \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
 jar/org/springframework/web/servlet/resource/CssLinkResourceTransformer.java  
 \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
 jar/org/springframework/web/servlet/view/script/ScriptTemplateConfigurer.java  
 \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
 jar/org/springframework/web/servlet/function/RenderingResponse.java  
 \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
 jar/org/springframework/web/servlet/view/script/ScriptTemplateView.java  
 \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
 jar/org/springframework/web/servlet/mvc/ServletWrappingController.java  
 \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
 jar/org/springframework/web/servlet/mvc/condition/AbstractRequestCondition.java  
 \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
 jar/org/springframework/web/servlet/mvc/method/RequestMappingInfoHandlerMethodMappingNamingStrategy.java  
 \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
 jar/org/springframework/web/servlet/function/ServerResponseExtensions.kt

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2002-2020 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1347861363_1655734693.0962408/0/spring-webmvc-5-3-21-sources-
jar/org/springframework/web/servlet/mvc/method/annotation/RequestMappingHandlerAdapter.java
* /opt/cola/permits/1347861363_1655734693.0962408/0/spring-webmvc-5-3-21-sources-
jar/org/springframework/web/servlet/view/xml/MappingJackson2XmlView.java
* /opt/cola/permits/1347861363_1655734693.0962408/0/spring-webmvc-5-3-21-sources-
jar/org/springframework/web/servlet/ViewResolver.java
* /opt/cola/permits/1347861363_1655734693.0962408/0/spring-webmvc-5-3-21-sources-
jar/org/springframework/web/servlet/mvc/method/annotation/ServletRequestMethodArgumentResolver.java
* /opt/cola/permits/1347861363_1655734693.0962408/0/spring-webmvc-5-3-21-sources-
jar/org/springframework/web/servlet/function/AsyncServerResponse.java
* /opt/cola/permits/1347861363_1655734693.0962408/0/spring-webmvc-5-3-21-sources-
jar/org/springframework/web/servlet/mvc/condition/ProducesRequestCondition.java
* /opt/cola/permits/1347861363_1655734693.0962408/0/spring-webmvc-5-3-21-sources-
jar/org/springframework/web/servlet/config/annotation/ViewResolverRegistry.java
* /opt/cola/permits/1347861363_1655734693.0962408/0/spring-webmvc-5-3-21-sources-
jar/org/springframework/web/servlet/support/WebContentGenerator.java
* /opt/cola/permits/1347861363_1655734693.0962408/0/spring-webmvc-5-3-21-sources-
jar/org/springframework/web/servlet/mvc/WebContentInterceptor.java
* /opt/cola/permits/1347861363_1655734693.0962408/0/spring-webmvc-5-3-21-sources-
jar/org/springframework/web/servlet/view/UrlBasedViewResolver.java
* /opt/cola/permits/1347861363_1655734693.0962408/0/spring-webmvc-5-3-21-sources-
jar/org/springframework/web/servlet/mvc/condition/ConsumesRequestCondition.java
* /opt/cola/permits/1347861363_1655734693.0962408/0/spring-webmvc-5-3-21-sources-
jar/org/springframework/web/servlet/config/annotation/ViewControllerRegistry.java
* /opt/cola/permits/1347861363_1655734693.0962408/0/spring-webmvc-5-3-21-sources-
jar/org/springframework/web/servlet/mvc/method/annotation/ContinuationHandlerMethodArgumentResolver.java
* /opt/cola/permits/1347861363_1655734693.0962408/0/spring-webmvc-5-3-21-sources-
jar/org/springframework/web/servlet/function/RouterFunctionBuilder.java
* /opt/cola/permits/1347861363_1655734693.0962408/0/spring-webmvc-5-3-21-sources-
jar/org/springframework/web/servlet/support/AbstractFlashMapManager.java
* /opt/cola/permits/1347861363_1655734693.0962408/0/spring-webmvc-5-3-21-sources-
```

jar/org/springframework/web/servlet/resource/ResourceUrlProviderExposingInterceptor.java  
 \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
 jar/org/springframework/web/servlet/mvc/method/annotation/PrincipalMethodArgumentResolver.java  
 \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
 jar/org/springframework/web/servlet/view/ResourceBundleViewResolver.java  
 \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
 jar/org/springframework/web/servlet/mvc/method/annotation/ServletModelAttributeMethodProcessor.java  
 \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
 jar/org/springframework/web/servlet/mvc/condition/PathPatternsRequestCondition.java  
 \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
 jar/org/springframework/web/servlet/view/json/AbstractJackson2View.java  
 \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
 jar/org/springframework/web/servlet/function/DefaultServerRequestBuilder.java  
 \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
 jar/org/springframework/web/servlet/handler/AbstractHandlerMethodExceptionResolver.java  
 \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
 jar/org/springframework/web/servlet/mvc/method/annotation/ModelAndViewResolverMethodReturnValueHandler.java  
 \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
 jar/org/springframework/web/servlet/view/XmlViewResolver.java  
 \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
 jar/org/springframework/web/servlet/mvc/method/annotation/HttpEntityMethodProcessor.java  
 \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
 jar/org/springframework/web/servlet/config/ResourcesBeanDefinitionParser.java  
 \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
 jar/org/springframework/web/servlet/function/DefaultServerResponseBuilder.java  
 \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
 jar/org/springframework/web/servlet/handler/UserRoleAuthorizationInterceptor.java  
 \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
 jar/org/springframework/web/servlet/handler/ConversionServiceExposingInterceptor.java  
 \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
 jar/org/springframework/web/servlet/view/BeanNameViewResolver.java  
 \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
 jar/org/springframework/web/servlet/config/annotation/InterceptorRegistration.java  
 \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
 jar/org/springframework/web/servlet/HandlerExecutionChain.java  
 \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
 jar/org/springframework/web/servlet/view/RedirectView.java  
 \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
 jar/org/springframework/web/servlet/view/InternalResourceViewResolver.java  
 \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
 jar/org/springframework/web/servlet/config/annotation/ContentNegotiationConfigurer.java  
 \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
 jar/org/springframework/web/servlet/config/annotation/CorsRegistry.java  
 \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
 jar/org/springframework/web/servlet/mvc/method/annotation/ResponseBodyEmitterReturnValueHandler.java  
 \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
 jar/org/springframework/web/servlet/view/xslt/XsltViewResolver.java



- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/theme/ThemeChangeInterceptor.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/mvc/annotation/ResponseStatusExceptionHandler.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/function/AbstractServerResponse.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/FlashMap.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/function/RouterFunctions.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/resource/ResourceUrlEncodingFilter.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/HandlerMapping.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/config/AnnotationDrivenBeanDefinitionParser.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/mvc/method/annotation/ServletCookieValueMethodArgumentResolver.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/config/MvcNamespaceUtils.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/view/script/ScriptTemplateViewResolver.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/view/tiles3/TilesConfigurer.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/view/tiles3/TilesViewResolver.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/mvc/condition/AbstractMediaTypeExpression.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/function/ChangePathPatternParserVisitor.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/tags/MessageTag.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/view/freemarker/FreeMarkerViewResolver.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/handler/HandlerInterceptorAdapter.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/mvc/UrlFilenameViewController.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/handler/RequestMatchResult.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/resource/AppCacheManifestTransformer.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/view/AbstractTemplateViewResolver.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/view/AbstractView.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/mvc/method/annotation/ResponseBodyEmitter.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/support/ServletUriComponentsBuilder.java  
\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/function/ServerRequest.java  
\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/tags/form/ErrorsTag.java  
\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/i18n/LocaleChangeInterceptor.java  
\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/view/json/MappingJackson2JsonView.java  
\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/mvc/condition/RequestMethodRequestCondition.java  
\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/function/SseServerResponse.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2002-2010 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/handler/DispatcherServletWebRequest.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2002-2018 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,

- \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- \* See the License for the specific language governing permissions and
- \* limitations under the License.
- \*/

Found in path(s):

- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/tags/RequestContextAwareTag.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/tags/form/CheckboxesTag.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/config/annotation/InterceptorRegistry.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/tags/ParamTag.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/tags/form/OptionTag.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/tags/BindErrorsTag.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/resource/DefaultServletHttpRequestHandler.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/resource/TransformedResource.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/tags/form/AbstractCheckedElementTag.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/tags/form/AbstractHtmlElementBodyTag.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/view/tiles3/SimpleSpringPreparerFactory.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/resource/DefaultResourceTransformerChain.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/handler/HandlerMethodMappingNamingStrategy.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/mvc/method/annotation/RequestResponseBodyAdviceChain.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/tags/form/RadioButtonTag.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/resource/ContentVersionStrategy.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/tags/form/AbstractDataBoundFormElementTag.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/config/TilesConfigurerBeanDefinitionParser.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/tags/form/ButtonTag.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/config/ScriptTemplateConfigurerBeanDefinitionParser.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/mvc/method/annotation/ServletRequestMethodArgumentResolver.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/mvc/AbstractController.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/tags/NestedPathTag.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/tags/form/AbstractHtmlInputElementTag.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/tags/form/SelectTag.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/View.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/tags/form/SelectedValueComparator.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/resource/FixedVersionStrategy.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/view/document/AbstractPdfStamperView.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/tags/HtmlEscapeTag.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/config/GroovyMarkupConfigurerBeanDefinitionParser.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/resource/GzipResourceResolver.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/tags/form/TextareaTag.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/ModelAndView.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/tags/EscapeBodyTag.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/support/AbstractDispatcherServletInitializer.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/resource/ResourceResolverChain.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/view/xml/MarshallingView.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/tags/ThemeTag.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/mvc/condition/AbstractNameValueExpression.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/config/ViewResolversBeanDefinitionParser.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/tags/form/AbstractHtmlElementTag.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/tags/form/AbstractSingleCheckedElementTag.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/resource/AbstractVersionStrategy.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/view/groovy/GroovyMarkupConfigurer.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/tags/BindTag.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/mvc/method/annotation/RequestResponseBodyMethodProcessor.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/tags/form/AbstractMultiCheckedElementTag.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/handler/SimpleMappingExceptionHandler.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/tags/EvalTag.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/theme/CookieThemeResolver.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/tags/form/CheckboxTag.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/tags/form/InputTag.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/mvc/method/annotation/MatrixVariableMapMethodArgumentResolver.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/resource/ResourceTransformerChain.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/tags/EditorAwareTag.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/HttpServletBean.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/tags/form/ValueFormatter.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/view/feed/AbstractFeedView.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/resource/DefaultResourceResolverChain.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/view/feed/AbstractAtomFeedView.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/view/ContentNegotiatingViewResolver.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/view/script/RenderingContext.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/mvc/method/annotation/ResponseBodyAdvice.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/tags/ArgumentTag.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/ModelAndViewDefiningException.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/view/document/AbstractPdfView.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/HandlerExceptionHandler.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/resource/ResourceTransformerSupport.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/view/freemarker/FreeMarkerConfigurer.java  
\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/tags/form/FormTag.java  
\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/tags/form/OptionsTag.java  
\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/mvc/condition/NameValueExpression.java  
\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/tags/form/AbstractFormTag.java  
\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/view/freemarker/FreeMarkerView.java  
\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/support/AbstractAnnotationConfigDispatcherServletInitializer.java  
\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/tags/TransformTag.java  
\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/tags/form/LabelTag.java  
No license file was found, but licenses were detected in source scan.

```
/*
* Copyright 2002-2017 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
/**
* XSLT-driven View that allows for response context to be rendered as the
* result of an XSLT transformation.
*
* <p>The XSLT Source object is supplied as a parameter in the model and then
* { @link #locateSource detected } during response rendering. Users can either specify
* a specific entry in the model via the { @link #setSourceKey sourceKey } property or
* have Spring locate the Source object. This class also provides basic conversion
* of objects into Source implementations. See { @link #getSourceTypes() here }
* for more details.
*
* <p>All model parameters are passed to the XSLT Transformer as parameters.
* In addition the user can configure { @link #setOutputProperties output properties }
```

\* to be passed to the Transformer.

\*

\* @author Rob Harrop

\* @author Juergen Hoeller

\* @since 2.0

\*/

Found in path(s):

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/view/xslt/XsltView.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2007 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/theme/AbstractThemeResolver.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2017 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/resource/ResourceResolver.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/view/groovy/GroovyMarkupView.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/config/annotation/ViewControllerRegistration.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/config/ViewControllerBeanDefinitionParser.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/mvc/ParameterizableViewController.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/config/CorsBeanDefinitionParser.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/view/document/AbstractXlsView.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/mvc/ServletForwardingController.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/view/JstlView.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/support/JspAwareRequestContext.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/resource/AbstractResourceResolver.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/mvc/method/annotation/JsonViewRequestBodyAdvice.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/view/AbstractUrlBasedView.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/mvc/method/annotation/RedirectAttributesMethodArgumentResolver.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/view/tiles3/SpringWildcardServletTilesApplicationContext.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/mvc/method/annotation/ServletWebArgumentResolverAdapter.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/mvc/method/annotation/PathVariableMapMethodArgumentResolver.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/view/freemarker/FreeMarkerConfig.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/resource/HttpResource.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/view/InternalResourceView.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/mvc/method/annotation/AsyncTaskMethodReturnValueHandler.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/mvc/support/RedirectAttributesModelMap.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/mvc/method/annotation/ServletRequestDataBinderFactory.java



\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/i18n/FixedLocaleResolver.java  
\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/config/annotation/RedirectViewControllerRegistration.java  
\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/ThemeResolver.java  
\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/theme/FixedThemeResolver.java  
\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/AsyncHandlerInterceptor.java  
\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/mvc/method/annotation/JsonViewResponseBodyAdvice.java  
\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/handler/SimpleServletPostProcessor.java  
\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/support/JstlUtils.java  
\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/mvc/method/annotation/UriComponentsBuilderMethodArgumentResolver.java  
a  
\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/mvc/method/annotation/RequestAttributeMethodArgumentResolver.java  
\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/RequestToViewNameTranslator.java  
\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/mvc/condition/RequestConditionHolder.java  
\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/mvc/method/annotation/ModelAndViewMethodReturnValueHandler.java  
\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/theme/SessionThemeResolver.java  
\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/handler/WebRequestHandlerInterceptorAdapter.java  
\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/view/feed/AbstractRssFeedView.java  
\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/view/tiles3/TilesView.java  
\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/tags/Param.java  
\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/mvc/method/annotation/CallableMethodReturnValueHandler.java  
\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/mvc/method/annotation/HttpHeadersReturnValueHandler.java  
\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/config/annotation/ResourceChainRegistration.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2013 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
jar/org/springframework/web/servlet/tags/form/HiddenInputTag.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2016 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
jar/org/springframework/web/servlet/config/annotation/WebMvcConfigurerAdapter.java  
\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
jar/org/springframework/web/servlet/config/annotation/WebMvcConfigurerComposite.java  
\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
jar/org/springframework/web/servlet/view/AbstractTemplateView.java  
\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
jar/org/springframework/web/servlet/mvc/condition/RequestCondition.java  
\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
jar/org/springframework/web/servlet/view/ViewResolverComposite.java  
\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
jar/org/springframework/web/servlet/resource/ResourceTransformer.java  
\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-

jar/org/springframework/web/servlet/view/tiles3/SpringLocaleResolver.java  
\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
jar/org/springframework/web/servlet/config/MvcNamespaceHandler.java  
\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
jar/org/springframework/web/servlet/config/InterceptorsBeanDefinitionParser.java  
\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
jar/org/springframework/web/servlet/config/DefaultServletHandlerBeanDefinitionParser.java  
\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-  
jar/org/springframework/web/servlet/mvc/method/annotation/StreamingResponseBody.java  
No license file was found, but licenses were detected in source scan.

```
/*
* Copyright 2002-2021 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
```

Found in path(s):

```
* /opt/cola/permits/1347861363_1655734693.0962408/0/spring-webmvc-5-3-21-sources-
jar/org/springframework/web/servlet/tags/UrlTag.java
* /opt/cola/permits/1347861363_1655734693.0962408/0/spring-webmvc-5-3-21-sources-
jar/org/springframework/web/servlet/DispatcherServlet.java
* /opt/cola/permits/1347861363_1655734693.0962408/0/spring-webmvc-5-3-21-sources-
jar/org/springframework/web/servlet/tags/form/TagWriter.java
* /opt/cola/permits/1347861363_1655734693.0962408/0/spring-webmvc-5-3-21-sources-
jar/org/springframework/web/servlet/config/annotation/WebMvcConfigurer.java
* /opt/cola/permits/1347861363_1655734693.0962408/0/spring-webmvc-5-3-21-sources-
jar/org/springframework/web/servlet/HandlerAdapter.java
* /opt/cola/permits/1347861363_1655734693.0962408/0/spring-webmvc-5-3-21-sources-
jar/org/springframework/web/servlet/resource/ResourceHttpRequestHandler.java
* /opt/cola/permits/1347861363_1655734693.0962408/0/spring-webmvc-5-3-21-sources-
jar/org/springframework/web/servlet/config/annotation/EnableWebMvc.java
* /opt/cola/permits/1347861363_1655734693.0962408/0/spring-webmvc-5-3-21-sources-
jar/org/springframework/web/servlet/mvc/method/annotation/RequestBodyAdvice.java
* /opt/cola/permits/1347861363_1655734693.0962408/0/spring-webmvc-5-3-21-sources-
jar/org/springframework/web/servlet/function/support/HandlerFunctionAdapter.java
* /opt/cola/permits/1347861363_1655734693.0962408/0/spring-webmvc-5-3-21-sources-
jar/org/springframework/web/servlet/view/DefaultRequestToViewNameTranslator.java
```

- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/mvc/Controller.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/mvc/method/annotation/ExceptionHandlerExceptionHandlerResolver.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/config/annotation/PathMatchConfigurer.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/mvc/method/annotation/ReactiveTypeHandler.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/config/annotation/ResourceHandlerRegistration.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/mvc/HttpRequestHandlerAdapter.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/function/DefaultAsyncServerResponse.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/function/PathResourceLookupFunction.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/config/annotation/ResourceHandlerRegistry.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/mvc/method/annotation/ResponseEntityExceptionHandler.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/mvc/condition/HeadersRequestCondition.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/handler/PathPatternMatchableHandlerMapping.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/resource/ResourceUrlProvider.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/mvc/method/RequestMappingInfoHandlerMapping.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/handler/AbstractHandlerMethodMapping.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/mvc/method/RequestMappingInfo.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/view/groovy/GroovyMarkupViewResolver.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/HandlerInterceptor.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/mvc/SimpleControllerHandlerAdapter.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/mvc/LastModified.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/mvc/method/annotation/ServletInvocableHandlerMethod.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/mvc/condition/PatternsRequestCondition.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/handler/AbstractHandlerExceptionHandlerResolver.java
- \* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/mvc/method/annotation/PathVariableMethodArgumentResolver.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/function/ErrorHandlerServerResponse.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/mvc/support/DefaultHandlerExceptionResolver.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/support/BindStatus.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/handler/MappedInterceptor.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/config/FreeMarkerConfigurerBeanDefinitionParser.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/handler/MatchableHandlerMapping.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/handler/AbstractDetectingUrlHandlerMapping.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/handler/AbstractHandlerMapping.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/handler/SimpleServletHandlerAdapter.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/mvc/method/annotation/MvcUriComponentsBuilder.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/function/RequestPredicates.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/mvc/method/annotation/SseEmitter.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/handler/SimpleUrlHandlerMapping.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/mvc/condition/ParamsRequestCondition.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/config/annotation/WebMvcConfigurationSupport.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/function/DefaultEntityResponseBuilder.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/mvc/method/annotation/AbstractMessageConverterMethodProcessor.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/mvc/method/AbstractHandlerMethodAdapter.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/mvc/method/annotation/RequestBodyAdviceAdapter.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/FrameworkServlet.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/function/RequestPredicate.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/config/annotation/CorsRegistration.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/handler/HandlerMappingIntrospector.java

\* /opt/cola/permits/1347861363\_1655734693.0962408/0/spring-webmvc-5-3-21-sources-jar/org/springframework/web/servlet/mvc/method/annotation/MatrixVariableMethodArgumentResolver.java

```
* /opt/cola/permits/1347861363_1655734693.0962408/0/spring-webmvc-5-3-21-sources-
jar/org/springframework/web/servlet/mvc/condition/CompositeRequestCondition.java
* /opt/cola/permits/1347861363_1655734693.0962408/0/spring-webmvc-5-3-21-sources-
jar/org/springframework/web/servlet/function/DefaultServerRequest.java
No license file was found, but licenses were detected in source scan.
```

```
/*
* Copyright 2002-2015 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
```

Found in path(s):

```
* /opt/cola/permits/1347861363_1655734693.0962408/0/spring-webmvc-5-3-21-sources-
jar/org/springframework/web/servlet/tags/ArgumentAware.java
* /opt/cola/permits/1347861363_1655734693.0962408/0/spring-webmvc-5-3-21-sources-
jar/org/springframework/web/servlet/tags/HtmlEscapingAwareTag.java
* /opt/cola/permits/1347861363_1655734693.0962408/0/spring-webmvc-5-3-21-sources-
jar/org/springframework/web/servlet/resource/VersionStrategy.java
* /opt/cola/permits/1347861363_1655734693.0962408/0/spring-webmvc-5-3-21-sources-
jar/org/springframework/web/servlet/mvc/annotation/ModelAndViewResolver.java
* /opt/cola/permits/1347861363_1655734693.0962408/0/spring-webmvc-5-3-21-sources-
jar/org/springframework/web/servlet/view/groovy/GroovyMarkupConfig.java
* /opt/cola/permits/1347861363_1655734693.0962408/0/spring-webmvc-5-3-21-sources-
jar/org/springframework/web/servlet/view/document/AbstractXlsxView.java
* /opt/cola/permits/1347861363_1655734693.0962408/0/spring-webmvc-5-3-21-sources-
jar/org/springframework/web/servlet/view/document/AbstractXlsxStreamingView.java
* /opt/cola/permits/1347861363_1655734693.0962408/0/spring-webmvc-5-3-21-sources-
jar/org/springframework/web/servlet/NoHandlerFoundException.java
* /opt/cola/permits/1347861363_1655734693.0962408/0/spring-webmvc-5-3-21-sources-
jar/org/springframework/web/servlet/resource/VersionPathStrategy.java
```

## 1.215 swagger-annotations 2.1.2

## 1.215.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/**
 * Copyright 2017 SmartBear Software
 * <p>
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 * <p>
 * http://www.apache.org/licenses/LICENSE-2.0
 * <p>
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/ws_local/PERMITS_SQL/1069435298_1594665075.15/0/swagger-annotations-2-1-2-sources-
jar/io/swagger/v3/oas/annotations/servers/Server.java
* /opt/ws_local/PERMITS_SQL/1069435298_1594665075.15/0/swagger-annotations-2-1-2-sources-
jar/io/swagger/v3/oas/annotations/media/ExampleObject.java
* /opt/ws_local/PERMITS_SQL/1069435298_1594665075.15/0/swagger-annotations-2-1-2-sources-
jar/io/swagger/v3/oas/annotations/security/SecurityRequirements.java
* /opt/ws_local/PERMITS_SQL/1069435298_1594665075.15/0/swagger-annotations-2-1-2-sources-
jar/io/swagger/v3/oas/annotations/security/OAuthFlows.java
* /opt/ws_local/PERMITS_SQL/1069435298_1594665075.15/0/swagger-annotations-2-1-2-sources-
jar/io/swagger/v3/oas/annotations/links/LinkParameter.java
* /opt/ws_local/PERMITS_SQL/1069435298_1594665075.15/0/swagger-annotations-2-1-2-sources-
jar/io/swagger/v3/oas/annotations/parameters/RequestBody.java
* /opt/ws_local/PERMITS_SQL/1069435298_1594665075.15/0/swagger-annotations-2-1-2-sources-
jar/io/swagger/v3/oas/annotations/media/Schema.java
* /opt/ws_local/PERMITS_SQL/1069435298_1594665075.15/0/swagger-annotations-2-1-2-sources-
jar/io/swagger/v3/oas/annotations/responses/ApiResponse.java
* /opt/ws_local/PERMITS_SQL/1069435298_1594665075.15/0/swagger-annotations-2-1-2-sources-
jar/io/swagger/v3/oas/annotations/Parameter.java
* /opt/ws_local/PERMITS_SQL/1069435298_1594665075.15/0/swagger-annotations-2-1-2-sources-
jar/io/swagger/v3/oas/annotations/callbacks/Callbacks.java
* /opt/ws_local/PERMITS_SQL/1069435298_1594665075.15/0/swagger-annotations-2-1-2-sources-
jar/io/swagger/v3/oas/annotations/tags/Tags.java
* /opt/ws_local/PERMITS_SQL/1069435298_1594665075.15/0/swagger-annotations-2-1-2-sources-
jar/io/swagger/v3/oas/annotations/servers/Servers.java
* /opt/ws_local/PERMITS_SQL/1069435298_1594665075.15/0/swagger-annotations-2-1-2-sources-
jar/io/swagger/v3/oas/annotations/security/SecurityScheme.java
* /opt/ws_local/PERMITS_SQL/1069435298_1594665075.15/0/swagger-annotations-2-1-2-sources-
jar/io/swagger/v3/oas/annotations/security/SecuritySchemes.java
```

\* /opt/ws\_local/PERMITS\_SQL/1069435298\_1594665075.15/0/swagger-annotations-2-1-2-sources-jar/io/swagger/v3/oas/annotations/Operation.java  
\* /opt/ws\_local/PERMITS\_SQL/1069435298\_1594665075.15/0/swagger-annotations-2-1-2-sources-jar/io/swagger/v3/oas/annotations/media/Encoding.java  
\* /opt/ws\_local/PERMITS\_SQL/1069435298\_1594665075.15/0/swagger-annotations-2-1-2-sources-jar/io/swagger/v3/oas/annotations/tags/Tag.java  
\* /opt/ws\_local/PERMITS\_SQL/1069435298\_1594665075.15/0/swagger-annotations-2-1-2-sources-jar/io/swagger/v3/oas/annotations/security/OAuthFlow.java  
\* /opt/ws\_local/PERMITS\_SQL/1069435298\_1594665075.15/0/swagger-annotations-2-1-2-sources-jar/io/swagger/v3/oas/annotations/security/OAuthScope.java  
\* /opt/ws\_local/PERMITS\_SQL/1069435298\_1594665075.15/0/swagger-annotations-2-1-2-sources-jar/io/swagger/v3/oas/annotations/media/Content.java  
\* /opt/ws\_local/PERMITS\_SQL/1069435298\_1594665075.15/0/swagger-annotations-2-1-2-sources-jar/io/swagger/v3/oas/annotations/callbacks/Callback.java  
\* /opt/ws\_local/PERMITS\_SQL/1069435298\_1594665075.15/0/swagger-annotations-2-1-2-sources-jar/io/swagger/v3/oas/annotations/info/License.java  
\* /opt/ws\_local/PERMITS\_SQL/1069435298\_1594665075.15/0/swagger-annotations-2-1-2-sources-jar/io/swagger/v3/oas/annotations/security/SecurityRequirement.java  
\* /opt/ws\_local/PERMITS\_SQL/1069435298\_1594665075.15/0/swagger-annotations-2-1-2-sources-jar/io/swagger/v3/oas/annotations/ExternalDocumentation.java  
\* /opt/ws\_local/PERMITS\_SQL/1069435298\_1594665075.15/0/swagger-annotations-2-1-2-sources-jar/io/swagger/v3/oas/annotations/info/Info.java  
\* /opt/ws\_local/PERMITS\_SQL/1069435298\_1594665075.15/0/swagger-annotations-2-1-2-sources-jar/io/swagger/v3/oas/annotations/links/Link.java  
\* /opt/ws\_local/PERMITS\_SQL/1069435298\_1594665075.15/0/swagger-annotations-2-1-2-sources-jar/io/swagger/v3/oas/annotations/responses/ApiResponse.java  
\* /opt/ws\_local/PERMITS\_SQL/1069435298\_1594665075.15/0/swagger-annotations-2-1-2-sources-jar/io/swagger/v3/oas/annotations/Parameters.java  
\* /opt/ws\_local/PERMITS\_SQL/1069435298\_1594665075.15/0/swagger-annotations-2-1-2-sources-jar/io/swagger/v3/oas/annotations/info/Contact.java  
\* /opt/ws\_local/PERMITS\_SQL/1069435298\_1594665075.15/0/swagger-annotations-2-1-2-sources-jar/io/swagger/v3/oas/annotations/OpenAPIDefinition.java  
\* /opt/ws\_local/PERMITS\_SQL/1069435298\_1594665075.15/0/swagger-annotations-2-1-2-sources-jar/io/swagger/v3/oas/annotations/headers/Header.java  
\* /opt/ws\_local/PERMITS\_SQL/1069435298\_1594665075.15/0/swagger-annotations-2-1-2-sources-jar/io/swagger/v3/oas/annotations/media/DiscriminatorMapping.java  
\* /opt/ws\_local/PERMITS\_SQL/1069435298\_1594665075.15/0/swagger-annotations-2-1-2-sources-jar/io/swagger/v3/oas/annotations/extensions/Extensions.java  
\* /opt/ws\_local/PERMITS\_SQL/1069435298\_1594665075.15/0/swagger-annotations-2-1-2-sources-jar/io/swagger/v3/oas/annotations/Hidden.java  
\* /opt/ws\_local/PERMITS\_SQL/1069435298\_1594665075.15/0/swagger-annotations-2-1-2-sources-jar/io/swagger/v3/oas/annotations/servers/ServerVariable.java

## 1.216 python-setuptools 39.2.0 6.e18



## 1.216.1 Available under license :

Copyright (C) 2016 Jason R Coombs <jaraco@jaraco.com>

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

## 1.217 springfox-core 3.0.0

### 1.217.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/*
 *
 * Copyright 2015-2018 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 *
 *
 */
```

Found in path(s):

```
* /opt/ws_local/PERMITS_SQL/1082519108_1597955825.09/0/springfox-core-3-0-0-sources-
```

jar/springfox/documentation/service/BasicAuth.java  
\* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-  
jar/springfox/documentation/service/SecurityScheme.java  
\* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-  
jar/springfox/documentation/service/Parameter.java  
\* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-  
jar/springfox/documentation/service/OAuth.java  
\* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-  
jar/springfox/documentation/service/ApiKey.java  
No license file was found, but licenses were detected in source scan.

```
/*
 *
 * Copyright 2015-2016 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 *
 *
 */
```

Found in path(s):  
\* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-  
jar/springfox/documentation/builders/RequestHandlerSelectors.java  
\* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-  
jar/springfox/documentation/RequestHandler.java  
No license file was found, but licenses were detected in source scan.

```
/*
 *
 * Copyright 2017-2019 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
```

\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.

\*/  
/\*

\* NOTE: This class is copied from  
\* <groupId>org.springframework.data</groupId>  
\* <artifactId>spring-data-commons</artifactId>  
\* <version>1.13.9.RELEASE</version>

\*  
\* Copyright 2013-2015 the original author or authors.

\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at

\*  
\* <http://www.apache.org/licenses/LICENSE-2.0>

\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.

\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-jar/springfox/documentation/common/Version.java

No license file was found, but licenses were detected in source scan.

/\*

\*  
\* Copyright 2018 the original author or authors.

\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at

\*  
\* <http://www.apache.org/licenses/LICENSE-2.0>

\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.

\*  
\*  
\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-jar/springfox/documentation/common/SpringVersion.java

No license file was found, but licenses were detected in source scan.

/\*

\*

\* Copyright 2016 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*

\*

\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-jar/springfox/documentation/RequestHandlerKey.java

\* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-jar/springfox/documentation/service/Header.java

No license file was found, but licenses were detected in source scan.

/\*

\*

\* Copyright 2015 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

- \* See the License for the specific language governing permissions and
- \* limitations under the License.
- \*
- \*
- \*/

Found in path(s):

- \* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-jar/springfox/documentation/schema/Model.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-jar/springfox/documentation/schema/ModelReference.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-jar/springfox/documentation/service/LoginEndpoint.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-jar/springfox/documentation/builders/LoginEndpointBuilder.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-jar/springfox/documentation/service/Contact.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-jar/springfox/documentation/service/StringVendorExtension.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-jar/springfox/documentation/annotations/Cacheable.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-jar/springfox/documentation/builders/AuthorizationCodeGrantBuilder.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-jar/springfox/documentation/service/ApiInfo.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-jar/springfox/documentation/OperationNameGenerator.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-jar/springfox/documentation/service/ApiListingReference.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-jar/springfox/documentation/service/AllowableValues.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-jar/springfox/documentation/annotations/ApiIgnore.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-jar/springfox/documentation/builders/AuthorizationScopeBuilder.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-jar/springfox/documentation/schema/AlternateTypeRule.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-jar/springfox/documentation/builders/TokenRequestEndpointBuilder.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-jar/springfox/documentation/service/ImplicitGrant.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-jar/springfox/documentation/builders/OAuthBuilder.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-jar/springfox/documentation/builders/PathSelectors.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-jar/springfox/documentation/schema/Xml.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-

jar/springfox/documentation/service/VendorExtension.java  
\* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-  
jar/springfox/documentation/service/ClientCredentialsGrant.java  
\* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-  
jar/springfox/documentation/spring/wrapper/NameValueExpression.java  
\* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-  
jar/springfox/documentation/service/GrantType.java  
\* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-  
jar/springfox/documentation/annotations/Incubating.java  
\* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-  
jar/springfox/documentation/schema/AlternateTypeRules.java  
\* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-  
jar/springfox/documentation/service/TokenEndpoint.java  
\* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-  
jar/springfox/documentation/service/AuthorizationCodeGrant.java  
\* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-  
jar/springfox/documentation/PathProvider.java  
\* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-  
jar/springfox/documentation/service/AuthorizationScope.java  
\* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-  
jar/springfox/documentation/spring/wrapper/RequestMappingInfo.java  
\* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-  
jar/springfox/documentation/service/ResourceListing.java  
\* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-  
jar/springfox/documentation/service/CredentialsGrant.java  
\* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-  
jar/springfox/documentation/service/AllowableRangeValues.java  
\* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-  
jar/springfox/documentation/builders/TokenEndpointBuilder.java  
\* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-  
jar/springfox/documentation/service/AllowableListValues.java  
\* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-  
jar/springfox/documentation/builders/ImplicitGrantBuilder.java  
\* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-  
jar/springfox/documentation/service/ResourceOwnerPasswordCredentialsGrant.java  
\* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-  
jar/springfox/documentation/schema/Entry.java  
\* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-  
jar/springfox/documentation/service/TokenRequestEndpoint.java  
\* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-  
jar/springfox/documentation/spring/wrapper/PatternsRequestCondition.java  
\* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-  
jar/springfox/documentation/service/ResponseMessage.java

No license file was found, but licenses were detected in source scan.

/\*

\*

\* Copyright 2017-2018 the original author or authors.

\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <http://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*  
\*  
\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-jar/springfox/documentation/schema/AlternateTypeRuleConvention.java  
\* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-jar/springfox/documentation/builders/AlternateTypePropertyBuilder.java  
\* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-jar/springfox/documentation/builders/AlternateTypeBuilder.java  
\* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-jar/springfox/documentation/service/Server.java  
\* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-jar/springfox/documentation/service/DocumentationReference.java  
\* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-jar/springfox/documentation/service/ServerVariable.java

No license file was found, but licenses were detected in source scan.

/\*  
\*  
\* Copyright 2015-2019 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <http://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*  
\*

\*/

Found in path(s):

- \* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-jar/springfox/documentation/schema/ClassSupport.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-jar/springfox/documentation/service/Documentation.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-jar/springfox/documentation/service/ResourceGroup.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-jar/springfox/documentation/schema/Enums.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-jar/springfox/documentation/service/SecurityReference.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-jar/springfox/documentation/builders/OperationBuilder.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-jar/springfox/documentation/service/Tag.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-jar/springfox/documentation/builders/ResourceListingBuilder.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-jar/springfox/documentation/service/ApiListing.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-jar/springfox/documentation/schema/WildcardType.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-jar/springfox/documentation/service/ObjectVendorExtension.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-jar/springfox/documentation/service/Operation.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-jar/springfox/documentation/builders/ApiListingBuilder.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-jar/springfox/documentation/service/ResolvedMethodParameter.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-jar/springfox/documentation/builders/ModelPropertyBuilder.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-jar/springfox/documentation/service/ApiDescription.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-jar/springfox/documentation/builders/BuilderDefaults.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-jar/springfox/documentation/builders/ApiDescriptionBuilder.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-jar/springfox/documentation/builders/ModelBuilder.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-jar/springfox/documentation/builders/RequestParameterMerger.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-jar/springfox/documentation/builders/DocumentationBuilder.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-jar/springfox/documentation/service/Tags.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-



jar/springfox/documentation/schema/ModelProperty.java  
\* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-  
jar/springfox/documentation/builders/ApiInfoBuilder.java  
\* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-  
jar/springfox/documentation/service/MediaTypes.java  
\* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-  
jar/springfox/documentation/schema/ModelRef.java  
\* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-  
jar/springfox/documentation/builders/ParameterBuilder.java  
\* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-  
jar/springfox/documentation/builders/ParameterMerger.java  
No license file was found, but licenses were detected in source scan.

```
/*
*
* Copyright 2017 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* http://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*
*
*/
```

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-  
jar/springfox/documentation/builders/ResponseMessageBuilder.java  
No license file was found, but licenses were detected in source scan.

```
/*
*
* Copyright 2017-2019 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* http://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
```

- \* distributed under the License is distributed on an "AS IS" BASIS,
- \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- \* See the License for the specific language governing permissions and
- \* limitations under the License.
- \*
- \*
- \*/

Found in path(s):

- \* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-jar/springfox/documentation/schema/Example.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-jar/springfox/documentation/common/ClassPresentInClassPathCondition.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-jar/springfox/documentation/service/ListVendorExtension.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-jar/springfox/documentation/common/SpringVersionCapability.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519108\_1597955825.09/0/springfox-core-3-0-0-sources-jar/springfox/documentation/common/ClassNotPresentInClassPathCondition.java

## 1.218 libarchive 3.3.3-3.el8\_5

### 1.218.1 Available under license :

The libarchive distribution as a whole is Copyright by Tim Kientzle and is subject to the copyright notice reproduced at the bottom of this file.

Each individual file in this distribution should have a clear copyright/licensing statement at the beginning of the file. If any do not, please let me know and I will rectify it. The following is intended to summarize the copyright status of the individual files; the actual statements in the files are controlling.

\* Except as listed below, all C sources (including .c and .h files) and documentation files are subject to the copyright notice reproduced at the bottom of this file.

\* The following source files are also subject in whole or in part to a 3-clause UC Regents copyright; please read the individual source files for details:

libarchive/archive\_entry.c  
 libarchive/archive\_read\_support\_filter\_compress.c  
 libarchive/archive\_write\_add\_filter\_compress.c  
 libarchive/mtree.5

\* The following source files are in the public domain:

libarchive/archive\_getdate.c

\* The build files---including Makefiles, configure scripts, and auxiliary scripts used as part of the compile process---have widely varying licensing terms. Please check individual files before distributing them to see if those restrictions apply to you.

I intend for all new source code to use the license below and hope over time to replace code with other licenses with new implementations that do use the license below. The varying licensing of the build scripts seems to be an unavoidable mess.

Copyright (c) 2003-2009 <author(s)>  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer in this position and unchanged.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR(S) ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR(S) BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## 1.219 python-chardet 3.0.4 7.e18

### 1.219.1 Available under license :

GNU LESSER GENERAL PUBLIC LICENSE  
Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.  
51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

## Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be

introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the

users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

## GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an

appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the



library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any

such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY

KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990

Ty Coon, President of Vice

That's all there is to it!

## 1.220 bash 4.4.20-4.el8\_6

### 1.220.1 Available under license :

GNU Free Documentation License  
Version 1.3, 3 November 2008

Copyright (C) 2000, 2001, 2002, 2007, 2008 Free Software Foundation, Inc.

<<http://fsf.org/>>

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

#### 0. PREAMBLE

The purpose of this License is to make a manual, textbook, or other functional and useful document "free" in the sense of freedom: to assure everyone the effective freedom to copy and redistribute it, with or without modifying it, either commercially or noncommercially. Secondly, this License preserves for the author and publisher a way to get credit for their work, while not being considered responsible for modifications made by others.

This License is a kind of "copyleft", which means that derivative works of the document must themselves be free in the same sense. It complements the GNU General Public License, which is a copyleft license designed for free software.

We have designed this License in order to use it for manuals for free software, because free software needs free documentation: a free program should come with manuals providing the same freedoms that the software does. But this License is not limited to software manuals;

it can be used for any textual work, regardless of subject matter or whether it is published as a printed book. We recommend this License principally for works whose purpose is instruction or reference.

## 1. APPLICABILITY AND DEFINITIONS

This License applies to any manual or other work, in any medium, that contains a notice placed by the copyright holder saying it can be distributed under the terms of this License. Such a notice grants a world-wide, royalty-free license, unlimited in duration, to use that work under the conditions stated herein. The "Document", below, refers to any such manual or work. Any member of the public is a licensee, and is addressed as "you". You accept the license if you copy, modify or distribute the work in a way requiring permission under copyright law.

A "Modified Version" of the Document means any work containing the Document or a portion of it, either copied verbatim, or with modifications and/or translated into another language.

A "Secondary Section" is a named appendix or a front-matter section of the Document that deals exclusively with the relationship of the publishers or authors of the Document to the Document's overall subject (or to related matters) and contains nothing that could fall directly within that overall subject. (Thus, if the Document is in part a textbook of mathematics, a Secondary Section may not explain any mathematics.) The relationship could be a matter of historical connection with the subject or with related matters, or of legal, commercial, philosophical, ethical or political position regarding them.

The "Invariant Sections" are certain Secondary Sections whose titles are designated, as being those of Invariant Sections, in the notice that says that the Document is released under this License. If a section does not fit the above definition of Secondary then it is not allowed to be designated as Invariant. The Document may contain zero Invariant Sections. If the Document does not identify any Invariant Sections then there are none.

The "Cover Texts" are certain short passages of text that are listed, as Front-Cover Texts or Back-Cover Texts, in the notice that says that the Document is released under this License. A Front-Cover Text may be at most 5 words, and a Back-Cover Text may be at most 25 words.

A "Transparent" copy of the Document means a machine-readable copy, represented in a format whose specification is available to the general public, that is suitable for revising the document

straightforwardly with generic text editors or (for images composed of pixels) generic paint programs or (for drawings) some widely available drawing editor, and that is suitable for input to text formatters or for automatic translation to a variety of formats suitable for input to text formatters. A copy made in an otherwise Transparent file format whose markup, or absence of markup, has been arranged to thwart or discourage subsequent modification by readers is not Transparent. An image format is not Transparent if used for any substantial amount of text. A copy that is not "Transparent" is called "Opaque".

Examples of suitable formats for Transparent copies include plain ASCII without markup, Texinfo input format, LaTeX input format, SGML or XML using a publicly available DTD, and standard-conforming simple HTML, PostScript or PDF designed for human modification. Examples of transparent image formats include PNG, XCF and JPG. Opaque formats include proprietary formats that can be read and edited only by proprietary word processors, SGML or XML for which the DTD and/or processing tools are not generally available, and the machine-generated HTML, PostScript or PDF produced by some word processors for output purposes only.

The "Title Page" means, for a printed book, the title page itself, plus such following pages as are needed to hold, legibly, the material this License requires to appear in the title page. For works in formats which do not have any title page as such, "Title Page" means the text near the most prominent appearance of the work's title, preceding the beginning of the body of the text.

The "publisher" means any person or entity that distributes copies of the Document to the public.

A section "Entitled XYZ" means a named subunit of the Document whose title either is precisely XYZ or contains XYZ in parentheses following text that translates XYZ in another language. (Here XYZ stands for a specific section name mentioned below, such as "Acknowledgements", "Dedications", "Endorsements", or "History".) To "Preserve the Title" of such a section when you modify the Document means that it remains a section "Entitled XYZ" according to this definition.

The Document may include Warranty Disclaimers next to the notice which states that this License applies to the Document. These Warranty Disclaimers are considered to be included by reference in this License, but only as regards disclaiming warranties: any other implication that these Warranty Disclaimers may have is void and has no effect on the meaning of this License.

## 2. VERBATIM COPYING



You may copy and distribute the Document in any medium, either commercially or noncommercially, provided that this License, the copyright notices, and the license notice saying this License applies to the Document are reproduced in all copies, and that you add no other conditions whatsoever to those of this License. You may not use technical measures to obstruct or control the reading or further copying of the copies you make or distribute. However, you may accept compensation in exchange for copies. If you distribute a large enough number of copies you must also follow the conditions in section 3.

You may also lend copies, under the same conditions stated above, and you may publicly display copies.

### 3. COPYING IN QUANTITY

If you publish printed copies (or copies in media that commonly have printed covers) of the Document, numbering more than 100, and the Document's license notice requires Cover Texts, you must enclose the copies in covers that carry, clearly and legibly, all these Cover Texts: Front-Cover Texts on the front cover, and Back-Cover Texts on the back cover. Both covers must also clearly and legibly identify you as the publisher of these copies. The front cover must present the full title with all words of the title equally prominent and visible. You may add other material on the covers in addition. Copying with changes limited to the covers, as long as they preserve the title of the Document and satisfy these conditions, can be treated as verbatim copying in other respects.

If the required texts for either cover are too voluminous to fit legibly, you should put the first ones listed (as many as fit reasonably) on the actual cover, and continue the rest onto adjacent pages.

If you publish or distribute Opaque copies of the Document numbering more than 100, you must either include a machine-readable Transparent copy along with each Opaque copy, or state in or with each Opaque copy a computer-network location from which the general network-using public has access to download using public-standard network protocols a complete Transparent copy of the Document, free of added material. If you use the latter option, you must take reasonably prudent steps, when you begin distribution of Opaque copies in quantity, to ensure that this Transparent copy will remain thus accessible at the stated location until at least one year after the last time you distribute an Opaque copy (directly or through your agents or retailers) of that edition to the public.

It is requested, but not required, that you contact the authors of the

Document well before redistributing any large number of copies, to give them a chance to provide you with an updated version of the Document.

#### 4. MODIFICATIONS

You may copy and distribute a Modified Version of the Document under the conditions of sections 2 and 3 above, provided that you release the Modified Version under precisely this License, with the Modified Version filling the role of the Document, thus licensing distribution and modification of the Modified Version to whoever possesses a copy of it. In addition, you must do these things in the Modified Version:

- A. Use in the Title Page (and on the covers, if any) a title distinct from that of the Document, and from those of previous versions (which should, if there were any, be listed in the History section of the Document). You may use the same title as a previous version if the original publisher of that version gives permission.
- B. List on the Title Page, as authors, one or more persons or entities responsible for authorship of the modifications in the Modified Version, together with at least five of the principal authors of the Document (all of its principal authors, if it has fewer than five), unless they release you from this requirement.
- C. State on the Title page the name of the publisher of the Modified Version, as the publisher.
- D. Preserve all the copyright notices of the Document.
- E. Add an appropriate copyright notice for your modifications adjacent to the other copyright notices.
- F. Include, immediately after the copyright notices, a license notice giving the public permission to use the Modified Version under the terms of this License, in the form shown in the Addendum below.
- G. Preserve in that license notice the full lists of Invariant Sections and required Cover Texts given in the Document's license notice.
- H. Include an unaltered copy of this License.
- I. Preserve the section Entitled "History", Preserve its Title, and add to it an item stating at least the title, year, new authors, and publisher of the Modified Version as given on the Title Page. If there is no section Entitled "History" in the Document, create one stating the title, year, authors, and publisher of the Document as given on its Title Page, then add an item describing the Modified Version as stated in the previous sentence.
- J. Preserve the network location, if any, given in the Document for public access to a Transparent copy of the Document, and likewise the network locations given in the Document for previous versions it was based on. These may be placed in the "History" section. You may omit a network location for a work that was published at least four years before the Document itself, or if the original

publisher of the version it refers to gives permission.

- K. For any section Entitled "Acknowledgements" or "Dedications", Preserve the Title of the section, and preserve in the section all the substance and tone of each of the contributor acknowledgements and/or dedications given therein.
- L. Preserve all the Invariant Sections of the Document, unaltered in their text and in their titles. Section numbers or the equivalent are not considered part of the section titles.
- M. Delete any section Entitled "Endorsements". Such a section may not be included in the Modified Version.
- N. Do not retitle any existing section to be Entitled "Endorsements" or to conflict in title with any Invariant Section.
- O. Preserve any Warranty Disclaimers.

If the Modified Version includes new front-matter sections or appendices that qualify as Secondary Sections and contain no material copied from the Document, you may at your option designate some or all of these sections as invariant. To do this, add their titles to the list of Invariant Sections in the Modified Version's license notice. These titles must be distinct from any other section titles.

You may add a section Entitled "Endorsements", provided it contains nothing but endorsements of your Modified Version by various parties--for example, statements of peer review or that the text has been approved by an organization as the authoritative definition of a standard.

You may add a passage of up to five words as a Front-Cover Text, and a passage of up to 25 words as a Back-Cover Text, to the end of the list of Cover Texts in the Modified Version. Only one passage of Front-Cover Text and one of Back-Cover Text may be added by (or through arrangements made by) any one entity. If the Document already includes a cover text for the same cover, previously added by you or by arrangement made by the same entity you are acting on behalf of, you may not add another; but you may replace the old one, on explicit permission from the previous publisher that added the old one.

The author(s) and publisher(s) of the Document do not by this License give permission to use their names for publicity for or to assert or imply endorsement of any Modified Version.

## 5. COMBINING DOCUMENTS

You may combine the Document with other documents released under this License, under the terms defined in section 4 above for modified versions, provided that you include in the combination all of the Invariant Sections of all of the original documents, unmodified, and

list them all as Invariant Sections of your combined work in its license notice, and that you preserve all their Warranty Disclaimers.

The combined work need only contain one copy of this License, and multiple identical Invariant Sections may be replaced with a single copy. If there are multiple Invariant Sections with the same name but different contents, make the title of each such section unique by adding at the end of it, in parentheses, the name of the original author or publisher of that section if known, or else a unique number. Make the same adjustment to the section titles in the list of Invariant Sections in the license notice of the combined work.

In the combination, you must combine any sections Entitled "History" in the various original documents, forming one section Entitled "History"; likewise combine any sections Entitled "Acknowledgements", and any sections Entitled "Dedications". You must delete all sections Entitled "Endorsements".

## 6. COLLECTIONS OF DOCUMENTS

You may make a collection consisting of the Document and other documents released under this License, and replace the individual copies of this License in the various documents with a single copy that is included in the collection, provided that you follow the rules of this License for verbatim copying of each of the documents in all other respects.

You may extract a single document from such a collection, and distribute it individually under this License, provided you insert a copy of this License into the extracted document, and follow this License in all other respects regarding verbatim copying of that document.

## 7. AGGREGATION WITH INDEPENDENT WORKS

A compilation of the Document or its derivatives with other separate and independent documents or works, in or on a volume of a storage or distribution medium, is called an "aggregate" if the copyright resulting from the compilation is not used to limit the legal rights of the compilation's users beyond what the individual works permit. When the Document is included in an aggregate, this License does not apply to the other works in the aggregate which are not themselves derivative works of the Document.

If the Cover Text requirement of section 3 is applicable to these copies of the Document, then if the Document is less than one half of

the entire aggregate, the Document's Cover Texts may be placed on covers that bracket the Document within the aggregate, or the electronic equivalent of covers if the Document is in electronic form. Otherwise they must appear on printed covers that bracket the whole aggregate.

## 8. TRANSLATION

Translation is considered a kind of modification, so you may distribute translations of the Document under the terms of section 4. Replacing Invariant Sections with translations requires special permission from their copyright holders, but you may include translations of some or all Invariant Sections in addition to the original versions of these Invariant Sections. You may include a translation of this License, and all the license notices in the Document, and any Warranty Disclaimers, provided that you also include the original English version of this License and the original versions of those notices and disclaimers. In case of a disagreement between the translation and the original version of this License or a notice or disclaimer, the original version will prevail.

If a section in the Document is Entitled "Acknowledgements", "Dedications", or "History", the requirement (section 4) to Preserve its Title (section 1) will typically require changing the actual title.

## 9. TERMINATION

You may not copy, modify, sublicense, or distribute the Document except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, or distribute it is void, and will automatically terminate your rights under this License.

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, receipt of a copy of some or all of the same material does not give you any rights to use it.

## 10. FUTURE REVISIONS OF THIS LICENSE

The Free Software Foundation may publish new, revised versions of the GNU Free Documentation License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns. See <http://www.gnu.org/copyleft/>.

Each version of the License is given a distinguishing version number. If the Document specifies that a particular numbered version of this License "or any later version" applies to it, you have the option of following the terms and conditions either of that specified version or of any later version that has been published (not as a draft) by the Free Software Foundation. If the Document does not specify a version number of this License, you may choose any version ever published (not as a draft) by the Free Software Foundation. If the Document specifies that a proxy can decide which future versions of this License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Document.

## 11. RELICENSING

"Massive Multiauthor Collaboration Site" (or "MMC Site") means any World Wide Web server that publishes copyrightable works and also provides prominent facilities for anybody to edit those works. A public wiki that anybody can edit is an example of such a server. A "Massive Multiauthor Collaboration" (or "MMC") contained in the site means any set of copyrightable works thus published on the MMC site.

"CC-BY-SA" means the Creative Commons Attribution-Share Alike 3.0 license published by Creative Commons Corporation, a not-for-profit corporation with a principal place of business in San Francisco, California, as well as future copyleft versions of that license published by that same organization.

"Incorporate" means to publish or republish a Document, in whole or in part, as part of another Document.

An MMC is "eligible for relicensing" if it is licensed under this

License, and if all works that were first published under this License somewhere other than this MMC, and subsequently incorporated in whole or in part into the MMC, (1) had no cover texts or invariant sections, and (2) were thus incorporated prior to November 1, 2008.

The operator of an MMC Site may republish an MMC contained in the site under CC-BY-SA on the same site at any time before August 1, 2009, provided the MMC is eligible for relicensing.

#### ADDENDUM: How to use this License for your documents

To use this License in a document you have written, include a copy of the License in the document and put the following copyright and license notices just after the title page:

Copyright (c) YEAR YOUR NAME.

Permission is granted to copy, distribute and/or modify this document under the terms of the GNU Free Documentation License, Version 1.3 or any later version published by the Free Software Foundation; with no Invariant Sections, no Front-Cover Texts, and no Back-Cover Texts. A copy of the license is included in the section entitled "GNU Free Documentation License".

If you have Invariant Sections, Front-Cover Texts and Back-Cover Texts, replace the "with...Texts." line with this:

with the Invariant Sections being LIST THEIR TITLES, with the Front-Cover Texts being LIST, and with the Back-Cover Texts being LIST.

If you have Invariant Sections without Cover Texts, or some other combination of the three, merge those two alternatives to suit the situation.

If your document contains nontrivial examples of program code, we recommend releasing these examples in parallel under your choice of free software license, such as the GNU General Public License, to permit their use in free software.

GNU GENERAL PUBLIC LICENSE  
Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>  
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

#### Preamble

The GNU General Public License is a free, copyleft license for

software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions



of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

## TERMS AND CONDITIONS

### 0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the

extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

## 1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

## 2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

### 3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

### 4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all

recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

#### 5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.
- b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".
- c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.
- d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

#### 6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family,

or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

## 7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions.

Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms

of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

## 8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

## 9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do



not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

#### 10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

#### 11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

## 12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

## 13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

## 14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a

later version.

#### 15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

#### 16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### 17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see <<http://www.gnu.org/licenses/>>.

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program> Copyright (C) <year> <name of author>
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <<http://www.gnu.org/licenses/>>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <<http://www.gnu.org/philosophy/why-not-lgpl.html>>.

@c The GNU Free Documentation License.

@center Version 1.3, 3 November 2008

@c This file is intended to be included within another document,

@c hence no sectioning command or @node.

@display

Copyright @copyright{ } 2000, 2001, 2002, 2007, 2008 Free Software Foundation, Inc.

[@uref{http://fsf.org/}](http://fsf.org/)

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

@end display

@enumerate 0

@item

PREAMBLE

The purpose of this License is to make a manual, textbook, or other functional and useful document @dfn{free} in the sense of freedom: to assure everyone the effective freedom to copy and redistribute it, with or without modifying it, either commercially or noncommercially. Secondly, this License preserves for the author and publisher a way to get credit for their work, while not being considered responsible for modifications made by others.

This License is a kind of ``copyleft'', which means that derivative works of the document must themselves be free in the same sense. It complements the GNU General Public License, which is a copyleft license designed for free software.

We have designed this License in order to use it for manuals for free software, because free software needs free documentation: a free program should come with manuals providing the same freedoms that the software does. But this License is not limited to software manuals; it can be used for any textual work, regardless of subject matter or whether it is published as a printed book. We recommend this License principally for works whose purpose is instruction or reference.

@item

APPLICABILITY AND DEFINITIONS

This License applies to any manual or other work, in any medium, that contains a notice placed by the copyright holder saying it can be distributed under the terms of this License. Such a notice grants a world-wide, royalty-free license, unlimited in duration, to use that work under the conditions stated herein. The ``Document'', below, refers to any such manual or work. Any member of the public is a licensee, and is addressed as ``you''. You accept the license if you copy, modify or distribute the work in a way requiring permission under copyright law.

A ``Modified Version'' of the Document means any work containing the Document or a portion of it, either copied verbatim, or with modifications and/or translated into another language.

A "Secondary Section" is a named appendix or a front-matter section of the Document that deals exclusively with the relationship of the publishers or authors of the Document to the Document's overall subject (or to related matters) and contains nothing that could fall directly within that overall subject. (Thus, if the Document is in part a textbook of mathematics, a Secondary Section may not explain any mathematics.) The relationship could be a matter of historical connection with the subject or with related matters, or of legal, commercial, philosophical, ethical or political position regarding them.

The "Invariant Sections" are certain Secondary Sections whose titles are designated, as being those of Invariant Sections, in the notice that says that the Document is released under this License. If a section does not fit the above definition of Secondary then it is not allowed to be designated as Invariant. The Document may contain zero Invariant Sections. If the Document does not identify any Invariant Sections then there are none.

The "Cover Texts" are certain short passages of text that are listed, as Front-Cover Texts or Back-Cover Texts, in the notice that says that the Document is released under this License. A Front-Cover Text may be at most 5 words, and a Back-Cover Text may be at most 25 words.

A "Transparent" copy of the Document means a machine-readable copy, represented in a format whose specification is available to the general public, that is suitable for revising the document straightforwardly with generic text editors or (for images composed of pixels) generic paint programs or (for drawings) some widely available drawing editor, and that is suitable for input to text formatters or for automatic translation to a variety of formats suitable for input to text formatters. A copy made in an otherwise Transparent file format whose markup, or absence of markup, has been arranged to thwart or discourage subsequent modification by readers is not Transparent. An image format is not Transparent if used for any substantial amount of text. A copy that is not "Transparent" is called "Opaque".

Examples of suitable formats for Transparent copies include plain `@sc{ascii}` without markup, Texinfo input format, `La@TeX{}` input format, `@acronym{SGML}` or `@acronym{XML}` using a publicly available `@acronym{DTD}`, and standard-conforming simple `@acronym{HTML}`, PostScript or `@acronym{PDF}` designed for human modification. Examples of transparent image formats include `@acronym{PNG}`, `@acronym{XCF}` and `@acronym{JPG}`. Opaque formats include proprietary formats that can be read and edited only by proprietary word processors, `@acronym{SGML}` or `@acronym{XML}` for which the `@acronym{DTD}` and/or processing tools are not generally available, and the machine-generated `@acronym{HTML}`, PostScript or `@acronym{PDF}` produced by some word processors for

output purposes only.

The "Title Page" means, for a printed book, the title page itself, plus such following pages as are needed to hold, legibly, the material this License requires to appear in the title page. For works in formats which do not have any title page as such, "Title Page" means the text near the most prominent appearance of the work's title, preceding the beginning of the body of the text.

The "publisher" means any person or entity that distributes copies of the Document to the public.

A section "Entitled XYZ" means a named subunit of the Document whose title either is precisely XYZ or contains XYZ in parentheses following text that translates XYZ in another language. (Here XYZ stands for a specific section name mentioned below, such as "Acknowledgements", "Dedications", "Endorsements", or "History".) To "Preserve the Title" of such a section when you modify the Document means that it remains a section "Entitled XYZ" according to this definition.

The Document may include Warranty Disclaimers next to the notice which states that this License applies to the Document. These Warranty Disclaimers are considered to be included by reference in this License, but only as regards disclaiming warranties: any other implication that these Warranty Disclaimers may have is void and has no effect on the meaning of this License.

@item

#### VERBATIM COPYING

You may copy and distribute the Document in any medium, either commercially or noncommercially, provided that this License, the copyright notices, and the license notice saying this License applies to the Document are reproduced in all copies, and that you add no other conditions whatsoever to those of this License. You may not use technical measures to obstruct or control the reading or further copying of the copies you make or distribute. However, you may accept compensation in exchange for copies. If you distribute a large enough number of copies you must also follow the conditions in section 3.

You may also lend copies, under the same conditions stated above, and you may publicly display copies.

@item

#### COPYING IN QUANTITY

If you publish printed copies (or copies in media that commonly have printed covers) of the Document, numbering more than 100, and the



Document's license notice requires Cover Texts, you must enclose the copies in covers that carry, clearly and legibly, all these Cover Texts: Front-Cover Texts on the front cover, and Back-Cover Texts on the back cover. Both covers must also clearly and legibly identify you as the publisher of these copies. The front cover must present the full title with all words of the title equally prominent and visible. You may add other material on the covers in addition. Copying with changes limited to the covers, as long as they preserve the title of the Document and satisfy these conditions, can be treated as verbatim copying in other respects.

If the required texts for either cover are too voluminous to fit legibly, you should put the first ones listed (as many as fit reasonably) on the actual cover, and continue the rest onto adjacent pages.

If you publish or distribute Opaque copies of the Document numbering more than 100, you must either include a machine-readable Transparent copy along with each Opaque copy, or state in or with each Opaque copy a computer-network location from which the general network-using public has access to download using public-standard network protocols a complete Transparent copy of the Document, free of added material. If you use the latter option, you must take reasonably prudent steps, when you begin distribution of Opaque copies in quantity, to ensure that this Transparent copy will remain thus accessible at the stated location until at least one year after the last time you distribute an Opaque copy (directly or through your agents or retailers) of that edition to the public.

It is requested, but not required, that you contact the authors of the Document well before redistributing any large number of copies, to give them a chance to provide you with an updated version of the Document.

@item

## MODIFICATIONS

You may copy and distribute a Modified Version of the Document under the conditions of sections 2 and 3 above, provided that you release the Modified Version under precisely this License, with the Modified Version filling the role of the Document, thus licensing distribution and modification of the Modified Version to whoever possesses a copy of it. In addition, you must do these things in the Modified Version:

@enumerate A

@item

Use in the Title Page (and on the covers, if any) a title distinct from that of the Document, and from those of previous versions (which should, if there were any, be listed in the History section

of the Document). You may use the same title as a previous version if the original publisher of that version gives permission.

@item

List on the Title Page, as authors, one or more persons or entities responsible for authorship of the modifications in the Modified Version, together with at least five of the principal authors of the Document (all of its principal authors, if it has fewer than five), unless they release you from this requirement.

@item

State on the Title page the name of the publisher of the Modified Version, as the publisher.

@item

Preserve all the copyright notices of the Document.

@item

Add an appropriate copyright notice for your modifications adjacent to the other copyright notices.

@item

Include, immediately after the copyright notices, a license notice giving the public permission to use the Modified Version under the terms of this License, in the form shown in the Addendum below.

@item

Preserve in that license notice the full lists of Invariant Sections and required Cover Texts given in the Document's license notice.

@item

Include an unaltered copy of this License.

@item

Preserve the section Entitled ``History'', Preserve its Title, and add to it an item stating at least the title, year, new authors, and publisher of the Modified Version as given on the Title Page. If there is no section Entitled ``History'' in the Document, create one stating the title, year, authors, and publisher of the Document as given on its Title Page, then add an item describing the Modified Version as stated in the previous sentence.

@item

Preserve the network location, if any, given in the Document for public access to a Transparent copy of the Document, and likewise the network locations given in the Document for previous versions it was based on. These may be placed in the ``History'' section.

You may omit a network location for a work that was published at

least four years before the Document itself, or if the original publisher of the version it refers to gives permission.

@item

For any section Entitled ``Acknowledgements" or ``Dedications", Preserve the Title of the section, and preserve in the section all the substance and tone of each of the contributor acknowledgements and/or dedications given therein.

@item

Preserve all the Invariant Sections of the Document, unaltered in their text and in their titles. Section numbers or the equivalent are not considered part of the section titles.

@item

Delete any section Entitled ``Endorsements". Such a section may not be included in the Modified Version.

@item

Do not retile any existing section to be Entitled ``Endorsements" or to conflict in title with any Invariant Section.

@item

Preserve any Warranty Disclaimers.

@end enumerate

If the Modified Version includes new front-matter sections or appendices that qualify as Secondary Sections and contain no material copied from the Document, you may at your option designate some or all of these sections as invariant. To do this, add their titles to the list of Invariant Sections in the Modified Version's license notice. These titles must be distinct from any other section titles.

You may add a section Entitled ``Endorsements", provided it contains nothing but endorsements of your Modified Version by various parties---for example, statements of peer review or that the text has been approved by an organization as the authoritative definition of a standard.

You may add a passage of up to five words as a Front-Cover Text, and a passage of up to 25 words as a Back-Cover Text, to the end of the list of Cover Texts in the Modified Version. Only one passage of Front-Cover Text and one of Back-Cover Text may be added by (or through arrangements made by) any one entity. If the Document already includes a cover text for the same cover, previously added by you or by arrangement made by the same entity you are acting on behalf of, you may not add another; but you may replace the old one, on explicit permission from the previous publisher that added the old one.

The author(s) and publisher(s) of the Document do not by this License give permission to use their names for publicity for or to assert or imply endorsement of any Modified Version.

@item

## COMBINING DOCUMENTS

You may combine the Document with other documents released under this License, under the terms defined in section 4 above for modified versions, provided that you include in the combination all of the Invariant Sections of all of the original documents, unmodified, and list them all as Invariant Sections of your combined work in its license notice, and that you preserve all their Warranty Disclaimers.

The combined work need only contain one copy of this License, and multiple identical Invariant Sections may be replaced with a single copy. If there are multiple Invariant Sections with the same name but different contents, make the title of each such section unique by adding at the end of it, in parentheses, the name of the original author or publisher of that section if known, or else a unique number. Make the same adjustment to the section titles in the list of Invariant Sections in the license notice of the combined work.

In the combination, you must combine any sections Entitled ``History" in the various original documents, forming one section Entitled ``History"; likewise combine any sections Entitled ``Acknowledgements", and any sections Entitled ``Dedications". You must delete all sections Entitled ``Endorsements."

@item

## COLLECTIONS OF DOCUMENTS

You may make a collection consisting of the Document and other documents released under this License, and replace the individual copies of this License in the various documents with a single copy that is included in the collection, provided that you follow the rules of this License for verbatim copying of each of the documents in all other respects.

You may extract a single document from such a collection, and distribute it individually under this License, provided you insert a copy of this License into the extracted document, and follow this License in all other respects regarding verbatim copying of that document.

@item

## AGGREGATION WITH INDEPENDENT WORKS

A compilation of the Document or its derivatives with other separate

and independent documents or works, in or on a volume of a storage or distribution medium, is called an ``aggregate" if the copyright resulting from the compilation is not used to limit the legal rights of the compilation's users beyond what the individual works permit. When the Document is included in an aggregate, this License does not apply to the other works in the aggregate which are not themselves derivative works of the Document.

If the Cover Text requirement of section 3 is applicable to these copies of the Document, then if the Document is less than one half of the entire aggregate, the Document's Cover Texts may be placed on covers that bracket the Document within the aggregate, or the electronic equivalent of covers if the Document is in electronic form. Otherwise they must appear on printed covers that bracket the whole aggregate.

@item

## TRANSLATION

Translation is considered a kind of modification, so you may distribute translations of the Document under the terms of section 4. Replacing Invariant Sections with translations requires special permission from their copyright holders, but you may include translations of some or all Invariant Sections in addition to the original versions of these Invariant Sections. You may include a translation of this License, and all the license notices in the Document, and any Warranty Disclaimers, provided that you also include the original English version of this License and the original versions of those notices and disclaimers. In case of a disagreement between the translation and the original version of this License or a notice or disclaimer, the original version will prevail.

If a section in the Document is Entitled ``Acknowledgements", ``Dedications", or ``History", the requirement (section 4) to Preserve its Title (section 1) will typically require changing the actual title.

@item

## TERMINATION

You may not copy, modify, sublicense, or distribute the Document except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, or distribute it is void, and will automatically terminate your rights under this License.

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally

terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, receipt of a copy of some or all of the same material does not give you any rights to use it.

@item

#### FUTURE REVISIONS OF THIS LICENSE

The Free Software Foundation may publish new, revised versions of the GNU Free Documentation License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns. See [@uref{http://www.gnu.org/copyleft/}](http://www.gnu.org/copyleft/).

Each version of the License is given a distinguishing version number. If the Document specifies that a particular numbered version of this License "or any later version" applies to it, you have the option of following the terms and conditions either of that specified version or of any later version that has been published (not as a draft) by the Free Software Foundation. If the Document does not specify a version number of this License, you may choose any version ever published (not as a draft) by the Free Software Foundation. If the Document specifies that a proxy can decide which future versions of this License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Document.

@item

#### RELICENSING

"Massive Multiauthor Collaboration Site" (or "MMC Site") means any World Wide Web server that publishes copyrightable works and also provides prominent facilities for anybody to edit those works. A public wiki that anybody can edit is an example of such a server. A "Massive Multiauthor Collaboration" (or "MMC") contained in the site means any set of copyrightable works thus published on the MMC

site.

``CC-BY-SA" means the Creative Commons Attribution-Share Alike 3.0 license published by Creative Commons Corporation, a not-for-profit corporation with a principal place of business in San Francisco, California, as well as future copyleft versions of that license published by that same organization.

``Incorporate" means to publish or republish a Document, in whole or in part, as part of another Document.

An MMC is ``eligible for relicensing" if it is licensed under this License, and if all works that were first published under this License somewhere other than this MMC, and subsequently incorporated in whole or in part into the MMC, (1) had no cover texts or invariant sections, and (2) were thus incorporated prior to November 1, 2008.

The operator of an MMC Site may republish an MMC contained in the site under CC-BY-SA on the same site at any time before August 1, 2009, provided the MMC is eligible for relicensing.

@end enumerate

@page

@heading ADDENDUM: How to use this License for your documents

To use this License in a document you have written, include a copy of the License in the document and put the following copyright and license notices just after the title page:

@smallexample

@group

Copyright (C) @var{year} @var{your name}.

Permission is granted to copy, distribute and/or modify this document under the terms of the GNU Free Documentation License, Version 1.3 or any later version published by the Free Software Foundation; with no Invariant Sections, no Front-Cover Texts, and no Back-Cover Texts. A copy of the license is included in the section entitled ``GNU Free Documentation License".

@end group

@end smallexample

If you have Invariant Sections, Front-Cover Texts and Back-Cover Texts, replace the ``with@dots{ }Texts." line with this:

@smallexample

@group

with the Invariant Sections being @var{list their titles}, with

the Front-Cover Texts being @var{list}, and with the Back-Cover Texts being @var{list}.  
@end group  
@end smallexample

If you have Invariant Sections without Cover Texts, or some other combination of the three, merge those two alternatives to suit the situation.

If your document contains nontrivial examples of program code, we recommend releasing these examples in parallel under your choice of free software license, such as the GNU General Public License, to permit their use in free software.

@c Local Variables:  
@c ispell-local-pdict: "ispell-dict"  
@c End:  
Unless otherwise stated, all files in this directory are Copyright (C) 1991,1992,1993,1994,1995,1996,1997,1998,1999,2000,2001,2002,2003,2004,2005,2006,2007,2008,2009,2010,2011  
Free Software Foundation, Inc.

See the file COPYING in the bash distribution root directory for copying and usage restrictions.

The file ifs-posix.tests is Copyright (C) 2005 Glen Fowler.

## 1.221 aop-alliance 1.0

### 1.221.1 Available under license :

Public Domain

## 1.222 tomcat 8.5.82

### 1.222.1 Available under license :

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

##### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.



"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but

excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. **Grant of Copyright License.** Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. **Grant of Patent License.** Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. **Redistribution.** You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its

distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise,

unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

### APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

## APACHE TOMCAT SUBCOMPONENTS:

Apache Tomcat includes a number of subcomponents with separate copyright notices and license terms. Your use of these subcomponents is subject to the terms and conditions of the following licenses.

For the Eclipse JDT Core Batch Compiler (ecj-x.x.x.jar) component:

Eclipse Public License - v 1.0

THE ACCOMPANYING PROGRAM IS PROVIDED UNDER THE TERMS OF THIS ECLIPSE PUBLIC LICENSE ("AGREEMENT"). ANY USE, REPRODUCTION OR DISTRIBUTION OF THE PROGRAM CONSTITUTES RECIPIENT'S ACCEPTANCE OF THIS AGREEMENT.

### 1. DEFINITIONS

"Contribution" means:

a) in the case of the initial Contributor, the initial code and documentation distributed under this Agreement, and

b) in the case of each subsequent Contributor:

i) changes to the Program, and

ii) additions to the Program;

where such changes and/or additions to the Program originate from and are distributed by that particular Contributor. A Contribution 'originates' from a Contributor if it was added to the Program by such Contributor itself or anyone acting on such Contributor's behalf. Contributions do not include additions to the Program which: (i) are separate modules of software distributed in conjunction with the Program under their own license agreement, and (ii) are not derivative works of the Program.

"Contributor" means any person or entity that distributes the Program.

"Licensed Patents" mean patent claims licensable by a Contributor which are necessarily infringed by the use or sale of its Contribution alone or when combined with the Program.

"Program" means the Contributions distributed in accordance with this Agreement.

"Recipient" means anyone who receives the Program under this Agreement, including all Contributors.

## 2. GRANT OF RIGHTS

a) Subject to the terms of this Agreement, each Contributor hereby grants Recipient a non-exclusive, worldwide, royalty-free copyright license to reproduce, prepare derivative works of, publicly display, publicly perform, distribute and sublicense the Contribution of such Contributor, if any, and such derivative works, in source code and object code form.

b) Subject to the terms of this Agreement, each Contributor hereby grants Recipient a non-exclusive, worldwide, royalty-free patent license under Licensed Patents to make, use, sell, offer to sell, import and otherwise transfer the Contribution of such Contributor, if any, in source code and object code form. This patent license shall apply to the combination of the Contribution and the Program if, at the time the Contribution is added by the Contributor, such addition of the Contribution causes such combination to be covered by the Licensed Patents. The patent license shall not apply to any other combinations which include the Contribution. No hardware per se is licensed hereunder.

c) Recipient understands that although each Contributor grants the licenses to its Contributions set forth herein, no assurances are provided by any Contributor that the Program does not infringe the patent or other intellectual property rights of any other entity. Each Contributor disclaims any liability to Recipient for claims brought by any other entity based on infringement of intellectual property rights or otherwise. As a condition to exercising the rights and licenses granted hereunder, each Recipient hereby assumes sole responsibility to secure any other intellectual property rights needed, if any. For example, if a third party patent license is required to allow Recipient to distribute the Program, it is Recipient's responsibility to acquire that license before distributing the Program.

d) Each Contributor represents that to its knowledge it has sufficient copyright rights in its Contribution, if any, to grant the copyright license set forth in this Agreement.

## 3. REQUIREMENTS

A Contributor may choose to distribute the Program in object code form under its own license agreement, provided that:

a) it complies with the terms and conditions of this Agreement; and

b) its license agreement:

i) effectively disclaims on behalf of all Contributors all warranties and conditions, express and implied, including warranties or conditions of title and non-infringement, and implied warranties or conditions of merchantability and fitness for a particular purpose;

ii) effectively excludes on behalf of all Contributors all liability for damages, including direct, indirect, special, incidental and consequential damages, such as lost profits;

iii) states that any provisions which differ from this Agreement are offered by that Contributor alone and not by any other party; and

iv) states that source code for the Program is available from such Contributor, and informs licensees how to obtain it in a reasonable manner on or through a medium customarily used for software exchange.

When the Program is made available in source code form:

a) it must be made available under this Agreement; and

b) a copy of this Agreement must be included with each copy of the Program.

Contributors may not remove or alter any copyright notices contained within the Program.

Each Contributor must identify itself as the originator of its Contribution, if any, in a manner that reasonably allows subsequent Recipients to identify the originator of the Contribution.

#### 4. COMMERCIAL DISTRIBUTION

Commercial distributors of software may accept certain responsibilities with respect to end users, business partners and the like. While this license is intended to facilitate the commercial use of the Program, the Contributor who includes the Program in a commercial product offering should do so in a manner which does not create potential liability for other Contributors. Therefore, if a Contributor includes the Program in a commercial product offering, such Contributor ("Commercial Contributor") hereby agrees to defend and indemnify every other Contributor ("Indemnified Contributor") against any losses, damages and costs (collectively "Losses") arising from claims, lawsuits and other legal actions brought by a third party against the Indemnified Contributor to the extent caused by the acts or omissions of such Commercial Contributor in connection with its distribution of the Program in a commercial product offering. The obligations in this section do not apply to any claims or Losses relating to any actual or alleged intellectual property infringement. In order to qualify, an Indemnified Contributor must: a) promptly notify the Commercial Contributor in writing of such claim, and b) allow the Commercial Contributor to control, and cooperate with the Commercial Contributor in, the defense and any related settlement negotiations. The Indemnified Contributor may participate in any such claim at its own expense.

For example, a Contributor might include the Program in a commercial product

offering, Product X. That Contributor is then a Commercial Contributor. If that Commercial Contributor then makes performance claims, or offers warranties related to Product X, those performance claims and warranties are such Commercial Contributor's responsibility alone. Under this section, the Commercial Contributor would have to defend claims against the other Contributors related to those performance claims and warranties, and if a court requires any other Contributor to pay any damages as a result, the Commercial Contributor must pay those damages.

## 5. NO WARRANTY

EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, THE PROGRAM IS PROVIDED ON AN "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, EITHER EXPRESS OR IMPLIED INCLUDING, WITHOUT LIMITATION, ANY WARRANTIES OR CONDITIONS OF TITLE, NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Each Recipient is solely responsible for determining the appropriateness of using and distributing the Program and assumes all risks associated with its exercise of rights under this Agreement, including but not limited to the risks and costs of program errors, compliance with applicable laws, damage to or loss of data, programs or equipment, and unavailability or interruption of operations.

## 6. DISCLAIMER OF LIABILITY

EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, NEITHER RECIPIENT NOR ANY CONTRIBUTORS SHALL HAVE ANY LIABILITY FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING WITHOUT LIMITATION LOST PROFITS), HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OR DISTRIBUTION OF THE PROGRAM OR THE EXERCISE OF ANY RIGHTS GRANTED HEREUNDER, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## 7. GENERAL

If any provision of this Agreement is invalid or unenforceable under applicable law, it shall not affect the validity or enforceability of the remainder of the terms of this Agreement, and without further action by the parties hereto, such provision shall be reformed to the minimum extent necessary to make such provision valid and enforceable.

If Recipient institutes patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Program itself (excluding combinations of the Program with other software or hardware) infringes such Recipient's patent(s), then such Recipient's rights granted under Section 2(b) shall terminate as of the date such litigation is filed.

All Recipient's rights under this Agreement shall terminate if it fails to comply with any of the material terms or conditions of this Agreement and does not cure such failure in a reasonable period of time after becoming aware of



such noncompliance. If all Recipient's rights under this Agreement terminate, Recipient agrees to cease use and distribution of the Program as soon as reasonably practicable. However, Recipient's obligations under this Agreement and any licenses granted by Recipient relating to the Program shall continue and survive.

Everyone is permitted to copy and distribute copies of this Agreement, but in order to avoid inconsistency the Agreement is copyrighted and may only be modified in the following manner. The Agreement Steward reserves the right to publish new versions (including revisions) of this Agreement from time to time. No one other than the Agreement Steward has the right to modify this Agreement. The Eclipse Foundation is the initial Agreement Steward. The Eclipse Foundation may assign the responsibility to serve as the Agreement Steward to a suitable separate entity. Each new version of the Agreement will be given a distinguishing version number. The Program (including Contributions) may always be distributed subject to the version of the Agreement under which it was received. In addition, after a new version of the Agreement is published, Contributor may elect to distribute the Program (including its Contributions) under the new version. Except as expressly stated in Sections 2(a) and 2(b) above, Recipient receives no rights or licenses to the intellectual property of any Contributor under this Agreement, whether expressly, by implication, estoppel or otherwise. All rights in the Program not expressly granted under this Agreement are reserved.

This Agreement is governed by the laws of the State of New York and the intellectual property laws of the United States of America. No party to this Agreement will bring a legal action under this Agreement more than one year after the cause of action arose. Each party waives its rights to a jury trial in any resulting litigation.

For the Windows Installer component:

- \* All NSIS source code, plug-ins, documentation, examples, header files and graphics, with the exception of the compression modules and where otherwise noted, are licensed under the zlib/libpng license.
- \* The zlib compression module for NSIS is licensed under the zlib/libpng license.
- \* The bzip2 compression module for NSIS is licensed under the bzip2 license.
- \* The lzma compression module for NSIS is licensed under the Common Public License version 1.0.

zlib/libpng license

This software is provided 'as-is', without any express or implied warranty. In no event will the authors be held liable for any damages arising from the use of this software.

Permission is granted to anyone to use this software for any purpose, including commercial applications, and to alter it and redistribute it freely, subject to the following restrictions:

1. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated but is not required.
2. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
3. This notice may not be removed or altered from any source distribution.

bzip2 license

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated but is not required.
3. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
4. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Julian Seward, Cambridge, UK.

[jseward@acm.org](mailto:jseward@acm.org)

Common Public License version 1.0

THE ACCOMPANYING PROGRAM IS PROVIDED UNDER THE TERMS OF THIS COMMON PUBLIC LICENSE ("AGREEMENT"). ANY USE, REPRODUCTION OR DISTRIBUTION OF THE PROGRAM CONSTITUTES RECIPIENT'S ACCEPTANCE OF THIS AGREEMENT.

## 1. DEFINITIONS

"Contribution" means:

a) in the case of the initial Contributor, the initial code and documentation distributed under this Agreement, and b) in the case of each subsequent Contributor:

i) changes to the Program, and

ii) additions to the Program;

where such changes and/or additions to the Program originate from and are distributed by that particular Contributor. A Contribution 'originates' from a Contributor if it was added to the Program by such Contributor itself or anyone acting on such Contributor's behalf. Contributions do not include additions to the Program which: (i) are separate modules of software distributed in conjunction with the Program under their own license agreement, and (ii) are not derivative works of the Program.

"Contributor" means any person or entity that distributes the Program.

"Licensed Patents " mean patent claims licensable by a Contributor which are necessarily infringed by the use or sale of its Contribution alone or when combined with the Program.

"Program" means the Contributions distributed in accordance with this Agreement.

"Recipient" means anyone who receives the Program under this Agreement, including all Contributors.

## 2. GRANT OF RIGHTS

a) Subject to the terms of this Agreement, each Contributor hereby grants Recipient a non-exclusive, worldwide, royalty-free copyright license to reproduce, prepare derivative works of, publicly display, publicly perform, distribute and sublicense the Contribution of such Contributor, if any, and such derivative works, in source code and object code form.

b) Subject to the terms of this Agreement, each Contributor hereby grants Recipient a non-exclusive, worldwide, royalty-free patent license under Licensed Patents to make, use, sell, offer to sell, import and otherwise transfer the Contribution of such Contributor, if any, in source code and object code form. This patent license shall apply to the combination of the Contribution and the Program if, at the time the Contribution is added by the Contributor, such addition of the Contribution causes such combination to be covered by the Licensed Patents. The patent license shall not apply to any other combinations which include the Contribution. No hardware per se is licensed hereunder.

c) Recipient understands that although each Contributor grants the licenses to its Contributions set forth herein, no assurances are provided by any Contributor that the Program does not infringe the patent or other intellectual property rights of any other entity. Each Contributor disclaims any liability to Recipient for claims brought by any other entity based on infringement of intellectual property rights or otherwise. As a condition to exercising the rights and licenses granted hereunder, each Recipient hereby assumes sole responsibility to secure any other intellectual property rights needed, if any. For example, if a third party patent license is required to allow Recipient to distribute the Program, it is Recipient's responsibility to acquire that license before distributing the Program.

d) Each Contributor represents that to its knowledge it has sufficient copyright rights in its Contribution, if any, to grant the copyright license set forth in this Agreement.

### 3. REQUIREMENTS

A Contributor may choose to distribute the Program in object code form under its own license agreement, provided that:

a) it complies with the terms and conditions of this Agreement; and

b) its license agreement:

i) effectively disclaims on behalf of all Contributors all warranties and conditions, express and implied, including warranties or conditions of title and non-infringement, and implied warranties or conditions of merchantability and fitness for a particular purpose;

ii) effectively excludes on behalf of all Contributors all liability for damages, including direct, indirect, special, incidental and consequential damages, such as lost profits;

iii) states that any provisions which differ from this Agreement are offered by that Contributor alone and not by any other party; and

iv) states that source code for the Program is available from such Contributor, and informs licensees how to obtain it in a reasonable manner on or through a medium customarily used for software exchange.

When the Program is made available in source code form:

a) it must be made available under this Agreement; and

b) a copy of this Agreement must be included with each copy of the Program.

Contributors may not remove or alter any copyright notices contained within the Program.

Each Contributor must identify itself as the originator of its Contribution, if any, in a manner that reasonably allows subsequent Recipients to identify the originator of the Contribution.

#### 4. COMMERCIAL DISTRIBUTION

Commercial distributors of software may accept certain responsibilities with respect to end users, business partners and the like. While this license is intended to facilitate the commercial use of the Program, the Contributor who includes the Program in a commercial product offering should do so in a manner which does not create potential liability for other Contributors. Therefore, if a Contributor includes the Program in a commercial product offering, such Contributor ("Commercial Contributor") hereby agrees to defend and indemnify every other Contributor ("Indemnified Contributor") against any losses, damages and costs (collectively "Losses") arising from claims, lawsuits and other legal actions brought by a third party against the Indemnified Contributor to the extent caused by the acts or omissions of such Commercial Contributor in connection with its distribution of the Program in a commercial product offering. The obligations in this section do not apply to any claims or Losses relating to any actual or alleged intellectual property infringement. In order to qualify, an Indemnified Contributor must: a) promptly notify the Commercial Contributor in writing of such claim, and b) allow the Commercial Contributor to control, and cooperate with the Commercial Contributor in, the defense and any related settlement negotiations. The Indemnified Contributor may participate in any such claim at its own expense.

For example, a Contributor might include the Program in a commercial product offering, Product X. That Contributor is then a Commercial Contributor. If that Commercial Contributor then makes performance claims, or offers warranties related to Product X, those performance claims and warranties are such Commercial Contributor's responsibility alone. Under this section, the Commercial Contributor would have to defend claims against the other Contributors related to those performance claims and warranties, and if a court requires any other Contributor to pay any damages as a result, the Commercial Contributor must pay those damages.

#### 5. NO WARRANTY

EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, THE PROGRAM IS PROVIDED ON AN "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, EITHER EXPRESS OR IMPLIED INCLUDING, WITHOUT LIMITATION, ANY WARRANTIES OR CONDITIONS OF TITLE, NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Each Recipient is solely responsible for determining the appropriateness of using and distributing the Program and assumes all risks associated with its exercise of rights under this Agreement, including but not limited to the risks and costs of

program errors, compliance with applicable laws, damage to or loss of data, programs or equipment, and unavailability or interruption of operations.

## 6. DISCLAIMER OF LIABILITY

EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, NEITHER RECIPIENT NOR ANY CONTRIBUTORS SHALL HAVE ANY LIABILITY FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING WITHOUT LIMITATION LOST PROFITS), HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OR DISTRIBUTION OF THE PROGRAM OR THE EXERCISE OF ANY RIGHTS GRANTED HEREUNDER, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## 7. GENERAL

If any provision of this Agreement is invalid or unenforceable under applicable law, it shall not affect the validity or enforceability of the remainder of the terms of this Agreement, and without further action by the parties hereto, such provision shall be reformed to the minimum extent necessary to make such provision valid and enforceable.

If Recipient institutes patent litigation against a Contributor with respect to a patent applicable to software (including a cross-claim or counterclaim in a lawsuit), then any patent licenses granted by that Contributor to such Recipient under this Agreement shall terminate as of the date such litigation is filed. In addition, if Recipient institutes patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Program itself (excluding combinations of the Program with other software or hardware) infringes such Recipient's patent(s), then such Recipient's rights granted under Section 2(b) shall terminate as of the date such litigation is filed.

All Recipient's rights under this Agreement shall terminate if it fails to comply with any of the material terms or conditions of this Agreement and does not cure such failure in a reasonable period of time after becoming aware of such noncompliance. If all Recipient's rights under this Agreement terminate, Recipient agrees to cease use and distribution of the Program as soon as reasonably practicable. However, Recipient's obligations under this Agreement and any licenses granted by Recipient relating to the Program shall continue and survive.

Everyone is permitted to copy and distribute copies of this Agreement, but in order to avoid inconsistency the Agreement is copyrighted and may only be modified in the following manner. The Agreement Steward reserves the right to publish new versions (including revisions) of this Agreement from time to time. No one other than the Agreement Steward has the right to modify this Agreement. IBM is the initial Agreement Steward. IBM may assign the responsibility to serve as the Agreement Steward to a suitable separate entity. Each new version of the Agreement will be given a distinguishing version number. The Program (including

Contributions) may always be distributed subject to the version of the Agreement under which it was received. In addition, after a new version of the Agreement is published, Contributor may elect to distribute the Program (including its Contributions) under the new version. Except as expressly stated in Sections 2(a) and 2(b) above, Recipient receives no rights or licenses to the intellectual property of any Contributor under this Agreement, whether expressly, by implication, estoppel or otherwise. All rights in the Program not expressly granted under this Agreement are reserved.

This Agreement is governed by the laws of the State of New York and the intellectual property laws of the United States of America. No party to this Agreement will bring a legal action under this Agreement more than one year after the cause of action arose. Each party waives its rights to a jury trial in any resulting litigation.

Special exception for LZMA compression module

Igor Pavlov and Amir Szekely, the authors of the LZMA compression module for NSIS, expressly permit you to statically or dynamically link your code (or bind by name) to the files from the LZMA compression module for NSIS without subjecting your linked code to the terms of the Common Public license version 1.0. Any modifications or additions to files from the LZMA compression module for NSIS, however, are subject to the terms of the Common Public License version 1.0.

For the following XML Schemas for Java EE Deployment Descriptors:

- javaee\_5.xsd
- javaee\_web\_services\_1\_2.xsd
- javaee\_web\_services\_client\_1\_2.xsd
- javaee\_6.xsd
- javaee\_web\_services\_1\_3.xsd
- javaee\_web\_services\_client\_1\_3.xsd
- jsp\_2\_2.xsd
- web-app\_3\_0.xsd
- web-common\_3\_0.xsd
- web-fragment\_3\_0.xsd
- javaee\_7.xsd
- javaee\_web\_services\_1\_4.xsd
- javaee\_web\_services\_client\_1\_4.xsd
- jsp\_2\_3.xsd
- web-app\_3\_1.xsd
- web-common\_3\_1.xsd
- web-fragment\_3\_1.xsd

COMMON DEVELOPMENT AND DISTRIBUTION LICENSE (CDDL) Version 1.0

1. Definitions.

- 1.1. Contributor. means each individual or entity that creates or contributes to the creation of Modifications.
- 1.2. Contributor Version. means the combination of the Original Software, prior Modifications used by a Contributor (if any), and the Modifications made by that particular Contributor.
- 1.3. Covered Software. means (a) the Original Software, or (b) Modifications, or (c) the combination of files containing Original Software with files containing Modifications, in each case including portions thereof.
- 1.4. Executable. means the Covered Software in any form other than Source Code.
- 1.5. Initial Developer. means the individual or entity that first makes Original Software available under this License.
- 1.6. Larger Work. means a work which combines Covered Software or portions thereof with code not governed by the terms of this License.
- 1.7. License. means this document.
- 1.8. Licensable. means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently acquired, any and all of the rights conveyed herein.
- 1.9. Modifications. means the Source Code and Executable form of any of the following:
  - A. Any file that results from an addition to, deletion from or modification of the contents of a file containing Original Software or previous Modifications;
  - B. Any new file that contains any part of the Original Software or previous Modification; or
  - C. Any new file that is contributed or otherwise made available under the terms of this License.
- 1.10. Original Software. means the Source Code and Executable form of computer software code that is originally released under this License.
- 1.11. Patent Claims. means any patent claim(s), now owned or hereafter acquired, including without limitation, method, process, and apparatus claims, in any patent Licensable by grantor.
- 1.12. Source Code. means (a) the common form of computer software code in



which modifications are made and (b) associated documentation included in or with such code.

1.13. You. (or .Your.) means an individual or a legal entity exercising rights under, and complying with all of the terms of, this License. For legal entities, .You. includes any entity which controls, is controlled by, or is under common control with You. For purposes of this definition, .control. means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

## 2. License Grants.

### 2.1. The Initial Developer Grant.

Conditioned upon Your compliance with Section 3.1 below and subject to third party intellectual property claims, the Initial Developer hereby grants You a world-wide, royalty-free, non-exclusive license:

- (a) under intellectual property rights (other than patent or trademark) Licensable by Initial Developer, to use, reproduce, modify, display, perform, sublicense and distribute the Original Software (or portions thereof), with or without Modifications, and/or as part of a Larger Work; and
- (b) under Patent Claims infringed by the making, using or selling of Original Software, to make, have made, use, practice, sell, and offer for sale, and/or otherwise dispose of the Original Software (or portions thereof).
- (c) The licenses granted in Sections 2.1(a) and (b) are effective on the date Initial Developer first distributes or otherwise makes the Original Software available to a third party under the terms of this License.
- (d) Notwithstanding Section 2.1(b) above, no patent license is granted:
  - (1) for code that You delete from the Original Software, or
  - (2) for infringements caused by: (i) the modification of the Original Software, or (ii) the combination of the Original Software with other software or devices.

### 2.2. Contributor Grant.

Conditioned upon Your compliance with Section 3.1 below and subject to third party intellectual property claims, each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:

- (a) under intellectual property rights (other than patent or trademark)  
Licensable by Contributor to use, reproduce, modify, display, perform, sublicense and distribute the Modifications created by such Contributor (or portions thereof), either on an unmodified basis, with other Modifications, as Covered Software and/or as part of a Larger Work; and
- (b) under Patent Claims infringed by the making, using, or selling of Modifications made by that Contributor either alone and/or in combination with its Contributor Version (or portions of such combination), to make, use, sell, offer for sale, have made, and/or otherwise dispose of: (1) Modifications made by that Contributor (or portions thereof); and (2) the combination of Modifications made by that Contributor with its Contributor Version (or portions of such combination).
- (c) The licenses granted in Sections 2.2(a) and 2.2(b) are effective on the date Contributor first distributes or otherwise makes the Modifications available to a third party.
- (d) Notwithstanding Section 2.2(b) above, no patent license is granted:  
(1) for any code that Contributor has deleted from the Contributor Version; (2) for infringements caused by: (i) third party modifications of Contributor Version, or (ii) the combination of Modifications made by that Contributor with other software (except as part of the Contributor Version) or other devices; or (3) under Patent Claims infringed by Covered Software in the absence of Modifications made by that Contributor.

### 3. Distribution Obligations.

#### 3.1. Availability of Source Code.

Any Covered Software that You distribute or otherwise make available in Executable form must also be made available in Source Code form and that Source Code form must be distributed only under the terms of this License. You must include a copy of this License with every copy of the Source Code form of the Covered Software You distribute or otherwise make available. You must inform recipients of any such Covered Software in Executable form as to how they can obtain such Covered Software in Source Code form in a reasonable manner on or through a medium customarily used for software exchange.

#### 3.2. Modifications.

The Modifications that You create or to which You contribute are governed by the terms of this License. You represent that You believe Your Modifications are Your original creation(s) and/or You have sufficient rights to grant the rights conveyed by this License.

### 3.3. Required Notices.

You must include a notice in each of Your Modifications that identifies You as the Contributor of the Modification. You may not remove or alter any copyright, patent or trademark notices contained within the Covered Software, or any notices of licensing or any descriptive text giving attribution to any Contributor or the Initial Developer.

### 3.4. Application of Additional Terms.

You may not offer or impose any terms on any Covered Software in Source Code form that alters or restricts the applicable version of this License or the recipients' rights hereunder. You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Software. However, you may do so only on Your own behalf, and not on behalf of the Initial Developer or any Contributor. You must make it absolutely clear that any such warranty, support, indemnity or liability obligation is offered by You alone, and You hereby agree to indemnify the Initial Developer and every Contributor for any liability incurred by the Initial Developer or such Contributor as a result of warranty, support, indemnity or liability terms You offer.

### 3.5. Distribution of Executable Versions.

You may distribute the Executable form of the Covered Software under the terms of this License or under the terms of a license of Your choice, which may contain terms different from this License, provided that You are in compliance with the terms of this License and that the license for the Executable form does not attempt to limit or alter the recipient's rights in the Source Code form from the rights set forth in this License. If You distribute the Covered Software in Executable form under a different license, You must make it absolutely clear that any terms which differ from this License are offered by You alone, not by the Initial Developer or Contributor. You hereby agree to indemnify the Initial Developer and every Contributor for any liability incurred by the Initial Developer or such Contributor as a result of any such terms You offer.

### 3.6. Larger Works.

You may create a Larger Work by combining Covered Software with other code not governed by the terms of this License and distribute the Larger Work as a single product. In such a case, You must make sure the requirements of this License are fulfilled for the Covered Software.

## 4. Versions of the License.

### 4.1. New Versions.

Sun Microsystems, Inc. is the initial license steward and may publish revised and/or new versions of this License from time to time. Each version will be given a distinguishing version number. Except as provided in Section 4.3, no one other than the license steward has the right to modify this License.

#### 4.2. Effect of New Versions.

You may always continue to use, distribute or otherwise make the Covered Software available under the terms of the version of the License under which You originally received the Covered Software. If the Initial Developer includes a notice in the Original Software prohibiting it from being distributed or otherwise made available under any subsequent version of the License, You must distribute and make the Covered Software available under the terms of the version of the License under which You originally received the Covered Software. Otherwise, You may also choose to use, distribute or otherwise make the Covered Software available under the terms of any subsequent version of the License published by the license steward.

#### 4.3. Modified Versions.

When You are an Initial Developer and You want to create a new license for Your Original Software, You may create and use a modified version of this License if You: (a) rename the license and remove any references to the name of the license steward (except to note that the license differs from this License); and (b) otherwise make it clear that the license contains terms which differ from this License.

### 5. DISCLAIMER OF WARRANTY.

COVERED SOFTWARE IS PROVIDED UNDER THIS LICENSE ON AN .AS IS. BASIS, WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTIES THAT THE COVERED SOFTWARE IS FREE OF DEFECTS, MERCHANTABILITY, FIT FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE COVERED SOFTWARE IS WITH YOU. SHOULD ANY COVERED SOFTWARE PROVE DEFECTIVE IN ANY RESPECT, YOU (NOT THE INITIAL DEVELOPER OR ANY OTHER CONTRIBUTOR) ASSUME THE COST OF ANY NECESSARY SERVICING, REPAIR OR CORRECTION. THIS DISCLAIMER OF WARRANTY CONSTITUTES AN ESSENTIAL PART OF THIS LICENSE. NO USE OF ANY COVERED SOFTWARE IS AUTHORIZED HEREUNDER EXCEPT UNDER THIS DISCLAIMER.

### 6. TERMINATION.

- 6.1. This License and the rights granted hereunder will terminate automatically if You fail to comply with terms herein and fail to cure such breach within 30 days of becoming aware of the breach. Provisions which, by their nature, must remain in effect beyond the termination of this License shall survive.
- 6.2. If You assert a patent infringement claim (excluding declaratory judgment actions) against Initial Developer or a Contributor (the Initial Developer or Contributor against whom You assert such claim is referred to as .Participant.) alleging that the Participant Software (meaning the Contributor Version where the Participant is a

Contributor or the Original Software where the Participant is the Initial Developer) directly or indirectly infringes any patent, then any and all rights granted directly or indirectly to You by such Participant, the Initial Developer (if the Initial Developer is not the Participant) and all Contributors under Sections 2.1 and/or 2.2 of this License shall, upon 60 days notice from Participant terminate prospectively and automatically at the expiration of such 60 day notice period, unless if within such 60 day period You withdraw Your claim with respect to the Participant Software against such Participant either unilaterally or pursuant to a written agreement with Participant.

6.3. In the event of termination under Sections 6.1 or 6.2 above, all end user licenses that have been validly granted by You or any distributor hereunder prior to termination (excluding licenses granted to You by any distributor) shall survive termination.

## 7. LIMITATION OF LIABILITY.

UNDER NO CIRCUMSTANCES AND UNDER NO LEGAL THEORY, WHETHER TORT (INCLUDING NEGLIGENCE), CONTRACT, OR OTHERWISE, SHALL YOU, THE INITIAL DEVELOPER, ANY OTHER CONTRIBUTOR, OR ANY DISTRIBUTOR OF COVERED SOFTWARE, OR ANY SUPPLIER OF ANY OF SUCH PARTIES, BE LIABLE TO ANY PERSON FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES OF ANY CHARACTER INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOST PROFITS, LOSS OF GOODWILL, WORK STOPPAGE, COMPUTER FAILURE OR MALFUNCTION, OR ANY AND ALL OTHER COMMERCIAL DAMAGES OR LOSSES, EVEN IF SUCH PARTY SHALL HAVE BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. THIS LIMITATION OF LIABILITY SHALL NOT APPLY TO LIABILITY FOR DEATH OR PERSONAL INJURY RESULTING FROM SUCH PARTY'S NEGLIGENCE TO THE EXTENT APPLICABLE LAW PROHIBITS SUCH LIMITATION. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THIS EXCLUSION AND LIMITATION MAY NOT APPLY TO YOU.

## 8. U.S. GOVERNMENT END USERS.

The Covered Software is a .commercial item., as that term is defined in 48 C.F.R. 2.101 (Oct. 1995), consisting of .commercial computer software. (as that term is defined at 48 C.F.R. ? 252.227-7014(a)(1)) and commercial computer software documentation. as such terms are used in 48 C.F.R. 12.212 (Sept. 1995). Consistent with 48 C.F.R. 12.212 and 48 C.F.R. 227.7202-1 through 227.7202-4 (June 1995), all U.S. Government End Users acquire Covered Software with only those rights set forth herein. This U.S. Government Rights clause is in lieu of, and supersedes, any other FAR, DFAR, or other clause or provision that addresses Government rights in computer software under this License.

## 9. MISCELLANEOUS.

This License represents the complete agreement concerning subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable. This License shall be governed by the law of the jurisdiction specified in a notice contained within the Original Software (except to the extent applicable law, if any, provides otherwise), excluding such jurisdiction's conflict-of-law provisions. Any litigation relating to this License shall be subject to the jurisdiction of the courts located in the jurisdiction and venue specified in a notice contained within the Original Software, with the losing party responsible for costs, including, without limitation, court costs and reasonable attorneys' fees and expenses. The application of the United Nations Convention on Contracts for the International Sale of Goods is expressly excluded. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not apply to this License. You agree that You alone are responsible for compliance with the United States export administration regulations (and the export control laws and regulation of any other countries) when You use, distribute or otherwise make available any Covered Software.

#### 10. RESPONSIBILITY FOR CLAIMS.

As between Initial Developer and the Contributors, each party is responsible for claims and damages arising, directly or indirectly, out of its utilization of rights under this License and You agree to work with Initial Developer and Contributors to distribute such responsibility on an equitable basis. Nothing herein is intended or shall be deemed to constitute any admission of liability.

#### NOTICE PURSUANT TO SECTION 9 OF THE COMMON DEVELOPMENT AND DISTRIBUTION LICENSE (CDDL)

The code released under the CDDL shall be governed by the laws of the State of California (excluding conflict-of-law provisions). Any litigation relating to this License shall be subject to the jurisdiction of the Federal Courts of the Northern District of California and the state courts of the State of California, with venue lying in Santa Clara County, California.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

##### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but

excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. **Grant of Copyright License.** Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. **Grant of Patent License.** Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. **Redistribution.** You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its



distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise,

unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

### APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

## APACHE TOMCAT SUBCOMPONENTS:

Apache Tomcat includes a number of subcomponents with separate copyright notices and license terms. Your use of these subcomponents is subject to the terms and conditions of the following licenses.

For the ecj-x.x.x.jar component and the EnclosingMethod and LocalVariableTypeTable classes in the org.apache.tomcat.util.bcel.classfile package:

Eclipse Public License - v 1.0

THE ACCOMPANYING PROGRAM IS PROVIDED UNDER THE TERMS OF THIS ECLIPSE PUBLIC LICENSE ("AGREEMENT"). ANY USE, REPRODUCTION OR DISTRIBUTION OF THE PROGRAM CONSTITUTES RECIPIENT'S ACCEPTANCE OF THIS AGREEMENT.

### 1. DEFINITIONS

"Contribution" means:

a) in the case of the initial Contributor, the initial code and documentation distributed under this Agreement, and

b) in the case of each subsequent Contributor:

i) changes to the Program, and

ii) additions to the Program;

where such changes and/or additions to the Program originate from and are distributed by that particular Contributor. A Contribution 'originates' from a Contributor if it was added to the Program by such Contributor itself or anyone acting on such Contributor's behalf. Contributions do not include additions to the Program which: (i) are separate modules of software distributed in conjunction with the Program under their own license agreement, and (ii) are not derivative works of the Program.

"Contributor" means any person or entity that distributes the Program.

"Licensed Patents" mean patent claims licensable by a Contributor which are necessarily infringed by the use or sale of its Contribution alone or when combined with the Program.

"Program" means the Contributions distributed in accordance with this Agreement.

"Recipient" means anyone who receives the Program under this Agreement, including all Contributors.

## 2. GRANT OF RIGHTS

a) Subject to the terms of this Agreement, each Contributor hereby grants Recipient a non-exclusive, worldwide, royalty-free copyright license to reproduce, prepare derivative works of, publicly display, publicly perform, distribute and sublicense the Contribution of such Contributor, if any, and such derivative works, in source code and object code form.

b) Subject to the terms of this Agreement, each Contributor hereby grants Recipient a non-exclusive, worldwide, royalty-free patent license under Licensed Patents to make, use, sell, offer to sell, import and otherwise transfer the Contribution of such Contributor, if any, in source code and object code form. This patent license shall apply to the combination of the Contribution and the Program if, at the time the Contribution is added by the Contributor, such addition of the Contribution causes such combination to be covered by the Licensed Patents. The patent license shall not apply to any other combinations which include the Contribution. No hardware per se is licensed hereunder.

c) Recipient understands that although each Contributor grants the licenses to its Contributions set forth herein, no assurances are provided by any Contributor that the Program does not infringe the patent or other intellectual property rights of any other entity. Each Contributor disclaims any liability to Recipient for claims brought by any other entity based on infringement of intellectual property rights or otherwise. As a condition to exercising the rights and licenses granted hereunder, each Recipient hereby assumes sole responsibility to secure any other intellectual property rights needed, if any. For example, if a third party patent license is required to allow Recipient to distribute the Program, it is Recipient's responsibility to acquire that license before distributing the Program.

d) Each Contributor represents that to its knowledge it has sufficient copyright rights in its Contribution, if any, to grant the copyright license set forth in this Agreement.

## 3. REQUIREMENTS

A Contributor may choose to distribute the Program in object code form under its own license agreement, provided that:

a) it complies with the terms and conditions of this Agreement; and

b) its license agreement:

i) effectively disclaims on behalf of all Contributors all warranties and conditions, express and implied, including warranties or conditions of title and

non-infringement, and implied warranties or conditions of merchantability and fitness for a particular purpose;

ii) effectively excludes on behalf of all Contributors all liability for damages, including direct, indirect, special, incidental and consequential damages, such as lost profits;

iii) states that any provisions which differ from this Agreement are offered by that Contributor alone and not by any other party; and

iv) states that source code for the Program is available from such Contributor, and informs licensees how to obtain it in a reasonable manner on or through a medium customarily used for software exchange.

When the Program is made available in source code form:

a) it must be made available under this Agreement; and

b) a copy of this Agreement must be included with each copy of the Program.

Contributors may not remove or alter any copyright notices contained within the Program.

Each Contributor must identify itself as the originator of its Contribution, if any, in a manner that reasonably allows subsequent Recipients to identify the originator of the Contribution.

#### 4. COMMERCIAL DISTRIBUTION

Commercial distributors of software may accept certain responsibilities with respect to end users, business partners and the like. While this license is intended to facilitate the commercial use of the Program, the Contributor who includes the Program in a commercial product offering should do so in a manner which does not create potential liability for other Contributors. Therefore, if a Contributor includes the Program in a commercial product offering, such Contributor ("Commercial Contributor") hereby agrees to defend and indemnify every other Contributor ("Indemnified Contributor") against any losses, damages and costs (collectively "Losses") arising from claims, lawsuits and other legal actions brought by a third party against the Indemnified Contributor to the extent caused by the acts or omissions of such Commercial Contributor in connection with its distribution of the Program in a commercial product offering. The obligations in this section do not apply to any claims or Losses relating to any actual or alleged intellectual property infringement. In order to qualify, an Indemnified Contributor must: a) promptly notify the Commercial Contributor in writing of such claim, and b) allow the Commercial Contributor to control, and cooperate with the Commercial Contributor in, the defense and any related settlement negotiations. The Indemnified Contributor may participate in any such claim at its own expense.

For example, a Contributor might include the Program in a commercial product offering, Product X. That Contributor is then a Commercial Contributor. If that Commercial Contributor then makes performance claims, or offers warranties related to Product X, those performance claims and warranties are such Commercial Contributor's responsibility alone. Under this section, the Commercial Contributor would have to defend claims against the other Contributors related to those performance claims and warranties, and if a court requires any other Contributor to pay any damages as a result, the Commercial Contributor must pay those damages.

## 5. NO WARRANTY

EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, THE PROGRAM IS PROVIDED ON AN "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, EITHER EXPRESS OR IMPLIED INCLUDING, WITHOUT LIMITATION, ANY WARRANTIES OR CONDITIONS OF TITLE, NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Each Recipient is solely responsible for determining the appropriateness of using and distributing the Program and assumes all risks associated with its exercise of rights under this Agreement, including but not limited to the risks and costs of program errors, compliance with applicable laws, damage to or loss of data, programs or equipment, and unavailability or interruption of operations.

## 6. DISCLAIMER OF LIABILITY

EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, NEITHER RECIPIENT NOR ANY CONTRIBUTORS SHALL HAVE ANY LIABILITY FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING WITHOUT LIMITATION LOST PROFITS), HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OR DISTRIBUTION OF THE PROGRAM OR THE EXERCISE OF ANY RIGHTS GRANTED HEREUNDER, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## 7. GENERAL

If any provision of this Agreement is invalid or unenforceable under applicable law, it shall not affect the validity or enforceability of the remainder of the terms of this Agreement, and without further action by the parties hereto, such provision shall be reformed to the minimum extent necessary to make such provision valid and enforceable.

If Recipient institutes patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Program itself (excluding combinations of the Program with other software or hardware) infringes such Recipient's patent(s), then such Recipient's rights granted under Section 2(b) shall terminate as of the date such litigation is filed.

All Recipient's rights under this Agreement shall terminate if it fails to

comply with any of the material terms or conditions of this Agreement and does not cure such failure in a reasonable period of time after becoming aware of such noncompliance. If all Recipient's rights under this Agreement terminate, Recipient agrees to cease use and distribution of the Program as soon as reasonably practicable. However, Recipient's obligations under this Agreement and any licenses granted by Recipient relating to the Program shall continue and survive.

Everyone is permitted to copy and distribute copies of this Agreement, but in order to avoid inconsistency the Agreement is copyrighted and may only be modified in the following manner. The Agreement Steward reserves the right to publish new versions (including revisions) of this Agreement from time to time. No one other than the Agreement Steward has the right to modify this Agreement. The Eclipse Foundation is the initial Agreement Steward. The Eclipse Foundation may assign the responsibility to serve as the Agreement Steward to a suitable separate entity. Each new version of the Agreement will be given a distinguishing version number. The Program (including Contributions) may always be distributed subject to the version of the Agreement under which it was received. In addition, after a new version of the Agreement is published, Contributor may elect to distribute the Program (including its Contributions) under the new version. Except as expressly stated in Sections 2(a) and 2(b) above, Recipient receives no rights or licenses to the intellectual property of any Contributor under this Agreement, whether expressly, by implication, estoppel or otherwise. All rights in the Program not expressly granted under this Agreement are reserved.

This Agreement is governed by the laws of the State of New York and the intellectual property laws of the United States of America. No party to this Agreement will bring a legal action under this Agreement more than one year after the cause of action arose. Each party waives its rights to a jury trial in any resulting litigation.

For the Windows Installer component:

- \* All NSIS source code, plug-ins, documentation, examples, header files and graphics, with the exception of the compression modules and where otherwise noted, are licensed under the zlib/libpng license.
- \* The zlib compression module for NSIS is licensed under the zlib/libpng license.
- \* The bzip2 compression module for NSIS is licensed under the bzip2 license.
- \* The lzma compression module for NSIS is licensed under the Common Public License version 1.0.

zlib/libpng license

This software is provided 'as-is', without any express or implied warranty. In no event will the authors be held liable for any damages arising from the use of

this software.

Permission is granted to anyone to use this software for any purpose, including commercial applications, and to alter it and redistribute it freely, subject to the following restrictions:

1. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated but is not required.
2. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
3. This notice may not be removed or altered from any source distribution.

bzip2 license

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated but is not required.
3. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
4. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Julian Seward, Cambridge, UK.

[jseward@acm.org](mailto:jseward@acm.org)

Common Public License version 1.0

THE ACCOMPANYING PROGRAM IS PROVIDED UNDER THE TERMS OF THIS COMMON PUBLIC LICENSE ("AGREEMENT"). ANY USE, REPRODUCTION OR DISTRIBUTION OF THE PROGRAM



## CONSTITUTES RECIPIENT'S ACCEPTANCE OF THIS AGREEMENT.

### 1. DEFINITIONS

"Contribution" means:

a) in the case of the initial Contributor, the initial code and documentation distributed under this Agreement, and b) in the case of each subsequent Contributor:

i) changes to the Program, and

ii) additions to the Program;

where such changes and/or additions to the Program originate from and are distributed by that particular Contributor. A Contribution 'originates' from a Contributor if it was added to the Program by such Contributor itself or anyone acting on such Contributor's behalf. Contributions do not include additions to the Program which: (i) are separate modules of software distributed in conjunction with the Program under their own license agreement, and (ii) are not derivative works of the Program.

"Contributor" means any person or entity that distributes the Program.

"Licensed Patents " mean patent claims licensable by a Contributor which are necessarily infringed by the use or sale of its Contribution alone or when combined with the Program.

"Program" means the Contributions distributed in accordance with this Agreement.

"Recipient" means anyone who receives the Program under this Agreement, including all Contributors.

### 2. GRANT OF RIGHTS

a) Subject to the terms of this Agreement, each Contributor hereby grants Recipient a non-exclusive, worldwide, royalty-free copyright license to reproduce, prepare derivative works of, publicly display, publicly perform, distribute and sublicense the Contribution of such Contributor, if any, and such derivative works, in source code and object code form.

b) Subject to the terms of this Agreement, each Contributor hereby grants Recipient a non-exclusive, worldwide, royalty-free patent license under Licensed Patents to make, use, sell, offer to sell, import and otherwise transfer the Contribution of such Contributor, if any, in source code and object code form. This patent license shall apply to the combination of the Contribution and the Program if, at the time the Contribution is added by the Contributor, such addition of the Contribution causes such combination to be covered by the

Licensed Patents. The patent license shall not apply to any other combinations which include the Contribution. No hardware per se is licensed hereunder.

c) Recipient understands that although each Contributor grants the licenses to its Contributions set forth herein, no assurances are provided by any Contributor that the Program does not infringe the patent or other intellectual property rights of any other entity. Each Contributor disclaims any liability to Recipient for claims brought by any other entity based on infringement of intellectual property rights or otherwise. As a condition to exercising the rights and licenses granted hereunder, each Recipient hereby assumes sole responsibility to secure any other intellectual property rights needed, if any. For example, if a third party patent license is required to allow Recipient to distribute the Program, it is Recipient's responsibility to acquire that license before distributing the Program.

d) Each Contributor represents that to its knowledge it has sufficient copyright rights in its Contribution, if any, to grant the copyright license set forth in this Agreement.

### 3. REQUIREMENTS

A Contributor may choose to distribute the Program in object code form under its own license agreement, provided that:

- a) it complies with the terms and conditions of this Agreement; and
- b) its license agreement:
  - i) effectively disclaims on behalf of all Contributors all warranties and conditions, express and implied, including warranties or conditions of title and non-infringement, and implied warranties or conditions of merchantability and fitness for a particular purpose;
  - ii) effectively excludes on behalf of all Contributors all liability for damages, including direct, indirect, special, incidental and consequential damages, such as lost profits;
  - iii) states that any provisions which differ from this Agreement are offered by that Contributor alone and not by any other party; and
  - iv) states that source code for the Program is available from such Contributor, and informs licensees how to obtain it in a reasonable manner on or through a medium customarily used for software exchange.

When the Program is made available in source code form:

- a) it must be made available under this Agreement; and

b) a copy of this Agreement must be included with each copy of the Program.

Contributors may not remove or alter any copyright notices contained within the Program.

Each Contributor must identify itself as the originator of its Contribution, if any, in a manner that reasonably allows subsequent Recipients to identify the originator of the Contribution.

#### 4. COMMERCIAL DISTRIBUTION

Commercial distributors of software may accept certain responsibilities with respect to end users, business partners and the like. While this license is intended to facilitate the commercial use of the Program, the Contributor who includes the Program in a commercial product offering should do so in a manner which does not create potential liability for other Contributors. Therefore, if a Contributor includes the Program in a commercial product offering, such Contributor ("Commercial Contributor") hereby agrees to defend and indemnify every other Contributor ("Indemnified Contributor") against any losses, damages and costs (collectively "Losses") arising from claims, lawsuits and other legal actions brought by a third party against the Indemnified Contributor to the extent caused by the acts or omissions of such Commercial Contributor in connection with its distribution of the Program in a commercial product offering. The obligations in this section do not apply to any claims or Losses relating to any actual or alleged intellectual property infringement. In order to qualify, an Indemnified Contributor must: a) promptly notify the Commercial Contributor in writing of such claim, and b) allow the Commercial Contributor to control, and cooperate with the Commercial Contributor in, the defense and any related settlement negotiations. The Indemnified Contributor may participate in any such claim at its own expense.

For example, a Contributor might include the Program in a commercial product offering, Product X. That Contributor is then a Commercial Contributor. If that Commercial Contributor then makes performance claims, or offers warranties related to Product X, those performance claims and warranties are such Commercial Contributor's responsibility alone. Under this section, the Commercial Contributor would have to defend claims against the other Contributors related to those performance claims and warranties, and if a court requires any other Contributor to pay any damages as a result, the Commercial Contributor must pay those damages.

#### 5. NO WARRANTY

EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, THE PROGRAM IS PROVIDED ON AN "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, EITHER EXPRESS OR IMPLIED INCLUDING, WITHOUT LIMITATION, ANY WARRANTIES OR CONDITIONS OF TITLE, NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Each Recipient is solely responsible for determining the appropriateness of using and

distributing the Program and assumes all risks associated with its exercise of rights under this Agreement, including but not limited to the risks and costs of program errors, compliance with applicable laws, damage to or loss of data, programs or equipment, and unavailability or interruption of operations.

## 6. DISCLAIMER OF LIABILITY

EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, NEITHER RECIPIENT NOR ANY CONTRIBUTORS SHALL HAVE ANY LIABILITY FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING WITHOUT LIMITATION LOST PROFITS), HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OR DISTRIBUTION OF THE PROGRAM OR THE EXERCISE OF ANY RIGHTS GRANTED HEREUNDER, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## 7. GENERAL

If any provision of this Agreement is invalid or unenforceable under applicable law, it shall not affect the validity or enforceability of the remainder of the terms of this Agreement, and without further action by the parties hereto, such provision shall be reformed to the minimum extent necessary to make such provision valid and enforceable.

If Recipient institutes patent litigation against a Contributor with respect to a patent applicable to software (including a cross-claim or counterclaim in a lawsuit), then any patent licenses granted by that Contributor to such Recipient under this Agreement shall terminate as of the date such litigation is filed. In addition, if Recipient institutes patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Program itself (excluding combinations of the Program with other software or hardware) infringes such Recipient's patent(s), then such Recipient's rights granted under Section 2(b) shall terminate as of the date such litigation is filed.

All Recipient's rights under this Agreement shall terminate if it fails to comply with any of the material terms or conditions of this Agreement and does not cure such failure in a reasonable period of time after becoming aware of such noncompliance. If all Recipient's rights under this Agreement terminate, Recipient agrees to cease use and distribution of the Program as soon as reasonably practicable. However, Recipient's obligations under this Agreement and any licenses granted by Recipient relating to the Program shall continue and survive.

Everyone is permitted to copy and distribute copies of this Agreement, but in order to avoid inconsistency the Agreement is copyrighted and may only be modified in the following manner. The Agreement Steward reserves the right to publish new versions (including revisions) of this Agreement from time to time. No one other than the Agreement Steward has the right to modify this Agreement. IBM is the initial Agreement Steward. IBM may assign the responsibility to serve

as the Agreement Steward to a suitable separate entity. Each new version of the Agreement will be given a distinguishing version number. The Program (including Contributions) may always be distributed subject to the version of the Agreement under which it was received. In addition, after a new version of the Agreement is published, Contributor may elect to distribute the Program (including its Contributions) under the new version. Except as expressly stated in Sections 2(a) and 2(b) above, Recipient receives no rights or licenses to the intellectual property of any Contributor under this Agreement, whether expressly, by implication, estoppel or otherwise. All rights in the Program not expressly granted under this Agreement are reserved.

This Agreement is governed by the laws of the State of New York and the intellectual property laws of the United States of America. No party to this Agreement will bring a legal action under this Agreement more than one year after the cause of action arose. Each party waives its rights to a jury trial in any resulting litigation.

Special exception for LZMA compression module

Igor Pavlov and Amir Szekely, the authors of the LZMA compression module for NSIS, expressly permit you to statically or dynamically link your code (or bind by name) to the files from the LZMA compression module for NSIS without subjecting your linked code to the terms of the Common Public license version 1.0. Any modifications or additions to files from the LZMA compression module for NSIS, however, are subject to the terms of the Common Public License version 1.0.

For the following XML Schemas for Java EE Deployment Descriptors:

- javaee\_5.xsd
- javaee\_web\_services\_1\_2.xsd
- javaee\_web\_services\_client\_1\_2.xsd
- javaee\_6.xsd
- javaee\_web\_services\_1\_3.xsd
- javaee\_web\_services\_client\_1\_3.xsd
- web-app\_3\_0.xsd
- web-common\_3\_0.xsd
- web-fragment\_3\_0.xsd

COMMON DEVELOPMENT AND DISTRIBUTION LICENSE (CDDL) Version 1.0

## 1. Definitions.

1.1. Contributor. means each individual or entity that creates or contributes to the creation of Modifications.

1.2. Contributor Version. means the combination of the Original Software, prior Modifications used by a Contributor (if any), and the

Modifications made by that particular Contributor.

- 1.3. Covered Software. means (a) the Original Software, or (b) Modifications, or (c) the combination of files containing Original Software with files containing Modifications, in each case including portions thereof.
- 1.4. Executable. means the Covered Software in any form other than Source Code.
- 1.5. Initial Developer. means the individual or entity that first makes Original Software available under this License.
- 1.6. Larger Work. means a work which combines Covered Software or portions thereof with code not governed by the terms of this License.
- 1.7. License. means this document.
- 1.8. Licensable. means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently acquired, any and all of the rights conveyed herein.
- 1.9. Modifications. means the Source Code and Executable form of any of the following:
- A. Any file that results from an addition to, deletion from or modification of the contents of a file containing Original Software or previous Modifications;
  - B. Any new file that contains any part of the Original Software or previous Modification; or
  - C. Any new file that is contributed or otherwise made available under the terms of this License.
- 1.10. Original Software. means the Source Code and Executable form of computer software code that is originally released under this License.
- 1.11. Patent Claims. means any patent claim(s), now owned or hereafter acquired, including without limitation, method, process, and apparatus claims, in any patent Licensable by grantor.
- 1.12. Source Code. means (a) the common form of computer software code in which modifications are made and (b) associated documentation included in or with such code.
- 1.13. You. (or .Your.) means an individual or a legal entity exercising rights under, and complying with all of the terms of, this License. For legal entities, .You. includes any entity which controls, is controlled

by, or is under common control with You. For purposes of this definition, .control. means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

## 2. License Grants.

### 2.1. The Initial Developer Grant.

Conditioned upon Your compliance with Section 3.1 below and subject to third party intellectual property claims, the Initial Developer hereby grants You a world-wide, royalty-free, non-exclusive license:

(a) under intellectual property rights (other than patent or trademark) Licensable by Initial Developer, to use, reproduce, modify, display, perform, sublicense and distribute the Original Software (or portions thereof), with or without Modifications, and/or as part of a Larger Work; and

(b) under Patent Claims infringed by the making, using or selling of Original Software, to make, have made, use, practice, sell, and offer for sale, and/or otherwise dispose of the Original Software (or portions thereof).

(c) The licenses granted in Sections 2.1(a) and (b) are effective on the date Initial Developer first distributes or otherwise makes the Original Software available to a third party under the terms of this License.

(d) Notwithstanding Section 2.1(b) above, no patent license is granted: (1) for code that You delete from the Original Software, or (2) for infringements caused by: (i) the modification of the Original Software, or (ii) the combination of the Original Software with other software or devices.

### 2.2. Contributor Grant.

Conditioned upon Your compliance with Section 3.1 below and subject to third party intellectual property claims, each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:

(a) under intellectual property rights (other than patent or trademark) Licensable by Contributor to use, reproduce, modify, display, perform, sublicense and distribute the Modifications created by such Contributor (or portions thereof), either on an unmodified basis, with other Modifications, as Covered Software and/or as part of a Larger Work; and

- (b) under Patent Claims infringed by the making, using, or selling of Modifications made by that Contributor either alone and/or in combination with its Contributor Version (or portions of such combination), to make, use, sell, offer for sale, have made, and/or otherwise dispose of: (1) Modifications made by that Contributor (or portions thereof); and (2) the combination of Modifications made by that Contributor with its Contributor Version (or portions of such combination).
- (c) The licenses granted in Sections 2.2(a) and 2.2(b) are effective on the date Contributor first distributes or otherwise makes the Modifications available to a third party.
- (d) Notwithstanding Section 2.2(b) above, no patent license is granted: (1) for any code that Contributor has deleted from the Contributor Version; (2) for infringements caused by: (i) third party modifications of Contributor Version, or (ii) the combination of Modifications made by that Contributor with other software (except as part of the Contributor Version) or other devices; or (3) under Patent Claims infringed by Covered Software in the absence of Modifications made by that Contributor.

### 3. Distribution Obligations.

#### 3.1. Availability of Source Code.

Any Covered Software that You distribute or otherwise make available in Executable form must also be made available in Source Code form and that Source Code form must be distributed only under the terms of this License. You must include a copy of this License with every copy of the Source Code form of the Covered Software You distribute or otherwise make available. You must inform recipients of any such Covered Software in Executable form as to how they can obtain such Covered Software in Source Code form in a reasonable manner on or through a medium customarily used for software exchange.

#### 3.2. Modifications.

The Modifications that You create or to which You contribute are governed by the terms of this License. You represent that You believe Your Modifications are Your original creation(s) and/or You have sufficient rights to grant the rights conveyed by this License.

#### 3.3. Required Notices.

You must include a notice in each of Your Modifications that identifies You as the Contributor of the Modification. You may not remove or alter any copyright, patent or trademark notices contained within the Covered Software, or any notices of licensing or any descriptive text giving attribution to any Contributor or the Initial Developer.



#### 3.4. Application of Additional Terms.

You may not offer or impose any terms on any Covered Software in Source Code form that alters or restricts the applicable version of this License or the recipients' rights hereunder. You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Software. However, you may do so only on Your own behalf, and not on behalf of the Initial Developer or any Contributor. You must make it absolutely clear that any such warranty, support, indemnity or liability obligation is offered by You alone, and You hereby agree to indemnify the Initial Developer and every Contributor for any liability incurred by the Initial Developer or such Contributor as a result of warranty, support, indemnity or liability terms You offer.

#### 3.5. Distribution of Executable Versions.

You may distribute the Executable form of the Covered Software under the terms of this License or under the terms of a license of Your choice, which may contain terms different from this License, provided that You are in compliance with the terms of this License and that the license for the Executable form does not attempt to limit or alter the recipient's rights in the Source Code form from the rights set forth in this License. If You distribute the Covered Software in Executable form under a different license, You must make it absolutely clear that any terms which differ from this License are offered by You alone, not by the Initial Developer or Contributor. You hereby agree to indemnify the Initial Developer and every Contributor for any liability incurred by the Initial Developer or such Contributor as a result of any such terms You offer.

#### 3.6. Larger Works.

You may create a Larger Work by combining Covered Software with other code not governed by the terms of this License and distribute the Larger Work as a single product. In such a case, You must make sure the requirements of this License are fulfilled for the Covered Software.

### 4. Versions of the License.

#### 4.1. New Versions.

Sun Microsystems, Inc. is the initial license steward and may publish revised and/or new versions of this License from time to time. Each version will be given a distinguishing version number. Except as provided in Section 4.3, no one other than the license steward has the right to modify this License.

#### 4.2. Effect of New Versions.

You may always continue to use, distribute or otherwise make the Covered Software available under the terms of the version of the License under which You originally received the Covered Software. If the Initial Developer includes a notice in the Original Software prohibiting it from

being distributed or otherwise made available under any subsequent version of the License, You must distribute and make the Covered Software available under the terms of the version of the License under which You originally received the Covered Software. Otherwise, You may also choose to use, distribute or otherwise make the Covered Software available under the terms of any subsequent version of the License published by the license steward.

#### 4.3. Modified Versions.

When You are an Initial Developer and You want to create a new license for Your Original Software, You may create and use a modified version of this License if You: (a) rename the license and remove any references to the name of the license steward (except to note that the license differs from this License); and (b) otherwise make it clear that the license contains terms which differ from this License.

### 5. DISCLAIMER OF WARRANTY.

COVERED SOFTWARE IS PROVIDED UNDER THIS LICENSE ON AN .AS IS. BASIS, WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTIES THAT THE COVERED SOFTWARE IS FREE OF DEFECTS, MERCHANTABILITY, FIT FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE COVERED SOFTWARE IS WITH YOU. SHOULD ANY COVERED SOFTWARE PROVE DEFECTIVE IN ANY RESPECT, YOU (NOT THE INITIAL DEVELOPER OR ANY OTHER CONTRIBUTOR) ASSUME THE COST OF ANY NECESSARY SERVICING, REPAIR OR CORRECTION. THIS DISCLAIMER OF WARRANTY CONSTITUTES AN ESSENTIAL PART OF THIS LICENSE. NO USE OF ANY COVERED SOFTWARE IS AUTHORIZED HEREUNDER EXCEPT UNDER THIS DISCLAIMER.

### 6. TERMINATION.

6.1. This License and the rights granted hereunder will terminate automatically if You fail to comply with terms herein and fail to cure such breach within 30 days of becoming aware of the breach. Provisions which, by their nature, must remain in effect beyond the termination of this License shall survive.

6.2. If You assert a patent infringement claim (excluding declaratory judgment actions) against Initial Developer or a Contributor (the Initial Developer or Contributor against whom You assert such claim is referred to as .Participant.) alleging that the Participant Software (meaning the Contributor Version where the Participant is a Contributor or the Original Software where the Participant is the Initial Developer) directly or indirectly infringes any patent, then any and all rights granted directly or indirectly to You by such Participant, the Initial Developer (if the Initial Developer is not the Participant) and all Contributors under Sections 2.1 and/or 2.2 of this License shall, upon 60 days notice from Participant terminate

prospectively and automatically at the expiration of such 60 day notice period, unless if within such 60 day period You withdraw Your claim with respect to the Participant Software against such Participant either unilaterally or pursuant to a written agreement with Participant.

6.3. In the event of termination under Sections 6.1 or 6.2 above, all end user licenses that have been validly granted by You or any distributor hereunder prior to termination (excluding licenses granted to You by any distributor) shall survive termination.

## 7. LIMITATION OF LIABILITY.

UNDER NO CIRCUMSTANCES AND UNDER NO LEGAL THEORY, WHETHER TORT (INCLUDING NEGLIGENCE), CONTRACT, OR OTHERWISE, SHALL YOU, THE INITIAL DEVELOPER, ANY OTHER CONTRIBUTOR, OR ANY DISTRIBUTOR OF COVERED SOFTWARE, OR ANY SUPPLIER OF ANY OF SUCH PARTIES, BE LIABLE TO ANY PERSON FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES OF ANY CHARACTER INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOST PROFITS, LOSS OF GOODWILL, WORK STOPPAGE, COMPUTER FAILURE OR MALFUNCTION, OR ANY AND ALL OTHER COMMERCIAL DAMAGES OR LOSSES, EVEN IF SUCH PARTY SHALL HAVE BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. THIS LIMITATION OF LIABILITY SHALL NOT APPLY TO LIABILITY FOR DEATH OR PERSONAL INJURY RESULTING FROM SUCH PARTY'S NEGLIGENCE TO THE EXTENT APPLICABLE LAW PROHIBITS SUCH LIMITATION. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THIS EXCLUSION AND LIMITATION MAY NOT APPLY TO YOU.

## 8. U.S. GOVERNMENT END USERS.

The Covered Software is a .commercial item,. as that term is defined in 48 C.F.R. 2.101 (Oct. 1995), consisting of .commercial computer software. (as that term is defined at 48 C.F.R. ? 252.227-7014(a)(1)) and commercial computer software documentation. as such terms are used in 48 C.F.R. 12.212 (Sept. 1995). Consistent with 48 C.F.R. 12.212 and 48 C.F.R. 227.7202-1 through 227.7202-4 (June 1995), all U.S. Government End Users acquire Covered Software with only those rights set forth herein. This U.S. Government Rights clause is in lieu of, and supersedes, any other FAR, DFAR, or other clause or provision that addresses Government rights in computer software under this License.

## 9. MISCELLANEOUS.

This License represents the complete agreement concerning subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable. This License shall be governed by the law of the jurisdiction specified in a notice contained within the Original Software (except to the extent applicable law, if any, provides otherwise), excluding such

jurisdiction's conflict-of-law provisions. Any litigation relating to this License shall be subject to the jurisdiction of the courts located in the jurisdiction and venue specified in a notice contained within the Original Software, with the losing party responsible for costs, including, without limitation, court costs and reasonable attorneys' fees and expenses. The application of the United Nations Convention on Contracts for the International Sale of Goods is expressly excluded. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not apply to this License. You agree that You alone are responsible for compliance with the United States export administration regulations (and the export control laws and regulation of any other countries) when You use, distribute or otherwise make available any Covered Software.

#### 10. RESPONSIBILITY FOR CLAIMS.

As between Initial Developer and the Contributors, each party is responsible for claims and damages arising, directly or indirectly, out of its utilization of rights under this License and You agree to work with Initial Developer and Contributors to distribute such responsibility on an equitable basis. Nothing herein is intended or shall be deemed to constitute any admission of liability.

#### NOTICE PURSUANT TO SECTION 9 OF THE COMMON DEVELOPMENT AND DISTRIBUTION LICENSE (CDDL)

The code released under the CDDL shall be governed by the laws of the State of California (excluding conflict-of-law provisions). Any litigation relating to this License shall be subject to the jurisdiction of the Federal Courts of the Northern District of California and the state courts of the State of California, with venue lying in Santa Clara County, California.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

##### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common

control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or

documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill,

work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

## APACHE TOMCAT SUBCOMPONENTS:

Apache Tomcat includes a number of subcomponents with separate copyright notices and license terms. Your use of these subcomponents is subject to the terms and



conditions of the following licenses.

For the following XML Schemas for Java EE Deployment Descriptors:

- javaee\_5.xsd
- javaee\_web\_services\_1\_2.xsd
- javaee\_web\_services\_client\_1\_2.xsd
- javaee\_6.xsd
- javaee\_web\_services\_1\_3.xsd
- javaee\_web\_services\_client\_1\_3.xsd
- jsp\_2\_2.xsd
- web-app\_3\_0.xsd
- web-common\_3\_0.xsd
- web-fragment\_3\_0.xsd
- javaee\_7.xsd
- javaee\_web\_services\_1\_4.xsd
- javaee\_web\_services\_client\_1\_4.xsd
- jsp\_2\_3.xsd
- web-app\_3\_1.xsd
- web-common\_3\_1.xsd
- web-fragment\_3\_1.xsd

COMMON DEVELOPMENT AND DISTRIBUTION LICENSE (CDDL) Version 1.0

#### 1. Definitions.

- 1.1. Contributor. means each individual or entity that creates or contributes to the creation of Modifications.
- 1.2. Contributor Version. means the combination of the Original Software, prior Modifications used by a Contributor (if any), and the Modifications made by that particular Contributor.
- 1.3. Covered Software. means (a) the Original Software, or (b) Modifications, or (c) the combination of files containing Original Software with files containing Modifications, in each case including portions thereof.
- 1.4. Executable. means the Covered Software in any form other than Source Code.
- 1.5. Initial Developer. means the individual or entity that first makes Original Software available under this License.
- 1.6. Larger Work. means a work which combines Covered Software or portions thereof with code not governed by the terms of this License.
- 1.7. License. means this document.

- 1.8. **Licensable.** means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently acquired, any and all of the rights conveyed herein.
- 1.9. **Modifications.** means the Source Code and Executable form of any of the following:
- A. Any file that results from an addition to, deletion from or modification of the contents of a file containing Original Software or previous Modifications;
  - B. Any new file that contains any part of the Original Software or previous Modification; or
  - C. Any new file that is contributed or otherwise made available under the terms of this License.
- 1.10. **Original Software.** means the Source Code and Executable form of computer software code that is originally released under this License.
- 1.11. **Patent Claims.** means any patent claim(s), now owned or hereafter acquired, including without limitation, method, process, and apparatus claims, in any patent Licensable by grantor.
- 1.12. **Source Code.** means (a) the common form of computer software code in which modifications are made and (b) associated documentation included in or with such code.
- 1.13. **You.** (or **.Your.**) means an individual or a legal entity exercising rights under, and complying with all of the terms of, this License. For legal entities, **.You.** includes any entity which controls, is controlled by, or is under common control with You. For purposes of this definition, **.control.** means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

## 2. License Grants.

### 2.1. The Initial Developer Grant.

Conditioned upon Your compliance with Section 3.1 below and subject to third party intellectual property claims, the Initial Developer hereby grants You a world-wide, royalty-free, non-exclusive license:

- (a) under intellectual property rights (other than patent or trademark) Licensable by Initial Developer, to use, reproduce, modify, display, perform, sublicense and distribute the Original Software (or

portions thereof), with or without Modifications, and/or as part of a Larger Work; and

- (b) under Patent Claims infringed by the making, using or selling of Original Software, to make, have made, use, practice, sell, and offer for sale, and/or otherwise dispose of the Original Software (or portions thereof).
- (c) The licenses granted in Sections 2.1(a) and (b) are effective on the date Initial Developer first distributes or otherwise makes the Original Software available to a third party under the terms of this License.
- (d) Notwithstanding Section 2.1(b) above, no patent license is granted:
  - (1) for code that You delete from the Original Software, or (2) for infringements caused by: (i) the modification of the Original Software, or (ii) the combination of the Original Software with other software or devices.

## 2.2. Contributor Grant.

Conditioned upon Your compliance with Section 3.1 below and subject to third party intellectual property claims, each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:

- (a) under intellectual property rights (other than patent or trademark) Licensable by Contributor to use, reproduce, modify, display, perform, sublicense and distribute the Modifications created by such Contributor (or portions thereof), either on an unmodified basis, with other Modifications, as Covered Software and/or as part of a Larger Work; and
- (b) under Patent Claims infringed by the making, using, or selling of Modifications made by that Contributor either alone and/or in combination with its Contributor Version (or portions of such combination), to make, use, sell, offer for sale, have made, and/or otherwise dispose of: (1) Modifications made by that Contributor (or portions thereof); and (2) the combination of Modifications made by that Contributor with its Contributor Version (or portions of such combination).
- (c) The licenses granted in Sections 2.2(a) and 2.2(b) are effective on the date Contributor first distributes or otherwise makes the Modifications available to a third party.
- (d) Notwithstanding Section 2.2(b) above, no patent license is granted:
  - (1) for any code that Contributor has deleted from the Contributor Version; (2) for infringements caused by: (i) third party

modifications of Contributor Version, or (ii) the combination of Modifications made by that Contributor with other software (except as part of the Contributor Version) or other devices; or (3) under Patent Claims infringed by Covered Software in the absence of Modifications made by that Contributor.

### 3. Distribution Obligations.

#### 3.1. Availability of Source Code.

Any Covered Software that You distribute or otherwise make available in Executable form must also be made available in Source Code form and that Source Code form must be distributed only under the terms of this License. You must include a copy of this License with every copy of the Source Code form of the Covered Software You distribute or otherwise make available. You must inform recipients of any such Covered Software in Executable form as to how they can obtain such Covered Software in Source Code form in a reasonable manner on or through a medium customarily used for software exchange.

#### 3.2. Modifications.

The Modifications that You create or to which You contribute are governed by the terms of this License. You represent that You believe Your Modifications are Your original creation(s) and/or You have sufficient rights to grant the rights conveyed by this License.

#### 3.3. Required Notices.

You must include a notice in each of Your Modifications that identifies You as the Contributor of the Modification. You may not remove or alter any copyright, patent or trademark notices contained within the Covered Software, or any notices of licensing or any descriptive text giving attribution to any Contributor or the Initial Developer.

#### 3.4. Application of Additional Terms.

You may not offer or impose any terms on any Covered Software in Source Code form that alters or restricts the applicable version of this License or the recipients' rights hereunder. You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Software. However, you may do so only on Your own behalf, and not on behalf of the Initial Developer or any Contributor. You must make it absolutely clear that any such warranty, support, indemnity or liability obligation is offered by You alone, and You hereby agree to indemnify the Initial Developer and every Contributor for any liability incurred by the Initial Developer or such Contributor as a result of warranty, support, indemnity or liability terms You offer.

#### 3.5. Distribution of Executable Versions.

You may distribute the Executable form of the Covered Software under the terms of this License or under the terms of a license of Your choice,

which may contain terms different from this License, provided that You are in compliance with the terms of this License and that the license for the Executable form does not attempt to limit or alter the recipient's rights in the Source Code form from the rights set forth in this License. If You distribute the Covered Software in Executable form under a different license, You must make it absolutely clear that any terms which differ from this License are offered by You alone, not by the Initial Developer or Contributor. You hereby agree to indemnify the Initial Developer and every Contributor for any liability incurred by the Initial Developer or such Contributor as a result of any such terms You offer.

#### 3.6. Larger Works.

You may create a Larger Work by combining Covered Software with other code not governed by the terms of this License and distribute the Larger Work as a single product. In such a case, You must make sure the requirements of this License are fulfilled for the Covered Software.

### 4. Versions of the License.

#### 4.1. New Versions.

Sun Microsystems, Inc. is the initial license steward and may publish revised and/or new versions of this License from time to time. Each version will be given a distinguishing version number. Except as provided in Section 4.3, no one other than the license steward has the right to modify this License.

#### 4.2. Effect of New Versions.

You may always continue to use, distribute or otherwise make the Covered Software available under the terms of the version of the License under which You originally received the Covered Software. If the Initial Developer includes a notice in the Original Software prohibiting it from being distributed or otherwise made available under any subsequent version of the License, You must distribute and make the Covered Software available under the terms of the version of the License under which You originally received the Covered Software. Otherwise, You may also choose to use, distribute or otherwise make the Covered Software available under the terms of any subsequent version of the License published by the license steward.

#### 4.3. Modified Versions.

When You are an Initial Developer and You want to create a new license for Your Original Software, You may create and use a modified version of this License if You: (a) rename the license and remove any references to the name of the license steward (except to note that the license differs from this License); and (b) otherwise make it clear that the license contains terms which differ from this License.

### 5. DISCLAIMER OF WARRANTY.

COVERED SOFTWARE IS PROVIDED UNDER THIS LICENSE ON AN .AS IS. BASIS, WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTIES THAT THE COVERED SOFTWARE IS FREE OF DEFECTS, MERCHANTABILITY, FIT FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE COVERED SOFTWARE IS WITH YOU. SHOULD ANY COVERED SOFTWARE PROVE DEFECTIVE IN ANY RESPECT, YOU (NOT THE INITIAL DEVELOPER OR ANY OTHER CONTRIBUTOR) ASSUME THE COST OF ANY NECESSARY SERVICING, REPAIR OR CORRECTION. THIS DISCLAIMER OF WARRANTY CONSTITUTES AN ESSENTIAL PART OF THIS LICENSE. NO USE OF ANY COVERED SOFTWARE IS AUTHORIZED HEREUNDER EXCEPT UNDER THIS DISCLAIMER.

## 6. TERMINATION.

- 6.1. This License and the rights granted hereunder will terminate automatically if You fail to comply with terms herein and fail to cure such breach within 30 days of becoming aware of the breach. Provisions which, by their nature, must remain in effect beyond the termination of this License shall survive.
- 6.2. If You assert a patent infringement claim (excluding declaratory judgment actions) against Initial Developer or a Contributor (the Initial Developer or Contributor against whom You assert such claim is referred to as .Participant.) alleging that the Participant Software (meaning the Contributor Version where the Participant is a Contributor or the Original Software where the Participant is the Initial Developer) directly or indirectly infringes any patent, then any and all rights granted directly or indirectly to You by such Participant, the Initial Developer (if the Initial Developer is not the Participant) and all Contributors under Sections 2.1 and/or 2.2 of this License shall, upon 60 days notice from Participant terminate prospectively and automatically at the expiration of such 60 day notice period, unless if within such 60 day period You withdraw Your claim with respect to the Participant Software against such Participant either unilaterally or pursuant to a written agreement with Participant.
- 6.3. In the event of termination under Sections 6.1 or 6.2 above, all end user licenses that have been validly granted by You or any distributor hereunder prior to termination (excluding licenses granted to You by any distributor) shall survive termination.

## 7. LIMITATION OF LIABILITY.

UNDER NO CIRCUMSTANCES AND UNDER NO LEGAL THEORY, WHETHER TORT (INCLUDING NEGLIGENCE), CONTRACT, OR OTHERWISE, SHALL YOU, THE INITIAL DEVELOPER, ANY OTHER CONTRIBUTOR, OR ANY DISTRIBUTOR OF COVERED SOFTWARE, OR ANY SUPPLIER OF ANY OF SUCH PARTIES, BE LIABLE TO ANY PERSON FOR ANY INDIRECT, SPECIAL,

INCIDENTAL, OR CONSEQUENTIAL DAMAGES OF ANY CHARACTER INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOST PROFITS, LOSS OF GOODWILL, WORK STOPPAGE, COMPUTER FAILURE OR MALFUNCTION, OR ANY AND ALL OTHER COMMERCIAL DAMAGES OR LOSSES, EVEN IF SUCH PARTY SHALL HAVE BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. THIS LIMITATION OF LIABILITY SHALL NOT APPLY TO LIABILITY FOR DEATH OR PERSONAL INJURY RESULTING FROM SUCH PARTY'S NEGLIGENCE TO THE EXTENT APPLICABLE LAW PROHIBITS SUCH LIMITATION. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THIS EXCLUSION AND LIMITATION MAY NOT APPLY TO YOU.

#### 8. U.S. GOVERNMENT END USERS.

The Covered Software is a .commercial item., as that term is defined in 48 C.F.R. 2.101 (Oct. 1995), consisting of .commercial computer software. (as that term is defined at 48 C.F.R. ? 252.227-7014(a)(1)) and commercial computer software documentation. as such terms are used in 48 C.F.R. 12.212 (Sept. 1995). Consistent with 48 C.F.R. 12.212 and 48 C.F.R. 227.7202-1 through 227.7202-4 (June 1995), all U.S. Government End Users acquire Covered Software with only those rights set forth herein. This U.S. Government Rights clause is in lieu of, and supersedes, any other FAR, DFAR, or other clause or provision that addresses Government rights in computer software under this License.

#### 9. MISCELLANEOUS.

This License represents the complete agreement concerning subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable. This License shall be governed by the law of the jurisdiction specified in a notice contained within the Original Software (except to the extent applicable law, if any, provides otherwise), excluding such jurisdiction's conflict-of-law provisions. Any litigation relating to this License shall be subject to the jurisdiction of the courts located in the jurisdiction and venue specified in a notice contained within the Original Software, with the losing party responsible for costs, including, without limitation, court costs and reasonable attorneys. fees and expenses. The application of the United Nations Convention on Contracts for the International Sale of Goods is expressly excluded. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not apply to this License. You agree that You alone are responsible for compliance with the United States export administration regulations (and the export control laws and regulation of any other countries) when You use, distribute or otherwise make available any Covered Software.

#### 10. RESPONSIBILITY FOR CLAIMS.

As between Initial Developer and the Contributors, each party is responsible

for claims and damages arising, directly or indirectly, out of its utilization of rights under this License and You agree to work with Initial Developer and Contributors to distribute such responsibility on an equitable basis. Nothing herein is intended or shall be deemed to constitute any admission of liability.

#### NOTICE PURSUANT TO SECTION 9 OF THE COMMON DEVELOPMENT AND DISTRIBUTION LICENSE (CDDL)

The code released under the CDDL shall be governed by the laws of the State of California (excluding conflict-of-law provisions). Any litigation relating to this License shall be subject to the jurisdiction of the Federal Courts of the Northern District of California and the state courts of the State of California, with venue lying in Santa Clara County, California.

Apache Tomcat

Copyright 1999-@YEAR@ The Apache Software Foundation

This product includes software developed at  
The Apache Software Foundation (<http://www.apache.org/>).  
Apache Tomcat JDBC Pool  
Copyright 2008-2022 The Apache Software Foundation

This product includes software developed at  
The Apache Software Foundation (<http://www.apache.org/>).

Apache Standard Taglib Specification API  
Copyright 2001-2015 The Apache Software Foundation

This product includes software developed at  
The Apache Software Foundation (<http://www.apache.org/>).

Apache Standard Taglib Implementation  
Copyright 2001-2015 The Apache Software Foundation

This product includes software developed at  
The Apache Software Foundation (<http://www.apache.org/>).

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

##### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by



the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained

within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be

liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.

You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Apache Tomcat

Copyright 1999-@YEAR@ The Apache Software Foundation

This product includes software developed at  
The Apache Software Foundation (<http://www.apache.org/>).

The original XML Schemas for Java EE Deployment Descriptors:

- javaee\_5.xsd
- javaee\_web\_services\_1\_2.xsd
- javaee\_web\_services\_client\_1\_2.xsd
- javaee\_6.xsd
- javaee\_web\_services\_1\_3.xsd
- javaee\_web\_services\_client\_1\_3.xsd
- jsp\_2\_2.xsd
- web-app\_3\_0.xsd
- web-common\_3\_0.xsd
- web-fragment\_3\_0.xsd
- javaee\_7.xsd
- javaee\_web\_services\_1\_4.xsd
- javaee\_web\_services\_client\_1\_4.xsd
- jsp\_2\_3.xsd
- web-app\_3\_1.xsd
- web-common\_3\_1.xsd
- web-fragment\_3\_1.xsd

may be obtained from:

<http://www.oracle.com/webfolder/technetwork/jsc/xml/ns/javaee/index.html>

Apache Tomcat

Copyright 1999-2022 The Apache Software Foundation

This product includes software developed at  
The Apache Software Foundation (<https://www.apache.org/>).

This software contains code derived from netty-native  
developed by the Netty project  
(<https://netty.io>, <https://github.com/netty/netty-tcnative/>)  
and from finagle-native developed at Twitter  
(<https://github.com/twitter/finagle>).

The Windows Installer is built with the Nullsoft  
Scriptable Install System (NSIS), which is  
open source software. The original software and  
related information is available at  
<http://nsis.sourceforge.net>.

Java compilation software for JSP pages is provided by the Eclipse  
JDT Core Batch Compiler component, which is open source software.  
The original software and related information is available at  
<https://www.eclipse.org/jdt/core/>.

For portions of the Tomcat JNI OpenSSL API and the OpenSSL JSSE integration

The org.apache.tomcat.jni and the org.apache.tomcat.net.openssl packages are derivative work originating from the Netty project and the finagle-native project developed at Twitter

\* Copyright 2014 The Netty Project

\* Copyright 2014 Twitter

The original XML Schemas for Java EE Deployment Descriptors:

- javaee\_5.xsd
- javaee\_web\_services\_1\_2.xsd
- javaee\_web\_services\_client\_1\_2.xsd
- javaee\_6.xsd
- javaee\_web\_services\_1\_3.xsd
- javaee\_web\_services\_client\_1\_3.xsd
- jsp\_2\_2.xsd
- web-app\_3\_0.xsd
- web-common\_3\_0.xsd
- web-fragment\_3\_0.xsd
- javaee\_7.xsd
- javaee\_web\_services\_1\_4.xsd
- javaee\_web\_services\_client\_1\_4.xsd
- jsp\_2\_3.xsd
- web-app\_3\_1.xsd
- web-common\_3\_1.xsd
- web-fragment\_3\_1.xsd

may be obtained from:

<http://www.oracle.com/webfolder/technetwork/jsc/xml/ns/javaee/index.html>

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the

outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable

copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and



do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

# 1.223 groovy 2.4.21

## 1.223.1 Available under license :

No license file was found, but licenses were detected in source scan.

/\*

- \* Licensed to the Apache Software Foundation (ASF) under one
- \* or more contributor license agreements. See the NOTICE file
- \* distributed with this work for additional information

\* regarding copyright ownership. The ASF licenses this file  
 \* to you under the Apache License, Version 2.0 (the  
 \* "License"); you may not use this file except in compliance  
 \* with the License. You may obtain a copy of the License at  
 \*  
 \* <http://www.apache.org/licenses/LICENSE-2.0>  
 \*  
 \* Unless required by applicable law or agreed to in writing,  
 \* software distributed under the License is distributed on an  
 \* "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY  
 \* KIND, either express or implied. See the License for the  
 \* specific language governing permissions and limitations  
 \* under the License.  
 \*/

Found in path(s):

\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/classgen/ClassCompletionVerifier.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/expr/ListExpression.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/classgen/asm/UnaryExpressionHelper.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/util/ClosureComparator.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/transform/LogASTTransformation.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/ObjectRange.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/transform/PackageScopeTarget.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/antlr/java/PreJava2GroovyConverter.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/expr/CastExpression.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/Writable.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/transform/tailrec/ReturnStatementToIterationConverter.groovy  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/MetaClass.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/util/DelegatingScript.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/transform/LazyASTTransformation.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/tools/javac/JavaStubGenerator.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/expr/FieldExpression.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/antlr/AntlrParserPlugin.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/tools/shell/IO.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-

jar/org/codehaus/groovy/classgen/asm/ExpressionAsVariableSlot.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/runtime/callsite/CallSiteGenerator.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/antlr/GroovySourceAST.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/groovy/transform/EqualsAndHashCode.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/ui/GroovyMain.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/classgen/asm/OperandStack.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/transform/AutoClone.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/control/messages/ExceptionMessage.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/control/customizers/ASTTransformationCustomizer.groovy  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/runtime/callsite/PojoMetaClassGetPropertySite.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/groovy/transform/WithWriteLock.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/transform/trait/SuperCallTraitTransformer.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/ClosureException.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/inspect/Inspector.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/reflection/stdclasses/ArrayCachedClass.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/util/ReferenceBundle.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/syntax/Types.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/runtime/memoize/UnlimitedConcurrentCache.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/transform/DelegateASTTransformation.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/runtime/IOGroovyMethods.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/Sequence.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/transform/GroovyASTTransformation.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/runtime/callsite/AbstractCallSite.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/groovy/lang/GroovyResourceLoader.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/tools/javac/JavaCompiler.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/transform/stc/DefaultTypeCheckingExtension.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/runtime/metaclass/MultipleSetterProperty.java

- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/control/customizers/builder/PostCompletionFactory.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/ProcessGroovyMethods.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/reflection/stdclasses/BigIntegerCachedClass.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/antlr/treewalker/CompositeVisitor.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/util/Factory.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/control/Janitor.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/transform/ToStringASTTransformation.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/antlr/treewalker/SourcePrinter.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/classgen/asm/InvocationWriter.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/io/FileVisitResult.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/callsite/ConstructorSite.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/callsite/CallSite.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/reflection/ReflectionUtils.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/MetaClassImpl.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/util/NodePrinter.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/dgmimpl/arrays/ObjectArrayGetAtMetaMethod.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/callsite/PerInstancePojoMetaClassSite.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/callsite/MetaClassSite.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/classgen/asm/WriterController.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/control/ProcessingUnit.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/io/GroovyPrintStream.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/syntax/ParserException.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/classgen/asm/indy/IndyCallSiteWriter.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/FieldNode.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/stmt/CaseStatement.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/util/ManagedConcurrentMap.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-

jar/org/codehaus/groovy/classgen/asm/CompileStack.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/util/ReleaseInfo.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/runtime/BytecodeInterface8.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/classgen/BytecodeInstruction.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/runtime/metaclass/MethodSelectionException.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/classgen/asm/sc/StaticTypesTypeChooser.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/util/FastArray.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/runtime/GStringImpl.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/vmplugin/v7/TypeHelper.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/runtime/MethodClosure.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/classgen/asm/sc/StaticInvocationWriter.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/ast/ImportNode.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/control/customizers/builder/ImportCustomizerFactory.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/transform/stc/FirstParam.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/transform/tailrec/AstHelper.groovy  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/transform/stc/TypeCheckingContext.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/transform/stc/ExtensionMethodNode.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/transform/PackageScopeASTTransformation.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/ast/expr/BooleanExpression.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/reflection/stdclasses/NumberCachedClass.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/runtime/metaclass/NewInstanceMetaMethod.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/reflection/stdclasses/ShortCachedClass.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/antlr/treewalker/TraversalHelper.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/transform/tailrec/InWhileLoopWrapper.groovy  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/runtime/ReverseListIterator.java

- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/util/LockableObject.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/classgen/asm/TypeChooser.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/metaclass/ThreadManagedMetaBeanProperty.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/transform/IndexedPropertyASTTransformation.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/builder/AstBuilderTransformation.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/control/customizers/builder/SourceAwareCustomizerFactory.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/util/Node.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/control/BytecodeProcessor.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/io/FileType.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/transform/stc/PropertyLookupVisitor.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/io/PlatformLineWriter.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/MetaClassRegistryChangeEvent.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/m12n/MetaInfExtensionModule.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/callsite/PojoMetaMethodSite.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/dgmimpl/arrays/BooleanArrayPutAtMetaMethod.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/metaclass/ClosureStaticMetaMethod.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/GString.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/callsite/GroovySunClassLoader.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/classgen/asm/BinaryFloatExpressionHelper.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/Closure.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/expr/DeclarationExpression.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/TrampolineClosure.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/antlr/treewalker/VisitorAdapter.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/dgmimpl/arrays/FloatArrayPutAtMetaMethod.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/transform/AnnotationCollectorTransform.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/StringGroovyMethods.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/beans/BindableASTTransformation.java

\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/MetaBeanProperty.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/transform/stc/StaticTypeCheckingVisitor.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/transform/InheritConstructors.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/tools/ast/TransformTestHelper.groovy  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/transform/SortableASTTransformation.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/control/StaticImportVisitor.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/dgmimpl/arrays/ArrayPutAtMetaMethod.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/DefaultCachedMethodKey.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/expr/UnaryPlusExpression.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/util/Reference.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/GroovyCodeSource.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/reflection/SunClassLoader.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/tools/gse/StringSetMap.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/dgmimpl/NumberNumberMetaMethod.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/util/Proxy.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/m12n/ExtensionModuleRegistry.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/dgmimpl/arrays/LongArrayGetAtMetaMethod.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/apache/commons/cli/GroovyInternalPosixParser.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/InterfaceHelperClassNode.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/reflection/GroovyClassValueFactory.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/syntax/TokenMismatchException.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/transform/sc/transformers/CastExpressionOptimizer.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/transform/trait/TraitASTTransformation.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/transform/sc/transformers/StaticMethodCallExpressionTransformer.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/util/ObservableList.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/apache/groovy/util/SystemUtil.java



- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/control/MultipleCompilationErrorsException.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/ProxyGeneratorAdapter.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/metaclass/NewMetaMethod.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/SpreadMap.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/classgen/AnnotationVisitor.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/memoize/Memoize.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/control/HasCleanup.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/callsite/PogoMetaMethodSite.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/classgen/asm/DelegatingController.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/time/TimeDatumDependentDuration.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/powerassert/ValueRecorder.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/antlr/ASTRuntimeException.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/util/ResourceException.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/DefaultGroovyMethods.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/stmt/SynchronizedStatement.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/util/ResourceConnector.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/callsite/CallSiteAwareMetaMethod.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/grape/GrapeIvy.groovy
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/metaclass/TemporaryMethodKey.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/IncorrectClosureArgumentsException.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/grape/GrabAnnotationTransformation.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/stmt/TryCatchStatement.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/metaclass/NewStaticMetaMethod.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/callsite/ConstructorMetaClassSite.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/Newify.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/transform/ExternalizeVerifierASTTransformation.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-

jar/org/codehaus/groovy/transform/stc/StaticTypesMarker.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/runtime/wrappers/PojoWrapper.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/reflection/stdclasses/IntegerCachedClass.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/control/io/AbstractReaderSource.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/transform/NewifyASTTransformation.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/control/Phases.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/runtime/dgmimpl/arrays/ObjectArrayPutAtMetaMethod.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/antlr/EnumHelper.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/ast/tools/ClosureUtils.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/syntax/Numbers.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/runtime/callsite/StaticMetaMethodSite.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/control/messages/Message.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/groovy/transform/stc/SecondParam.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/vmplugin/v7/IndyGuardsFiltersAndSignatures.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/ast/expr/BinaryExpression.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/transform/stc/TraitTypeCheckingExtension.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/ast/expr/NamedArgumentListExpression.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/groovy/lang/MissingClassException.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/io/LineColumnReader.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/transform/ASTTransformationCollectorCodeVisitor.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/runtime/metaclass/ReflectionMetaMethod.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/GroovyShell.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/beans/Vetoable.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/classgen/EnumCompletionVisitor.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/ast/tools/GeneralUtils.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/classgen/asm/OptimizingStatementWriter.java

\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/Reflector.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/transform/builder/DefaultStrategy.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/reflection/v7/GroovyClassValueJava7.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/wrappers/CharWrapper.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/ClassNode.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/callsite/GetEffectivePogoFieldSite.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/beans/VetoableASTTransformation.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/GeneratedClosure.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/ClassHelper.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/beans/DefaultPropertyReader.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/antlr/treewalker/MindMapPrinter.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/HandleMetaClass.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/NullObject.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/callsite/ConstructorMetaMethodSite.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/classgen/asm/indy/InvokeDynamicWriter.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/reflection/CachedField.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/transform/stc/SecondPassExpression.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/MixinNode.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/classgen/ClassGenerator.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/typehandling/NumberMath.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/CompileUnit.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/metaclass/DefaultMetaClassInfo.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/expr/ArrayExpression.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/DeprecationException.java

- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/transform/sc/transformers/StaticCompilationTransformer.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/builder/AstBuilder.groovy
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/expr/MethodCallExpression.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/InvokerInvocationException.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/util/IFilenameFinder.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/transform/Memoized.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/util/NodeList.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/expr/BitwiseNegationExpression.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/classgen/genArrayAccess.groovy
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/beans/Bindable.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/EnumConstantClassNode.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/memoize/NullProtectionStorage.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/transform/SourceURIASTTransformation.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/vmplugin/v6/Java6.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/apache/groovy/io/StringBuilderWriter.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/transform/AbstractASTTransformUtil.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/tools/FileSystemCompiler.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/util/StringUtil.groovy
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/syntax/ReadException.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/antlr/UnicodeEscapingReader.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/PropertyNode.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/classgen/BytecodeSequence.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/dgmimpl/NumberNumberDiv.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/transform/ASTTestTransformation.groovy
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/classgen/asm/MopWriter.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/dgmimpl/NumberNumberMultiply.java

- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/control/customizers/SecureASTCustomizer.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/expr/SpreadExpression.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/reflection/android/AndroidSupport.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/tools/GroovyClass.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/stmt/Statement.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/transform/ToString.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/SocketGroovyMethods.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/transform/stc/GroovyTypeCheckingExtensionSupport.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/classgen/InnerClassCompletionVisitor.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/m12n/SimpleExtensionModule.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/transform/InheritConstructorsASTTransformation.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/classgen/asm/BinaryBooleanExpressionHelper.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/callsite/PojoMetaClassSite.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/MissingPropertyException.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/AbstractComparator.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/expr/PostfixExpression.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/SpreadMapEvaluatingException.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/tools/javac/JavacCompilerFactory.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/util/logging/Log4j2.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/callsite/BooleanClosureWrapper.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/tools/GrapeUtil.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/typehandling/LongMath.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/GroovyException.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/transform/sc/TemporaryVariableExpression.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/GroovyCategorySupport.java

- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/tools/gse/DependencyTracker.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/transform/CanonicalASTTransformation.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/MetaClassHelper.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/Mixin.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/tools/javac/JavacJavaCompiler.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/ResourceGroovyMethods.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/transform/sc/transformers/RangeExpressionTransformer.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/GrabResolver.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/callsite/PogoMetaClassGetPropertySite.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/transform/TupleConstructor.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/classgen/asm/StatementWriter.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/vmplugin/v5/JUnit4Utils.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/syntax/TokenException.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/util/ScriptException.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/transform/PackageScope.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/util/HashCodeHelper.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/stmt/IfStatement.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/transform/SynchronizedASTTransformation.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/antlr/LineColumn.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/classgen/asm/sc/StaticTypesUnaryExpressionHelper.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/callsite/ClassMetaClassGetPropertySite.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/classgen/EnumVisitor.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/classgen/genDgmMath.groovy
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/Variable.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/MutableMetaClass.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/metaclass/ClosureMetaMethod.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-

jar/org/codehaus/groovy/antlr/AntlrASTProcessSnippets.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/control/customizers/builder/CompilerCustomizationBuilder.groovy  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/antlr/treewalker/NodeCollector.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/runtime/ScriptBytecodeAdapter.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/runtime/MethodKey.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/classgen/asm/indy/IndyBinHelper.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/groovy/transform/stc/IncorrectTypeHintException.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/util/BuilderSupport.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/runtime/dgmimpl/arrays/DoubleArrayGetAtMetaMethod.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/transform/SelfType.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/groovy/lang/ClosureInvokingMethod.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/Binding.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/runtime/m12n/ExtensionModule.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/reflection/ParameterTypes.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/groovy/transform/ThreadInterrupt.groovy  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/ast/expr/MapExpression.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/ast/expr/RangeExpression.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/util/ObservableMap.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/classgen/asm/sc/StaticTypesWriterControllerFactoryImpl.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/control/ClassNodeResolver.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/runtime/metaclass/OwnedMetaClass.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/transform/stc/StaticTypeCheckingSupport.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/runtime/StackTraceUtils.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/classgen/asm/BinaryObjectExpressionHelper.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/control/customizers/builder/CustomizersFactory.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/runtime/dgmimpl/arrays/CharArrayGetAtMetaMethod.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-

jar/org/codehaus/groovy/runtime/CurriedClosure.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/DelegatesTo.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/runtime/metaclass/MissingMethodExecutionFailed.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/util/IndentPrinter.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/transform/stc/SharedVariableCollector.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/reflection/GeneratedMetaMethod.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/util/logging/Log4j.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/ast/expr/MapEntryExpression.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/classgen/BytecodeExpression.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/transform/Field.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/transform/stc/FromString.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/transform/tailrec/TernaryToIfStatementConverter.groovy  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/classgen/asm/StatementMetaTypeChooser.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/control/StaticVerifier.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/transform/sc/transformers/VariableExpressionTransformer.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/classgen/Verifier.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/transform/trait/TraitComposer.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/reflection/GroovyClassValue.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/ast/expr/ExpressionTransformer.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/groovy/lang/BenchmarkInterceptor.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/control/ErrorCollector.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/transform/ASTTransformationVisitor.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/control/ParserPlugin.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/ast/expr/ClosureExpression.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/runtime/InvokerHelper.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/ast/expr/EmptyExpression.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/time/BaseDuration.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-



jar/org/codehaus/groovy/transform/AbstractInterruptibleASTTransformation.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/ast/stmt/ThrowStatement.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/runtime/dgmimpl/arrays/IntegerArrayGetAtMetaMethod.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/ast/expr/GStringExpression.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/vmplugin/v7/IndyInterface.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/util/ManagedConcurrentLinkedQueue.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/ast/VariableScope.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/runtime/StringBufferWriter.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/transform/sc/transformers/ListExpressionTransformer.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/groovy/transform/TypeCheckingMode.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/transform/CompileDynamicProcessor.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/reflection/GroovyClassValuePreJava7.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/ast/expr/StaticMethodCallExpression.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/ast/expr/VariableExpression.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/reflection/stdclasses/CharacterCachedClass.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/tools/javac/JavaCompilerFactory.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/transform/Trait.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/runtime/metaclass/TransformMetaMethod.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/Range.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/MapWithDefault.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/control/GenericsVisitor.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/runtime/DefaultGroovyStaticMethods.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/transform/builder/Builder.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/tools/Utilities.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/antlr/Main.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/ast/AstToTextHelper.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/runtime/callsite/CallSiteClassLoader.java

- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/transform/sc/transformers/CompareIdentityExpression.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/antlr/treewalker/Visitor.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/transform/sc/transformers/BinaryExpressionTransformer.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/stmt/WhileStatement.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/MissingMethodException.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/ExpandoMetaClassCreationHandle.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/antlr/SourceBuffer.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/security/GroovyCodeSourcePermission.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/antlr/AntlrASTProcessor.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/classgen/asm/sc/StaticTypesClosureWriter.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/transform/sc/transformers/BooleanExpressionTransformer.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/util/logging/Slf4j.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/dgmimpl/arrays/ArrayMetaMethod.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/transform/TimedInterrupt.groovy
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/classgen/GeneratorContext.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/memoize/LRUCache.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/tools/StringHelper.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/transform/CompileDynamic.groovy
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/typehandling/FloatingPointMath.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/transform/ExternalizeVerifier.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/util/SingleKeyHashMap.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/antlr/treewalker/PreOrderTraversal.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/transform/tailrec/StatementReplacer.groovy
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/vmplugin/v8/Java8.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-

jar/groovy/transform/AnnotationCollector.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/AdaptingMetaClass.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/control/customizers/builder/SecureASTCustomizerFactory.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/reflection/ReflectionCache.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/transform/ThreadInterruptibleASTTransformation.groovy  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/grape/Grape.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/expr/TernaryExpression.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/tools/GenericsUtils.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/classgen/asm/BytecodeHelper.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/metaclass/MetaClassRegistryImpl.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/classgen/asm/sc/StaticTypesWriterController.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/dgmimpl/arrays/ArrayGetAtMetaMethod.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/classgen/asm/WriterControllerFactory.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/transform/stc/ClosureSignatureHint.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/control/io/StringReaderSource.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/dgmimpl/NumberNumberPlus.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/DefaultGroovyMethodsSupport.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/tools/javac/JavaAwareResolveVisitor.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/typehandling/ShortTypeHandling.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/callsite/GetEffectivePojoPropertySite.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/MetaMethod.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/stmt/LoopingStatement.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/antlr/AntlrParserPluginFactory.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/transform/ASTTest.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/transform/sc/StaticCompilationMetadataKeys.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/expr/SpreadMapExpression.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-

jar/org/codehaus/groovy/control/io/ReaderSource.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/ast/GroovyClassVisitor.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/classgen/DummyClassGenerator.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/antlr/LexerFrame.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/groovy/transform/stc/MapEntryOrKeyValue.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/ast/expr/PrefixExpression.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/vmplugin/v5/PluginDefaultGroovyMethods.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/control/io/FileReaderSource.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/runtime/metaclass/MissingPropertyExceptionNoStack.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/groovy/util/FactoryBuilderSupport.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/transform/sc/StaticCompilationVisitor.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/transform/AutoCloneASTTransformation.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/syntax/RuntimeParserException.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/MetaProperty.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/ast/expr/MethodPointerExpression.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/control/CompilerConfiguration.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/classgen/asm/BytecodeDumper.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/ast/stmt/ReturnStatement.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/util/ComplexKeyHashMap.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/groovy/lang/MetaExpandoProperty.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/classgen/asm/BinaryExpressionWriter.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/runtime/IteratorClosureAdapter.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/antlr/treewalker/SourceCodeTraversal.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/runtime/ComposedClosure.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/GroovyObject.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-

jar/org/codehaus/groovy/runtime/metaclass/ReflectorLoader.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/control/CompilePhase.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/tools/javac/JavaStubCompilationUnit.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/Lazy.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/groovy/transform/AutoExternalize.groovy  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/classgen/asm/sc/StaticTypesBinaryExpressionMultiTypeDispatcher.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/ListWithDefault.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/transform/CompileStatic.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/groovy/lang/SpreadListEvaluatingException.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/runtime/callsite/MetaMethodSite.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/groovy/lang/ReadOnlyPropertyException.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/antlr/java/Java2GroovyProcessor.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/util/ListHashMap.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/runtime/callsite/BooleanReturningMethodInvoker.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/transform/tailrec/RecursivenessTester.groovy  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/classgen/asm/sc/StaticTypesCallSiteWriter.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/runtime/wrappers/DoubleWrapper.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/ast/expr/AttributeExpression.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/util/OrderBy.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/runtime/callsite/MetaClassConstructorSite.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/runtime/ScriptReference.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/antlr/java/Groovifier.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/ast/expr/ClosureListExpression.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/runtime/WritableFile.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/GroovyClassLoader.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/io/GroovyPrintWriter.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/reflection/stdclasses/FloatCachedClass.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-

jar/org/codehaus/groovy/ast/DynamicVariable.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/tools/Compiler.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/tools/LoaderConfiguration.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/runtime/DateGroovyMethods.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/transform/EqualsAndHashCodeASTTransformation.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/Script.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/classgen/asm/CallSiteWriter.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/util/ObservableSet.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/control/SourceUnit.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/runtime/metaclass/MissingMethodExceptionNoStack.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/Delegate.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/runtime/metaclass/ConcurrentReaderHashMap.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/groovy/lang/GroovyRuntimeException.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/control/io/URLReaderSource.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/util/logging/Log.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/GroovyInterceptable.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/runtime/NumberAwareComparator.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/MetaClassRegistry.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/transform/sc/transformers/CompareToNullExpression.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/ast/MethodNode.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/reflection/stdclasses/CachedClosureClass.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/util/ReferenceType.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/util/Finalizable.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/util/LazyReference.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/groovy/transform/CompilationUnitAware.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/transform/tailrec/TailRecursiveASTTransformation.groovy  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/runtime/memoize/LRUProtectionStorage.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/util/CliBuilder.groovy

- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/util/NodeBuilder.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/callsite/PogoInterceptableSite.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/reflection/ClassInfo.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/classgen/ExtendedVerifier.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/grape/GrapeEngine.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/metaclass/MetaMethodIndex.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/MetaObjectProtocol.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/builder/AstSpecificationCompiler.groovy
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/GroovyBugError.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/util/MapEntry.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/ConstructorNode.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/util/ObjectGraphBuilder.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/dgmimpl/NumberNumberMinus.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/transform/SingletonASTTransformation.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/MethodRankHelper.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/Reference.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/control/AnnotationConstantsVisitor.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/transform/trait/Traits.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/transform/tailrec/CollectRecursiveCalls.groovy
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/control/io/InputStreamReaderSource.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/transform/ExternalizeMethods.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/util/ManagedLinkedList.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/callsite/DummyCallSite.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/transform/tailrec/ReturnAdderForClosures.groovy
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/transform/stc/AbstractTypeCheckingExtension.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/reflection/CachedMethod.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/cli/GroovyPosixParser.java

- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/PropertyAccessInterceptor.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/callsite/GetEffectivePojoFieldSite.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/transform/stc/FromAbstractTypeMethods.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/beans/PropertyAccessor.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/util/ConfigSlurper.groovy
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/GrabExclude.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/GroovyCallable.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/control/customizers/SourceAwareCustomizer.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/transform/IndexedProperty.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/dgmimpl/arrays/CharacterArrayPutAtMetaMethod.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/tools/shell/util/Preferences.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/transform/StaticTypesTransformation.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/dgmimpl/arrays/LongArrayPutAtMetaMethod.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/builder/AstStringCompiler.groovy
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/classgen/asm/BinaryIntExpressionHelper.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/MixinASTTransformation.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/transform/stc/ThirdParam.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/expr/TupleExpression.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/ClassExtender.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/classgen/VariableScopeVisitor.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/reflection/stdclasses/CachedSAMClass.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/stmt/EmptyStatement.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/dgmimpl/arrays/ShortArrayGetAtMetaMethod.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/GeneratedGroovyProxy.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/util/GroovyCollections.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/transform/MemoizedASTTransformation.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-



jar/org/codehaus/groovy/transform/sc/transformers/MethodCallExpressionTransformer.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/ast/expr/PropertyExpression.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/classgen/asm/BinaryLongExpressionHelper.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/TracingInterceptor.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/classgen/ClassGeneratorException.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/transform/stc/DelegationMetadata.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/ast/expr/UnaryMinusExpression.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/util/GroovyScriptEngine.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/tools/RootLoader.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/ast/AnnotatedNode.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/runtime/RegexSupport.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/classgen/asm/BinaryExpressionHelper.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/control/customizers/builder/InlinedASTCustomizerFactory.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/ast/expr/AnnotationConstantExpression.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/runtime/callsite/NullCallSite.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/groovy/beans/DefaultPropertyWriter.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/transform/FieldASTTransformation.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/groovy/beans/ListenerListASTTransformation.groovy  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/tools/shell/util/Logger.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/ast/stmt/DoWhileStatement.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/groovy/lang/IllegalPropertyAccessException.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/transform/stc/SignatureCodec.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/runtime/callsite/PogoGetPropertySite.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/groovy/transform/builder/InitializerStrategy.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/groovy/io/EncodingAwareBufferedWriter.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-

jar/org/codehaus/groovy/ast/CodeVisitorSupport.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/vmplugin/v7/Java7.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/runtime/ConvertedMap.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/ast/tools/PropertyNodeUtils.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/transform/stc/Receiver.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/groovy/transform/AutoCloneStyle.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/ast/ModuleNode.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/util/FileTreeBuilder.groovy  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/util/CharsetToolkit.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/antlr/ASTParserException.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/groovy/transform/stc/PickAnyArgumentHint.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/runtime/metaclass/MixinInstanceMetaMethod.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/classgen/asm/sc/StaticPropertyAccessHelper.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/control/customizers/DelegatingCustomizer.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/ui/GroovySocketServer.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/runtime/m12n/StandardPropertiesModuleFactory.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/vmplugin/v5/Java5.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/control/CompilationUnit.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/classgen/asm/MethodCallerMultiAdapter.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/groovy/lang/MetaClassRegistryChangeEventListener.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/tools/shell/util/MessageSource.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/reflection/ClassLoaderForClassArtifacts.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/transform/trait/TraitReceiverTransformer.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/transform/sc/StaticCompileTransformation.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/ParameterArray.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/control/messages/WarningMessage.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/transform/SourceURI.java

- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/Parameter.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/stmt/BlockStatement.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/control/customizers/CompilationCustomizer.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/classgen/asm/ClosureWriter.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/powerassert/PowerAssertionError.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/transform/TailRecursive.groovy
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/control/ASTTransformationsContext.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/ClassCodeExpressionTransformer.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/tools/GroovyStarter.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/beans/ListenerList.groovy
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/classgen/asm/sc/StaticCompilationMopWriter.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/beans/PropertyWriter.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/expr/ArgumentListExpression.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/antlr/SourceInfo.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/reflection/stdclasses/DoubleCachedClass.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/IntRange.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/antlr/GroovySourceToken.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/control/CompilationFailedException.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/control/LabelVerifier.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/antlr/treewalker/NodePrinter.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/callsite/GetEffectivePogoPropertySite.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/reflection/stdclasses/BigDecimalCachedClass.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/syntax/CSTNode.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/syntax/SyntaxException.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/util/AbstractConcurrentMapBase.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/time/TimeDuration.java

- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/util/AbstractFactory.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/typehandling/GroovyCastException.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/stmt/ContinueStatement.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/tools/DgmConverter.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/transform/ASTTransformation.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/transform/stc/TypeCheckingExtension.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/stmt/BreakStatement.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/InnerClassNode.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/control/customizers/ImportCustomizer.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/Interceptor.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/transform/BaseScriptASTTransformation.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/control/ParserPluginFactory.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/Tuple2.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/Buildable.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/util/ProxyGenerator.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/wrappers/BooleanWrapper.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/transform/builder/ExternalStrategy.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/stmt/SwitchStatement.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/stmt/AssertStatement.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/transform/Sortable.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/util/TripleKeyHashMap.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/transform/trait/TraitHelpersTuple.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/classgen/ReturnAdder.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/classgen/asm/BinaryExpressionMultiTypeDispatcher.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/beans/PropertyReader.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/plugin/GroovyRunner.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/EncodingGroovyMethods.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-

jar/org/codehaus/groovy/vmplugin/v7/TypeTransformers.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/transform/ReadWriteLockASTTransformation.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/tools/GrapeMain.groovy  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/ExpandoMetaClass.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/transform/ImmutableASTTransformation.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/classgen/asm/sc/StaticTypesStatementWriter.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/ast/ASTNode.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/reflection/stdclasses/ByteCachedClass.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/control/XStreamUtils.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/GroovySystem.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/Tuple.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/runtime/typehandling/BigIntegerMath.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/runtime/dgmimpl/arrays/ShortArrayPutAtMetaMethod.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/ast/GroovyCodeVisitor.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/runtime/m12n/ExtensionModuleScanner.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/runtime/wrappers/ByteWrapper.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/vmplugin/v7/IndyMath.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/groovy/beans/DefaultPropertyAccessor.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/control/OptimizerVisitor.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/classgen/genArrays.groovy  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/transform/Immutable.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/transform/BaseScript.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/runtime/wrappers/LongWrapper.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/ast/ClassCodeVisitorSupport.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/Category.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/classgen/asm/BinaryDoubleExpressionHelper.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/runtime/wrappers/IntWrapper.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-

jar/org/codehaus/groovy/syntax/ASTHelper.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/runtime/memoize/MemoizeCache.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/runtime/ArrayUtil.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/groovy/transform/stc/SimpleType.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/EmptyRange.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/ast/expr/ElvisOperatorExpression.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/runtime/ReflectionMethodInvoker.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/runtime/wrappers/FloatWrapper.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/runtime/metaclass/MethodHelper.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/transform/WithReadLock.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/runtime/metaclass/MixinInstanceMetaProperty.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/runtime/metaclass/ClosureMetaClass.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/transform/CategoryASTTransformation.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/transform/sc/transformers/ClosureExpressionTransformer.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/groovy/util/FileNameByRegexFinder.groovy  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/xml/QName.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/groovy/transform/ConditionalInterrupt.groovy  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/runtime/dgmimpl/arrays/BooleanArrayGetAtMetaMethod.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/GroovyExceptionInterface.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/runtime/wrappers/Wrapper.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/runtime/typehandling/IntegerMath.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/reflection/MixinInMetaClass.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/runtime/metaclass/MixedInMetaClass.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/syntax/Reduction.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/ast/tools/WideningCategories.java  
 \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
 jar/org/codehaus/groovy/antlr/treewalker/NodeAsHTMLPrinter.java

- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/transform/stc/SingleSignatureClosureHint.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/transform/AbstractASTTransformation.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/dgmimpl/arrays/ByteArrayGetAtMetaMethod.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/expr/MethodCall.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/classgen/asm/MethodCaller.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/expr/ConstantExpression.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/util/Expando.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/util/AbstractConcurrentMap.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/util/ManagedConcurrentValueMap.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/tools/ErrorReporter.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/typehandling/DefaultTypeTransformation.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/GrabConfig.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/wrappers/ShortWrapper.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/transform/ExternalizeMethodsASTTransformation.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/util/logging/Commons.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/transform/trait/NaryOperationRewriter.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/tools/javac/JavaAwareCompilationUnit.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/NonEmptySequence.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/util/ArrayIterator.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/control/io/NullWriter.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/powerassert/Value.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/transform/tailrec/VariableAccessReplacer.groovy
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/classgen/InnerClassVisitorHelper.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/transform/TypeChecked.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/dgmimpl/arrays/DoubleArrayPutAtMetaMethod.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/util/Eval.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/callsite/PogoMetaClassSite.java

- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/callsite/StaticMetaClassSite.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/transform/GroovyASTTransformationClass.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/classgen/InnerClassVisitor.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/control/ConfigurationException.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/transform/stc/UnionTypeClassNode.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/DelegatingMetaClass.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/reflection/CachedConstructor.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/MissingFieldException.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/GenericsType.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/m12n/PropertiesModuleFactory.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/PropertyValue.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/Singleton.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/classgen/asm/AssertionWriter.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/powerassert/SourceText.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/expr/NotExpression.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/typehandling/BigDecimalMath.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/classgen/AsmClassGenerator.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/control/SourceExtensionHandler.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/reflection/stdclasses/BooleanCachedClass.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/RangeInfo.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/transform/ConditionalInterruptibleASTTransformation.groovy
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/antlr/UnicodeLexerSharedInputState.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/GroovyObjectSupport.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/Grapes.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/dgmimpl/arrays/ByteArrayPutAtMetaMethod.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-



jar/org/codehaus/groovy/control/messages/SimpleMessage.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/classgen/genMathModification.groovy  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/syntax/TokenUtil.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/transform/Synchronized.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/groovy/transform/stc/ClosureParams.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/transform/sc/transformers/ConstructorCallTransformer.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/transform/TimedInterruptibleASTTransformation.groovy  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/antlr/treewalker/FlatNodeListTraversal.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/transform/TupleConstructorASTTransformation.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/transform/tailrec/HasRecursiveCalls.groovy  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/runtime/powerassert/AssertionRenderer.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/ast/expr/ConstructorCallExpression.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/Grab.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/reflection/stdclasses/StringCachedClass.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/runtime/typehandling/NumberMathModificationInfo.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/runtime/DefaultMethodKey.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/transform/tailrec/VariableExpressionTransformer.groovy  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/antlr/java/Java2GroovyConverter.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/runtime/callsite/CallSiteArray.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/reflection/CachedClass.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/vmplugin/VMPluginFactory.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/util/ConfigObject.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/runtime/ConvertedClosure.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/ast/expr/ClassExpression.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/ast/stmt/CatchStatement.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/groovy/time/DatumDependentDuration.java

- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/util/PermutationGenerator.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/stmt/ForStatement.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/control/messages/SyntaxErrorMessage.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/transform/Canonical.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/syntax/Token.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/stmt/ExpressionStatement.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/time/Duration.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/ConversionHandler.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/util/ReferenceManager.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/transform/Undefined.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/memoize/ProtectionStorage.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/AnnotationNode.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/reflection/stdclasses/LongCachedClass.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/transform/builder/SimpleStrategy.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/dgmimpl/arrays/FloatArrayGetAtMetaMethod.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/dgmimpl/arrays/IntegerArrayPutAtMetaMethod.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/StringWriterIOException.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/control/customizers/builder/ASTTransformationCustomizerFactory.groovy
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/PackageNode.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/reflection/stdclasses/ObjectCachedClass.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/classgen/asm/BytecodeVariable.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/classgen/asm/VariableSlotLoader.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/transform/stc/SignatureCodecVersion1.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/expr/Expression.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/antlr/java/Java2GroovyMain.java
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-

```

jar/org/codehaus/groovy/runtime/metaclass/MethodMetaProperty.java
* /opt/cola/permits/1120336501_1609928120.52/0/groovy-2-4-21-sources-
jar/org/codehaus/groovy/runtime/EncodingGroovyMethodsSupport.java
* /opt/cola/permits/1120336501_1609928120.52/0/groovy-2-4-21-sources-
jar/org/codehaus/groovy/runtime/powerassert/SourceTextNotAvailableException.java
* /opt/cola/permits/1120336501_1609928120.52/0/groovy-2-4-21-sources-
jar/org/codehaus/groovy/transform/BuilderASTTransformation.java
* /opt/cola/permits/1120336501_1609928120.52/0/groovy-2-4-21-sources-
jar/groovy/lang/MetaArrayLengthProperty.java
* /opt/cola/permits/1120336501_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/time/TimeCategory.java
* /opt/cola/permits/1120336501_1609928120.52/0/groovy-2-4-21-sources-
jar/org/codehaus/groovy/runtime/wrappers/GroovyObjectWrapper.java
* /opt/cola/permits/1120336501_1609928120.52/0/groovy-2-4-21-sources-
jar/org/codehaus/groovy/runtime/FlushingStreamWriter.java
* /opt/cola/permits/1120336501_1609928120.52/0/groovy-2-4-21-sources-
jar/org/codehaus/groovy/vmplugin/v7/Selector.java
* /opt/cola/permits/1120336501_1609928120.52/0/groovy-2-4-21-sources-
jar/org/codehaus/groovy/transform/sc/ListOfExpressionsExpression.java
* /opt/cola/permits/1120336501_1609928120.52/0/groovy-2-4-21-sources-
jar/org/codehaus/groovy/classgen/VerifierCodeVisitor.java
* /opt/cola/permits/1120336501_1609928120.52/0/groovy-2-4-21-sources-
jar/org/codehaus/groovy/util/ManagedReference.java
* /opt/cola/permits/1120336501_1609928120.52/0/groovy-2-4-21-sources-
jar/org/codehaus/groovy/control/ResolveVisitor.java
* /opt/cola/permits/1120336501_1609928120.52/0/groovy-2-4-21-sources-
jar/org/codehaus/groovy/transform/tailrec/VariableExpressionReplacer.groovy
* /opt/cola/permits/1120336501_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/ProxyMetaClass.java
* /opt/cola/permits/1120336501_1609928120.52/0/groovy-2-4-21-sources-
jar/org/codehaus/groovy/control/messages/LocatedMessage.java
* /opt/cola/permits/1120336501_1609928120.52/0/groovy-2-4-21-sources-
jar/org/codehaus/groovy/vmplugin/VMPlugin.java
No license file was found, but licenses were detected in source scan.

```

```

to you under the Apache License, Version 2.0 (the
"License"); you may not use this file except in compliance
with the License. You may obtain a copy of the License at
http://www.apache.org/licenses/LICENSE-2.0
software distributed under the License is distributed on an

```

```

Found in path(s):
* /opt/cola/permits/1120336501_1609928120.52/0/groovy-2-4-21-sources-jar/META-INF/groovy-release-
info.properties
No license file was found, but licenses were detected in source scan.

```

```

/*
* Licensed to the Apache Software Foundation (ASF) under one
* or more contributor license agreements. See the NOTICE file
* distributed with this work for additional information

```

\* regarding copyright ownership. The ASF licenses this file  
\* to you under the Apache License, Version 2.0 (the  
\* "License"); you may not use this file except in compliance  
\* with the License. You may obtain a copy of the License at  
\*  
\* <http://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing,  
\* software distributed under the License is distributed on an  
\* "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY  
\* KIND, either express or implied. See the License for the  
\* specific language governing permissions and limitations  
\* under the License.  
\*  
\*/

Found in path(s):

\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/util/CharSequenceReader.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/ast/tools/ParameterUtils.java  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-  
jar/org/codehaus/groovy/ast/tools/ClassNodeUtils.java

No license file was found, but licenses were detected in source scan.

# Licensed to the Apache Software Foundation (ASF) under one or more  
# contributor license agreements. See the NOTICE file distributed with  
# this work for additional information regarding copyright ownership.  
# The ASF licenses this file to You under the Apache License, Version 2.0  
# (the "License"); you may not use this file except in compliance with  
# the License. You may obtain a copy of the License at  
#  
# <http://www.apache.org/licenses/LICENSE-2.0>  
#  
# Unless required by applicable law or agreed to in writing, software  
# distributed under the License is distributed on an "AS IS" BASIS,  
# WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
# See the License for the specific language governing permissions and  
# limitations under the License.

# global transformation to handle @Grab annotation  
groovy.grape.GrabAnnotationTransformation

#global transformation for AST Builder  
org.codehaus.groovy.ast.builder.AstBuilderTransformation

Found in path(s):

\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/META-

INF/services/org.codehaus.groovy.transform.ASTTransformation  
No license file was found, but licenses were detected in source scan.

```
Licensed to the Apache Software Foundation (ASF) under one or more
contributor license agreements. See the NOTICE file distributed with
this work for additional information regarding copyright ownership.
The ASF licenses this file to You under the Apache License, Version 2.0
(the "License"); you may not use this file except in compliance with
the License. You may obtain a copy of the License at
#
http://www.apache.org/licenses/LICENSE-2.0
#
Unless required by applicable law or agreed to in writing, software
distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License.
```

```
Format: one extension on each line without the leading "*"
Listed below are default groovy source file extensions.
```

```
NOTE: This implementation of supporting multiple file extensions is experimental and
the exact implementation details may vary when modularization gets introduced in
groovy 2.0. However, in terms of the behavior, this support will remain intact.
groovy
```

Found in path(s):

```
* /opt/cola/permits/1120336501_1609928120.52/0/groovy-2-4-21-sources-jar/META-
INF/services/org.codehaus.groovy.source.Extensions
No license file was found, but licenses were detected in source scan.
```

```
* to you under the Apache License, Version 2.0 (the
* "License"); you may not use this file except in compliance
* with the License. You may obtain a copy of the License at
* http://www.apache.org/licenses/LICENSE-2.0
* software distributed under the License is distributed on an
* Based on an original grammar released in the PUBLIC DOMAIN
```

Found in path(s):

```
* /opt/cola/permits/1120336501_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/antlr/groovy.g
* /opt/cola/permits/1120336501_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/antlr/java/java.g
No license file was found, but licenses were detected in source scan.
```

Licensed to the Apache Software Foundation (ASF) under one  
or more contributor license agreements. See the NOTICE file  
distributed with this work for additional information  
regarding copyright ownership. The ASF licenses this file  
to you under the Apache License, Version 2.0 (the

"License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE>

2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Found in path(s):

- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/package.html
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/lang/package.html
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/classgen/asm/package.html
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/package.html
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/security/package.html
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/antlr/treewalker/package.html
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/time/package.html
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/control/io/package.html
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/typehandling/package.html
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/vmplugin/v5/package.html
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/antlr/package.html
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/control/messages/package.html
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/overviewj.html
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/vmplugin/package.html
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/util/package.html
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/overview.html
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/control/package.html
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/reflection/package.html
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/package.html
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/classgen/package.html
- \* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-

jar/org/codehaus/groovy/tools/xml/package.html  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/inspect/package.html  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/wrappers/package.html  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/tools/javac/package.html  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/groovy/io/package.html  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/syntax/package.html  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/tools/package.html  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/expr/package.html  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/runtime/metaclass/package.html  
\* /opt/cola/permits/1120336501\_1609928120.52/0/groovy-2-4-21-sources-jar/org/codehaus/groovy/ast/stmt/package.html

## 1.224 Ivm2 2.02.187-2.ph3

### 1.224.1 Available under license :

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts  
as the successor of the GNU Library Public License, version 2, hence  
the version number 2.1.]

#### Preamble

The licenses for most software are designed to take away your  
freedom to share and change it. By contrast, the GNU General Public  
Licenses are intended to guarantee your freedom to share and change  
free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some  
specially designated software packages--typically libraries--of the  
Free Software Foundation and other authors who decide to use it. You  
can use it too, but we suggest you first think carefully about whether  
this license or the ordinary General Public License is the better  
strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a



combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

#### GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.

c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may

distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

- e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
- b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and

all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if

written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS



## How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990

Ty Coon, President of Vice

That's all there is to it!  
BSD 2-Clause License

Copyright (c) 2014, Red Hat, Inc.

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the

Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made

generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING,

## REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:



Gnomovision version 69, Copyright (C) year name of author  
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.  
This is free software, and you are welcome to redistribute it  
under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program  
'Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989  
Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

## 1.225 libcomps 0.1.18-1.el8

### 1.225.1 Available under license :

GNU GENERAL PUBLIC LICENSE  
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to

your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law:

that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If

identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the

operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under

any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along

with this program; if not, write to the Free Software Foundation, Inc.,  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this  
when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate  
parts of the General Public License. Of course, the commands you use may  
be called something other than `show w' and `show c'; they could even be  
mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your  
school, if any, to sign a "copyright disclaimer" for the program, if  
necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into  
proprietary programs. If your program is a subroutine library, you may  
consider it more useful to permit linking proprietary applications with the  
library. If this is what you want to do, use the GNU Lesser General  
Public License instead of this License.

## 1.226 jackson 1.9.13

### 1.226.1 Available under license :

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.



"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such

license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

You must give any other recipients of the Work or Derivative Works a copy of this License; and  
You must cause any modified files to carry prominent notices stating that You changed the files; and  
You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing,

shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

## 1.227 pysocks 1.6.8

### 1.227.1 Available under license :

Copyright 2006 Dan-Haim. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of Dan Haim nor the names of his contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY DAN HAIM "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL DAN HAIM OR HIS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

3proxy 0.7 Public License Agreement

(c) 2000-2014 by 3APA3A (3APA3A@security.nnov.ru)

(c) 2000-2014 by SecurityVulns.com (<http://3proxy.ru/>)

(c) 2000-2014 by Vladimir Dubrovin (vlad@sandy.ru)

This software uses:

RSA Data Security, Inc. MD4 Message-Digest Algorithm  
RSA Data Security, Inc. MD5 Message-Digest Algorithm

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

This software is FREeware.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that following conditions are met (BSD style license):

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of the SecurityVulns.COM nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

Instead of this license, you can also use and redistribute this software under terms of compatible license, including:

1. Apache License, Version 2.0

You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

2. GNU General Public License as published by

the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

You may obtain a copy of the License at

<http://www.gnu.org/licenses/gpl.txt>

3. GNU Lesser General Public License as published by the

Free Software Foundation; either version 2.1 of the License, or

(at your option) any later version.  
You may obtain a copy of the License at

<http://www.gnu.org/licenses/lgpl.txt>

## 1.228 neethi 3.1.1

## 1.229 commons-el 8.5.60

### 1.229.1 Available under license :

Apache Tomcat Native Library  
Copyright 2002-2018 The Apache Software Foundation

This product includes software developed at  
The Apache Software Foundation (<http://www.apache.org/>).

This software contains code derived from netty-native  
developed by the Netty project  
(<http://netty.io>, <https://github.com/netty/netty-tcnative/>)  
and from finagle-native developed at Twitter  
(<https://github.com/twitter/finagle>).

This product includes software developed by the OpenSSL Project  
for use in the OpenSSL Toolkit. (<http://www.openssl.org/>)

This product includes cryptographic software written by  
Eric Young ([eay@cryptsoft.com](mailto:eay@cryptsoft.com))

This product includes software written by  
Tim Hudson ([tjh@cryptsoft.com](mailto:tjh@cryptsoft.com))

Apache Standard Taglib Specification API  
Copyright 2001-2015 The Apache Software Foundation

This product includes software developed at  
The Apache Software Foundation (<http://www.apache.org/>).  
Apache Tomcat Native Library  
Copyright 2002-2020 The Apache Software Foundation

This product includes software developed at  
The Apache Software Foundation (<http://www.apache.org/>).

This software contains code derived from netty-native  
developed by the Netty project  
(<http://netty.io>, <https://github.com/netty/netty-tcnative/>)

and from finagle-native developed at Twitter  
(<https://github.com/twitter/finagle>).

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or

Derivative Works a copy of this License; and

- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.



7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
  
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
  
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction,  
and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by  
the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all  
other entities that control, are controlled by, or are under common  
control with that entity. For the purposes of this definition,  
"control" means (i) the power, direct or indirect, to cause the  
direction or management of such entity, whether by contract or  
otherwise, or (ii) ownership of fifty percent (50%) or more of the  
outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity  
exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications,  
including but not limited to software source code, documentation  
source, and configuration files.

"Object" form shall mean any form resulting from mechanical  
transformation or translation of a Source form, including but  
not limited to compiled object code, generated documentation,  
and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or  
Object form, made available under the License, as indicated by a

copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct

or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of

this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following

boilerplate notice, with the fields enclosed by brackets "[ ]"  
replaced with your own identifying information. (Don't include  
the brackets!) The text should be enclosed in the appropriate  
comment syntax for the file format. We also recommend that a  
file or class name and description of purpose be included on the  
same "printed page" as the copyright notice for easier  
identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

#### APACHE TOMCAT SUBCOMPONENTS:

Apache Tomcat includes a number of subcomponents with separate copyright notices  
and license terms. Your use of these subcomponents is subject to the terms and  
conditions of the following licenses.

For the following XML Schemas for Java EE Deployment Descriptors:

- javaee\_5.xsd
- javaee\_web\_services\_1\_2.xsd
- javaee\_web\_services\_client\_1\_2.xsd
- javaee\_6.xsd
- javaee\_web\_services\_1\_3.xsd
- javaee\_web\_services\_client\_1\_3.xsd
- jsp\_2\_2.xsd
- web-app\_3\_0.xsd
- web-common\_3\_0.xsd
- web-fragment\_3\_0.xsd
- javaee\_7.xsd
- javaee\_web\_services\_1\_4.xsd
- javaee\_web\_services\_client\_1\_4.xsd
- jsp\_2\_3.xsd
- web-app\_3\_1.xsd
- web-common\_3\_1.xsd

COMMON DEVELOPMENT AND DISTRIBUTION LICENSE (CDDL) Version 1.0

1. Definitions.

- 1.1. Contributor. means each individual or entity that creates or contributes to the creation of Modifications.
- 1.2. Contributor Version. means the combination of the Original Software, prior Modifications used by a Contributor (if any), and the Modifications made by that particular Contributor.
- 1.3. Covered Software. means (a) the Original Software, or (b) Modifications, or (c) the combination of files containing Original Software with files containing Modifications, in each case including portions thereof.
- 1.4. Executable. means the Covered Software in any form other than Source Code.
- 1.5. Initial Developer. means the individual or entity that first makes Original Software available under this License.
- 1.6. Larger Work. means a work which combines Covered Software or portions thereof with code not governed by the terms of this License.
- 1.7. License. means this document.
- 1.8. Licensable. means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently acquired, any and all of the rights conveyed herein.
- 1.9. Modifications. means the Source Code and Executable form of any of the following:
  - A. Any file that results from an addition to, deletion from or modification of the contents of a file containing Original Software or previous Modifications;
  - B. Any new file that contains any part of the Original Software or previous Modification; or
  - C. Any new file that is contributed or otherwise made available under the terms of this License.
- 1.10. Original Software. means the Source Code and Executable form of computer software code that is originally released under this License.

- 1.11. Patent Claims. means any patent claim(s), now owned or hereafter acquired, including without limitation, method, process, and apparatus claims, in any patent Licensable by grantor.
- 1.12. Source Code. means (a) the common form of computer software code in which modifications are made and (b) associated documentation included in or with such code.
- 1.13. You. (or .Your.) means an individual or a legal entity exercising rights under, and complying with all of the terms of, this License. For legal entities, .You. includes any entity which controls, is controlled by, or is under common control with You. For purposes of this definition, .control. means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

## 2. License Grants.

### 2.1. The Initial Developer Grant.

Conditioned upon Your compliance with Section 3.1 below and subject to third party intellectual property claims, the Initial Developer hereby grants You a world-wide, royalty-free, non-exclusive license:

- (a) under intellectual property rights (other than patent or trademark) Licensable by Initial Developer, to use, reproduce, modify, display, perform, sublicense and distribute the Original Software (or portions thereof), with or without Modifications, and/or as part of a Larger Work; and
- (b) under Patent Claims infringed by the making, using or selling of Original Software, to make, have made, use, practice, sell, and offer for sale, and/or otherwise dispose of the Original Software (or portions thereof).
- (c) The licenses granted in Sections 2.1(a) and (b) are effective on the date Initial Developer first distributes or otherwise makes the Original Software available to a third party under the terms of this License.
- (d) Notwithstanding Section 2.1(b) above, no patent license is granted:
  - (1) for code that You delete from the Original Software, or
  - (2) for infringements caused by: (i) the modification of the Original Software, or (ii) the combination of the Original Software with other software or devices.

### 2.2. Contributor Grant.



Conditioned upon Your compliance with Section 3.1 below and subject to third party intellectual property claims, each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:

- (a) under intellectual property rights (other than patent or trademark)  
Licensable by Contributor to use, reproduce, modify, display, perform, sublicense and distribute the Modifications created by such Contributor (or portions thereof), either on an unmodified basis, with other Modifications, as Covered Software and/or as part of a Larger Work; and
- (b) under Patent Claims infringed by the making, using, or selling of Modifications made by that Contributor either alone and/or in combination with its Contributor Version (or portions of such combination), to make, use, sell, offer for sale, have made, and/or otherwise dispose of: (1) Modifications made by that Contributor (or portions thereof); and (2) the combination of Modifications made by that Contributor with its Contributor Version (or portions of such combination).
- (c) The licenses granted in Sections 2.2(a) and 2.2(b) are effective on the date Contributor first distributes or otherwise makes the Modifications available to a third party.
- (d) Notwithstanding Section 2.2(b) above, no patent license is granted:  
(1) for any code that Contributor has deleted from the Contributor Version; (2) for infringements caused by: (i) third party modifications of Contributor Version, or (ii) the combination of Modifications made by that Contributor with other software (except as part of the Contributor Version) or other devices; or (3) under Patent Claims infringed by Covered Software in the absence of Modifications made by that Contributor.

### 3. Distribution Obligations.

#### 3.1. Availability of Source Code.

Any Covered Software that You distribute or otherwise make available in Executable form must also be made available in Source Code form and that Source Code form must be distributed only under the terms of this License. You must include a copy of this License with every copy of the Source Code form of the Covered Software You distribute or otherwise make available. You must inform recipients of any such Covered Software in Executable form as to how they can obtain such Covered Software in Source Code form in a reasonable manner on or through a medium customarily used for software exchange.

#### 3.2. Modifications.

The Modifications that You create or to which You contribute are governed by the terms of this License. You represent that You believe Your Modifications are Your original creation(s) and/or You have sufficient rights to grant the rights conveyed by this License.

### 3.3. Required Notices.

You must include a notice in each of Your Modifications that identifies You as the Contributor of the Modification. You may not remove or alter any copyright, patent or trademark notices contained within the Covered Software, or any notices of licensing or any descriptive text giving attribution to any Contributor or the Initial Developer.

### 3.4. Application of Additional Terms.

You may not offer or impose any terms on any Covered Software in Source Code form that alters or restricts the applicable version of this License or the recipients' rights hereunder. You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Software. However, you may do so only on Your own behalf, and not on behalf of the Initial Developer or any Contributor. You must make it absolutely clear that any such warranty, support, indemnity or liability obligation is offered by You alone, and You hereby agree to indemnify the Initial Developer and every Contributor for any liability incurred by the Initial Developer or such Contributor as a result of warranty, support, indemnity or liability terms You offer.

### 3.5. Distribution of Executable Versions.

You may distribute the Executable form of the Covered Software under the terms of this License or under the terms of a license of Your choice, which may contain terms different from this License, provided that You are in compliance with the terms of this License and that the license for the Executable form does not attempt to limit or alter the recipient's rights in the Source Code form from the rights set forth in this License. If You distribute the Covered Software in Executable form under a different license, You must make it absolutely clear that any terms which differ from this License are offered by You alone, not by the Initial Developer or Contributor. You hereby agree to indemnify the Initial Developer and every Contributor for any liability incurred by the Initial Developer or such Contributor as a result of any such terms You offer.

### 3.6. Larger Works.

You may create a Larger Work by combining Covered Software with other code not governed by the terms of this License and distribute the Larger Work as a single product. In such a case, You must make sure the requirements of this License are fulfilled for the Covered Software.

## 4. Versions of the License.

### 4.1. New Versions.

Sun Microsystems, Inc. is the initial license steward and may publish revised and/or new versions of this License from time to time. Each version will be given a distinguishing version number. Except as provided in Section 4.3, no one other than the license steward has the right to modify this License.

#### 4.2. Effect of New Versions.

You may always continue to use, distribute or otherwise make the Covered Software available under the terms of the version of the License under which You originally received the Covered Software. If the Initial Developer includes a notice in the Original Software prohibiting it from being distributed or otherwise made available under any subsequent version of the License, You must distribute and make the Covered Software available under the terms of the version of the License under which You originally received the Covered Software. Otherwise, You may also choose to use, distribute or otherwise make the Covered Software available under the terms of any subsequent version of the License published by the license steward.

#### 4.3. Modified Versions.

When You are an Initial Developer and You want to create a new license for Your Original Software, You may create and use a modified version of this License if You: (a) rename the license and remove any references to the name of the license steward (except to note that the license differs from this License); and (b) otherwise make it clear that the license contains terms which differ from this License.

### 5. DISCLAIMER OF WARRANTY.

COVERED SOFTWARE IS PROVIDED UNDER THIS LICENSE ON AN .AS IS. BASIS, WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTIES THAT THE COVERED SOFTWARE IS FREE OF DEFECTS, MERCHANTABILITY, FIT FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE COVERED SOFTWARE IS WITH YOU. SHOULD ANY COVERED SOFTWARE PROVE DEFECTIVE IN ANY RESPECT, YOU (NOT THE INITIAL DEVELOPER OR ANY OTHER CONTRIBUTOR) ASSUME THE COST OF ANY NECESSARY SERVICING, REPAIR OR CORRECTION. THIS DISCLAIMER OF WARRANTY CONSTITUTES AN ESSENTIAL PART OF THIS LICENSE. NO USE OF ANY COVERED SOFTWARE IS AUTHORIZED HEREUNDER EXCEPT UNDER THIS DISCLAIMER.

### 6. TERMINATION.

6.1. This License and the rights granted hereunder will terminate automatically if You fail to comply with terms herein and fail to cure such breach within 30 days of becoming aware of the breach. Provisions which, by their nature, must remain in effect beyond the termination of this License shall survive.

6.2. If You assert a patent infringement claim (excluding declaratory judgment actions) against Initial Developer or a Contributor (the Initial Developer or Contributor against whom You assert such claim is referred to as .Participant.) alleging that the Participant Software (meaning the Contributor Version where the Participant is a Contributor or the Original Software where the Participant is the Initial Developer) directly or indirectly infringes any patent, then any and all rights granted directly or indirectly to You by such Participant, the Initial Developer (if the Initial Developer is not the Participant) and all Contributors under Sections 2.1 and/or 2.2 of this License shall, upon 60 days notice from Participant terminate prospectively and automatically at the expiration of such 60 day notice period, unless if within such 60 day period You withdraw Your claim with respect to the Participant Software against such Participant either unilaterally or pursuant to a written agreement with Participant.

6.3. In the event of termination under Sections 6.1 or 6.2 above, all end user licenses that have been validly granted by You or any distributor hereunder prior to termination (excluding licenses granted to You by any distributor) shall survive termination.

## 7. LIMITATION OF LIABILITY.

UNDER NO CIRCUMSTANCES AND UNDER NO LEGAL THEORY, WHETHER TORT (INCLUDING NEGLIGENCE), CONTRACT, OR OTHERWISE, SHALL YOU, THE INITIAL DEVELOPER, ANY OTHER CONTRIBUTOR, OR ANY DISTRIBUTOR OF COVERED SOFTWARE, OR ANY SUPPLIER OF ANY OF SUCH PARTIES, BE LIABLE TO ANY PERSON FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES OF ANY CHARACTER INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOST PROFITS, LOSS OF GOODWILL, WORK STOPPAGE, COMPUTER FAILURE OR MALFUNCTION, OR ANY AND ALL OTHER COMMERCIAL DAMAGES OR LOSSES, EVEN IF SUCH PARTY SHALL HAVE BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. THIS LIMITATION OF LIABILITY SHALL NOT APPLY TO LIABILITY FOR DEATH OR PERSONAL INJURY RESULTING FROM SUCH PARTY'S NEGLIGENCE TO THE EXTENT APPLICABLE LAW PROHIBITS SUCH LIMITATION. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THIS EXCLUSION AND LIMITATION MAY NOT APPLY TO YOU.

## 8. U.S. GOVERNMENT END USERS.

The Covered Software is a .commercial item., as that term is defined in 48 C.F.R. 2.101 (Oct. 1995), consisting of .commercial computer software. (as that term is defined at 48 C.F.R. ? 252.227-7014(a)(1)) and commercial computer software documentation. as such terms are used in 48 C.F.R. 12.212 (Sept. 1995). Consistent with 48 C.F.R. 12.212 and 48 C.F.R. 227.7202-1 through 227.7202-4 (June 1995), all U.S. Government End Users acquire Covered Software with only those rights set forth herein. This U.S. Government Rights clause is in lieu of, and supersedes, any other FAR, DFAR, or other clause or

provision that addresses Government rights in computer software under this License.

#### 9. MISCELLANEOUS.

This License represents the complete agreement concerning subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable. This License shall be governed by the law of the jurisdiction specified in a notice contained within the Original Software (except to the extent applicable law, if any, provides otherwise), excluding such jurisdiction's conflict-of-law provisions. Any litigation relating to this License shall be subject to the jurisdiction of the courts located in the jurisdiction and venue specified in a notice contained within the Original Software, with the losing party responsible for costs, including, without limitation, court costs and reasonable attorneys' fees and expenses. The application of the United Nations Convention on Contracts for the International Sale of Goods is expressly excluded. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not apply to this License. You agree that You alone are responsible for compliance with the United States export administration regulations (and the export control laws and regulation of any other countries) when You use, distribute or otherwise make available any Covered Software.

#### 10. RESPONSIBILITY FOR CLAIMS.

As between Initial Developer and the Contributors, each party is responsible for claims and damages arising, directly or indirectly, out of its utilization of rights under this License and You agree to work with Initial Developer and Contributors to distribute such responsibility on an equitable basis. Nothing herein is intended or shall be deemed to constitute any admission of liability.

#### NOTICE PURSUANT TO SECTION 9 OF THE COMMON DEVELOPMENT AND DISTRIBUTION LICENSE (CDDL)

The code released under the CDDL shall be governed by the laws of the State of California (excluding conflict-of-law provisions). Any litigation relating to this License shall be subject to the jurisdiction of the Federal Courts of the Northern District of California and the state courts of the State of California, with venue lying in Santa Clara County, California.

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

## 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent

to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work,

excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any



risks associated with Your exercise of permissions under this License.

8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
  
9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

#### APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS,

WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

For OpenSSL:

## LICENSE ISSUES

=====

The OpenSSL toolkit stays under a double license, i.e. both the conditions of  
the OpenSSL License and the original SSLeay license apply to the toolkit.  
See below for the actual license texts.

### OpenSSL License

-----

/\* =====

- \* Copyright (c) 1998-2018 The OpenSSL Project. All rights reserved.
- \*
- \* Redistribution and use in source and binary forms, with or without
- \* modification, are permitted provided that the following conditions
- \* are met:
- \*
- \* 1. Redistributions of source code must retain the above copyright
- \* notice, this list of conditions and the following disclaimer.
- \*
- \* 2. Redistributions in binary form must reproduce the above copyright
- \* notice, this list of conditions and the following disclaimer in
- \* the documentation and/or other materials provided with the
- \* distribution.
- \*
- \* 3. All advertising materials mentioning features or use of this
- \* software must display the following acknowledgment:
- \* "This product includes software developed by the OpenSSL Project
- \* for use in the OpenSSL Toolkit. (<http://www.openssl.org/>)"
- \*
- \* 4. The names "OpenSSL Toolkit" and "OpenSSL Project" must not be used to
- \* endorse or promote products derived from this software without
- \* prior written permission. For written permission, please contact
- \* [openssl-core@openssl.org](mailto:openssl-core@openssl.org).
- \*
- \* 5. Products derived from this software may not be called "OpenSSL"
- \* nor may "OpenSSL" appear in their names without prior written
- \* permission of the OpenSSL Project.
- \*
- \* 6. Redistributions of any form whatsoever must retain the following
- \* acknowledgment:

```

* "This product includes software developed by the OpenSSL Project
* for use in the OpenSSL Toolkit (http://www.openssl.org/)"
*
* THIS SOFTWARE IS PROVIDED BY THE OpenSSL PROJECT ``AS IS" AND ANY
* EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
* PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE OpenSSL PROJECT OR
* ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
* SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT
* NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
* LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,
* STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
* ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED
* OF THE POSSIBILITY OF SUCH DAMAGE.
* =====
*
* This product includes cryptographic software written by Eric Young
* (eay@cryptsoft.com). This product includes software written by Tim
* Hudson (tjh@cryptsoft.com).
*
*/

```

Original SSLeay License

-----

```

/* Copyright (C) 1995-1998 Eric Young (eay@cryptsoft.com)
* All rights reserved.
*
* This package is an SSL implementation written
* by Eric Young (eay@cryptsoft.com).
* The implementation was written so as to conform with Netscapes SSL.
*
* This library is free for commercial and non-commercial use as long as
* the following conditions are aheared to. The following conditions
* apply to all code found in this distribution, be it the RC4, RSA,
* lhash, DES, etc., code; not just the SSL code. The SSL documentation
* included with this distribution is covered by the same copyright terms
* except that the holder is Tim Hudson (tjh@cryptsoft.com).
*
* Copyright remains Eric Young's, and as such any Copyright notices in
* the code are not to be removed.
* If this package is used in a product, Eric Young should be given attribution
* as the author of the parts of the library used.
* This can be in the form of a textual message at program startup or
* in documentation (online or textual) provided with the package.
*
* Redistribution and use in source and binary forms, with or without

```

- \* modification, are permitted provided that the following conditions
- \* are met:
- \* 1. Redistributions of source code must retain the copyright
- \* notice, this list of conditions and the following disclaimer.
- \* 2. Redistributions in binary form must reproduce the above copyright
- \* notice, this list of conditions and the following disclaimer in the
- \* documentation and/or other materials provided with the distribution.
- \* 3. All advertising materials mentioning features or use of this software
- \* must display the following acknowledgement:
- \* "This product includes cryptographic software written by
- \* Eric Young (eay@cryptsoft.com)"
- \* The word 'cryptographic' can be left out if the routines from the library
- \* being used are not cryptographic related :-).
- \* 4. If you include any Windows specific code (or a derivative thereof) from
- \* the apps directory (application code) you must include an acknowledgement:
- \* "This product includes software written by Tim Hudson (tjh@cryptsoft.com)"
- \*
- \* THIS SOFTWARE IS PROVIDED BY ERIC YOUNG ``AS IS'' AND
- \* ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
- \* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
- \* ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE
- \* FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
- \* DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS
- \* OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
- \* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
- \* LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
- \* OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
- \* SUCH DAMAGE.
- \*
- \* The licence and distribution terms for any publically available version or
- \* derivative of this code cannot be changed. i.e. this code cannot simply be
- \* copied and put under another distribution licence
- \* [including the GNU Public Licence.]
- \*/

Apache Tomcat

Copyright 1999-2020 The Apache Software Foundation

This product includes software developed at  
The Apache Software Foundation (<http://www.apache.org/>).

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction,

and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the

Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory,

whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.



## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and

- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or

agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");

you may not use this file except in compliance with the License.

You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Apache Commons Daemon

Copyright 1999-2020 The Apache Software Foundation

This product includes software developed by  
The Apache Software Foundation (<http://www.apache.org/>).

Apache Standard Taglib Implementation

Copyright 2001-2015 The Apache Software Foundation

This product includes software developed at  
The Apache Software Foundation (<http://www.apache.org/>).  
Apache Tomcat  
Copyright 1999-2020 The Apache Software Foundation

This product includes software developed at  
The Apache Software Foundation (<https://www.apache.org/>).

This software contains code derived from netty-native developed by the Netty project (<https://netty.io>, <https://github.com/netty/netty-tcnative/>) and from finagle-native developed at Twitter (<https://github.com/twitter/finagle>).

The Windows Installer is built with the Nullsoft Scriptable Install System (NSIS), which is open source software. The original software and related information is available at <http://nsis.sourceforge.net>.

Java compilation software for JSP pages is provided by the Eclipse JDT Core Batch Compiler component, which is open source software. The original software and related information is available at <https://www.eclipse.org/jdt/core/>.

For portions of the Tomcat JNI OpenSSL API and the OpenSSL JSSE integration The org.apache.tomcat.jni and the org.apache.tomcat.net.openssl packages are derivative work originating from the Netty project and the finagle-native project developed at Twitter

\* Copyright 2014 The Netty Project

\* Copyright 2014 Twitter

The original XML Schemas for Java EE Deployment Descriptors:

- javaee\_5.xsd
- javaee\_web\_services\_1\_2.xsd
- javaee\_web\_services\_client\_1\_2.xsd
- javaee\_6.xsd
- javaee\_web\_services\_1\_3.xsd
- javaee\_web\_services\_client\_1\_3.xsd
- jsp\_2\_2.xsd
- web-app\_3\_0.xsd
- web-common\_3\_0.xsd
- web-fragment\_3\_0.xsd
- javaee\_7.xsd
- javaee\_web\_services\_1\_4.xsd
- javaee\_web\_services\_client\_1\_4.xsd
- jsp\_2\_3.xsd
- web-app\_3\_1.xsd
- web-common\_3\_1.xsd
- web-fragment\_3\_1.xsd

may be obtained from:

<http://www.oracle.com/webfolder/technetwork/jsc/xml/ns/javaee/index.html>

Apache Tomcat

Copyright 1999-2020 The Apache Software Foundation

This product includes software developed at

The Apache Software Foundation (<http://www.apache.org/>).

The original XML Schemas for Java EE Deployment Descriptors:

- javaee\_5.xsd
- javaee\_web\_services\_1\_2.xsd
- javaee\_web\_services\_client\_1\_2.xsd
- javaee\_6.xsd
- javaee\_web\_services\_1\_3.xsd
- javaee\_web\_services\_client\_1\_3.xsd
- jsp\_2\_2.xsd
- web-app\_3\_0.xsd
- web-common\_3\_0.xsd
- web-fragment\_3\_0.xsd
- javaee\_7.xsd
- javaee\_web\_services\_1\_4.xsd
- javaee\_web\_services\_client\_1\_4.xsd
- jsp\_2\_3.xsd
- web-app\_3\_1.xsd
- web-common\_3\_1.xsd
- web-fragment\_3\_1.xsd

may be obtained from:

<http://www.oracle.com/webfolder/technetwork/jsc/xml/ns/javaee/index.html>

Apache Tomcat JDBC Pool

Copyright 2008-2020 The Apache Software Foundation

This product includes software developed at

The Apache Software Foundation (<http://www.apache.org/>).

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.



4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed

with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate

comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work,

where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or

for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason

of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

### APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

### APACHE TOMCAT SUBCOMPONENTS:

Apache Tomcat includes a number of subcomponents with separate copyright notices and license terms. Your use of these subcomponents is subject to the terms and conditions of the following licenses.

For the Eclipse JDT Core Batch Compiler (ecj-x.x.x.jar) component:

Eclipse Public License - v 1.0

THE ACCOMPANYING PROGRAM IS PROVIDED UNDER THE TERMS OF THIS ECLIPSE PUBLIC LICENSE ("AGREEMENT"). ANY USE, REPRODUCTION OR DISTRIBUTION OF THE PROGRAM CONSTITUTES RECIPIENT'S ACCEPTANCE OF THIS AGREEMENT.

### 1. DEFINITIONS

"Contribution" means:

a) in the case of the initial Contributor, the initial code and documentation distributed under this Agreement, and

b) in the case of each subsequent Contributor:

i) changes to the Program, and

ii) additions to the Program;

where such changes and/or additions to the Program originate from and are distributed by that particular Contributor. A Contribution 'originates' from a Contributor if it was added to the Program by such Contributor itself or anyone acting on such Contributor's behalf. Contributions do not include additions to the Program which: (i) are separate modules of software distributed in conjunction with the Program under their own license agreement, and (ii) are not derivative works of the Program.

"Contributor" means any person or entity that distributes the Program.

"Licensed Patents" mean patent claims licensable by a Contributor which are necessarily infringed by the use or sale of its Contribution alone or when combined with the Program.

"Program" means the Contributions distributed in accordance with this Agreement.

"Recipient" means anyone who receives the Program under this Agreement, including all Contributors.

## 2. GRANT OF RIGHTS

a) Subject to the terms of this Agreement, each Contributor hereby grants Recipient a non-exclusive, worldwide, royalty-free copyright license to reproduce, prepare derivative works of, publicly display, publicly perform, distribute and sublicense the Contribution of such Contributor, if any, and such derivative works, in source code and object code form.

b) Subject to the terms of this Agreement, each Contributor hereby grants Recipient a non-exclusive, worldwide, royalty-free patent license under Licensed Patents to make, use, sell, offer to sell, import and otherwise transfer the Contribution of such Contributor, if any, in source code and object code form. This patent license shall apply to the combination of the Contribution and the Program if, at the time the Contribution is added by the Contributor, such addition of the Contribution causes such combination to be covered by the Licensed Patents. The patent license shall not apply to any other combinations which include the Contribution. No hardware per se is licensed hereunder.



c) Recipient understands that although each Contributor grants the licenses to its Contributions set forth herein, no assurances are provided by any Contributor that the Program does not infringe the patent or other intellectual property rights of any other entity. Each Contributor disclaims any liability to Recipient for claims brought by any other entity based on infringement of intellectual property rights or otherwise. As a condition to exercising the rights and licenses granted hereunder, each Recipient hereby assumes sole responsibility to secure any other intellectual property rights needed, if any. For example, if a third party patent license is required to allow Recipient to distribute the Program, it is Recipient's responsibility to acquire that license before distributing the Program.

d) Each Contributor represents that to its knowledge it has sufficient copyright rights in its Contribution, if any, to grant the copyright license set forth in this Agreement.

### 3. REQUIREMENTS

A Contributor may choose to distribute the Program in object code form under its own license agreement, provided that:

- a) it complies with the terms and conditions of this Agreement; and
- b) its license agreement:
  - i) effectively disclaims on behalf of all Contributors all warranties and conditions, express and implied, including warranties or conditions of title and non-infringement, and implied warranties or conditions of merchantability and fitness for a particular purpose;
  - ii) effectively excludes on behalf of all Contributors all liability for damages, including direct, indirect, special, incidental and consequential damages, such as lost profits;
  - iii) states that any provisions which differ from this Agreement are offered by that Contributor alone and not by any other party; and
  - iv) states that source code for the Program is available from such Contributor, and informs licensees how to obtain it in a reasonable manner on or through a medium customarily used for software exchange.

When the Program is made available in source code form:

- a) it must be made available under this Agreement; and
- b) a copy of this Agreement must be included with each copy of the Program.

Contributors may not remove or alter any copyright notices contained within the

Program.

Each Contributor must identify itself as the originator of its Contribution, if any, in a manner that reasonably allows subsequent Recipients to identify the originator of the Contribution.

#### 4. COMMERCIAL DISTRIBUTION

Commercial distributors of software may accept certain responsibilities with respect to end users, business partners and the like. While this license is intended to facilitate the commercial use of the Program, the Contributor who includes the Program in a commercial product offering should do so in a manner which does not create potential liability for other Contributors. Therefore, if a Contributor includes the Program in a commercial product offering, such Contributor ("Commercial Contributor") hereby agrees to defend and indemnify every other Contributor ("Indemnified Contributor") against any losses, damages and costs (collectively "Losses") arising from claims, lawsuits and other legal actions brought by a third party against the Indemnified Contributor to the extent caused by the acts or omissions of such Commercial Contributor in connection with its distribution of the Program in a commercial product offering. The obligations in this section do not apply to any claims or Losses relating to any actual or alleged intellectual property infringement. In order to qualify, an Indemnified Contributor must: a) promptly notify the Commercial Contributor in writing of such claim, and b) allow the Commercial Contributor to control, and cooperate with the Commercial Contributor in, the defense and any related settlement negotiations. The Indemnified Contributor may participate in any such claim at its own expense.

For example, a Contributor might include the Program in a commercial product offering, Product X. That Contributor is then a Commercial Contributor. If that Commercial Contributor then makes performance claims, or offers warranties related to Product X, those performance claims and warranties are such Commercial Contributor's responsibility alone. Under this section, the Commercial Contributor would have to defend claims against the other Contributors related to those performance claims and warranties, and if a court requires any other Contributor to pay any damages as a result, the Commercial Contributor must pay those damages.

#### 5. NO WARRANTY

EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, THE PROGRAM IS PROVIDED ON AN "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, EITHER EXPRESS OR IMPLIED INCLUDING, WITHOUT LIMITATION, ANY WARRANTIES OR CONDITIONS OF TITLE, NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Each Recipient is solely responsible for determining the appropriateness of using and distributing the Program and assumes all risks associated with its exercise of rights under this Agreement, including but not limited to the risks and costs of program errors, compliance with applicable laws, damage to or loss of data,

programs or equipment, and unavailability or interruption of operations.

## 6. DISCLAIMER OF LIABILITY

EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, NEITHER RECIPIENT NOR ANY CONTRIBUTORS SHALL HAVE ANY LIABILITY FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING WITHOUT LIMITATION LOST PROFITS), HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OR DISTRIBUTION OF THE PROGRAM OR THE EXERCISE OF ANY RIGHTS GRANTED HEREUNDER, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## 7. GENERAL

If any provision of this Agreement is invalid or unenforceable under applicable law, it shall not affect the validity or enforceability of the remainder of the terms of this Agreement, and without further action by the parties hereto, such provision shall be reformed to the minimum extent necessary to make such provision valid and enforceable.

If Recipient institutes patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Program itself (excluding combinations of the Program with other software or hardware) infringes such Recipient's patent(s), then such Recipient's rights granted under Section 2(b) shall terminate as of the date such litigation is filed.

All Recipient's rights under this Agreement shall terminate if it fails to comply with any of the material terms or conditions of this Agreement and does not cure such failure in a reasonable period of time after becoming aware of such noncompliance. If all Recipient's rights under this Agreement terminate, Recipient agrees to cease use and distribution of the Program as soon as reasonably practicable. However, Recipient's obligations under this Agreement and any licenses granted by Recipient relating to the Program shall continue and survive.

Everyone is permitted to copy and distribute copies of this Agreement, but in order to avoid inconsistency the Agreement is copyrighted and may only be modified in the following manner. The Agreement Steward reserves the right to publish new versions (including revisions) of this Agreement from time to time. No one other than the Agreement Steward has the right to modify this Agreement. The Eclipse Foundation is the initial Agreement Steward. The Eclipse Foundation may assign the responsibility to serve as the Agreement Steward to a suitable separate entity. Each new version of the Agreement will be given a distinguishing version number. The Program (including Contributions) may always be distributed subject to the version of the Agreement under which it was received. In addition, after a new version of the Agreement is published, Contributor may elect to distribute the Program (including its Contributions) under the new version. Except as expressly stated in Sections 2(a) and 2(b)

above, Recipient receives no rights or licenses to the intellectual property of any Contributor under this Agreement, whether expressly, by implication, estoppel or otherwise. All rights in the Program not expressly granted under this Agreement are reserved.

This Agreement is governed by the laws of the State of New York and the intellectual property laws of the United States of America. No party to this Agreement will bring a legal action under this Agreement more than one year after the cause of action arose. Each party waives its rights to a jury trial in any resulting litigation.

For the Windows Installer component:

- \* All NSIS source code, plug-ins, documentation, examples, header files and graphics, with the exception of the compression modules and where otherwise noted, are licensed under the zlib/libpng license.
- \* The zlib compression module for NSIS is licensed under the zlib/libpng license.
- \* The bzip2 compression module for NSIS is licensed under the bzip2 license.
- \* The lzma compression module for NSIS is licensed under the Common Public License version 1.0.

zlib/libpng license

This software is provided 'as-is', without any express or implied warranty. In no event will the authors be held liable for any damages arising from the use of this software.

Permission is granted to anyone to use this software for any purpose, including commercial applications, and to alter it and redistribute it freely, subject to the following restrictions:

1. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated but is not required.
2. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
3. This notice may not be removed or altered from any source distribution.

bzip2 license

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

2. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated but is not required.
3. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
4. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Julian Seward, Cambridge, UK.

[jseward@acm.org](mailto:jseward@acm.org)

Common Public License version 1.0

THE ACCOMPANYING PROGRAM IS PROVIDED UNDER THE TERMS OF THIS COMMON PUBLIC LICENSE ("AGREEMENT"). ANY USE, REPRODUCTION OR DISTRIBUTION OF THE PROGRAM CONSTITUTES RECIPIENT'S ACCEPTANCE OF THIS AGREEMENT.

## 1. DEFINITIONS

"Contribution" means:

a) in the case of the initial Contributor, the initial code and documentation distributed under this Agreement, and b) in the case of each subsequent Contributor:

i) changes to the Program, and

ii) additions to the Program;

where such changes and/or additions to the Program originate from and are distributed by that particular Contributor. A Contribution 'originates' from a Contributor if it was added to the Program by such Contributor itself or anyone acting on such Contributor's behalf. Contributions do not include additions to the Program which: (i) are separate modules of software distributed in conjunction with the Program under their own license agreement, and (ii) are not derivative works of the Program.

"Contributor" means any person or entity that distributes the Program.

"Licensed Patents " mean patent claims licensable by a Contributor which are necessarily infringed by the use or sale of its Contribution alone or when combined with the Program.

"Program" means the Contributions distributed in accordance with this Agreement.

"Recipient" means anyone who receives the Program under this Agreement, including all Contributors.

## 2. GRANT OF RIGHTS

a) Subject to the terms of this Agreement, each Contributor hereby grants Recipient a non-exclusive, worldwide, royalty-free copyright license to reproduce, prepare derivative works of, publicly display, publicly perform, distribute and sublicense the Contribution of such Contributor, if any, and such derivative works, in source code and object code form.

b) Subject to the terms of this Agreement, each Contributor hereby grants Recipient a non-exclusive, worldwide, royalty-free patent license under Licensed Patents to make, use, sell, offer to sell, import and otherwise transfer the Contribution of such Contributor, if any, in source code and object code form. This patent license shall apply to the combination of the Contribution and the Program if, at the time the Contribution is added by the Contributor, such addition of the Contribution causes such combination to be covered by the Licensed Patents. The patent license shall not apply to any other combinations which include the Contribution. No hardware per se is licensed hereunder.

c) Recipient understands that although each Contributor grants the licenses to its Contributions set forth herein, no assurances are provided by any Contributor that the Program does not infringe the patent or other intellectual property rights of any other entity. Each Contributor disclaims any liability to Recipient for claims brought by any other entity based on infringement of intellectual property rights or otherwise. As a condition to exercising the rights and licenses granted hereunder, each Recipient hereby assumes sole responsibility to secure any other intellectual property rights needed, if any. For example, if a third party patent license is required to allow Recipient to distribute the Program, it is Recipient's responsibility to acquire that license before distributing the Program.

d) Each Contributor represents that to its knowledge it has sufficient copyright rights in its Contribution, if any, to grant the copyright license set forth in this Agreement.

## 3. REQUIREMENTS

A Contributor may choose to distribute the Program in object code form under its own license agreement, provided that:

- a) it complies with the terms and conditions of this Agreement; and
- b) its license agreement:
  - i) effectively disclaims on behalf of all Contributors all warranties and conditions, express and implied, including warranties or conditions of title and non-infringement, and implied warranties or conditions of merchantability and fitness for a particular purpose;
  - ii) effectively excludes on behalf of all Contributors all liability for damages, including direct, indirect, special, incidental and consequential damages, such as lost profits;
  - iii) states that any provisions which differ from this Agreement are offered by that Contributor alone and not by any other party; and
  - iv) states that source code for the Program is available from such Contributor, and informs licensees how to obtain it in a reasonable manner on or through a medium customarily used for software exchange.

When the Program is made available in source code form:

- a) it must be made available under this Agreement; and
- b) a copy of this Agreement must be included with each copy of the Program.

Contributors may not remove or alter any copyright notices contained within the Program.

Each Contributor must identify itself as the originator of its Contribution, if any, in a manner that reasonably allows subsequent Recipients to identify the originator of the Contribution.

#### 4. COMMERCIAL DISTRIBUTION

Commercial distributors of software may accept certain responsibilities with respect to end users, business partners and the like. While this license is intended to facilitate the commercial use of the Program, the Contributor who includes the Program in a commercial product offering should do so in a manner which does not create potential liability for other Contributors. Therefore, if a Contributor includes the Program in a commercial product offering, such Contributor ("Commercial Contributor") hereby agrees to defend and indemnify every other Contributor ("Indemnified Contributor") against any losses, damages and costs (collectively "Losses") arising from claims, lawsuits and other legal actions brought by a third party against the Indemnified Contributor to the

extent caused by the acts or omissions of such Commercial Contributor in connection with its distribution of the Program in a commercial product offering. The obligations in this section do not apply to any claims or Losses relating to any actual or alleged intellectual property infringement. In order to qualify, an Indemnified Contributor must: a) promptly notify the Commercial Contributor in writing of such claim, and b) allow the Commercial Contributor to control, and cooperate with the Commercial Contributor in, the defense and any related settlement negotiations. The Indemnified Contributor may participate in any such claim at its own expense.

For example, a Contributor might include the Program in a commercial product offering, Product X. That Contributor is then a Commercial Contributor. If that Commercial Contributor then makes performance claims, or offers warranties related to Product X, those performance claims and warranties are such Commercial Contributor's responsibility alone. Under this section, the Commercial Contributor would have to defend claims against the other Contributors related to those performance claims and warranties, and if a court requires any other Contributor to pay any damages as a result, the Commercial Contributor must pay those damages.

#### 5. NO WARRANTY

EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, THE PROGRAM IS PROVIDED ON AN "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, EITHER EXPRESS OR IMPLIED INCLUDING, WITHOUT LIMITATION, ANY WARRANTIES OR CONDITIONS OF TITLE, NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Each Recipient is solely responsible for determining the appropriateness of using and distributing the Program and assumes all risks associated with its exercise of rights under this Agreement, including but not limited to the risks and costs of program errors, compliance with applicable laws, damage to or loss of data, programs or equipment, and unavailability or interruption of operations.

#### 6. DISCLAIMER OF LIABILITY

EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, NEITHER RECIPIENT NOR ANY CONTRIBUTORS SHALL HAVE ANY LIABILITY FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING WITHOUT LIMITATION LOST PROFITS), HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OR DISTRIBUTION OF THE PROGRAM OR THE EXERCISE OF ANY RIGHTS GRANTED HEREUNDER, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### 7. GENERAL

If any provision of this Agreement is invalid or unenforceable under applicable law, it shall not affect the validity or enforceability of the remainder of the terms of this Agreement, and without further action by the parties hereto, such provision shall be reformed to the minimum extent necessary to make such



provision valid and enforceable.

If Recipient institutes patent litigation against a Contributor with respect to a patent applicable to software (including a cross-claim or counterclaim in a lawsuit), then any patent licenses granted by that Contributor to such Recipient under this Agreement shall terminate as of the date such litigation is filed. In addition, if Recipient institutes patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Program itself (excluding combinations of the Program with other software or hardware) infringes such Recipient's patent(s), then such Recipient's rights granted under Section 2(b) shall terminate as of the date such litigation is filed.

All Recipient's rights under this Agreement shall terminate if it fails to comply with any of the material terms or conditions of this Agreement and does not cure such failure in a reasonable period of time after becoming aware of such noncompliance. If all Recipient's rights under this Agreement terminate, Recipient agrees to cease use and distribution of the Program as soon as reasonably practicable. However, Recipient's obligations under this Agreement and any licenses granted by Recipient relating to the Program shall continue and survive.

Everyone is permitted to copy and distribute copies of this Agreement, but in order to avoid inconsistency the Agreement is copyrighted and may only be modified in the following manner. The Agreement Steward reserves the right to publish new versions (including revisions) of this Agreement from time to time. No one other than the Agreement Steward has the right to modify this Agreement. IBM is the initial Agreement Steward. IBM may assign the responsibility to serve as the Agreement Steward to a suitable separate entity. Each new version of the Agreement will be given a distinguishing version number. The Program (including Contributions) may always be distributed subject to the version of the Agreement under which it was received. In addition, after a new version of the Agreement is published, Contributor may elect to distribute the Program (including its Contributions) under the new version. Except as expressly stated in Sections 2(a) and 2(b) above, Recipient receives no rights or licenses to the intellectual property of any Contributor under this Agreement, whether expressly, by implication, estoppel or otherwise. All rights in the Program not expressly granted under this Agreement are reserved.

This Agreement is governed by the laws of the State of New York and the intellectual property laws of the United States of America. No party to this Agreement will bring a legal action under this Agreement more than one year after the cause of action arose. Each party waives its rights to a jury trial in any resulting litigation.

Special exception for LZMA compression module

Igor Pavlov and Amir Szekely, the authors of the LZMA compression module for NSIS, expressly permit you to statically or dynamically link your code (or bind

by name) to the files from the LZMA compression module for NSIS without subjecting your linked code to the terms of the Common Public license version 1.0. Any modifications or additions to files from the LZMA compression module for NSIS, however, are subject to the terms of the Common Public License version 1.0.

For the following XML Schemas for Java EE Deployment Descriptors:

- javaee\_5.xsd
- javaee\_web\_services\_1\_2.xsd
- javaee\_web\_services\_client\_1\_2.xsd
- javaee\_6.xsd
- javaee\_web\_services\_1\_3.xsd
- javaee\_web\_services\_client\_1\_3.xsd
- jsp\_2\_2.xsd
- web-app\_3\_0.xsd
- web-common\_3\_0.xsd
- web-fragment\_3\_0.xsd
- javaee\_7.xsd
- javaee\_web\_services\_1\_4.xsd
- javaee\_web\_services\_client\_1\_4.xsd
- jsp\_2\_3.xsd
- web-app\_3\_1.xsd
- web-common\_3\_1.xsd
- web-fragment\_3\_1.xsd

#### COMMON DEVELOPMENT AND DISTRIBUTION LICENSE (CDDL) Version 1.0

##### 1. Definitions.

1.1. Contributor. means each individual or entity that creates or contributes to the creation of Modifications.

1.2. Contributor Version. means the combination of the Original Software, prior Modifications used by a Contributor (if any), and the Modifications made by that particular Contributor.

1.3. Covered Software. means (a) the Original Software, or (b) Modifications, or (c) the combination of files containing Original Software with files containing Modifications, in each case including portions thereof.

1.4. Executable. means the Covered Software in any form other than Source Code.

1.5. Initial Developer. means the individual or entity that first makes Original Software available under this License.

1.6. Larger Work. means a work which combines Covered Software or portions

thereof with code not governed by the terms of this License.

- 1.7. License. means this document.
- 1.8. Licensable. means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently acquired, any and all of the rights conveyed herein.
- 1.9. Modifications. means the Source Code and Executable form of any of the following:
- A. Any file that results from an addition to, deletion from or modification of the contents of a file containing Original Software or previous Modifications;
  - B. Any new file that contains any part of the Original Software or previous Modification; or
  - C. Any new file that is contributed or otherwise made available under the terms of this License.
- 1.10. Original Software. means the Source Code and Executable form of computer software code that is originally released under this License.
- 1.11. Patent Claims. means any patent claim(s), now owned or hereafter acquired, including without limitation, method, process, and apparatus claims, in any patent Licensable by grantor.
- 1.12. Source Code. means (a) the common form of computer software code in which modifications are made and (b) associated documentation included in or with such code.
- 1.13. You. (or .Your.) means an individual or a legal entity exercising rights under, and complying with all of the terms of, this License. For legal entities, .You. includes any entity which controls, is controlled by, or is under common control with You. For purposes of this definition, .control. means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

## 2. License Grants.

### 2.1. The Initial Developer Grant.

Conditioned upon Your compliance with Section 3.1 below and subject to third party intellectual property claims, the Initial Developer hereby grants You a world-wide, royalty-free, non-exclusive license:

- (a) under intellectual property rights (other than patent or trademark)  
Licensable by Initial Developer, to use, reproduce, modify, display, perform, sublicense and distribute the Original Software (or portions thereof), with or without Modifications, and/or as part of a Larger Work; and
- (b) under Patent Claims infringed by the making, using or selling of Original Software, to make, have made, use, practice, sell, and offer for sale, and/or otherwise dispose of the Original Software (or portions thereof).
- (c) The licenses granted in Sections 2.1(a) and (b) are effective on the date Initial Developer first distributes or otherwise makes the Original Software available to a third party under the terms of this License.
- (d) Notwithstanding Section 2.1(b) above, no patent license is granted:  
(1) for code that You delete from the Original Software, or (2) for infringements caused by: (i) the modification of the Original Software, or (ii) the combination of the Original Software with other software or devices.

## 2.2. Contributor Grant.

Conditioned upon Your compliance with Section 3.1 below and subject to third party intellectual property claims, each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:

- (a) under intellectual property rights (other than patent or trademark)  
Licensable by Contributor to use, reproduce, modify, display, perform, sublicense and distribute the Modifications created by such Contributor (or portions thereof), either on an unmodified basis, with other Modifications, as Covered Software and/or as part of a Larger Work; and
- (b) under Patent Claims infringed by the making, using, or selling of Modifications made by that Contributor either alone and/or in combination with its Contributor Version (or portions of such combination), to make, use, sell, offer for sale, have made, and/or otherwise dispose of: (1) Modifications made by that Contributor (or portions thereof); and (2) the combination of Modifications made by that Contributor with its Contributor Version (or portions of such combination).
- (c) The licenses granted in Sections 2.2(a) and 2.2(b) are effective on the date Contributor first distributes or otherwise makes the Modifications available to a third party.

(d) Notwithstanding Section 2.2(b) above, no patent license is granted:

(1) for any code that Contributor has deleted from the Contributor Version; (2) for infringements caused by: (i) third party modifications of Contributor Version, or (ii) the combination of Modifications made by that Contributor with other software (except as part of the Contributor Version) or other devices; or (3) under Patent Claims infringed by Covered Software in the absence of Modifications made by that Contributor.

### 3. Distribution Obligations.

#### 3.1. Availability of Source Code.

Any Covered Software that You distribute or otherwise make available in Executable form must also be made available in Source Code form and that Source Code form must be distributed only under the terms of this License. You must include a copy of this License with every copy of the Source Code form of the Covered Software You distribute or otherwise make available. You must inform recipients of any such Covered Software in Executable form as to how they can obtain such Covered Software in Source Code form in a reasonable manner on or through a medium customarily used for software exchange.

#### 3.2. Modifications.

The Modifications that You create or to which You contribute are governed by the terms of this License. You represent that You believe Your Modifications are Your original creation(s) and/or You have sufficient rights to grant the rights conveyed by this License.

#### 3.3. Required Notices.

You must include a notice in each of Your Modifications that identifies You as the Contributor of the Modification. You may not remove or alter any copyright, patent or trademark notices contained within the Covered Software, or any notices of licensing or any descriptive text giving attribution to any Contributor or the Initial Developer.

#### 3.4. Application of Additional Terms.

You may not offer or impose any terms on any Covered Software in Source Code form that alters or restricts the applicable version of this License or the recipients' rights hereunder. You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Software. However, you may do so only on Your own behalf, and not on behalf of the Initial Developer or any Contributor. You must make it absolutely clear that any such warranty, support, indemnity or liability obligation is offered by You alone, and You hereby agree to indemnify the Initial Developer and every Contributor for any liability incurred by the Initial Developer or such Contributor as a result of warranty, support, indemnity or liability terms You offer.

### 3.5. Distribution of Executable Versions.

You may distribute the Executable form of the Covered Software under the terms of this License or under the terms of a license of Your choice, which may contain terms different from this License, provided that You are in compliance with the terms of this License and that the license for the Executable form does not attempt to limit or alter the recipient's rights in the Source Code form from the rights set forth in this License. If You distribute the Covered Software in Executable form under a different license, You must make it absolutely clear that any terms which differ from this License are offered by You alone, not by the Initial Developer or Contributor. You hereby agree to indemnify the Initial Developer and every Contributor for any liability incurred by the Initial Developer or such Contributor as a result of any such terms You offer.

### 3.6. Larger Works.

You may create a Larger Work by combining Covered Software with other code not governed by the terms of this License and distribute the Larger Work as a single product. In such a case, You must make sure the requirements of this License are fulfilled for the Covered Software.

## 4. Versions of the License.

### 4.1. New Versions.

Sun Microsystems, Inc. is the initial license steward and may publish revised and/or new versions of this License from time to time. Each version will be given a distinguishing version number. Except as provided in Section 4.3, no one other than the license steward has the right to modify this License.

### 4.2. Effect of New Versions.

You may always continue to use, distribute or otherwise make the Covered Software available under the terms of the version of the License under which You originally received the Covered Software. If the Initial Developer includes a notice in the Original Software prohibiting it from being distributed or otherwise made available under any subsequent version of the License, You must distribute and make the Covered Software available under the terms of the version of the License under which You originally received the Covered Software. Otherwise, You may also choose to use, distribute or otherwise make the Covered Software available under the terms of any subsequent version of the License published by the license steward.

### 4.3. Modified Versions.

When You are an Initial Developer and You want to create a new license for Your Original Software, You may create and use a modified version of this License if You: (a) rename the license and remove any references to the name of the license steward (except to note that the license differs from

this License); and (b) otherwise make it clear that the license contains terms which differ from this License.

## 5. DISCLAIMER OF WARRANTY.

COVERED SOFTWARE IS PROVIDED UNDER THIS LICENSE ON AN .AS IS. BASIS, WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTIES THAT THE COVERED SOFTWARE IS FREE OF DEFECTS, MERCHANTABILITY, FIT FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE COVERED SOFTWARE IS WITH YOU. SHOULD ANY COVERED SOFTWARE PROVE DEFECTIVE IN ANY RESPECT, YOU (NOT THE INITIAL DEVELOPER OR ANY OTHER CONTRIBUTOR) ASSUME THE COST OF ANY NECESSARY SERVICING, REPAIR OR CORRECTION. THIS DISCLAIMER OF WARRANTY CONSTITUTES AN ESSENTIAL PART OF THIS LICENSE. NO USE OF ANY COVERED SOFTWARE IS AUTHORIZED HEREUNDER EXCEPT UNDER THIS DISCLAIMER.

## 6. TERMINATION.

6.1. This License and the rights granted hereunder will terminate automatically if You fail to comply with terms herein and fail to cure such breach within 30 days of becoming aware of the breach. Provisions which, by their nature, must remain in effect beyond the termination of this License shall survive.

6.2. If You assert a patent infringement claim (excluding declaratory judgment actions) against Initial Developer or a Contributor (the Initial Developer or Contributor against whom You assert such claim is referred to as .Participant.) alleging that the Participant Software (meaning the Contributor Version where the Participant is a Contributor or the Original Software where the Participant is the Initial Developer) directly or indirectly infringes any patent, then any and all rights granted directly or indirectly to You by such Participant, the Initial Developer (if the Initial Developer is not the Participant) and all Contributors under Sections 2.1 and/or 2.2 of this License shall, upon 60 days notice from Participant terminate prospectively and automatically at the expiration of such 60 day notice period, unless if within such 60 day period You withdraw Your claim with respect to the Participant Software against such Participant either unilaterally or pursuant to a written agreement with Participant.

6.3. In the event of termination under Sections 6.1 or 6.2 above, all end user licenses that have been validly granted by You or any distributor hereunder prior to termination (excluding licenses granted to You by any distributor) shall survive termination.

## 7. LIMITATION OF LIABILITY.

UNDER NO CIRCUMSTANCES AND UNDER NO LEGAL THEORY, WHETHER TORT (INCLUDING NEGLIGENCE), CONTRACT, OR OTHERWISE, SHALL YOU, THE INITIAL DEVELOPER, ANY OTHER CONTRIBUTOR, OR ANY DISTRIBUTOR OF COVERED SOFTWARE, OR ANY SUPPLIER OF ANY OF SUCH PARTIES, BE LIABLE TO ANY PERSON FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES OF ANY CHARACTER INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOST PROFITS, LOSS OF GOODWILL, WORK STOPPAGE, COMPUTER FAILURE OR MALFUNCTION, OR ANY AND ALL OTHER COMMERCIAL DAMAGES OR LOSSES, EVEN IF SUCH PARTY SHALL HAVE BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. THIS LIMITATION OF LIABILITY SHALL NOT APPLY TO LIABILITY FOR DEATH OR PERSONAL INJURY RESULTING FROM SUCH PARTY'S NEGLIGENCE TO THE EXTENT APPLICABLE LAW PROHIBITS SUCH LIMITATION. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THIS EXCLUSION AND LIMITATION MAY NOT APPLY TO YOU.

#### 8. U.S. GOVERNMENT END USERS.

The Covered Software is a .commercial item., as that term is defined in 48 C.F.R. 2.101 (Oct. 1995), consisting of .commercial computer software. (as that term is defined at 48 C.F.R. ? 252.227-7014(a)(1)) and commercial computer software documentation. as such terms are used in 48 C.F.R. 12.212 (Sept. 1995). Consistent with 48 C.F.R. 12.212 and 48 C.F.R. 227.7202-1 through 227.7202-4 (June 1995), all U.S. Government End Users acquire Covered Software with only those rights set forth herein. This U.S. Government Rights clause is in lieu of, and supersedes, any other FAR, DFAR, or other clause or provision that addresses Government rights in computer software under this License.

#### 9. MISCELLANEOUS.

This License represents the complete agreement concerning subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable. This License shall be governed by the law of the jurisdiction specified in a notice contained within the Original Software (except to the extent applicable law, if any, provides otherwise), excluding such jurisdiction's conflict-of-law provisions. Any litigation relating to this License shall be subject to the jurisdiction of the courts located in the jurisdiction and venue specified in a notice contained within the Original Software, with the losing party responsible for costs, including, without limitation, court costs and reasonable attorneys. fees and expenses. The application of the United Nations Convention on Contracts for the International Sale of Goods is expressly excluded. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not apply to this License. You agree that You alone are responsible for compliance with the United States export administration regulations (and the export control laws and regulation of any other countries) when You use, distribute or otherwise make available any Covered Software.



## 10. RESPONSIBILITY FOR CLAIMS.

As between Initial Developer and the Contributors, each party is responsible for claims and damages arising, directly or indirectly, out of its utilization of rights under this License and You agree to work with Initial Developer and Contributors to distribute such responsibility on an equitable basis. Nothing herein is intended or shall be deemed to constitute any admission of liability.

### NOTICE PURSUANT TO SECTION 9 OF THE COMMON DEVELOPMENT AND DISTRIBUTION LICENSE (CDDL)

The code released under the CDDL shall be governed by the laws of the State of California (excluding conflict-of-law provisions). Any litigation relating to this License shall be subject to the jurisdiction of the Federal Courts of the Northern District of California and the state courts of the State of California, with venue lying in Santa Clara County, California.

# 1.230 libjpeg-turbo 1.5.3-12.el8

## 1.230.1 Available under license :

libjpeg-turbo Licenses

=====

libjpeg-turbo is covered by three compatible BSD-style open source licenses:

- The IJG (Independent JPEG Group) License, which is listed in [README.ijg](README.ijg)

This license applies to the libjpeg API library and associated programs (any code inherited from libjpeg, and any modifications to that code.)

- The Modified (3-clause) BSD License, which is listed below

This license covers the TurboJPEG API library and associated programs.

- The zlib License, which is listed below

This license is a subset of the other two, and it covers the libjpeg-turbo SIMD extensions.

Complying with the libjpeg-turbo Licenses

=====

This section provides a roll-up of the libjpeg-turbo licensing terms, to the

best of our understanding.

1. If you are distributing a modified version of the libjpeg-turbo source, then:

1. You cannot alter or remove any existing copyright or license notices from the source.

**\*\*Origin\*\***

- Clause 1 of the IJG License
- Clause 1 of the Modified BSD License
- Clauses 1 and 3 of the zlib License

2. You must add your own copyright notice to the header of each source file you modified, so others can tell that you modified that file (if there is not an existing copyright header in that file, then you can simply add a notice stating that you modified the file.)

**\*\*Origin\*\***

- Clause 1 of the IJG License
- Clause 2 of the zlib License

3. You must include the IJG README file, and you must not alter any of the copyright or license text in that file.

**\*\*Origin\*\***

- Clause 1 of the IJG License

2. If you are distributing only libjpeg-turbo binaries without the source, or if you are distributing an application that statically links with libjpeg-turbo, then:

1. Your product documentation must include a message stating:

This software is based in part on the work of the Independent JPEG Group.

**\*\*Origin\*\***

- Clause 2 of the IJG license

2. If your binary distribution includes or uses the TurboJPEG API, then your product documentation must include the text of the Modified BSD License.

**\*\*Origin\*\***

- Clause 2 of the Modified BSD License

3. You cannot use the name of the IJG or The libjpeg-turbo Project or the

contributors thereof in advertising, publicity, etc.

**\*\*Origin\*\***

- IJG License
- Clause 3 of the Modified BSD License

4. The IJG and The libjpeg-turbo Project do not warrant libjpeg-turbo to be free of defects, nor do we accept any liability for undesirable consequences resulting from your use of the software.

**\*\*Origin\*\***

- IJG License
- Modified BSD License
- zlib License

The Modified (3-clause) BSD License

=====

Copyright (C)\<YEAR\> \<AUTHOR\>. All Rights Reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- Neither the name of the libjpeg-turbo Project nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS", AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The zlib License

=====

Copyright (C) \<YEAR\>, \<AUTHOR\>.

This software is provided 'as-is', without any express or implied warranty. In no event will the authors be held liable for any damages arising from the use of this software.

Permission is granted to anyone to use this software for any purpose, including commercial applications, and to alter it and redistribute it freely, subject to the following restrictions:

1. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated but is not required.
2. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
3. This notice may not be removed or altered from any source distribution.

# 1.231 spring-plugin-core 2.0.0.RELEASE

## 1.231.1 Available under license :

Apache License  
Version 2.0, January 2004  
<https://www.apache.org/licenses/>

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of

this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only

on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

=====

To the extent any open source subcomponents are licensed under the EPL and/or other similar licenses that require the source code and/or modifications to source code to be made available (as would be noted above), you may obtain a copy of the source code corresponding to the binaries for such open source components and modifications thereto, if any, (the "Source Files"), by downloading the Source Files from <https://www.springsource.org/download>, or by sending a request, with your name and address to: VMware, Inc., 3401 Hillview Avenue, Palo Alto, CA 94304, United States of America or email [info@vmware.com](mailto:info@vmware.com). All such requests should clearly specify: OPEN SOURCE FILES REQUEST, Attention General Counsel. VMware shall mail a copy of the Source Files to you on a CD or equivalent physical medium. This offer to obtain a copy of the Source Files is valid for three years from the date you acquired this Software product.



`${project.name} ${project.version}`  
Copyright (c) [2008-2019] Pivotal Software, Inc.

This product is licensed to you under the Apache License, Version 2.0 (the "License").  
You may not use this product except in compliance with the License.

This product may include a number of subcomponents with  
separate copyright notices and license terms. Your use of the source  
code for these subcomponents is subject to the terms and  
conditions of the subcomponent's license, as noted in the LICENSE file.

## 1.232 json-glib 1.4.4 1.el8

### 1.232.1 Available under license :

GNU LESSER GENERAL PUBLIC LICENSE  
Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.  
59 Temple Place, Suite 330, Boston, MA 02111-1307 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts  
as the successor of the GNU Library Public License, version 2, hence  
the version number 2.1.]

#### Preamble

The licenses for most software are designed to take away your  
freedom to share and change it. By contrast, the GNU General Public  
Licenses are intended to guarantee your freedom to share and change  
free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some  
specially designated software packages--typically libraries--of the  
Free Software Foundation and other authors who decide to use it. You  
can use it too, but we suggest you first think carefully about whether  
this license or the ordinary General Public License is the better  
strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use,  
not price. Our General Public Licenses are designed to make sure that  
you have the freedom to distribute copies of free software (and charge  
for this service if you wish); that you receive source code or can get  
it if you want it; that you can change the software and use pieces of  
it in new free programs; and that you are informed that you can do  
these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it

does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

## GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the

Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility

is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work

under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is

normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
- b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further



restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the

ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!

## 1.233 json-c 0.13.1-3.el8

### 1.233.1 Available under license :

Copyright (c) 2009-2012 Eric Haszlakiewicz

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation

the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

-----  
Copyright (c) 2004, 2005 Metaparadigm Pte Ltd

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

## 1.234 libssh 0.9.6-3.el8

### 1.234.1 Available under license :

MIT License

Copyright (c) 2017 Jan-Lukas Wynen

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights

to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Some parts are under the BSDv2 License :

Copyright (c) 2000 Markus Friedl. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.

59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

## Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of

any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

## GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the



Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or

collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a

copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made

generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE

LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### Linking with OpenSSL

17. In addition, as a special exception, we give permission to link the code of its release of libssh with the OpenSSL project's "OpenSSL" library (or with modified versions of it that use the same license as the "OpenSSL" library), and distribute the linked executables. You must obey the GNU Lesser General Public License in all respects for all of the code used other than "OpenSSL". If you modify this file, you may extend this exception to your version of the file, but you are not obligated to do so. If you do not wish to do so, delete this exception statement from your version.

#### END OF TERMS AND CONDITIONS

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

# 1.235 libunistring 0.9.9 3.e18

## 1.235.1 Available under license :

GNU LESSER GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

This version of the GNU Lesser General Public License incorporates  
the terms and conditions of version 3 of the GNU General Public  
License, supplemented by the additional permissions listed below.

### 0. Additional Definitions.

As used herein, "this License" refers to version 3 of the GNU Lesser  
General Public License, and the "GNU GPL" refers to version 3 of the GNU  
General Public License.

"The Library" refers to a covered work governed by this License,  
other than an Application or a Combined Work as defined below.

An "Application" is any work that makes use of an interface provided  
by the Library, but which is not otherwise based on the Library.  
Defining a subclass of a class defined by the Library is deemed a mode  
of using an interface provided by the Library.

A "Combined Work" is a work produced by combining or linking an  
Application with the Library. The particular version of the Library  
with which the Combined Work was made is also called the "Linked  
Version".

The "Minimal Corresponding Source" for a Combined Work means the  
Corresponding Source for the Combined Work, excluding any source code  
for portions of the Combined Work that, considered in isolation, are  
based on the Application, and not on the Linked Version.

The "Corresponding Application Code" for a Combined Work means the  
object code and/or source code for the Application, including any data  
and utility programs needed for reproducing the Combined Work from the  
Application, but excluding the System Libraries of the Combined Work.

### 1. Exception to Section 3 of the GNU GPL.



You may convey a covered work under sections 3 and 4 of this License without being bound by section 3 of the GNU GPL.

## 2. Conveying Modified Versions.

If you modify a copy of the Library, and, in your modifications, a facility refers to a function or data to be supplied by an Application that uses the facility (other than as an argument passed when the facility is invoked), then you may convey a copy of the modified version:

- a) under this License, provided that you make a good faith effort to ensure that, in the event an Application does not supply the function or data, the facility still operates, and performs whatever part of its purpose remains meaningful, or
- b) under the GNU GPL, with none of the additional permissions of this License applicable to that copy.

## 3. Object Code Incorporating Material from Library Header Files.

The object code form of an Application may incorporate material from a header file that is part of the Library. You may convey such object code under terms of your choice, provided that, if the incorporated material is not limited to numerical parameters, data structure layouts and accessors, or small macros, inline functions and templates (ten or fewer lines in length), you do both of the following:

- a) Give prominent notice with each copy of the object code that the Library is used in it and that the Library and its use are covered by this License.
- b) Accompany the object code with a copy of the GNU GPL and this license document.

## 4. Combined Works.

You may convey a Combined Work under terms of your choice that, taken together, effectively do not restrict modification of the portions of the Library contained in the Combined Work and reverse engineering for debugging such modifications, if you also do each of the following:

- a) Give prominent notice with each copy of the Combined Work that the Library is used in it and that the Library and its use are covered by this License.
- b) Accompany the Combined Work with a copy of the GNU GPL and this license

document.

c) For a Combined Work that displays copyright notices during execution, include the copyright notice for the Library among these notices, as well as a reference directing the user to the copies of the GNU GPL and this license document.

d) Do one of the following:

0) Convey the Minimal Corresponding Source under the terms of this License, and the Corresponding Application Code in a form suitable for, and under terms that permit, the user to recombine or relink the Application with a modified version of the Linked Version to produce a modified Combined Work, in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.

1) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (a) uses at run time a copy of the Library already present on the user's computer system, and (b) will operate properly with a modified version of the Library that is interface-compatible with the Linked Version.

e) Provide Installation Information, but only if you would otherwise be required to provide such information under section 6 of the GNU GPL, and only to the extent that such information is necessary to install and execute a modified version of the Combined Work produced by recombining or relinking the Application with a modified version of the Linked Version. (If you use option 4d0, the Installation Information must accompany the Minimal Corresponding Source and Corresponding Application Code. If you use option 4d1, you must provide the Installation Information in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.)

## 5. Combined Libraries.

You may place library facilities that are a work based on the Library side by side in a single library together with other library facilities that are not Applications and are not covered by this License, and convey such a combined library under terms of your choice, if you do both of the following:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities, conveyed under the terms of this License.

b) Give prominent notice with the combined library that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

## 6. Revised Versions of the GNU Lesser General Public License.

The Free Software Foundation may publish revised and/or new versions of the GNU Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library as you received it specifies that a certain numbered version of the GNU Lesser General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that published version or of any later version published by the Free Software Foundation. If the Library as you received it does not specify a version number of the GNU Lesser General Public License, you may choose any version of the GNU Lesser General Public License ever published by the Free Software Foundation.

If the Library as you received it specifies that a proxy can decide whether future versions of the GNU Lesser General Public License shall apply, that proxy's public statement of acceptance of any version is permanent authorization for you to choose that version for the Library.

### GNU GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

#### Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not

price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

## TERMS AND CONDITIONS

### 0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

### 1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official

standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

## 2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose

of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

### 3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

### 4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

### 5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified

it, and giving a relevant date.

b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".

c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.

d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

## 6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the



product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods,

procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

## 7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work,

for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

## 8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

## 9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

## 10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an

organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

## 11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means,

then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

## 12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

### 13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

### 14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

### 15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

## 16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## 17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.



You should have received a copy of the GNU General Public License along with this program. If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program> Copyright (C) <year> <name of author>
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <http://www.gnu.org/licenses/>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <http://www.gnu.org/philosophy/why-not-lgpl.html>.

```
@c The GNU General Public License.
@center Version 3, 29 June 2007
```

```
@c This file is intended to be included within another document,
@c hence no sectioning command or @node.
```

```
@display
Copyright @copyright{} 2007 Free Software Foundation, Inc. @url{http://fsf.org/}
```

```
Everyone is permitted to copy and distribute verbatim copies of this
license document, but changing it is not allowed.
@end display
```

```
@heading Preamble
```

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast,

the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program---to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

@heading TERMS AND CONDITIONS

@enumerate 0

@item Definitions.

``This License" refers to version 3 of the GNU General Public License.

``Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

``The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as ``you". ``Licensees" and ``recipients" may be individuals or organizations.

To ``modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a ``modified version" of the earlier work or a work ``based on" the earlier work.

A ``covered work" means either the unmodified Program or a work based on the Program.

To ``propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To ``convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays ``Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the

extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

@item Source Code.

The ``source code'' for a work means the preferred form of the work for making modifications to it. ``Object code'' means any non-source form of a work.

A ``Standard Interface'' means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The ``System Libraries'' of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A ``Major Component'', in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The ``Corresponding Source'' for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

@item Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

@item Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

@item Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

@item Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

@enumerate a

@item

The work must carry prominent notices stating that you modified it, and giving a relevant date.

@item

The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to ``keep intact all notices".

@item

You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.

@item

If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

@end enumerate

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an ``aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

@item Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

@enumerate a

@item

Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

@item

Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

@item

Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

@item

Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

@item

Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

@end enumerate

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or



installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

@item Additional Terms.

“Additional permissions” are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

@enumerate a

@item

Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or

@item

Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or

@item

Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or

@item

Limiting the use for publicity purposes of names of licensors or authors of the material; or

@item

Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or

@item

Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

@end enumerate

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

@item Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to

60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

@item Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

@item Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that

any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

@item Patents.

A ``contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's ``contributor version".

A contributor's ``essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, ``control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a ``patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To ``grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. ``Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties

receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

@item No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

@item Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

@item Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

@item Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

@item Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER

PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

@item Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

@end enumerate

@heading END OF TERMS AND CONDITIONS

@heading How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the ``copyright" line and a pointer to where the full notice is found.

@smallexample

@var{one line to give the program's name and a brief idea of what it does.}

Copyright (C) @var{year} @var{name of author}

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see @url{<http://www.gnu.org/licenses/>}.

@end smallexample

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short

notice like this when it starts in an interactive mode:

```
@smallexample
@var{program} Copyright (C) @var{year} @var{name of author}
This program comes with ABSOLUTELY NO WARRANTY; for details type @samp{show w}.
This is free software, and you are welcome to redistribute it
under certain conditions; type @samp{show c} for details.
@end smallexample
```

The hypothetical commands `@samp{show w}` and `@samp{show c}` should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an ```about box```.

You should also get your employer (if you work as a programmer) or school, if any, to sign a ```copyright disclaimer``` for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see `@url{http://www.gnu.org/licenses/}`.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read `@url{http://www.gnu.org/philosophy/why-not-lgpl.html}`.  
`@c` The GNU Free Documentation License.  
`@center` Version 1.3, 3 November 2008

```
@c This file is intended to be included within another document,
@c hence no sectioning command or @node.
```

```
@display
Copyright @copyright{ } 2000, 2001, 2002, 2007, 2008 Free Software Foundation, Inc.
@uref{http://fsf.org/}
```

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.  
`@end display`

```
@enumerate 0
@item
PREAMBLE
```

The purpose of this License is to make a manual, textbook, or other functional and useful document `@dfn{free}` in the sense of freedom: to assure everyone the effective freedom to copy and redistribute it, with or without modifying it, either commercially or noncommercially. Secondly, this License preserves for the author and publisher a way



to get credit for their work, while not being considered responsible for modifications made by others.

This License is a kind of "copyleft", which means that derivative works of the document must themselves be free in the same sense. It complements the GNU General Public License, which is a copyleft license designed for free software.

We have designed this License in order to use it for manuals for free software, because free software needs free documentation: a free program should come with manuals providing the same freedoms that the software does. But this License is not limited to software manuals; it can be used for any textual work, regardless of subject matter or whether it is published as a printed book. We recommend this License principally for works whose purpose is instruction or reference.

@item

## APPLICABILITY AND DEFINITIONS

This License applies to any manual or other work, in any medium, that contains a notice placed by the copyright holder saying it can be distributed under the terms of this License. Such a notice grants a world-wide, royalty-free license, unlimited in duration, to use that work under the conditions stated herein. The "Document", below, refers to any such manual or work. Any member of the public is a licensee, and is addressed as "you". You accept the license if you copy, modify or distribute the work in a way requiring permission under copyright law.

A "Modified Version" of the Document means any work containing the Document or a portion of it, either copied verbatim, or with modifications and/or translated into another language.

A "Secondary Section" is a named appendix or a front-matter section of the Document that deals exclusively with the relationship of the publishers or authors of the Document to the Document's overall subject (or to related matters) and contains nothing that could fall directly within that overall subject. (Thus, if the Document is in part a textbook of mathematics, a Secondary Section may not explain any mathematics.) The relationship could be a matter of historical connection with the subject or with related matters, or of legal, commercial, philosophical, ethical or political position regarding them.

The "Invariant Sections" are certain Secondary Sections whose titles are designated, as being those of Invariant Sections, in the notice that says that the Document is released under this License. If a section does not fit the above definition of Secondary then it is not

allowed to be designated as Invariant. The Document may contain zero Invariant Sections. If the Document does not identify any Invariant Sections then there are none.

The ``Cover Texts" are certain short passages of text that are listed, as Front-Cover Texts or Back-Cover Texts, in the notice that says that the Document is released under this License. A Front-Cover Text may be at most 5 words, and a Back-Cover Text may be at most 25 words.

A ``Transparent" copy of the Document means a machine-readable copy, represented in a format whose specification is available to the general public, that is suitable for revising the document straightforwardly with generic text editors or (for images composed of pixels) generic paint programs or (for drawings) some widely available drawing editor, and that is suitable for input to text formatters or for automatic translation to a variety of formats suitable for input to text formatters. A copy made in an otherwise Transparent file format whose markup, or absence of markup, has been arranged to thwart or discourage subsequent modification by readers is not Transparent. An image format is not Transparent if used for any substantial amount of text. A copy that is not ``Transparent" is called ``Opaque".

Examples of suitable formats for Transparent copies include plain `@sc{ascii}` without markup, Texinfo input format, `La@TeX{}` input format, `@acronym{SGML}` or `@acronym{XML}` using a publicly available `@acronym{DTD}`, and standard-conforming simple `@acronym{HTML}`, PostScript or `@acronym{PDF}` designed for human modification. Examples of transparent image formats include `@acronym{PNG}`, `@acronym{XCF}` and `@acronym{JPG}`. Opaque formats include proprietary formats that can be read and edited only by proprietary word processors, `@acronym{SGML}` or `@acronym{XML}` for which the `@acronym{DTD}` and/or processing tools are not generally available, and the machine-generated `@acronym{HTML}`, PostScript or `@acronym{PDF}` produced by some word processors for output purposes only.

The ``Title Page" means, for a printed book, the title page itself, plus such following pages as are needed to hold, legibly, the material this License requires to appear in the title page. For works in formats which do not have any title page as such, ``Title Page" means the text near the most prominent appearance of the work's title, preceding the beginning of the body of the text.

The ``publisher" means any person or entity that distributes copies of the Document to the public.

A section ``Entitled XYZ" means a named subunit of the Document whose title either is precisely XYZ or contains XYZ in parentheses following text that translates XYZ in another language. (Here XYZ stands for a

specific section name mentioned below, such as ``Acknowledgements'', ``Dedications'', ``Endorsements'', or ``History''.) To ``Preserve the Title'' of such a section when you modify the Document means that it remains a section ``Entitled XYZ'' according to this definition.

The Document may include Warranty Disclaimers next to the notice which states that this License applies to the Document. These Warranty Disclaimers are considered to be included by reference in this License, but only as regards disclaiming warranties: any other implication that these Warranty Disclaimers may have is void and has no effect on the meaning of this License.

@item

#### VERBATIM COPYING

You may copy and distribute the Document in any medium, either commercially or noncommercially, provided that this License, the copyright notices, and the license notice saying this License applies to the Document are reproduced in all copies, and that you add no other conditions whatsoever to those of this License. You may not use technical measures to obstruct or control the reading or further copying of the copies you make or distribute. However, you may accept compensation in exchange for copies. If you distribute a large enough number of copies you must also follow the conditions in section 3.

You may also lend copies, under the same conditions stated above, and you may publicly display copies.

@item

#### COPYING IN QUANTITY

If you publish printed copies (or copies in media that commonly have printed covers) of the Document, numbering more than 100, and the Document's license notice requires Cover Texts, you must enclose the copies in covers that carry, clearly and legibly, all these Cover Texts: Front-Cover Texts on the front cover, and Back-Cover Texts on the back cover. Both covers must also clearly and legibly identify you as the publisher of these copies. The front cover must present the full title with all words of the title equally prominent and visible. You may add other material on the covers in addition. Copying with changes limited to the covers, as long as they preserve the title of the Document and satisfy these conditions, can be treated as verbatim copying in other respects.

If the required texts for either cover are too voluminous to fit legibly, you should put the first ones listed (as many as fit reasonably) on the actual cover, and continue the rest onto adjacent pages.

If you publish or distribute Opaque copies of the Document numbering more than 100, you must either include a machine-readable Transparent copy along with each Opaque copy, or state in or with each Opaque copy a computer-network location from which the general network-using public has access to download using public-standard network protocols a complete Transparent copy of the Document, free of added material. If you use the latter option, you must take reasonably prudent steps, when you begin distribution of Opaque copies in quantity, to ensure that this Transparent copy will remain thus accessible at the stated location until at least one year after the last time you distribute an Opaque copy (directly or through your agents or retailers) of that edition to the public.

It is requested, but not required, that you contact the authors of the Document well before redistributing any large number of copies, to give them a chance to provide you with an updated version of the Document.

@item

#### MODIFICATIONS

You may copy and distribute a Modified Version of the Document under the conditions of sections 2 and 3 above, provided that you release the Modified Version under precisely this License, with the Modified Version filling the role of the Document, thus licensing distribution and modification of the Modified Version to whoever possesses a copy of it. In addition, you must do these things in the Modified Version:

@enumerate A

@item

Use in the Title Page (and on the covers, if any) a title distinct from that of the Document, and from those of previous versions (which should, if there were any, be listed in the History section of the Document). You may use the same title as a previous version if the original publisher of that version gives permission.

@item

List on the Title Page, as authors, one or more persons or entities responsible for authorship of the modifications in the Modified Version, together with at least five of the principal authors of the Document (all of its principal authors, if it has fewer than five), unless they release you from this requirement.

@item

State on the Title page the name of the publisher of the Modified Version, as the publisher.

@item

Preserve all the copyright notices of the Document.

@item

Add an appropriate copyright notice for your modifications adjacent to the other copyright notices.

@item

Include, immediately after the copyright notices, a license notice giving the public permission to use the Modified Version under the terms of this License, in the form shown in the Addendum below.

@item

Preserve in that license notice the full lists of Invariant Sections and required Cover Texts given in the Document's license notice.

@item

Include an unaltered copy of this License.

@item

Preserve the section Entitled ``History'', Preserve its Title, and add to it an item stating at least the title, year, new authors, and publisher of the Modified Version as given on the Title Page. If there is no section Entitled ``History'' in the Document, create one stating the title, year, authors, and publisher of the Document as given on its Title Page, then add an item describing the Modified Version as stated in the previous sentence.

@item

Preserve the network location, if any, given in the Document for public access to a Transparent copy of the Document, and likewise the network locations given in the Document for previous versions it was based on. These may be placed in the ``History'' section. You may omit a network location for a work that was published at least four years before the Document itself, or if the original publisher of the version it refers to gives permission.

@item

For any section Entitled ``Acknowledgements'' or ``Dedications'', Preserve the Title of the section, and preserve in the section all the substance and tone of each of the contributor acknowledgements and/or dedications given therein.

@item

Preserve all the Invariant Sections of the Document, unaltered in their text and in their titles. Section numbers or the equivalent are not considered part of the section titles.

@item

Delete any section Entitled ``Endorsements''. Such a section may not be included in the Modified Version.

@item

Do not retitle any existing section to be Entitled ``Endorsements'' or to conflict in title with any Invariant Section.

@item

Preserve any Warranty Disclaimers.

@end enumerate

If the Modified Version includes new front-matter sections or appendices that qualify as Secondary Sections and contain no material copied from the Document, you may at your option designate some or all of these sections as invariant. To do this, add their titles to the list of Invariant Sections in the Modified Version's license notice. These titles must be distinct from any other section titles.

You may add a section Entitled ``Endorsements'', provided it contains nothing but endorsements of your Modified Version by various parties---for example, statements of peer review or that the text has been approved by an organization as the authoritative definition of a standard.

You may add a passage of up to five words as a Front-Cover Text, and a passage of up to 25 words as a Back-Cover Text, to the end of the list of Cover Texts in the Modified Version. Only one passage of Front-Cover Text and one of Back-Cover Text may be added by (or through arrangements made by) any one entity. If the Document already includes a cover text for the same cover, previously added by you or by arrangement made by the same entity you are acting on behalf of, you may not add another; but you may replace the old one, on explicit permission from the previous publisher that added the old one.

The author(s) and publisher(s) of the Document do not by this License give permission to use their names for publicity for or to assert or imply endorsement of any Modified Version.

@item

## COMBINING DOCUMENTS

You may combine the Document with other documents released under this License, under the terms defined in section 4 above for modified versions, provided that you include in the combination all of the Invariant Sections of all of the original documents, unmodified, and list them all as Invariant Sections of your combined work in its license notice, and that you preserve all their Warranty Disclaimers.

The combined work need only contain one copy of this License, and multiple identical Invariant Sections may be replaced with a single copy. If there are multiple Invariant Sections with the same name but different contents, make the title of each such section unique by adding at the end of it, in parentheses, the name of the original author or publisher of that section if known, or else a unique number. Make the same adjustment to the section titles in the list of Invariant Sections in the license notice of the combined work.

In the combination, you must combine any sections Entitled ``History" in the various original documents, forming one section Entitled ``History"; likewise combine any sections Entitled ``Acknowledgements", and any sections Entitled ``Dedications". You must delete all sections Entitled ``Endorsements."

@item

#### COLLECTIONS OF DOCUMENTS

You may make a collection consisting of the Document and other documents released under this License, and replace the individual copies of this License in the various documents with a single copy that is included in the collection, provided that you follow the rules of this License for verbatim copying of each of the documents in all other respects.

You may extract a single document from such a collection, and distribute it individually under this License, provided you insert a copy of this License into the extracted document, and follow this License in all other respects regarding verbatim copying of that document.

@item

#### AGGREGATION WITH INDEPENDENT WORKS

A compilation of the Document or its derivatives with other separate and independent documents or works, in or on a volume of a storage or distribution medium, is called an ``aggregate" if the copyright resulting from the compilation is not used to limit the legal rights of the compilation's users beyond what the individual works permit. When the Document is included in an aggregate, this License does not apply to the other works in the aggregate which are not themselves derivative works of the Document.

If the Cover Text requirement of section 3 is applicable to these copies of the Document, then if the Document is less than one half of the entire aggregate, the Document's Cover Texts may be placed on covers that bracket the Document within the aggregate, or the electronic equivalent of covers if the Document is in electronic form. Otherwise they must appear on printed covers that bracket the whole aggregate.

@item

## TRANSLATION

Translation is considered a kind of modification, so you may distribute translations of the Document under the terms of section 4.

Replacing Invariant Sections with translations requires special permission from their copyright holders, but you may include translations of some or all Invariant Sections in addition to the original versions of these Invariant Sections. You may include a translation of this License, and all the license notices in the Document, and any Warranty Disclaimers, provided that you also include the original English version of this License and the original versions of those notices and disclaimers. In case of a disagreement between the translation and the original version of this License or a notice or disclaimer, the original version will prevail.

If a section in the Document is Entitled ``Acknowledgements'', ``Dedications'', or ``History'', the requirement (section 4) to Preserve its Title (section 1) will typically require changing the actual title.

@item

## TERMINATION

You may not copy, modify, sublicense, or distribute the Document except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, or distribute it is void, and will automatically terminate your rights under this License.

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, receipt of a copy of some or all of the same material does



not give you any rights to use it.

@item

## FUTURE REVISIONS OF THIS LICENSE

The Free Software Foundation may publish new, revised versions of the GNU Free Documentation License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns. See <http://www.gnu.org/copyleft/>.

Each version of the License is given a distinguishing version number. If the Document specifies that a particular numbered version of this License "or any later version" applies to it, you have the option of following the terms and conditions either of that specified version or of any later version that has been published (not as a draft) by the Free Software Foundation. If the Document does not specify a version number of this License, you may choose any version ever published (not as a draft) by the Free Software Foundation. If the Document specifies that a proxy can decide which future versions of this License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Document.

@item

## RELICENSING

"Massive Multiauthor Collaboration Site" (or "MMC Site") means any World Wide Web server that publishes copyrightable works and also provides prominent facilities for anybody to edit those works. A public wiki that anybody can edit is an example of such a server. A "Massive Multiauthor Collaboration" (or "MMC") contained in the site means any set of copyrightable works thus published on the MMC site.

"CC-BY-SA" means the Creative Commons Attribution-Share Alike 3.0 license published by Creative Commons Corporation, a not-for-profit corporation with a principal place of business in San Francisco, California, as well as future copyleft versions of that license published by that same organization.

"Incorporate" means to publish or republish a Document, in whole or in part, as part of another Document.

An MMC is "eligible for relicensing" if it is licensed under this License, and if all works that were first published under this License somewhere other than this MMC, and subsequently incorporated in whole or in part into the MMC, (1) had no cover texts or invariant sections,

and (2) were thus incorporated prior to November 1, 2008.

The operator of an MMC Site may republish an MMC contained in the site under CC-BY-SA on the same site at any time before August 1, 2009, provided the MMC is eligible for relicensing.

@end enumerate

@page

@heading ADDENDUM: How to use this License for your documents

To use this License in a document you have written, include a copy of the License in the document and put the following copyright and license notices just after the title page:

@smallexample

@group

Copyright (C) @var{year} @var{your name}.

Permission is granted to copy, distribute and/or modify this document under the terms of the GNU Free Documentation License, Version 1.3 or any later version published by the Free Software Foundation; with no Invariant Sections, no Front-Cover Texts, and no Back-Cover Texts. A copy of the license is included in the section entitled ``GNU Free Documentation License".

@end group

@end smallexample

If you have Invariant Sections, Front-Cover Texts and Back-Cover Texts, replace the ``with@dots{ }Texts." line with this:

@smallexample

@group

with the Invariant Sections being @var{list their titles}, with the Front-Cover Texts being @var{list}, and with the Back-Cover Texts being @var{list}.

@end group

@end smallexample

If you have Invariant Sections without Cover Texts, or some other combination of the three, merge those two alternatives to suit the situation.

If your document contains nontrivial examples of program code, we recommend releasing these examples in parallel under your choice of free software license, such as the GNU General Public License, to permit their use in free software.

@c Local Variables:

@c ispell-local-pdict: "ispell-dict"

@c End:

# 1.236 avahi 0.7-20.el8

## 1.236.1 Available under license :

### GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.  
51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts  
as the successor of the GNU Library Public License, version 2, hence  
the version number 2.1.]

#### Preamble

The licenses for most software are designed to take away your  
freedom to share and change it. By contrast, the GNU General Public  
Licenses are intended to guarantee your freedom to share and change  
free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some  
specially designated software packages--typically libraries--of the  
Free Software Foundation and other authors who decide to use it. You  
can use it too, but we suggest you first think carefully about whether  
this license or the ordinary General Public License is the better  
strategy to use in any particular case, based on the explanations  
below.

When we speak of free software, we are referring to freedom of use,  
not price. Our General Public Licenses are designed to make sure that  
you have the freedom to distribute copies of free software (and charge  
for this service if you wish); that you receive source code or can get  
it if you want it; that you can change the software and use pieces of  
it in new free programs; and that you are informed that you can do  
these things.

To protect your rights, we need to make restrictions that forbid  
distributors to deny you these rights or to ask you to surrender these  
rights. These restrictions translate to certain responsibilities for  
you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

## GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has

a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a

medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by



this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license

restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues),

conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a

license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should

have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!

## 1.237 pcre 8.42-6.el8

### 1.237.1 Available under license :

PCRE LICENCE

-----

PCRE is a library of functions to support regular expressions whose syntax and semantics are as close as possible to those of the Perl 5 language.

Release 8 of PCRE is distributed under the terms of the "BSD" licence, as specified below. The documentation for PCRE, supplied in the "doc"

directory, is distributed under the same terms as the software itself. The data in the testdata directory is not copyrighted and is in the public domain.

The basic library functions are written in C and are freestanding. Also included in the distribution is a set of C++ wrapper functions, and a just-in-time compiler that can be used to optimize pattern matching. These are both optional features that can be omitted when the library is built.

## THE BASIC LIBRARY FUNCTIONS

-----

Written by: Philip Hazel  
Email local part: ph10  
Email domain: cam.ac.uk

University of Cambridge Computing Service,  
Cambridge, England.

Copyright (c) 1997-2018 University of Cambridge  
All rights reserved.

## PCRE JUST-IN-TIME COMPILATION SUPPORT

-----

Written by: Zoltan Herczeg  
Email local part: hzmester  
Email domain: freemail.hu

Copyright(c) 2010-2018 Zoltan Herczeg  
All rights reserved.

## STACK-LESS JUST-IN-TIME COMPILER

-----

Written by: Zoltan Herczeg  
Email local part: hzmester  
Email domain: freemail.hu

Copyright(c) 2009-2018 Zoltan Herczeg  
All rights reserved.

## THE C++ WRAPPER FUNCTIONS

-----

Contributed by: Google Inc.

Copyright (c) 2007-2012, Google Inc.  
All rights reserved.

#### THE "BSD" LICENCE

-----

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of the University of Cambridge nor the name of Google Inc. nor the names of their contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

End

#### PCRE LICENCE

Please see the file LICENCE in the PCRE distribution for licensing details.

End

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the copyright notice, this list of conditions and the following disclaimer.

2. Redistributions in binary form must reproduce the copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## 1.238 libutempter 1.1.6 14.el8

### 1.238.1 Available under license :

GNU LESSER GENERAL PUBLIC LICENSE  
Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.  
51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts  
as the successor of the GNU Library Public License, version 2, hence  
the version number 2.1.]

#### Preamble

The licenses for most software are designed to take away your  
freedom to share and change it. By contrast, the GNU General Public  
Licenses are intended to guarantee your freedom to share and change  
free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some  
specially designated software packages--typically libraries--of the  
Free Software Foundation and other authors who decide to use it. You  
can use it too, but we suggest you first think carefully about whether  
this license or the ordinary General Public License is the better  
strategy to use in any particular case, based on the explanations  
below.



When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using

a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

## GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License").

Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices

stating that you changed the files and the date of any change.

c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in

these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

- e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
- b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the

Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those



countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!

# 1.239 libsolv 0.7.20-1.el8

## 1.239.1 Available under license :

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of Novell nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

All files for the Windows compatibility layer are taken from musl, except for unistd.h and fmemopen.c.

MUSL

musl as a whole is licensed under the following standard MIT license:

-----  
Copyright 2005-2014 Rich Felker, et al.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to

permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

-----

TRE (tre.h, tre-mem.c)

The TRE regular expression implementation (reg\* and tre\*) is Copyright 2001-2008 Ville Laurikari and licensed under a 2-clause BSD license (license text in the source files). The included version has been heavily modified by Rich Felker in 2012, in the interests of size, simplicity, and namespace cleanliness.

-----

This is the license, copyright notice, and disclaimer for TRE, a regex matching package (library and tools) with support for approximate matching.

Copyright (c) 2001-2009 Ville Laurikari <vl@iki.fi>  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDER AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,

SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

-----

## 1.240 gridx 1.3.2

### 1.240.1 Available under license :

Dojo is available under \*either\* the terms of the modified BSD license \*or\* the Academic Free License version 2.1. As a recipient of Dojo, you may choose which license to receive this code under (except as noted in per-module LICENSE files). Some modules may not be the copyright of the Dojo Foundation. These modules contain explicit declarations of copyright in both the LICENSE files in the directories in which they reside and in the code itself. No external contributions are allowed under licenses which are fundamentally incompatible with the AFL or BSD licenses that Dojo is distributed under.

The text of the AFL and BSD licenses is reproduced below.

-----

The "New" BSD License:

\*\*\*\*\*

Copyright (c) 2005-2011, The Dojo Foundation  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of the Dojo Foundation nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR

SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

-----  
The Academic Free License, v. 2.1:

\*\*\*\*\*

This Academic Free License (the "License") applies to any original work of authorship (the "Original Work") whose owner (the "Licensor") has placed the following notice immediately following the copyright notice for the Original Work:

Licensed under the Academic Free License version 2.1

1) Grant of Copyright License. Licensor hereby grants You a world-wide, royalty-free, non-exclusive, perpetual, sublicenseable license to do the following:

a) to reproduce the Original Work in copies;

b) to prepare derivative works ("Derivative Works") based upon the Original Work;

c) to distribute copies of the Original Work and Derivative Works to the public;

d) to perform the Original Work publicly; and

e) to display the Original Work publicly.

2) Grant of Patent License. Licensor hereby grants You a world-wide, royalty-free, non-exclusive, perpetual, sublicenseable license, under patent claims owned or controlled by the Licensor that are embodied in the Original Work as furnished by the Licensor, to make, use, sell and offer for sale the Original Work and Derivative Works.

3) Grant of Source Code License. The term "Source Code" means the preferred form of the Original Work for making modifications to it and all available documentation describing how to modify the Original Work. Licensor hereby agrees to provide a machine-readable copy of the Source Code of the Original Work along with each copy of the Original Work that Licensor distributes.

Licensor reserves the right to satisfy this obligation by placing a machine-readable copy of the Source Code in an information repository reasonably calculated to permit inexpensive and convenient access by You for as long as Licensor continues to distribute the Original Work, and by publishing the address of that information repository in a notice immediately following

the copyright notice that applies to the Original Work.

4) Exclusions From License Grant. Neither the names of Licensor, nor the names of any contributors to the Original Work, nor any of their trademarks or service marks, may be used to endorse or promote products derived from this Original Work without express prior written permission of the Licensor. Nothing in this License shall be deemed to grant any rights to trademarks, copyrights, patents, trade secrets or any other intellectual property of Licensor except as expressly stated herein. No patent license is granted to make, use, sell or offer to sell embodiments of any patent claims other than the licensed claims defined in Section 2. No right is granted to the trademarks of Licensor even if such marks are included in the Original Work. Nothing in this License shall be interpreted to prohibit Licensor from licensing under different terms from this License any Original Work that Licensor otherwise would have a right to license.

5) This section intentionally omitted.

6) Attribution Rights. You must retain, in the Source Code of any Derivative Works that You create, all copyright, patent or trademark notices from the Source Code of the Original Work, as well as any notices of licensing and any descriptive text identified therein as an "Attribution Notice." You must cause the Source Code for any Derivative Works that You create to carry a prominent Attribution Notice reasonably calculated to inform recipients that You have modified the Original Work.

7) Warranty of Provenance and Disclaimer of Warranty. Licensor warrants that the copyright in and to the Original Work and the patent rights granted herein by Licensor are owned by the Licensor or are sublicensed to You under the terms of this License with the permission of the contributor(s) of those copyrights and patent rights. Except as expressly stated in the immediately preceding sentence, the Original Work is provided under this License on an "AS IS" BASIS and WITHOUT WARRANTY, either express or implied, including, without limitation, the warranties of NON-INFRINGEMENT, MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY OF THE ORIGINAL WORK IS WITH YOU. This DISCLAIMER OF WARRANTY constitutes an essential part of this License. No license to Original Work is granted hereunder except under this disclaimer.

8) Limitation of Liability. Under no circumstances and under no legal theory, whether in tort (including negligence), contract, or otherwise, shall the Licensor be liable to any person for any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or the use of the Original Work including, without limitation, damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses. This limitation of liability shall not apply to liability for death or personal injury resulting from Licensor's negligence to the extent applicable law prohibits such limitation. Some jurisdictions do not allow the exclusion or limitation of incidental or

consequential damages, so this exclusion and limitation may not apply to You.

9) Acceptance and Termination. If You distribute copies of the Original Work or a Derivative Work, You must make a reasonable effort under the circumstances to obtain the express assent of recipients to the terms of this License. Nothing else but this License (or another written agreement between Licensor and You) grants You permission to create Derivative Works based upon the Original Work or to exercise any of the rights granted in Section 1 herein, and any attempt to do so except under the terms of this License (or another written agreement between Licensor and You) is expressly prohibited by U.S. copyright law, the equivalent laws of other countries, and by international treaty. Therefore, by exercising any of the rights granted to You in Section 1 herein, You indicate Your acceptance of this License and all of its terms and conditions.

10) Termination for Patent Action. This License shall terminate automatically and You may no longer exercise any of the rights granted to You by this License as of the date You commence an action, including a cross-claim or counterclaim, against Licensor or any licensee alleging that the Original Work infringes a patent. This termination provision shall not apply for an action alleging patent infringement by combinations of the Original Work with other software or hardware.

11) Jurisdiction, Venue and Governing Law. Any action or suit relating to this License may be brought only in the courts of a jurisdiction wherein the Licensor resides or in which Licensor conducts its primary business, and under the laws of that jurisdiction excluding its conflict-of-law provisions. The application of the United Nations Convention on Contracts for the International Sale of Goods is expressly excluded. Any use of the Original Work outside the scope of this License or after its termination shall be subject to the requirements and penalties of the U.S. Copyright Act, 17 U.S.C. 101 et seq., the equivalent laws of other countries, and international treaty. This section shall survive the termination of this License.

12) Attorneys Fees. In any action to enforce the terms of this License or seeking damages relating thereto, the prevailing party shall be entitled to recover its costs and expenses, including, without limitation, reasonable attorneys' fees and costs incurred in connection with such action, including any appeal of such action. This section shall survive the termination of this License.

13) Miscellaneous. This License represents the complete agreement concerning the subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable.

14) Definition of "You" in This License. "You" throughout this License, whether in upper or lower case, means an individual or a legal entity exercising rights under, and complying with all of the terms of, this License. For legal



entities, "You" includes any entity that controls, is controlled by, or is under common control with you. For purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

15) Right to Use. You may use the Original Work in all ways not otherwise restricted or conditioned by this License or by law, and Licensor promises not to interfere with or be responsible for such uses by You.

This license is Copyright (C) 2003-2004 Lawrence E. Rosen. All rights reserved. Permission is hereby granted to copy and distribute this license without modification. This license may not be modified without the express written permission of its copyright owner.

## 1.241 nspr 4.34.0-3.el8\_6

### 1.241.1 Available under license :

Mozilla Public License Version 2.0

=====

#### 1. Definitions

-----

##### 1.1. "Contributor"

means each individual or legal entity that creates, contributes to the creation of, or owns Covered Software.

##### 1.2. "Contributor Version"

means the combination of the Contributions of others (if any) used by a Contributor and that particular Contributor's Contribution.

##### 1.3. "Contribution"

means Covered Software of a particular Contributor.

##### 1.4. "Covered Software"

means Source Code Form to which the initial Contributor has attached the notice in Exhibit A, the Executable Form of such Source Code Form, and Modifications of such Source Code Form, in each case including portions thereof.

##### 1.5. "Incompatible With Secondary Licenses"

means

(a) that the initial Contributor has attached the notice described in Exhibit B to the Covered Software; or

(b) that the Covered Software was made available under the terms of version 1.1 or earlier of the License, but not also under the terms of a Secondary License.

1.6. "Executable Form"

means any form of the work other than Source Code Form.

1.7. "Larger Work"

means a work that combines Covered Software with other material, in a separate file or files, that is not Covered Software.

1.8. "License"

means this document.

1.9. "Licensable"

means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently, any and all of the rights conveyed by this License.

1.10. "Modifications"

means any of the following:

(a) any file in Source Code Form that results from an addition to, deletion from, or modification of the contents of Covered Software; or

(b) any new file in Source Code Form that contains any Covered Software.

1.11. "Patent Claims" of a Contributor

means any patent claim(s), including without limitation, method, process, and apparatus claims, in any patent Licensable by such Contributor that would be infringed, but for the grant of the License, by the making, using, selling, offering for sale, having made, import, or transfer of either its Contributions or its Contributor Version.

1.12. "Secondary License"

means either the GNU General Public License, Version 2.0, the GNU Lesser General Public License, Version 2.1, the GNU Affero General Public License, Version 3.0, or any later versions of those licenses.

1.13. "Source Code Form"

means the form of the work preferred for making modifications.

1.14. "You" (or "Your")

means an individual or a legal entity exercising rights under this License. For legal entities, "You" includes any entity that controls, is controlled by, or is under common control with You. For purposes of this definition, "control" means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

## 2. License Grants and Conditions

-----

### 2.1. Grants

Each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:

- (a) under intellectual property rights (other than patent or trademark) Licensable by such Contributor to use, reproduce, make available, modify, display, perform, distribute, and otherwise exploit its Contributions, either on an unmodified basis, with Modifications, or as part of a Larger Work; and
- (b) under Patent Claims of such Contributor to make, use, sell, offer for sale, have made, import, and otherwise transfer either its Contributions or its Contributor Version.

### 2.2. Effective Date

The licenses granted in Section 2.1 with respect to any Contribution become effective for each Contribution on the date the Contributor first distributes such Contribution.

### 2.3. Limitations on Grant Scope

The licenses granted in this Section 2 are the only rights granted under this License. No additional rights or licenses will be implied from the distribution or licensing of Covered Software under this License. Notwithstanding Section 2.1(b) above, no patent license is granted by a Contributor:

- (a) for any code that a Contributor has removed from Covered Software; or
- (b) for infringements caused by: (i) Your and any other third party's modifications of Covered Software, or (ii) the combination of its Contributions with other software (except as part of its Contributor Version); or

(c) under Patent Claims infringed by Covered Software in the absence of its Contributions.

This License does not grant any rights in the trademarks, service marks, or logos of any Contributor (except as may be necessary to comply with the notice requirements in Section 3.4).

#### 2.4. Subsequent Licenses

No Contributor makes additional grants as a result of Your choice to distribute the Covered Software under a subsequent version of this License (see Section 10.2) or under the terms of a Secondary License (if permitted under the terms of Section 3.3).

#### 2.5. Representation

Each Contributor represents that the Contributor believes its Contributions are its original creation(s) or it has sufficient rights to grant the rights to its Contributions conveyed by this License.

#### 2.6. Fair Use

This License is not intended to limit any rights You have under applicable copyright doctrines of fair use, fair dealing, or other equivalents.

#### 2.7. Conditions

Sections 3.1, 3.2, 3.3, and 3.4 are conditions of the licenses granted in Section 2.1.

### 3. Responsibilities

-----

#### 3.1. Distribution of Source Form

All distribution of Covered Software in Source Code Form, including any Modifications that You create or to which You contribute, must be under the terms of this License. You must inform recipients that the Source Code Form of the Covered Software is governed by the terms of this License, and how they can obtain a copy of this License. You may not attempt to alter or restrict the recipients' rights in the Source Code Form.

#### 3.2. Distribution of Executable Form

If You distribute Covered Software in Executable Form then:

(a) such Covered Software must also be made available in Source Code Form, as described in Section 3.1, and You must inform recipients of the Executable Form how they can obtain a copy of such Source Code Form by reasonable means in a timely manner, at a charge no more than the cost of distribution to the recipient; and

(b) You may distribute such Executable Form under the terms of this License, or sublicense it under different terms, provided that the license for the Executable Form does not attempt to limit or alter the recipients' rights in the Source Code Form under this License.

### 3.3. Distribution of a Larger Work

You may create and distribute a Larger Work under terms of Your choice, provided that You also comply with the requirements of this License for the Covered Software. If the Larger Work is a combination of Covered Software with a work governed by one or more Secondary Licenses, and the Covered Software is not Incompatible With Secondary Licenses, this License permits You to additionally distribute such Covered Software under the terms of such Secondary License(s), so that the recipient of the Larger Work may, at their option, further distribute the Covered Software under the terms of either this License or such Secondary License(s).

### 3.4. Notices

You may not remove or alter the substance of any license notices (including copyright notices, patent notices, disclaimers of warranty, or limitations of liability) contained within the Source Code Form of the Covered Software, except that You may alter any license notices to the extent required to remedy known factual inaccuracies.

### 3.5. Application of Additional Terms

You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Software. However, You may do so only on Your own behalf, and not on behalf of any Contributor. You must make it absolutely clear that any such warranty, support, indemnity, or liability obligation is offered by You alone, and You hereby agree to indemnify every Contributor for any liability incurred by such Contributor as a result of warranty, support, indemnity or liability terms You offer. You may include additional disclaimers of warranty and limitations of liability specific to any jurisdiction.

## 4. Inability to Comply Due to Statute or Regulation

-----

If it is impossible for You to comply with any of the terms of this License with respect to some or all of the Covered Software due to statute, judicial order, or regulation then You must: (a) comply with the terms of this License to the maximum extent possible; and (b) describe the limitations and the code they affect. Such description must be placed in a text file included with all distributions of the Covered Software under this License. Except to the extent prohibited by statute or regulation, such description must be sufficiently detailed for a recipient of ordinary skill to be able to understand it.

## 5. Termination

-----

5.1. The rights granted under this License will terminate automatically if You fail to comply with any of its terms. However, if You become compliant, then the rights granted under this License from a particular Contributor are reinstated (a) provisionally, unless and until such Contributor explicitly and finally terminates Your grants, and (b) on an ongoing basis, if such Contributor fails to notify You of the non-compliance by some reasonable means prior to 60 days after You have come back into compliance. Moreover, Your grants from a particular Contributor are reinstated on an ongoing basis if such Contributor notifies You of the non-compliance by some reasonable means, this is the first time You have received notice of non-compliance with this License from such Contributor, and You become compliant prior to 30 days after Your receipt of the notice.

5.2. If You initiate litigation against any entity by asserting a patent infringement claim (excluding declaratory judgment actions, counter-claims, and cross-claims) alleging that a Contributor Version directly or indirectly infringes any patent, then the rights granted to You by any and all Contributors for the Covered Software under Section 2.1 of this License shall terminate.

5.3. In the event of termination under Sections 5.1 or 5.2 above, all end user license agreements (excluding distributors and resellers) which have been validly granted by You or Your distributors under this License prior to termination shall survive termination.

\*\*\*\*\*

```
*
*
* 6. Disclaimer of Warranty
* -----
*
* Covered Software is provided under this License on an "as is"
* basis, without warranty of any kind, either expressed, implied, or
* statutory, including, without limitation, warranties that the
```

\* Covered Software is free of defects, merchantable, fit for a \*  
\* particular purpose or non-infringing. The entire risk as to the \*  
\* quality and performance of the Covered Software is with You. \*  
\* Should any Covered Software prove defective in any respect, You \*  
\* (not any Contributor) assume the cost of any necessary servicing, \*  
\* repair, or correction. This disclaimer of warranty constitutes an \*  
\* essential part of this License. No use of any Covered Software is \*  
\* authorized under this License except under this disclaimer. \*

\*\*\*\*\*

\*\*\*\*\*

\* \*  
\* 7. Limitation of Liability \*  
\* ----- \*

\* Under no circumstances and under no legal theory, whether tort \*  
\* (including negligence), contract, or otherwise, shall any \*  
\* Contributor, or anyone who distributes Covered Software as \*  
\* permitted above, be liable to You for any direct, indirect, \*  
\* special, incidental, or consequential damages of any character \*  
\* including, without limitation, damages for lost profits, loss of \*  
\* goodwill, work stoppage, computer failure or malfunction, or any \*  
\* and all other commercial damages or losses, even if such party \*  
\* shall have been informed of the possibility of such damages. This \*  
\* limitation of liability shall not apply to liability for death or \*  
\* personal injury resulting from such party's negligence to the \*  
\* extent applicable law prohibits such limitation. Some \*  
\* jurisdictions do not allow the exclusion or limitation of \*  
\* incidental or consequential damages, so this exclusion and \*  
\* limitation may not apply to You. \*

\*\*\*\*\*

## 8. Litigation

-----

Any litigation relating to this License may be brought only in the courts of a jurisdiction where the defendant maintains its principal place of business and such litigation shall be governed by laws of that jurisdiction, without reference to its conflict-of-law provisions. Nothing in this Section shall prevent a party's ability to bring cross-claims or counter-claims.

## 9. Miscellaneous

-----

This License represents the complete agreement concerning the subject

matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not be used to construe this License against a Contributor.

## 10. Versions of the License

-----

### 10.1. New Versions

Mozilla Foundation is the license steward. Except as provided in Section 10.3, no one other than the license steward has the right to modify or publish new versions of this License. Each version will be given a distinguishing version number.

### 10.2. Effect of New Versions

You may distribute the Covered Software under the terms of the version of the License under which You originally received the Covered Software, or under the terms of any subsequent version published by the license steward.

### 10.3. Modified Versions

If you create software not governed by this License, and you want to create a new license for such software, you may create and use a modified version of this License if you rename the license and remove any references to the name of the license steward (except to note that such modified license differs from this License).

### 10.4. Distributing Source Code Form that is Incompatible With Secondary Licenses

If You choose to distribute Source Code Form that is Incompatible With Secondary Licenses under the terms of this version of the License, the notice described in Exhibit B of this License must be attached.

#### Exhibit A - Source Code Form License Notice

-----

This Source Code Form is subject to the terms of the Mozilla Public License, v. 2.0. If a copy of the MPL was not distributed with this file, You can obtain one at <http://mozilla.org/MPL/2.0/>.

If it is not possible or desirable to put the notice in a particular file, then You may include the notice in a location (such as a LICENSE file in a relevant directory) where a recipient would be likely to look



for such a notice.

You may add additional accurate notices of copyright ownership.

Exhibit B - "Incompatible With Secondary Licenses" Notice

-----

This Source Code Form is "Incompatible With Secondary Licenses", as defined by the Mozilla Public License, v. 2.0.

Copyright 2005 Sun Microsystems, Inc. All rights reserved.

Use is subject to license terms.

This Source Code Form is subject to the terms of the Mozilla Public License, v. 2.0. If a copy of the MPL was not distributed with this file, You can obtain one at <http://mozilla.org/MPL/2.0/>.

# 1.242 guava 30.1-jre

## 1.242.1 Available under license :

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright (C) 2010 The Guava Authors

\*

\* Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software distributed under the License

\* is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express

\* or implied. See the License for the specific language governing permissions and limitations under

\* the License.

\*/

Found in path(s):

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ContiguousSet.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/Monitor.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/net/package-info.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/SortedLists.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/ForwardingBlockingQueue.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Ascii.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Strings.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/annotations/package-info.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/primitives/package-info.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/Atomics.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Equivalence.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/annotations/Beta.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/ThreadFactoryBuilder.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/ListeningExecutorService.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/UncaughtExceptionHandler.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright (C) 2016 The Guava Authors

\*

\* Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except  
\* in compliance with the License. You may obtain a copy of the License at

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software distributed under the License  
\* is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either  
express

\* or implied. See the License for the specific language governing permissions and limitations under  
\* the License.

\*/

Found in path(s):

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/PatternCompiler.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/CommonMatcher.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/CommonPattern.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/JdkPattern.java  
No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright (C) 2011 The Guava Authors
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/GwtTransient.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/AtomicLongMap.java
No license file was found, but licenses were detected in source scan.
```

```
/*
 * Copyright (C) 2016 The Guava Authors
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/graph/MutableValueGraph.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/graph/AbstractGraph.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/graph/AbstractUndirectedNetworkConnections.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/MoreCollectors.java
```

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/ImmutableValueGraph.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/ElementOrder.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/ValueGraphBuilder.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/HashMultimapGwtSerializationDependencies.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/NetworkConnections.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/Comparators.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/GraphConstants.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/ForwardingGraph.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/AbstractNetwork.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/EdgesConnecting.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/GraphBuilder.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/UndirectedMultiNetworkConnections.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/EndpointPairIterator.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/ForwardingValueGraph.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/AbstractValueGraph.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/EndpointPair.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/DirectedNetworkConnections.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ImmutableMultisetGwtSerializationDependencies.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/StandardMutableNetwork.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/UndirectedNetworkConnections.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/ValueGraph.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/StandardMutableValueGraph.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/UndirectedGraphConnections.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/ForwardingNetwork.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/MultiEdgesConnecting.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/RangeGwtSerializationDependencies.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/LinkedHashMapMultimapGwtSerializationDependencies.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ArrayListMultimapGwtSerializationDependencies.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/StandardValueGraph.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/DirectedGraphConnections.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/StandardNetwork.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/CollectCollectors.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/MapRetrievalCache.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/DirectedMultiNetworkConnections.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/GraphConnections.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/AbstractGraphBuilder.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/NetworkBuilder.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/MapIteratorCache.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/AbstractDirectedNetworkConnections.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/StandardMutableGraph.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright (C) 2020 The Guava Authors

\*

\* Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except

\* in compliance with the License. You may obtain a copy of the License at

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software distributed under the License

\* is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either  
express

\* or implied. See the License for the specific language governing permissions and limitations under

\* the License.

\*/

/\*\*

\* Holder for web specializations of methods of { @code Doubles }. Intended to be empty for regular  
\* version.  
\*/

Found in path(s):

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/primitives/DoublesMethodsForWeb.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright (C) 2020 The Guava Authors

\*

\* Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except  
\* in compliance with the License. You may obtain a copy of the License at

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software distributed under the License  
\* is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either  
express

\* or implied. See the License for the specific language governing permissions and limitations under  
\* the License.

\*/

/\*\*

\* Holder for web specializations of methods of { @code Ints }. Intended to be empty for regular  
\* version.

\*/

Found in path(s):

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/primitives/IntsMethodsForWeb.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright (C) 2009 The Guava Authors

\*

\* Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except  
\* in compliance with the License. You may obtain a copy of the License at

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software distributed under the  
\* License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND,  
either

\* express or implied. See the License for the specific language governing permissions and  
\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ImmutableSortedAsList.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright (C) 2015 The Guava Authors

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/CollectSpliterators.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ImmutableBiMapFauxverideShim.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/package-info.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright (C) 2007 The Guava Authors

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ImmutableSet.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/AbstractMultiset.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ForwardingMapEntry.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/AbstractIterator.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/Sets.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ForwardingMultiset.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/Multimaps.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/BiMap.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/Multisets.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ForwardingQueue.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ForwardingConcurrentMap.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ReverseNaturalOrdering.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/SortedSetMultimap.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/NullsFirstOrdering.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/SingletonImmutableSet.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/EnumHashBiMap.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/Multiset.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ForwardingListIterator.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/Ordering.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/TreeMultimap.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/LinkedListMultimap.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/AbstractSortedSetMultimap.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ConcurrentHashMultiset.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/HashMultimap.java



\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/AbstractSetMultimap.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ImmutableList.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/NullsLastOrdering.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/AbstractBiMap.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/AbstractListMultimap.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/Multimap.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/Iterators.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/Interner.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/Synchronized.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ComparatorOrdering.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/CompoundOrdering.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ForwardingSet.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/AbstractMapBasedMultimap.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ForwardingIterator.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ForwardingSortedMap.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/package-info.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ForwardingMap.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/MutableClassToInstanceMap.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/AbstractMapBasedMultiset.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/UsingToStringOrdering.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/Iterables.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/TreeMultiset.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/NaturalOrdering.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/Lists.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ExplicitOrdering.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/RegularImmutableSet.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/LinkedHashMultiset.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ArrayListMultimap.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ForwardingList.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ByFunctionOrdering.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ForwardingMultimap.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ListMultimap.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ReverseOrdering.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/SetMultimap.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/AbstractMapEntry.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/LexicographicalOrdering.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/LinkedHashMultimap.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/HashMultiset.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ForwardingCollection.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ClassToInstanceMap.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/Maps.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ForwardingSortedSet.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ForwardingObject.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/MapDifference.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/EnumBiMap.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright (C) 2007 The Guava Authors

\*

\* Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except

\* in compliance with the License. You may obtain a copy of the License at  
\*  
\* <http://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software distributed under the License  
\* is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either  
express  
\* or implied. See the License for the specific language governing permissions and limitations under  
\* the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/Resources.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Predicates.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Function.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Throwables.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/eventbus/AsyncEventBus.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/primitives/Primitives.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/FinalizableWeakReference.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/ExecutionList.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/eventbus/DeadEvent.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/Files.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/eventbus/package-info.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/package-info.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/LineReader.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/AbstractFuture.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Predicate.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/package-info.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Preconditions.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/FinalizableSoftReference.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-

jar/com/google/common/base/FinalizableReferenceQueue.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/base/Objects.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/base/Charsets.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/eventbus/Subscribe.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/io/MultiInputStream.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/io/Flushables.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/base/Supplier.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/base/FinalizableReference.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/collect/Interners.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/io/Closeables.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/eventbus/EventBus.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/base/FinalizablePhantomReference.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/io/LineBuffer.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/base/Suppliers.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/package-  
info.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/util/concurrent/DirectExecutor.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/collect/EnumMultiset.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/collect/HashBiMap.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/eventbus/AllowConcurrentEvents.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/io/LittleEndianDataInputStream.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/base/Defaults.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/io/CountingOutputStream.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/util/concurrent/ListenableFuture.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/base/AbstractIterator.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-

jar/com/google/common/base/Functions.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/io/CountingInputStream.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/io/LittleEndianDataOutputStream.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/io/CharStreams.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/io/ByteStreams.java  
No license file was found, but licenses were detected in source scan.

```
/*
* Copyright (C) 2017 The Guava Authors
*
* Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except
* in compliance with the License. You may obtain a copy of the License at
*
* http://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software distributed under the License
* is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either
express
* or implied. See the License for the specific language governing permissions and limitations under
* the License.
*/
```

Found in path(s):

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/primitives/ImmutableDoubleArray.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/primitives/ImmutableIntArray.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/util/concurrent/ForwardingLock.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/hash/AbstractHashFunction.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/primitives/ImmutableLongArray.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/util/concurrent/ForwardingCondition.java  
No license file was found, but licenses were detected in source scan.

```
/*
* Copyright (C) 2020 The Guava Authors
*
* Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except
* in compliance with the License. You may obtain a copy of the License at
*
* http://www.apache.org/licenses/LICENSE-2.0
```



\* <http://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software distributed under the License  
\* is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either  
express  
\* or implied. See the License for the specific language governing permissions and limitations under  
\* the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/primitives/Platform.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/util/concurrent/Internal.java

No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright (C) 2015 The Guava Authors  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except  
\* in compliance with the License. You may obtain a copy of the License at  
\*  
\* <http://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software distributed under the License  
\* is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either  
express  
\* or implied. See the License for the specific language governing permissions and limitations under  
\* the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/hash/LittleEndianByteArray.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/util/concurrent/AsyncCallable.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/hash/FarmHashFingerprint64.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/io/ReaderInputStream.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/hash/MacHashFunction.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/collect/ConsumingQueueIterator.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/util/concurrent/CombinedFuture.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/util/concurrent/Platform.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/InterruptibleTask.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/AggregateFutureState.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright (C) 2018 The Guava Authors

\*

\* Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except  
\* in compliance with the License. You may obtain a copy of the License at

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software distributed under the License  
\* is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either  
express

\* or implied. See the License for the specific language governing permissions and limitations under  
\* the License.

\*/

Found in path(s):

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/JdkBackedImmutableMultiset.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/JdkBackedImmutableSet.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/ImmutableSupplier.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/ExecutionSequencer.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2019 The Guava Authors

\*

\* Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except  
\* in compliance with the License. You may obtain a copy of the License at

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software distributed under the License  
\* is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either  
express

\* or implied. See the License for the specific language governing permissions and limitations under  
\* the License.

\*/

Found in path(s):



\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/IgnoreJRERequirement.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright (C) 2011 The Guava Authors

\*

\* Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except  
\* in compliance with the License. You may obtain a copy of the License at

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software distributed under the License  
\* is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either  
express

\* or implied. See the License for the specific language governing permissions and limitations under  
\* the License.

\*/

/\*

\* This method was written by Doug Lea with assistance from members of JCP JSR-166 Expert Group

\* and released to the public domain, as explained at

\* <http://creativecommons.org/licenses/publicdomain>

\*

\* As of 2010/06/11, this method is identical to the (package private) hash method in OpenJDK 7's

\* `java.util.HashMap` class.

\*/

Found in path(s):

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/Striped.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright (C) 2011 The Guava Authors

\*

\* Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except  
\* in compliance with the License. You may obtain a copy of the License at

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software distributed under the License  
\* is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either  
express

\* or implied. See the License for the specific language governing permissions and limitations under  
\* the License.

\*/

Found in path(s):

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/primitives/UnsignedInts.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/WrappingExecutorService.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/AbstractScheduledService.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/UncheckedExecutionException.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/Weigher.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/CacheStats.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/AbstractCompositeHashFunction.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/Hashing.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/AbstractLoadingCache.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/package-info.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/ForwardingLoadingCache.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/CacheBuilderSpec.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Optional.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/DescendingImmutableSortedMultiset.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Ticker.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Present.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/primitives/UnsignedInteger.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/Murmur3\_32HashFunction.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/PrimitiveSink.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/BoundType.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/AbstractHasher.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/RemovalListeners.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/primitives/UnsignedLong.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/reflect/Types.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/reflect/TypeParameter.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/RegularImmutableMultiset.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/ForwardingExecutorService.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/PairwiseEquivalence.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/CycleDetectingLockFactory.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/TreeRangeSet.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/RegularContiguousSet.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Absent.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/RemovalNotification.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/AbstractListeningExecutorService.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/Hasher.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/ForwardingListeningExecutorService.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/HashCode.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/net/MediaType.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/AbstractStreamingHasher.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/Crc32cHashFunction.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/Uninterruptibles.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/net/HostAndPort.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/Murmur3\_128HashFunction.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Enums.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/math/MathPreconditions.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/MessageDigestHashFunction.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/primitives/UnsignedLongs.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/RemovalListener.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/ListeningScheduledExecutorService.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/net/HttpHeaders.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/RemovalCause.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/math/package-info.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/FunctionalEquivalence.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/AsyncFunction.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/Cache.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/BloomFilterStrategies.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/math/BigIntegerMath.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/AbstractCache.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/ExecutionError.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/math/IntMath.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/HashingOutputStream.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/EmptyContiguousSet.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/math/DoubleMath.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/Funnels.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/CacheLoader.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/AbstractNonStreamingHashFunction.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/Funnel.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/ForwardingCache.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/Queues.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/math/LongMath.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/math/DoubleUtils.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/AbstractSortedMultiset.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/LoadingCache.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/primitives/ParseRequest.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/FutureCallback.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/BloomFilter.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/HashFunction.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright (C) 2011 The Guava Authors

\*

\* Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except  
\* in compliance with the License. You may obtain a copy of the License at

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software distributed under the  
\* License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND,  
either

\* express or implied. See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/RegularImmutableSortedMultiset.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ImmutableSortedMultisetFauxverideShim.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/GeneralRange.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ForwardingSortedMultiset.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/SortedIterable.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/RangeSet.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/AbstractRangeSet.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/Count.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/SortedIterables.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ImmutableSortedMultiset.java

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright (C) 2007 The Guava Authors
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

```
/**
 * Returns an array containing all of the elements in the specified collection. This method
 * returns the elements in the order they are returned by the collection's iterator. The returned
 * array is "safe" in that no references to it are maintained by the collection. The caller is
 * thus free to modify the returned array.
 *
 * <p>This method assumes that the collection size doesn't change while the method is running.
 *
 * <p>TODO(kevinb): support concurrently modified collections?
 *
 * @param c the collection for which to return an array of elements
 */
```

Found in path(s):

```
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ObjectArrays.java
```

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright (C) 2012 The Guava Authors
 *
 * Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except
 * in compliance with the License. You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software distributed under the License
 * is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either
 * express
 * or implied. See the License for the specific language governing permissions and limitations under
 * the License.
 */
```

```
*/
/*
 * This method was rewritten in Java from an intermediate step of the Murmur hash function in
 * http://code.google.com/p/smhasher/source/browse/trunk/MurmurHash3.cpp, which contained the
 * following header:
 *
 * MurmurHash3 was written by Austin Appleby, and is placed in the public domain. The author
 * hereby disclaims copyright to this source code.
 */
```

Found in path(s):

```
*/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/base/SmallCharMatcher.java
```

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright (C) 2014 The Guava Authors
 *
 * Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except
 * in compliance with the License. You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software distributed under the License
 * is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either
 * express
 * or implied. See the License for the specific language governing permissions and limitations under
 * the License.
 */
```

Found in path(s):

```
*/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/eventbus/SubscriberRegistry.java
*/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/eventbus/Dispatcher.java
*/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/base/MoreObjects.java
*/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/ListenerCallQueue.java
*/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/math/Quantiles.java
*/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/eventbus/Subscriber.java
*/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/TrustedListenableFutureTask.java
```

No license file was found, but licenses were detected in source scan.

```
/*
```

\* Copyright (C) 2006 The Guava Authors  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except  
\* in compliance with the License. You may obtain a copy of the License at  
\*  
\* <http://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software distributed under the License  
\* is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either  
express  
\* or implied. See the License for the specific language governing permissions and limitations under  
\* the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/AppendableWriter.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/reflect/TypeToken.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/FluentFuture.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/AggregateFuture.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/TimeLimiter.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/AbstractCatchingFuture.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/AbstractTransformFuture.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/UncheckedTimeoutException.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/FakeTimeLimiter.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/FuturesGetChecked.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/GwtFluentFutureCatchingSpecialization.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/Futures.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/CollectionFuture.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/CaseFormat.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/escape/CharEscaper.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/PatternFilenameFilter.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-



jar/com/google/common/util/concurrent/GwtFuturesCatchingSpecialization.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/escape/CharEscaperBuilder.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/util/concurrent/TimeoutFuture.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/util/concurrent/ImmediateFuture.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/util/concurrent/SimpleTimeLimiter.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/annotations/VisibleForTesting.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright (C) 2020 The Guava Authors

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/util/concurrent/ServiceManagerBridge.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/base/Java8Usage.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright (C) 2013 The Guava Authors

\*

\* Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except

\* in compliance with the License. You may obtain a copy of the License at

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software distributed under the License

\* is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either  
express

\* or implied. See the License for the specific language governing permissions and limitations under

\* the License.

\*/

Found in path(s):

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/reflect/TypeVisitor.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/thirdparty/publicsuffix/PublicSuffixType.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/HashingInputStream.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/VerifyException.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/eventbus/SubscriberExceptionHandler.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/AbstractTable.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/Runnables.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Verify.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/eventbus/SubscriberExceptionContext.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/FilteredMultimapValues.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/CharSequenceReader.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Utf8.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/WrappingScheduledExecutorService.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright (C) 2018 The Guava Authors

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

- \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/JdkBackedImmutableMap.java
- \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/BaseImmutableMultimap.java
- \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/JdkBackedImmutableBiMap.java
- \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/IndexedImmutableSet.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright (C) 2012 The Guava Authors

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

- \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/FilteredKeySetMultimap.java
- \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/FilteredKeyListMultimap.java
- \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/AllEqualOrdering.java
- \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/TransformedListIterator.java
- \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/FilteredMultimap.java
- \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/FilteredEntrySetMultimap.java
- \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/SortedMultisetBridge.java
- \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/CompactLinkedHashSet.java
- \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/CompactLinkedHashMap.java
- \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/FilteredSetMultimap.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/CompactHashMap.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/AbstractSortedKeySortedSetMultimap.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ImmutableEnumMap.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/UnmodifiableSortedMultiset.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/ForwardingBlockingDeque.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ForwardingImmutableList.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ForwardingBlockingDeque.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ForwardingDeque.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/TransformedIterator.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ForwardingImmutableMap.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/TreeTraverser.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/CompactHashSet.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/DescendingMultiset.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/FilteredEntryMultimap.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/RangeMap.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ForwardingNavigableSet.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/TreeRangeMap.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/DescendingImmutableSortedSet.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/AbstractMultimap.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/RegularImmutableAsList.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/EvictingQueue.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ForwardingNavigableMap.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ForwardingImmutableSet.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/AbstractNavigableMap.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright (C) 2011 The Guava Authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except

\* in compliance with the License. You may obtain a copy of the License at

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software distributed under the License

\* is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either  
express

\* or implied. See the License for the specific language governing permissions and limitations under

\* the License.

\*/

Found in path(s):

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/hash/package-info.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright (C) 2016 The Guava Authors

\*

\* Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except

\* in compliance with the License. You may obtain a copy of the License at

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software distributed under the License

\* is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either  
express

\* or implied. See the License for the specific language governing permissions and limitations under

\* the License.

\*/

/\*\*

\* Holder for extra methods of { @code Objects } only in web. Intended to be empty for regular

\* version.

\*/

Found in path(s):

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/base/ExtraObjectsMethodsForWeb.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright (C) 2007 The Guava Authors

```
*
* Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except
* in compliance with the License. You may obtain a copy of the License at
*
* http://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software distributed under the License
* is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either
express
* or implied. See the License for the specific language governing permissions and limitations under
* the License.
*/
/*
* This following method is a modified version of one found in
* http://gee.cs.oswego.edu/cgi-bin/viewcvs.cgi/jsr166/src/test/tck/AbstractExecutorServiceTest.java?revision=1.30
* which contained the following notice:
*
* Written by Doug Lea with assistance from members of JCP JSR-166 Expert Group and released to
* the public domain, as explained at http://creativecommons.org/publicdomain/zero/1.0/
*
* Other contributors include Andrew Wright, Jeffrey Hayes, Pat Fisher, Mike Judd.
*/
```

Found in path(s):

```
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/MoreExecutors.java
```

No license file was found, but licenses were detected in source scan.

```
/*
* Copyright (C) 2013 The Guava Authors
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* http://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
```

Found in path(s):

```
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ImmutableMapEntry.java
```

```
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
```

jar/com/google/common/collect/MultimapBuilder.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/io/MoreFiles.java  
No license file was found, but licenses were detected in source scan.

```
/*
* Copyright (C) 2008 The Guava Authors
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* http://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
```

Found in path(s):

```
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ImmutableEntry.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/Tables.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/thirdparty/publicsuffix/PublicSuffixPatterns.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/Serialization.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/StandardTable.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ImmutableListMultimap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/PeekingIterator.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/RegularImmutableMap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ImmutableMultiset.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/SingletonImmutableBiMap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/RegularImmutableBiMap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ImmutableBiMap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ImmutableSortedSet.java
```

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ImmutableMapValues.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/Collections2.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ImmutableMapEntrySet.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ImmutableCollection.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/Table.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/EmptyImmutableListMultimap.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/CollectPreconditions.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/HashBasedTable.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ImmutableMultimap.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/Platform.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/TreeBasedTable.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/StandardRowSortedTable.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ImmutableMap.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/Range.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/UnmodifiableIterator.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ImmutableMapKeySet.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright (C) 2020 The Guava Authors

\*

\* Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except

\* in compliance with the License. You may obtain a copy of the License at

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software distributed under the License

\* is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either  
express

\* or implied. See the License for the specific language governing permissions and limitations under

\* the License.

\*/



/\*\*

\* Holder for web specializations of methods of { @code Shorts }. Intended to be empty for regular  
\* version.  
\*/

Found in path(s):

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/primitives/ShortsMethodsForWeb.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright (C) 2012 The Guava Authors

\*

\* Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except  
\* in compliance with the License. You may obtain a copy of the License at

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software distributed under the License  
\* is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either  
express

\* or implied. See the License for the specific language governing permissions and limitations under  
\* the License.

\*/

Found in path(s):

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/collect/ImmutableRangeSet.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/math/LinearTransformation.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/io/CharSink.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/hash/LongAddable.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/util/concurrent/SmoothRateLimiter.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/collect/FilteredKeyMultimap.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/reflect/Parameter.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/io/ByteSink.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/Closer.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/math/Stats.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/html/package-info.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-

jar/com/google/common/math/PairedStatsAccumulator.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/reflect/Element.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/io/CharSource.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/reflect/package-info.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/reflect/ImmutableTypeToInstanceMap.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/math/StatsAccumulator.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/escape/package-info.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/reflect/MutableTypeToInstanceMap.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/hash/SipHashFunction.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/reflect/TypeCapture.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/cache/LongAddable.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/io/ByteSource.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/hash/ChecksumHashFunction.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/reflect/Invokable.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/util/concurrent/RateLimiter.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/base/StandardSystemProperty.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/hash/AbstractByteHasher.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/reflect/AbstractInvocationHandler.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/io/BaseEncoding.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/reflect/TypeToInstanceMap.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/math/PairedStats.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/cache/LongAddables.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/util/concurrent/ListenableScheduledFuture.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/hash/LongAddables.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-

jar/com/google/common/collect/CartesianList.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/io/FileWriteMode.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/reflect/ClassPath.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/xml/package-  
info.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/collect/ImmutableRangeMap.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/util/concurrent/ServiceManager.java  
No license file was found, but licenses were detected in source scan.

```
/*
* Copyright (C) 2019 The Guava Authors
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* http://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
```

Found in path(s):

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/graph/IncidentEdgeSet.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/collect/CompactHashing.java  
No license file was found, but licenses were detected in source scan.

```
/*
* Copyright (C) 2017 The Guava Authors
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* http://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
```

- \* See the License for the specific language governing permissions and
  - \* limitations under the License.
- \*/

Found in path(s):

- \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/AbstractBaseGraph.java
- \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/BaseGraph.java
- \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/Traverser.java
- \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/ClosingFuture.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright (C) 2008 The Guava Authors

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

/\*

\* This method was rewritten in Java from an intermediate step of the Murmur hash function in

\* <http://code.google.com/p/smhasher/source/browse/trunk/MurmurHash3.cpp>, which contained the

\* following header:

\*

\* MurmurHash3 was written by Austin Appleby, and is placed in the public domain. The author

\* hereby disclaims copyright to this source code.

\*/

Found in path(s):

- \* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/Hashing.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright (C) 2005 The Guava Authors

\*

\* Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except

\* in compliance with the License. You may obtain a copy of the License at  
\*  
\* <http://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software distributed under the License  
\* is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either  
express  
\* or implied. See the License for the specific language governing permissions and limitations under  
\* the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/reflect/Reflection.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright (C) 2009 The Guava Authors

\*

\* Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except  
\* in compliance with the License. You may obtain a copy of the License at

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software distributed under the License  
\* is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either  
express

\* or implied. See the License for the specific language governing permissions and limitations under  
\* the License.

\*/

/\*\*

\* Outer class that exists solely to let us write { @code Partially.GwtIncompatible } instead of plain  
\* { @code GwtIncompatible }. This is more accurate for { @link Futures#catching }, which is available  
\* under GWT but with a slightly different signature.

\*

\* <p>We can't use { @code PartiallyGwtIncompatible } because then the GWT compiler wouldn't recognize  
\* it as a { @code GwtIncompatible } annotation. And for { @code Futures.catching }, we need the GWT  
\* compiler to autostrip the normal server method in order to expose the special, inherited GWT  
\* version.

\*/

Found in path(s):

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/util/concurrent/Partially.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright (C) 2014 The Guava Authors

\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <http://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/TopKSelector.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/ImmutableGraph.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/SuccessorsFunction.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/MutableNetwork.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/ImmutableNetwork.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/Graphs.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/InsecureRecursiveDeleteException.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/Graph.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/RecursiveDeleteOption.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/PredecessorsFunction.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/MutableGraph.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/Network.java

No license file was found, but licenses were detected in source scan.

/\*  
\* Written by Doug Lea with assistance from members of JCP JSR-166  
\* Expert Group and released to the public domain, as explained at  
\* <http://creativecommons.org/publicdomain/zero/1.0/>  
\*/

Found in path(s):

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/AtomicDoubleArray.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/LongAdder.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/LongAdder.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/Striped64.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/Striped64.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright (C) 2008 The Guava Authors

\*

\* Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except  
\* in compliance with the License. You may obtain a copy of the License at

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software distributed under the License  
\* is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either  
express

\* or implied. See the License for the specific language governing permissions and limitations under  
\* the License.

\*/

Found in path(s):

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/FileBackedOutputStream.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/primitives/Shorts.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/primitives/Doubles.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/SequentialExecutor.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/CharMatcher.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/FluentIterable.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/primitives/Booleans.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/primitives/Chars.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/net/PercentEscaper.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Joiner.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/primitives/Floats.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/ListenableFutureTask.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/escape/UnicodeEscaper.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/primitives/Bytes.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/MultiReader.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Stopwatch.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Converter.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/primitives/Longs.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/primitives/Ints.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/internal/Finalizer.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/net/InetAddresses.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/escape/Escaper.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/thirdparty/publicsuffix/TrieParser.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright (C) 2010 The Guava Authors

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ForwardingSetMultimap.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-



jar/com/google/common/collect/MinMaxPriorityQueue.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/collect/AbstractSequentialIterator.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/collect/ForwardingListMultimap.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/collect/RowSortedTable.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/collect/ForwardingSortedSetMultimap.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/collect/ForwardingImmutableCollection.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/collect/UnmodifiableListIterator.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/collect/SortedMapDifference.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright (C) 2011 The Guava Authors

\*

\* Licensed under the Apache License, Version 2.0 (the "License"); you may not  
\* use this file except in compliance with the License. You may obtain a copy of  
\* the License at

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
\* License for the specific language governing permissions and limitations under  
\* the License.

\*/

Found in path(s):

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/collect/SortedMultiset.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-  
jar/com/google/common/collect/SortedMultisets.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright (C) 2009 The Guava Authors

\*

\* Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except  
\* in compliance with the License. You may obtain a copy of the License at

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software distributed under the License  
\* is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either  
express  
\* or implied. See the License for the specific language governing permissions and limitations under  
\* the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/DenseImmutableTable.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/ForwardingFuture.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/primitives/UnsignedBytes.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/net/HostSpecifier.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/AbstractExecutionThreadService.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/JdkFutureAdapters.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/primitives/SignedBytes.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/annotations/GwtIncompatible.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/SparseImmutableTable.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/net/UrlEscapers.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/ReferenceEntry.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/MapMakerInternalMap.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/reflect/TypeResolver.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/escape/Platform.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/MapMaker.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/escape/ArrayBasedUnicodeEscaper.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/CacheBuilder.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/Cut.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/ByteArrayDataInput.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/SettableFuture.java

\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/Callables.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/Service.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/AbstractIdleService.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/ForwardingFluentFuture.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Platform.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/ByteArrayDataOutput.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/html/HtmlEscapers.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/escape/ArrayBasedEscaperMap.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/LineProcessor.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/xml/XmlEscapers.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/RegularImmutableTable.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/ForwardingListenableFuture.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/annotations/GwtCompatible.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/ByteProcessor.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/escape/ArrayBasedCharEscaper.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/net/InternetDomainName.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/AbstractService.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Splitter.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/LocalCache.java  
\* /opt/cola/permits/1119092615\_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/escape/Escapers.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright (C) 2009 The Guava Authors

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

```

*
* http://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
/**
 * Not supported. You are attempting to create a map that may contain a non-{@code Comparable}
 * key. Proper calls will resolve to the version in {@code ImmutableSortedMap}, not this dummy
 * version.
 *
 * @throws UnsupportedOperationException always
 * @deprecated Pass a key of type {@code Comparable} to use {@link
 * ImmutableSortedMap#of(Comparable, Object)}.
 */

```

Found in path(s):

```

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ImmutableSortedMapFauxverideShim.java
No license file was found, but licenses were detected in source scan.

```

```

/*
 * Copyright (C) 2020 The Guava Authors
 *
 * Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except
 * in compliance with the License. You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software distributed under the License
 * is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either
 * express
 * or implied. See the License for the specific language governing permissions and limitations under
 * the License.
 */
/**
 * Holder for web specializations of methods of {@code Floats}. Intended to be empty for regular
 * version.
 */

```

Found in path(s):

```

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/primitives/FloatsMethodsForWeb.java
No license file was found, but licenses were detected in source scan.

```

```
/*
 * Copyright (C) 2009 The Guava Authors
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ComputationException.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/DiscreteDomain.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ImmutableClassToInstanceMap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ImmutableSortedSetFauxverideShim.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ImmutableTable.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ImmutableAsList.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ArrayTable.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ForwardingTable.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/TableCollectors.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ImmutableEnumSet.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/RegularImmutableSortedSet.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ImmutableSortedMap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/SingletonImmutableList.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/SingletonImmutableTable.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ImmutableSetMultimap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
```

```
jar/com/google/common/collect/ComparisonChain.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/RegularImmutableList.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/AbstractIndexedListIterator.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/EmptyImmutableSetMultimap.java
```

# 1.243 swagger 1.5.20

## 1.243.1 Available under license :

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works

thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

You must give any other recipients of the Work or Derivative Works a copy of this License; and  
You must cause any modified files to carry prominent notices stating that You changed the files; and  
You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

#### APPENDIX: HOW TO APPLY THE APACHE LICENSE TO YOUR WORK

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.



You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

## 1.244 sqlite 3.26.0-15.e18

### 1.244.1 Available under license :

The author disclaims copyright to this source code. In place of a legal notice, here is a blessing:

May you do good and not evil.  
May you find forgiveness for yourself and forgive others.  
May you share freely, never taking more than you give.

## 1.245 spring-security-acl 5.2.15.RELEASE

### 1.245.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2002-2013 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1348346230_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-
jar/org/springframework/security/acls/domain/SpringCacheBasedAclCache.java
```

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2004, 2005, 2006, 2017 Acegi Technology Pty Limited
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
*/opt/cola/permits/1348346230_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-
jar/org/springframework/security/acls/jdbc/BasicLookupStrategy.java
No license file was found, but licenses were detected in source scan.
```

```
/*
 * Copyright 2004, 2005, 2006, 2017, 2018 Acegi Technology Pty Limited
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
*/opt/cola/permits/1348346230_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-
jar/org/springframework/security/acls/jdbc/JdbcMutableAclService.java
*/opt/cola/permits/1348346230_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-
jar/org/springframework/security/acls/jdbc/JdbcAclService.java
No license file was found, but licenses were detected in source scan.
```

```
/*
 * Copyright 2004, 2005, 2006 Acegi Technology Pty Limited
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
```

- \* you may not use this file except in compliance with the License.
- \* You may obtain a copy of the License at
- \*
- \* <https://www.apache.org/licenses/LICENSE-2.0>
- \*
- \* Unless required by applicable law or agreed to in writing, software
- \* distributed under the License is distributed on an "AS IS" BASIS,
- \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- \* See the License for the specific language governing permissions and
- \* limitations under the License.
- \*/

Found in path(s):

- \* /opt/cola/permits/1348346230\_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-jar/org/springframework/security/acls/afterinvocation/ArrayFilterer.java
- \* /opt/cola/permits/1348346230\_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-jar/org/springframework/security/acls/domain/AclFormattingUtils.java
- \* /opt/cola/permits/1348346230\_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-jar/org/springframework/security/acls/model/OwnershipAcl.java
- \* /opt/cola/permits/1348346230\_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-jar/org/springframework/security/acls/model/SidRetrievalStrategy.java
- \* /opt/cola/permits/1348346230\_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-jar/org/springframework/security/acls/model/UnloadedSidException.java
- \* /opt/cola/permits/1348346230\_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-jar/org/springframework/security/acls/domain/AclAuthorizationStrategy.java
- \* /opt/cola/permits/1348346230\_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-jar/org/springframework/security/acls/domain/CumulativePermission.java
- \* /opt/cola/permits/1348346230\_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-jar/org/springframework/security/acls/domain/ConsoleAuditLogger.java
- \* /opt/cola/permits/1348346230\_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-jar/org/springframework/security/acls/domain/AclAuthorizationStrategyImpl.java
- \* /opt/cola/permits/1348346230\_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-jar/org/springframework/security/acls/model/AclService.java
- \* /opt/cola/permits/1348346230\_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-jar/org/springframework/security/acls/model/AccessControlEntry.java
- \* /opt/cola/permits/1348346230\_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-jar/org/springframework/security/acls/domain/GrantedAuthoritySid.java
- \* /opt/cola/permits/1348346230\_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-jar/org/springframework/security/acls/domain/AuditLogger.java
- \* /opt/cola/permits/1348346230\_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-jar/org/springframework/security/acls/afterinvocation/AclEntryAfterInvocationCollectionFilteringProvider.java
- \* /opt/cola/permits/1348346230\_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-jar/org/springframework/security/acls/afterinvocation/CollectionFilterer.java
- \* /opt/cola/permits/1348346230\_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-jar/org/springframework/security/acls/jdbc/LookupStrategy.java
- \* /opt/cola/permits/1348346230\_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-jar/org/springframework/security/acls/model/MutableAclService.java
- \* /opt/cola/permits/1348346230\_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-

jar/org/springframework/security/acls/model/NotFoundException.java  
\* /opt/cola/permits/1348346230\_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-  
jar/org/springframework/security/acls/domain/ObjectIdentityRetrievalStrategyImpl.java  
\* /opt/cola/permits/1348346230\_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-  
jar/org/springframework/security/acls/model/Sid.java  
\* /opt/cola/permits/1348346230\_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-  
jar/org/springframework/security/acls/domain/IdentityUnavailableException.java  
\* /opt/cola/permits/1348346230\_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-  
jar/org/springframework/security/acls/afterinvocation/AbstractAclProvider.java  
\* /opt/cola/permits/1348346230\_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-  
jar/org/springframework/security/acls/domain/ObjectIdentityImpl.java  
\* /opt/cola/permits/1348346230\_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-  
jar/org/springframework/security/acls/domain/EhCacheBasedAclCache.java  
\* /opt/cola/permits/1348346230\_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-  
jar/org/springframework/security/acls/model/AuditAcl.java  
\* /opt/cola/permits/1348346230\_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-  
jar/org/springframework/security/acls/model/AclCache.java  
\* /opt/cola/permits/1348346230\_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-  
jar/org/springframework/security/acls/domain/SidRetrievalStrategyImpl.java  
\* /opt/cola/permits/1348346230\_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-  
jar/org/springframework/security/acls/model/AlreadyExistsException.java  
\* /opt/cola/permits/1348346230\_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-  
jar/org/springframework/security/acls/model/MutableAcl.java  
\* /opt/cola/permits/1348346230\_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-  
jar/org/springframework/security/acls/model/ObjectIdentity.java  
\* /opt/cola/permits/1348346230\_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-  
jar/org/springframework/security/acls/model/ObjectIdentityRetrievalStrategy.java  
\* /opt/cola/permits/1348346230\_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-  
jar/org/springframework/security/acls/model/Permission.java  
\* /opt/cola/permits/1348346230\_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-  
jar/org/springframework/security/acls/afterinvocation/AclEntryAfterInvocationProvider.java  
\* /opt/cola/permits/1348346230\_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-  
jar/org/springframework/security/acls/model/ChildrenExistException.java  
\* /opt/cola/permits/1348346230\_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-  
jar/org/springframework/security/acls/AclEntryVoter.java  
\* /opt/cola/permits/1348346230\_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-  
jar/org/springframework/security/acls/model/Acl.java  
\* /opt/cola/permits/1348346230\_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-  
jar/org/springframework/security/acls/afterinvocation/Filterer.java  
\* /opt/cola/permits/1348346230\_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-  
jar/org/springframework/security/acls/domain/BasePermission.java  
\* /opt/cola/permits/1348346230\_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-  
jar/org/springframework/security/acls/domain/AclImpl.java  
\* /opt/cola/permits/1348346230\_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-  
jar/org/springframework/security/acls/model/AuditAclAccessControlEntry.java  
\* /opt/cola/permits/1348346230\_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-  
jar/org/springframework/security/acls/domain/PrincipalSid.java

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2002-2016 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
 * /opt/cola/permits/1348346230_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-
jar/org/springframework/security/acls/domain/AbstractPermission.java
 * /opt/cola/permits/1348346230_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-
jar/org/springframework/security/acls/package-info.java
 * /opt/cola/permits/1348346230_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-
jar/org/springframework/security/acls/model/AclDataAccessException.java
 * /opt/cola/permits/1348346230_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-
jar/org/springframework/security/acls/AclPermissionEvaluator.java
 * /opt/cola/permits/1348346230_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-
jar/org/springframework/security/acls/domain/PermissionFactory.java
 * /opt/cola/permits/1348346230_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-
jar/org/springframework/security/acls/AclPermissionCacheOptimizer.java
 * /opt/cola/permits/1348346230_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-
jar/org/springframework/security/acls/afterinvocation/package-info.java
 * /opt/cola/permits/1348346230_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-
jar/org/springframework/security/acls/model/ObjectIdentityGenerator.java
 * /opt/cola/permits/1348346230_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-
jar/org/springframework/security/acls/model/package-info.java
 * /opt/cola/permits/1348346230_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-
jar/org/springframework/security/acls/domain/AccessControlEntryImpl.java
 * /opt/cola/permits/1348346230_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-
jar/org/springframework/security/acls/domain/package-info.java
 * /opt/cola/permits/1348346230_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-
jar/org/springframework/security/acls/model/PermissionGrantingStrategy.java
 * /opt/cola/permits/1348346230_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-
jar/org/springframework/security/acls/jdbc/package-info.java
```

No license file was found, but licenses were detected in source scan.

```
/*
```

\* Copyright 2002-2018 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1348346230\_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-jar/org/springframework/security/acls/domain/DefaultPermissionGrantingStrategy.java  
\* /opt/cola/permits/1348346230\_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-jar/org/springframework/security/acls/domain/DefaultPermissionFactory.java  
\* /opt/cola/permits/1348346230\_1655814070.7724574/0/spring-security-acl-5-2-15-release-sources-jar/org/springframework/security/acls/jdbc/AclClassIdUtils.java

## 1.246 mime-pull 1.8.0.312

### 1.246.1 Available under license :

```
" Copyright (c) 2018, 2021 Oracle and/or its affiliates. All rights reserved. "
[/]: # " "
[/]: # " This program and the accompanying materials are made available under the "
[/]: # " terms of the Eclipse Distribution License v. 1.0, which is available at "
[/]: # " http://www.eclipse.org/org/documents/edl-v10.php. "
[/]: # " "
[/]: # " SPDX-License-Identifier: BSD-3-Clause "
```

Copyright (c) 2018 Oracle and/or its affiliates. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

- Neither the name of the Eclipse Foundation, Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

# 1.247 netty-transport-native-epoll 4.1.78.Final

## 1.247.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
<!--
~ Copyright 2014 The Netty Project
~
~ The Netty Project licenses this file to you under the Apache License,
~ version 2.0 (the "License"); you may not use this file except in compliance
~ with the License. You may obtain a copy of the License at:
~
~ https://www.apache.org/licenses/LICENSE-2.0
~
~ Unless required by applicable law or agreed to in writing, software
~ distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
~ WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
~ License for the specific language governing permissions and limitations
~ under the License.
-->
```

Found in path(s):

```
* /opt/cola/permits/1350828752_1656063995.818272/0/netty-transport-native-epoll-4-1-78-final-sources-
jar/META-INF/maven/io.netty/netty-transport-native-epoll/pom.xml
```

No license file was found, but licenses were detected in source scan.

```
/*
* Copyright 2016 The Netty Project
*
* The Netty Project licenses this file to you under the Apache License,
* version 2.0 (the "License"); you may not use this file except in compliance
```

\* with the License. You may obtain a copy of the License at:  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
\* License for the specific language governing permissions and limitations  
\* under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1350828752\_1656063995.818272/0/netty-transport-native-epoll-4-1-78-final-sources-jar/netty\_epoll\_linuxsocket.h  
\* /opt/cola/permits/1350828752\_1656063995.818272/0/netty-transport-native-epoll-4-1-78-final-sources-jar/netty\_epoll\_linuxsocket.c

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2013 The Netty Project  
\*  
\* The Netty Project licenses this file to you under the Apache License,  
\* version 2.0 (the "License"); you may not use this file except in compliance  
\* with the License. You may obtain a copy of the License at:  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
\* License for the specific language governing permissions and limitations  
\* under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1350828752\_1656063995.818272/0/netty-transport-native-epoll-4-1-78-final-sources-jar/netty\_epoll\_native.c

## 1.248 libassuan 2.5.1 3.e18

### 1.248.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>

Everyone is permitted to copy and distribute verbatim copies



of this license document, but changing it is not allowed.

## Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic

pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

## TERMS AND CONDITIONS

### 0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

#### 1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

## 2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

## 3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

## 4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you

receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

#### 5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.
- b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".
- c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.
- d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

#### 6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

- a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.
- b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.
- c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.
- d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.
- e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded

from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

## 7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you



received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

#### 8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

#### 9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or

run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

#### 10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

#### 11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement,

or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

#### 12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

#### 13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

#### 14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you

to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

#### 15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

#### 16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### 17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest

to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program> Copyright (C) <year> <name of author>
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <http://www.gnu.org/licenses/>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <http://www.gnu.org/philosophy/why-not-lgpl.html>.

GNU LESSER GENERAL PUBLIC LICENSE  
Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.  
51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts  
as the successor of the GNU Library Public License, version 2, hence  
the version number 2.1.]

### Preamble

The licenses for most software are designed to take away your  
freedom to share and change it. By contrast, the GNU General Public  
Licenses are intended to guarantee your freedom to share and change  
free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some  
specially designated software packages--typically libraries--of the  
Free Software Foundation and other authors who decide to use it. You  
can use it too, but we suggest you first think carefully about whether  
this license or the ordinary General Public License is the better  
strategy to use in any particular case, based on the explanations  
below.

When we speak of free software, we are referring to freedom of use,  
not price. Our General Public Licenses are designed to make sure that  
you have the freedom to distribute copies of free software (and charge  
for this service if you wish); that you receive source code or can get  
it if you want it; that you can change the software and use pieces of  
it in new free programs; and that you are informed that you can do  
these things.

To protect your rights, we need to make restrictions that forbid  
distributors to deny you these rights or to ask you to surrender these  
rights. These restrictions translate to certain responsibilities for  
you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis  
or for a fee, you must give the recipients all the rights that we gave  
you. You must make sure that they, too, receive or can get the source  
code. If you link other code with the library, you must provide  
complete object files to the recipients, so that they can relink them  
with the library after making changes to the library and recompiling  
it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the  
library, and (2) we offer you this license, which gives you legal

permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free



programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

## GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based

on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those

sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or

linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License.

Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked

with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise

permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing

and reuse of software generally.

## NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either



version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful,  
but WITHOUT ANY WARRANTY; without even the implied warranty of  
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU  
Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public  
License along with this library; if not, write to the Free Software  
Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or  
your school, if any, to sign a "copyright disclaimer" for the library,  
if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the  
library `Frob' (a library for tweaking knobs) written by James  
Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!

## 1.249 java-cc 3.2

### 1.249.1 Available under license :

<OWNER> = Regents of the University of California  
<ORGANIZATION> = University of California, Berkeley  
<YEAR> = 1998

In the original BSD license, both occurrences of the phrase "COPYRIGHT HOLDERS AND CONTRIBUTORS" in  
the disclaimer read "REGENTS AND CONTRIBUTORS".

Here is the license template:

Copyright (c) <YEAR>, <OWNER>

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the  
following conditions are met:

Redistributions of source code must retain the above copyright notice, this list of conditions and the following  
disclaimer.

Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

Neither the name of the <ORGANIZATION> nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## 1.250 checker-qual 3.5.0

### 1.250.1 Available under license :

Checker Framework qualifiers

Copyright 2004-present by the Checker Framework developers

MIT License:

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER

LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

# 1.251 free-type 2.9.1 4.el8\_3.1

## 1.251.1 Available under license :

The FreeType Project LICENSE  
-----

2006-Jan-27

Copyright 1996-2002, 2006 by  
David Turner, Robert Wilhelm, and Werner Lemberg

### Introduction

=====

The FreeType Project is distributed in several archive packages; some of them may contain, in addition to the FreeType font engine, various tools and contributions which rely on, or relate to, the FreeType Project.

This license applies to all files found in such packages, and which do not fall under their own explicit license. The license affects thus the FreeType font engine, the test programs, documentation and makefiles, at the very least.

This license was inspired by the BSD, Artistic, and IJG (Independent JPEG Group) licenses, which all encourage inclusion and use of free software in commercial and freeware products alike. As a consequence, its main points are that:

- o We don't promise that this software works. However, we will be interested in any kind of bug reports. (^ as is' distribution)
- o You can use this software for whatever you want, in parts or full form, without having to pay us. (^ royalty-free' usage)
- o You may not pretend that you wrote this software. If you use it, or only parts of it, in a program, you must acknowledge somewhere in your documentation that you have used the FreeType code. (^ credits')

We specifically permit and encourage the inclusion of this

software, with or without modifications, in commercial products. We disclaim all warranties covering The FreeType Project and assume no liability related to The FreeType Project.

Finally, many people asked us for a preferred form for a credit/disclaimer to use in compliance with this license. We thus encourage you to use the following text:

""

Portions of this software are copyright <year> The FreeType Project (www.freetype.org). All rights reserved.

""

Please replace <year> with the value from the FreeType version you actually use.

## Legal Terms

=====

### 0. Definitions

-----

Throughout this license, the terms `package', `FreeType Project', and `FreeType archive' refer to the set of files originally distributed by the authors (David Turner, Robert Wilhelm, and Werner Lemberg) as the `FreeType Project', be they named as alpha, beta or final release.

`You' refers to the licensee, or person using the project, where `using' is a generic term including compiling the project's source code as well as linking it to form a `program' or `executable'. This program is referred to as `a program using the FreeType engine'.

This license applies to all files distributed in the original FreeType Project, including all source code, binaries and documentation, unless otherwise stated in the file in its original, unmodified form as distributed in the original archive. If you are unsure whether or not a particular file is covered by this license, you must contact us to verify this.

The FreeType Project is copyright (C) 1996-2000 by David Turner, Robert Wilhelm, and Werner Lemberg. All rights reserved except as specified below.

### 1. No Warranty

-----  
THE FREETYPE PROJECT IS PROVIDED `AS IS' WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT WILL ANY OF THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY DAMAGES CAUSED BY THE USE OR THE INABILITY TO USE, OF THE FREETYPE PROJECT.

## 2. Redistribution

-----

This license grants a worldwide, royalty-free, perpetual and irrevocable right and license to use, execute, perform, compile, display, copy, create derivative works of, distribute and sublicense the FreeType Project (in both source and object code forms) and derivative works thereof for any purpose; and to authorize others to exercise some or all of the rights granted herein, subject to the following conditions:

- o Redistribution of source code must retain this license file ('FTL.TXT') unaltered; any additions, deletions or changes to the original files must be clearly indicated in accompanying documentation. The copyright notices of the unaltered, original files must be preserved in all copies of source files.
  
- o Redistribution in binary form must provide a disclaimer that states that the software is based in part of the work of the FreeType Team, in the distribution documentation. We also encourage you to put an URL to the FreeType web page in your documentation, though this isn't mandatory.

These conditions apply to any software derived from or based on the FreeType Project, not just the unmodified files. If you use our work, you must acknowledge us. However, no fee need be paid to us.

## 3. Advertising

-----

Neither the FreeType authors and contributors nor you shall use the name of the other for commercial, advertising, or promotional purposes without specific prior written permission.

We suggest, but do not require, that you use one or more of the following phrases to refer to this software in your documentation or advertising materials: `FreeType Project', `FreeType Engine',

`FreeType library', or `FreeType Distribution'.

As you have not signed this license, you are not required to accept it. However, as the FreeType Project is copyrighted material, only this license, or another one contracted with the authors, grants you the right to use, distribute, and modify it. Therefore, by using, distributing, or modifying the FreeType Project, you indicate that you understand and accept all the terms of this license.

#### 4. Contacts

-----

There are two mailing lists related to FreeType:

o [freetype@nongnu.org](mailto:freetype@nongnu.org)

Discusses general use and applications of FreeType, as well as future and wanted additions to the library and distribution.

If you are looking for support, start in this list if you haven't found anything to help you in the documentation.

o [freetype-devel@nongnu.org](mailto:freetype-devel@nongnu.org)

Discusses bugs, as well as engine internals, design issues, specific licenses, porting, etc.

Our home page can be found at

<https://www.freetype.org>

--- end of FTL.TXT ---

# Files that don't get a copyright, or which are taken from elsewhere.

#

# All lines in this file are patterns, including the comment lines; this

# means that e.g. `FTL.TXT' matches all files that have this string in

# the file name (including the path relative to the current directory,

# always starting with `./').

#

# Don't put empty lines into this file!

#

.gitignore

#

builds/unix/pkg.m4

#

docs/FTL.TXT

docs/GPLv2.TXT

```
#
include/freetype/internal/fthash.h
#
src/base/fthash.c
src/base/md5.c
src/base/md5.h
#
src/bdf/bdf.c
src/bdf/bdf.h
src/bdf/bdfdrivr.c
src/bdf/bdfdrivr.h
src/bdf/bdferror.h
src/bdf/bdflib.c
src/bdf/module.mk
src/bdf/README
src/bdf/rules.mk
#
src/pcf/module.mk
src/pcf/pcf.c
src/pcf/pcf.h
src/pcf/pcfdrivr.c
src/pcf/pcfdrivr.h
src/pcf/pcferror.h
src/pcf/pcfread.c
src/pcf/pcfread.h
src/pcf/pcfutil.c
src/pcf/pcfutil.h
src/pcf/README
src/pcf/rules.mk
#
src/gzip/adler32.c
src/gzip/infblock.c
src/gzip/infblock.h
src/gzip/infcodes.c
src/gzip/infcodes.h
src/gzip/inffixed.h
src/gzip/inflate.c
src/gzip/inftrees.c
src/gzip/inftrees.h
src/gzip/infutil.c
src/gzip/infutil.h
src/gzip/zconf.h
src/gzip/zlib.h
src/gzip/zutil.c
src/gzip/zutil.h
#
src/tools/apinames.c
src/tools/ftrandom/ftrandom.c
```

#

# EOF

The FreeType 2 font engine is copyrighted work and cannot be used legally without a software license. In order to make this project usable to a vast majority of developers, we distribute it under two mutually exclusive open-source licenses.

This means that \*you\* must choose \*one\* of the two licenses described below, then obey all its terms and conditions when using FreeType 2 in any of your projects or products.

- The FreeType License, found in the file `FTL.TXT', which is similar to the original BSD license \*with\* an advertising clause that forces you to explicitly cite the FreeType project in your product's documentation. All details are in the license file. This license is suited to products which don't use the GNU General Public License.

Note that this license is compatible to the GNU General Public License version 3, but not version 2.

- The GNU General Public License version 2, found in `GPLv2.TXT' (any later version can be used also), for programs which already use the GPL. Note that the FTL is incompatible with GPLv2 due to its advertisement clause.

The contributed BDF and PCF drivers come with a license similar to that of the X Window System. It is compatible to the above two licenses (see file `src/bdf/README` and `src/pcf/README`). The same holds for the files ``ftthash.c'` and ``ftthash.h'`; their code was part of the BDF driver in earlier FreeType versions.

The gzip module uses the zlib license (see `src/gzip/zlib.h`) which too is compatible to the above two licenses.

The MD5 checksum support (only used for debugging in development builds) is in the public domain.

--- end of LICENSE.TXT ---

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.



## Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE  
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively

when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you

received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or

otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software

Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands ``show w'` and ``show c'` should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than ``show w'` and ``show c'`; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

# 1.252 brotli 1.0.6-3.el8

## 1.252.1 Available under license :

Copyright (c) 2009, 2010, 2013-2016 by the Brotli Authors.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

# 1.253 libsemanage 2.9-8.el8

## 1.253.1 Available under license :

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.

51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some



specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and

is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE  
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1

above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do

this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline

functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more

than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.



12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING

RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!

## 1.254 decorator 4.2.1

### 1.254.1 Available under license :

Copyright (c) 2005-2017, Michele Simionato  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

Redistributions in bytecode form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## 1.255 saxon 9.0

### 1.255.1 Available under license :

MOZILLA PUBLIC LICENSE  
Version 1.0

#### 1. Definitions.

1.1. "Contributor" means each entity that creates or contributes to the creation of Modifications.

1.2. "Contributor Version" means the combination of the Original Code, prior Modifications used by a Contributor, and the Modifications made by that particular Contributor.

1.3. "Covered Code" means the Original Code or Modifications or the combination of the Original Code and Modifications, in each case including portions thereof.

1.4. "Electronic Distribution Mechanism" means a mechanism generally accepted in the software development community for the electronic transfer of data.

1.5. "Executable" means Covered Code in any form other than Source Code.

1.6. "Initial Developer" means the individual or entity identified as the Initial Developer in the Source Code notice required by Exhibit A.

1.7. "Larger Work" means a work which combines Covered Code or portions thereof with code not governed by the terms of this License.

1.8. "License" means this document.

1.9. "Modifications" means any addition to or deletion from the substance or structure of either the Original Code or any previous Modifications. When Covered Code is released as a series of files, a Modification is:

A. Any addition to or deletion from the contents of a file containing Original Code or previous Modifications.

B. Any new file that contains any part of the Original Code or previous Modifications.

1.10. "Original Code" means Source Code of computer software code which is described in the Source Code notice required by Exhibit A as Original Code, and which, at the time of its release under this License is not already Covered Code governed by this License.

1.11. "Source Code" means the preferred form of the Covered Code for making modifications to it, including all modules it contains, plus any associated interface definition files, scripts used to control compilation and installation of an Executable, or a list of source code differential comparisons against either the Original Code or another well known, available Covered Code of the Contributor's choice. The Source Code can be in a compressed or archival form, provided the appropriate decompression or de-archiving software is widely available for no charge.

1.12. "You" means an individual or a legal entity exercising rights under, and complying with all of the terms of, this License or a future version of this License issued under Section 6.1. For legal entities, "You" includes any entity which controls, is controlled by, or is under common control with You. For purposes of this definition, "control" means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of fifty percent (50%) or more of the outstanding shares or beneficial ownership of such entity.

## 2. Source Code License.

### 2.1. The Initial Developer Grant.

The Initial Developer hereby grants You a world-wide, royalty-free, non-exclusive license, subject to third party intellectual property claims:

(a) to use, reproduce, modify, display, perform, sublicense and distribute the Original Code (or portions

thereof) with or without Modifications, or as part of a Larger Work; and

(b) under patents now or hereafter owned or controlled by Initial Developer, to make, have made, use and sell ("Utilize") the Original Code (or portions thereof), but solely to the extent that any such patent is reasonably necessary to enable You to Utilize the Original Code (or portions thereof) and not to any greater extent that may be necessary to Utilize further Modifications or combinations.

## 2.2. Contributor Grant.

Each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license, subject to third party intellectual property claims:

(a) to use, reproduce, modify, display, perform, sublicense and distribute the Modifications created by such Contributor (or portions thereof) either on an unmodified basis, with other Modifications, as Covered Code or as part of a Larger Work; and

(b) under patents now or hereafter owned or controlled by Contributor, to Utilize the Contributor Version (or portions thereof), but solely to the extent that any such patent is reasonably necessary to enable You to Utilize the Contributor Version (or portions thereof), and not to any greater extent that may be necessary to Utilize further Modifications or combinations.

## 3. Distribution Obligations.

### 3.1. Application of License.

The Modifications which You create or to which You contribute are governed by the terms of this License, including without limitation Section 2.2. The Source Code version of Covered Code may be distributed only under the terms of this License or a future version of this License released under Section 6.1, and You must include a copy of this License with every copy of the Source Code You distribute. You may not offer or impose any terms on any Source Code version that alters or restricts the applicable version of this License or the recipients' rights hereunder. However, You may include an additional document offering the additional rights described in Section 3.5.

### 3.2. Availability of Source Code.

Any Modification which You create or to which You contribute must be made available in Source Code form under the terms of this License either on the same media as an Executable version or via an accepted Electronic Distribution Mechanism to anyone to whom you made an Executable version available; and if made available via Electronic Distribution Mechanism, must remain available for at least twelve (12) months after the date it initially became available, or at least six (6) months after a subsequent version of that particular Modification has been made available to such recipients. You are responsible for ensuring that the Source Code version remains available even if the Electronic Distribution Mechanism is maintained by a third party.

### 3.3. Description of Modifications.

You must cause all Covered Code to which you contribute to contain a file documenting the changes You made to create that Covered Code and the date of any change. You must include a prominent statement that the Modification is derived, directly or indirectly, from Original Code provided by the Initial Developer and including the name of the Initial Developer in (a) the Source Code, and (b) in any notice in an Executable version or related documentation in which You describe the origin or ownership of the Covered Code.

### 3.4. Intellectual Property Matters

(a) Third Party Claims.

If You have knowledge that a party claims an intellectual property right in particular functionality or code (or its utilization under this License), you must include a text file with the source code distribution titled "LEGAL" which describes the claim and the party making the claim in sufficient detail that a recipient will know whom to contact. If you obtain such knowledge after You make Your Modification available as described in Section 3.2, You shall promptly modify the LEGAL file in all copies You make available thereafter and shall take other steps (such as notifying appropriate mailing lists or newsgroups) reasonably calculated to inform those who received the Covered Code that new knowledge has been obtained.

(b) Contributor APIs.

If Your Modification is an application programming interface and You own or control patents which are reasonably necessary to implement that API, you must also include this information in the LEGAL file.

3.5. Required Notices.

You must duplicate the notice in Exhibit A in each file of the Source Code, and this License in any documentation for the Source Code, where You describe recipients' rights relating to Covered Code. If You created one or more Modification(s), You may add your name as a Contributor to the notice described in Exhibit A. If it is not possible to put such notice in a particular Source Code file due to its structure, then you must include such notice in a location (such as a relevant directory file) where a user would be likely to look for such a notice. You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Code. However, You may do so only on Your own behalf, and not on behalf of the Initial Developer or any Contributor. You must make it absolutely clear than any such warranty, support, indemnity or liability obligation is offered by You alone, and You hereby agree to indemnify the Initial Developer and every Contributor for any liability incurred by the Initial Developer or such Contributor as a result of warranty, support, indemnity or liability terms You offer.

3.6. Distribution of Executable Versions.

You may distribute Covered Code in Executable form only if the requirements of Section 3.1-3.5 have been met for that Covered Code, and if You include a notice stating that the Source Code version of the Covered Code is available under the terms of this License, including a description of how and where You have fulfilled the obligations of Section 3.2. The notice must be conspicuously included in any notice in an Executable version, related documentation or collateral in which You describe recipients' rights relating to the Covered Code. You may distribute the Executable version of Covered Code under a license of Your choice, which may contain terms different from this License, provided that You are in compliance with the terms of this License and that the license for the Executable version does not attempt to limit or alter the recipient's rights in the Source Code version from the rights set forth in this License. If You distribute the Executable version under a different license You must make it absolutely clear that any terms which differ from this License are offered by You alone, not by the Initial Developer or any Contributor. You hereby agree to indemnify the Initial Developer and every Contributor for any liability incurred by the Initial Developer or such Contributor as a result of any such terms You offer.

3.7. Larger Works.

You may create a Larger Work by combining Covered Code with other code not governed by the terms of this License and distribute the Larger Work as a single product. In such a case, You must make sure the requirements of this License are fulfilled for the Covered Code.

4. Inability to Comply Due to Statute or Regulation.

If it is impossible for You to comply with any of the terms of this License with respect to some or all of the

Covered Code due to statute or regulation then You must: (a) comply with the terms of this License to the maximum extent possible; and (b) describe the limitations and the code they affect. Such description must be included in the LEGAL file described in Section 3.4 and must be included with all distributions of the Source Code. Except to the extent prohibited by statute or regulation, such description must be sufficiently detailed for a recipient of ordinary skill to be able to understand it.

## 5. Application of this License.

This License applies to code to which the Initial Developer has attached the notice in Exhibit A, and to related Covered Code.

## 6. Versions of the License.

### 6.1. New Versions.

Netscape Communications Corporation ("Netscape") may publish revised and/or new versions of the License from time to time. Each version will be given a distinguishing version number.

### 6.2. Effect of New Versions.

Once Covered Code has been published under a particular version of the License, You may always continue to use it under the terms of that version. You may also choose to use such Covered Code under the terms of any subsequent version of the License published by Netscape. No one other than Netscape has the right to modify the terms applicable to Covered Code created under this License.

### 6.3. Derivative Works.

If you create or use a modified version of this License (which you may only do in order to apply it to code which is not already Covered Code governed by this License), you must (a) rename Your license so that the phrases "Mozilla", "MOZILLAPL", "MOZPL", "Netscape", "NPL" or any confusingly similar phrase do not appear anywhere in your license and (b) otherwise make it clear that your version of the license contains terms which differ from the Mozilla Public License and Netscape Public License. (Filling in the name of the Initial Developer, Original Code or Contributor in the notice described in Exhibit A shall not of themselves be deemed to be modifications of this License.)

## 7. DISCLAIMER OF WARRANTY.

COVERED CODE IS PROVIDED UNDER THIS LICENSE ON AN "AS IS" BASIS, WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTIES THAT THE COVERED CODE IS FREE OF DEFECTS, MERCHANTABILITY, FIT FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE COVERED CODE IS WITH YOU. SHOULD ANY COVERED CODE PROVE DEFECTIVE IN ANY RESPECT, YOU (NOT THE INITIAL DEVELOPER OR ANY OTHER CONTRIBUTOR) ASSUME THE COST OF ANY NECESSARY SERVICING, REPAIR OR CORRECTION. THIS DISCLAIMER OF WARRANTY CONSTITUTES AN ESSENTIAL PART OF THIS LICENSE. NO USE OF ANY COVERED CODE IS AUTHORIZED HEREUNDER EXCEPT UNDER THIS DISCLAIMER.

## 8. TERMINATION.

This License and the rights granted hereunder will terminate automatically if You fail to comply with terms herein and fail to cure such breach within 30 days of becoming aware of the breach. All sublicenses to the Covered

Code which are properly granted shall survive any termination of this License. Provisions which, by their nature, must remain in effect beyond the termination of this License shall survive.

#### 9. LIMITATION OF LIABILITY.

UNDER NO CIRCUMSTANCES AND UNDER NO LEGAL THEORY, WHETHER TORT (INCLUDING NEGLIGENCE), CONTRACT, OR OTHERWISE, SHALL THE INITIAL DEVELOPER, ANY OTHER CONTRIBUTOR, OR ANY DISTRIBUTOR OF COVERED CODE, OR ANY SUPPLIER OF ANY OF SUCH PARTIES, BE LIABLE TO YOU OR ANY OTHER PERSON FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES OF ANY CHARACTER INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOSS OF GOODWILL, WORK STOPPAGE, COMPUTER FAILURE OR MALFUNCTION, OR ANY AND ALL OTHER COMMERCIAL DAMAGES OR LOSSES, EVEN IF SUCH PARTY SHALL HAVE BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. THIS LIMITATION OF LIABILITY SHALL NOT APPLY TO LIABILITY FOR DEATH OR PERSONAL INJURY RESULTING FROM SUCH PARTY'S NEGLIGENCE TO THE EXTENT APPLICABLE LAW PROHIBITS SUCH LIMITATION. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THAT EXCLUSION AND LIMITATION MAY NOT APPLY TO YOU.

#### 10. U.S. GOVERNMENT END USERS.

The Covered Code is a "commercial item," as that term is defined in 48 C.F.R. 2.101 (Oct. 1995), consisting of "commercial computer software" and "commercial computer software documentation," as such terms are used in 48 C.F.R. 12.212 (Sept. 1995). Consistent with 48 C.F.R. 12.212 and 48 C.F.R. 227.7202-1 through 227.7202-4 (June 1995), all U.S. Government End Users acquire Covered Code with only those rights set forth herein.

#### 11. MISCELLANEOUS.

This License represents the complete agreement concerning subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable. This License shall be governed by California law provisions (except to the extent applicable law, if any, provides otherwise), excluding its conflict-of-law provisions. With respect to disputes in which at least one party is a citizen of, or an entity chartered or registered to do business in, the United States of America: (a) unless otherwise agreed in writing, all disputes relating to this License (excepting any dispute relating to intellectual property rights) shall be subject to final and binding arbitration, with the losing party paying all costs of arbitration; (b) any arbitration relating to this Agreement shall be held in Santa Clara County, California, under the auspices of JAMS/EndDispute; and (c) any litigation relating to this Agreement shall be subject to the jurisdiction of the Federal Courts of the Northern District of California, with venue lying in Santa Clara County, California, with the losing party responsible for costs, including without limitation, court costs and reasonable attorneys fees and expenses. The application of the United Nations Convention on Contracts for the International Sale of Goods is expressly excluded. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not apply to this License.

#### 12. RESPONSIBILITY FOR CLAIMS.

Except in cases where another Contributor has failed to comply with Section 3.4, You are responsible for damages arising, directly or indirectly, out of Your utilization of rights under this License, based on the number of copies of Covered Code you made available, the revenues you received from utilizing such rights, and other relevant factors. You agree to work with affected parties to distribute responsibility on an equitable basis.



## EXHIBIT A.

"The contents of this file are subject to the Mozilla Public License Version 1.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at <http://www.mozilla.org/MPL/>

Software distributed under the License is distributed on an "AS IS" basis, WITHOUT WARRANTY OF ANY KIND, either express or implied. See the License for the specific language governing rights and limitations under the License.

The Original Code is \_\_\_\_\_.

The Initial Developer of the Original Code is \_\_\_\_\_. Portions created by \_\_\_\_\_ are Copyright (C) \_\_\_\_\_. All Rights Reserved.

Contributor(s): \_\_\_\_\_."

# 1.256 python-inotify 0.9.6 13.e18

## 1.256.1 Available under license :

Copyright (c) 2010 Sebastien Martini <seb@dbzteam.org>

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

# 1.257 attr 2.4.48 3.e18

## 1.257.1 Available under license :

Most components of the "attr" package are licensed under Version 2.1 of the GNU Lesser General Public License (see below).  
below.

Some components (as annotated in the source) are licensed under Version 2 of the GNU General Public License (see COPYING).

-----  
**GNU LESSER GENERAL PUBLIC LICENSE**

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain

special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

## GNU LESSER GENERAL PUBLIC LICENSE

### TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which

must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the

Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.



It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
- b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent

infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a

license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the

"copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!  
Most components of the "attr" package are licensed under Version 2.1 of the GNU Lesser General Public License (see COPYING.LGPL).

Some components (as annotated in the source) are licensed under Version 2 of the GNU General Public License (see below),

-----  
GNU GENERAL PUBLIC LICENSE  
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

## Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and

modification follow.

GNU GENERAL PUBLIC LICENSE  
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such

interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such

an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not



excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify

it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands ``show w'` and ``show c'` should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than ``show w'` and ``show c'`; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
```

```
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

## 1.258 libuser 0.62-24.el8

## 1.258.1 Available under license :

### GNU LIBRARY GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1991 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

[This is the first released version of the library GPL. It is  
numbered 2 because it goes with version 2 of the ordinary GPL.]

#### Preamble

The licenses for most software are designed to take away your  
freedom to share and change it. By contrast, the GNU General Public  
Licenses are intended to guarantee your freedom to share and change  
free software--to make sure the software is free for all its users.

This license, the Library General Public License, applies to some  
specially designated Free Software Foundation software, and to any  
other libraries whose authors decide to use it. You can use it for  
your libraries, too.

When we speak of free software, we are referring to freedom, not  
price. Our General Public Licenses are designed to make sure that you  
have the freedom to distribute copies of free software (and charge for  
this service if you wish), that you receive source code or can get it  
if you want it, that you can change the software or use pieces of it  
in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid  
anyone to deny you these rights or to ask you to surrender the rights.  
These restrictions translate to certain responsibilities for you if  
you distribute copies of the library, or if you modify it.

For example, if you distribute copies of the library, whether gratis  
or for a fee, you must give the recipients all the rights that we gave  
you. You must make sure that they, too, receive or can get the source  
code. If you link a program with the library, you must provide  
complete object files to the recipients so that they can relink them  
with the library, after making changes to the library and recompiling  
it. And you must show them these terms so they know their rights.

Our method of protecting your rights has two steps: (1) copyright  
the library, and (2) offer you this license which gives you legal  
permission to copy, distribute and/or modify the library.

Also, for each distributor's protection, we want to make certain that everyone understands that there is no warranty for this free library. If the library is modified by someone else and passed on, we want its recipients to know that what they have is not the original version, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that companies distributing free software will individually obtain patent licenses, thus in effect transforming the program into proprietary software. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License, which was designed for utility programs. This license, the GNU Library General Public License, applies to certain designated libraries. This license is quite different from the ordinary one; be sure to read it in full, and don't assume that anything in it is the same as in the ordinary license.

The reason we have a separate public license for some libraries is that they blur the distinction we usually make between modifying or adding to a program and simply using it. Linking a program with a library, without changing the library, is in some sense simply using the library, and is analogous to running a utility program or application program. However, in a textual and legal sense, the linked executable is a combined work, a derivative of the original library, and the ordinary General Public License treats it as such.

Because of this blurred distinction, using the ordinary General Public License for libraries did not effectively promote software sharing, because most developers did not use the libraries. We concluded that weaker conditions might promote sharing better.

However, unrestricted linking of non-free programs would deprive the users of those programs of all benefit from the free status of the libraries themselves. This Library General Public License is intended to permit developers of non-free programs to use free libraries, while preserving your freedom as a user of such programs to change the free libraries that are incorporated in them. (We have not seen how to achieve this as regards changes in header files, but we have achieved it as regards changes in the actual functions of the Library.) The hope is that this will lead to faster development of free libraries.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The

former contains code derived from the library, while the latter only works together with the library.

Note that it is possible for a library to be covered by the ordinary General Public License rather than by this special one.

## GNU LIBRARY GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Library General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file



that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also compile or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more

than the cost of performing this distribution.

c) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

d) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Library General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING

RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Library General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Library General Public License for more details.

You should have received a copy of the GNU Library General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!

# 1.259 iconv 2.28

## 1.259.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

### Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps:

(1) assert copyright on the software, and (2) offer you this License

giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

## TERMS AND CONDITIONS

### 0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based

on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

#### 1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's



System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

## 2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

## 3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

#### 4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

#### 5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.
- b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".
- c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.
- d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

#### 6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

- a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.
- b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.
- c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.
- d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party)

that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a

requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

## 7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or

e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or

f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

## 8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that

copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

#### 9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

#### 10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

#### 11. Patents.

A "contributor" is a copyright holder who authorizes use under this

License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within



the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

#### 12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

#### 13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

#### 14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

#### 15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

#### 16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### 17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the

Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program> Copyright (C) <year> <name of author>
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary.

For more information on this, and how to apply and follow the GNU GPL, see <http://www.gnu.org/licenses/>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <http://www.gnu.org/philosophy/why-not-lgpl.html>.

## GNU LIBRARY GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1991 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA  
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the library GPL. It is numbered 2 because it goes with version 2 of the ordinary GPL.]

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Library General Public License, applies to some specially designated Free Software Foundation software, and to any other libraries whose authors decide to use it. You can use it for your libraries, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library, or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link a program with the library, you must provide

complete object files to the recipients so that they can relink them with the library, after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

Our method of protecting your rights has two steps: (1) copyright the library, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the library.

Also, for each distributor's protection, we want to make certain that everyone understands that there is no warranty for this free library. If the library is modified by someone else and passed on, we want its recipients to know that what they have is not the original version, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that companies distributing free software will individually obtain patent licenses, thus in effect transforming the program into proprietary software. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License, which was designed for utility programs. This license, the GNU Library General Public License, applies to certain designated libraries. This license is quite different from the ordinary one; be sure to read it in full, and don't assume that anything in it is the same as in the ordinary license.

The reason we have a separate public license for some libraries is that they blur the distinction we usually make between modifying or adding to a program and simply using it. Linking a program with a library, without changing the library, is in some sense simply using the library, and is analogous to running a utility program or application program. However, in a textual and legal sense, the linked executable is a combined work, a derivative of the original library, and the ordinary General Public License treats it as such.

Because of this blurred distinction, using the ordinary General Public License for libraries did not effectively promote software sharing, because most developers did not use the libraries. We concluded that weaker conditions might promote sharing better.

However, unrestricted linking of non-free programs would deprive the users of those programs of all benefit from the free status of the libraries themselves. This Library General Public License is intended to permit developers of non-free programs to use free libraries, while preserving your freedom as a user of such programs to change the free

libraries that are incorporated in them. (We have not seen how to achieve this as regards changes in header files, but we have achieved it as regards changes in the actual functions of the Library.) The hope is that this will lead to faster development of free libraries.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, while the latter only works together with the library.

Note that it is possible for a library to be covered by the ordinary General Public License rather than by this special one.

## GNU LIBRARY GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Library General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of

this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.



However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also compile or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified

executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

c) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

d) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed

through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Library General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME

THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

#### Appendix: How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Library General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Library General Public License for more details.

You should have received a copy of the GNU Library General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!

## 1.260 mpfr 3.1.6 1.el8

### 1.260.1 Available under license :

@c MPFR tweak: Have this in mpfr.texi to help texinfo-mode  
@c @node GNU Free Documentation License  
@c @appendixsec GNU Free Documentation License

@cindex GNU Free Documentation License  
@center Version 1.2, November 2002

@display  
Copyright @copyright{ } 2000,2001,2002 Free Software Foundation, Inc.  
51 Franklin St, Fifth Floor, Boston, MA 02110-1301, USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.  
@end display

@enumerate 0  
@item  
PREAMBLE

The purpose of this License is to make a manual, textbook, or other functional and useful document @dfn{free} in the sense of freedom: to assure everyone the effective freedom to copy and redistribute it, with or without modifying it, either commercially or noncommercially. Secondly, this License preserves for the author and publisher a way to get credit for their work, while not being considered responsible for modifications made by others.

This License is a kind of ``copyleft'', which means that derivative works of the document must themselves be free in the same sense. It complements the GNU General Public License, which is a copyleft license designed for free software.

We have designed this License in order to use it for manuals for free software, because free software needs free documentation: a free program should come with manuals providing the same freedoms that the software does. But this License is not limited to software manuals; it can be used for any textual work, regardless of subject matter or whether it is published as a printed book. We recommend this License principally for works whose purpose is instruction or reference.

@item

## APPLICABILITY AND DEFINITIONS

This License applies to any manual or other work, in any medium, that contains a notice placed by the copyright holder saying it can be distributed under the terms of this License. Such a notice grants a world-wide, royalty-free license, unlimited in duration, to use that work under the conditions stated herein. The ``Document'', below, refers to any such manual or work. Any member of the public is a licensee, and is addressed as ``you''. You accept the license if you copy, modify or distribute the work in a way requiring permission under copyright law.

A ``Modified Version'' of the Document means any work containing the Document or a portion of it, either copied verbatim, or with modifications and/or translated into another language.

A ``Secondary Section'' is a named appendix or a front-matter section of the Document that deals exclusively with the relationship of the publishers or authors of the Document to the Document's overall subject (or to related matters) and contains nothing that could fall directly within that overall subject. (Thus, if the Document is in part a textbook of mathematics, a Secondary Section may not explain any mathematics.) The relationship could be a matter of historical connection with the subject or with related matters, or of legal, commercial, philosophical, ethical or political position regarding them.

The ``Invariant Sections'' are certain Secondary Sections whose titles are designated, as being those of Invariant Sections, in the notice that says that the Document is released under this License. If a section does not fit the above definition of Secondary then it is not allowed to be designated as Invariant. The Document may contain zero Invariant Sections. If the Document does not identify any Invariant Sections then there are none.

The ``Cover Texts'' are certain short passages of text that are listed, as Front-Cover Texts or Back-Cover Texts, in the notice that says that the Document is released under this License. A Front-Cover Text may be at most 5 words, and a Back-Cover Text may be at most 25 words.

A "Transparent" copy of the Document means a machine-readable copy, represented in a format whose specification is available to the general public, that is suitable for revising the document straightforwardly with generic text editors or (for images composed of pixels) generic paint programs or (for drawings) some widely available drawing editor, and that is suitable for input to text formatters or for automatic translation to a variety of formats suitable for input to text formatters. A copy made in an otherwise Transparent file format whose markup, or absence of markup, has been arranged to thwart or discourage subsequent modification by readers is not Transparent. An image format is not Transparent if used for any substantial amount of text. A copy that is not "Transparent" is called "Opaque".

Examples of suitable formats for Transparent copies include plain `@sc{ascii}` without markup, Texinfo input format, `La@TeX{}` input format, `@acronym{SGML}` or `@acronym{XML}` using a publicly available `@acronym{DTD}`, and standard-conforming simple `@acronym{HTML}`, PostScript or `@acronym{PDF}` designed for human modification. Examples of transparent image formats include `@acronym{PNG}`, `@acronym{XCF}` and `@acronym{JPG}`. Opaque formats include proprietary formats that can be read and edited only by proprietary word processors, `@acronym{SGML}` or `@acronym{XML}` for which the `@acronym{DTD}` and/or processing tools are not generally available, and the machine-generated `@acronym{HTML}`, PostScript or `@acronym{PDF}` produced by some word processors for output purposes only.

The "Title Page" means, for a printed book, the title page itself, plus such following pages as are needed to hold, legibly, the material this License requires to appear in the title page. For works in formats which do not have any title page as such, "Title Page" means the text near the most prominent appearance of the work's title, preceding the beginning of the body of the text.

A section "Entitled XYZ" means a named subunit of the Document whose title either is precisely XYZ or contains XYZ in parentheses following text that translates XYZ in another language. (Here XYZ stands for a specific section name mentioned below, such as "Acknowledgements", "Dedications", "Endorsements", or "History".) To "Preserve the Title" of such a section when you modify the Document means that it remains a section "Entitled XYZ" according to this definition.

The Document may include Warranty Disclaimers next to the notice which states that this License applies to the Document. These Warranty Disclaimers are considered to be included by reference in this License, but only as regards disclaiming warranties; any other implication that these Warranty Disclaimers may have is void and has no effect on the meaning of this License.



@item

## VERBATIM COPYING

You may copy and distribute the Document in any medium, either commercially or noncommercially, provided that this License, the copyright notices, and the license notice saying this License applies to the Document are reproduced in all copies, and that you add no other conditions whatsoever to those of this License. You may not use technical measures to obstruct or control the reading or further copying of the copies you make or distribute. However, you may accept compensation in exchange for copies. If you distribute a large enough number of copies you must also follow the conditions in section 3.

You may also lend copies, under the same conditions stated above, and you may publicly display copies.

@item

## COPYING IN QUANTITY

If you publish printed copies (or copies in media that commonly have printed covers) of the Document, numbering more than 100, and the Document's license notice requires Cover Texts, you must enclose the copies in covers that carry, clearly and legibly, all these Cover Texts: Front-Cover Texts on the front cover, and Back-Cover Texts on the back cover. Both covers must also clearly and legibly identify you as the publisher of these copies. The front cover must present the full title with all words of the title equally prominent and visible. You may add other material on the covers in addition. Copying with changes limited to the covers, as long as they preserve the title of the Document and satisfy these conditions, can be treated as verbatim copying in other respects.

If the required texts for either cover are too voluminous to fit legibly, you should put the first ones listed (as many as fit reasonably) on the actual cover, and continue the rest onto adjacent pages.

If you publish or distribute Opaque copies of the Document numbering more than 100, you must either include a machine-readable Transparent copy along with each Opaque copy, or state in or with each Opaque copy a computer-network location from which the general network-using public has access to download using public-standard network protocols a complete Transparent copy of the Document, free of added material. If you use the latter option, you must take reasonably prudent steps, when you begin distribution of Opaque copies in quantity, to ensure that this Transparent copy will remain thus accessible at the stated location until at least one year after the last time you distribute an

Opaque copy (directly or through your agents or retailers) of that edition to the public.

It is requested, but not required, that you contact the authors of the Document well before redistributing any large number of copies, to give them a chance to provide you with an updated version of the Document.

@item

## MODIFICATIONS

You may copy and distribute a Modified Version of the Document under the conditions of sections 2 and 3 above, provided that you release the Modified Version under precisely this License, with the Modified Version filling the role of the Document, thus licensing distribution and modification of the Modified Version to whoever possesses a copy of it. In addition, you must do these things in the Modified Version:

@enumerate A

@item

Use in the Title Page (and on the covers, if any) a title distinct from that of the Document, and from those of previous versions (which should, if there were any, be listed in the History section of the Document). You may use the same title as a previous version if the original publisher of that version gives permission.

@item

List on the Title Page, as authors, one or more persons or entities responsible for authorship of the modifications in the Modified Version, together with at least five of the principal authors of the Document (all of its principal authors, if it has fewer than five), unless they release you from this requirement.

@item

State on the Title page the name of the publisher of the Modified Version, as the publisher.

@item

Preserve all the copyright notices of the Document.

@item

Add an appropriate copyright notice for your modifications adjacent to the other copyright notices.

@item

Include, immediately after the copyright notices, a license notice giving the public permission to use the Modified Version under the terms of this License, in the form shown in the Addendum below.

@item

Preserve in that license notice the full lists of Invariant Sections and required Cover Texts given in the Document's license notice.

@item

Include an unaltered copy of this License.

@item

Preserve the section Entitled ``History'', Preserve its Title, and add to it an item stating at least the title, year, new authors, and publisher of the Modified Version as given on the Title Page. If there is no section Entitled ``History'' in the Document, create one stating the title, year, authors, and publisher of the Document as given on its Title Page, then add an item describing the Modified Version as stated in the previous sentence.

@item

Preserve the network location, if any, given in the Document for public access to a Transparent copy of the Document, and likewise the network locations given in the Document for previous versions it was based on. These may be placed in the ``History'' section. You may omit a network location for a work that was published at least four years before the Document itself, or if the original publisher of the version it refers to gives permission.

@item

For any section Entitled ``Acknowledgements'' or ``Dedications'', Preserve the Title of the section, and preserve in the section all the substance and tone of each of the contributor acknowledgements and/or dedications given therein.

@item

Preserve all the Invariant Sections of the Document, unaltered in their text and in their titles. Section numbers or the equivalent are not considered part of the section titles.

@item

Delete any section Entitled ``Endorsements''. Such a section may not be included in the Modified Version.

@item

Do not retitle any existing section to be Entitled ``Endorsements'' or to conflict in title with any Invariant Section.

@item

Preserve any Warranty Disclaimers.

@end enumerate

If the Modified Version includes new front-matter sections or appendices that qualify as Secondary Sections and contain no material copied from the Document, you may at your option designate some or all of these sections as invariant. To do this, add their titles to the list of Invariant Sections in the Modified Version's license notice. These titles must be distinct from any other section titles.

You may add a section Entitled ``Endorsements'', provided it contains nothing but endorsements of your Modified Version by various parties---for example, statements of peer review or that the text has been approved by an organization as the authoritative definition of a standard.

You may add a passage of up to five words as a Front-Cover Text, and a passage of up to 25 words as a Back-Cover Text, to the end of the list of Cover Texts in the Modified Version. Only one passage of Front-Cover Text and one of Back-Cover Text may be added by (or through arrangements made by) any one entity. If the Document already includes a cover text for the same cover, previously added by you or by arrangement made by the same entity you are acting on behalf of, you may not add another; but you may replace the old one, on explicit permission from the previous publisher that added the old one.

The author(s) and publisher(s) of the Document do not by this License give permission to use their names for publicity for or to assert or imply endorsement of any Modified Version.

@item

## COMBINING DOCUMENTS

You may combine the Document with other documents released under this License, under the terms defined in section 4 above for modified versions, provided that you include in the combination all of the Invariant Sections of all of the original documents, unmodified, and list them all as Invariant Sections of your combined work in its license notice, and that you preserve all their Warranty Disclaimers.

The combined work need only contain one copy of this License, and multiple identical Invariant Sections may be replaced with a single copy. If there are multiple Invariant Sections with the same name but different contents, make the title of each such section unique by adding at the end of it, in parentheses, the name of the original author or publisher of that section if known, or else a unique number. Make the same adjustment to the section titles in the list of Invariant Sections in the license notice of the combined work.

In the combination, you must combine any sections Entitled ``History'' in the various original documents, forming one section Entitled

``History"; likewise combine any sections Entitled ``Acknowledgements", and any sections Entitled ``Dedications". You must delete all sections Entitled ``Endorsements."

@item

## COLLECTIONS OF DOCUMENTS

You may make a collection consisting of the Document and other documents released under this License, and replace the individual copies of this License in the various documents with a single copy that is included in the collection, provided that you follow the rules of this License for verbatim copying of each of the documents in all other respects.

You may extract a single document from such a collection, and distribute it individually under this License, provided you insert a copy of this License into the extracted document, and follow this License in all other respects regarding verbatim copying of that document.

@item

## AGGREGATION WITH INDEPENDENT WORKS

A compilation of the Document or its derivatives with other separate and independent documents or works, in or on a volume of a storage or distribution medium, is called an ``aggregate" if the copyright resulting from the compilation is not used to limit the legal rights of the compilation's users beyond what the individual works permit. When the Document is included in an aggregate, this License does not apply to the other works in the aggregate which are not themselves derivative works of the Document.

If the Cover Text requirement of section 3 is applicable to these copies of the Document, then if the Document is less than one half of the entire aggregate, the Document's Cover Texts may be placed on covers that bracket the Document within the aggregate, or the electronic equivalent of covers if the Document is in electronic form. Otherwise they must appear on printed covers that bracket the whole aggregate.

@item

## TRANSLATION

Translation is considered a kind of modification, so you may distribute translations of the Document under the terms of section 4. Replacing Invariant Sections with translations requires special permission from their copyright holders, but you may include translations of some or all Invariant Sections in addition to the original versions of these Invariant Sections. You may include a translation of this License, and all the license notices in the

Document, and any Warranty Disclaimers, provided that you also include the original English version of this License and the original versions of those notices and disclaimers. In case of a disagreement between the translation and the original version of this License or a notice or disclaimer, the original version will prevail.

If a section in the Document is Entitled ``Acknowledgements'', ``Dedications'', or ``History'', the requirement (section 4) to Preserve its Title (section 1) will typically require changing the actual title.

@item

## TERMINATION

You may not copy, modify, sublicense, or distribute the Document except as expressly provided for under this License. Any other attempt to copy, modify, sublicense or distribute the Document is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

@item

## FUTURE REVISIONS OF THIS LICENSE

The Free Software Foundation may publish new, revised versions of the GNU Free Documentation License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns. See [@uref{http://www.gnu.org/copyleft/}](http://www.gnu.org/copyleft/).

Each version of the License is given a distinguishing version number. If the Document specifies that a particular numbered version of this License ``or any later version'' applies to it, you have the option of following the terms and conditions either of that specified version or of any later version that has been published (not as a draft) by the Free Software Foundation. If the Document does not specify a version number of this License, you may choose any version ever published (not as a draft) by the Free Software Foundation.

@end enumerate

@page

@c MPFR tweak: Use @appendixsec

@c @appendixsubsec ADDENDUM: How to use this License for your documents

@appendixsec ADDENDUM: How to Use This License For Your Documents

To use this License in a document you have written, include a copy of the License in the document and put the following copyright and

license notices just after the title page:

```
@smallexample
@group
Copyright (C) @var{year} @var{your name}.
Permission is granted to copy, distribute and/or modify this document
under the terms of the GNU Free Documentation License, Version 1.2
or any later version published by the Free Software Foundation;
with no Invariant Sections, no Front-Cover Texts, and no Back-Cover
Texts. A copy of the license is included in the section entitled ``GNU
Free Documentation License".
@end group
@end smallexample
```

If you have Invariant Sections, Front-Cover Texts and Back-Cover Texts, replace the ``with...Texts." line with this:

```
@smallexample
@group
with the Invariant Sections being @var{list their titles}, with
the Front-Cover Texts being @var{list}, and with the Back-Cover Texts
being @var{list}.
@end group
@end smallexample
```

If you have Invariant Sections without Cover Texts, or some other combination of the three, merge those two alternatives to suit the situation.

If your document contains nontrivial examples of program code, we recommend releasing these examples in parallel under your choice of free software license, such as the GNU General Public License, to permit their use in free software.

```
@c Local Variables:
@c ispell-local-pdict: "ispell-dict"
@c End:
```

GNU GENERAL PUBLIC LICENSE  
Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

Preamble

The GNU General Public License is a free, copyleft license for  
software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.



Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

## TERMS AND CONDITIONS

### 0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the

work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

## 1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

## 2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

### 3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

### 4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

#### 5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.
- b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".
- c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.
- d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

#### 6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation

into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

## 7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall

be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does

not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

#### 8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

#### 9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a



covered work, you indicate your acceptance of this License to do so.

#### 10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

#### 11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

## 12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

## 13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

## 14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program> Copyright (C) <year> <name of author>
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <http://www.gnu.org/licenses/>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <http://www.gnu.org/philosophy/why-not-lgpl.html>.

GNU LESSER GENERAL PUBLIC LICENSE  
Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>  
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

This version of the GNU Lesser General Public License incorporates

the terms and conditions of version 3 of the GNU General Public License, supplemented by the additional permissions listed below.

## 0. Additional Definitions.

As used herein, "this License" refers to version 3 of the GNU Lesser General Public License, and the "GNU GPL" refers to version 3 of the GNU General Public License.

"The Library" refers to a covered work governed by this License, other than an Application or a Combined Work as defined below.

An "Application" is any work that makes use of an interface provided by the Library, but which is not otherwise based on the Library. Defining a subclass of a class defined by the Library is deemed a mode of using an interface provided by the Library.

A "Combined Work" is a work produced by combining or linking an Application with the Library. The particular version of the Library with which the Combined Work was made is also called the "Linked Version".

The "Minimal Corresponding Source" for a Combined Work means the Corresponding Source for the Combined Work, excluding any source code for portions of the Combined Work that, considered in isolation, are based on the Application, and not on the Linked Version.

The "Corresponding Application Code" for a Combined Work means the object code and/or source code for the Application, including any data and utility programs needed for reproducing the Combined Work from the Application, but excluding the System Libraries of the Combined Work.

## 1. Exception to Section 3 of the GNU GPL.

You may convey a covered work under sections 3 and 4 of this License without being bound by section 3 of the GNU GPL.

## 2. Conveying Modified Versions.

If you modify a copy of the Library, and, in your modifications, a facility refers to a function or data to be supplied by an Application that uses the facility (other than as an argument passed when the facility is invoked), then you may convey a copy of the modified version:

- a) under this License, provided that you make a good faith effort to ensure that, in the event an Application does not supply the function or data, the facility still operates, and performs

whatever part of its purpose remains meaningful, or

b) under the GNU GPL, with none of the additional permissions of this License applicable to that copy.

### 3. Object Code Incorporating Material from Library Header Files.

The object code form of an Application may incorporate material from a header file that is part of the Library. You may convey such object code under terms of your choice, provided that, if the incorporated material is not limited to numerical parameters, data structure layouts and accessors, or small macros, inline functions and templates (ten or fewer lines in length), you do both of the following:

a) Give prominent notice with each copy of the object code that the Library is used in it and that the Library and its use are covered by this License.

b) Accompany the object code with a copy of the GNU GPL and this license document.

### 4. Combined Works.

You may convey a Combined Work under terms of your choice that, taken together, effectively do not restrict modification of the portions of the Library contained in the Combined Work and reverse engineering for debugging such modifications, if you also do each of the following:

a) Give prominent notice with each copy of the Combined Work that the Library is used in it and that the Library and its use are covered by this License.

b) Accompany the Combined Work with a copy of the GNU GPL and this license document.

c) For a Combined Work that displays copyright notices during execution, include the copyright notice for the Library among these notices, as well as a reference directing the user to the copies of the GNU GPL and this license document.

d) Do one of the following:

0) Convey the Minimal Corresponding Source under the terms of this License, and the Corresponding Application Code in a form suitable for, and under terms that permit, the user to recombine or relink the Application with a modified version of the Linked Version to produce a modified Combined Work, in the

manner specified by section 6 of the GNU GPL for conveying Corresponding Source.

1) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (a) uses at run time a copy of the Library already present on the user's computer system, and (b) will operate properly with a modified version of the Library that is interface-compatible with the Linked Version.

e) Provide Installation Information, but only if you would otherwise be required to provide such information under section 6 of the GNU GPL, and only to the extent that such information is necessary to install and execute a modified version of the Combined Work produced by recombining or relinking the Application with a modified version of the Linked Version. (If you use option 4d0, the Installation Information must accompany the Minimal Corresponding Source and Corresponding Application Code. If you use option 4d1, you must provide the Installation Information in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.)

## 5. Combined Libraries.

You may place library facilities that are a work based on the Library side by side in a single library together with other library facilities that are not Applications and are not covered by this License, and convey such a combined library under terms of your choice, if you do both of the following:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities, conveyed under the terms of this License.

b) Give prominent notice with the combined library that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

## 6. Revised Versions of the GNU Lesser General Public License.

The Free Software Foundation may publish revised and/or new versions of the GNU Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library as you received it specifies that a certain numbered version of the GNU Lesser General Public License "or any later version"



applies to it, you have the option of following the terms and conditions either of that published version or of any later version published by the Free Software Foundation. If the Library as you received it does not specify a version number of the GNU Lesser General Public License, you may choose any version of the GNU Lesser General Public License ever published by the Free Software Foundation.

If the Library as you received it specifies that a proxy can decide whether future versions of the GNU Lesser General Public License shall apply, that proxy's public statement of acceptance of any version is permanent authorization for you to choose that version for the Library.

## 1.261 asm 9.2

### 1.261.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
// All rights reserved.
// Redistribution and use in source and binary forms, with or without
// modification, are permitted provided that the following conditions
// are met:
// 1. Redistributions of source code must retain the above copyright
// notice, this list of conditions and the following disclaimer.
// 2. Redistributions in binary form must reproduce the above copyright
// notice, this list of conditions and the following disclaimer in the
// documentation and/or other materials provided with the distribution.
// 3. Neither the name of the copyright holders nor the names of its
// this software without specific prior written permission.
```

Found in path(s):

```
* /opt/cola/permits/1183834240_1627488405.61/0/asm-9-2-sources-jar/org/objectweb/asm/ConstantDynamic.java
* /opt/cola/permits/1183834240_1627488405.61/0/asm-9-2-sources-jar/org/objectweb/asm/Label.java
* /opt/cola/permits/1183834240_1627488405.61/0/asm-9-2-sources-
jar/org/objectweb/asm/signature/SignatureVisitor.java
* /opt/cola/permits/1183834240_1627488405.61/0/asm-9-2-sources-jar/org/objectweb/asm/ClassVisitor.java
* /opt/cola/permits/1183834240_1627488405.61/0/asm-9-2-sources-jar/org/objectweb/asm/CurrentFrame.java
* /opt/cola/permits/1183834240_1627488405.61/0/asm-9-2-sources-
jar/org/objectweb/asm/signature/SignatureWriter.java
* /opt/cola/permits/1183834240_1627488405.61/0/asm-9-2-sources-jar/org/objectweb/asm/ClassReader.java
* /opt/cola/permits/1183834240_1627488405.61/0/asm-9-2-sources-
jar/org/objectweb/asm/ClassTooLargeException.java
* /opt/cola/permits/1183834240_1627488405.61/0/asm-9-2-sources-jar/org/objectweb/asm/AnnotationWriter.java
* /opt/cola/permits/1183834240_1627488405.61/0/asm-9-2-sources-jar/org/objectweb/asm/FieldVisitor.java
* /opt/cola/permits/1183834240_1627488405.61/0/asm-9-2-sources-jar/org/objectweb/asm/Attribute.java
* /opt/cola/permits/1183834240_1627488405.61/0/asm-9-2-sources-jar/org/objectweb/asm/Opcodes.java
* /opt/cola/permits/1183834240_1627488405.61/0/asm-9-2-sources-jar/org/objectweb/asm/Context.java
```

\* /opt/cola/permits/1183834240\_1627488405.61/0/asm-9-2-sources-jar/org/objectweb/asm/SymbolTable.java  
 \* /opt/cola/permits/1183834240\_1627488405.61/0/asm-9-2-sources-jar/org/objectweb/asm/RecordComponentWriter.java  
 \* /opt/cola/permits/1183834240\_1627488405.61/0/asm-9-2-sources-jar/org/objectweb/asm/ModuleVisitor.java  
 \* /opt/cola/permits/1183834240\_1627488405.61/0/asm-9-2-sources-jar/org/objectweb/asm/MethodTooLargeException.java  
 \* /opt/cola/permits/1183834240\_1627488405.61/0/asm-9-2-sources-jar/org/objectweb/asm/FieldWriter.java  
 \* /opt/cola/permits/1183834240\_1627488405.61/0/asm-9-2-sources-jar/org/objectweb/asm/ModuleWriter.java  
 \* /opt/cola/permits/1183834240\_1627488405.61/0/asm-9-2-sources-jar/org/objectweb/asm/AnnotationVisitor.java  
 \* /opt/cola/permits/1183834240\_1627488405.61/0/asm-9-2-sources-jar/org/objectweb/asm/Handler.java  
 \* /opt/cola/permits/1183834240\_1627488405.61/0/asm-9-2-sources-jar/org/objectweb/asm/MethodWriter.java  
 \* /opt/cola/permits/1183834240\_1627488405.61/0/asm-9-2-sources-jar/org/objectweb/asm/ByteVector.java  
 \* /opt/cola/permits/1183834240\_1627488405.61/0/asm-9-2-sources-jar/org/objectweb/asm/Frame.java  
 \* /opt/cola/permits/1183834240\_1627488405.61/0/asm-9-2-sources-jar/org/objectweb/asm/TypeReference.java  
 \* /opt/cola/permits/1183834240\_1627488405.61/0/asm-9-2-sources-jar/org/objectweb/asm/Edge.java  
 \* /opt/cola/permits/1183834240\_1627488405.61/0/asm-9-2-sources-jar/org/objectweb/asm/Symbol.java  
 \* /opt/cola/permits/1183834240\_1627488405.61/0/asm-9-2-sources-jar/org/objectweb/asm/MethodVisitor.java  
 \* /opt/cola/permits/1183834240\_1627488405.61/0/asm-9-2-sources-jar/org/objectweb/asm/Type.java  
 \* /opt/cola/permits/1183834240\_1627488405.61/0/asm-9-2-sources-jar/org/objectweb/asm/TypePath.java  
 \* /opt/cola/permits/1183834240\_1627488405.61/0/asm-9-2-sources-jar/org/objectweb/asm/signature/SignatureReader.java  
 \* /opt/cola/permits/1183834240\_1627488405.61/0/asm-9-2-sources-jar/org/objectweb/asm/RecordComponentVisitor.java  
 \* /opt/cola/permits/1183834240\_1627488405.61/0/asm-9-2-sources-jar/org/objectweb/asm/Handle.java  
 \* /opt/cola/permits/1183834240\_1627488405.61/0/asm-9-2-sources-jar/org/objectweb/asm/ClassWriter.java  
 \* /opt/cola/permits/1183834240\_1627488405.61/0/asm-9-2-sources-jar/org/objectweb/asm/Constants.java

No license file was found, but licenses were detected in source scan.

2011 INRIA, France Telecom

\* All rights reserved.

\*

\* Redistribution and use in source and binary forms, with or without  
 \* modification, are permitted provided that the following conditions  
 \* are met:

- \* 1. Redistributions of source code must retain the above copyright  
 \* notice, this list of conditions and the following disclaimer.
- \* 2. Redistributions in binary form must reproduce the above copyright  
 \* notice, this list of conditions and the following disclaimer in the  
 \* documentation and/or other materials provided with the distribution.
- \* 3. Neither the name of the copyright holders nor the names of its  
 \* contributors may be used to endorse or promote products derived from  
 \* this software without specific prior written permission.

\*

\* THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"  
 \* AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE  
 \* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE  
 \* ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE  
 \* LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR

- \* CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
- \* SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
- \* INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN
- \* CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
- \* ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF
- \* THE POSSIBILITY OF SUCH DAMAGE.

Found in path(s):

- \* /opt/cola/permits/1183834240\_1627488405.61/0/asm-9-2-sources-jar/org/objectweb/asm/signature/package.html
- \* /opt/cola/permits/1183834240\_1627488405.61/0/asm-9-2-sources-jar/org/objectweb/asm/package.html

## 1.262 idna 2.5-2.ph2

### 1.262.1 Available under license :

No license file was found, but licenses were detected in source scan.

License: BSD and Python and Unicode

Found in path(s):

- \* /opt/cola/permits/1162254759\_1625655735.46/0/python-idna-2.5-5.el8-1.src.rpm-cosi-expand-archive-xG0yOH9V/python-idna.spec

No license file was found, but licenses were detected in source scan.

Metadata-Version: 1.1

Name: idna

Version: 2.5

Summary: Internationalized Domain Names in Applications (IDNA)

Home-page: <https://github.com/kjd/idna>

Author: Kim Davies

Author-email: [kim@cynosure.com.au](mailto:kim@cynosure.com.au)

License: BSD-like

Description: Internationalized Domain Names in Applications (IDNA)

=====

Support for the Internationalised Domain Names in Applications (IDNA) protocol as specified in `RFC 5891 <<http://tools.ietf.org/html/rfc5891>>`\_. This is the latest version of the protocol and is sometimes referred to as “IDNA 2008”.

This library also provides support for Unicode Technical Standard 46, `Unicode IDNA Compatibility Processing <<http://unicode.org/reports/tr46/>>`\_.

This acts as a suitable replacement for the “encodings.idna” module that comes with the Python standard library, but only supports the old, deprecated IDNA specification (`RFC 3490 <<http://tools.ietf.org/html/rfc3490>>`\_).

Basic functions are simply executed:

```
.. code-block:: pycon

Python 3
>>> import idna
>>> idna.encode('.')
b'xn--eckwd4c7c.xn--zckzah'
>>> print(idna.decode('xn--eckwd4c7c.xn--zckzah'))
.

Python 2
>>> import idna
>>> idna.encode(u'.')
'xn--eckwd4c7c.xn--zckzah'
>>> print idna.decode('xn--eckwd4c7c.xn--zckzah')
.
```

## Packages

-----

The latest tagged release version is published in the PyPI repository:

```
.. image:: https://badge.fury.io/py/idna.svg
:target: http://badge.fury.io/py/idna
```

## Installation

-----

To install this library, you can use pip:

```
.. code-block:: bash

$ pip install idna
```

Alternatively, you can install the package using the bundled setup script:

```
.. code-block:: bash

$ python setup.py install
```

This library works with Python 2.6 or later, and Python 3.3 or later.

## Usage

-----

For typical usage, the ``encode`` and ``decode`` functions will take a domain

name argument and perform a conversion to A-labels or U-labels respectively.

```
.. code-block:: pycon

Python 3
>>> import idna
>>> idna.encode('.')
b'xn--eckwd4c7c.xn--zckzah'
>>> print(idna.decode('xn--eckwd4c7c.xn--zckzah'))
.
```

You may use the codec encoding and decoding methods using the `idna.codec` module:

```
.. code-block:: pycon

Python 2
>>> import idna.codec
>>> print u'.'.encode('idna')
xn--80ahd1agd.xn--80akhbyknj4f
>>> print 'xn--80ahd1agd.xn--80akhbyknj4f'.decode('idna')
.
```

Conversions can be applied at a per-label basis using the `ulabel` or `alabel` functions if necessary:

```
.. code-block:: pycon

Python 2
>>> idna.alabel(u")
'xn--0zwm56d'
```

#### Compatibility Mapping (UTS #46)

+++++

As described in [RFC 5895](http://tools.ietf.org/html/rfc5895) [\(<http://tools.ietf.org/html/rfc5895>`\\_](http://tools.ietf.org/html/rfc5895), the IDNA specification no longer normalizes input from different potential ways a user may input a domain name. This functionality, known as a “mapping”, is now considered by the specification to be a local user-interface issue distinct from IDNA conversion functionality.

This library provides one such mapping, that was developed by the Unicode Consortium. Known as [Unicode IDNA Compatibility Processing](http://unicode.org/reports/tr46/) [\(<http://unicode.org/reports/tr46/>`\\_](http://unicode.org/reports/tr46/), it provides for both a regular mapping for typical applications, as well as a transitional mapping to help migrate from older IDNA 2003 applications.

For example, “Königsgäßchen” is not a permissible label as `*LATIN CAPITAL LETTER K*` is not allowed (nor are capital letters in general). UTS 46 will

convert this into lower case prior to applying the IDNA conversion.

```
.. code-block:: pycon
```

```
Python 3
>>> import idna
>>> idna.encode(u'Königsgäßchen')
...
idna.core.InvalidCodepoint: Codepoint U+004B at position 1 of 'Königsgäßchen' not allowed
>>> idna.encode('Königsgäßchen', uts46=True)
b'xn--knigsgchen-b4a3dun'
>>> print(idna.decode('xn--knigsgchen-b4a3dun'))
königsgäßchen
```

Transitional processing provides conversions to help transition from the older 2003 standard to the current standard. For example, in the original IDNA specification, the \*LATIN SMALL LETTER SHARP S\* (ß) was converted into two \*LATIN SMALL LETTER S\* (ss), whereas in the current IDNA specification this conversion is not performed.

```
.. code-block:: pycon
```

```
Python 2
>>> idna.encode(u'Königsgäßchen', uts46=True, transitional=True)
'xn--knigsgsschen-lcb0w'
```

Implementors should use transitional processing with caution, only in rare cases where conversion from legacy labels to current labels must be performed (i.e. IDNA implementations that pre-date 2008). For typical applications that just need to convert labels, transitional processing is unlikely to be beneficial and could produce unexpected incompatible results.

```
``encodings.idna`` Compatibility
+++++
```

Function calls from the Python built-in ``encodings.idna`` module are mapped to their IDNA 2008 equivalents using the ``idna.compat`` module. Simply substitute the ``import`` clause in your code to refer to the new module name.

Exceptions

-----

All errors raised during the conversion following the specification should raise an exception derived from the ``idna.IDNAError`` base class.

More specific exceptions that may be generated as ``idna.IDNABidiError`` when the error reflects an illegal combination of left-to-right and right-to-left

characters in a label; ``idna.InvalidCodepoint`` when a specific codepoint is an illegal character in an IDN label (i.e. INVALID); and ``idna.InvalidCodepointContext`` when the codepoint is illegal based on its positional context (i.e. it is CONTEXTO or CONTEXTJ but the contextual requirements are not satisfied.)

## Testing

-----

The library has a test suite based on each rule of the IDNA specification, as well as tests that are provided as part of the Unicode Technical Standard 46, `Unicode IDNA Compatibility Processing <<http://unicode.org/reports/tr46/>>` \_.

The tests are run automatically on each commit at Travis CI:

```
.. image:: https://travis-ci.org/kjd/idna.svg?branch=master
 :target: https://travis-ci.org/kjd/idna
```

Platform: UNKNOWN

Classifier: Development Status :: 5 - Production/Stable

Classifier: Intended Audience :: Developers

Classifier: Intended Audience :: System Administrators

Classifier: License :: OSI Approved :: BSD License

Classifier: Operating System :: OS Independent

Classifier: Programming Language :: Python

Classifier: Programming Language :: Python :: 2.6

Classifier: Programming Language :: Python :: 2.7

Classifier: Programming Language :: Python :: 3

Classifier: Programming Language :: Python :: 3.3

Classifier: Programming Language :: Python :: 3.4

Classifier: Programming Language :: Python :: 3.5

Classifier: Programming Language :: Python :: 3.6

Classifier: Topic :: Internet :: Name Service (DNS)

Classifier: Topic :: Software Development :: Libraries :: Python Modules

Classifier: Topic :: Utilities

Found in path(s):

```
* /opt/cola/permits/1162254759_1625655735.46/0/python-idna-2.5-5.el8-1.src.rpm-cosi-expand-archive-xG0yOH9V/idna-2.5.tar.gz-cosi-expand-archive-0y03VA5z/idna-2.5/idna.egg-info/PKG-INFO
```

```
* /opt/cola/permits/1162254759_1625655735.46/0/python-idna-2.5-5.el8-1.src.rpm-cosi-expand-archive-xG0yOH9V/idna-2.5.tar.gz-cosi-expand-archive-0y03VA5z/idna-2.5/PKG-INFO
```

No license file was found, but licenses were detected in source scan.

"""

A library to support the Internationalised Domain Names in Applications (IDNA) protocol as specified in RFC 5890 et.al. This new methodology, known as IDNA 2008, can generate materially different results to the previous standard. The library can act as a drop-in replacement for the "encodings.idna" module.

```

"""

import io, sys
from setuptools import setup

version = "2.5"

def main():

 python_version = sys.version_info[:2]
 if python_version < (2,6):
 raise SystemExit("Sorry, Python 2.6 or newer required")

 arguments = {
 'name': 'idna',
 'packages': ['idna'],
 'version': version,
 'description': 'Internationalized Domain Names in Applications (IDNA)',
 'long_description': io.open("README.rst", encoding="UTF-8").read(),
 'author': 'Kim Davies',
 'author_email': 'kim@cynosure.com.au',
 'license': 'BSD-like',
 'url': 'https://github.com/kjd/idna',
 'classifiers': [
 'Development Status :: 5 - Production/Stable',
 'Intended Audience :: Developers',
 'Intended Audience :: System Administrators',
 'License :: OSI Approved :: BSD License',
 'Operating System :: OS Independent',
 'Programming Language :: Python',
 'Programming Language :: Python :: 2.6',
 'Programming Language :: Python :: 2.7',
 'Programming Language :: Python :: 3',
 'Programming Language :: Python :: 3.3',
 'Programming Language :: Python :: 3.4',
 'Programming Language :: Python :: 3.5',
 'Programming Language :: Python :: 3.6',
 'Topic :: Internet :: Name Service (DNS)',
 'Topic :: Software Development :: Libraries :: Python Modules',
 'Topic :: Utilities',
],
 'test_suite': 'tests',
 }

 setup(**arguments)

if __name__ == '__main__':
 main()

```



Found in path(s):

```
* /opt/cola/permits/1162254759_1625655735.46/0/python-idna-2.5-5.el8-1.src.rpm-cosi-expand-archive-xG0yOH9V/idna-2.5.tar.gz-cosi-expand-archive-0y03VA5z/idna-2.5/setup.py
```

No license file was found, but licenses were detected in source scan.

License

-----

Copyright (c) 2013-2017, Kim Davies. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

#. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

#. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

#. Neither the name of the copyright holder nor the names of the contributors may be used to endorse or promote products derived from this software without specific prior written permission.

#. THIS SOFTWARE IS PROVIDED BY THE CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Portions of the codec implementation and unit tests are derived from the Python standard library, which carries the Python Software Foundation License <<https://docs.python.org/2/license.html>>`\_`:

Copyright (c) 2001-2014 Python Software Foundation; All Rights Reserved

Portions of the unit tests are derived from the Unicode standard, which is subject to the Unicode, Inc. License Agreement:

Copyright (c) 1991-2014 Unicode, Inc. All rights reserved.

Distributed under the Terms of Use in

<<http://www.unicode.org/copyright.html>>.

Permission is hereby granted, free of charge, to any person obtaining a copy of the Unicode data files and any associated documentation (the "Data Files") or Unicode software and any associated documentation (the "Software") to deal in the Data Files or Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, and/or sell copies of the Data Files or Software, and to permit persons to whom the Data Files or Software are furnished to do so, provided that

(a) this copyright and permission notice appear with all copies of the Data Files or Software,

(b) this copyright and permission notice appear in associated documentation, and

(c) there is clear notice in each modified Data File or in the Software as well as in the documentation associated with the Data File(s) or Software that the data or software has been modified.

THE DATA FILES AND SOFTWARE ARE PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF THIRD PARTY RIGHTS.

IN NO EVENT SHALL THE COPYRIGHT HOLDER OR HOLDERS INCLUDED IN THIS NOTICE BE LIABLE FOR ANY CLAIM, OR ANY SPECIAL INDIRECT OR CONSEQUENTIAL DAMAGES, OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THE DATA FILES OR SOFTWARE.

Except as contained in this notice, the name of a copyright holder shall not be used in advertising or otherwise to promote the sale, use or other dealings in these Data Files or Software without prior written authorization of the copyright holder.

Found in path(s):

\* /opt/cola/permits/1162254759\_1625655735.46/0/python-idna-2.5-5.el8-1.src.rpm-cosi-expand-archive-xG0yOH9V/idna-2.5.tar.gz-cosi-expand-archive-0y03VA5z/idna-2.5/LICENSE.rst

## 1.263 isorelax 20090621

## 1.263.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/*
 * @(#) $Id: IslandSchemaReader.java,v 1.4 2001/11/01 00:11:45 kkawa Exp $
 *
 * Copyright 2001 KAWAGUCHI Kohsuke
 *
 * Permission is hereby granted, free of charge, to any person obtaining
 * a copy of this software and associated documentation files (the
 * "Software"), to deal in the Software without restriction, including
 * without limitation the rights to use, copy, modify, merge, publish,
 * distribute, sublicense, and/or sell copies of the Software, and to
 * permit persons to whom the Software is furnished to do so, subject to
 * the following conditions:
 *
 * The above copyright notice and this permission notice shall be included
 * in all copies or substantial portions of the Software.
 *
 * THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
 * EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
 * MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
 * IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY
 * CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
 * TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE
 * SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.
 */
```

Found in path(s):

```
* /opt/cola/permits/1135864262_1613618257.27/0/isorelax-20090621-sources-1-
jar/org/iso_relax/dispatcher/IslandSchemaReader.java
```

No license file was found, but licenses were detected in source scan.

```
/*
 * @(#) $Id: IgnoredSchema.java,v 1.5 2003/05/30 23:46:32 kkawa Exp $
 *
 * Copyright 2001 Kohsuke KAWAGUCHI
 *
 * Permission is hereby granted, free of charge, to any person obtaining
 * a copy of this software and associated documentation files (the
 * "Software"), to deal in the Software without restriction, including
 * without limitation the rights to use, copy, modify, merge, publish,
 * distribute, sublicense, and/or sell copies of the Software, and to
 * permit persons to whom the Software is furnished to do so, subject to
 * the following conditions:
 *
 * The above copyright notice and this permission notice shall be included
 * in all copies or substantial portions of the Software.
```

\*  
\* THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,  
\* EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF  
\* MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.  
\* IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY  
\* CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,  
\* TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE  
\* SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.  
\*/

Found in path(s):

\* /opt/cola/permits/1135864262\_1613618257.27/0/isorelax-20090621-sources-1-  
jar/org/iso\_relax/dispatcher/impl/IgnoredSchema.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* @(#) \$Id: Dispatcher.java,v 1.6 2003/05/30 23:46:32 kkawa Exp \$  
\*  
\* Copyright 2001 MURATA Makoto, KAWAGUCHI Kohsuke  
\*  
\* Permission is hereby granted, free of charge, to any person obtaining  
\* a copy of this software and associated documentation files (the  
\* "Software"), to deal in the Software without restriction, including  
\* without limitation the rights to use, copy, modify, merge, publish,  
\* distribute, sublicense, and/or sell copies of the Software, and to  
\* permit persons to whom the Software is furnished to do so, subject to  
\* the following conditions:  
\*  
\* The above copyright notice and this permission notice shall be included  
\* in all copies or substantial portions of the Software.  
\*  
\* THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,  
\* EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF  
\* MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.  
\* IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY  
\* CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,  
\* TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE  
\* SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.  
\*/

Found in path(s):

\* /opt/cola/permits/1135864262\_1613618257.27/0/isorelax-20090621-sources-1-  
jar/org/iso\_relax/dispatcher/Dispatcher.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* @(#) \$Id: IslandVerifier.java,v 1.6 2003/05/30 23:46:32 kkawa Exp \$  
\*  
\*/

```
* Copyright 2001 MURATA Makoto, KAWAGUCHI Kohsuke
*
* Permission is hereby granted, free of charge, to any person obtaining
* a copy of this software and associated documentation files (the
* "Software"), to deal in the Software without restriction, including
* without limitation the rights to use, copy, modify, merge, publish,
* distribute, sublicense, and/or sell copies of the Software, and to
* permit persons to whom the Software is furnished to do so, subject to
* the following conditions:
*
* The above copyright notice and this permission notice shall be included
* in all copies or substantial portions of the Software.
*
* THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
* EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
* MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
* IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY
* CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
* TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE
* SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.
*/
```

Found in path(s):

```
* /opt/cola/permits/1135864262_1613618257.27/0/isorelax-20090621-sources-1-
jar/org/iso_relax/dispatcher/IslandVerifier.java
```

No license file was found, but licenses were detected in source scan.

```
/*
```

```
* @(#)$Id: AttributesDecl.java,v 1.3 2001/11/01 00:11:45 kkawa Exp $
*
* Copyright 2001 Kohsuke KAWAGUCHI
*
* Permission is hereby granted, free of charge, to any person obtaining
* a copy of this software and associated documentation files (the
* "Software"), to deal in the Software without restriction, including
* without limitation the rights to use, copy, modify, merge, publish,
* distribute, sublicense, and/or sell copies of the Software, and to
* permit persons to whom the Software is furnished to do so, subject to
* the following conditions:
*
* The above copyright notice and this permission notice shall be included
* in all copies or substantial portions of the Software.
*
* THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
* EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
* MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
* IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY
* CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
```

\* TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE  
\* SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.  
\*/

Found in path(s):

\* /opt/cola/permits/1135864262\_1613618257.27/0/isorelax-20090621-sources-1-  
jar/org/iso\_relax/dispatcher/AttributesDecl.java

No license file was found, but licenses were detected in source scan.

/\*

\* @(#) \$Id: SchemaProvider.java,v 1.6 2003/05/30 23:46:32 kkawa Exp \$

\*

\* Copyright 2001 Kohsuke KAWAGUCHI

\*

\* Permission is hereby granted, free of charge, to any person obtaining

\* a copy of this software and associated documentation files (the

\* "Software"), to deal in the Software without restriction, including

\* without limitation the rights to use, copy, modify, merge, publish,

\* distribute, sublicense, and/or sell copies of the Software, and to

\* permit persons to whom the Software is furnished to do so, subject to

\* the following conditions:

\*

\* The above copyright notice and this permission notice shall be included

\* in all copies or substantial portions of the Software.

\*

\* THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,

\* EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF

\* MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.

\* IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY

\* CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,

\* TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE

\* SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

\*/

Found in path(s):

\* /opt/cola/permits/1135864262\_1613618257.27/0/isorelax-20090621-sources-1-  
jar/org/iso\_relax/dispatcher/SchemaProvider.java

No license file was found, but licenses were detected in source scan.

/\*

\* @(#) \$Id: ElementDecl.java,v 1.3 2001/11/01 00:11:45 kkawa Exp \$

\*

\* Copyright 2001 Kohsuke KAWAGUCHI

\*

\* Permission is hereby granted, free of charge, to any person obtaining

\* a copy of this software and associated documentation files (the

\* "Software"), to deal in the Software without restriction, including

\* without limitation the rights to use, copy, modify, merge, publish,

\* distribute, sublicense, and/or sell copies of the Software, and to  
\* permit persons to whom the Software is furnished to do so, subject to  
\* the following conditions:  
\*  
\* The above copyright notice and this permission notice shall be included  
\* in all copies or substantial portions of the Software.  
\*  
\* THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,  
\* EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF  
\* MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.  
\* IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY  
\* CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,  
\* TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE  
\* SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.  
\*/

Found in path(s):

\* /opt/cola/permits/1135864262\_1613618257.27/0/isorelax-20090621-sources-1-  
jar/org/iso\_relax/dispatcher/ElementDecl.java

No license file was found, but licenses were detected in source scan.

/\*

\* @(#) \$Id: IslandSchema.java,v 1.5 2003/05/30 23:46:32 kkawa Exp \$

\*

\* Copyright 2001 KAWAGUCHI Kohsuke

\*

\* Permission is hereby granted, free of charge, to any person obtaining  
\* a copy of this software and associated documentation files (the  
\* "Software"), to deal in the Software without restriction, including  
\* without limitation the rights to use, copy, modify, merge, publish,  
\* distribute, sublicense, and/or sell copies of the Software, and to  
\* permit persons to whom the Software is furnished to do so, subject to  
\* the following conditions:

\*

\* The above copyright notice and this permission notice shall be included  
\* in all copies or substantial portions of the Software.

\*

\* THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,  
\* EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF  
\* MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.  
\* IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY  
\* CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,  
\* TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE  
\* SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

\*/

Found in path(s):

\* /opt/cola/permits/1135864262\_1613618257.27/0/isorelax-20090621-sources-1-

jar/org/iso\_relax/dispatcher/IslandSchema.java

No license file was found, but licenses were detected in source scan.

```
/*
 * @(#) $Id: DispatcherImpl.java,v 1.5 2003/05/30 23:46:32 kkawa Exp $
 *
 * Copyright 2001 Kohsuke KAWAGUCHI
 *
 * Permission is hereby granted, free of charge, to any person obtaining
 * a copy of this software and associated documentation files (the
 * "Software"), to deal in the Software without restriction, including
 * without limitation the rights to use, copy, modify, merge, publish,
 * distribute, sublicense, and/or sell copies of the Software, and to
 * permit persons to whom the Software is furnished to do so, subject to
 * the following conditions:
 *
 * The above copyright notice and this permission notice shall be included
 * in all copies or substantial portions of the Software.
 *
 * THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
 * EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
 * MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
 * IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY
 * CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
 * TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE
 * SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.
 */
```

Found in path(s):

```
*/opt/cola/permits/1135864262_1613618257.27/0/isorelax-20090621-sources-1-
jar/org/iso_relax/dispatcher/impl/DispatcherImpl.java
```

## 1.264 libnl3 3.5.0 1.el8

### 1.264.1 Available under license :

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts  
as the successor of the GNU Library Public License, version 2, hence  
the version number 2.1.]



## Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot

effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE  
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file

that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system,

rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed



through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME

THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your

school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!

GNU GENERAL PUBLIC LICENSE  
Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>  
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

## TERMS AND CONDITIONS

### 0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the

earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

#### 1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all

the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

## 2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

## 3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article

11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

#### 4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

#### 5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.
- b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".
- c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.
- d) If the work has interactive user interfaces, each must display

Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

#### 6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the



Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has

been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

## 7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or

- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

## 8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is

reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

#### 9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

#### 10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

## 11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered

work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

#### 12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

#### 13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

#### 14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will

be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

#### 15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

#### 16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### 17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided

above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program> Copyright (C) <year> <name of author>
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".



You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <<http://www.gnu.org/licenses/>>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <<http://www.gnu.org/philosophy/why-not-lgpl.html>>.

## 1.265 libsepol 2.9-3.el8

### 1.265.1 Available under license :

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.

51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of

it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

#### GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a

table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or

link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for

reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
- b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the



original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version,

but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that

everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!

## 1.266 bzip2 1.0.6 26.el8

### 1.266.1 Available under license :

-----  
This program, "bzip2", the associated library "libbzip2", and all

documentation, are copyright (C) 1996-2010 Julian R Seward. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated but is not required.
3. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
4. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Julian Seward, [jseward@bzip.org](mailto:jseward@bzip.org)  
bzip2/libbzip2 version 1.0.6 of 6 September 2010

---

## 1.267 scala-reflect 2.13.6

### 1.267.1 Available under license :

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

## 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted"

means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and

attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the

appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
  
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

### APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software



distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

Scala

Copyright (c) 2002-2021 EPFL

Copyright (c) 2011-2021 Lightbend, Inc.

Scala includes software developed at  
LAMP/EPFL (<https://lamp.epfl.ch/>) and  
Lightbend, Inc. (<https://www.lightbend.com/>).

Licensed under the Apache License, Version 2.0 (the "License").  
Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

This software includes projects with other licenses -- see `doc/LICENSE.md`.

## 1.268 kerberos 1.18.2-14.el8

### 1.268.1 Available under license :

[ NOTE: MIT has only incorporated the mechglue and spnego change, and not the incremental propagation changes. The filenames are different between the Sun and MIT sources. The actual MIT filenames appear in the top-level README file. Original text of Sun's LICENSE file follows. ]

Subject to the license set forth below, Sun Microsystems, Inc. donates the attached files to MIT for the purpose of including these modifications and additions in future versions of the Kerberos system.

Many of the files attached are subject to licenses issued by other entities, including OpenVision, MIT, and FundsXpress. See the individual files, and/or related Readme files, for these licenses.

In addition Sun requires that the license set forth below be incorporated into any future version of the Kerberos system which contains portions of the files attached. The following files must be listed, in the top level Readme file, as being provided subject to such license:

```
cmd/krb5/iprof/iprof.x
cmd/krb5/iprof/iprof_hdr.h
cmd/krb5/kadmin/server/iprofd_svc.c
```

cmd/krb5/kproplog/kproplog.c  
cmd/krb5/slave/kpropd\_rpc.c  
lib/gss\_mechs/mech\_krb5/et/kdb5\_err.c  
lib/gss\_mechs/mech\_spnego/mech/gssapiP\_spnego.h  
lib/gss\_mechs/mech\_spnego/mech/spnego\_mech.c  
lib/krb5/kadm5/kadm\_host\_srv\_names.c  
lib/krb5/kdb/kdb\_convert.c  
lib/krb5/kdb/kdb\_hdr.h  
lib/krb5/kdb/kdb\_log.c  
lib/krb5/kdb/kdb\_log.h  
lib/libgss/g\_accept\_sec\_context.c  
lib/libgss/g\_acquire\_cred.c  
lib/libgss/g\_canon\_name.c  
lib/libgss/g\_compare\_name.c  
lib/libgss/g\_context\_time.c  
lib/libgss/g\_delete\_sec\_context.c  
lib/libgss/g\_dsp\_name.c  
lib/libgss/g\_dsp\_status.c  
lib/libgss/g\_dup\_name.c  
lib/libgss/g\_exp\_sec\_context.c  
lib/libgss/g\_export\_name.c  
lib/libgss/g\_glue.c  
lib/libgss/g\_imp\_name.c  
lib/libgss/g\_imp\_sec\_context.c  
lib/libgss/g\_init\_sec\_context.c  
lib/libgss/g\_initialize.c  
lib/libgss/g\_inquire\_context.c  
lib/libgss/g\_inquire\_cred.c  
lib/libgss/g\_inquire\_names.c  
lib/libgss/g\_process\_context.c  
lib/libgss/g\_rel\_buffer.c  
lib/libgss/g\_rel\_cred.c  
lib/libgss/g\_rel\_name.c  
lib/libgss/g\_rel\_oid\_set.c  
lib/libgss/g\_seal.c  
lib/libgss/g\_sign.c  
lib/libgss/g\_store\_cred.c  
lib/libgss/g\_unseal.c  
lib/libgss/g\_userok.c  
lib/libgss/g\_utils.c  
lib/libgss/g\_verify.c  
lib/libgss/gssd\_pname\_to\_uid.c  
uts/common/gssapi/include/gssapi\_err\_generic.h  
uts/common/gssapi/include/mechglueP.h

Sun's License is as follows:

Copyright (c) 2004 Sun Microsystems, Inc.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright

=====

Copyright |copy| 1985-2020 by the Massachusetts Institute of Technology and its contributors. All rights reserved.

See :ref:`mitK5license` for additional copyright and license information.

Copyright (C) 1985-2020 by the Massachusetts Institute of Technology.

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT

LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Downloading of this software may constitute an export of cryptographic software from the United States of America that is subject to the United States Export Administration Regulations (EAR), 15 CFR 730-774. Additional laws or regulations may apply. It is the responsibility of the person or entity contemplating export to comply with all applicable export laws and regulations, including obtaining any required license from the U.S. government.

The U.S. government prohibits export of encryption source code to certain countries and individuals, including, but not limited to, the countries of Cuba, Iran, North Korea, Sudan, Syria, and residents and nationals of those countries.

Documentation components of this software distribution are licensed under a Creative Commons Attribution-ShareAlike 3.0 Unported License. (<https://creativecommons.org/licenses/by-sa/3.0/>)

Individual source code files are copyright MIT, Cygnus Support, Novell, OpenVision Technologies, Oracle, Red Hat, Sun Microsystems, FundsXpress, and others.

Project Athena, Athena, Athena MUSE, Discuss, Hesiod, Kerberos, Moira, and Zephyr are trademarks of the Massachusetts Institute of Technology (MIT). No commercial use of these trademarks may be made without prior written permission of MIT.

"Commercial use" means use of a name in a product or other for-profit manner. It does NOT prevent a commercial firm from referring to the MIT trademarks in order to convey information (although in doing so, recognition of their trademark status should be given).

=====

The following copyright and permission notice applies to the OpenVision Kerberos Administration system located in "kadmin/create", "kadmin/dbutil", "kadmin/passwd", "kadmin/server", "lib/kadm5", and portions of "lib/rpc":

Copyright, OpenVision Technologies, Inc., 1993-1996, All Rights Reserved

WARNING: Retrieving the OpenVision Kerberos Administration system

source code, as described below, indicates your acceptance of the following terms. If you do not agree to the following terms, do not retrieve the OpenVision Kerberos administration system.

You may freely use and distribute the Source Code and Object Code compiled from it, with or without modification, but this Source Code is provided to you "AS IS" EXCLUSIVE OF ANY WARRANTY, INCLUDING, WITHOUT LIMITATION, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ANY OTHER WARRANTY, WHETHER EXPRESS OR IMPLIED. IN NO EVENT WILL OPENVISION HAVE ANY LIABILITY FOR ANY LOST PROFITS, LOSS OF DATA OR COSTS OF PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES, OR FOR ANY SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES ARISING OUT OF THIS AGREEMENT, INCLUDING, WITHOUT LIMITATION, THOSE RESULTING FROM THE USE OF THE SOURCE CODE, OR THE FAILURE OF THE SOURCE CODE TO PERFORM, OR FOR ANY OTHER REASON.

OpenVision retains all copyrights in the donated Source Code. OpenVision also retains copyright to derivative works of the Source Code, whether created by OpenVision or by a third party. The OpenVision copyright notice must be preserved if derivative works are made based on the donated Source Code.

OpenVision Technologies, Inc. has donated this Kerberos Administration system to MIT for inclusion in the standard Kerberos 5 distribution. This donation underscores our commitment to continuing Kerberos technology development and our gratitude for the valuable work which has been performed by MIT and the Kerberos community.

=====

Portions contributed by Matt Crawford "crawd@fnal.gov" were work performed at Fermi National Accelerator Laboratory, which is operated by Universities Research Association, Inc., under contract DE-AC02-76CHO3000 with the U.S. Department of Energy.

=====

Portions of "src/lib/crypto" have the following copyright:

Copyright (C) 1998 by the FundsXpress, INC.

All rights reserved.

Export of this software from the United States of America may require a specific license from the United States Government.

It is the responsibility of any person or organization

contemplating export to obtain such a license before exporting.

WITHIN THAT CONSTRAINT, permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of FundsXpress. not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission. FundsXpress makes no representations about the suitability of this software for any purpose. It is provided "as is" without express or implied warranty.

THIS SOFTWARE IS PROVIDED "AS IS" AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

=====

The implementation of the AES encryption algorithm in "src/lib/crypto/builtin/aes" has the following copyright:

Copyright (C) 2001, Dr Brian Gladman "brg@gladman.uk.net",  
Worcester, UK.  
All rights reserved.

#### LICENSE TERMS

The free distribution and use of this software in both source and binary form is allowed (with or without changes) provided that:

1. distributions of this source code include the above copyright notice, this list of conditions and the following disclaimer;
2. distributions in binary form include the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other associated materials;
3. the copyright holder's name is not used to endorse products built using this software without specific written permission.

#### DISCLAIMER

This software is provided 'as is' with no explicit or implied warranties in respect of any properties, including, but not limited to, correctness and fitness for purpose.

=====

Portions contributed by Red Hat, including the pre-authentication plug-in framework and the NSS crypto implementation, contain the following copyright:

Copyright (C) 2006 Red Hat, Inc.  
Portions copyright (C) 2006 Massachusetts Institute of Technology  
All Rights Reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Red Hat, Inc., nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

=====

The bundled verto source code is subject to the following license:

Copyright 2011 Red Hat, Inc.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy,

modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

-----

The MS-KKDCP client implementation has the following copyright:

Copyright 2013,2014 Red Hat, Inc.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.



---

The implementations of GSSAPI mechglue in GSSAPI-SPNEGO in "src/lib/gssapi", including the following files:

lib/gssapi/generic/gssapi\_err\_generic.et  
lib/gssapi/mechglue/g\_accept\_sec\_context.c  
lib/gssapi/mechglue/g\_acquire\_cred.c  
lib/gssapi/mechglue/g\_canon\_name.c  
lib/gssapi/mechglue/g\_compare\_name.c  
lib/gssapi/mechglue/g\_context\_time.c  
lib/gssapi/mechglue/g\_delete\_sec\_context.c  
lib/gssapi/mechglue/g\_dsp\_name.c  
lib/gssapi/mechglue/g\_dsp\_status.c  
lib/gssapi/mechglue/g\_dup\_name.c  
lib/gssapi/mechglue/g\_exp\_sec\_context.c  
lib/gssapi/mechglue/g\_export\_name.c  
lib/gssapi/mechglue/g\_glue.c  
lib/gssapi/mechglue/g\_imp\_name.c  
lib/gssapi/mechglue/g\_imp\_sec\_context.c  
lib/gssapi/mechglue/g\_init\_sec\_context.c  
lib/gssapi/mechglue/g\_initialize.c  
lib/gssapi/mechglue/g\_inquire\_context.c  
lib/gssapi/mechglue/g\_inquire\_cred.c  
lib/gssapi/mechglue/g\_inquire\_names.c  
lib/gssapi/mechglue/g\_process\_context.c  
lib/gssapi/mechglue/g\_rel\_buffer.c  
lib/gssapi/mechglue/g\_rel\_cred.c  
lib/gssapi/mechglue/g\_rel\_name.c  
lib/gssapi/mechglue/g\_rel\_oid\_set.c  
lib/gssapi/mechglue/g\_seal.c  
lib/gssapi/mechglue/g\_sign.c  
lib/gssapi/mechglue/g\_store\_cred.c  
lib/gssapi/mechglue/g\_unseal.c  
lib/gssapi/mechglue/g\_userok.c  
lib/gssapi/mechglue/g\_utils.c  
lib/gssapi/mechglue/g\_verify.c  
lib/gssapi/mechglue/gssd\_pname\_to\_uid.c  
lib/gssapi/mechglue/mglueP.h  
lib/gssapi/mechglue/oid\_ops.c  
lib/gssapi/spnego/gssapiP\_spnego.h  
lib/gssapi/spnego/spnego\_mech.c

and the initial implementation of incremental propagation, including the following new or changed files:

include/iprop\_hdr.h  
kadmin/server/ipropd\_svc.c

lib/kdb/iprof.x  
lib/kdb/kdb\_convert.c  
lib/kdb/kdb\_log.c  
lib/kdb/kdb\_log.h  
lib/krb5/error\_tables/kdb5\_err.et  
kprop/kpropd\_rpc.c  
kprop/kproplog.c

are subject to the following license:

Copyright (C) 2004 Sun Microsystems, Inc.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

=====  
Kerberos V5 includes documentation and software developed at the University of California at Berkeley, which includes this copyright notice:

Copyright (C) 1983 Regents of the University of California.  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

3. Neither the name of the University nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

=====

Portions contributed by Novell, Inc., including the LDAP database backend, are subject to the following license:

Copyright (C) 2004-2005, Novell, Inc.  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

\* The copyright holder's name is not used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS

"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

=====

Portions funded by Sandia National Laboratory and developed by the University of Michigan's Center for Information Technology Integration, including the PKINIT implementation, are subject to the following license:

COPYRIGHT (C) 2006-2007  
THE REGENTS OF THE UNIVERSITY OF MICHIGAN  
ALL RIGHTS RESERVED

Permission is granted to use, copy, create derivative works and redistribute this software and such derivative works for any purpose, so long as the name of The University of Michigan is not used in any advertising or publicity pertaining to the use of distribution of this software without specific, written prior authorization. If the above copyright notice or any other identification of the University of Michigan is included in any copy of any portion of this software, then the disclaimer below must also be included.

THIS SOFTWARE IS PROVIDED AS IS, WITHOUT REPRESENTATION FROM THE UNIVERSITY OF MICHIGAN AS TO ITS FITNESS FOR ANY PURPOSE, AND WITHOUT WARRANTY BY THE UNIVERSITY OF MICHIGAN OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE REGENTS OF THE UNIVERSITY OF MICHIGAN SHALL NOT BE LIABLE FOR ANY DAMAGES, INCLUDING SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, WITH RESPECT TO ANY CLAIM ARISING OUT OF OR IN CONNECTION WITH THE USE OF THE SOFTWARE, EVEN IF IT HAS BEEN OR IS HEREAFTER ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

=====

The pkcs11.h file included in the PKINIT code has the following license:

Copyright 2006 g10 Code GmbH  
Copyright 2006 Andreas Jellinghaus

This file is free software; as a special exception the author gives unlimited permission to copy and/or distribute it, with or without modifications, as long as this notice is preserved.

This file is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY, to the extent permitted by law; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.

=====  
Portions contributed by Apple Inc. are subject to the following license:

Copyright 2004-2008 Apple Inc. All Rights Reserved.

Export of this software from the United States of America may require a specific license from the United States Government. It is the responsibility of any person or organization contemplating export to obtain such a license before exporting.

WITHIN THAT CONSTRAINT, permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of Apple Inc. not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission. Apple Inc. makes no representations about the suitability of this software for any purpose. It is provided "as is" without express or implied warranty.

THIS SOFTWARE IS PROVIDED "AS IS" AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

=====  
The implementations of UTF-8 string handling in src/util/support and src/lib/krb5/unicode are subject to the following copyright and permission notice:

The OpenLDAP Public License  
Version 2.8, 17 August 2003

Redistribution and use of this software and associated documentation ("Software"), with or without modification, are permitted provided that the following conditions are met:

1. Redistributions in source form must retain copyright statements and notices,
2. Redistributions in binary form must reproduce applicable copyright statements and notices, this list of conditions, and the following disclaimer in the documentation and/or other materials provided with the distribution, and
3. Redistributions must contain a verbatim copy of this document.

The OpenLDAP Foundation may revise this license from time to time. Each revision is distinguished by a version number. You may use this Software under terms of this license revision or under the terms of any subsequent revision of the license.

THIS SOFTWARE IS PROVIDED BY THE OPENLDAP FOUNDATION AND ITS CONTRIBUTORS "AS IS" AND ANY EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE OPENLDAP FOUNDATION, ITS CONTRIBUTORS, OR THE AUTHOR(S) OR OWNER(S) OF THE SOFTWARE BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The names of the authors and copyright holders must not be used in advertising or otherwise to promote the sale, use or other dealing in this Software without specific, written prior permission. Title to copyright in this Software shall at all times remain with copyright holders.

OpenLDAP is a registered trademark of the OpenLDAP Foundation.

Copyright 1999-2003 The OpenLDAP Foundation, Redwood City, California, USA. All Rights Reserved. Permission to copy and distribute verbatim copies of this document is granted.

---

---

Marked test programs in src/lib/krb5/krb have the following copyright:

Copyright (C) 2006 Kungliga Tekniska Hgskola  
(Royal Institute of Technology, Stockholm, Sweden).  
All rights reserved.

Redistribution and use in source and binary forms, with or without  
modification, are permitted provided that the following conditions  
are met:

1. Redistributions of source code must retain the above  
copyright notice, this list of conditions and the following  
disclaimer.
2. Redistributions in binary form must reproduce the above  
copyright notice, this list of conditions and the following  
disclaimer in the documentation and/or other materials provided  
with the distribution.
3. Neither the name of KTH nor the names of its contributors may  
be used to endorse or promote products derived from this  
software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY KTH AND ITS CONTRIBUTORS "AS IS" AND  
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO,  
THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A  
PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL KTH OR ITS  
CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,  
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT  
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF  
USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND  
ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,  
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT  
OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF  
SUCH DAMAGE.

---

---

The KCM Mach RPC definition file used on macOS has the following  
copyright:

Copyright (C) 2009 Kungliga Tekniska Hgskola  
(Royal Institute of Technology, Stockholm, Sweden).  
All rights reserved.

Portions Copyright (C) 2009 Apple Inc. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the Institute nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE INSTITUTE AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE INSTITUTE OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

=====

Portions of the RPC implementation in src/lib/rpc and src/include/gssrpc have the following copyright and permission notice:

Copyright (C) 2010, Oracle America, Inc.

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.



2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

3. Neither the name of the "Oracle America, Inc." nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

=====

Copyright (C) 2006,2007,2009 NTT (Nippon Telegraph and Telephone Corporation). All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer as the first lines of this file unmodified.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY NTT "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL NTT BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)

HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

=====  
Copyright 2000 by Carnegie Mellon University

All Rights Reserved

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of Carnegie Mellon University not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission.

CARNEGIE MELLON UNIVERSITY DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS, IN NO EVENT SHALL CARNEGIE MELLON UNIVERSITY BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

=====  
Copyright (C) 2002 Naval Research Laboratory (NRL/CCS)

Permission to use, copy, modify and distribute this software and its documentation is hereby granted, provided that both the copyright notice and this permission notice appear in all copies of the software, derivative works or modified versions, and any portions thereof.

NRL ALLOWS FREE USE OF THIS SOFTWARE IN ITS "AS IS" CONDITION AND DISCLAIMS ANY LIABILITY OF ANY KIND FOR ANY DAMAGES WHATSOEVER RESULTING FROM THE USE OF THIS SOFTWARE.

=====  
Copyright (C) 1991, 1992, 1994 by Cygnus Support.

Permission to use, copy, modify, and distribute this software and

its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation. Cygnus Support makes no representations about the suitability of this software for any purpose. It is provided "as is" without express or implied warranty.

---

Copyright (C) 2006 Secure Endpoints Inc.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

---

Portions of the implementation of the Fortuna-like PRNG are subject to the following notice:

Copyright (C) 2005 Marko Kreen  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (C) 1994 by the University of Southern California

EXPORT OF THIS SOFTWARE from the United States of America may require a specific license from the United States Government. It is the responsibility of any person or organization contemplating export to obtain such a license before exporting.

WITHIN THAT CONSTRAINT, permission to copy, modify, and distribute this software and its documentation in source and binary forms is hereby granted, provided that any documentation or other materials related to such distribution or use acknowledge that the software was developed by the University of Southern California.

DISCLAIMER OF WARRANTY. THIS SOFTWARE IS PROVIDED "AS IS". The University of Southern California MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. By way of example, but not limitation, the University of Southern California MAKES NO REPRESENTATIONS OR WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE. The University of Southern California shall not be held liable for any liability nor for any direct, indirect, or consequential damages with respect to any claim by the user or distributor of the ksu software.

=====

Copyright (C) 1995  
The President and Fellows of Harvard University

This code is derived from software contributed to Harvard by Jeremy Rassen.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. All advertising materials mentioning features or use of this software must display the following acknowledgement:

This product includes software developed by the University of California, Berkeley and its contributors.

4. Neither the name of the University nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

=====

Copyright (C) 2008 by the Massachusetts Institute of Technology.  
Copyright 1995 by Richard P. Basch. All Rights Reserved.  
Copyright 1995 by Lehman Brothers, Inc. All Rights Reserved.

Export of this software from the United States of America may require a specific license from the United States Government. It is the responsibility of any person or organization contemplating export to obtain such a license before exporting.

WITHIN THAT CONSTRAINT, permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of Richard P. Basch, Lehman Brothers and M.I.T. not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission. Richard P. Basch, Lehman Brothers and M.I.T. make no representations about the suitability of this software for any purpose. It is provided "as is" without express or implied warranty.

=====

The following notice applies to "src/lib/krb5/krb/strptime.c" and "src/include/k5-queue.h".

Copyright (C) 1997, 1998 The NetBSD Foundation, Inc.  
All rights reserved.

This code was contributed to The NetBSD Foundation by Klaus Klein.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. All advertising materials mentioning features or use of this software must display the following acknowledgement:

This product includes software developed by the NetBSD Foundation, Inc. and its contributors.

4. Neither the name of The NetBSD Foundation nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE NETBSD FOUNDATION, INC. AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES,

INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE FOUNDATION OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---

The following notice applies to Unicode library files in "src/lib/krb5/unicode":

Copyright 1997, 1998, 1999 Computing Research Labs,  
New Mexico State University

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE COMPUTING RESEARCH LAB OR NEW MEXICO STATE UNIVERSITY BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

---

The following notice applies to "src/util/support/strncpy.c":

Copyright (C) 1998 Todd C. Miller "Todd.Miller@courtesan.com"

Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that

the above copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS" AND THE AUTHOR DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

=====

The following notice applies to "src/util/profile/argv\_parse.c" and "src/util/profile/argv\_parse.h":

Copyright 1999 by Theodore Ts'o.

Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies. THE SOFTWARE IS PROVIDED "AS IS" AND THEODORE TS'O (THE AUTHOR) DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE. (Isn't it sick that the U.S. culture of lawsuit-happy lawyers requires this kind of disclaimer?)

=====

The following notice applies to SWIG-generated code in "src/util/profile/profile\_tcl.c":

Copyright (C) 1999-2000, The University of Chicago

This file may be freely redistributed without license or fee provided this copyright message remains intact.

=====

The following notice applies to portions of "src/lib/rpc" and "src/include/gssrpc":



Copyright (C) 2000 The Regents of the University of Michigan. All rights reserved.

Copyright (C) 2000 Dug Song "dugsong@UMICH.EDU". All rights reserved, all wrongs reversed.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the University nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

=====

Implementations of the MD4 algorithm are subject to the following notice:

Copyright (C) 1990, RSA Data Security, Inc. All rights reserved.

License to copy and use this software is granted provided that it is identified as the "RSA Data Security, Inc. MD4 Message Digest Algorithm" in all material mentioning or referencing this software or this function.

License is also granted to make and use derivative works provided that such works are identified as "derived from the RSA Data Security, Inc. MD4 Message Digest Algorithm" in all material mentioning or referencing the derived work.

RSA Data Security, Inc. makes no representations concerning either the merchantability of this software or the suitability of this software for any particular purpose. It is provided "as is" without express or implied warranty of any kind.

These notices must be retained in any copies of any part of this documentation and/or software.

=====

Implementations of the MD5 algorithm are subject to the following notice:

Copyright (C) 1990, RSA Data Security, Inc. All rights reserved.

License to copy and use this software is granted provided that it is identified as the "RSA Data Security, Inc. MD5 Message-Digest Algorithm" in all material mentioning or referencing this software or this function.

License is also granted to make and use derivative works provided that such works are identified as "derived from the RSA Data Security, Inc. MD5 Message-Digest Algorithm" in all material mentioning or referencing the derived work.

RSA Data Security, Inc. makes no representations concerning either the merchantability of this software or the suitability of this software for any particular purpose. It is provided "as is" without express or implied warranty of any kind.

These notices must be retained in any copies of any part of this documentation and/or software.

=====

The following notice applies to  
"src/lib/crypto/crypto\_tests/t\_mddriver.c":

Copyright (C) 1990-2, RSA Data Security, Inc. Created 1990. All rights reserved.

RSA Data Security, Inc. makes no representations concerning either the merchantability of this software or the suitability of this

software for any particular purpose. It is provided "as is" without express or implied warranty of any kind.

These notices must be retained in any copies of any part of this documentation and/or software.

=====

Portions of "src/lib/krb5" are subject to the following notice:

Copyright (C) 1994 CyberSAFE Corporation.  
Copyright 1990,1991,2007,2008 by the Massachusetts  
Institute of Technology.  
All Rights Reserved.

Export of this software from the United States of America may require a specific license from the United States Government. It is the responsibility of any person or organization contemplating export to obtain such a license before exporting.

WITHIN THAT CONSTRAINT, permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of M.I.T. not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission. Furthermore if you modify this software you must label your software as modified software and not distribute it in such a fashion that it might be confused with the original M.I.T. software. Neither M.I.T., the Open Computing Security Group, nor CyberSAFE Corporation make any representations about the suitability of this software for any purpose. It is provided "as is" without express or implied warranty.

=====

Portions contributed by PADL Software are subject to the following license:

Copyright (c) 2011, PADL Software Pty Ltd. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following

disclaimer.

2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

3. Neither the name of PADL Software nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY PADL SOFTWARE AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL PADL SOFTWARE OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

=====

The bundled libev source code is subject to the following license:

All files in libev are Copyright (C)2007,2008,2009 Marc Alexander Lehmann.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT,

INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Alternatively, the contents of this package may be used under the terms of the GNU General Public License ("GPL") version 2 or any later version, in which case the provisions of the GPL are applicable instead of the above. If you wish to allow the use of your version of this package only under the terms of the GPL and not to allow others to use your version of this file under the BSD license, indicate your decision by deleting the provisions above and replace them with the notice and other provisions required by the GPL in this and the other files of this package. If you do not delete the provisions above, a recipient may use your version of this file under either the BSD or the GPL.

=====  
Files copied from the Intel AESNI Sample Library are subject to the following license:

Copyright (C) 2010, Intel Corporation All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Intel Corporation nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS

FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

=====

The following notice applies to  
"src/ccapi/common/win/OldCC/autolock.hxx":

Copyright (C) 1998 by Danilo Almeida. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

=====

The following notice applies to portions of  
"src/plugins/preauth/spake/edwards25519.c" and  
"src/plugins/preauth/spake/edwards25519\_tables.h":

The MIT License (MIT)

Copyright (c) 2015-2016 the fiat-crypto authors (see the AUTHORS file).

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

=====

The following notice applies to portions of "src/plugins/preauth/spake/edwards25519.c":

Copyright (c) 2015-2016, Google Inc.

Permission to use, copy, modify, and/or distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS" AND THE AUTHOR DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

.. \_mitK5license:

MIT Kerberos License information

=====

.. toctree::

:hidden:

copyright.rst

.. include:: notice.rst

## 1.269 jackson-module-parameter-names

### 2.12.6

#### 1.269.1 Available under license :

Apache-2.0

## 1.270 cpp 8.5.0-10.1.el8\_6

#### 1.270.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid



anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program).

Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest

your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program

except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed

through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
```

Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.  
This is free software, and you are welcome to redistribute it  
under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate  
parts of the General Public License. Of course, the commands you use may  
be called something other than `show w' and `show c'; they could even be  
mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your  
school, if any, to sign a "copyright disclaimer" for the program, if  
necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program  
'Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989  
Ty Coon, President of Vice

This General Public License does not permit incorporating your program into  
proprietary programs. If your program is a subroutine library, you may  
consider it more useful to permit linking proprietary applications with the  
library. If this is what you want to do, use the GNU Library General  
Public License instead of this License.

-----  
This program, "bzip2", the associated library "libbzip2", and all  
documentation, are copyright (C) 1996-2010 Julian R Seward. All  
rights reserved.

Redistribution and use in source and binary forms, with or without  
modification, are permitted provided that the following conditions  
are met:

1. Redistributions of source code must retain the above copyright  
notice, this list of conditions and the following disclaimer.
2. The origin of this software must not be misrepresented; you must  
not claim that you wrote the original software. If you use this  
software in a product, an acknowledgment in the product  
documentation would be appreciated but is not required.
3. Altered source versions must be plainly marked as such, and must  
not be misrepresented as being the original software.
4. The name of the author may not be used to endorse or promote  
products derived from this software without specific prior written

permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Julian Seward, jseward@bzip.org  
bzip2/libbzip2 version 1.0.6 of 6 September 2010

-----  
libffi - Copyright (c) 1996-2014 Anthony Green, Red Hat, Inc and others.  
See source files for details.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the ``Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED ``AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

GNU LESSER GENERAL PUBLIC LICENSE  
Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.  
51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.



[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

## Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original

author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

## GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that

you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it

contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License.

Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application

to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.



It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW.

EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!  
Copyright 1992, 1993, 1994 Henry Spencer. All rights reserved.  
This software is not subject to any license of the American Telephone and Telegraph Company or of the Regents of the University of California.

Permission is granted to anyone to use this software for any purpose on any computer system, and to alter it and redistribute it, subject to the following restrictions:

1. The author is not responsible for the consequences of use of this software, no matter how awful, even if they arise from flaws in it.
2. The origin of this software must not be misrepresented, either by explicit claim or by omission. Since few users ever read sources, credits must appear in the documentation.
3. Altered versions must be plainly marked as such, and must not be misrepresented as being the original software. Since few users ever read sources, credits must appear in the documentation.
4. This notice may not be removed or altered.

-----

/\*\_

- \* Copyright (c) 1994
- \* The Regents of the University of California. All rights reserved.
- \*
- \* Redistribution and use in source and binary forms, with or without
- \* modification, are permitted provided that the following conditions
- \* are met:

\* 1. Redistributions of source code must retain the above copyright  
\* notice, this list of conditions and the following disclaimer.  
\* 2. Redistributions in binary form must reproduce the above copyright  
\* notice, this list of conditions and the following disclaimer in the  
\* documentation and/or other materials provided with the distribution.  
\* 4. Neither the name of the University nor the names of its contributors  
\* may be used to endorse or promote products derived from this software  
\* without specific prior written permission.  
\*  
\* THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS" AND  
\* ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE  
\* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE  
\* ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE  
\* FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL  
\* DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS  
\* OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)  
\* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT  
\* LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY  
\* OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF  
\* SUCH DAMAGE.

\* @(#)COPYRIGHT 8.1 (Berkeley) 3/16/94

\*/

@ignore

@c Set file name and title for man page.

@setfilename gpl

@settitle GNU General Public License

@c man begin SEEALSO

gfdl(7), fsf-funding(7).

@c man end

@c man begin COPYRIGHT

Copyright @copyright{ } 2007 Free Software Foundation, Inc.

Everyone is permitted to copy and distribute verbatim copies of this  
license document, but changing it is not allowed.

@c man end

@end ignore

@node Copying

@c man begin DESCRIPTION

@unnumbered GNU General Public License

@center Version 3, 29 June 2007

@c This file is intended to be included in another file.

@display

Copyright @copyright{ } 2007 Free Software Foundation, Inc. @url{http://fsf.org/}

Everyone is permitted to copy and distribute verbatim copies of this

license document, but changing it is not allowed.

@end display

@heading Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps:

(1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the

manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

@heading TERMS AND CONDITIONS

@enumerate 0

@item Definitions.

``This License" refers to version 3 of the GNU General Public License.

``Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

``The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as ``you". ``Licensees" and ``recipients" may be individuals or organizations.

To ``modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a ``modified version" of the earlier work or a work ``based on" the earlier work.

A ``covered work" means either the unmodified Program or a work based on the Program.

To ``propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

@item Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those

subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

@item Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

@item Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.



@item Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

@item Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

@enumerate a

@item

The work must carry prominent notices stating that you modified it, and giving a relevant date.

@item

The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to ``keep intact all notices".

@item

You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.

@item

If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

@end enumerate

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

@item Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

@enumerate a

@item

Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

@item

Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

@item

Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

@item

Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the

Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

@item

Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

@end enumerate

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the

Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

@item Additional Terms.

``Additional permissions'' are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

@enumerate a

@item

Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or

@item

Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or

@item

Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or

@item

Limiting the use for publicity purposes of names of licensors or authors of the material; or

@item

Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or

@item

Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

@end enumerate

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

@item Termination.

You may not propagate or modify a covered work except as expressly

provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

@item Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

@item Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever

licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

@item Patents.

A ``contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's ``contributor version".

A contributor's ``essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, ``control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a ``patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To ``grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner

consistent with the requirements of this License, to extend the patent license to downstream recipients. ``Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is ``discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

@item No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

@item Use with the GNU Affero General Public License.



Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

@item Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

@item Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

@item Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

@item Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

@end enumerate

@heading END OF TERMS AND CONDITIONS

@heading How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the ``copyright" line and a pointer to where the full notice is found.

@smallexample

@var{one line to give the program's name and a brief idea of what it does.}

Copyright (C) @var{year} @var{name of author}

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of

MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see [@url{http://www.gnu.org/licenses/}](http://www.gnu.org/licenses/).  
@end smallexample

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
@smallexample
@var{program} Copyright (C) @var{year} @var{name of author}
This program comes with ABSOLUTELY NO WARRANTY; for details type @samp{show w}.
This is free software, and you are welcome to redistribute it
under certain conditions; type @samp{show c} for details.
@end smallexample
```

The hypothetical commands `@samp{show w}` and `@samp{show c}` should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an ```about box''`.

You should also get your employer (if you work as a programmer) or school, if any, to sign a ```copyright disclaimer''` for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see [@url{http://www.gnu.org/licenses/}](http://www.gnu.org/licenses/).

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read [@url{http://www.gnu.org/philosophy/why-not-lgpl.html}](http://www.gnu.org/philosophy/why-not-lgpl.html).  
@c man end

Boost Software License - Version 1.0 - August 17th, 2003

Permission is hereby granted, free of charge, to any person or organization obtaining a copy of the software and accompanying documentation covered by this license (the "Software") to use, reproduce, display, distribute, execute, and transmit the Software, and to prepare derivative works of the Software, and to permit third-parties to whom the Software is furnished to do so, all subject to the following:

The copyright notices in the Software and this entire statement, including the above license grant, this restriction and the following disclaimer, must be included in all copies of the Software, in whole or in part, and

all derivative works of the Software, unless such copies or derivative works are solely in the form of machine-executable object code generated by a source language processor.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE AND NON-INFRINGEMENT. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR ANYONE DISTRIBUTING THE SOFTWARE BE LIABLE FOR ANY DAMAGES OR OTHER LIABILITY, WHETHER IN CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

@c The GNU Free Documentation License.

@center Version 1.3, 3 November 2008

@c This file is intended to be included within another document,

@c hence no sectioning command or @node.

@display

Copyright @copyright{ } 2000, 2001, 2002, 2007, 2008 Free Software Foundation, Inc.

@uref{<http://fsf.org/>}

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

@end display

@enumerate 0

@item

PREAMBLE

The purpose of this License is to make a manual, textbook, or other functional and useful document @dfn{free} in the sense of freedom: to assure everyone the effective freedom to copy and redistribute it, with or without modifying it, either commercially or noncommercially. Secondly, this License preserves for the author and publisher a way to get credit for their work, while not being considered responsible for modifications made by others.

This License is a kind of ``copyleft'', which means that derivative works of the document must themselves be free in the same sense. It complements the GNU General Public License, which is a copyleft license designed for free software.

We have designed this License in order to use it for manuals for free software, because free software needs free documentation: a free program should come with manuals providing the same freedoms that the software does. But this License is not limited to software manuals; it can be used for any textual work, regardless of subject matter or whether it is published as a printed book. We recommend this License

principally for works whose purpose is instruction or reference.

@item

## APPLICABILITY AND DEFINITIONS

This License applies to any manual or other work, in any medium, that contains a notice placed by the copyright holder saying it can be distributed under the terms of this License. Such a notice grants a world-wide, royalty-free license, unlimited in duration, to use that work under the conditions stated herein. The ``Document'', below, refers to any such manual or work. Any member of the public is a licensee, and is addressed as ``you''. You accept the license if you copy, modify or distribute the work in a way requiring permission under copyright law.

A ``Modified Version'' of the Document means any work containing the Document or a portion of it, either copied verbatim, or with modifications and/or translated into another language.

A ``Secondary Section'' is a named appendix or a front-matter section of the Document that deals exclusively with the relationship of the publishers or authors of the Document to the Document's overall subject (or to related matters) and contains nothing that could fall directly within that overall subject. (Thus, if the Document is in part a textbook of mathematics, a Secondary Section may not explain any mathematics.) The relationship could be a matter of historical connection with the subject or with related matters, or of legal, commercial, philosophical, ethical or political position regarding them.

The ``Invariant Sections'' are certain Secondary Sections whose titles are designated, as being those of Invariant Sections, in the notice that says that the Document is released under this License. If a section does not fit the above definition of Secondary then it is not allowed to be designated as Invariant. The Document may contain zero Invariant Sections. If the Document does not identify any Invariant Sections then there are none.

The ``Cover Texts'' are certain short passages of text that are listed, as Front-Cover Texts or Back-Cover Texts, in the notice that says that the Document is released under this License. A Front-Cover Text may be at most 5 words, and a Back-Cover Text may be at most 25 words.

A ``Transparent'' copy of the Document means a machine-readable copy, represented in a format whose specification is available to the general public, that is suitable for revising the document straightforwardly with generic text editors or (for images composed of pixels) generic paint programs or (for drawings) some widely available

drawing editor, and that is suitable for input to text formatters or for automatic translation to a variety of formats suitable for input to text formatters. A copy made in an otherwise Transparent file format whose markup, or absence of markup, has been arranged to thwart or discourage subsequent modification by readers is not Transparent. An image format is not Transparent if used for any substantial amount of text. A copy that is not ``Transparent" is called ``Opaque".

Examples of suitable formats for Transparent copies include plain @sc{ascii} without markup, Texinfo input format, La@TeX{} input format, @acronym{SGML} or @acronym{XML} using a publicly available @acronym{DTD}, and standard-conforming simple @acronym{HTML}, PostScript or @acronym{PDF} designed for human modification. Examples of transparent image formats include @acronym{PNG}, @acronym{XCF} and @acronym{JPG}. Opaque formats include proprietary formats that can be read and edited only by proprietary word processors, @acronym{SGML} or @acronym{XML} for which the @acronym{DTD} and/or processing tools are not generally available, and the machine-generated @acronym{HTML}, PostScript or @acronym{PDF} produced by some word processors for output purposes only.

The ``Title Page" means, for a printed book, the title page itself, plus such following pages as are needed to hold, legibly, the material this License requires to appear in the title page. For works in formats which do not have any title page as such, ``Title Page" means the text near the most prominent appearance of the work's title, preceding the beginning of the body of the text.

The ``publisher" means any person or entity that distributes copies of the Document to the public.

A section ``Entitled XYZ" means a named subunit of the Document whose title either is precisely XYZ or contains XYZ in parentheses following text that translates XYZ in another language. (Here XYZ stands for a specific section name mentioned below, such as ``Acknowledgements", ``Dedications", ``Endorsements", or ``History".) To ``Preserve the Title" of such a section when you modify the Document means that it remains a section ``Entitled XYZ" according to this definition.

The Document may include Warranty Disclaimers next to the notice which states that this License applies to the Document. These Warranty Disclaimers are considered to be included by reference in this License, but only as regards disclaiming warranties: any other implication that these Warranty Disclaimers may have is void and has no effect on the meaning of this License.

@item

VERBATIM COPYING

You may copy and distribute the Document in any medium, either commercially or noncommercially, provided that this License, the copyright notices, and the license notice saying this License applies to the Document are reproduced in all copies, and that you add no other conditions whatsoever to those of this License. You may not use technical measures to obstruct or control the reading or further copying of the copies you make or distribute. However, you may accept compensation in exchange for copies. If you distribute a large enough number of copies you must also follow the conditions in section 3.

You may also lend copies, under the same conditions stated above, and you may publicly display copies.

@item

### COPYING IN QUANTITY

If you publish printed copies (or copies in media that commonly have printed covers) of the Document, numbering more than 100, and the Document's license notice requires Cover Texts, you must enclose the copies in covers that carry, clearly and legibly, all these Cover Texts: Front-Cover Texts on the front cover, and Back-Cover Texts on the back cover. Both covers must also clearly and legibly identify you as the publisher of these copies. The front cover must present the full title with all words of the title equally prominent and visible. You may add other material on the covers in addition. Copying with changes limited to the covers, as long as they preserve the title of the Document and satisfy these conditions, can be treated as verbatim copying in other respects.

If the required texts for either cover are too voluminous to fit legibly, you should put the first ones listed (as many as fit reasonably) on the actual cover, and continue the rest onto adjacent pages.

If you publish or distribute Opaque copies of the Document numbering more than 100, you must either include a machine-readable Transparent copy along with each Opaque copy, or state in or with each Opaque copy a computer-network location from which the general network-using public has access to download using public-standard network protocols a complete Transparent copy of the Document, free of added material. If you use the latter option, you must take reasonably prudent steps, when you begin distribution of Opaque copies in quantity, to ensure that this Transparent copy will remain thus accessible at the stated location until at least one year after the last time you distribute an Opaque copy (directly or through your agents or retailers) of that edition to the public.

It is requested, but not required, that you contact the authors of the Document well before redistributing any large number of copies, to give them a chance to provide you with an updated version of the Document.

@item

## MODIFICATIONS

You may copy and distribute a Modified Version of the Document under the conditions of sections 2 and 3 above, provided that you release the Modified Version under precisely this License, with the Modified Version filling the role of the Document, thus licensing distribution and modification of the Modified Version to whoever possesses a copy of it. In addition, you must do these things in the Modified Version:

@enumerate A

@item

Use in the Title Page (and on the covers, if any) a title distinct from that of the Document, and from those of previous versions (which should, if there were any, be listed in the History section of the Document). You may use the same title as a previous version if the original publisher of that version gives permission.

@item

List on the Title Page, as authors, one or more persons or entities responsible for authorship of the modifications in the Modified Version, together with at least five of the principal authors of the Document (all of its principal authors, if it has fewer than five), unless they release you from this requirement.

@item

State on the Title page the name of the publisher of the Modified Version, as the publisher.

@item

Preserve all the copyright notices of the Document.

@item

Add an appropriate copyright notice for your modifications adjacent to the other copyright notices.

@item

Include, immediately after the copyright notices, a license notice giving the public permission to use the Modified Version under the terms of this License, in the form shown in the Addendum below.

@item

Preserve in that license notice the full lists of Invariant Sections and required Cover Texts given in the Document's license notice.



@item

Include an unaltered copy of this License.

@item

Preserve the section Entitled ``History'', Preserve its Title, and add to it an item stating at least the title, year, new authors, and publisher of the Modified Version as given on the Title Page. If there is no section Entitled ``History'' in the Document, create one stating the title, year, authors, and publisher of the Document as given on its Title Page, then add an item describing the Modified Version as stated in the previous sentence.

@item

Preserve the network location, if any, given in the Document for public access to a Transparent copy of the Document, and likewise the network locations given in the Document for previous versions it was based on. These may be placed in the ``History'' section. You may omit a network location for a work that was published at least four years before the Document itself, or if the original publisher of the version it refers to gives permission.

@item

For any section Entitled ``Acknowledgements'' or ``Dedications'', Preserve the Title of the section, and preserve in the section all the substance and tone of each of the contributor acknowledgements and/or dedications given therein.

@item

Preserve all the Invariant Sections of the Document, unaltered in their text and in their titles. Section numbers or the equivalent are not considered part of the section titles.

@item

Delete any section Entitled ``Endorsements''. Such a section may not be included in the Modified Version.

@item

Do not retitle any existing section to be Entitled ``Endorsements'' or to conflict in title with any Invariant Section.

@item

Preserve any Warranty Disclaimers.

@end enumerate

If the Modified Version includes new front-matter sections or appendices that qualify as Secondary Sections and contain no material copied from the Document, you may at your option designate some or all

of these sections as invariant. To do this, add their titles to the list of Invariant Sections in the Modified Version's license notice. These titles must be distinct from any other section titles.

You may add a section Entitled ``Endorsements'', provided it contains nothing but endorsements of your Modified Version by various parties---for example, statements of peer review or that the text has been approved by an organization as the authoritative definition of a standard.

You may add a passage of up to five words as a Front-Cover Text, and a passage of up to 25 words as a Back-Cover Text, to the end of the list of Cover Texts in the Modified Version. Only one passage of Front-Cover Text and one of Back-Cover Text may be added by (or through arrangements made by) any one entity. If the Document already includes a cover text for the same cover, previously added by you or by arrangement made by the same entity you are acting on behalf of, you may not add another; but you may replace the old one, on explicit permission from the previous publisher that added the old one.

The author(s) and publisher(s) of the Document do not by this License give permission to use their names for publicity for or to assert or imply endorsement of any Modified Version.

@item

## COMBINING DOCUMENTS

You may combine the Document with other documents released under this License, under the terms defined in section 4 above for modified versions, provided that you include in the combination all of the Invariant Sections of all of the original documents, unmodified, and list them all as Invariant Sections of your combined work in its license notice, and that you preserve all their Warranty Disclaimers.

The combined work need only contain one copy of this License, and multiple identical Invariant Sections may be replaced with a single copy. If there are multiple Invariant Sections with the same name but different contents, make the title of each such section unique by adding at the end of it, in parentheses, the name of the original author or publisher of that section if known, or else a unique number. Make the same adjustment to the section titles in the list of Invariant Sections in the license notice of the combined work.

In the combination, you must combine any sections Entitled ``History'' in the various original documents, forming one section Entitled ``History''; likewise combine any sections Entitled ``Acknowledgements'', and any sections Entitled ``Dedications''. You must delete all sections Entitled ``Endorsements.''

@item

## COLLECTIONS OF DOCUMENTS

You may make a collection consisting of the Document and other documents released under this License, and replace the individual copies of this License in the various documents with a single copy that is included in the collection, provided that you follow the rules of this License for verbatim copying of each of the documents in all other respects.

You may extract a single document from such a collection, and distribute it individually under this License, provided you insert a copy of this License into the extracted document, and follow this License in all other respects regarding verbatim copying of that document.

@item

## AGGREGATION WITH INDEPENDENT WORKS

A compilation of the Document or its derivatives with other separate and independent documents or works, in or on a volume of a storage or distribution medium, is called an "aggregate" if the copyright resulting from the compilation is not used to limit the legal rights of the compilation's users beyond what the individual works permit. When the Document is included in an aggregate, this License does not apply to the other works in the aggregate which are not themselves derivative works of the Document.

If the Cover Text requirement of section 3 is applicable to these copies of the Document, then if the Document is less than one half of the entire aggregate, the Document's Cover Texts may be placed on covers that bracket the Document within the aggregate, or the electronic equivalent of covers if the Document is in electronic form. Otherwise they must appear on printed covers that bracket the whole aggregate.

@item

## TRANSLATION

Translation is considered a kind of modification, so you may distribute translations of the Document under the terms of section 4. Replacing Invariant Sections with translations requires special permission from their copyright holders, but you may include translations of some or all Invariant Sections in addition to the original versions of these Invariant Sections. You may include a translation of this License, and all the license notices in the Document, and any Warranty Disclaimers, provided that you also include the original English version of this License and the original versions of those notices and disclaimers. In case of a disagreement between

the translation and the original version of this License or a notice or disclaimer, the original version will prevail.

If a section in the Document is Entitled ``Acknowledgements'', ``Dedications'', or ``History'', the requirement (section 4) to Preserve its Title (section 1) will typically require changing the actual title.

@item

## TERMINATION

You may not copy, modify, sublicense, or distribute the Document except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, or distribute it is void, and will automatically terminate your rights under this License.

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, receipt of a copy of some or all of the same material does not give you any rights to use it.

@item

## FUTURE REVISIONS OF THIS LICENSE

The Free Software Foundation may publish new, revised versions of the GNU Free Documentation License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns. See [@uref{http://www.gnu.org/copyleft/}](http://www.gnu.org/copyleft/).

Each version of the License is given a distinguishing version number. If the Document specifies that a particular numbered version of this License ``or any later version'' applies to it, you have the option of

following the terms and conditions either of that specified version or of any later version that has been published (not as a draft) by the Free Software Foundation. If the Document does not specify a version number of this License, you may choose any version ever published (not as a draft) by the Free Software Foundation. If the Document specifies that a proxy can decide which future versions of this License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Document.

@item

## RELICENSING

``Massive Multiauthor Collaboration Site" (or ``MMC Site") means any World Wide Web server that publishes copyrightable works and also provides prominent facilities for anybody to edit those works. A public wiki that anybody can edit is an example of such a server. A ``Massive Multiauthor Collaboration" (or ``MMC") contained in the site means any set of copyrightable works thus published on the MMC site.

``CC-BY-SA" means the Creative Commons Attribution-Share Alike 3.0 license published by Creative Commons Corporation, a not-for-profit corporation with a principal place of business in San Francisco, California, as well as future copyleft versions of that license published by that same organization.

``Incorporate" means to publish or republish a Document, in whole or in part, as part of another Document.

An MMC is ``eligible for relicensing" if it is licensed under this License, and if all works that were first published under this License somewhere other than this MMC, and subsequently incorporated in whole or in part into the MMC, (1) had no cover texts or invariant sections, and (2) were thus incorporated prior to November 1, 2008.

The operator of an MMC Site may republish an MMC contained in the site under CC-BY-SA on the same site at any time before August 1, 2009, provided the MMC is eligible for relicensing.

@end enumerate

@page

@heading ADDENDUM: How to use this License for your documents

To use this License in a document you have written, include a copy of the License in the document and put the following copyright and license notices just after the title page:

```
@smallexample
@group
Copyright (C) @var{year} @var{your name}.
Permission is granted to copy, distribute and/or modify this document
under the terms of the GNU Free Documentation License, Version 1.3
or any later version published by the Free Software Foundation;
with no Invariant Sections, no Front-Cover Texts, and no Back-Cover
Texts. A copy of the license is included in the section entitled ``GNU
Free Documentation License".
@end group
@end smallexample
```

If you have Invariant Sections, Front-Cover Texts and Back-Cover Texts, replace the ``with@dots{ }Texts." line with this:

```
@smallexample
@group
 with the Invariant Sections being @var{list their titles}, with
 the Front-Cover Texts being @var{list}, and with the Back-Cover Texts
 being @var{list}.
@end group
@end smallexample
```

If you have Invariant Sections without Cover Texts, or some other combination of the three, merge those two alternatives to suit the situation.

If your document contains nontrivial examples of program code, we recommend releasing these examples in parallel under your choice of free software license, such as the GNU General Public License, to permit their use in free software.

```
@c Local Variables:
@c ispell-local-pdict: "ispell-dict"
@c End:
Copyright (c) 2009 The Go Authors. All rights reserved.
```

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

\* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

This is the file "copying.dj". It does not apply to any sources copyrighted by UCB Berkeley or the Free Software Foundation.

Copyright Information for sources and executables that are marked  
Copyright (C) DJ Delorie  
24 Kirsten Ave  
Rochester NH 03867-2954

This document is Copyright (C) DJ Delorie and may be distributed verbatim, but changing it is not allowed.

Source code copyright DJ Delorie is distributed under the terms of the GNU General Public Licence, with the following exceptions:

\* Any existing copyright or authorship information in any given source file must remain intact. If you modify a source file, a notice to that effect must be added to the authorship information in the source file.

\* binaries provided in djgpp may be distributed without sources ONLY if the recipient is given sufficient information to obtain a copy of djgpp themselves. This primarily applies to go32.exe, emu387, stub.exe, and the graphics drivers.

\* modified versions of the binaries provided in djgpp must be distributed under the terms of the GPL.

\* objects and libraries linked into an application may be distributed without sources.

-----

Changes to source code copyright BSD or FSF are copyright DJ Delorie, but fall under the terms of the original copyright.

A copy of the file "COPYING" is included with this document. If you did not receive a copy of "COPYING", you may obtain one from whence this document was obtained, or by writing:

Free Software Foundation  
675 Mass Ave  
Cambridge, MA 02139  
USA

GNU LESSER GENERAL PUBLIC LICENSE  
Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.

51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts  
as the successor of the GNU Library Public License, version 2, hence  
the version number 2.1.]

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis



or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

## GNU LESSER GENERAL PUBLIC LICENSE

### TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for

making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the

application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work

during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally

accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or

otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.



14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!

The libgloss subdirectory is a collection of software from several sources.

Each file may have its own copyright/license that is embedded in the source file. Unless otherwise noted in the body of the source file(s), the following copyright notices will apply to the contents of the libgloss subdirectory:

(1) Red Hat Incorporated

Copyright (c) 1994-2009 Red Hat, Inc. All rights reserved.

This copyrighted material is made available to anyone wishing to use, modify, copy, or redistribute it subject to the terms and conditions of the BSD License. This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY expressed or implied, including the implied warranties of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. A copy of this license is available at <http://www.opensource.org/licenses>. Any Red Hat trademarks that are incorporated in the source code or documentation are not subject to the BSD License and may only be used or replicated with the express permission of

Red Hat, Inc.

(2) University of California, Berkeley

Copyright (c) 1981-2000 The Regents of the University of California.  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification,  
are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice,  
this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice,  
this list of conditions and the following disclaimer in the documentation  
and/or other materials provided with the distribution.
- \* Neither the name of the University nor the names of its contributors may  
be used to endorse or promote products derived from this software without  
specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"  
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED  
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE  
DISCLAIMED.

IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT,  
INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT

NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR  
PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY,  
WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)  
ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE  
POSSIBILITY  
OF SUCH DAMAGE.

(3) DJ Delorie

Copyright (C) 1993 DJ Delorie  
All rights reserved.

Redistribution, modification, and use in source and binary forms is permitted  
provided that the above copyright notice and following paragraph are  
duplicated in all such forms.

This file is distributed WITHOUT ANY WARRANTY; without even the implied  
warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.

(4) (formerly GPL for fr30)

The GPL is no longer applicable to the fr30 platform. The piece of

code (syscalls.c) referencing the GPL has been officially relicensed.

(5) Advanced Micro Devices

Copyright 1989, 1990 Advanced Micro Devices, Inc.

This software is the property of Advanced Micro Devices, Inc (AMD) which specifically grants the user the right to modify, use and distribute this software provided this notice is not removed or altered. All other rights are reserved by AMD.

AMD MAKES NO WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, WITH REGARD TO THIS SOFTWARE. IN NO EVENT SHALL AMD BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES IN CONNECTION WITH OR ARISING FROM THE FURNISHING, PERFORMANCE, OR USE OF THIS SOFTWARE.

So that all may benefit from your experience, please report any problems or suggestions about this software to the 29K Technical Support Center at 800-29-29-AMD (800-292-9263) in the USA, or 0800-89-1131 in the UK, or 0031-11-1129 in Japan, toll free. The direct dial number is 512-462-4118.

Advanced Micro Devices, Inc.  
29K Support Products  
Mail Stop 573  
5900 E. Ben White Blvd.  
Austin, TX 78741  
800-292-9263

(6) - Analog Devices, Inc. (bfin-\* targets)

Copyright (C) 2006, 2008, 2009, 2011, 2012 Analog Devices, Inc.

The authors hereby grant permission to use, copy, modify, distribute, and license this software and its documentation for any purpose, provided that existing copyright notices are retained in all copies and that this notice is included verbatim in any distributions. No written agreement, license, or royalty fee is required for any of the authorized uses. Modifications to this software may be copyrighted by their authors and need not follow the licensing terms described here, provided that the new terms are clearly indicated on the first page of each file where they apply.

(7) University of Utah and the Computer Systems Laboratory (CSL)

[applies only to hppa\*-\*-pro\* targets]

Copyright (c) 1990,1994 The University of Utah and the Computer Systems Laboratory (CSL). All rights reserved.

Permission to use, copy, modify and distribute this software is hereby

granted provided that (1) source code retains these copyright, permission, and disclaimer notices, and (2) redistributions including binaries reproduce the notices in supporting documentation, and (3) all advertising materials mentioning features or use of this software display the following acknowledgement: ``This product includes software developed by the Computer Systems Laboratory at the University of Utah."

THE UNIVERSITY OF UTAH AND CSL ALLOW FREE USE OF THIS SOFTWARE IN ITS "AS IS" CONDITION. THE UNIVERSITY OF UTAH AND CSL DISCLAIM ANY LIABILITY OF ANY KIND FOR ANY DAMAGES WHATSOEVER RESULTING FROM THE USE OF THIS SOFTWARE.

CSL requests users of this software to return to [csl-dist@cs.utah.edu](mailto:csl-dist@cs.utah.edu) any improvements that they make and grant CSL redistribution rights.

(8) Sun Microsystems

Copyright (C) 1993 by Sun Microsystems, Inc. All rights reserved.

Developed at SunPro, a Sun Microsystems, Inc. business.  
Permission to use, copy, modify, and distribute this software is freely granted, provided that this notice is preserved.

(9) Hewlett Packard

(c) Copyright 1986 HEWLETT-PACKARD COMPANY

To anyone who acknowledges that this file is provided "AS IS" without any express or implied warranty:

permission to use, copy, modify, and distribute this file for any purpose is hereby granted without fee, provided that the above copyright notice and this notice appears in all copies, and that the name of Hewlett-Packard Company not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission. Hewlett-Packard Company makes no representations about the suitability of this software for any purpose.

(10) Hans-Peter Nilsson

Copyright (C) 2001 Hans-Peter Nilsson

Permission to use, copy, modify, and distribute this software is freely granted, provided that the above copyright notice, this notice and the following disclaimer are preserved with no changes.

THIS SOFTWARE IS PROVIDED ``AS IS" AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED

WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

(11) IBM Corp. spu processor (only spu-\* targets)

(C) Copyright IBM Corp. 2005, 2006

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

\* Neither the name of IBM nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

(12) Jon Beniston (only lm32-\* targets)

Contributed by Jon Beniston <jon@beniston.com>

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE

IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

(13) - Xilinx, Inc. (microblaze-\* and powerpc-\* targets)

Copyright (c) 2004, 2009 Xilinx, Inc. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of Xilinx nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDER AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

(14) - National Semiconductor Corporation

Copyright (c) 2004 National Semiconductor Corporation

The authors hereby grant permission to use, copy, modify, distribute, and license this software and its documentation for any purpose, provided

that existing copyright notices are retained in all copies and that this notice is included verbatim in any distributions. No written agreement, license, or royalty fee is required for any of the authorized uses. Modifications to this software may be copyrighted by their authors and need not follow the licensing terms described here, provided that the new terms are clearly indicated on the first page of each file where they apply.

(15) - CodeSourcery, Inc. (tic6x-\* targets)

Copyright (c) 2010 CodeSourcery, Inc.  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of CodeSourcery nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY CODESOURCERY, INC. ``AS IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL CODESOURCERY BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

(16) - GPL with exception (sparc-\*leon\*, crx-\*, cr16-\* targets only)

Copyright (C) 1992 Free Software Foundation, Inc.  
Written By David Vinayak Henkel-Wallace, June 1992

This file is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2, or (at your option) any later version.

In addition to the permissions in the GNU General Public License, the



Free Software Foundation gives you unlimited permission to link the compiled version of this file with other programs, and to distribute those programs without any restriction coming from the use of this file. (The General Public License restrictions do apply in other respects; for example, they cover modification of the file, and distribution when not linked into another program.)

This file is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; see the file COPYING. If not, write to the Free Software Foundation, 59 Temple Place - Suite 330, Boston, MA 02111-1307, USA.

As a special exception, if you link this library with files compiled with GCC to produce an executable, this does not cause the resulting executable to be covered by the GNU General Public License. This exception does not however invalidate any other reasons why the executable file might be covered by the GNU General Public License.

(17) - Adapteva, Inc. (epiphany-\* targets)

Copyright (c) 2011, Adapteva, Inc.  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Adapteva nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,

OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Cygwin is free software. Red Hat, Inc. licenses Cygwin to you under the terms of the GNU General Public License as published by the Free Software Foundation; you can redistribute it and/or modify it under the terms of the GNU General Public License either version 3 of the license, or (at your option) any later version (GPLv3+), along with the additional permissions given below.

There is NO WARRANTY for this software, express or implied, including the implied warranties of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see <http://gnu.org/licenses/>.

Additional Permissions:

#### 1. Linking Exception.

As a special exception to GPLv3+, Red Hat grants you permission to link software whose sources are distributed under a license that satisfies the Open Source Definition with libcygwin.a, without libcygwin.a itself causing the resulting program to be covered by GPLv3+.

This means that you can port an Open Source application to Cygwin, and distribute that executable as if it didn't include a copy of libcygwin.a linked into it. Note that this does not apply to the Cygwin DLL itself. If you distribute a (possibly modified) version of the Cygwin DLL, you must adhere to the terms of GPLv3+, including the requirement to provide sources for the Cygwin DLL, unless you have obtained a special Cygwin license to distribute the Cygwin DLL in only its binary form (see below).

See <http://www.opensource.org/docs/osd/> for the precise Open Source Definition referenced above.

#### 2. Files Excluded from GPL Coverage.

Red Hat grants you permission to distribute Cygwin with the following files, which are not considered part of Cygwin and are not governed by GPLv3+, in source or binary form.

winsup\testsuite\winsup.api\msgtest.c

winsup\testsuite\winsup.api\semtest.c

winsup\testsuite\winsup.api\shmttest.c

Red Hat grants you permission to link or combine code in Cygwin with code in or corresponding to the following files, which are not considered part of Cygwin and are not governed by GPLv3+, and to distribute such combinations under terms of your choice, provided that such terms are otherwise consistent with the application of GPLv3+ to Cygwin itself. You must comply with GPLv3+ with respect to all portions of such combinations other than those that correspond to or are derived from such non-Cygwin code but which do not correspond to or are not derived from Cygwin itself.

winsup\cygserver\sysv\_shm.cc

### 3. Alternative License.

Red Hat sells a special Cygwin License for customers who are unable to provide their application in open source code form. For more information, please see: <http://www.redhat.com/software/cygwin/>, or call +1-866-2REDHAT ext. 45300 (toll-free in the US).

Outside the US call your regional Red Hat office, see <http://www.redhat.com/about/contact/ww/>

### GCC RUNTIME LIBRARY EXCEPTION

Version 3.1, 31 March 2009

Copyright (C) 2009 Free Software Foundation, Inc. <<http://fsf.org/>>

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

This GCC Runtime Library Exception ("Exception") is an additional permission under section 7 of the GNU General Public License, version 3 ("GPLv3"). It applies to a given file (the "Runtime Library") that bears a notice placed by the copyright holder of the file stating that the file is governed by GPLv3 along with this Exception.

When you use GCC to compile a program, GCC may combine portions of certain GCC header files and runtime libraries with the compiled program. The purpose of this Exception is to allow compilation of non-GPL (including proprietary) programs to use, in this way, the header files and runtime libraries covered by this Exception.

### 0. Definitions.

A file is an "Independent Module" if it either requires the Runtime

Library for execution after a Compilation Process, or makes use of an interface provided by the Runtime Library, but is not otherwise based on the Runtime Library.

"GCC" means a version of the GNU Compiler Collection, with or without modifications, governed by version 3 (or a specified later version) of the GNU General Public License (GPL) with the option of using any subsequent versions published by the FSF.

"GPL-compatible Software" is software whose conditions of propagation, modification and use would permit combination with GCC in accord with the license of GCC.

"Target Code" refers to output from any compiler for a real or virtual target processor architecture, in executable form or suitable for input to an assembler, loader, linker and/or execution phase. Notwithstanding that, Target Code does not include data in any format that is used as a compiler intermediate representation, or used for producing a compiler intermediate representation.

The "Compilation Process" transforms code entirely represented in non-intermediate languages designed for human-written code, and/or in Java Virtual Machine byte code, into Target Code. Thus, for example, use of source code generators and preprocessors need not be considered part of the Compilation Process, since the Compilation Process can be understood as starting with the output of the generators or preprocessors.

A Compilation Process is "Eligible" if it is done using GCC, alone or with other GPL-compatible software, or if it is done without using any work based on GCC. For example, using non-GPL-compatible Software to optimize any GCC intermediate representations would not qualify as an Eligible Compilation Process.

#### 1. Grant of Additional Permission.

You have permission to propagate a work of Target Code formed by combining the Runtime Library with Independent Modules, even if such propagation would otherwise violate the terms of GPLv3, provided that all Target Code was generated by Eligible Compilation Processes. You may then convey such a combination under terms of your choice, consistent with the licensing of the Independent Modules.

#### 2. No Weakening of GCC Copyleft.

The availability of this Exception does not imply any general presumption that third-party software is unaffected by the copyleft requirements of the license of GCC.

## GNU LESSER GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

This version of the GNU Lesser General Public License incorporates  
the terms and conditions of version 3 of the GNU General Public  
License, supplemented by the additional permissions listed below.

### 0. Additional Definitions.

As used herein, "this License" refers to version 3 of the GNU Lesser  
General Public License, and the "GNU GPL" refers to version 3 of the GNU  
General Public License.

"The Library" refers to a covered work governed by this License,  
other than an Application or a Combined Work as defined below.

An "Application" is any work that makes use of an interface provided  
by the Library, but which is not otherwise based on the Library.  
Defining a subclass of a class defined by the Library is deemed a mode  
of using an interface provided by the Library.

A "Combined Work" is a work produced by combining or linking an  
Application with the Library. The particular version of the Library  
with which the Combined Work was made is also called the "Linked  
Version".

The "Minimal Corresponding Source" for a Combined Work means the  
Corresponding Source for the Combined Work, excluding any source code  
for portions of the Combined Work that, considered in isolation, are  
based on the Application, and not on the Linked Version.

The "Corresponding Application Code" for a Combined Work means the  
object code and/or source code for the Application, including any data  
and utility programs needed for reproducing the Combined Work from the  
Application, but excluding the System Libraries of the Combined Work.

### 1. Exception to Section 3 of the GNU GPL.

You may convey a covered work under sections 3 and 4 of this License  
without being bound by section 3 of the GNU GPL.

### 2. Conveying Modified Versions.

If you modify a copy of the Library, and, in your modifications, a facility refers to a function or data to be supplied by an Application that uses the facility (other than as an argument passed when the facility is invoked), then you may convey a copy of the modified version:

- a) under this License, provided that you make a good faith effort to ensure that, in the event an Application does not supply the function or data, the facility still operates, and performs whatever part of its purpose remains meaningful, or
- b) under the GNU GPL, with none of the additional permissions of this License applicable to that copy.

### 3. Object Code Incorporating Material from Library Header Files.

The object code form of an Application may incorporate material from a header file that is part of the Library. You may convey such object code under terms of your choice, provided that, if the incorporated material is not limited to numerical parameters, data structure layouts and accessors, or small macros, inline functions and templates (ten or fewer lines in length), you do both of the following:

- a) Give prominent notice with each copy of the object code that the Library is used in it and that the Library and its use are covered by this License.
- b) Accompany the object code with a copy of the GNU GPL and this license document.

### 4. Combined Works.

You may convey a Combined Work under terms of your choice that, taken together, effectively do not restrict modification of the portions of the Library contained in the Combined Work and reverse engineering for debugging such modifications, if you also do each of the following:

- a) Give prominent notice with each copy of the Combined Work that the Library is used in it and that the Library and its use are covered by this License.
- b) Accompany the Combined Work with a copy of the GNU GPL and this license document.
- c) For a Combined Work that displays copyright notices during execution, include the copyright notice for the Library among these notices, as well as a reference directing the user to the

copies of the GNU GPL and this license document.

d) Do one of the following:

0) Convey the Minimal Corresponding Source under the terms of this License, and the Corresponding Application Code in a form suitable for, and under terms that permit, the user to recombine or relink the Application with a modified version of the Linked Version to produce a modified Combined Work, in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.

1) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (a) uses at run time a copy of the Library already present on the user's computer system, and (b) will operate properly with a modified version of the Library that is interface-compatible with the Linked Version.

e) Provide Installation Information, but only if you would otherwise be required to provide such information under section 6 of the GNU GPL, and only to the extent that such information is necessary to install and execute a modified version of the Combined Work produced by recombining or relinking the Application with a modified version of the Linked Version. (If you use option 4d0, the Installation Information must accompany the Minimal Corresponding Source and Corresponding Application Code. If you use option 4d1, you must provide the Installation Information in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.)

## 5. Combined Libraries.

You may place library facilities that are a work based on the Library side by side in a single library together with other library facilities that are not Applications and are not covered by this License, and convey such a combined library under terms of your choice, if you do both of the following:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities, conveyed under the terms of this License.

b) Give prominent notice with the combined library that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

## 6. Revised Versions of the GNU Lesser General Public License.

The Free Software Foundation may publish revised and/or new versions of the GNU Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library as you received it specifies that a certain numbered version of the GNU Lesser General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that published version or of any later version published by the Free Software Foundation. If the Library as you received it does not specify a version number of the GNU Lesser General Public License, you may choose any version of the GNU Lesser General Public License ever published by the Free Software Foundation.

If the Library as you received it specifies that a proxy can decide whether future versions of the GNU Lesser General Public License shall apply, that proxy's public statement of acceptance of any version is permanent authorization for you to choose that version for the Library.

#### GNU GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>  
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

#### Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.



To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

## TERMS AND CONDITIONS

### 0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

#### 1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other

than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

## 2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction

and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

### 3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

### 4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

### 5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.
- b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to

"keep intact all notices".

c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.

d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

## 6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because

modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

## 7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

## 8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under



this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

#### 9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

#### 10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the

Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

## 11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have

actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

#### 12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

#### 13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed

under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

#### 14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

#### 15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

#### 16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS

THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### 17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

```
This program is free software: you can redistribute it and/or modify
it under the terms of the GNU General Public License as published by
the Free Software Foundation, either version 3 of the License, or
(at your option) any later version.
```

```
This program is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
GNU General Public License for more details.
```

```
You should have received a copy of the GNU General Public License
along with this program. If not, see <http://www.gnu.org/licenses/>.
```

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program> Copyright (C) <year> <name of author>
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <http://www.gnu.org/licenses/>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <http://www.gnu.org/philosophy/why-not-lgpl.html>.

#### GNU LIBRARY GENERAL PUBLIC LICENSE

\*\*\*\*\*

Version 2, June 1991

Copyright (C) 1991 Free Software Foundation, Inc.  
59 Temple Place -- Suite 330, Boston, MA 02111-1307, USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the library GPL. It is numbered 2 because it goes with version 2 of the ordinary GPL.]

#### Preamble

=====

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Library General Public License, applies to some specially designated Free Software Foundation software, and to any other libraries whose authors decide to use it. You can use it for

your libraries, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library, or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link a program with the library, you must provide complete object files to the recipients so that they can relink them with the library, after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

Our method of protecting your rights has two steps: (1) copyright the library, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the library.

Also, for each distributor's protection, we want to make certain that everyone understands that there is no warranty for this free library. If the library is modified by someone else and passed on, we want its recipients to know that what they have is not the original version, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that companies distributing free software will individually obtain patent licenses, thus in effect transforming the program into proprietary software. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License, which was designed for utility programs. This license, the GNU Library General Public License, applies to certain designated libraries. This license is quite different from the ordinary one; be sure to read it in full, and don't assume that anything in it is the same as in the ordinary license.

The reason we have a separate public license for some libraries is

that they blur the distinction we usually make between modifying or adding to a program and simply using it. Linking a program with a library, without changing the library, is in some sense simply using the library, and is analogous to running a utility program or application program. However, in a textual and legal sense, the linked executable is a combined work, a derivative of the original library, and the ordinary General Public License treats it as such.

Because of this blurred distinction, using the ordinary General Public License for libraries did not effectively promote software sharing, because most developers did not use the libraries. We concluded that weaker conditions might promote sharing better.

However, unrestricted linking of non-free programs would deprive the users of those programs of all benefit from the free status of the libraries themselves. This Library General Public License is intended to permit developers of non-free programs to use free libraries, while preserving your freedom as a user of such programs to change the free libraries that are incorporated in them. (We have not seen how to achieve this as regards changes in header files, but we have achieved it as regards changes in the actual functions of the Library.) The hope is that this will lead to faster development of free libraries.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, while the latter only works together with the library.

Note that it is possible for a library to be covered by the ordinary General Public License rather than by this special one.

## TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Library General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a



portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:
  - a. The modified work must itself be a software library.
  - b. You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
  - c. You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
  - d. If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the

facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also compile or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- a. Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)
- b. Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.
- c. If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.
- d. Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:
  - a. Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
  - b. Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.
8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.
9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.
10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights

granted herein. You are not responsible for enforcing compliance by third parties to this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.
13. The Free Software Foundation may publish revised and/or new versions of the Library General Public License from time to time. Such new versions will be similar in spirit to the present version,

but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

- 14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

- 15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

- 16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

=====

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

ONE LINE TO GIVE THE LIBRARY'S NAME AND AN IDEA OF WHAT IT DOES.  
Copyright (C) YEAR NAME OF AUTHOR

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Library General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Library General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307, USA.

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library  
`Frob' (a library for tweaking knobs) written by James Random Hacker.

SIGNATURE OF TY COON, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!  
The newlib subdirectory is a collection of software from several sources.

Each file may have its own copyright/license that is embedded in the source file. Unless otherwise noted in the body of the source file(s), the following copyright notices will apply to the contents of the newlib subdirectory:



(1) Red Hat Incorporated

Copyright (c) 1994-2009 Red Hat, Inc. All rights reserved.

This copyrighted material is made available to anyone wishing to use, modify, copy, or redistribute it subject to the terms and conditions of the BSD License. This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY expressed or implied, including the implied warranties of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. A copy of this license is available at <http://www.opensource.org/licenses>. Any Red Hat trademarks that are incorporated in the source code or documentation are not subject to the BSD License and may only be used or replicated with the express permission of Red Hat, Inc.

(2) University of California, Berkeley

Copyright (c) 1981-2000 The Regents of the University of California.  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of the University nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED.

IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT

NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

(3) David M. Gay (AT&T 1991, Lucent 1998)

The author of this software is David M. Gay.

Copyright (c) 1991 by AT&T.

Permission to use, copy, modify, and distribute this software for any purpose without fee is hereby granted, provided that this entire notice is included in all copies of any software which is or includes a copy or modification of this software and in all copies of the supporting documentation for such software.

THIS SOFTWARE IS BEING PROVIDED "AS IS", WITHOUT ANY EXPRESS OR IMPLIED WARRANTY. IN PARTICULAR, NEITHER THE AUTHOR NOR AT&T MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND CONCERNING THE MERCHANTABILITY OF THIS SOFTWARE OR ITS FITNESS FOR ANY PARTICULAR PURPOSE.

-----  
The author of this software is David M. Gay.

Copyright (C) 1998-2001 by Lucent Technologies  
All Rights Reserved

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that the copyright notice and this permission notice and warranty disclaimer appear in supporting documentation, and that the name of Lucent or any of its entities not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission.

LUCENT DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL LUCENT OR ANY OF ITS ENTITIES BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

(4) Advanced Micro Devices

Copyright 1989, 1990 Advanced Micro Devices, Inc.

This software is the property of Advanced Micro Devices, Inc (AMD) which

specifically grants the user the right to modify, use and distribute this software provided this notice is not removed or altered. All other rights are reserved by AMD.

AMD MAKES NO WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, WITH REGARD TO THIS SOFTWARE. IN NO EVENT SHALL AMD BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES IN CONNECTION WITH OR ARISING FROM THE FURNISHING, PERFORMANCE, OR USE OF THIS SOFTWARE.

So that all may benefit from your experience, please report any problems or suggestions about this software to the 29K Technical Support Center at 800-29-29-AMD (800-292-9263) in the USA, or 0800-89-1131 in the UK, or 0031-11-1129 in Japan, toll free. The direct dial number is 512-462-4118.

Advanced Micro Devices, Inc.  
29K Support Products  
Mail Stop 573  
5900 E. Ben White Blvd.  
Austin, TX 78741  
800-292-9263

(5)

(6)

(7) Sun Microsystems

Copyright (C) 1993 by Sun Microsystems, Inc. All rights reserved.

Developed at SunPro, a Sun Microsystems, Inc. business.  
Permission to use, copy, modify, and distribute this software is freely granted, provided that this notice is preserved.

(8) Hewlett Packard

(c) Copyright 1986 HEWLETT-PACKARD COMPANY

To anyone who acknowledges that this file is provided "AS IS" without any express or implied warranty:

permission to use, copy, modify, and distribute this file for any purpose is hereby granted without fee, provided that the above copyright notice and this notice appears in all copies, and that the name of Hewlett-Packard Company not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission. Hewlett-Packard Company makes no representations about the suitability of this software for any purpose.

(9) Hans-Peter Nilsson

Copyright (C) 2001 Hans-Peter Nilsson

Permission to use, copy, modify, and distribute this software is freely granted, provided that the above copyright notice, this notice and the following disclaimer are preserved with no changes.

THIS SOFTWARE IS PROVIDED ``AS IS" AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

(10) Stephane Carrez (m68hc11-elf/m68hc12-elf targets only)

Copyright (C) 1999, 2000, 2001, 2002 Stephane Carrez (stcarrez@nerim.fr)

The authors hereby grant permission to use, copy, modify, distribute, and license this software and its documentation for any purpose, provided that existing copyright notices are retained in all copies and that this notice is included verbatim in any distributions. No written agreement, license, or royalty fee is required for any of the authorized uses.

Modifications to this software may be copyrighted by their authors and need not follow the licensing terms described here, provided that the new terms are clearly indicated on the first page of each file where they apply.

(11) Christopher G. Demetriou

Copyright (c) 2001 Christopher G. Demetriou

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT

NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

(12) SuperH, Inc.

Copyright 2002 SuperH, Inc. All rights reserved

This software is the property of SuperH, Inc (SuperH) which specifically grants the user the right to modify, use and distribute this software provided this notice is not removed or altered. All other rights are reserved by SuperH.

SUPERH MAKES NO WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, WITH REGARD TO THIS SOFTWARE. IN NO EVENT SHALL SUPERH BE LIABLE FOR INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES IN CONNECTION WITH OR ARISING FROM THE FURNISHING, PERFORMANCE, OR USE OF THIS SOFTWARE.

So that all may benefit from your experience, please report any problems or suggestions about this software to the SuperH Support Center via e-mail at [softwaresupport@superh.com](mailto:softwaresupport@superh.com) .

SuperH, Inc.  
405 River Oaks Parkway  
San Jose  
CA 95134  
USA

(13) Royal Institute of Technology

Copyright (c) 1999 Kungliga Tekniska Hgskolan  
(Royal Institute of Technology, Stockholm, Sweden).  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of KTH nor the names of its contributors may be

used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY KTH AND ITS CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL KTH OR ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

(14) Alexey Zelkin

Copyright (c) 2000, 2001 Alexey Zelkin <phantom@FreeBSD.org>  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

(15) Andrey A. Chernov

Copyright (C) 1997 by Andrey A. Chernov, Moscow, Russia.  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions

are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

(16) FreeBSD

Copyright (c) 1997-2002 FreeBSD Project.

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

(17) S. L. Moshier

Author: S. L. Moshier.

Copyright (c) 1984,2000 S.L. Moshier

Permission to use, copy, modify, and distribute this software for any purpose without fee is hereby granted, provided that this entire notice is included in all copies of any software which is or includes a copy or modification of this software and in all copies of the supporting documentation for such software.

THIS SOFTWARE IS BEING PROVIDED "AS IS", WITHOUT ANY EXPRESS OR IMPLIED WARRANTY. IN PARTICULAR, THE AUTHOR MAKES NO REPRESENTATION OR WARRANTY OF ANY KIND CONCERNING THE MERCHANTABILITY OF THIS SOFTWARE OR ITS FITNESS FOR ANY PARTICULAR PURPOSE.

(18) Citrus Project

Copyright (c)1999 Citrus Project,  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

(19) Todd C. Miller

Copyright (c) 1998 Todd C. Miller <Todd.Miller@courtesan.com>  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:



1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

(20) DJ Delorie (i386)  
Copyright (C) 1991 DJ Delorie  
All rights reserved.

Redistribution, modification, and use in source and binary forms is permitted provided that the above copyright notice and following paragraph are duplicated in all such forms.

This file is distributed WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.

(21) Free Software Foundation LGPL License (\*-linux\* targets only)

Copyright (C) 1990-1999, 2000, 2001 Free Software Foundation, Inc.  
This file is part of the GNU C Library.  
Contributed by Mark Kettenis <kettenis@phys.uva.nl>, 1997.

The GNU C Library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

The GNU C Library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with the GNU C Library; if not, write to the Free

Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA  
02110-1301 USA.

(22) Xavier Leroy LGPL License (i[3456]86-\*-linux\* targets only)

Copyright (C) 1996 Xavier Leroy (Xavier.Leroy@inria.fr)

This program is free software; you can redistribute it and/or  
modify it under the terms of the GNU Library General Public License  
as published by the Free Software Foundation; either version 2  
of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful,  
but WITHOUT ANY WARRANTY; without even the implied warranty of  
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the  
GNU Library General Public License for more details.

(23) Intel (i960)

Copyright (c) 1993 Intel Corporation

Intel hereby grants you permission to copy, modify, and distribute this  
software and its documentation. Intel grants this permission provided  
that the above copyright notice appears in all copies and that both the  
copyright notice and this permission notice appear in supporting  
documentation. In addition, Intel grants this permission provided that  
you prominently mark as "not part of the original" any modifications  
made to this software or documentation, and that the name of Intel  
Corporation not be used in advertising or publicity pertaining to  
distribution of the software or the documentation without specific,  
written prior permission.

Intel Corporation provides this AS IS, WITHOUT ANY WARRANTY, EXPRESS OR  
IMPLIED, INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY  
OR FITNESS FOR A PARTICULAR PURPOSE. Intel makes no guarantee or  
representations regarding the use of, or the results of the use of,  
the software and documentation in terms of correctness, accuracy,  
reliability, currentness, or otherwise; and you rely on the software,  
documentation and results solely at your own risk.

IN NO EVENT SHALL INTEL BE LIABLE FOR ANY LOSS OF USE, LOSS OF BUSINESS,  
LOSS OF PROFITS, INDIRECT, INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES  
OF ANY KIND. IN NO EVENT SHALL INTEL'S TOTAL LIABILITY EXCEED THE SUM  
PAID TO INTEL FOR THE PRODUCT LICENSED HEREUNDER.

(24) Hewlett-Packard (hppa targets only)

(c) Copyright 1986 HEWLETT-PACKARD COMPANY

To anyone who acknowledges that this file is provided "AS IS" without any express or implied warranty:

permission to use, copy, modify, and distribute this file for any purpose is hereby granted without fee, provided that the above copyright notice and this notice appears in all copies, and that the name of Hewlett-Packard Company not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission. Hewlett-Packard Company makes no representations about the suitability of this software for any purpose.

(25) Henry Spencer (only \*-linux targets)

Copyright 1992, 1993, 1994 Henry Spencer. All rights reserved. This software is not subject to any license of the American Telephone and Telegraph Company or of the Regents of the University of California.

Permission is granted to anyone to use this software for any purpose on any computer system, and to alter it and redistribute it, subject to the following restrictions:

1. The author is not responsible for the consequences of use of this software, no matter how awful, even if they arise from flaws in it.
2. The origin of this software must not be misrepresented, either by explicit claim or by omission. Since few users ever read sources, credits must appear in the documentation.
3. Altered versions must be plainly marked as such, and must not be misrepresented as being the original software. Since few users ever read sources, credits must appear in the documentation.
4. This notice may not be removed or altered.

(26) Mike Barcroft

Copyright (c) 2001 Mike Barcroft <mike@FreeBSD.org>  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

(27) Konstantin Chuguev (--enable-newlib-iconv)

Copyright (c) 1999, 2000

Konstantin Chuguev. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

iconv (Charset Conversion Library) v2.0

(28) Artem Bityuckiy (--enable-newlib-iconv)

Copyright (c) 2003, Artem B. Bityuckiy, SoftMine Corporation.

Rights transferred to Franklin Electronic Publishers.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions

are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

(29) IBM, Sony, Toshiba (only spu-\* targets)

(C) Copyright 2001,2006,  
International Business Machines Corporation,  
Sony Computer Entertainment, Incorporated,  
Toshiba Corporation,

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the names of the copyright holders nor the names of their contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN

CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

(30) - Alex Tatmanjants (targets using libc/posix)

Copyright (c) 1995 Alex Tatmanjants <alex@elvisti.kiev.ua>

at Electronni Visti IA, Kiev, Ukraine.

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

(31) - M. Warner Losh (targets using libc/posix)

Copyright (c) 1998, M. Warner Losh <imp@freebsd.org>

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE

ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

(32) - Andrey A. Chernov (targets using libc/posix)

Copyright (C) 1996 by Andrey A. Chernov, Moscow, Russia.  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

(33) - Daniel Eischen (targets using libc/posix)

Copyright (c) 2001 Daniel Eischen <deischen@FreeBSD.org>.  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

(34) - Jon Beniston (only lm32-\* targets)

Contributed by Jon Beniston <jon@beniston.com>

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

(35) - ARM Ltd (arm and thumb variant targets only)

Copyright (c) 2009 ARM Ltd  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:



1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of the company may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY ARM LTD ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL ARM LTD BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

(36) - Xilinx, Inc. (microblaze-\* and powerpc-\* targets)

Copyright (c) 2004, 2009 Xilinx, Inc. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of Xilinx nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDER AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING

NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

(37) Texas Instruments Incorporated (tic6x-\*, \*-tirtos targets)

Copyright (c) 1996-2010,2014 Texas Instruments Incorporated  
<http://www.ti.com/>

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

Neither the name of Texas Instruments Incorporated nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

(38) National Semiconductor (cr16-\* and crx-\* targets)

Copyright (c) 2004 National Semiconductor Corporation

The authors hereby grant permission to use, copy, modify, distribute, and license this software and its documentation for any purpose, provided that existing copyright notices are retained in all copies and that this notice is included verbatim in any distributions. No written agreement, license, or royalty fee is required for any of the authorized uses.

Modifications to this software may be copyrighted by their authors

and need not follow the licensing terms described here, provided that the new terms are clearly indicated on the first page of each file where they apply.

(39) - Adapteva, Inc. (epiphany-\* targets)

Copyright (c) 2011, Adapteva, Inc.  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Adapteva nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

(40) - Altera Corporation (nios2-\* targets)

Copyright (c) 2003 Altera Corporation  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- o Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- o Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- o Neither the name of Altera Corporation nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY ALTERA CORPORATION, THE COPYRIGHT HOLDER, AND ITS CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

(41) Ed Schouten - Free BSD

Copyright (c) 2008 Ed Schouten <ed@FreeBSD.org>  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

GNU LIBRARY GENERAL PUBLIC LICENSE  
Version 2, June 1991

Copyright (C) 1991 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

[This is the first released version of the library GPL. It is  
numbered 2 because it goes with version 2 of the ordinary GPL.]

## Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Library General Public License, applies to some specially designated Free Software Foundation software, and to any other libraries whose authors decide to use it. You can use it for your libraries, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library, or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link a program with the library, you must provide complete object files to the recipients so that they can relink them with the library, after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

Our method of protecting your rights has two steps: (1) copyright the library, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the library.

Also, for each distributor's protection, we want to make certain that everyone understands that there is no warranty for this free library. If the library is modified by someone else and passed on, we want its recipients to know that what they have is not the original version, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that companies distributing free software will individually obtain patent licenses, thus in effect transforming the program into proprietary software. To prevent this,

we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License, which was designed for utility programs. This license, the GNU Library General Public License, applies to certain designated libraries. This license is quite different from the ordinary one; be sure to read it in full, and don't assume that anything in it is the same as in the ordinary license.

The reason we have a separate public license for some libraries is that they blur the distinction we usually make between modifying or adding to a program and simply using it. Linking a program with a library, without changing the library, is in some sense simply using the library, and is analogous to running a utility program or application program. However, in a textual and legal sense, the linked executable is a combined work, a derivative of the original library, and the ordinary General Public License treats it as such.

Because of this blurred distinction, using the ordinary General Public License for libraries did not effectively promote software sharing, because most developers did not use the libraries. We concluded that weaker conditions might promote sharing better.

However, unrestricted linking of non-free programs would deprive the users of those programs of all benefit from the free status of the libraries themselves. This Library General Public License is intended to permit developers of non-free programs to use free libraries, while preserving your freedom as a user of such programs to change the free libraries that are incorporated in them. (We have not seen how to achieve this as regards changes in header files, but we have achieved it as regards changes in the actual functions of the Library.) The hope is that this will lead to faster development of free libraries.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, while the latter only works together with the library.

Note that it is possible for a library to be covered by the ordinary General Public License rather than by this special one.

## GNU LIBRARY GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library which contains a notice placed by the copyright holder or other authorized

party saying it may be distributed under the terms of this Library General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.

b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.

c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the



ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the

Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also compile or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)
- b) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.
- c) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.
- d) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for

reproducing the executable from it. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
- b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the

original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Library General Public License from time to time. Such new versions will be similar in spirit to the present version,

but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

#### Appendix: How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that

everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Library General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Library General Public License for more details.

You should have received a copy of the GNU Library General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!

=====  
compiler\_rt License  
=====

The compiler\_rt library is dual licensed under both the University of Illinois "BSD-Like" license and the MIT license. As a user of this code you may choose to use it under either license. As a contributor, you agree to allow your code to be used under both.

Full text of the relevant licenses is included below.

=====

University of Illinois/NCSA  
Open Source License

Copyright (c) 2009-2012 by the contributors listed in CREDITS.TXT

All rights reserved.

Developed by:

LLVM Team

University of Illinois at Urbana-Champaign

<http://llvm.org>

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal with the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimers.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimers in the documentation and/or other materials provided with the distribution.
- \* Neither the names of the LLVM Team, University of Illinois at Urbana-Champaign, nor the names of its contributors may be used to endorse or promote products derived from this Software without specific prior written permission.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE CONTRIBUTORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS WITH THE SOFTWARE.

=====

Copyright (c) 2009-2012 by the contributors listed in CREDITS.TXT

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

=====  
Copyrights and Licenses for Third Party Software Distributed with LLVM:  
=====

The LLVM software contains code written by third parties. Such software will have its own individual LICENSE.TXT file in the directory in which it appears. This file will describe the copyrights, license, and restrictions which apply to that code.

The disclaimer of warranty in the University of Illinois Open Source License applies to all code in the LLVM Distribution, and nothing in any of the other licenses gives permission to use the names of the LLVM Team or the University of Illinois to endorse or promote products derived from this Software.

The following pieces of software have additional or alternate copyrights, licenses, and/or restrictions:

| Program       | Directory                           |
|---------------|-------------------------------------|
| -----         | -----                               |
| mach_override | lib/interception/mach_override      |
| @node         | Library Copying                     |
| @appendixsec  | GNU LESSER GENERAL PUBLIC LICENSE   |
| @cindex       | LGPL, Lesser General Public License |
| @center       | Version 2.1, February 1999          |
| @display      |                                     |



Copyright © 1991, 1999 Free Software Foundation, Inc.  
51 Franklin Street - Fifth Floor, Boston, MA 02110-1301, USA

Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts  
as the successor of the GNU Library Public License, version 2, hence the  
version number 2.1.]

@end display

@appendixsubsec Preamble

The licenses for most software are designed to take away your  
freedom to share and change it. By contrast, the GNU General Public  
Licenses are intended to guarantee your freedom to share and change  
free software---to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some  
specially designated software---typically libraries---of the Free  
Software Foundation and other authors who decide to use it. You can use  
it too, but we suggest you first think carefully about whether this  
license or the ordinary General Public License is the better strategy to  
use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use,  
not price. Our General Public Licenses are designed to make sure that  
you have the freedom to distribute copies of free software (and charge  
for this service if you wish); that you receive source code or can get  
it if you want it; that you can change the software and use pieces of it  
in new free programs; and that you are informed that you can do these  
things.

To protect your rights, we need to make restrictions that forbid  
distributors to deny you these rights or to ask you to surrender these  
rights. These restrictions translate to certain responsibilities for  
you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis  
or for a fee, you must give the recipients all the rights that we gave  
you. You must make sure that they, too, receive or can get the source  
code. If you link other code with the library, you must provide  
complete object files to the recipients, so that they can relink them  
with the library after making changes to the library and recompiling  
it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the  
library, and (2) we offer you this license, which gives you legal

permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the @dfn{Lesser} General Public License because it does @emph{Less} to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free

programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a ``work based on the library" and a ``work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

@iftex

@appendixsubsec TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

@end iftex

@ifinfo

@center GNU LESSER GENERAL PUBLIC LICENSE

@center TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

@end ifinfo

@enumerate 0

@item

This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called ``this License"). Each licensee is addressed as ``you".

A ``library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The ``Library", below, refers to any such software library or work which has been distributed under these terms. A ``work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term ``modification".)

``Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated

interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

@item

You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

@item

You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

@enumerate a

@item

The modified work must itself be a software library.

@item

You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.

@item

You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

@item

If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or

table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

@end enumerate

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

@item

You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

@item

You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

@item

A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

@item

As an exception to the Sections above, you may also combine or link a ``work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

@enumerate a

@item

Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable ``work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

@item

Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

@item

Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

@item

If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

@item

Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

@end enumerate

For an executable, the required form of the ``work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

@item

You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

@enumerate a

@item

Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

@item

Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

@end enumerate

@item

You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies,



or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

@item

You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

@item

Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

@item

If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing

to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

@item

If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

@item

The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and ``any later version'', you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

@item

If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

@center NO WARRANTY

@item

BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY ``AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR

PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

@item

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

@end enumerate

@iftex

@heading END OF TERMS AND CONDITIONS

@end iftex

@ifinfo

@center END OF TERMS AND CONDITIONS

@end ifinfo

@page

@appendixsubsec How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the ``copyright" line and a pointer to where the full notice is found.

@smallexample

@var{one line to give the library's name and an idea of what it does.}

Copyright (C) @var{year} @var{name of author}

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but

WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.

@end smallexample

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a ``copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

@smallexample

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

@var{signature of Ty Coon}, 1 April 1990

Ty Coon, President of Vice

@end smallexample

That's all there is to it!

## 1.271 asm 9.1

### 1.271.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
// All rights reserved.
// Redistribution and use in source and binary forms, with or without
// modification, are permitted provided that the following conditions
// are met:
// 1. Redistributions of source code must retain the above copyright
// notice, this list of conditions and the following disclaimer.
// 2. Redistributions in binary form must reproduce the above copyright
// notice, this list of conditions and the following disclaimer in the
// documentation and/or other materials provided with the distribution.
// 3. Neither the name of the copyright holders nor the names of its
// this software without specific prior written permission.
```

Found in path(s):

```
* /opt/cola/permits/1146079232_1616457494.45/0/asm-9-1-sources-
jar/org/objectweb/asm/signature/SignatureWriter.java
```

```
* /opt/cola/permits/1146079232_1616457494.45/0/asm-9-1-sources-jar/org/objectweb/asm/TypePath.java
```

\* /opt/cola/permits/1146079232\_1616457494.45/0/asm-9-1-sources-jar/org/objectweb/asm/RecordComponentVisitor.java  
\* /opt/cola/permits/1146079232\_1616457494.45/0/asm-9-1-sources-jar/org/objectweb/asm/signature/SignatureReader.java  
\* /opt/cola/permits/1146079232\_1616457494.45/0/asm-9-1-sources-jar/org/objectweb/asm/Context.java  
\* /opt/cola/permits/1146079232\_1616457494.45/0/asm-9-1-sources-jar/org/objectweb/asm/TypeReference.java  
\* /opt/cola/permits/1146079232\_1616457494.45/0/asm-9-1-sources-jar/org/objectweb/asm/FieldVisitor.java  
\* /opt/cola/permits/1146079232\_1616457494.45/0/asm-9-1-sources-jar/org/objectweb/asm/MethodTooLargeException.java  
\* /opt/cola/permits/1146079232\_1616457494.45/0/asm-9-1-sources-jar/org/objectweb/asm/ModuleVisitor.java  
\* /opt/cola/permits/1146079232\_1616457494.45/0/asm-9-1-sources-jar/org/objectweb/asm/ClassTooLargeException.java  
\* /opt/cola/permits/1146079232\_1616457494.45/0/asm-9-1-sources-jar/org/objectweb/asm/ClassWriter.java  
\* /opt/cola/permits/1146079232\_1616457494.45/0/asm-9-1-sources-jar/org/objectweb/asm/Attribute.java  
\* /opt/cola/permits/1146079232\_1616457494.45/0/asm-9-1-sources-jar/org/objectweb/asm/ClassVisitor.java  
\* /opt/cola/permits/1146079232\_1616457494.45/0/asm-9-1-sources-jar/org/objectweb/asm/Handler.java  
\* /opt/cola/permits/1146079232\_1616457494.45/0/asm-9-1-sources-jar/org/objectweb/asm/FieldWriter.java  
\* /opt/cola/permits/1146079232\_1616457494.45/0/asm-9-1-sources-jar/org/objectweb/asm/Type.java  
\* /opt/cola/permits/1146079232\_1616457494.45/0/asm-9-1-sources-jar/org/objectweb/asm/AnnotationWriter.java  
\* /opt/cola/permits/1146079232\_1616457494.45/0/asm-9-1-sources-jar/org/objectweb/asm/Edge.java  
\* /opt/cola/permits/1146079232\_1616457494.45/0/asm-9-1-sources-jar/org/objectweb/asm/MethodWriter.java  
\* /opt/cola/permits/1146079232\_1616457494.45/0/asm-9-1-sources-jar/org/objectweb/asm/ByteVector.java  
\* /opt/cola/permits/1146079232\_1616457494.45/0/asm-9-1-sources-jar/org/objectweb/asm/Constants.java  
\* /opt/cola/permits/1146079232\_1616457494.45/0/asm-9-1-sources-jar/org/objectweb/asm/ConstantDynamic.java  
\* /opt/cola/permits/1146079232\_1616457494.45/0/asm-9-1-sources-jar/org/objectweb/asm/Label.java  
\* /opt/cola/permits/1146079232\_1616457494.45/0/asm-9-1-sources-jar/org/objectweb/asm/Handle.java  
\* /opt/cola/permits/1146079232\_1616457494.45/0/asm-9-1-sources-jar/org/objectweb/asm/Opcodes.java  
\* /opt/cola/permits/1146079232\_1616457494.45/0/asm-9-1-sources-jar/org/objectweb/asm/ClassReader.java  
\* /opt/cola/permits/1146079232\_1616457494.45/0/asm-9-1-sources-jar/org/objectweb/asm/AnnotationVisitor.java  
\* /opt/cola/permits/1146079232\_1616457494.45/0/asm-9-1-sources-jar/org/objectweb/asm/signature/SignatureVisitor.java  
\* /opt/cola/permits/1146079232\_1616457494.45/0/asm-9-1-sources-jar/org/objectweb/asm/Frame.java  
\* /opt/cola/permits/1146079232\_1616457494.45/0/asm-9-1-sources-jar/org/objectweb/asm/SymbolTable.java  
\* /opt/cola/permits/1146079232\_1616457494.45/0/asm-9-1-sources-jar/org/objectweb/asm/ModuleWriter.java  
\* /opt/cola/permits/1146079232\_1616457494.45/0/asm-9-1-sources-jar/org/objectweb/asm/MethodVisitor.java  
\* /opt/cola/permits/1146079232\_1616457494.45/0/asm-9-1-sources-jar/org/objectweb/asm/RecordComponentWriter.java  
\* /opt/cola/permits/1146079232\_1616457494.45/0/asm-9-1-sources-jar/org/objectweb/asm/Symbol.java  
\* /opt/cola/permits/1146079232\_1616457494.45/0/asm-9-1-sources-jar/org/objectweb/asm/CurrentFrame.java  
No license file was found, but licenses were detected in source scan.

2011 INRIA, France Telecom

\* All rights reserved.

\*

\* Redistribution and use in source and binary forms, with or without

\* modification, are permitted provided that the following conditions

\* are met:

\* 1. Redistributions of source code must retain the above copyright

- \* notice, this list of conditions and the following disclaimer.
- \* 2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* 3. Neither the name of the copyright holders nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.
- \*
- \* THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Found in path(s):

- \* /opt/cola/permits/1146079232\_1616457494.45/0/asm-9-1-sources-jar/org/objectweb/asm/package.html
- \* /opt/cola/permits/1146079232\_1616457494.45/0/asm-9-1-sources-jar/org/objectweb/asm/signature/package.html

## 1.272 commons-jxpath 1.3

### 1.272.1 Available under license :

Apache Commons JXPath

Copyright 2001-2008 The Apache Software Foundation

This product includes software developed by  
The Apache Software Foundation (<http://www.apache.org/>).

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

##### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity

on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one



of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a

result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

## 1.273 glibc 2.28-189.1.el8

## 1.273.1 Available under license :

@c The GNU Lesser General Public License.

@center Version 2.1, February 1999

@c This file is intended to be included within another document,

@c hence no sectioning command or @node.

@display

Copyright @copyright{ } 1991, 1999 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA

Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts  
as the successor of the GNU Library Public License, version 2, hence the  
version number 2.1.]

@end display

@subheading Preamble

The licenses for most software are designed to take away your  
freedom to share and change it. By contrast, the GNU General Public  
Licenses are intended to guarantee your freedom to share and change  
free software---to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some  
specially designated software---typically libraries---of the Free  
Software Foundation and other authors who decide to use it. You can use  
it too, but we suggest you first think carefully about whether this  
license or the ordinary General Public License is the better strategy to  
use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use,  
not price. Our General Public Licenses are designed to make sure that  
you have the freedom to distribute copies of free software (and charge  
for this service if you wish); that you receive source code or can get  
it if you want it; that you can change the software and use pieces of it  
in new free programs; and that you are informed that you can do these  
things.

To protect your rights, we need to make restrictions that forbid  
distributors to deny you these rights or to ask you to surrender these  
rights. These restrictions translate to certain responsibilities for  
you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis  
or for a fee, you must give the recipients all the rights that we gave

you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the `Lesser` General Public License because it does *Less* to protect the user's freedom than the ordinary General Public License. It also provides other free software developers *Less* of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to

encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a ``work based on the library" and a ``work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

#### @subheading TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

@enumerate 0

@item

This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called ``this License"). Each licensee is addressed as ``you".

A ``library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The ``Library", below, refers to any such software library or work which has been distributed under these terms. A ``work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term ``modification".)

``Source code" for a work means the preferred form of the work for

making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

@item

You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

@item

You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

@enumerate a

@item

The modified work must itself be a software library.

@item

You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.

@item

You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

@item

If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility

is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

@end enumerate

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

@item

You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

@item

You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

@item

A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.



@item

As an exception to the Sections above, you may also combine or link a ``work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

@enumerate a

@item

Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable ``work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

@item

Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

@item

Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

@item

If distribution of the work is made by offering access to copy

from a designated place, offer equivalent access to copy the above specified materials from the same place.

@item

Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

@end enumerate

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

@item

You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

@enumerate a

@item

Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

@item

Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

@end enumerate

@item

You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or

distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

@item

You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

@item

Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

@item

If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed

through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

@item

If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

@item

The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and ``any later version'', you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

@item

If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

@center @b{NO WARRANTY}

@item

BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY ``AS IS" WITHOUT WARRANTY OF ANY

KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

@item

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

@end enumerate

@subheading END OF TERMS AND CONDITIONS

@page

@subheading How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the ``copyright" line and a pointer to where the full notice is found.

@smallexample

@var{one line to give the library's name and an idea of what it does.}

Copyright (C) @var{year} @var{name of author}

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.

@end smallexample

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a ``copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

@smallexample

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

@var{signature of Ty Coon}, 1 April 1990

Ty Coon, President of Vice

@end smallexample

That's all there is to it!

Copyright 1992, 1993, 1994, 1997 Henry Spencer. All rights reserved.  
This software is not subject to any license of the American Telephone and Telegraph Company or of the Regents of the University of California.

Permission is granted to anyone to use this software for any purpose on any computer system, and to alter it and redistribute it, subject to the following restrictions:

1. The author is not responsible for the consequences of use of this software, no matter how awful, even if they arise from flaws in it.
2. The origin of this software must not be misrepresented, either by explicit claim or by omission. Since few users ever read sources, credits must appear in the documentation.
3. Altered versions must be plainly marked as such, and must not be misrepresented as being the original software. Since few users ever read sources, credits must appear in the documentation.
4. This notice may not be removed or altered.

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies

of this license document, but changing it is not allowed.

## Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE  
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.



c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is

allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues),

conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of

this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

GNU LESSER GENERAL PUBLIC LICENSE  
Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts  
as the successor of the GNU Library Public License, version 2, hence  
the version number 2.1.]

### Preamble

The licenses for most software are designed to take away your  
freedom to share and change it. By contrast, the GNU General Public  
Licenses are intended to guarantee your freedom to share and change  
free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some  
specially designated software packages--typically libraries--of the  
Free Software Foundation and other authors who decide to use it. You  
can use it too, but we suggest you first think carefully about whether  
this license or the ordinary General Public License is the better  
strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use,  
not price. Our General Public Licenses are designed to make sure that  
you have the freedom to distribute copies of free software (and charge  
for this service if you wish); that you receive source code or can get  
it if you want it; that you can change the software and use pieces of  
it in new free programs; and that you are informed that you can do  
these things.

To protect your rights, we need to make restrictions that forbid  
distributors to deny you these rights or to ask you to surrender these  
rights. These restrictions translate to certain responsibilities for  
you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis  
or for a fee, you must give the recipients all the rights that we gave  
you. You must make sure that they, too, receive or can get the source  
code. If you link other code with the library, you must provide  
complete object files to the recipients, so that they can relink them  
with the library after making changes to the library and recompiling  
it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the  
library, and (2) we offer you this license, which gives you legal  
permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in

non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

## GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does



and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based

on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and

therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License.

Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the

user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any

particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU

Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!

This file contains the copying permission notices for various files in the GNU C Library distribution that have copyright owners other than the Free Software Foundation. These notices all require that a copy of the notice be included in the accompanying documentation and be distributed with binary distributions of the code, so be sure to include this file along with any binary distributions derived from the GNU C Library.

All code incorporated from 4.4 BSD is distributed under the following license:

Copyright (C) 1991 Regents of the University of California.  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. [This condition was removed.]
4. Neither the name of the University nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS" AND



ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The DNS resolver code, taken from BIND 4.9.5, is copyrighted by UC Berkeley, by Digital Equipment Corporation and by Internet Software Consortium. The DEC portions are under the following license:

Portions Copyright (C) 1993 by Digital Equipment Corporation.

Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies, and that the name of Digital Equipment Corporation not be used in advertising or publicity pertaining to distribution of the document or software without specific, written prior permission.

THE SOFTWARE IS PROVIDED ``AS IS" AND DIGITAL EQUIPMENT CORP. DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL DIGITAL EQUIPMENT CORPORATION BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

The ISC portions are under the following license:

Portions Copyright (c) 1996-1999 by Internet Software Consortium.

Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS" AND INTERNET SOFTWARE CONSORTIUM DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL INTERNET SOFTWARE CONSORTIUM BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS

## SOFTWARE.

The Sun RPC support (from rpcsrc-4.0) is covered by the following license:

Copyright (c) 2010, Oracle America, Inc.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of the "Oracle America, Inc." nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The following CMU license covers some of the support code for Mach, derived from Mach 3.0:

Mach Operating System  
Copyright (C) 1991,1990,1989 Carnegie Mellon University  
All Rights Reserved.

Permission to use, copy, modify and distribute this software and its documentation is hereby granted, provided that both the copyright notice and this permission notice appear in all copies of the software, derivative works or modified versions, and any portions thereof, and that both notices appear in supporting documentation.

CARNEGIE MELLON ALLOWS FREE USE OF THIS SOFTWARE IN ITS ``AS IS" CONDITION. CARNEGIE MELLON DISCLAIMS ANY LIABILITY OF ANY KIND FOR ANY DAMAGES WHATSOEVER RESULTING FROM THE USE OF THIS SOFTWARE.

Carnegie Mellon requests users of this software to return to

Software Distribution Coordinator  
School of Computer Science  
Carnegie Mellon University  
Pittsburgh PA 15213-3890

or Software.Distribution@CS.CMU.EDU any improvements or extensions that they make and grant Carnegie Mellon the rights to redistribute these changes.

The file if\_ppp.h is under the following CMU license:

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the University nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY CARNEGIE MELLON UNIVERSITY AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE UNIVERSITY OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The following license covers the files from Intel's "Highly Optimized Mathematical Functions for Itanium" collection:

Intel License Agreement

Copyright (c) 2000, Intel Corporation

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* The name of Intel Corporation may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL INTEL OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The files inet/getnameinfo.c and sysdeps/posix/getaddrinfo.c are copyright (C) by Craig Metz and are distributed under the following license:

```
/* The Inner Net License, Version 2.00
```

The author(s) grant permission for redistribution and use in source and binary forms, with or without modification, of the software and documentation provided that the following conditions are met:

0. If you receive a version of the software that is specifically labelled as not being for redistribution (check the version message and/or README), you are not permitted to redistribute that version of the software in any way or form.
1. All terms of the all other applicable copyrights and licenses must be followed.
2. Redistributions of source code must retain the authors' copyright notice(s), this list of conditions, and the following disclaimer.
3. Redistributions in binary form must reproduce the authors' copyright

notice(s), this list of conditions, and the following disclaimer in the documentation and/or other materials provided with the distribution.

4. [The copyright holder has authorized the removal of this clause.]

5. Neither the name(s) of the author(s) nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY ITS AUTHORS AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHORS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

If these license terms cause you a real problem, contact the author. \*/

The file sunrpc/des\_impl.c is copyright Eric Young:

Copyright (C) 1992 Eric Young

Collected from libdes and modified for SECURE RPC by Martin Kuck 1994

This file is distributed under the terms of the GNU Lesser General Public License, version 2.1 or later - see the file COPYING.LIB for details.

If you did not receive a copy of the license with this program, please see <<http://www.gnu.org/licenses/>> to obtain a copy.

The file inet/rcmd.c is under a UCB copyright and the following:

Copyright (C) 1998 WIDE Project.

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the project nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE PROJECT AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE

IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE PROJECT OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The file posix/runtests.c is copyright Tom Lord:

Copyright 1995 by Tom Lord

All Rights Reserved

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of the copyright holder not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission.

Tom Lord DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS, IN NO EVENT SHALL TOM LORD BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

The posix/rxspencer tests are copyright Henry Spencer:

Copyright 1992, 1993, 1994, 1997 Henry Spencer. All rights reserved. This software is not subject to any license of the American Telephone and Telegraph Company or of the Regents of the University of California.

Permission is granted to anyone to use this software for any purpose on any computer system, and to alter it and redistribute it, subject to the following restrictions:

1. The author is not responsible for the consequences of use of this software, no matter how awful, even if they arise from flaws in it.
2. The origin of this software must not be misrepresented, either by explicit claim or by omission. Since few users ever read sources, credits must appear in the documentation.

3. Altered versions must be plainly marked as such, and must not be misrepresented as being the original software. Since few users ever read sources, credits must appear in the documentation.
4. This notice may not be removed or altered.

The file `posix/PCRE.tests` is copyright University of Cambridge:

Copyright (c) 1997-2003 University of Cambridge

Permission is granted to anyone to use this software for any purpose on any computer system, and to redistribute it freely, subject to the following restrictions:

1. This software is distributed in the hope that it will be useful, but **WITHOUT ANY WARRANTY**; without even the implied warranty of **MERCHANTABILITY** or **FITNESS FOR A PARTICULAR PURPOSE**.
2. The origin of this software must not be misrepresented, either by explicit claim or by omission. In practice, this means that if you use PCRE in software that you distribute to others, commercially or otherwise, you must put a sentence like this

Regular expression support is provided by the PCRE library package, which is open source software, written by Philip Hazel, and copyright by the University of Cambridge, England.

somewhere reasonably visible in your documentation and in any relevant files or online help data or similar. A reference to the ftp site for the source, that is, to

`ftp://ftp.csx.cam.ac.uk/pub/software/programming/pcre/`

should also be given in the documentation. However, this condition is not intended to apply to whole chains of software. If package A includes PCRE, it must acknowledge it, but if package B is software that includes package A, the condition is not imposed on package B (unless it uses PCRE independently).

3. Altered versions must be plainly marked as such, and must not be misrepresented as being the original software.
4. If PCRE is embedded in any software that is released under the GNU General Purpose Licence (GPL), or Lesser General Purpose Licence (LGPL), then the terms of that licence shall supersede any condition above with which it is incompatible.

Files from Sun fdlibm are copyright Sun Microsystems, Inc.:

Copyright (C) 1993 by Sun Microsystems, Inc. All rights reserved.

Developed at SunPro, a Sun Microsystems, Inc. business.

Permission to use, copy, modify, and distribute this software is freely granted, provided that this notice is preserved.

Various long double libm functions are copyright Stephen L. Moshier:

Copyright 2001 by Stephen L. Moshier <moshier@na-net.ornl.gov>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, see <<http://www.gnu.org/licenses/>>. \*/

UNICODE, INC. LICENSE AGREEMENT - DATA FILES AND SOFTWARE

Unicode Data Files include all data files under the directories <http://www.unicode.org/Public/>, <http://www.unicode.org/reports/>, and <http://www.unicode.org/cldr/data/>. Unicode Data Files do not include PDF online code charts under the directory <http://www.unicode.org/Public/>. Software includes any source code published in the Unicode Standard or under the directories <http://www.unicode.org/Public/>, <http://www.unicode.org/reports/>, and <http://www.unicode.org/cldr/data/>.

NOTICE TO USER: Carefully read the following legal agreement. BY DOWNLOADING, INSTALLING, COPYING OR OTHERWISE USING UNICODE INC.'S DATA FILES ("DATA FILES"), AND/OR SOFTWARE ("SOFTWARE"), YOU UNEQUIVOCALLY ACCEPT, AND AGREE TO BE BOUND BY, ALL OF THE TERMS AND CONDITIONS OF THIS AGREEMENT. IF YOU DO NOT AGREE, DO NOT DOWNLOAD, INSTALL, COPY, DISTRIBUTE OR USE THE DATA FILES OR SOFTWARE.

COPYRIGHT AND PERMISSION NOTICE

Copyright 1991-2013 Unicode, Inc. All rights reserved. Distributed under the Terms of Use in <http://www.unicode.org/copyright.html>.



Permission is hereby granted, free of charge, to any person obtaining a copy of the Unicode data files and any associated documentation (the "Data Files") or Unicode software and any associated documentation (the "Software") to deal in the Data Files or Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, and/or sell copies of the Data Files or Software, and to permit persons to whom the Data Files or Software are furnished to do so, provided that (a) the above copyright notice(s) and this permission notice appear with all copies of the Data Files or Software, (b) both the above copyright notice(s) and this permission notice appear in associated documentation, and (c) there is clear notice in each modified Data File or in the Software as well as in the documentation associated with the Data File(s) or Software that the data or software has been modified.

THE DATA FILES AND SOFTWARE ARE PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NON-INFRINGEMENT OF THIRD PARTY RIGHTS. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR HOLDERS INCLUDED IN THIS NOTICE BE LIABLE FOR ANY CLAIM, OR ANY SPECIAL INDIRECT OR CONSEQUENTIAL DAMAGES, OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THE DATA FILES OR SOFTWARE.

Except as contained in this notice, the name of a copyright holder shall not be used in advertising or otherwise to promote the sale, use or other dealings in these Data Files or Software without prior written authorization of the copyright holder.

@c The GNU Free Documentation License.

@center Version 1.3, 3 November 2008

@c This file is intended to be included within another document,

@c hence no sectioning command or @node.

@display

Copyright @copyright{ } 2000, 2001, 2002, 2007, 2008 Free Software Foundation, Inc.

@uref{http://fsf.org/}

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

@end display

@enumerate 0

@item

PREAMBLE

The purpose of this License is to make a manual, textbook, or other functional and useful document @dfn{free} in the sense of freedom: to

assure everyone the effective freedom to copy and redistribute it, with or without modifying it, either commercially or noncommercially. Secondly, this License preserves for the author and publisher a way to get credit for their work, while not being considered responsible for modifications made by others.

This License is a kind of ``copyleft'', which means that derivative works of the document must themselves be free in the same sense. It complements the GNU General Public License, which is a copyleft license designed for free software.

We have designed this License in order to use it for manuals for free software, because free software needs free documentation: a free program should come with manuals providing the same freedoms that the software does. But this License is not limited to software manuals; it can be used for any textual work, regardless of subject matter or whether it is published as a printed book. We recommend this License principally for works whose purpose is instruction or reference.

@item

#### APPLICABILITY AND DEFINITIONS

This License applies to any manual or other work, in any medium, that contains a notice placed by the copyright holder saying it can be distributed under the terms of this License. Such a notice grants a world-wide, royalty-free license, unlimited in duration, to use that work under the conditions stated herein. The ``Document'', below, refers to any such manual or work. Any member of the public is a licensee, and is addressed as ``you''. You accept the license if you copy, modify or distribute the work in a way requiring permission under copyright law.

A ``Modified Version'' of the Document means any work containing the Document or a portion of it, either copied verbatim, or with modifications and/or translated into another language.

A ``Secondary Section'' is a named appendix or a front-matter section of the Document that deals exclusively with the relationship of the publishers or authors of the Document to the Document's overall subject (or to related matters) and contains nothing that could fall directly within that overall subject. (Thus, if the Document is in part a textbook of mathematics, a Secondary Section may not explain any mathematics.) The relationship could be a matter of historical connection with the subject or with related matters, or of legal, commercial, philosophical, ethical or political position regarding them.

The ``Invariant Sections'' are certain Secondary Sections whose titles

are designated, as being those of Invariant Sections, in the notice that says that the Document is released under this License. If a section does not fit the above definition of Secondary then it is not allowed to be designated as Invariant. The Document may contain zero Invariant Sections. If the Document does not identify any Invariant Sections then there are none.

The ``Cover Texts" are certain short passages of text that are listed, as Front-Cover Texts or Back-Cover Texts, in the notice that says that the Document is released under this License. A Front-Cover Text may be at most 5 words, and a Back-Cover Text may be at most 25 words.

A ``Transparent" copy of the Document means a machine-readable copy, represented in a format whose specification is available to the general public, that is suitable for revising the document straightforwardly with generic text editors or (for images composed of pixels) generic paint programs or (for drawings) some widely available drawing editor, and that is suitable for input to text formatters or for automatic translation to a variety of formats suitable for input to text formatters. A copy made in an otherwise Transparent file format whose markup, or absence of markup, has been arranged to thwart or discourage subsequent modification by readers is not Transparent. An image format is not Transparent if used for any substantial amount of text. A copy that is not ``Transparent" is called ``Opaque".

Examples of suitable formats for Transparent copies include plain ASCII without markup, Texinfo input format,  $\LaTeX$  input format, SGML or XML using a publicly available DTD, and standard-conforming simple HTML, PostScript or PDF designed for human modification. Examples of transparent image formats include PNG, XCF and JPG. Opaque formats include proprietary formats that can be read and edited only by proprietary word processors, SGML or XML for which the DTD and/or processing tools are not generally available, and the machine-generated HTML, PostScript or PDF produced by some word processors for output purposes only.

The ``Title Page" means, for a printed book, the title page itself, plus such following pages as are needed to hold, legibly, the material this License requires to appear in the title page. For works in formats which do not have any title page as such, ``Title Page" means the text near the most prominent appearance of the work's title, preceding the beginning of the body of the text.

The ``publisher" means any person or entity that distributes copies of the Document to the public.

A section ``Entitled XYZ" means a named subunit of the Document whose title either is precisely XYZ or contains XYZ in parentheses following text that translates XYZ in another language. (Here XYZ stands for a specific section name mentioned below, such as ``Acknowledgements", ``Dedications", ``Endorsements", or ``History".) To ``Preserve the Title" of such a section when you modify the Document means that it remains a section ``Entitled XYZ" according to this definition.

The Document may include Warranty Disclaimers next to the notice which states that this License applies to the Document. These Warranty Disclaimers are considered to be included by reference in this License, but only as regards disclaiming warranties: any other implication that these Warranty Disclaimers may have is void and has no effect on the meaning of this License.

@item

### VERBATIM COPYING

You may copy and distribute the Document in any medium, either commercially or noncommercially, provided that this License, the copyright notices, and the license notice saying this License applies to the Document are reproduced in all copies, and that you add no other conditions whatsoever to those of this License. You may not use technical measures to obstruct or control the reading or further copying of the copies you make or distribute. However, you may accept compensation in exchange for copies. If you distribute a large enough number of copies you must also follow the conditions in section 3.

You may also lend copies, under the same conditions stated above, and you may publicly display copies.

@item

### COPYING IN QUANTITY

If you publish printed copies (or copies in media that commonly have printed covers) of the Document, numbering more than 100, and the Document's license notice requires Cover Texts, you must enclose the copies in covers that carry, clearly and legibly, all these Cover Texts: Front-Cover Texts on the front cover, and Back-Cover Texts on the back cover. Both covers must also clearly and legibly identify you as the publisher of these copies. The front cover must present the full title with all words of the title equally prominent and visible. You may add other material on the covers in addition. Copying with changes limited to the covers, as long as they preserve the title of the Document and satisfy these conditions, can be treated as verbatim copying in other respects.

If the required texts for either cover are too voluminous to fit

legibly, you should put the first ones listed (as many as fit reasonably) on the actual cover, and continue the rest onto adjacent pages.

If you publish or distribute Opaque copies of the Document numbering more than 100, you must either include a machine-readable Transparent copy along with each Opaque copy, or state in or with each Opaque copy a computer-network location from which the general network-using public has access to download using public-standard network protocols a complete Transparent copy of the Document, free of added material. If you use the latter option, you must take reasonably prudent steps, when you begin distribution of Opaque copies in quantity, to ensure that this Transparent copy will remain thus accessible at the stated location until at least one year after the last time you distribute an Opaque copy (directly or through your agents or retailers) of that edition to the public.

It is requested, but not required, that you contact the authors of the Document well before redistributing any large number of copies, to give them a chance to provide you with an updated version of the Document.

@item

## MODIFICATIONS

You may copy and distribute a Modified Version of the Document under the conditions of sections 2 and 3 above, provided that you release the Modified Version under precisely this License, with the Modified Version filling the role of the Document, thus licensing distribution and modification of the Modified Version to whoever possesses a copy of it. In addition, you must do these things in the Modified Version:

@enumerate A

@item

Use in the Title Page (and on the covers, if any) a title distinct from that of the Document, and from those of previous versions (which should, if there were any, be listed in the History section of the Document). You may use the same title as a previous version if the original publisher of that version gives permission.

@item

List on the Title Page, as authors, one or more persons or entities responsible for authorship of the modifications in the Modified Version, together with at least five of the principal authors of the Document (all of its principal authors, if it has fewer than five), unless they release you from this requirement.

@item

State on the Title page the name of the publisher of the

Modified Version, as the publisher.

@item

Preserve all the copyright notices of the Document.

@item

Add an appropriate copyright notice for your modifications adjacent to the other copyright notices.

@item

Include, immediately after the copyright notices, a license notice giving the public permission to use the Modified Version under the terms of this License, in the form shown in the Addendum below.

@item

Preserve in that license notice the full lists of Invariant Sections and required Cover Texts given in the Document's license notice.

@item

Include an unaltered copy of this License.

@item

Preserve the section Entitled ``History'', Preserve its Title, and add to it an item stating at least the title, year, new authors, and publisher of the Modified Version as given on the Title Page. If there is no section Entitled ``History'' in the Document, create one stating the title, year, authors, and publisher of the Document as given on its Title Page, then add an item describing the Modified Version as stated in the previous sentence.

@item

Preserve the network location, if any, given in the Document for public access to a Transparent copy of the Document, and likewise the network locations given in the Document for previous versions it was based on. These may be placed in the ``History'' section. You may omit a network location for a work that was published at least four years before the Document itself, or if the original publisher of the version it refers to gives permission.

@item

For any section Entitled ``Acknowledgements'' or ``Dedications'', Preserve the Title of the section, and preserve in the section all the substance and tone of each of the contributor acknowledgements and/or dedications given therein.

@item

Preserve all the Invariant Sections of the Document, unaltered in their text and in their titles. Section numbers

or the equivalent are not considered part of the section titles.

@item

Delete any section Entitled ``Endorsements''. Such a section may not be included in the Modified Version.

@item

Do not retitle any existing section to be Entitled ``Endorsements'' or to conflict in title with any Invariant Section.

@item

Preserve any Warranty Disclaimers.

@end enumerate

If the Modified Version includes new front-matter sections or appendices that qualify as Secondary Sections and contain no material copied from the Document, you may at your option designate some or all of these sections as invariant. To do this, add their titles to the list of Invariant Sections in the Modified Version's license notice.

These titles must be distinct from any other section titles.

You may add a section Entitled ``Endorsements'', provided it contains nothing but endorsements of your Modified Version by various parties---for example, statements of peer review or that the text has been approved by an organization as the authoritative definition of a standard.

You may add a passage of up to five words as a Front-Cover Text, and a passage of up to 25 words as a Back-Cover Text, to the end of the list of Cover Texts in the Modified Version. Only one passage of Front-Cover Text and one of Back-Cover Text may be added by (or through arrangements made by) any one entity. If the Document already includes a cover text for the same cover, previously added by you or by arrangement made by the same entity you are acting on behalf of, you may not add another; but you may replace the old one, on explicit permission from the previous publisher that added the old one.

The author(s) and publisher(s) of the Document do not by this License give permission to use their names for publicity for or to assert or imply endorsement of any Modified Version.

@item

## COMBINING DOCUMENTS

You may combine the Document with other documents released under this License, under the terms defined in section 4 above for modified versions, provided that you include in the combination all of the Invariant Sections of all of the original documents, unmodified, and

list them all as Invariant Sections of your combined work in its license notice, and that you preserve all their Warranty Disclaimers.

The combined work need only contain one copy of this License, and multiple identical Invariant Sections may be replaced with a single copy. If there are multiple Invariant Sections with the same name but different contents, make the title of each such section unique by adding at the end of it, in parentheses, the name of the original author or publisher of that section if known, or else a unique number. Make the same adjustment to the section titles in the list of Invariant Sections in the license notice of the combined work.

In the combination, you must combine any sections Entitled ``History'' in the various original documents, forming one section Entitled ``History''; likewise combine any sections Entitled ``Acknowledgements'', and any sections Entitled ``Dedications''. You must delete all sections Entitled ``Endorsements.''

@item

#### COLLECTIONS OF DOCUMENTS

You may make a collection consisting of the Document and other documents released under this License, and replace the individual copies of this License in the various documents with a single copy that is included in the collection, provided that you follow the rules of this License for verbatim copying of each of the documents in all other respects.

You may extract a single document from such a collection, and distribute it individually under this License, provided you insert a copy of this License into the extracted document, and follow this License in all other respects regarding verbatim copying of that document.

@item

#### AGGREGATION WITH INDEPENDENT WORKS

A compilation of the Document or its derivatives with other separate and independent documents or works, in or on a volume of a storage or distribution medium, is called an ``aggregate'' if the copyright resulting from the compilation is not used to limit the legal rights of the compilation's users beyond what the individual works permit. When the Document is included in an aggregate, this License does not apply to the other works in the aggregate which are not themselves derivative works of the Document.

If the Cover Text requirement of section 3 is applicable to these copies of the Document, then if the Document is less than one half of the entire aggregate, the Document's Cover Texts may be placed on covers that bracket the Document within the aggregate, or the



electronic equivalent of covers if the Document is in electronic form. Otherwise they must appear on printed covers that bracket the whole aggregate.

@item

## TRANSLATION

Translation is considered a kind of modification, so you may distribute translations of the Document under the terms of section 4. Replacing Invariant Sections with translations requires special permission from their copyright holders, but you may include translations of some or all Invariant Sections in addition to the original versions of these Invariant Sections. You may include a translation of this License, and all the license notices in the Document, and any Warranty Disclaimers, provided that you also include the original English version of this License and the original versions of those notices and disclaimers. In case of a disagreement between the translation and the original version of this License or a notice or disclaimer, the original version will prevail.

If a section in the Document is Entitled ``Acknowledgements'', ``Dedications'', or ``History'', the requirement (section 4) to Preserve its Title (section 1) will typically require changing the actual title.

@item

## TERMINATION

You may not copy, modify, sublicense, or distribute the Document except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, or distribute it is void, and will automatically terminate your rights under this License.

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the

licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, receipt of a copy of some or all of the same material does not give you any rights to use it.

@item

## FUTURE REVISIONS OF THIS LICENSE

The Free Software Foundation may publish new, revised versions of the GNU Free Documentation License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns. See [@uref{http://www.gnu.org/copyleft/}](http://www.gnu.org/copyleft/).

Each version of the License is given a distinguishing version number. If the Document specifies that a particular numbered version of this License "or any later version" applies to it, you have the option of following the terms and conditions either of that specified version or of any later version that has been published (not as a draft) by the Free Software Foundation. If the Document does not specify a version number of this License, you may choose any version ever published (not as a draft) by the Free Software Foundation. If the Document specifies that a proxy can decide which future versions of this License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Document.

@item

## RELICENSING

"Massive Multiauthor Collaboration Site" (or "MMC Site") means any World Wide Web server that publishes copyrightable works and also provides prominent facilities for anybody to edit those works. A public wiki that anybody can edit is an example of such a server. A "Massive Multiauthor Collaboration" (or "MMC") contained in the site means any set of copyrightable works thus published on the MMC site.

"CC-BY-SA" means the Creative Commons Attribution-Share Alike 3.0 license published by Creative Commons Corporation, a not-for-profit corporation with a principal place of business in San Francisco, California, as well as future copyleft versions of that license published by that same organization.

"Incorporate" means to publish or republish a Document, in whole or in part, as part of another Document.

An MMC is "eligible for relicensing" if it is licensed under this

License, and if all works that were first published under this License somewhere other than this MMC, and subsequently incorporated in whole or in part into the MMC, (1) had no cover texts or invariant sections, and (2) were thus incorporated prior to November 1, 2008.

The operator of an MMC Site may republish an MMC contained in the site under CC-BY-SA on the same site at any time before August 1, 2009, provided the MMC is eligible for relicensing.

@end enumerate

@page

@heading ADDENDUM: How to use this License for your documents

To use this License in a document you have written, include a copy of the License in the document and put the following copyright and license notices just after the title page:

@smallexample

@group

Copyright (C) @var{year} @var{your name}.

Permission is granted to copy, distribute and/or modify this document under the terms of the GNU Free Documentation License, Version 1.3 or any later version published by the Free Software Foundation; with no Invariant Sections, no Front-Cover Texts, and no Back-Cover Texts. A copy of the license is included in the section entitled ``GNU Free Documentation License".

@end group

@end smallexample

If you have Invariant Sections, Front-Cover Texts and Back-Cover Texts, replace the ``with@dots{ }Texts."@: line with this:

@smallexample

@group

with the Invariant Sections being @var{list their titles}, with the Front-Cover Texts being @var{list}, and with the Back-Cover Texts being @var{list}.

@end group

@end smallexample

If you have Invariant Sections without Cover Texts, or some other combination of the three, merge those two alternatives to suit the situation.

If your document contains nontrivial examples of program code, we recommend releasing these examples in parallel under your choice of free software license, such as the GNU General Public License,

to permit their use in free software.

```
@c Local Variables:
@c ispell-local-pdict: "ispell-dict"
@c End:
```

## 1.274 sed 4.5-5.el8

### 1.274.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<https://fsf.org/>>  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

#### Preamble

The GNU General Public License is a free, copyleft license for  
software and other kinds of works.

The licenses for most software and other practical works are designed  
to take away your freedom to share and change the works. By contrast,  
the GNU General Public License is intended to guarantee your freedom to  
share and change all versions of a program--to make sure it remains free  
software for all its users. We, the Free Software Foundation, use the  
GNU General Public License for most of our software; it applies also to  
any other work released this way by its authors. You can apply it to  
your programs, too.

When we speak of free software, we are referring to freedom, not  
price. Our General Public Licenses are designed to make sure that you  
have the freedom to distribute copies of free software (and charge for  
them if you wish), that you receive source code or can get it if you  
want it, that you can change the software or use pieces of it in new  
free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you  
these rights or asking you to surrender the rights. Therefore, you have  
certain responsibilities if you distribute copies of the software, or if  
you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether  
gratis or for a fee, you must pass on to the recipients the same  
freedoms that you received. You must make sure that they, too, receive  
or can get the source code. And you must show them these terms so they  
know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

## TERMS AND CONDITIONS

### 0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the

earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

#### 1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all

the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

## 2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

## 3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article

11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

#### 4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

#### 5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.
- b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".
- c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.
- d) If the work has interactive user interfaces, each must display



Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

#### 6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the

Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has

been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

## 7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or

- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

## 8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is

reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

#### 9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

#### 10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

## 11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered

work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

#### 12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

#### 13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

#### 14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will

be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

#### 15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

#### 16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### 17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided



above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see [<https://www.gnu.org/licenses/>](https://www.gnu.org/licenses/).

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program> Copyright (C) <year> <name of author>
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <https://www.gnu.org/licenses/>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <https://www.gnu.org/philosophy/why-not-lgpl.html>.

## 1.275 pygobject 3.28.3 2.e18

### 1.275.1 Available under license :

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.

51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of

it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

#### GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a

table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or

link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for



reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
- b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the

original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version,

but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that

everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!

pygobject.svg and pygobject-small.svg are based on the GTK+ logo, created by Andreas Nilsson, licensed under CC BY-SA 3.0. For more info see [https://commons.wikimedia.org/wiki/File:GTK%2B\\_logo.svg](https://commons.wikimedia.org/wiki/File:GTK%2B_logo.svg)

## 1.276 scala-collection-compat\_2.13 2.4.4

## 1.276.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/*
 * Scala (https://www.scala-lang.org)
 *
 * Copyright EPFL and Lightbend, Inc.
 *
 * Licensed under Apache License 2.0
 * (http://www.apache.org/licenses/LICENSE-2.0).
 *
 * See the NOTICE file distributed with this work for
 * additional information regarding copyright ownership.
 */
```

Found in path(s):

```
* /opt/cola/permits/1424508690_1663913252.6130102/0/scala-collection-compat-2-13-2-4-4-sources-1-
jar/scala/collection/compat/immutable/package.scala
* /opt/cola/permits/1424508690_1663913252.6130102/0/scala-collection-compat-2-13-2-4-4-sources-1-
jar/scala/collection/compat/package.scala
```

## 1.277 file 5.33-20.el8

### 1.277.1 Available under license :

\$File: COPYING,v 1.1 2008/02/05 19:08:11 christos Exp \$  
Copyright (c) Ian F. Darwin 1986, 1987, 1989, 1990, 1991, 1992, 1994, 1995.  
Software written by Ian F. Darwin and others;  
maintained 1994- Christos Zoulas.

This software is not subject to any export provision of the United States Department of Commerce, and may be exported to any country or planet.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice immediately at the beginning of the file, without modification, this list of conditions, and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL

DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## 1.278 spring-context 5.3.21

### 1.278.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2002-2022 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/jmx/export/annotation/ManagedOperation.java
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/jmx/export/annotation/ManagedOperationParameters.java
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/ui/Model.java
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/validation/beanvalidation/LocalValidatorFactoryBean.java
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/jmx/export/MBeanExporter.java
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/stereotype/Controller.java
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/jmx/export/annotation/ManagedOperationParameter.java
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/validation/DataBinder.java
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/jmx/export/annotation/AnnotationJmxAttributeSource.java
```

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/support/PropertySourcesPlaceholderConfigurer.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/jmx/access/NotificationListenerRegistrar.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/jmx/export/annotation/ManagedNotifications.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/jmx/support/JmxUtils.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/jmx/export/annotation/ManagedNotification.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/i18n/SimpleLocaleContext.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/scheduling/concurrent/ConcurrentTaskExecutor.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/scripting/support/StandardScriptFactory.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/scheduling/config/ScheduledTask.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/stereotype/Service.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/scheduling/concurrent/ThreadPoolTaskExecutor.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/cache/interceptor/LoggingCacheErrorHandler.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/stereotype/Repository.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/ui/ExtendedModelMap.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/jmx/export/annotation/AnnotationMBeanExporter.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/jmx/export/naming/MetadataNamingStrategy.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/scheduling/concurrent/ThreadPoolTaskScheduler.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/jmx/export/annotation/ManagedResource.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2015 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

- \* distributed under the License is distributed on an "AS IS" BASIS,
- \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- \* See the License for the specific language governing permissions and
- \* limitations under the License.
- \*/

Found in path(s):

- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/annotation/ComponentScans.java
  - \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/annotation/Role.java
  - \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/scripting/support/StandardScriptEvalException.java
  - \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/format/number/money/CurrencyUnitFormatter.java
  - \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/scheduling/config/AnnotationDrivenBeanDefinitionParser.java
  - \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/remoting/RemoteTimeoutException.java
  - \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/format/datetime/joda/MonthDayFormatter.java
  - \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/event/EventListenerFactory.java
  - \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/cache/annotation/CacheConfig.java
  - \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/format/datetime/joda/PeriodFormatter.java
  - \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/format/number/PercentStyleFormatter.java
  - \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/scripting/config/LangNamespaceHandler.java
  - \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/format/datetime/joda/YearMonthFormatter.java
  - \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/scripting/ScriptEvaluator.java
  - \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/format/datetime/joda/DurationFormatter.java
  - \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/annotation/ImportResource.java
  - \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/jmx/export/annotation/ManagedMetric.java
  - \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/validation/beanvalidation/SpringConstraintValidatorFactory.java
- No license file was found, but licenses were detected in source scan.

/\*

- \* Copyright 2002-2020 the original author or authors.

\*



```

* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
/**
* Indicates that a component is only eligible for registration when all
* { @linkplain #value specified conditions } match.
*
* <p>A condition is any state that can be determined programmatically
* before the bean definition is due to be registered (see { @link Condition } for details).
*
* <p>The { @code @Conditional } annotation may be used in any of the following ways:
*
* as a type-level annotation on any class directly or indirectly annotated with
* { @code @Component }, including { @link Configuration @Configuration } classes
* as a meta-annotation, for the purpose of composing custom stereotype
* annotations
* as a method-level annotation on any { @link Bean @Bean } method
*
*
* <p>If a { @code @Configuration } class is marked with { @code @Conditional },
* all of the { @code @Bean } methods, { @link Import @Import } annotations, and
* { @link ComponentScan @ComponentScan } annotations associated with that
* class will be subject to the conditions.
*
* <p>NOTE: Inheritance of { @code @Conditional } annotations
* is not supported; any conditions from superclasses or from overridden
* methods will not be considered. In order to enforce these semantics,
* { @code @Conditional } itself is not declared as
* { @link java.lang.annotation.Inherited @Inherited }; furthermore, any
* custom composed annotation that is meta-annotated with
* { @code @Conditional } must not be declared as { @code @Inherited }.
*
* @author Phillip Webb
* @author Sam Brannen
* @since 4.0
* @see Condition
*/

```

Found in path(s):

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/annotation/Conditional.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2014 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/validation/beanvalidation/MessageSourceResourceBundleLocator.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/scheduling/annotation/AsyncConfigurerSupport.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/format/AnnotationFormatterFactory.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/cache/interceptor/BasicOperation.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/validation/annotation/Validated.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/annotation/PropertySources.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/scheduling/config/ContextLifecycleScheduledTaskRegistrar.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/ApplicationContext.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2021 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

- \* Unless required by applicable law or agreed to in writing, software
- \* distributed under the License is distributed on an "AS IS" BASIS,
- \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- \* See the License for the specific language governing permissions and
- \* limitations under the License.
- \*/

Found in path(s):

- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/support/GenericGroovyApplicationContext.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/scheduling/config/CronTask.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/event/SourceFilteringListener.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/scheduling/support/QuartzCronField.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/scheduling/annotation/SchedulingConfigurer.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/annotation/ComponentScanAnnotationParser.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/annotation/EnableAspectJAutoProxy.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/annotation/ConfigurationMethod.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/ui/ConcurrentModel.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/annotation/CommonAnnotationBeanPostProcessor.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/scheduling/support/BitsCronField.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/cache/interceptor/CachePutOperation.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/event/GenericApplicationListenerAdapter.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/validation/beanvalidation/SpringValidatorAdapter.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/annotation/ConfigurationClassUtils.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/support/AbstractApplicationContext.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/cache/annotation/Cacheable.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/support/ContextTypeMatchClassLoader.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/cache/annotation/AbstractCachingConfiguration.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/jndi/JndiCallback.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/cache/interceptor/CacheOperation.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/annotation/ClassPathScanningCandidateComponentProvider.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/cache/config/AnnotationDrivenCacheBeanDefinitionParser.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/event/ApplicationEventMulticaster.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/index/CandidateComponentsIndexLoader.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/annotation/ConfigurationClass.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/format/datetime/DateTimeFormatAnnotationFormatterFactory.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/scheduling/support/CronTrigger.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/scheduling/concurrent/ThreadPoolExecutorFactoryBean.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/event/ApplicationListenerMethodAdapter.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/ResourceLoaderAware.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/support/MessageSourceSupport.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/validation/Validator.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/event/EventListener.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/format/datetime/standard/DateTimeContextHolder.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/annotation/Configuration.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/format/FormatterRegistrar.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/annotation/AnnotationBeanNameGenerator.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/format/datetime/standard/DateTimeFormatAnnotationFormatterFactory.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/support/ReloadableResourceBundleMessageSource.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/event/GenericApplicationListener.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/cache/annotation/CachePut.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/scheduling/annotation/Scheduled.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/scheduling/annotation/ScheduledAnnotationBeanPostProcessor.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/ApplicationEvent.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/scheduling/annotation/AbstractAsyncConfiguration.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/annotation/Lazy.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/format/datetime/standard/Jsrf310DateTimeFormatAnnotationFormatterFactory.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/scheduling/support/CronExpression.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/support/PostProcessorRegistrationDelegate.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/event/SmartApplicationListener.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/format/datetime/DateFormatter.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/validation/support/BindingAwareConcurrentModel.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/scheduling/concurrent/ExecutorConfigurationSupport.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/annotation/ConfigurationClassEnhancer.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/format/datetime/standard/DateTimeContext.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/annotation/TypeFilterUtils.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/cache/interceptor/AbstractFallbackCacheOperationSource.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/scheduling/support/CronField.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/cache/annotation/CachingConfigurer.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/annotation/BeanMethod.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/event/AbstractApplicationEventMulticaster.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/cache/interceptor/CacheableOperation.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/PayloadApplicationEvent.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/format/datetime/standard/TemporalAccessorParser.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/annotation/AnnotationConfigUtils.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/annotation/ConfigurationClassPostProcessor.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/support/LiveBeansView.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/scheduling/annotation/AsyncConfigurer.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/cache/interceptor/CacheEvictOperation.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/support/BeanDefinitionDsl.kt  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/validation/annotation/ValidationAnnotationUtils.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/cache/interceptor/CacheAspectSupport.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/validation/support/BindingAwareModelMap.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/ApplicationListener.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/format/annotation/DateTimeFormat.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/format/datetime/standard/DateTimeFormatterUtils.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/scheduling/support/CompositeCronField.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/event/SimpleApplicationEventMulticaster.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/expression/StandardBeanExpressionResolver.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/scheduling/annotation/EnableScheduling.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2002-2017 the original author or authors  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/ui/ModelMapExtensions.kt  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-

jar/org/springframework/ui/ModelExtensions.kt

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2002-2019 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/context/event/EventExpressionEvaluator.java
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/context/support/StaticMessageSource.java
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/context/ApplicationEventPublisher.java
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/format/datetime/standard/InstantFormatter.java
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/cache/interceptor/AbstractCacheInvoker.java
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/cache/interceptor/CacheOperationSourcePointcut.java
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/context/weaving/DefaultContextLoadTimeWeaver.java
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/jmx/support/ConnectorServerFactoryBean.java
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/jndi/support/SimpleJndiBeanFactory.java
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/context/annotation/Import.java
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/context/MessageSource.java
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/context/SmartLifecycle.java
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/cache/support/AbstractCacheManager.java
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/context/support/StaticApplicationContext.java
```

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/cache/CacheManager.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/support/AbstractMessageSource.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/cache/interceptor/CompositeCacheOperationSource.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/annotation/ParserStrategyUtils.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/support/DefaultMessageSourceResolvable.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/cache/Cache.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/jndi/JndiTemplateEditor.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/jmx/support/MBeanServerConnectionFactoryBean.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/scheduling/support/TaskUtils.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/instrument/classloading/jboss/JBossLoadTimeWeaver.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/support/GenericApplicationContextExtensions.kt

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/cache/annotation/SpringCacheAnnotationParser.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/annotation/ImportBeanDefinitionRegistrar.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/annotation/AnnotatedBeanDefinitionReader.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/cache/annotation/AnnotationCacheOperationSource.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/annotation/ClassPathBeanDefinitionScanner.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/instrument/classloading/InstrumentationLoadTimeWeaver.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/jmx/support/MBeanServerFactoryBean.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/scheduling/annotation/Async.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/validation/ObjectError.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/config/PropertyPlaceholderBeanDefinitionParser.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/cache/interceptor/CacheProxyFactoryBean.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/annotation/AnnotationConfigApplicationContextExtensions.kt

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/annotation/AnnotationConfigRegistry.java



\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/cache/annotation/CacheAnnotationParser.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/cache/interceptor/CacheOperationSource.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/ui/ModelMap.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2009 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/LifecycleProcessor.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2005 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/jmx/export/metadata/ManagedOperation.java

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2002-2012 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/ejb/config/JeeNamespaceHandler.java
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/remoting/rmi/RmiInvocationHandler.java
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/jmx/export/ assembler/AutodetectCapableMBeanInfoAssembler.java
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/context/event/ApplicationContextEvent.java
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/ui/context/ThemeSource.java
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/format/Formatter.java
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/jmx/export/naming/SelfNaming.java
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/jmx/export/ assembler/MBeanInfoAssembler.java
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/context/NoSuchMessageException.java
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/jmx/access/InvalidInvocationException.java
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/scheduling/SchedulingException.java
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/scripting/ScriptSource.java
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/scripting/support/RefreshableScriptTargetSource.java
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/scheduling/SchedulingAwareRunnable.java
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
```

jar/org/springframework/validation/BindingErrorProcessor.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/annotation/ScopeMetadata.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/remoting/soap/SoapFaultException.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/ejb/config/JndiLookupBeanDefinitionParser.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/ejb/config/RemoteStatelessSessionBeanDefinitionParser.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/annotation/EnableMBeanExport.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/jmx/JmxException.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/config/ContextNamespaceHandler.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/event/ContextRefreshedEvent.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/annotation/LoadTimeWeavingConfigurer.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/annotation/AnnotationConfigBeanDefinitionParser.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/weaving/LoadTimeWeaverAware.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/jmx/export/MBeanExportException.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/scheduling/config/SchedulerBeanDefinitionParser.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/remoting/support/DefaultRemoteInvocationExecutor.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/jndi/JndiLookupFailureException.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/format/number/AbstractNumberFormatter.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/instrument/classloading/LoadTimeWeaver.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/jmx/export/UnableToRegisterMBeanException.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/validation/BindingResultUtils.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/jmx/access/InvocationFailureException.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/remoting/support/DefaultRemoteInvocationFactory.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/event/ContextStartedEvent.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/jmx/export/notification/UnableToSendNotificationException.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-

jar/org/springframework/remoting/rmi/CodebaseAwareObjectInputStream.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/ui/context/support/SimpleTheme.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/validation/MessageCodesResolver.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/event/ContextClosedEvent.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/remoting/RemoteProxyFailureException.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/remoting/support/UrlBasedRemoteAccessor.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/ApplicationContextAware.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/jmx/access/MBeanInfoRetrievalException.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/ui/context/Theme.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/Phased.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/scheduling/Trigger.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/remoting/RemoteInvocationFailureException.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/event/ContextStoppedEvent.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/jmx/export/MBeanExporterListener.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/jmx/access/MBeanConnectFailureException.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/remoting/RemoteConnectFailureException.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/ejb/config/LocalStatelessSessionBeanDefinitionParser.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/ui/context/support/UiApplicationContextUtils.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/config/SpringConfiguredBeanDefinitionParser.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/scheduling/config/TaskNamespaceHandler.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/ApplicationContextException.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/ejb/access/EjbAccessException.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/scheduling/support/DelegatingErrorHandlingRunnable.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/HierarchicalMessageSource.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-

jar/org/springframework/remoting/RemoteLookupFailureException.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/remoting/rmi/RmiBasedExporter.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/validation/beanvalidation/LocaleContextMessageInterpolator.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/jmx/MBeanServerNotFoundException.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/jmx/export/metadata/JmxAttributeSource.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/ui/context/HierarchicalThemeSource.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/jmx/export/metadata/InvalidMetadataException.java  
No license file was found, but licenses were detected in source scan.

```
/*
* Copyright 2002-2016 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
```

Found in path(s):

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/scheduling/config/ScheduledTasksBeanDefinitionParser.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/cache/annotation/Caching.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/remoting/support/RemoteInvocationUtils.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/cache/interceptor/CacheEvaluationContext.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/scripting/groovy/GroovyObjectCustomizer.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/config/AbstractPropertyLoadingBeanDefinitionParser.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/format/Parser.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/format/Printer.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/jndi/JndiPropertySource.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/cache/interceptor/KeyGenerator.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/cache/interceptor/SimpleKeyGenerator.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/format/datetime/standard/DurationFormatter.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/format/datetime/standard/PeriodFormatter.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/format/datetime/standard/MonthDayFormatter.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/format/datetime/standard/YearMonthFormatter.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/jndi/JndiLocatorDelegate.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/remoting/rmi/RmiClientInterceptorUtils.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/scheduling/config/ExecutorBeanDefinitionParser.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/format/support/FormatterPropertyEditorAdapter.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/config/PropertyOverrideBeanDefinitionParser.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/annotation/Primary.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/scripting/support/StandardScriptUtils.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/support/GenericXmlApplicationContext.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/instrument/classloading/weblogic/WebLogicLoadTimeWeaver.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/scripting/bsh/BshScriptFactory.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/annotation/ScopeMetadataResolver.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/cache/annotation/CacheEvict.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/cache/support/CompositeCacheManager.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/format/datetime/standard/TemporalAccessorPrinter.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/scheduling/annotation/Schedules.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2007 the original author or authors.

```
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
```

Found in path(s):

```
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/remoting/support/RemoteInvocationFactory.java
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/jmx/export/metadata/ManagedOperationParameter.java
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/jmx/export/SpringModelMBean.java
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/remoting/support/RemoteInvocationExecutor.java
```

No license file was found, but licenses were detected in source scan.

```
/*
* Copyright 2002-2017 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
```

Found in path(s):

```
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/cache/interceptor/SimpleCacheErrorHandler.java
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/context/support/DelegatingMessageSource.java
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/format/datetime/joda/JodaTimeFormatterRegistrar.java
```

- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/format/datetime/joda/DateTimeFormatterFactoryBean.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/MessageSourceResolvable.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/support/EmbeddedValueResolutionSupport.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/cache/concurrent/ConcurrentMapCacheFactoryBean.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/instrument/classloading/SimpleInstrumentableClassLoader.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/jmx/access/MBeanProxyFactoryBean.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/scheduling/support/MethodInvokingRunnable.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/instrument/classloading/glassfish/GlassFishLoadTimeWeaver.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/jmx/export/assembly/MethodExclusionMBeanInfoAssembler.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/scheduling/config/FixedDelayTask.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/format/datetime/joda/DateTimeFormatterFactory.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/config/MBeanExportBeanDefinitionParser.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/jmx/export/metadata/ManagedMetric.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/format/number/NumberFormatAnnotationFormatterFactory.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/scheduling/config/IntervalTask.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/cache/interceptor/BeanFactoryCacheOperationSourceAdvisor.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/scheduling/annotation/AnnotationAsyncExecutionInterceptor.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/cache/interceptor/CacheErrorHandler.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/instrument/classloading/SimpleLoadTimeWeaver.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/annotation/AspectJAutoProxyRegistrar.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/annotation/AnnotationScopeMetadataResolver.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/support/AbstractRefreshableConfigApplicationContext.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/i18n/SimpleTimeZoneAwareLocaleContext.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/remoting/support/RemoteExporter.java



- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/scripting/bsh/BshScriptEvaluator.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/cache/support/SimpleValueWrapper.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/support/ApplicationListenerDetector.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/format/number/money/MonetaryAmountFormatter.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/validation/beanvalidation/CustomValidatorBean.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/scripting/support/StaticScriptSource.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/annotation/Jsr330ScopeMetadataResolver.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/scheduling/config/FixedRateTask.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/jmx/support/MetricType.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/expression/BeanExpressionContextAccessor.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/format/number/NumberStyleFormatter.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/jndi/JndiAccessor.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/scripting/support/StandardScriptEvaluator.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/format/datetime/standard/DateTimeFormatterFactoryBean.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/jmx/export/NotificationListenerBean.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/ejb/access/SimpleRemoteSlsbInvokerInterceptor.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/stereotype/Indexed.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/jmx/export/metadata/JmxMetadataUtils.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/instrument/classloading/weblogic/WebLogicClassPreProcessorAdapter.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/config/LoadTimeWeaverBeanDefinitionParser.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/support/ClassPathXmlApplicationContext.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/instrument/classloading/SimpleThrowawayClassLoader.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/cache/interceptor/NamedCacheResolver.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/jmx/export/metadata/ManagedResource.java

- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/format/datetime/joda/JodaTimeContext.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/support/ConversionServiceFactoryBean.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/expression/AnnotatedElementKey.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/scheduling/config/Task.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/jndi/TypeMismatchNamingException.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/instrument/classloading/tomcat/TomcatLoadTimeWeaver.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/jmx/export/assembly/AbstractMBeanInfoAssembler.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/remoting/support/RemoteAccessor.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/scheduling/config/ScheduledTaskHolder.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/cache/config/CacheNamespaceHandler.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/format/datetime/joda/JodaDateTimeFormatAnnotationFormatterFactory.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/jmx/access/ConnectorDelegate.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/jmx/export/naming/ObjectNamingStrategy.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/expression/MapAccessor.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/remoting/rmi/JndiRmiProxyFactoryBean.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/jmx/export/metadata/ManagedNotification.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/format/datetime/DateFormatterRegistrar.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/scheduling/concurrent/ScheduledExecutorTask.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/remoting/rmi/RmiProxyFactoryBean.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/format/support/FormattingConversionServiceFactoryBean.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/jmx/support/NotificationListenerHolder.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/expression/BeanFactoryAccessor.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/validation/DefaultMessageCodesResolver.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/expression/EnvironmentAccessor.java

```
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/context/weaving/LoadTimeWeaverAwareProcessor.java
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/context/EnvironmentAware.java
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/format/number/CurrencyStyleFormatter.java
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/scripting/ScriptFactory.java
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/scripting/groovy/GroovyScriptEvaluator.java
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/stereotype/Component.java
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/jndi/JndiObjectTargetSource.java
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/cache/support/NullValue.java
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/context/support/AbstractXmlApplicationContext.java
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/instrument/classloading/websphere/WebSphereLoadTimeWeaver.java
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/scheduling/config/TriggerTask.java
```

No license file was found, but licenses were detected in source scan.

```
/*
```

```
* Copyright 2002-2020 the original author or authors.
```

```
*
```

```
* Licensed under the Apache License, Version 2.0 (the "License");
```

```
* you may not use this file except in compliance with the License.
```

```
* You may obtain a copy of the License at
```

```
*
```

```
* https://www.apache.org/licenses/LICENSE-2.0
```

```
*
```

```
* Unless required by applicable law or agreed to in writing, software
```

```
* distributed under the License is distributed on an "AS IS" BASIS,
```

```
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
```

```
* See the License for the specific language governing permissions and
```

```
* limitations under the License.
```

```
*/
```

Found in path(s):

```
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/context/annotation/DeferredImportSelector.java
```

```
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/context/support/AbstractResourceBasedMessageSource.java
```

```
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/context/annotation/ConfigurationClassParser.java
```

```
* /opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
```

jar/org/springframework/format/support/DefaultFormattingConversionService.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/scheduling/concurrent/DefaultManagedTaskScheduler.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/ejb/access/LocalSlsbInvokerInterceptor.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/annotation/ScannedGenericBeanDefinition.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/instrument/classloading/ShadowingClassLoader.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/validation/AbstractBindingResult.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/validation/MessageCodeFormatter.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/annotation/ComponentScan.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/support/ApplicationContextAwareProcessor.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/validation/AbstractErrors.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/remoting/rmi/RmiClientInterceptor.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/ApplicationStartupAware.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/scheduling/concurrent/DefaultManagedTaskExecutor.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/annotation/AnnotationConfigApplicationContext.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/scheduling/concurrent/ConcurrentTaskScheduler.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/cache/interceptor/SimpleKey.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/support/LiveBeansViewMBean.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/scheduling/config/ScheduledTaskRegistrar.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/jmx/export/annotation/ManagedAttribute.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/scheduling/TriggerContext.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/validation/beanvalidation/MethodValidationPostProcessor.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/support/AbstractRefreshableApplicationContext.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/support/SimpleThreadScope.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/ApplicationContextInitializer.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-

jar/org/springframework/validation/beanvalidation/MethodValidationInterceptor.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/annotation/AutoProxyRegistrar.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/remoting/support/RemoteInvocationTraceInterceptor.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/event/DefaultEventListenerFactory.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/instrument/classloading/websphere/WebSphereClassPreDefinePlugin.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/jmx/export/metadata/AbstractJmxAttribute.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/annotation/MBeanExportConfiguration.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/support/ResourceBundleMessageSource.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/annotation/PropertySource.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/annotation/FullyQualifiedAnnotationBeanNameGenerator.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/annotation/ImportSelector.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/cache/concurrent/ConcurrentMapCacheManager.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/cache/support/NoOpCache.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/scripting/support/ScriptFactoryPostProcessor.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/scripting/groovy/GroovyScriptFactory.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/remoting/rmi/JndiRmiClientInterceptor.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/cache/annotation/ProxyCachingConfiguration.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/support/GenericApplicationContext.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/ejb/access/AbstractRemoteSlsbInvokerInterceptor.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/annotation/ConfigurationClassBeanDefinitionReader.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/annotation/Condition.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/scheduling/config/TaskExecutorFactoryBean.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/jndi/JndiObjectFactoryBean.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/jmx/export/assembly/InterfaceBasedMBeanInfoAssembler.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-

jar/org/springframework/validation/MapBindingResult.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/scheduling/support/SimpleTriggerContext.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/annotation/ConditionContext.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/scheduling/support/PeriodicTrigger.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/cache/support/AbstractValueAdaptingCache.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/event/EventListenerMethodProcessor.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/cache/interceptor/CacheInterceptor.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/cache/concurrent/ConcurrentMapCache.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/annotation/ScopedProxyMode.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/validation/BindException.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/remoting/support/RemoteInvocationBasedAccessor.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/scheduling/annotation/ProxyAsyncConfiguration.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/annotation/LoadTimeWeavingConfiguration.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/event/EventPublicationInterceptor.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/ConfigurableApplicationContext.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/cache/support/SimpleCacheManager.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/jmx/support/RegistrationPolicy.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/support/DefaultLifecycleProcessor.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/cache/support/NoOpCacheManager.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/annotation/ConfigurationCondition.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/scheduling/TaskScheduler.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/jmx/access/MBeanClientInterceptor.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/annotation/Bean.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/index/CandidateComponentsIndex.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-

jar/org/springframework/format/number/money/Jsr354NumberFormatAnnotationFormatterFactory.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/annotation/ContextAnnotationAutowireCandidateResolver.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/scheduling/annotation/SchedulingConfiguration.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/scheduling/concurrent/ReschedulingRunnable.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/ejb/config/AbstractJndiLocatingBeanDefinitionParser.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2019 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

/\*\*

\* {@link FactoryBean} that obtains a WebSphere {@link javax.management.MBeanServer}

\* reference through WebSphere's proprietary {@code AdminServiceFactory} API,

\* available on WebSphere 5.1 and higher.

\*

\* <p>Exposes the {@code MBeanServer} for bean references.

\*

\* <p>This {@code FactoryBean} is a direct alternative to {@link MBeanServerFactoryBean},

\* which uses standard JMX 1.2 API to access the platform's {@link MBeanServer}.

\*

\* <p>See the javadocs for WebSphere's

\* <a

href="https://www.ibm.com/support/knowledgecenter/SSEQTJ\_9.0.0/com.ibm.websphere.javadoc.doc/web/apidocs/  
/com/ibm/websphere/management/AdminServiceFactory.html">{@code AdminServiceFactory}</a>

\* and

\* <a

href="https://www.ibm.com/support/knowledgecenter/SSEQTJ\_9.0.0/com.ibm.websphere.javadoc.doc/web/apidocs/  
/com/ibm/websphere/management/MBeanFactory.html">{@code MBeanFactory}</a>.

\*

\* @author Juergen Hoeller

\* @author Rob Harrop

\* @since 2.0.3

\* @see javax.management.MBeanServer  
\* @see MBeanServerFactoryBean  
\*/

Found in path(s):

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/jmx/support/WebSphereMBeanServerFactoryBean.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2011 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/annotation/ImportAware.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/annotation/ConflictingBeanDefinitionException.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/ApplicationEventPublisherAware.java

\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/jmx/export/notification/NotificationPublisherAware.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2018 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.



- \* See the License for the specific language governing permissions and
- \* limitations under the License.
- \*/

Found in path(s):

- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/scheduling/concurrent/ScheduledExecutorFactoryBean.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/jmx/export/assembler/MethodNameBasedMBeanInfoAssembler.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/jmx/export/assembler/AbstractConfigurableMBeanInfoAssembler.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/cache/config/CacheAdviceParser.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/cache/interceptor/CacheOperationExpressionEvaluator.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/validation/FieldError.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/scripting/support/ResourceScriptSource.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/format/datetime/standard/DateTimeFormatterRegistrar.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/remoting/rmi/JndiRmiServiceExporter.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/cache/interceptor/NameMatchCacheOperationSource.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/event/EventExpressionRootObject.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/support/ApplicationObjectSupport.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/scripting/config/ScriptingDefaultsParser.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/jmx/export/metadata/ManagedAttribute.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/annotation/EnableLoadTimeWeaving.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/validation/Errors.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/annotation/Profile.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/jmx/export/notification/NotificationPublisher.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/validation/BeanPropertyBindingResult.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/scheduling/annotation/AsyncAnnotationBeanPostProcessor.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/scheduling/config/TaskManagementConfigUtils.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-

jar/org/springframework/validation/DirectFieldBindingResult.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/remoting/support/RemoteInvocationBasedExporter.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/scheduling/annotation/EnableAsync.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/jmx/export/naming/KeyNamingStrategy.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/scheduling/support/ScheduledMethodRunnable.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/cache/annotation/EnableCaching.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/scripting/config/ScriptBeanDefinitionParser.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/jmx/export/notification/ModelMBeanNotificationPublisher.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/Lifecycle.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/jmx/export/ assembler/MetadataMBeanInfoAssembler.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/weaving/AspectJWeavingEnabler.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/annotation/DependsOn.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/annotation/AdviceMode.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/cache/interceptor/VariableNotAvailableException.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/scheduling/annotation/AsyncConfigurationSelector.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/scheduling/concurrent/DefaultManagedAwareThreadFactory.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/format/support/FormattingConversionService.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/expression/CachedExpressionEvaluator.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/validation/beanvalidation/BeanValidationPostProcessor.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/EmbeddedValueResolverAware.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/expression/MethodBasedEvaluationContext.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/remoting/support/SimpleHttpServerFactoryBean.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/remoting/rmi/RemoteInvocationSerializingExporter.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/cache/interceptor/CacheExpressionRootObject.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-

jar/org/springframework/jmx/export/assembler/SimpleReflectiveMBeanInfoAssembler.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/format/FormatterRegistry.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/scheduling/SchedulingTaskExecutor.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/instrument/classloading/websphere/WebSphereClassLoaderAdapter.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/i18n/LocaleContextHolder.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/annotation/BeanAnnotationHelper.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/remoting/support/RemotingSupport.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/annotation/ProfileCondition.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/format/datetime/standard/MonthFormatter.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/ejb/access/LocalStatelessSessionProxyFactoryBean.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/jmx/export/naming/IdentityNamingStrategy.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/format/datetime/joda/JodaTimeConverters.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/scheduling/annotation/AsyncResult.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/remoting/support/RemoteInvocationResult.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/cache/annotation/CachingConfigurerSupport.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/validation/SmartValidator.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/cache/interceptor/AbstractCacheResolver.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/remoting/rmi/RmiServiceExporter.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/remoting/rmi/RmiInvocationWrapper.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/remoting/rmi/RmiRegistryFactoryBean.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/instrument/classloading/weblogic/WebLogicClassLoaderAdapter.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/jndi/IndiObjectLocator.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/jmx/export/MBeanExportOperations.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/remoting/support/RemoteInvocation.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-

jar/org/springframework/context/annotation/ImportRegistry.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/format/annotation/NumberFormat.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/scheduling/concurrent/ForkJoinPoolFactoryBean.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/jndi/JndiTemplate.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/cache/config/CacheManagementConfigUtils.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/scheduling/support/CronSequenceGenerator.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/annotation/ComponentScanBeanDefinitionParser.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/cache/interceptor/CacheResolver.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/jmx/export/ assembler/AbstractReflectiveMBeanInfoAssembler.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/instrument/classloading/ReflectiveLoadTimeWeaver.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/scripting/ScriptCompilationException.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/instrument/classloading/ResourceOverridingShadowingClassLoader.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/cache/annotation/CachingConfigurationSelector.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/ejb/access/SimpleRemoteStatelessSessionProxyFactoryBean.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/validation/ValidationUtils.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/expression/BeanFactoryResolver.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/cache/interceptor/SimpleCacheResolver.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/validation/DefaultBindingErrorProcessor.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/jndi/JndiLocatorSupport.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/remoting/RemoteAccessException.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/format/datetime/standard/DateTimeConverters.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/config/MBeanServerBeanDefinitionParser.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/scripting/bsh/BshScriptUtils.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/annotation/ScopedProxyCreator.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-

jar/org/springframework/validation/AbstractPropertyBindingResult.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/annotation/ConditionEvaluator.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/annotation/AdviceModeImportSelector.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/ui/context/support/DelegatingThemeSource.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/validation/BindingResult.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/cache/interceptor/CacheOperationInvocationContext.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/format/datetime/joda/JodaTimeContextHolder.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/ui/context/support/ResourceBundleThemeSource.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/scripting/config/LangNamespaceUtils.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/support/FileSystemXmlApplicationContext.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/support/MessageSourceAccessor.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/jmx/support/ObjectNameManager.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/scheduling/annotation/AsyncAnnotationAdvisor.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/ejb/access/AbstractSlsInvokerInterceptor.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/annotation/Scope.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/instrument/classloading/WeavingTransformer.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/context/MessageSourceAware.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/jmx/support/MBeanRegistrationSupport.java  
\* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-  
jar/org/springframework/format/datetime/standard/YearFormatter.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2013 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*

- \* Unless required by applicable law or agreed to in writing, software
- \* distributed under the License is distributed on an "AS IS" BASIS,
- \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- \* See the License for the specific language governing permissions and
- \* limitations under the License.
- \*/

Found in path(s):

- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/format/datetime/joda/LocalTimeParser.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/format/datetime/joda/ReadablePartialPrinter.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/annotation/Description.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/i18n/TimeZoneAwareLocaleContext.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/support/MessageSourceResourceBundle.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/scheduling/concurrent/CustomizableThreadFactory.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/format/datetime/joda/LocalDateTimeParser.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/annotation/FilterType.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/format/datetime/joda/DateTimeParser.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/format/datetime/joda/MillisecondInstantPrinter.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/format/datetime/joda/LocalDateParser.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/format/datetime/joda/ReadableInstantPrinter.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/validation/beanvalidation/OptionalValidatorFactoryBean.java
- \* /opt/cola/permits/1346652488\_1655478933.348682/0/spring-context-5-3-21-sources-jar/org/springframework/context/i18n/LocaleContext.java

No license file was found, but licenses were detected in source scan.

/\*

- \* Copyright 2002-2020 the original author or authors.
- \*
- \* Licensed under the Apache License, Version 2.0 (the "License");
- \* you may not use this file except in compliance with the License.
- \* You may obtain a copy of the License at
- \*
- \* <https://www.apache.org/licenses/LICENSE-2.0>
- \*
- \* Unless required by applicable law or agreed to in writing, software

```
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
/**
* Abstract the invocation of a cache operation.
*
* <p>Does not provide a way to transmit checked exceptions but
* provide a special exception that should be used to wrap any
* exception that was thrown by the underlying invocation.
* Callers are expected to handle this issue type specifically.
*
* @author Stephane Nicoll
* @since 4.1
*/
```

Found in path(s):

```
*/opt/cola/permits/1346652488_1655478933.348682/0/spring-context-5-3-21-sources-
jar/org/springframework/cache/interceptor/CacheOperationInvoker.java
```

## 1.279 jackson-databind 2.14.0-rc2

### 1.279.1 Available under license :

# Jackson JSON processor

Jackson is a high-performance, Free/Open Source JSON processing library. It was originally written by Tatu Saloranta (tatu.saloranta@iki.fi), and has been in development since 2007. It is currently developed by a community of developers.

## Licensing

Jackson 2.x core and extension components are licensed under Apache License 2.0. To find the details that apply to this artifact see the accompanying LICENSE file.

## Credits

A list of contributors may be found from CREDITS(-2.x) file, which is included in some artifacts (usually source distributions); but is always available from the source code management (SCM) system project uses.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

## 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted"



means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and

attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the

appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
  
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

### APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software

distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

## 1.280 json-simple 1.1

### 1.280.1 Available under license :

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

##### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction,  
and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by  
the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all  
other entities that control, are controlled by, or are under common  
control with that entity. For the purposes of this definition,  
"control" means (i) the power, direct or indirect, to cause the  
direction or management of such entity, whether by contract or  
otherwise, or (ii) ownership of fifty percent (50%) or more of the  
outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity  
exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications,  
including but not limited to software source code, documentation  
source, and configuration files.

"Object" form shall mean any form resulting from mechanical  
transformation or translation of a Source form, including but  
not limited to compiled object code, generated documentation,  
and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or  
Object form, made available under the License, as indicated by a  
copyright notice that is included in or attached to the work  
(an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate

as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify

the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include

the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

## 1.281 libusb 1.0.23 4.el8

### 1.281.1 Available under license :

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better



strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

#### GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of

this Lesser General Public License (also called "this License").

Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

a) The modified work must itself be a software library.

b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.

c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify

that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above

specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by

modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries,



so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!

# 1.282 wsd14j 1.6.3

## 1.282.1 Available under license :

From RPM File Metadata:CPL

# 1.283 aspect-j 1.8.0

## 1.283.1 Available under license :

Eclipse Public License - v 1.0

THE ACCOMPANYING PROGRAM IS PROVIDED UNDER THE TERMS OF THIS ECLIPSE PUBLIC LICENSE ("AGREEMENT"). ANY USE, REPRODUCTION OR DISTRIBUTION OF THE PROGRAM CONSTITUTES RECIPIENT'S ACCEPTANCE OF THIS AGREEMENT.

### 1. DEFINITIONS

"Contribution" means:

- a) in the case of the initial Contributor, the initial code and documentation distributed under this Agreement, and
- b) in the case of each subsequent Contributor:

- i) changes to the Program, and

- ii) additions to the Program;

where such changes and/or additions to the Program originate from and are distributed by that particular Contributor. A Contribution 'originates' from a Contributor if it was added to the Program by such Contributor itself or anyone acting on such Contributor's behalf. Contributions do not include additions to the Program which: (i) are separate modules of software distributed in conjunction with the Program under their own license agreement, and (ii) are not derivative works of the Program.

"Contributor" means any person or entity that distributes the Program.

"Licensed Patents " mean patent claims licensable by a Contributor which are necessarily infringed by the use or sale of its Contribution alone or when combined with the Program.

"Program" means the Contributions distributed in accordance with this Agreement.

"Recipient" means anyone who receives the Program under this Agreement, including all Contributors.

### 2. GRANT OF RIGHTS

- a) Subject to the terms of this Agreement, each Contributor hereby grants Recipient a non-exclusive, worldwide, royalty-free copyright license to reproduce, prepare derivative works of, publicly display, publicly perform, distribute and sublicense the Contribution of such Contributor, if any, and such derivative works, in source code and object code form.

b) Subject to the terms of this Agreement, each Contributor hereby grants Recipient a non-exclusive, worldwide, royalty-free patent license under Licensed Patents to make, use, sell, offer to sell, import and otherwise transfer the Contribution of such Contributor, if any, in source code and object code form. This patent license shall apply to the combination of the Contribution and the Program if, at the time the Contribution is added by the Contributor, such addition of the Contribution causes such combination to be covered by the Licensed Patents. The patent license shall not apply to any other combinations which include the Contribution. No hardware per se is licensed hereunder.

c) Recipient understands that although each Contributor grants the licenses to its Contributions set forth herein, no assurances are provided by any Contributor that the Program does not infringe the patent or other intellectual property rights of any other entity. Each Contributor disclaims any liability to Recipient for claims brought by any other entity based on infringement of intellectual property rights or otherwise. As a condition to exercising the rights and licenses granted hereunder, each Recipient hereby assumes sole responsibility to secure any other intellectual property rights needed, if any. For example, if a third party patent license is required to allow Recipient to distribute the Program, it is Recipient's responsibility to acquire that license before distributing the Program.

d) Each Contributor represents that to its knowledge it has sufficient copyright rights in its Contribution, if any, to grant the copyright license set forth in this Agreement.

### 3. REQUIREMENTS

A Contributor may choose to distribute the Program in object code form under its own license agreement, provided that:

a) it complies with the terms and conditions of this Agreement; and

b) its license agreement:

i) effectively disclaims on behalf of all Contributors all warranties and conditions, express and implied, including warranties or conditions of title and non-infringement, and implied warranties or conditions of merchantability and fitness for a particular purpose;

ii) effectively excludes on behalf of all Contributors all liability for damages, including direct, indirect, special, incidental and consequential damages, such as lost profits;

iii) states that any provisions which differ from this Agreement are offered by that Contributor alone and not by any other party; and

iv) states that source code for the Program is available from such Contributor, and informs licensees how to obtain it in a reasonable manner on or through a medium customarily used for software exchange.

When the Program is made available in source code form:

a) it must be made available under this Agreement; and

b) a copy of this Agreement must be included with each copy of the Program.

Contributors may not remove or alter any copyright notices contained within the Program.

Each Contributor must identify itself as the originator of its Contribution, if any, in a manner that reasonably allows subsequent Recipients to identify the originator of the Contribution.

#### 4. COMMERCIAL DISTRIBUTION

Commercial distributors of software may accept certain responsibilities with respect to end users, business partners and the like. While this license is intended to facilitate the commercial use of the Program, the Contributor who includes the Program in a commercial product offering should do so in a manner which does not create potential liability for other Contributors. Therefore, if a Contributor includes the Program in a commercial product offering, such Contributor ("Commercial Contributor") hereby agrees to defend and indemnify every other Contributor ("Indemnified Contributor") against any losses, damages and costs (collectively "Losses") arising from claims, lawsuits and other legal actions brought by a third party against the Indemnified Contributor to the extent caused by the acts or omissions of such Commercial Contributor in connection with its distribution of the Program in a commercial product offering. The obligations in this section do not apply to any claims or Losses relating to any actual or alleged intellectual property infringement. In order to qualify, an Indemnified Contributor must: a) promptly notify the Commercial Contributor in writing of such claim, and b) allow the Commercial Contributor to control, and cooperate with the Commercial Contributor in, the defense and any related settlement negotiations. The Indemnified Contributor may participate in any such claim at its own expense.

For example, a Contributor might include the Program in a commercial product offering, Product X. That Contributor is then a Commercial Contributor. If that Commercial Contributor then makes performance claims, or offers warranties related to Product X, those performance claims and warranties are such Commercial Contributor's responsibility alone. Under this section, the Commercial Contributor would have to defend claims against the other Contributors related to those performance claims and warranties, and if a court requires any other Contributor to pay any damages as a result, the Commercial Contributor must pay those damages.

#### 5. NO WARRANTY

EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, THE PROGRAM IS PROVIDED ON AN "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, EITHER EXPRESS OR IMPLIED INCLUDING, WITHOUT LIMITATION, ANY WARRANTIES OR CONDITIONS OF TITLE, NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Each Recipient is solely responsible for determining the appropriateness of using and distributing the Program and assumes all risks associated with its exercise of rights under this Agreement, including but not limited to the risks and costs of program errors, compliance with applicable laws, damage to or loss of data, programs or equipment, and unavailability or interruption of operations.

#### 6. DISCLAIMER OF LIABILITY

EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, NEITHER RECIPIENT NOR ANY CONTRIBUTORS SHALL HAVE ANY LIABILITY FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING WITHOUT LIMITATION LOST PROFITS), HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OR DISTRIBUTION OF THE PROGRAM OR THE EXERCISE OF ANY RIGHTS GRANTED HEREUNDER, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## 7. GENERAL

If any provision of this Agreement is invalid or unenforceable under applicable law, it shall not affect the validity or enforceability of the remainder of the terms of this Agreement, and without further action by the parties hereto, such provision shall be reformed to the minimum extent necessary to make such provision valid and enforceable.

If Recipient institutes patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Program itself (excluding combinations of the Program with other software or hardware) infringes such Recipient's patent(s), then such Recipient's rights granted under Section 2(b) shall terminate as of the date such litigation is filed.

All Recipient's rights under this Agreement shall terminate if it fails to comply with any of the material terms or conditions of this Agreement and does not cure such failure in a reasonable period of time after becoming aware of such noncompliance. If all Recipient's rights under this Agreement terminate, Recipient agrees to cease use and distribution of the Program as soon as reasonably practicable. However, Recipient's obligations under this Agreement and any licenses granted by Recipient relating to the Program shall continue and survive.

Everyone is permitted to copy and distribute copies of this Agreement, but in order to avoid inconsistency the Agreement is copyrighted and may only be modified in the following manner. The Agreement Steward reserves the right to publish new versions (including revisions) of this Agreement from time to time. No one other than the Agreement Steward has the right to modify this Agreement. The Eclipse Foundation is the initial Agreement Steward. The Eclipse Foundation may assign the responsibility to serve as the Agreement Steward to a suitable separate entity. Each new version of the Agreement will be given a distinguishing version number. The Program (including Contributions) may always be distributed subject to the version of the Agreement under which it was received. In addition, after a new version of the Agreement is published, Contributor may elect to distribute the Program (including its Contributions) under the new version. Except as expressly stated in Sections 2(a) and 2(b) above, Recipient receives no rights or licenses to the intellectual property of any Contributor under this Agreement, whether expressly, by implication, estoppel or otherwise. All rights in the Program not expressly granted under this Agreement are reserved.

This Agreement is governed by the laws of the State of New York and the intellectual property laws of the United States of America. No party to this Agreement will bring a legal action under this Agreement more than one year after the cause of action arose. Each party waives its rights to a jury trial in any resulting litigation.

# 1.284 netty-resolver 4.1.78.Final

## 1.284.1 Available under license :

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2017 The Netty Project

\*

\* The Netty Project licenses this file to you under the Apache License,

\* version 2.0 (the "License"); you may not use this file except in compliance

\* with the License. You may obtain a copy of the License at:  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
\* License for the specific language governing permissions and limitations  
\* under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1350827987\_1656063954.5650308/0/netty-resolver-4-1-78-final-sources-1-jar/io/netty/resolver/ResolvedAddressTypes.java  
\* /opt/cola/permits/1350827987\_1656063954.5650308/0/netty-resolver-4-1-78-final-sources-1-jar/io/netty/resolver/HostsFileEntries.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2021 The Netty Project  
\*  
\* The Netty Project licenses this file to you under the Apache License,  
\* version 2.0 (the "License"); you may not use this file except in compliance  
\* with the License. You may obtain a copy of the License at:  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
\* License for the specific language governing permissions and limitations  
\* under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1350827987\_1656063954.5650308/0/netty-resolver-4-1-78-final-sources-1-jar/io/netty/resolver/HostsFileEntriesProvider.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2016 The Netty Project  
\*  
\* The Netty Project licenses this file to you under the Apache License,  
\* version 2.0 (the "License"); you may not use this file except in compliance  
\* with the License. You may obtain a copy of the License at:  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\*/

\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
\* License for the specific language governing permissions and limitations  
\* under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1350827987\_1656063954.5650308/0/netty-resolver-4-1-78-final-sources-1-jar/io/netty/resolver/RoundRobinInetAddressResolver.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2015 The Netty Project

\*

\* The Netty Project licenses this file to you under the Apache License,  
\* version 2.0 (the "License"); you may not use this file except in compliance  
\* with the License. You may obtain a copy of the License at:

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
\* License for the specific language governing permissions and limitations  
\* under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1350827987\_1656063954.5650308/0/netty-resolver-4-1-78-final-sources-1-jar/io/netty/resolver/InetSocketAddressResolver.java

\* /opt/cola/permits/1350827987\_1656063954.5650308/0/netty-resolver-4-1-78-final-sources-1-jar/io/netty/resolver/InetAddressResolver.java

\* /opt/cola/permits/1350827987\_1656063954.5650308/0/netty-resolver-4-1-78-final-sources-1-jar/io/netty/resolver/DefaultAddressResolverGroup.java

\* /opt/cola/permits/1350827987\_1656063954.5650308/0/netty-resolver-4-1-78-final-sources-1-jar/io/netty/resolver/DefaultNameResolver.java

\* /opt/cola/permits/1350827987\_1656063954.5650308/0/netty-resolver-4-1-78-final-sources-1-jar/io/netty/resolver/AbstractAddressResolver.java

\* /opt/cola/permits/1350827987\_1656063954.5650308/0/netty-resolver-4-1-78-final-sources-1-jar/io/netty/resolver/AddressResolver.java

\* /opt/cola/permits/1350827987\_1656063954.5650308/0/netty-resolver-4-1-78-final-sources-1-jar/io/netty/resolver/DefaultHostsFileEntriesResolver.java

\* /opt/cola/permits/1350827987\_1656063954.5650308/0/netty-resolver-4-1-78-final-sources-1-jar/io/netty/resolver/HostsFileEntriesResolver.java

\* /opt/cola/permits/1350827987\_1656063954.5650308/0/netty-resolver-4-1-78-final-sources-1-jar/io/netty/resolver/HostsFileParser.java

\* /opt/cola/permits/1350827987\_1656063954.5650308/0/netty-resolver-4-1-78-final-sources-1-



jar/io/netty/resolver/CompositeNameResolver.java  
No license file was found, but licenses were detected in source scan.

```
/*
* Copyright 2014 The Netty Project
*
* The Netty Project licenses this file to you under the Apache License,
* version 2.0 (the "License"); you may not use this file except in compliance
* with the License. You may obtain a copy of the License at:
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
* License for the specific language governing permissions and limitations
* under the License.
*/
```

Found in path(s):

```
* /opt/cola/permits/1350827987_1656063954.5650308/0/netty-resolver-4-1-78-final-sources-1-
jar/io/netty/resolver/package-info.java
* /opt/cola/permits/1350827987_1656063954.5650308/0/netty-resolver-4-1-78-final-sources-1-
jar/io/netty/resolver/NoopAddressResolver.java
* /opt/cola/permits/1350827987_1656063954.5650308/0/netty-resolver-4-1-78-final-sources-1-
jar/io/netty/resolver/SimpleNameResolver.java
* /opt/cola/permits/1350827987_1656063954.5650308/0/netty-resolver-4-1-78-final-sources-1-
jar/io/netty/resolver/NameResolver.java
* /opt/cola/permits/1350827987_1656063954.5650308/0/netty-resolver-4-1-78-final-sources-1-
jar/io/netty/resolver/AddressResolverGroup.java
* /opt/cola/permits/1350827987_1656063954.5650308/0/netty-resolver-4-1-78-final-sources-1-
jar/io/netty/resolver/NoopAddressResolverGroup.java
```

No license file was found, but licenses were detected in source scan.

```
<!--
~ Copyright 2014 The Netty Project
~
~ The Netty Project licenses this file to you under the Apache License,
~ version 2.0 (the "License"); you may not use this file except in compliance
~ with the License. You may obtain a copy of the License at:
~
~ https://www.apache.org/licenses/LICENSE-2.0
~
~ Unless required by applicable law or agreed to in writing, software
~ distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
~ WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
~ License for the specific language governing permissions and limitations
~ under the License.
```

-->

Found in path(s):

\* /opt/cola/permits/1350827987\_1656063954.5650308/0/netty-resolver-4-1-78-final-sources-1-jar/META-INF/maven/io.netty/netty-resolver/pom.xml

# 1.285 libpng 1.6.34 5.el8

## 1.285.1 Available under license :

---

Copyright (c) 1998-2008 Greg Roelofs. All rights reserved.

This software is provided "as is," without warranty of any kind, express or implied. In no event shall the author or contributors be held liable for any damages arising in any way from the use of this software.

The contents of this file are DUAL-LICENSED. You may modify and/or redistribute this software according to the terms of one of the following two licenses (at your option):

LICENSE 1 ("BSD-like with advertising clause"):

Permission is granted to anyone to use this software for any purpose, including commercial applications, and to alter it and redistribute it freely, subject to the following restrictions:

1. Redistributions of source code must retain the above copyright notice, disclaimer, and this list of conditions.
2. Redistributions in binary form must reproduce the above copyright notice, disclaimer, and this list of conditions in the documentation and/or other materials provided with the distribution.
3. All advertising materials mentioning features or use of this software must display the following acknowledgment:

This product includes software developed by Greg Roelofs and contributors for the book, "PNG: The Definitive Guide," published by O'Reilly and Associates.

LICENSE 2 (GNU GPL v2 or later):

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or

(at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

---

## GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their

rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

#### GNU GENERAL PUBLIC LICENSE

#### TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License

along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not

signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER



PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program  
'Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989  
Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

This copy of the libpng notices is provided for your convenience. In case of any discrepancy between this copy and the notices in the file png.h that is included in the libpng distribution, the latter shall prevail.

#### COPYRIGHT NOTICE, DISCLAIMER, and LICENSE:

If you modify libpng you may insert additional notices immediately following this sentence.

This code is released under the libpng license.

libpng versions 1.0.7, July 1, 2000 through 1.6.34, September 29, 2017 are Copyright (c) 2000-2002, 2004, 2006-2017 Glenn Randers-Pehrson, are derived from libpng-1.0.6, and are distributed according to the same disclaimer and license as libpng-1.0.6 with the following individuals added to the list of Contributing Authors:

Simon-Pierre Cadieux  
Eric S. Raymond  
Mans Rullgard  
Cosmin Truta  
Gilles Vollant  
James Yu  
Mandar Sahastrabuddhe  
Google Inc.  
Vadim Barkov

and with the following additions to the disclaimer:

There is no warranty against interference with your enjoyment of the library or against infringement. There is no warranty that our

efforts or the library will fulfill any of your particular purposes or needs. This library is provided with all faults, and the entire risk of satisfactory quality, performance, accuracy, and effort is with the user.

Some files in the "contrib" directory and some configure-generated files that are distributed with libpng have other copyright owners and are released under other open source licenses.

libpng versions 0.97, January 1998, through 1.0.6, March 20, 2000, are Copyright (c) 1998-2000 Glenn Randers-Pehrson, are derived from libpng-0.96, and are distributed according to the same disclaimer and license as libpng-0.96, with the following individuals added to the list of Contributing Authors:

Tom Lane  
Glenn Randers-Pehrson  
Willem van Schaik

libpng versions 0.89, June 1996, through 0.96, May 1997, are Copyright (c) 1996-1997 Andreas Dilger, are derived from libpng-0.88, and are distributed according to the same disclaimer and license as libpng-0.88, with the following individuals added to the list of Contributing Authors:

John Bowler  
Kevin Bracey  
Sam Bushell  
Magnus Holmgren  
Greg Roelofs  
Tom Tanner

Some files in the "scripts" directory have other copyright owners but are released under this license.

libpng versions 0.5, May 1995, through 0.88, January 1996, are Copyright (c) 1995-1996 Guy Eric Schalnat, Group 42, Inc.

For the purposes of this copyright and license, "Contributing Authors" is defined as the following set of individuals:

Andreas Dilger  
Dave Martindale  
Guy Eric Schalnat  
Paul Schmidt  
Tim Wegner

The PNG Reference Library is supplied "AS IS". The Contributing Authors

and Group 42, Inc. disclaim all warranties, expressed or implied, including, without limitation, the warranties of merchantability and of fitness for any purpose. The Contributing Authors and Group 42, Inc. assume no liability for direct, indirect, incidental, special, exemplary, or consequential damages, which may result from the use of the PNG Reference Library, even if advised of the possibility of such damage.

Permission is hereby granted to use, copy, modify, and distribute this source code, or portions hereof, for any purpose, without fee, subject to the following restrictions:

1. The origin of this source code must not be misrepresented.
2. Altered versions must be plainly marked as such and must not be misrepresented as being the original source.
3. This Copyright notice may not be removed or altered from any source or altered source distribution.

The Contributing Authors and Group 42, Inc. specifically permit, without fee, and encourage the use of this source code as a component to supporting the PNG file format in commercial products. If you use this source code in a product, acknowledgment is not required but would be appreciated.

END OF COPYRIGHT NOTICE, DISCLAIMER, and LICENSE.

#### TRADEMARK:

The name "libpng" has not been registered by the Copyright owner as a trademark in any jurisdiction. However, because libpng has been distributed and maintained world-wide, continually since 1995, the Copyright owner claims "common-law trademark protection" in any jurisdiction where common-law trademark is recognized.

#### OSI CERTIFICATION:

Libpng is OSI Certified Open Source Software. OSI Certified Open Source is a certification mark of the Open Source Initiative. OSI has not addressed the additional disclaimers inserted at version 1.0.7.

#### EXPORT CONTROL:

The Copyright owner believes that the Export Control Classification Number (ECCN) for libpng is EAR99, which means not subject to export controls or International Traffic in Arms Regulations (ITAR) because it is open source, publicly available software, that does not contain any encryption software. See the EAR, paragraphs 734.3(b)(3) and

734.7(b).

Glenn Randers-Pehrson  
glennrp at users.sourceforge.net  
September 29, 2017

# 1.286 springfox-swagger-common 3.0.0

## 1.286.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/*
 *
 * Copyright 2015-2016 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 *
 *
 */
```

Found in path(s):

```
* /opt/ws_local/PERMITS_SQL/1082519065_1597960278.73/0/springfox-swagger-common-3-0-0-sources-
jar/springfox/documentation/swagger/readers/operation/OperationSummaryReader.java
* /opt/ws_local/PERMITS_SQL/1082519065_1597960278.73/0/springfox-swagger-common-3-0-0-sources-
jar/springfox/documentation/swagger/readers/operation/OperationNotesReader.java
* /opt/ws_local/PERMITS_SQL/1082519065_1597960278.73/0/springfox-swagger-common-3-0-0-sources-
jar/springfox/documentation/swagger/readers/operation/OperationHttpMethodReader.java
* /opt/ws_local/PERMITS_SQL/1082519065_1597960278.73/0/springfox-swagger-common-3-0-0-sources-
jar/springfox/documentation/swagger/annotations/Annotations.java
* /opt/ws_local/PERMITS_SQL/1082519065_1597960278.73/0/springfox-swagger-common-3-0-0-sources-
jar/springfox/documentation/swagger/readers/operation/SwaggerOperationModelsProvider.java
* /opt/ws_local/PERMITS_SQL/1082519065_1597960278.73/0/springfox-swagger-common-3-0-0-sources-
jar/springfox/documentation/swagger/readers/operation/OpenApiOperationTagsReader.java
* /opt/ws_local/PERMITS_SQL/1082519065_1597960278.73/0/springfox-swagger-common-3-0-0-sources-
jar/springfox/documentation/swagger/readers/operation/SwaggerMediaTypeReader.java
* /opt/ws_local/PERMITS_SQL/1082519065_1597960278.73/0/springfox-swagger-common-3-0-0-sources-
jar/springfox/documentation/swagger/readers/operation/VendorExtensionsReader.java
```

\* /opt/ws\_local/PERMITS\_SQL/1082519065\_1597960278.73/0/springfox-swagger-common-3-0-0-sources-jar/springfox/documentation/swagger/readers/operation/OperationNicknameIntoUniqueIdReader.java  
\* /opt/ws\_local/PERMITS\_SQL/1082519065\_1597960278.73/0/springfox-swagger-common-3-0-0-sources-jar/springfox/documentation/swagger/readers/operation/SwaggerOperationTagsReader.java  
\* /opt/ws\_local/PERMITS\_SQL/1082519065\_1597960278.73/0/springfox-swagger-common-3-0-0-sources-jar/springfox/documentation/swagger/readers/operation/OperationPositionReader.java  
\* /opt/ws\_local/PERMITS\_SQL/1082519065\_1597960278.73/0/springfox-swagger-common-3-0-0-sources-jar/springfox/documentation/swagger/readers/operation/OperationHiddenReader.java

No license file was found, but licenses were detected in source scan.

/\*

\*

\* Copyright 2018 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <http://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*

\*

\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1082519065\_1597960278.73/0/springfox-swagger-common-3-0-0-sources-jar/springfox/documentation/swagger/web/OperationsSorter.java

\* /opt/ws\_local/PERMITS\_SQL/1082519065\_1597960278.73/0/springfox-swagger-common-3-0-0-sources-jar/springfox/documentation/swagger/web/ModelRendering.java

\* /opt/ws\_local/PERMITS\_SQL/1082519065\_1597960278.73/0/springfox-swagger-common-3-0-0-sources-jar/springfox/documentation/swagger/web/UiConfigurationBuilder.java

\* /opt/ws\_local/PERMITS\_SQL/1082519065\_1597960278.73/0/springfox-swagger-common-3-0-0-sources-jar/springfox/documentation/swagger/web/DocExpansion.java

\* /opt/ws\_local/PERMITS\_SQL/1082519065\_1597960278.73/0/springfox-swagger-common-3-0-0-sources-jar/springfox/documentation/swagger/web/TagsSorter.java

\* /opt/ws\_local/PERMITS\_SQL/1082519065\_1597960278.73/0/springfox-swagger-common-3-0-0-sources-jar/springfox/documentation/swagger/web/SecurityConfigurationBuilder.java

No license file was found, but licenses were detected in source scan.

/\*

\*

\* Copyright 2015-2019 the original author or authors.

\*

- \* Licensed under the Apache License, Version 2.0 (the "License");
- \* you may not use this file except in compliance with the License.
- \* You may obtain a copy of the License at
- \*
- \* <http://www.apache.org/licenses/LICENSE-2.0>
- \*
- \* Unless required by applicable law or agreed to in writing, software
- \* distributed under the License is distributed on an "AS IS" BASIS,
- \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- \* See the License for the specific language governing permissions and
- \* limitations under the License.
- \*
- \*
- \*/

Found in path(s):

- \* /opt/ws\_local/PERMITS\_SQL/1082519065\_1597960278.73/0/springfox-swagger-common-3-0-0-sources-jar/springfox/documentation/swagger/readers/operation/OperationImplicitParameterReader.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519065\_1597960278.73/0/springfox-swagger-common-3-0-0-sources-jar/springfox/documentation/swagger/schema/ApiModelProperties.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519065\_1597960278.73/0/springfox-swagger-common-3-0-0-sources-jar/springfox/documentation/swagger/readers/operation/OpenApiResponseReader.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519065\_1597960278.73/0/springfox-swagger-common-3-0-0-sources-jar/springfox/documentation/swagger/web/InMemorySwaggerResourcesProvider.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519065\_1597960278.73/0/springfox-swagger-common-3-0-0-sources-jar/springfox/documentation/swagger/schema/ApiModelTypeNameProvider.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519065\_1597960278.73/0/springfox-swagger-common-3-0-0-sources-jar/springfox/documentation/swagger/readers/operation/ResponseHeaders.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519065\_1597960278.73/0/springfox-swagger-common-3-0-0-sources-jar/springfox/documentation/swagger/readers/parameter/ApiParamParameterBuilder.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519065\_1597960278.73/0/springfox-swagger-common-3-0-0-sources-jar/springfox/documentation/swagger/readers/parameter/SwaggerExpandedParameterBuilder.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519065\_1597960278.73/0/springfox-swagger-common-3-0-0-sources-jar/springfox/documentation/swagger/web/ApiResourceController.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519065\_1597960278.73/0/springfox-swagger-common-3-0-0-sources-jar/springfox/documentation/swagger/readers/operation/OpenApiOperationAuthReader.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519065\_1597960278.73/0/springfox-swagger-common-3-0-0-sources-jar/springfox/documentation/swagger/web/SwaggerApiListingReader.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519065\_1597960278.73/0/springfox-swagger-common-3-0-0-sources-jar/springfox/documentation/swagger/schema/ApiModelPropertyPropertyBuilder.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519065\_1597960278.73/0/springfox-swagger-common-3-0-0-sources-jar/springfox/documentation/swagger/readers/operation/OperationImplicitParametersReader.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519065\_1597960278.73/0/springfox-swagger-common-3-0-0-sources-jar/springfox/documentation/swagger/readers/operation/SwaggerOperationResponseClassReader.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519065\_1597960278.73/0/springfox-swagger-common-3-0-0-sources-jar/springfox/documentation/swagger/readers/operation/SwaggerResponseMessageReader.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519065\_1597960278.73/0/springfox-swagger-common-3-0-0-sources-jar/springfox/documentation/swagger/common/HostNameProvider.java

\* /opt/ws\_local/PERMITS\_SQL/1082519065\_1597960278.73/0/springfox-swagger-common-3-0-0-sources-jar/springfox/documentation/swagger/readers/operation/OperationAuthReader.java  
\* /opt/ws\_local/PERMITS\_SQL/1082519065\_1597960278.73/0/springfox-swagger-common-3-0-0-sources-jar/springfox/documentation/swagger/readers/parameter/OpenApiParameterBuilder.java  
No license file was found, but licenses were detected in source scan.

```
/*
 *
 * Copyright 2017-2019 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1082519065\_1597960278.73/0/springfox-swagger-common-3-0-0-sources-jar/springfox/documentation/swagger/web/UiConfiguration.java  
\* /opt/ws\_local/PERMITS\_SQL/1082519065\_1597960278.73/0/springfox-swagger-common-3-0-0-sources-jar/springfox/documentation/swagger/web/SecurityConfiguration.java  
\* /opt/ws\_local/PERMITS\_SQL/1082519065\_1597960278.73/0/springfox-swagger-common-3-0-0-sources-jar/springfox/documentation/swagger/web/SwaggerResource.java  
\* /opt/ws\_local/PERMITS\_SQL/1082519065\_1597960278.73/0/springfox-swagger-common-3-0-0-sources-jar/springfox/documentation/swagger/common/XForwardPrefixPathAdjuster.java  
\* /opt/ws\_local/PERMITS\_SQL/1082519065\_1597960278.73/0/springfox-swagger-common-3-0-0-sources-jar/springfox/documentation/swagger/readers/parameter/Examples.java  
No license file was found, but licenses were detected in source scan.

```
/*
 *
 * Copyright 2015 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 */
```



- \* Unless required by applicable law or agreed to in writing, software
- \* distributed under the License is distributed on an "AS IS" BASIS,
- \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- \* See the License for the specific language governing permissions and
- \* limitations under the License.
- \*
- \*
- \*/

Found in path(s):

- \* /opt/ws\_local/PERMITS\_SQL/1082519065\_1597960278.73/0/springfox-swagger-common-3-0-0-sources-jar/springfox/documentation/swagger/readers/parameter/ParameterAnnotationReader.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519065\_1597960278.73/0/springfox-swagger-common-3-0-0-sources-jar/springfox/documentation/swagger/schema/ApiModelBuilder.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519065\_1597960278.73/0/springfox-swagger-common-3-0-0-sources-jar/springfox/documentation/swagger/web/SwaggerResourcesProvider.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519065\_1597960278.73/0/springfox-swagger-common-3-0-0-sources-jar/springfox/documentation/swagger/configuration/SwaggerCommonConfiguration.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519065\_1597960278.73/0/springfox-swagger-common-3-0-0-sources-jar/springfox/documentation/swagger/web/ApiKeyVehicle.java
- \* /opt/ws\_local/PERMITS\_SQL/1082519065\_1597960278.73/0/springfox-swagger-common-3-0-0-sources-jar/springfox/documentation/swagger/common/SwaggerPluginSupport.java

# 1.287 cups 2.2.6-45.el8\_6.2

## 1.287.1 Available under license :

Copyright 1992, 1993, 1994, 1997 Henry Spencer. All rights reserved.  
 This software is not subject to any license of the American Telephone and Telegraph Company or of the Regents of the University of California.

Permission is granted to anyone to use this software for any purpose on any computer system, and to alter it and redistribute it, subject to the following restrictions:

1. The author is not responsible for the consequences of use of this software, no matter how awful, even if they arise from flaws in it.
2. The origin of this software must not be misrepresented, either by explicit claim or by omission. Since few users ever read sources, credits must appear in the documentation.
3. Altered versions must be plainly marked as such, and must not be misrepresented as being the original software. Since few users ever read sources, credits must appear in the documentation.
4. This notice may not be removed or altered.

## CUPS License Agreement

Copyright 2007-2016 by Apple Inc.  
1 Infinite Loop  
Cupertino, CA 95014 USA

WWW: <http://www.cups.org/>

### INTRODUCTION

CUPS(tm) is provided under the GNU General Public License ("GPL") and GNU Library General Public License ("LGPL"), Version 2, with an exception for Apple operating systems. A copy of the exception and licenses follow this introduction.

The GNU LGPL applies to the CUPS and CUPS Imaging libraries located in the "cups" and "filter" subdirectories of the CUPS source distribution and the files in the "test" subdirectory. The GNU GPL applies to the remainder of the CUPS distribution.

For those not familiar with the GNU GPL, the license basically allows you to:

- Use the CUPS software at no charge.
- Distribute verbatim copies of the software in source or binary form.
- Sell verbatim copies of the software for a media fee, or sell support for the software.

What this license \*does not\* allow you to do is make changes or add features to CUPS and then sell a binary distribution without source code. You must provide source for any changes or additions to the software, and all code must be provided under the GPL or LGPL as appropriate. The only exceptions to this are the portions of the CUPS software covered by the Apple operating system license exceptions outlined later in this license agreement.

The GNU LGPL relaxes the "link-to" restriction, allowing you to develop applications that use the CUPS and CUPS Imaging libraries under other licenses and/or conditions as appropriate for your application, driver, or filter.

### LICENSE EXCEPTIONS

In addition, as the copyright holder of CUPS, Apple Inc. grants the following special exception:

1. Apple Operating System Development License Exception;

- a. Software that is developed by any person or entity for an Apple Operating System ("Apple OS-Developed Software"), including but not limited to Apple and third party printer drivers, filters, and backends for an Apple Operating System, that is linked to the CUPS imaging library or based on any sample filters or backends provided with CUPS shall not be considered to be a derivative work or collective work based on the CUPS program and is exempt from the mandatory source code release clauses of the GNU GPL. You may therefore distribute linked combinations of the CUPS imaging library with Apple OS-Developed Software without releasing the source code of the Apple OS-Developed Software. You may also use sample filters and backends provided with CUPS to develop Apple OS-Developed Software without releasing the source code of the Apple OS-Developed Software.
- b. An Apple Operating System means any operating system software developed and/or marketed by Apple Inc., including but not limited to all existing releases and versions of Apple's Darwin, iOS, macOS, macOS Server, and tvOS products and all follow-on releases and future versions thereof.
- c. This exception is only available for Apple OS-Developed Software and does not apply to software that is distributed for use on other operating systems.
- d. All CUPS software that falls under this license exception have the following text at the top of each source file:

This file is subject to the Apple OS-Developed Software exception.

No developer is required to provide this exception in a derived work.

#### KERBEROS SUPPORT CODE

The Kerberos support code ("KSC") is copyright 2006 by Jelmer Vernooij and is provided 'as-is', without any express or implied

warranty. In no event will the author or Apple Inc. be held liable for any damages arising from the use of the KSC.

Sources files containing KSC have the following text at the top of each source file:

This file contains Kerberos support code, copyright 2006 by Jelmer Vernooij.

The KSC copyright and license apply only to Kerberos-related feature code in CUPS. Such code is typically conditionally compiled based on the present of the HAVE\_GSSAPI preprocessor definition.

Permission is granted to anyone to use the KSC for any purpose, including commercial applications, and to alter it and redistribute it freely, subject to the following restrictions:

1. The origin of the KSC must not be misrepresented; you must not claim that you wrote the original software. If you use the KSC in a product, an acknowledgment in the product documentation would be appreciated but is not required.
2. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
3. This notice may not be removed or altered from any source distribution.

## TRADEMARKS

CUPS and the CUPS logo (the "CUPS Marks") are trademarks of Apple Inc. Apple grants you a non-exclusive and non-transferable right to use the CUPS Marks in any direct port or binary distribution incorporating CUPS software and in any promotional material therefor. You agree that your products will meet the highest levels of quality and integrity for similar goods, not be unlawful, and be developed, manufactured, and distributed in compliance with this license. You will not interfere with Apple's rights in the CUPS Marks, and all use of the CUPS Marks shall inure to the benefit of Apple. This license does not apply to use of the CUPS Marks in a derivative products, which requires prior written permission from Apple Inc.

## GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be

distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein.



You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### Appendix: How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively

convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) 19yy <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 675 Mass Ave, Cambridge, MA 02139, USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) 19yy name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
'Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the

library. If this is what you want to do, use the GNU Library General Public License instead of this License.

## GNU LIBRARY GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1991 Free Software Foundation, Inc.

59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the library GPL. It is numbered 2 because it goes with version 2 of the ordinary GPL.]

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Library General Public License, applies to some specially designated Free Software Foundation software, and to any other libraries whose authors decide to use it. You can use it for your libraries, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library, or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link a program with the library, you must provide complete object files to the recipients so that they can relink them with the library, after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

Our method of protecting your rights has two steps: (1) copyright

the library, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the library.

Also, for each distributor's protection, we want to make certain that everyone understands that there is no warranty for this free library. If the library is modified by someone else and passed on, we want its recipients to know that what they have is not the original version, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that companies distributing free software will individually obtain patent licenses, thus in effect transforming the program into proprietary software. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License, which was designed for utility programs. This license, the GNU Library General Public License, applies to certain designated libraries. This license is quite different from the ordinary one; be sure to read it in full, and don't assume that anything in it is the same as in the ordinary license.

The reason we have a separate public license for some libraries is that they blur the distinction we usually make between modifying or adding to a program and simply using it. Linking a program with a library, without changing the library, is in some sense simply using the library, and is analogous to running a utility program or application program. However, in a textual and legal sense, the linked executable is a combined work, a derivative of the original library, and the ordinary General Public License treats it as such.

Because of this blurred distinction, using the ordinary General Public License for libraries did not effectively promote software sharing, because most developers did not use the libraries. We concluded that weaker conditions might promote sharing better.

However, unrestricted linking of non-free programs would deprive the users of those programs of all benefit from the free status of the libraries themselves. This Library General Public License is intended to permit developers of non-free programs to use free libraries, while preserving your freedom as a user of such programs to change the free libraries that are incorporated in them. (We have not seen how to achieve this as regards changes in header files, but we have achieved it as regards changes in the actual functions of the Library.) The hope is that this will lead to faster development of free libraries.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, while the latter only works together with the library.

Note that it is possible for a library to be covered by the ordinary General Public License rather than by this special one.

## GNU LIBRARY GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Library General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact

all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest

your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License.



Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also compile or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

c) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

d) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies,

or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Library General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU

FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### Appendix: How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Library General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Library General Public License for more details.

You should have received a copy of the GNU Library General Public License along with this library; if not, write to the Free Software Foundation, Inc., 675 Mass Ave, Cambridge, MA 02139, USA.

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990

Ty Coon, President of Vice

That's all there is to it!

# 1.288 spring-framework 5.3.21

## 1.288.1 Available under license :

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2010 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/convert/ConversionException.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2003,2004 The Apache Software Foundation

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

- \* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/cglib/beans/BeanMapEmitter.java
- \* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/cglib/core/ReflectUtils.java
- \* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/cglib/beans/BulkBeanEmitter.java
- \* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/cglib/proxy/MethodProxy.java
- \* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/cglib/beans/BeanMap.java
- \* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/cglib/core/AsmApi.java
- \* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/cglib/core/AbstractClassGenerator.java
- \* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/cglib/core/KeyFactory.java
- \* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/cglib/beans/ImmutableBean.java
- \* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/cglib/beans/BeanCopier.java

No license file was found, but licenses were detected in source scan.

// All rights reserved.

// Redistribution and use in source and binary forms, with or without

// modification, are permitted provided that the following conditions

// are met:

// 1. Redistributions of source code must retain the above copyright

// notice, this list of conditions and the following disclaimer.

// 2. Redistributions in binary form must reproduce the above copyright

// notice, this list of conditions and the following disclaimer in the

// documentation and/or other materials provided with the distribution.

// 3. Neither the name of the copyright holders nor the names of its

// this software without specific prior written permission.

Found in path(s):

- \* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/asm/Constants.java
- \* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/asm/FieldWriter.java
- \* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/asm/ClassTooLargeException.java
- \* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/asm/ModuleVisitor.java
- \* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/asm/ClassReader.java
- \* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-

jar/org/springframework/asm/TypeReference.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/asm/ByteVector.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/asm/Symbol.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/asm/ClassWriter.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/asm/Opcodes.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/asm/Handle.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/asm/AnnotationVisitor.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/asm/Attribute.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/asm/Context.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/asm/Edge.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/asm/TypePath.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/asm/Label.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/asm/ClassVisitor.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/asm/CurrentFrame.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/asm/MethodTooLargeException.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/asm/RecordComponentWriter.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/asm/FieldVisitor.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/asm/ModuleWriter.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/asm/MethodWriter.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/asm/RecordComponentVisitor.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/asm/SymbolTable.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/asm/AnnotationWriter.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/asm/Handler.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/asm/Type.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-



jar/org/springframework/asm/ConstantDynamic.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/asm/MethodVisitor.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/asm/Frame.java  
No license file was found, but licenses were detected in source scan.

```
/*
* Copyright 2002,2003,2004 The Apache Software Foundation
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
```

Found in path(s):

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/cglib/proxy/Enhancer.java  
No license file was found, but licenses were detected in source scan.

```
/*
* Copyright 2003 The Apache Software Foundation
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
```

Found in path(s):

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/cglib/beans/FixedKeySet.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-

jar/org/springframework/cglib/beans/BeanGenerator.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/cglib/beans/BulkBeanException.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/cglib/beans/BulkBean.java  
No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2002-2014 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1346652480_1655478936.383428/0/spring-core-5-3-21-sources-
jar/org/springframework/core/convert/support/CollectionToCollectionConverter.java
* /opt/cola/permits/1346652480_1655478936.383428/0/spring-core-5-3-21-sources-
jar/org/springframework/core/convert/support/ObjectToCollectionConverter.java
* /opt/cola/permits/1346652480_1655478936.383428/0/spring-core-5-3-21-sources-
jar/org/springframework/cglib/core/SpringNamingPolicy.java
* /opt/cola/permits/1346652480_1655478936.383428/0/spring-core-5-3-21-sources-
jar/org/springframework/core/convert/support/ArrayToObjectConverter.java
* /opt/cola/permits/1346652480_1655478936.383428/0/spring-core-5-3-21-sources-
jar/org/springframework/cglib/SpringCglibInfo.java
* /opt/cola/permits/1346652480_1655478936.383428/0/spring-core-5-3-21-sources-
jar/org/springframework/core/convert/support/ArrayToStringConverter.java
* /opt/cola/permits/1346652480_1655478936.383428/0/spring-core-5-3-21-sources-
jar/org/springframework/core/convert/support/StringToCollectionConverter.java
* /opt/cola/permits/1346652480_1655478936.383428/0/spring-core-5-3-21-sources-
jar/org/springframework/core/convert/support/ObjectToStringConverter.java
* /opt/cola/permits/1346652480_1655478936.383428/0/spring-core-5-3-21-sources-
jar/org/springframework/core/convert/converter/ConditionalConverter.java
* /opt/cola/permits/1346652480_1655478936.383428/0/spring-core-5-3-21-sources-
jar/org/springframework/util/ExceptionTypeFilter.java
* /opt/cola/permits/1346652480_1655478936.383428/0/spring-core-5-3-21-sources-
jar/org/springframework/core/convert/support/PropertiesToStringConverter.java
* /opt/cola/permits/1346652480_1655478936.383428/0/spring-core-5-3-21-sources-
jar/org/springframework/core/convert/support/ArrayToCollectionConverter.java
```

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/util/xml/StaxStreamHandler.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/type/filter/AbstractClassTestingTypeFilter.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2022 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/task/AsyncTaskExecutor.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/convert/support/StringToLocaleConverter.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/util/ClassUtils.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/annotation/MergedAnnotations.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/io/buffer/DataBufferUtils.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/task/TaskTimeoutException.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/SimpleAliasRegistry.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/annotation/AnnotationTypeMappings.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/util/StringUtils.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/util/TypeUtils.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/CoroutinesUtils.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/io/AbstractFileResolvingResource.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-

jar/org/springframework/core/task/TaskRejectedException.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/util/SerializationUtils.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/ResolvableType.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/log/CompositeLog.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/util/SocketUtils.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/io/Resource.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/task/SimpleAsyncTaskExecutor.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/convert/support/ObjectToObjectConverter.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/util/xml/XmlValidationModeDetector.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/annotation/AnnotationTypeMapping.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/io/AbstractResource.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/task/support/TaskExecutorAdapter.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/annotation/AttributeMethods.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/annotation/SynthesizedMergedAnnotationInvocationHandler.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/io/support/ResourcePatternResolver.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/convert/Property.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/util/unit/DataSize.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/util/DefaultPropertiesPersister.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/env/AbstractEnvironment.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/NestedIOException.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/LocalVariableTableParameterNameDiscoverer.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/io/UrlResource.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2016 the original author or authors.

\*

- \* Licensed under the Apache License, Version 2.0 (the "License");
- \* you may not use this file except in compliance with the License.
- \* You may obtain a copy of the License at
- \*
- \* <https://www.apache.org/licenses/LICENSE-2.0>
- \*
- \* Unless required by applicable law or agreed to in writing, software
- \* distributed under the License is distributed on an "AS IS" BASIS,
- \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- \* See the License for the specific language governing permissions and
- \* limitations under the License.
- \*/

Found in path(s):

- \* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/util/concurrent/FailureCallback.java
- \* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/lang/UsesSunMisc.java
- \* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/convert/support/CharacterToNumberFactory.java
- \* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/convert/support/StringToPropertiesConverter.java
- \* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/convert/support/EnumToIntegerConverter.java
- \* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/objenesis/SpringObjenesis.java
- \* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/convert/converter/ConverterRegistry.java
- \* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/ConfigurableObjectInputStream.java
- \* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/env/CommandLineArgs.java
- \* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/util/backoff/BackOff.java
- \* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/convert/support/CollectionToStringConverter.java
- \* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/convert/support/ZoneIdToTimeZoneConverter.java
- \* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/task/TaskExecutor.java
- \* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/util/backoff/BackOffExecution.java
- \* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/type/filter/AssignableTypeFilter.java
- \* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/env/ConfigurablePropertyResolver.java
- \* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/io/ProtocolResolver.java

```
* /opt/cola/permits/1346652480_1655478936.383428/0/spring-core-5-3-21-sources-
jar/org/springframework/core/convert/support/StringToTimeZoneConverter.java
* /opt/cola/permits/1346652480_1655478936.383428/0/spring-core-5-3-21-sources-
jar/org/springframework/core/convert/support/EnumToStringConverter.java
* /opt/cola/permits/1346652480_1655478936.383428/0/spring-core-5-3-21-sources-
jar/org/springframework/core/convert/support/ZonedDateTimeToCalendarConverter.java
* /opt/cola/permits/1346652480_1655478936.383428/0/spring-core-5-3-21-sources-
jar/org/springframework/core/type/filter/TypeFilter.java
* /opt/cola/permits/1346652480_1655478936.383428/0/spring-core-5-3-21-sources-
jar/org/springframework/util/ErrorHandler.java
```

No license file was found, but licenses were detected in source scan.

```
Copyright 2002-2020 the original author or authors.
```

```
#
```

```
Licensed under the Apache License, Version 2.0 (the "License");
```

```
you may not use this file except in compliance with the License.
```

```
You may obtain a copy of the License at
```

```
#
```

```
https://www.apache.org/licenses/LICENSE-2.0
```

```
#
```

```
Unless required by applicable law or agreed to in writing, software
```

```
distributed under the License is distributed on an "AS IS" BASIS,
```

```
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
```

```
See the License for the specific language governing permissions and
```

```
limitations under the License.
```

org.springframework.core.ReactiveAdapterRegistry\$SpringCoreBlockHoundIntegration

Found in path(s):

```
* /opt/cola/permits/1346652480_1655478936.383428/0/spring-core-5-3-21-sources-jar/META-
INF/services/reactor.blockhound.integration.BlockHoundIntegration
```

No license file was found, but licenses were detected in source scan.

```
/*
```

```
* Copyright 2002-2011 the original author or authors.
```

```
*
```

```
* Licensed under the Apache License, Version 2.0 (the "License");
```

```
* you may not use this file except in compliance with the License.
```

```
* You may obtain a copy of the License at
```

```
*
```

```
* https://www.apache.org/licenses/LICENSE-2.0
```

```
*
```

```
* Unless required by applicable law or agreed to in writing, software
```

```
* distributed under the License is distributed on an "AS IS" BASIS,
```

```
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
```

```
* See the License for the specific language governing permissions and
```

```
* limitations under the License.
```

```
*/
```

Found in path(s):

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/convert/support/ConfigurableConversionService.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2020 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/io/support/ResourceArrayPropertyEditor.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/log/LogAccessor.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/util/xml/StaxStreamXMLReader.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/io/support/PropertiesLoaderSupport.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/util/CollectionUtils.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/convert/support/GenericConversionService.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/convert/converter/ConvertingComparator.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/util/concurrent/MonoToListenableFutureAdapter.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/OrderComparator.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/util/SystemPropertyUtils.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/convert/support/StringToCharacterConverter.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/util/PropertiesPersister.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-

jar/org/springframework/core/io/support/ResourcePropertiesPersister.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/util/backoff/ExponentialBackOff.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/convert/support/MapToMapConverter.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/SortedProperties.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/env/EnumerablePropertySource.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/io/UrlResource.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/task/TaskDecorator.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/MethodParameter.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/util/MimeTypeUtils.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/codec/Hints.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/AttributeAccessorSupport.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/convert/support/StringToEnumConverterFactory.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/annotation/AnnotationsScanner.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/io/support/PathMatchingResourcePatternResolver.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/io/support/PropertySourceFactory.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/env/PropertyResolver.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/annotation/MergedAnnotationsCollection.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/annotation/TypeMappedAnnotation.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/metrics/jfr/FlightRecorderStartupEvent.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/convert/support/StringToNumberConverterFactory.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/io/support/PropertiesLoaderUtils.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/io/support/SpringFactoriesLoader.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/codec/ResourceRegionEncoder.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/metrics/StartupStep.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-



jar/org/springframework/util/MultiValueMapAdapter.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/codec/NettyByteBufEncoder.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/util/StreamUtils.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/convert/support/NumberToNumberConverterFactory.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/convert/converter/Converter.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/GenericTypeResolver.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/env/ProfilesParser.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/annotation/TypeMappedAnnotations.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/util/CustomizableThreadCreator.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/util/SimpleIdGenerator.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/serializer/Serializer.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/AliasRegistry.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/annotation/OrderUtils.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/util/MimeType.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/annotation/MergedAnnotation.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/io/buffer/DefaultDataBufferFactory.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/env/AbstractPropertyResolver.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/util/comparator/InstanceComparator.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/serializer/Deserializer.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/util/FileSystemUtils.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/metrics/ApplicationStartup.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/convert/support/StringToBooleanConverter.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/env/PropertySource.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/ReactiveTypeDescriptor.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-

jar/org/springframework/util/FileCopyUtils.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/io/DefaultResourceLoader.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/util/Assert.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/env/MapPropertySource.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/annotation/MergedAnnotationCollectors.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/Conventions.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/util/IdGenerator.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/KotlinDetector.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/io/buffer/PooledDataBuffer.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/serializer/support/SerializingConverter.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/type/classreading/MethodMetadataReadingVisitor.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/codec/ResourceDecoder.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/util/FastByteArrayOutputStream.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/env/MutablePropertySources.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/codec/NettyByteBufDecoder.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/codec/StringDecoder.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/annotation/AnnotationUtils.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/util/DigestUtils.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/convert/support/StringToUUIDConverter.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/util/concurrent/ListenableFutureCallbackRegistry.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/util/LinkedMultiValueMap.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/env/Profiles.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/codec/AbstractSingleValueEncoder.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/env/SimpleCommandLineArgsParser.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-

jar/org/springframework/core/type/classreading/AnnotationMetadataReadingVisitor.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/PrioritizedParameterNameDiscoverer.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/util/CommonsLogWriter.java  
No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2002-2012 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/serializer/support/SerializationFailedException.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/util/xml/SimpleSaxErrorHandler.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/task/support/ConcurrentExecutorAdapter.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/io/ClassRelativeResourceLoader.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/InfrastructureProxy.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/util/xml/SimpleTransformErrorListener.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/type/classreading/MetadataReaderFactory.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/convert/support/NumberToCharacterConverter.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/style/StylerUtils.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/task/SyncTaskExecutor.java  
No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2012-2020 the original author or authors.
```

\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/metrics/jfr/FlightRecorderStartupStep.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2002-2018 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/util/ConcurrencyThrottleSupport.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/util/AutoPopulatingList.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/util/xml/AbstractXMLEventReader.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/io/DescriptiveResource.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/util/concurrent/SuccessCallback.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/util/backoff/FixedBackOff.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/ParameterizedTypeReference.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/io/support/ResourceRegion.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/NestedCheckedException.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/io/VfsUtils.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/util/concurrent/DelegatingCompletableFuture.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/env/ReadOnlySystemAttributesMap.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/task/AsyncListenableTaskExecutor.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/NestedRuntimeException.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/io/support/ResourcePropertySource.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/task/support/ExecutorServiceAdapter.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/type/classreading/CachingMetadataReaderFactory.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/lang/UsesSunHttpServer.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/convert/converter/ConverterFactory.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/io/support/LocalizedResourceHelper.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/util/concurrent/CompletableFutureAdapter.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/NamedInheritableThreadLocal.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/env/PropertySources.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/env/ConfigurableEnvironment.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/lang/UsesJava7.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/util/concurrent/SettableListenableFuture.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/io/InputStreamResource.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/util/comparator/CompoundComparator.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/util/xml/ListBasedXMLEventReader.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/OverridingClassLoader.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/util/concurrent/ListenableFutureTask.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/io/VfsResource.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/util/CompositeIterator.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/util/xml/SimpleNamespaceContext.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/ParameterNameDiscoverer.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/env/PropertySourcesPropertyResolver.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/convert/support/ConversionServiceFactory.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/lang/UsesJava8.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/NamedThreadLocal.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/ExceptionDepthComparator.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/util/comparator/NullSafeComparator.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/util/xml/StaxEventHandler.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/util/function/SingletonSupplier.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/util/comparator/BooleanComparator.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/convert/support/ByteBufferConverter.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/util/InstanceFilter.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/util/comparator/Comparators.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/util/concurrent/ListenableFutureCallback.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/io/buffer/DataBufferFactory.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/style/ToStringCreator.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/type/classreading/SimpleMetadataReaderFactory.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/io/buffer/NettyDataBufferFactory.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/util/xml/DomContentHandler.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/util/concurrent/ListenableFuture.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/util/comparator/InvertibleComparator.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/util/xml/AbstractXMLStreamReader.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/util/xml/DomUtils.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/util/xml/XMLEventStreamWriter.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/util/xml/XMLEventStreamReader.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/util/UpdateMessageDigestInputStream.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/util/ResourceUtils.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/util/xml/StaxSource.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/MethodIntrospector.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/util/comparator/ComparableComparator.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/util/function/SupplierUtils.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/env/Environment.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2007 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/type/filter/RegexPatternTypeFilter.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/io/ContextResource.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-

jar/org/springframework/core/style/ValueStyler.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2009 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-

jar/org/springframework/core/type/classreading/MetadataReader.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2019 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-

jar/org/springframework/core/codec/ByteBufferEncoder.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-

jar/org/springframework/core/annotation/AnnotatedElementUtils.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-

jar/org/springframework/cglib/core/ClassLoaderAwareGeneratorStrategy.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-



jar/org/springframework/core/PriorityOrdered.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/convert/support/IntegerToEnumConverterFactory.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/annotation/MergedAnnotationSelectors.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/SpringVersion.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/io/buffer/NettyDataBuffer.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/util/SimpleRouteMatcher.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/ReactiveAdapter.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/annotation/MissingMergedAnnotation.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/codec/DataBufferDecoder.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/codec/DataBufferEncoder.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/type/classreading/AnnotationAttributesReadingVisitor.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/annotation/PackagesAnnotationFilter.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/type/classreading/RecursiveAnnotationAttributesVisitor.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/type/classreading/ClassMetadataReadingVisitor.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/Ordered.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/annotation/IntrospectionFailureLogger.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/env/PropertyResolverExtensions.kt  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/annotation/RepeatableContainers.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/util/xml/AbstractStaxXMLReader.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/type/classreading/SimpleMetadataReader.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/codec/ByteArrayDecoder.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/type/AnnotationMetadata.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/util/xml/StaxUtils.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/type/AnnotatedTypeMetadata.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-

jar/org/springframework/core/annotation/AbstractMergedAnnotation.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/io/buffer/DataBuffer.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/type/classreading/RecursiveAnnotationArrayVisitor.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/lang/NonNull.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/codec/AbstractDecoder.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/lang/NonNullFields.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/log/LogMessage.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/type/classreading/AbstractRecursiveAnnotationVisitor.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/util/MultiValueMap.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/annotation/SynthesizingMethodParameter.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/io/support/ResourcePatternUtils.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/annotation/MergedAnnotationSelector.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/type/classreading/AnnotationReadingVisitorUtils.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/codec/AbstractEncoder.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/io/buffer/DataBufferWrapper.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/codec/AbstractDataBufferDecoder.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/DecoratingProxy.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/codec/ResourceEncoder.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/annotation/MergedAnnotationPredicates.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/codec/CharSequenceEncoder.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/style/DefaultValueStyler.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/type/filter/AbstractTypeHierarchyTraversingFilter.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/type/filter/AnnotationTypeFilter.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/util/Base64Utils.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-

jar/org/springframework/util/PathMatcher.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/env/PropertiesPropertySource.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/io/PathResource.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/codec/ByteArrayEncoder.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/util/MethodInvoker.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/util/unit/DataUnit.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/util/xml/TransformerUtils.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/annotation/AnnotationAwareOrderComparator.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/convert/support/ConversionUtils.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/codec/ByteBufferDecoder.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/lang/Nullable.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/BridgeMethodResolver.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/io/FileSystemResource.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/util/RouteMatcher.java

No license file was found, but licenses were detected in source scan.

```
/*
* Copyright 2002-2015 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
```

Found in path(s):

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/convert/support/FallbackObjectToStringConverter.java

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/serializer/DefaultSerializer.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/convert/support/StringToCharsetConverter.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/serializer/support/DeserializingConverter.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/util/JdkIdGenerator.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/env/SystemEnvironmentPropertySource.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/annotation/SynthesizedAnnotation.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/util/ResizableByteArrayOutputStream.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/annotation/AliasFor.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/convert/converter/ConditionalGenericConverter.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/convert/support/StringToCurrencyConverter.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/serializer/support/SerializationDelegate.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/util/AlternativeJdkIdGenerator.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/annotation/AnnotationConfigurationException.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2002-2021 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/util/PropertyPlaceholderHelper.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-

jar/org/springframework/core/env/JOptCommandLinePropertySource.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/SerializableTypeWrapper.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/log/LogDelegateFactory.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/metrics/DefaultApplicationStartup.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/annotation/AnnotationsProcessor.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/NativeDetector.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/util/ObjectUtils.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/io/ResourceLoader.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/AttributeAccessor.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/SmartClassLoader.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/Constants.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/DefaultParameterNameDiscoverer.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/io/buffer/DefaultDataBuffer.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/annotation/ValueExtractor.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/type/classreading/SimpleMethodMetadataReadingVisitor.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/type/classreading/MergedAnnotationReadingVisitor.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/codec/Decoder.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/io/InputStreamSource.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/env/SimpleCommandLinePropertySource.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/io/ByteArrayResource.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/metrics/jfr/FlightRecorderApplicationStartup.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/util/ReflectionUtils.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/convert/TypeDescriptor.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/type/classreading/SimpleMethodMetadata.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-

jar/org/springframework/util/ConcurrentLruCache.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/codec/Encoder.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/util/LinkedCaseInsensitiveMap.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/log/LogFormatUtils.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/env/StandardEnvironment.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/type/classreading/SimpleAnnotationMetadataReadingVisitor.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/util/AntPathMatcher.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/util/PatternMatchUtils.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/util/xml/StaxEventXMLReader.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/asm/SpringAsmInfo.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/annotation/AnnotationAttributes.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/util/StopWatch.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/io/ClassPathResource.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/env/CommandLinePropertySource.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/CollectionFactory.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/util/ConcurrentReferenceHashMap.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/ReactiveAdapterRegistry.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/io/buffer/LimitedDataBufferList.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/annotation/AnnotationFilter.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/SpringProperties.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/type/MethodMetadata.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/type/StandardMethodMetadata.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/io/buffer/DataBufferLimitException.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/type/StandardAnnotationMetadata.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-

jar/org/springframework/core/type/classreading/SimpleAnnotationMetadata.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-  
jar/org/springframework/core/type/StandardClassMetadata.java  
No license file was found, but licenses were detected in source scan.

```
/*
* Copyright 2002-2017 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
```

Found in path(s):

```
* /opt/cola/permits/1346652480_1655478936.383428/0/spring-core-5-3-21-sources-
jar/org/springframework/core/convert/support/ObjectToOptionalConverter.java
* /opt/cola/permits/1346652480_1655478936.383428/0/spring-core-5-3-21-sources-
jar/org/springframework/core/convert/support/CollectionToArrayConverter.java
* /opt/cola/permits/1346652480_1655478936.383428/0/spring-core-5-3-21-sources-
jar/org/springframework/core/type/filter/AspectJTypeFilter.java
* /opt/cola/permits/1346652480_1655478936.383428/0/spring-core-5-3-21-sources-
jar/org/springframework/lang/NonNullApi.java
* /opt/cola/permits/1346652480_1655478936.383428/0/spring-core-5-3-21-sources-
jar/org/springframework/core/KotlinReflectionParameterNameDiscoverer.java
* /opt/cola/permits/1346652480_1655478936.383428/0/spring-core-5-3-21-sources-
jar/org/springframework/core/convert/ConverterNotFoundException.java
* /opt/cola/permits/1346652480_1655478936.383428/0/spring-core-5-3-21-sources-
jar/org/springframework/core/convert/support/DefaultConversionService.java
* /opt/cola/permits/1346652480_1655478936.383428/0/spring-core-5-3-21-sources-
jar/org/springframework/core/convert/support/StreamConverter.java
* /opt/cola/permits/1346652480_1655478936.383428/0/spring-core-5-3-21-sources-
jar/org/springframework/core/io/ResourceEditor.java
* /opt/cola/permits/1346652480_1655478936.383428/0/spring-core-5-3-21-sources-
jar/org/springframework/core/serializer/DefaultDeserializer.java
* /opt/cola/permits/1346652480_1655478936.383428/0/spring-core-5-3-21-sources-
jar/org/springframework/core/codec/DecodingException.java
* /opt/cola/permits/1346652480_1655478936.383428/0/spring-core-5-3-21-sources-
jar/org/springframework/core/convert/support/CollectionToObjectConverter.java
* /opt/cola/permits/1346652480_1655478936.383428/0/spring-core-5-3-21-sources-
jar/org/springframework/core/type/ClassMetadata.java
```

\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/env/MissingRequiredPropertiesException.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/env/CompositePropertySource.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/convert/ConversionFailedException.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/util/xml/StaxResult.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/convert/converter/GenericConverter.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/convert/ConversionService.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/convert/support/ArrayToArrayConverter.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/util/xml/AbstractStaxHandler.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/codec/EncodingException.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/io/WritableResource.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/ResolvableTypeProvider.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/MethodClassKey.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/style/DefaultToStringStyler.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/DecoratingClassLoader.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/convert/support/IdToEntityConverter.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/env/EnvironmentCapable.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/annotation/Order.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/util/InvalidMimeTypeException.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/NestedExceptionUtils.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/io/support/VfsPatternUtils.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/util/xml/AbstractXMLReader.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/core/convert/support/AbstractConditionalEnumConverter.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/util/concurrent/ListenableFutureAdapter.java  
\* /opt/cola/permits/1346652480\_1655478936.383428/0/spring-core-5-3-21-sources-jar/org/springframework/util/NumberUtils.java



```

* /opt/cola/permits/1346652480_1655478936.383428/0/spring-core-5-3-21-sources-
jar/org/springframework/util/concurrent/FutureAdapter.java
* /opt/cola/permits/1346652480_1655478936.383428/0/spring-core-5-3-21-sources-
jar/org/springframework/core/io/support/EncodedResource.java
* /opt/cola/permits/1346652480_1655478936.383428/0/spring-core-5-3-21-sources-
jar/org/springframework/core/io/support/DefaultPropertySourceFactory.java
* /opt/cola/permits/1346652480_1655478936.383428/0/spring-core-5-3-21-sources-
jar/org/springframework/core/io/FileSystemResourceLoader.java
* /opt/cola/permits/1346652480_1655478936.383428/0/spring-core-5-3-21-sources-
jar/org/springframework/core/StandardReflectionParameterNameDiscoverer.java
* /opt/cola/permits/1346652480_1655478936.383428/0/spring-core-5-3-21-sources-
jar/org/springframework/core/convert/support/ObjectToArrayConverter.java
* /opt/cola/permits/1346652480_1655478936.383428/0/spring-core-5-3-21-sources-
jar/org/springframework/core/convert/support/StringToArrayConverter.java
* /opt/cola/permits/1346652480_1655478936.383428/0/spring-core-5-3-21-sources-
jar/org/springframework/util/StringValueResolver.java
* /opt/cola/permits/1346652480_1655478936.383428/0/spring-core-5-3-21-sources-
jar/org/springframework/core/style/ToStringStyler.java
* /opt/cola/permits/1346652480_1655478936.383428/0/spring-core-5-3-21-sources-
jar/org/springframework/core/convert/support/ConvertingPropertyEditorAdapter.java
* /opt/cola/permits/1346652480_1655478936.383428/0/spring-core-5-3-21-sources-
jar/org/springframework/core/codec/CodecException.java

```

## 1.289 xz 5.2.4-4.el8\_6

### 1.289.1 Available under license :

XZ Utils Licensing

=====

Different licenses apply to different files in this package. Here is a rough summary of which licenses apply to which parts of this package (but check the individual files to be sure!):

- liblzma is in the public domain.
- xz, xzdec, and lzmadec command line tools are in the public domain unless GNU getopt\_long had to be compiled and linked in from the lib directory. The getopt\_long code is under GNU LGPLv2.1+.
- The scripts to grep, diff, and view compressed files have been adapted from gzip. These scripts and their documentation are under GNU GPLv2+.
- All the documentation in the doc directory and most of the XZ Utils specific documentation files in other directories

are in the public domain.

- Translated messages are in the public domain.
- The build system contains public domain files, and files that are under GNU GPLv2+ or GNU GPLv3+. None of these files end up in the binaries being built.
- Test files and test code in the tests directory, and debugging utilities in the debug directory are in the public domain.
- The extra directory may contain public domain files, and files that are under various free software licenses.

You can do whatever you want with the files that have been put into the public domain. If you find public domain legally problematic, take the previous sentence as a license grant. If you still find the lack of copyright legally problematic, you have too many lawyers.

As usual, this software is provided "as is", without any warranty.

If you copy significant amounts of public domain code from XZ Utils into your project, acknowledging this somewhere in your software is polite (especially if it is proprietary, non-free software), but naturally it is not legally required. Here is an example of a good notice to put into "about box" or into documentation:

This software includes code from XZ Utils <<https://tukaani.org/xz/>>.

The following license texts are included in the following files:

- COPYING.LGPLv2.1: GNU Lesser General Public License version 2.1
- COPYING.GPLv2: GNU General Public License version 2
- COPYING.GPLv3: GNU General Public License version 3

Note that the toolchain (compiler, linker etc.) may add some code pieces that are copyrighted. Thus, it is possible that e.g. liblzma binary wouldn't actually be in the public domain in its entirety even though it contains no copyrighted code from the XZ Utils source package.

If you have questions, don't hesitate to ask the author(s) for more information.

GNU GENERAL PUBLIC LICENSE  
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

## Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any

patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE  
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer

to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent

infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free

Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>



Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

GNU GENERAL PUBLIC LICENSE  
Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

## Preamble

The GNU General Public License is a free, copyleft license for  
software and other kinds of works.

The licenses for most software and other practical works are designed  
to take away your freedom to share and change the works. By contrast,  
the GNU General Public License is intended to guarantee your freedom to  
share and change all versions of a program--to make sure it remains free  
software for all its users. We, the Free Software Foundation, use the  
GNU General Public License for most of our software; it applies also to  
any other work released this way by its authors. You can apply it to  
your programs, too.

When we speak of free software, we are referring to freedom, not  
price. Our General Public Licenses are designed to make sure that you  
have the freedom to distribute copies of free software (and charge for  
them if you wish), that you receive source code or can get it if you  
want it, that you can change the software or use pieces of it in new  
free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you  
these rights or asking you to surrender the rights. Therefore, you have  
certain responsibilities if you distribute copies of the software, or if  
you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether  
gratis or for a fee, you must pass on to the recipients the same  
freedoms that you received. You must make sure that they, too, receive  
or can get the source code. And you must show them these terms so they  
know their rights.

Developers that use the GNU GPL protect your rights with two steps:  
(1) assert copyright on the software, and (2) offer you this License  
giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains  
that there is no warranty for this free software. For both users' and  
authors' sake, the GPL requires that modified versions be marked as  
changed, so that their problems will not be attributed erroneously to  
authors of previous versions.

Some devices are designed to deny users access to install or run

modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

## TERMS AND CONDITIONS

### 0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

#### 1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

## 2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

## 3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

#### 4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

#### 5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.
- b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".
- c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.
- d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other

parts of the aggregate.

## 6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

- a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.
- b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.
- c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.
- d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.
- e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no

charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly



documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

## 7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

## 8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

## 9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

## 10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

## 11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For

purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work

conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

#### 12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

#### 13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

#### 14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

#### 15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

#### 16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### 17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it

free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program> Copyright (C) <year> <name of author>
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <http://www.gnu.org/licenses/>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <http://www.gnu.org/philosophy/why-not-lgpl.html>.

# 1.290 jboss-logging 3.3.2.Final

## 1.290.1 Available under license :

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications



represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without

modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. **Trademarks.** This License does not grant permission to use the trade

names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier

identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

## 1.291 libdnf 0.63.0-8.2.el8\_6

### 1.291.1 Available under license :

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts  
as the successor of the GNU Library Public License, version 2, hence  
the version number 2.1.]

#### Preamble

The licenses for most software are designed to take away your  
freedom to share and change it. By contrast, the GNU General Public  
Licenses are intended to guarantee your freedom to share and change  
free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some  
specially designated software packages--typically libraries--of the  
Free Software Foundation and other authors who decide to use it. You  
can use it too, but we suggest you first think carefully about whether  
this license or the ordinary General Public License is the better  
strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use,  
not price. Our General Public Licenses are designed to make sure that

you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the

entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

## GNU LESSER GENERAL PUBLIC LICENSE

### TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data

prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no

charge to all third parties under the terms of this License.

d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for



that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6,

whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
- b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!

## 1.292 taglibs-standard 1.2

## 1.292.1 Available under license :

Found license 'Common Development and Distribution License (CDDL) 1.1' in '\* The contents of this file are subject to the terms \* of the Common Development and Distribution License \* (the "License"). You may not use this file except \* Copyright 2005 Sun Microsystems, Inc. All rights reserved. \* version.'

Found license 'Common Development and Distribution License (CDDL) 1.1' in '\* The contents of this file are subject to the terms \* of the Common Development and Distribution License \* (the "License"). You may not use this file except \* Copyright 2005 Sun Microsystems, Inc. All rights reserved.'

## 1.293 netty-handler 4.1.78.Final

### 1.293.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2014 The Netty Project
 *
 * The Netty Project licenses this file to you under the Apache License,
 * version 2.0 (the "License"); you may not use this file except in compliance
 * with the License. You may obtain a copy of the License at:
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
 * WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
 * License for the specific language governing permissions and limitations
 * under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1350827988_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-
jar/io/netty/handler/ssl/SslContext.java
* /opt/cola/permits/1350827988_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-
jar/io/netty/handler/ipfilter/IpFilterRule.java
* /opt/cola/permits/1350827988_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-
jar/io/netty/handler/ssl/PemReader.java
* /opt/cola/permits/1350827988_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-
jar/io/netty/handler/ssl/JettyNpnSslEngine.java
* /opt/cola/permits/1350827988_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-
jar/io/netty/handler/ipfilter/UniqueIpFilter.java
* /opt/cola/permits/1350827988_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-
jar/io/netty/handler/ssl/CipherSuiteConverter.java
* /opt/cola/permits/1350827988_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-
jar/io/netty/handler/ssl/IdentityCipherSuiteFilter.java
* /opt/cola/permits/1350827988_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-
jar/io/netty/handler/ssl/JdkApplicationProtocolNegotiator.java
* /opt/cola/permits/1350827988_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-
```

jar/io/netty/handler/ssl/OpenSslContext.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-  
jar/io/netty/handler/ssl/util/InsecureTrustManagerFactory.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-  
jar/io/netty/handler/ssl/util/SimpleTrustManagerFactory.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-  
jar/io/netty/handler/ssl/Java7SslParametersUtils.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-  
jar/io/netty/handler/ssl/OpenSslDefaultApplicationProtocolNegotiator.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-  
jar/io/netty/handler/ssl/JdkBaseApplicationProtocolNegotiator.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-  
jar/io/netty/handler/ssl/OpenSslApplicationProtocolNegotiator.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-  
jar/io/netty/handler/ssl/JdkSslContext.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-  
jar/io/netty/handler/ssl/JettyAlpnSslEngine.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-  
jar/io/netty/handler/ssl/JdkSslClientContext.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-  
jar/io/netty/handler/ssl/OpenSslEngineMap.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-  
jar/io/netty/handler/ssl/JdkSslServerContext.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-  
jar/io/netty/handler/ssl/JdkNpnApplicationProtocolNegotiator.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-  
jar/io/netty/handler/ssl/OpenSslServerSessionContext.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-  
jar/io/netty/handler/ssl/JdkAlpnApplicationProtocolNegotiator.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-  
jar/io/netty/handler/ssl/util/FingerprintTrustManagerFactory.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-  
jar/io/netty/handler/ssl/OpenSslSessionStats.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-  
jar/io/netty/handler/ssl/SupportedCipherSuiteFilter.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-  
jar/io/netty/handler/ssl/ApplicationProtocolConfig.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-  
jar/io/netty/handler/ssl/OpenSslServerContext.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-  
jar/io/netty/handler/ssl/ApplicationProtocolNegotiator.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-  
jar/io/netty/handler/ssl/util/BouncyCastleSelfSignedCertGenerator.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-  
jar/io/netty/handler/ssl/JdkDefaultApplicationProtocolNegotiator.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-  
jar/io/netty/handler/ssl/util/LazyX509Certificate.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-



jar/io/netty/handler/ssl/SniHandler.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-  
jar/io/netty/handler/ssl/OpenSslEngine.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-  
jar/io/netty/handler/ssl/SslProvider.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-  
jar/io/netty/handler/ssl/util/ThreadLocalInsecureRandom.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-  
jar/io/netty/handler/ipfilter/IpFilterRuleType.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-  
jar/io/netty/handler/ssl/OpenSsl.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-  
jar/io/netty/handler/ssl/SslUtils.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-  
jar/io/netty/handler/ipfilter/AbstractRemoteAddressFilter.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-  
jar/io/netty/handler/ipfilter/IpSubnetFilterRule.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-  
jar/io/netty/handler/ssl/JdkSslEngine.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-  
jar/io/netty/handler/ipfilter/package-info.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-  
jar/io/netty/handler/traffic/GlobalChannelTrafficCounter.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-  
jar/io/netty/handler/ssl/CipherSuiteFilter.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-  
jar/io/netty/handler/ssl/OpenSslClientContext.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-  
jar/io/netty/handler/ipfilter/RuleBasedIpFilter.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-  
jar/io/netty/handler/ssl/ApplicationProtocolUtil.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-  
jar/io/netty/handler/ssl/OpenSslNpnApplicationProtocolNegotiator.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-  
jar/io/netty/handler/ssl/util/OpenJdkSelfSignedCertGenerator.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-  
jar/io/netty/handler/ssl/OpenSslSessionContext.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2017 The Netty Project

\*

\* The Netty Project licenses this file to you under the Apache License,

\* version 2.0 (the "License"); you may not use this file except in compliance

\* with the License. You may obtain a copy of the License at:

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
\* License for the specific language governing permissions and limitations  
\* under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/SslClientHelloHandler.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/JdkAlpnSslUtils.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/ocsp/OcspClientHandler.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/ocsp/package-info.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/ConscryptAlpnSslEngine.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/SslCloseCompletionEvent.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/AbstractSniHandler.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/OptionalSslHandler.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/SslCompletionEvent.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/Conscrypt.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/SniCompletionEvent.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/JdkAlpnSslEngine.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2020 The Netty Project

\*

\* The Netty Project licenses this file to you under the Apache License,  
\* version 2.0 (the "License"); you may not use this file except in compliance  
\* with the License. You may obtain a copy of the License at:

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
\* License for the specific language governing permissions and limitations  
\* under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/address/ResolveAddressHandler.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ipfilter/IpSubnetFilterRuleComparator.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/SslClosedEngineException.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/util/FingerprintTrustManagerFactoryBuilder.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/SslHandshakeTimeoutException.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/logging/ByteBufFormat.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ipfilter/IpSubnetFilter.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2019 The Netty Project

\*

\* The Netty Project licenses this file to you under the Apache License,  
\* version 2.0 (the "License"); you may not use this file except in compliance  
\* with the License. You may obtain a copy of the License at:

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
\* License for the specific language governing permissions and limitations  
\* under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/address/DynamicAddressConnectHandler.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/address/package-info.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/util/KeyManagerFactoryWrapper.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/util/SimpleKeyManagerFactory.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/util/TrustManagerFactoryWrapper.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/OpenSslPrivateKeyMethod.java

```
* /opt/cola/permits/1350827988_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-
jar/io/netty/handler/ssl/PseudoRandomFunction.java
* /opt/cola/permits/1350827988_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-
jar/io/netty/handler/ssl/util/X509KeyManagerWrapper.java
* /opt/cola/permits/1350827988_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-
jar/io/netty/handler/ssl/SslMasterKeyHandler.java
No license file was found, but licenses were detected in source scan.
```

```
/*
* Copyright 2022 The Netty Project
*
* The Netty Project licenses this file to you under the Apache License, version
* 2.0 (the "License"); you may not use this file except in compliance with the
* License. You may obtain a copy of the License at:
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
* License for the specific language governing permissions and limitations under
* the License.
*/
```

Found in path(s):

```
* /opt/cola/permits/1350827988_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-
jar/io/netty/handler/ssl/OpenSslCertificateCompressionConfig.java
No license file was found, but licenses were detected in source scan.
```

```
/*
* Copyright 2016 The Netty Project
*
* The Netty Project licenses this file to you under the Apache License,
* version 2.0 (the "License"); you may not use this file except in compliance
* with the License. You may obtain a copy of the License at:
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
* License for the specific language governing permissions and limitations
* under the License.
*/
```

Found in path(s):

```
* /opt/cola/permits/1350827988_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-
jar/io/netty/handler/flow/package-info.java
```

\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/PemPrivateKey.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/Java8SslUtils.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/OpenSslKeyMaterialManager.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/PemEncoded.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/ReferenceCountedOpenSslContext.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/flush/FlushConsolidationHandler.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/util/X509TrustManagerWrapper.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/ReferenceCountedOpenSslServerContext.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/OpenSslCertificateException.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/PemX509Certificate.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/DelegatingSslContext.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/PemValue.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/flush/package-info.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/ReferenceCountedOpenSslClientContext.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/ReferenceCountedOpenSslEngine.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2011 The Netty Project  
\*  
\* The Netty Project licenses this file to you under the Apache License,  
\* version 2.0 (the "License"); you may not use this file except in compliance  
\* with the License. You may obtain a copy of the License at:  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
\* License for the specific language governing permissions and limitations  
\* under the License.  
\*/

Found in path(s):

```
* /opt/cola/permits/1350827988_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/traffic/AbstractTrafficShapingHandler.java
No license file was found, but licenses were detected in source scan.
```

```
/*
 * Copyright 2014 The Netty Project
 *
 * The Netty Project licenses this file to you under the Apache License,
 * version 2.0 (the "License"); you may not use this file except in compliance
 * with the License. You may obtain a copy of the License at:
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
 * WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
 * License for the specific language governing permissions and limitations
 * under the License.
 */
// Try the OpenJDK's proprietary implementation.
```

Found in path(s):

```
* /opt/cola/permits/1350827988_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/util/SelfSignedCertificate.java
No license file was found, but licenses were detected in source scan.
```

```
The Netty Project licenses this file to you under the Apache License,
version 2.0 (the "License"); you may not use this file except in compliance
with the License. You may obtain a copy of the License at:
distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
```

Found in path(s):

```
* /opt/cola/permits/1350827988_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/META-INF/native-image/io.netty.handler/native-image.properties
No license file was found, but licenses were detected in source scan.
```

```
/*
 * Copyright 2022 The Netty Project
 *
 * The Netty Project licenses this file to you under the Apache License,
 * version 2.0 (the "License"); you may not use this file except in compliance
 * with the License. You may obtain a copy of the License at:
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
```

\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
\* License for the specific language governing permissions and limitations  
\* under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/OpenSslCertificateCompressionAlgorithm.java

No license file was found, but licenses were detected in source scan.

<!--

~ Copyright 2012 The Netty Project  
~  
~ The Netty Project licenses this file to you under the Apache License,  
~ version 2.0 (the "License"); you may not use this file except in compliance  
~ with the License. You may obtain a copy of the License at:  
~  
~ <https://www.apache.org/licenses/LICENSE-2.0>  
~  
~ Unless required by applicable law or agreed to in writing, software  
~ distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
~ WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
~ License for the specific language governing permissions and limitations  
~ under the License.  
-->

Found in path(s):

\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/META-INF/maven/io.netty/netty-handler/pom.xml

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2020 The Netty Project  
\*  
\* The Netty Project licenses this file to you under the Apache License,  
\* version 2.0 (the "License"); you may not use this file except in compliance  
\* with the License. You may obtain a copy of the License at:  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
\* License for the specific language governing permissions and limitations  
\* under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/pcap/package-info.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/pcap/PcapWriteHandler.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/pcap/EthernetPacket.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/pcap/TCPPacket.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/pcap/PcapHeaders.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/pcap/IPPacket.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/pcap/PcapWriter.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/pcap/UDPPacket.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2014 The Netty Project

\*

\* The Netty Project licenses this file to you under the Apache License,  
\* version 2.0 (the "License"); you may not use this file except in compliance  
\* with the License. You may obtain a copy of the License at:

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
\* License for the specific language governing permissions and limitations  
\* under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/traffic/GlobalChannelTrafficShapingHandler.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2021 The Netty Project

\*

\* The Netty Project licenses this file to you under the Apache License,  
\* version 2.0 (the "License"); you may not use this file except in compliance  
\* with the License. You may obtain a copy of the License at:

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*



- \* Unless required by applicable law or agreed to in writing, software
- \* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
- \* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
- \* License for the specific language governing permissions and limitations
- \* under the License.
- \*/

Found in path(s):

- \* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/BouncyCastleAlpnSslEngine.java
- \* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/SslProtocols.java
- \* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/GroupsConverter.java
- \* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/OpenSslSessionCache.java
- \* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/Ciphers.java
- \* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/SslContextOption.java
- \* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/AsyncRunnable.java
- \* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/OpenSslAsyncPrivateKeyMethod.java
- \* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/OpenSslContextOption.java
- \* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/BouncyCastle.java
- \* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/BouncyCastleAlpnSslUtils.java
- \* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/OpenSslClientSessionCache.java
- \* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/OpenSslSessionId.java

No license file was found, but licenses were detected in source scan.

/\*

- \* Copyright 2016 The Netty Project
- \*
- \* The Netty Project licenses this file to you under the Apache License, version
- \* 2.0 (the "License"); you may not use this file except in compliance with the
- \* License. You may obtain a copy of the License at:
- \*
- \* <https://www.apache.org/licenses/LICENSE-2.0>
- \*
- \* Unless required by applicable law or agreed to in writing, software
- \* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
- \* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the

\* License for the specific language governing permissions and limitations under  
\* the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/flow/FlowControlHandler.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2012 The Netty Project

\*

\* The Netty Project licenses this file to you under the Apache License,  
\* version 2.0 (the "License"); you may not use this file except in compliance  
\* with the License. You may obtain a copy of the License at:

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
\* License for the specific language governing permissions and limitations  
\* under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/timeout/IdleStateEvent.java

\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/logging/package-info.java

\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/timeout/ReadTimeoutHandler.java

\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/logging/LogLevel.java

\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/timeout/IdleStateHandler.java

\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/util/package-info.java

\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/SslHandler.java

\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/stream/ChunkedFile.java

\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/stream/ChunkedNioFile.java

\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/stream/ChunkedNioStream.java

\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/timeout/package-info.java

\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/NotSslRecordException.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/timeout/TimeoutException.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/stream/package-info.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/stream/ChunkedWriteHandler.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/stream/ChunkedStream.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/timeout/WriteTimeoutHandler.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/timeout/ReadTimeoutException.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/stream/ChunkedInput.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/timeout/IdleState.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/package-info.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/logging/LoggingHandler.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/timeout/WriteTimeoutException.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2013 The Netty Project

\*

\* The Netty Project licenses this file to you under the Apache License,  
\* version 2.0 (the "License"); you may not use this file except in compliance  
\* with the License. You may obtain a copy of the License at:

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
\* License for the specific language governing permissions and limitations  
\* under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/SslHandshakeCompletionEvent.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2018 The Netty Project  
\*  
\* The Netty Project licenses this file to you under the Apache License,  
\* version 2.0 (the "License"); you may not use this file except in compliance  
\* with the License. You may obtain a copy of the License at:  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
\* License for the specific language governing permissions and limitations  
\* under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/SignatureAlgorithmConverter.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/OpenSslX509TrustManagerWrapper.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/OpenSslSession.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/OpenSslX509KeyManagerFactory.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/DefaultOpenSslKeyMaterial.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/OpenSslCachingX509KeyManagerFactory.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/ExtendedOpenSslSession.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/OpenSslKeyMaterial.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/OpenSslPrivateKey.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/OpenSslCachingKeyMaterialProvider.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/OpenSslKeyMaterialProvider.java

No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2015 The Netty Project  
\*  
\* The Netty Project licenses this file to you under the Apache License,  
\* version 2.0 (the "License"); you may not use this file except in compliance  
\* with the License. You may obtain a copy of the License at:  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>

\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
\* License for the specific language governing permissions and limitations  
\* under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/ApplicationProtocolAccessor.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/ApplicationProtocolNames.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/ApplicationProtocolNegotiationHandler.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/OpenSslSessionTicketKey.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/SslContextBuilder.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/util/LazyJavaxX509Certificate.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/ssl/ClientAuth.java

No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2012 The Netty Project  
\*  
\* The Netty Project licenses this file to you under the Apache License,  
\* version 2.0 (the "License"); you may not use this file except in compliance  
\* with the License. You may obtain a copy of the License at:  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
\* License for the specific language governing permissions and limitations  
\* under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/traffic/TrafficCounter.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/traffic/GlobalTrafficShapingHandler.java  
\* /opt/cola/permits/1350827988\_1656063956.1981592/0/netty-handler-4-1-78-final-sources-1-jar/io/netty/handler/traffic/ChannelTrafficShapingHandler.java

# 1.294 pam 1.3.1-16.el8\_6.1

## 1.294.1 Available under license :

Unless otherwise \*explicitly\* stated the following text describes the licensed conditions under which the contents of this libpamc release may be distributed:

-----  
Redistribution and use in source and binary forms of libpamc, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain any existing copyright notice, and this entire permission notice in its entirety, including the disclaimer of warranties.
2. Redistributions in binary form must reproduce all prior and current copyright notices, this list of conditions, and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of any author may not be used to endorse or promote products derived from this software without their specific prior written permission.

ALTERNATIVELY, this product may be distributed under the terms of the GNU Library General Public License (LGPL), in which case the provisions of the GNU LGPL are required INSTEAD OF the above restrictions. (This clause is necessary due to a potential conflict between the GNU LGPL and the restrictions contained in a BSD-style copyright.)

THIS SOFTWARE IS PROVIDED ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR(S) BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

-----

Unless otherwise \*explicitly\* stated the following text describes the licensed conditions under which the contents of this Linux-PAM release may be distributed:

-----  
Redistribution and use in source and binary forms of Linux-PAM, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain any existing copyright notice, and this entire permission notice in its entirety, including the disclaimer of warranties.
2. Redistributions in binary form must reproduce all prior and current copyright notices, this list of conditions, and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of any author may not be used to endorse or promote products derived from this software without their specific prior written permission.

ALTERNATIVELY, this product may be distributed under the terms of the GNU General Public License, in which case the provisions of the GNU GPL are required INSTEAD OF the above restrictions. (This clause is necessary due to a potential conflict between the GNU GPL and the restrictions contained in a BSD-style copyright.)

THIS SOFTWARE IS PROVIDED ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR(S) BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

-----  
GNU GENERAL PUBLIC LICENSE  
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

## Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and



modification follow.

GNU GENERAL PUBLIC LICENSE  
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such

interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such

an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not

excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify

it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

GNU GENERAL PUBLIC LICENSE  
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.  
59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

## Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any

patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE  
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.



c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer

to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent

infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free

Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) 19yy <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) 19yy name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

The licensing conditions for each module in this package are detailed in the module source files.

# 1.295 ecj 3.12.3

## 1.295.1 Available under license :

Eclipse Public License - v 1.0

THE ACCOMPANYING PROGRAM IS PROVIDED UNDER THE TERMS OF THIS ECLIPSE PUBLIC LICENSE ("AGREEMENT"). ANY USE, REPRODUCTION OR DISTRIBUTION OF THE PROGRAM CONSTITUTES RECIPIENT'S ACCEPTANCE OF THIS AGREEMENT.

### 1. DEFINITIONS

"Contribution" means:

- a) in the case of the initial Contributor, the initial code and documentation distributed under this Agreement, and
- b) in the case of each subsequent Contributor:
  - i) changes to the Program, and
  - ii) additions to the Program;

where such changes and/or additions to the Program originate from and are distributed by that particular Contributor. A Contribution 'originates' from a Contributor if it was added to the Program by such Contributor itself or anyone acting on such Contributor's behalf. Contributions do not include additions to the Program which: (i) are separate modules of software distributed in conjunction with the Program under their own license agreement, and (ii) are not derivative works of the Program.

"Contributor" means any person or entity that distributes the Program.

"Licensed Patents" mean patent claims licensable by a Contributor which are necessarily infringed by the use or sale of its Contribution alone or when combined with the Program.

"Program" means the Contributions distributed in accordance with this Agreement.

"Recipient" means anyone who receives the Program under this Agreement, including all Contributors.

### 2. GRANT OF RIGHTS

- a) Subject to the terms of this Agreement, each Contributor hereby grants Recipient a non-exclusive, worldwide, royalty-free copyright license to reproduce, prepare derivative works of, publicly display, publicly perform, distribute and sublicense the Contribution of such Contributor, if any, and such derivative works, in source code and object code form.

b) Subject to the terms of this Agreement, each Contributor hereby grants Recipient a non-exclusive, worldwide, royalty-free patent license under Licensed Patents to make, use, sell, offer to sell, import and otherwise transfer the Contribution of such Contributor, if any, in source code and object code form. This patent license shall apply to the combination of the Contribution and the Program if, at the time the Contribution is added by the Contributor, such addition of the Contribution causes such combination to be covered by the Licensed Patents. The patent license shall not apply to any other combinations which include the Contribution. No hardware per se is licensed hereunder.

c) Recipient understands that although each Contributor grants the licenses to its Contributions set forth herein, no assurances are provided by any Contributor that the Program does not infringe the patent or other intellectual property rights of any other entity. Each Contributor disclaims any liability to Recipient for claims brought by any other entity based on infringement of intellectual property rights or otherwise. As a condition to exercising the rights and licenses granted hereunder, each Recipient hereby assumes sole responsibility to secure any other intellectual property rights needed, if any. For example, if a third party patent license is required to allow Recipient to distribute the Program, it is Recipient's responsibility to acquire that license before distributing the Program.

d) Each Contributor represents that to its knowledge it has sufficient copyright rights in its Contribution, if any, to grant the copyright license set forth in this Agreement.

### 3. REQUIREMENTS

A Contributor may choose to distribute the Program in object code form under its own license agreement, provided that:

a) it complies with the terms and conditions of this Agreement; and

b) its license agreement:

i) effectively disclaims on behalf of all Contributors all warranties and conditions, express and implied, including warranties or conditions of title and non-infringement, and implied warranties or conditions of merchantability and fitness for a particular purpose;

ii) effectively excludes on behalf of all Contributors all liability for damages, including direct, indirect, special, incidental and consequential damages, such as lost profits;

iii) states that any provisions which differ from this Agreement are offered by that Contributor alone and not by any other party; and

iv) states that source code for the Program is available from such Contributor, and informs licensees how to obtain it in a reasonable manner on or through a medium customarily used for software exchange.

When the Program is made available in source code form:

a) it must be made available under this Agreement; and

b) a copy of this Agreement must be included with each copy of the Program.

Contributors may not remove or alter any copyright notices contained within the Program.

Each Contributor must identify itself as the originator of its Contribution, if any, in a manner that reasonably allows subsequent Recipients to identify the originator of the Contribution.

#### 4. COMMERCIAL DISTRIBUTION

Commercial distributors of software may accept certain responsibilities with respect to end users, business partners and the like. While this license is intended to facilitate the commercial use of the Program, the Contributor who includes the Program in a commercial product offering should do so in a manner which does not create potential liability for other Contributors. Therefore, if a Contributor includes the Program in a commercial product offering, such Contributor ("Commercial Contributor") hereby agrees to defend and indemnify every other Contributor ("Indemnified Contributor") against any losses, damages and costs (collectively "Losses") arising from claims, lawsuits and other legal actions brought by a third party against the Indemnified Contributor to the extent caused by the acts or omissions of such Commercial Contributor in connection with its distribution of the Program in a commercial product offering. The obligations in this section do not apply to any claims or Losses relating to any actual or alleged intellectual property infringement. In order to qualify, an Indemnified Contributor must: a) promptly notify the Commercial Contributor in writing of such claim, and b) allow the Commercial Contributor to control, and cooperate with the Commercial Contributor in, the defense and any related settlement negotiations. The Indemnified Contributor may participate in any such claim at its own expense.

For example, a Contributor might include the Program in a commercial product offering, Product X. That Contributor is then a Commercial Contributor. If that Commercial Contributor then makes performance claims, or offers warranties related to Product X, those performance claims and warranties are such Commercial Contributor's responsibility alone. Under this section, the Commercial Contributor would have to defend claims against the other Contributors related to those performance claims and warranties, and if a court requires any other Contributor to pay any damages as a result, the Commercial Contributor must pay those damages.

#### 5. NO WARRANTY

EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, THE PROGRAM IS PROVIDED ON AN "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, EITHER EXPRESS OR IMPLIED INCLUDING, WITHOUT LIMITATION, ANY WARRANTIES OR CONDITIONS OF TITLE, NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Each Recipient is solely responsible for determining the appropriateness of using and distributing the Program and assumes all risks associated with its exercise of rights under this Agreement, including but not limited to the risks and costs of program errors, compliance with applicable laws, damage to or loss of data, programs or equipment, and unavailability or interruption of operations.

#### 6. DISCLAIMER OF LIABILITY

EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, NEITHER RECIPIENT NOR ANY CONTRIBUTORS SHALL HAVE ANY LIABILITY FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING WITHOUT LIMITATION LOST PROFITS), HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OR DISTRIBUTION OF THE PROGRAM OR THE EXERCISE OF ANY RIGHTS GRANTED HEREUNDER, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### 7. GENERAL



If any provision of this Agreement is invalid or unenforceable under applicable law, it shall not affect the validity or enforceability of the remainder of the terms of this Agreement, and without further action by the parties hereto, such provision shall be reformed to the minimum extent necessary to make such provision valid and enforceable.

If Recipient institutes patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Program itself (excluding combinations of the Program with other software or hardware) infringes such Recipient's patent(s), then such Recipient's rights granted under Section 2(b) shall terminate as of the date such litigation is filed.

All Recipient's rights under this Agreement shall terminate if it fails to comply with any of the material terms or conditions of this Agreement and does not cure such failure in a reasonable period of time after becoming aware of such noncompliance. If all Recipient's rights under this Agreement terminate, Recipient agrees to cease use and distribution of the Program as soon as reasonably practicable. However, Recipient's obligations under this Agreement and any licenses granted by Recipient relating to the Program shall continue and survive.

Everyone is permitted to copy and distribute copies of this Agreement, but in order to avoid inconsistency the Agreement is copyrighted and may only be modified in the following manner. The Agreement Steward reserves the right to publish new versions (including revisions) of this Agreement from time to time. No one other than the Agreement Steward has the right to modify this Agreement. The Eclipse Foundation is the initial Agreement Steward. The Eclipse Foundation may assign the responsibility to serve as the Agreement Steward to a suitable separate entity. Each new version of the Agreement will be given a distinguishing version number. The Program (including Contributions) may always be distributed subject to the version of the Agreement under which it was received. In addition, after a new version of the Agreement is published, Contributor may elect to distribute the Program (including its Contributions) under the new version. Except as expressly stated in Sections 2(a) and 2(b) above, Recipient receives no rights or licenses to the intellectual property of any Contributor under this Agreement, whether expressly, by implication, estoppel or otherwise. All rights in the Program not expressly granted under this Agreement are reserved.

This Agreement is governed by the laws of the State of New York and the intellectual property laws of the United States of America. No party to this Agreement will bring a legal action under this Agreement more than one year after the cause of action arose. Each party waives its rights to a jury trial in any resulting litigation.

## 1.296 jopt-simple 5.0.4

### 1.296.1 Available under license :

No license file was found, but licenses were detected in source scan.

/\*

The MIT License

Copyright (c) 2004-2015 Paul R. Holser, Jr.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish,

distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

\*/

Found in path(s):

- \* /opt/cola/permits/1177945013\_1625575335.76/0/jopt-simple-5-0-4-sources-8-jar/joptsimple/AlternativeLongOptionSpec.java
- \* /opt/cola/permits/1177945013\_1625575335.76/0/jopt-simple-5-0-4-sources-8-jar/joptsimple/OptionParserState.java
- \* /opt/cola/permits/1177945013\_1625575335.76/0/jopt-simple-5-0-4-sources-8-jar/joptsimple/UnconfiguredOptionException.java
- \* /opt/cola/permits/1177945013\_1625575335.76/0/jopt-simple-5-0-4-sources-8-jar/joptsimple/AbstractOptionSpec.java
- \* /opt/cola/permits/1177945013\_1625575335.76/0/jopt-simple-5-0-4-sources-8-jar/joptsimple/OptionSpec.java
- \* /opt/cola/permits/1177945013\_1625575335.76/0/jopt-simple-5-0-4-sources-8-jar/joptsimple/internal/MethodInvokingValueConverter.java
- \* /opt/cola/permits/1177945013\_1625575335.76/0/jopt-simple-5-0-4-sources-8-jar/joptsimple/OptionalArgumentOptionSpec.java
- \* /opt/cola/permits/1177945013\_1625575335.76/0/jopt-simple-5-0-4-sources-8-jar/joptsimple/util/DateConverter.java
- \* /opt/cola/permits/1177945013\_1625575335.76/0/jopt-simple-5-0-4-sources-8-jar/joptsimple/util/RegexMatcher.java
- \* /opt/cola/permits/1177945013\_1625575335.76/0/jopt-simple-5-0-4-sources-8-jar/joptsimple/internal/ConstructorInvokingValueConverter.java
- \* /opt/cola/permits/1177945013\_1625575335.76/0/jopt-simple-5-0-4-sources-8-jar/joptsimple/OptionArgumentConversionException.java
- \* /opt/cola/permits/1177945013\_1625575335.76/0/jopt-simple-5-0-4-sources-8-jar/joptsimple/internal/Classes.java
- \* /opt/cola/permits/1177945013\_1625575335.76/0/jopt-simple-5-0-4-sources-8-jar/joptsimple/UnavailableOptionException.java
- \* /opt/cola/permits/1177945013\_1625575335.76/0/jopt-simple-5-0-4-sources-8-jar/joptsimple/OptionDescriptor.java
- \* /opt/cola/permits/1177945013\_1625575335.76/0/jopt-simple-5-0-4-sources-8-jar/joptsimple/ValueConversionException.java
- \* /opt/cola/permits/1177945013\_1625575335.76/0/jopt-simple-5-0-4-sources-8-jar/joptsimple/OptionParser.java
- \* /opt/cola/permits/1177945013\_1625575335.76/0/jopt-simple-5-0-4-sources-8-jar/joptsimple/internal/Reflection.java

- \* /opt/cola/permits/1177945013\_1625575335.76/0/jopt-simple-5-0-4-sources-8-jar/joptsimple/UnrecognizedOptionException.java
- \* /opt/cola/permits/1177945013\_1625575335.76/0/jopt-simple-5-0-4-sources-8-jar/joptsimple/internal/Messages.java
- \* /opt/cola/permits/1177945013\_1625575335.76/0/jopt-simple-5-0-4-sources-8-jar/joptsimple/NoArgumentOptionSpec.java
- \* /opt/cola/permits/1177945013\_1625575335.76/0/jopt-simple-5-0-4-sources-8-jar/joptsimple/ParserRules.java
- \* /opt/cola/permits/1177945013\_1625575335.76/0/jopt-simple-5-0-4-sources-8-jar/joptsimple/RequiredArgumentOptionSpec.java
- \* /opt/cola/permits/1177945013\_1625575335.76/0/jopt-simple-5-0-4-sources-8-jar/joptsimple/ArgumentList.java
- \* /opt/cola/permits/1177945013\_1625575335.76/0/jopt-simple-5-0-4-sources-8-jar/joptsimple/ValueConverter.java
- \* /opt/cola/permits/1177945013\_1625575335.76/0/jopt-simple-5-0-4-sources-8-jar/joptsimple/internal/SimpleOptionNameMap.java
- \* /opt/cola/permits/1177945013\_1625575335.76/0/jopt-simple-5-0-4-sources-8-jar/joptsimple/MultipleArgumentsForOptionException.java
- \* /opt/cola/permits/1177945013\_1625575335.76/0/jopt-simple-5-0-4-sources-8-jar/joptsimple/internal/Row.java
- \* /opt/cola/permits/1177945013\_1625575335.76/0/jopt-simple-5-0-4-sources-8-jar/joptsimple/NonOptionArgumentSpec.java
- \* /opt/cola/permits/1177945013\_1625575335.76/0/jopt-simple-5-0-4-sources-8-jar/joptsimple/OptionSpecBuilder.java
- \* /opt/cola/permits/1177945013\_1625575335.76/0/jopt-simple-5-0-4-sources-8-jar/joptsimple/MissingRequiredOptionsException.java
- \* /opt/cola/permits/1177945013\_1625575335.76/0/jopt-simple-5-0-4-sources-8-jar/joptsimple/util/KeyValuePair.java
- \* /opt/cola/permits/1177945013\_1625575335.76/0/jopt-simple-5-0-4-sources-8-jar/joptsimple/internal/AbbreviationMap.java
- \* /opt/cola/permits/1177945013\_1625575335.76/0/jopt-simple-5-0-4-sources-8-jar/joptsimple/internal/Rows.java
- \* /opt/cola/permits/1177945013\_1625575335.76/0/jopt-simple-5-0-4-sources-8-jar/joptsimple/internal/Columns.java
- \* /opt/cola/permits/1177945013\_1625575335.76/0/jopt-simple-5-0-4-sources-8-jar/joptsimple/IllegalOptionSpecificationException.java
- \* /opt/cola/permits/1177945013\_1625575335.76/0/jopt-simple-5-0-4-sources-8-jar/joptsimple/internal/Strings.java
- \* /opt/cola/permits/1177945013\_1625575335.76/0/jopt-simple-5-0-4-sources-8-jar/joptsimple/OptionMissingRequiredArgumentException.java
- \* /opt/cola/permits/1177945013\_1625575335.76/0/jopt-simple-5-0-4-sources-8-jar/joptsimple/OptionSet.java
- \* /opt/cola/permits/1177945013\_1625575335.76/0/jopt-simple-5-0-4-sources-8-jar/joptsimple/ArgumentAcceptingOptionSpec.java
- \* /opt/cola/permits/1177945013\_1625575335.76/0/jopt-simple-5-0-4-sources-8-jar/joptsimple/util/InetAddressConverter.java
- \* /opt/cola/permits/1177945013\_1625575335.76/0/jopt-simple-5-0-4-sources-8-jar/joptsimple/OptionException.java
- \* /opt/cola/permits/1177945013\_1625575335.76/0/jopt-simple-5-0-4-sources-8-jar/joptsimple/BuiltinHelpFormatter.java
- \* /opt/cola/permits/1177945013\_1625575335.76/0/jopt-simple-5-0-4-sources-8-jar/joptsimple/OptionSpecTokenizer.java
- \* /opt/cola/permits/1177945013\_1625575335.76/0/jopt-simple-5-0-4-sources-8-jar/joptsimple/internal/ReflectionException.java
- \* /opt/cola/permits/1177945013\_1625575335.76/0/jopt-simple-5-0-4-sources-8-jar/joptsimple/internal/OptionNameMap.java

\* /opt/cola/permits/1177945013\_1625575335.76/0/jopt-simple-5-0-4-sources-8-jar/joptsimple/HelpFormatter.java  
No license file was found, but licenses were detected in source scan.

/\*

The MIT License

Copyright (c) 2004-2014 Paul R. Holser, Jr.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

\*/

Found in path(s):

\* /opt/cola/permits/1177945013\_1625575335.76/0/jopt-simple-5-0-4-sources-8-jar/joptsimple/util/EnumConverter.java

## 1.297 dbus-python 1.2.4 15.el8

### 1.297.1 Available under license :

As of version 0.82.4, dbus-python is released under the following permissive non-copyleft license (the same one that was proposed for D-Bus core but wasn't achieved):

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright holders and licensing are indicated in the source files.

## 1.298 libcap-ng 0.7.11-1.el8

### 1.298.1 Available under license :

GNU LESSER GENERAL PUBLIC LICENSE  
Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.

51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that

you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

^L

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the

entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes

a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

^L

## GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.



c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

^L

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may

distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

^L

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

- e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

^L

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
- b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and

all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

^L

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among

countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

^L

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

^L

### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990

Ty Coon, President of Vice

That's all there is to it!

## GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

(This is the first released version of the Lesser GPL. It also counts  
as the successor of the GNU Library Public License, version 2, hence  
the version number 2.1.)

### Preamble

The licenses for most software are designed to take away your  
freedom to share and change it. By contrast, the GNU General Public  
Licenses are intended to guarantee your freedom to share and change  
free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some  
specially designated software packages--typically libraries--of the  
Free Software Foundation and other authors who decide to use it. You  
can use it too, but we suggest you first think carefully about whether  
this license or the ordinary General Public License is the better  
strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use,  
not price. Our General Public Licenses are designed to make sure that  
you have the freedom to distribute copies of free software (and charge  
for this service if you wish); that you receive source code or can get  
it if you want it; that you can change the software and use pieces of  
it in new free programs; and that you are informed that you can do  
these things.

To protect your rights, we need to make restrictions that forbid  
distributors to deny you these rights or to ask you to surrender these  
rights. These restrictions translate to certain responsibilities for  
you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis  
or for a fee, you must give the recipients all the rights that we gave  
you. You must make sure that they, too, receive or can get the source  
code. If you link other code with the library, you must provide  
complete object files to the recipients, so that they can relink them  
with the library after making changes to the library and recompiling



it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this

case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

#### GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not

compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the

Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
- b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent

license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free



Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
{description}
Copyright (C) {year} {fullname}
```

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public

License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

{signature of Ty Coon}, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!

GNU GENERAL PUBLIC LICENSE  
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.  
59 Temple Place, Suite 330, Boston, MA 02111-1307 USA  
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not

price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in

the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those

sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

**NO WARRANTY**

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN

OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA



Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands ``show w'` and ``show c'` should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than ``show w'` and ``show c'`; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

## 1.299 libksba 1.3.5 7.el8

### 1.299.1 Available under license :

GNU GENERAL PUBLIC LICENSE  
Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

Preamble

The GNU General Public License is a free, copyleft license for  
software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

## TERMS AND CONDITIONS

### 0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the

work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

## 1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

## 2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

### 3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

### 4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

#### 5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.
- b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".
- c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.
- d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

#### 6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation

into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

## 7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall



be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does

not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

#### 8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

#### 9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a

covered work, you indicate your acceptance of this License to do so.

#### 10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

#### 11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

## 12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

## 13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

## 14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program> Copyright (C) <year> <name of author>
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <http://www.gnu.org/licenses/>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <http://www.gnu.org/philosophy/why-not-lgpl.html>.

KSBA is distributed under mixed GPL and LGPL licenses. Please see the file AUTHOR for details. The text of the used licenses can be found in the files:

COPYING.LGPLv3  
COPYING.GPLv3  
COPYING.GPLv2

GNU GENERAL PUBLIC LICENSE  
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software



patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in

whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium

customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to

this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program

specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least

the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

<signature of Ty Coon>, 1 April 1989

Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General

Public License instead of this License.

## GNU LESSER GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

This version of the GNU Lesser General Public License incorporates the terms and conditions of version 3 of the GNU General Public License, supplemented by the additional permissions listed below.

### 0. Additional Definitions.

As used herein, "this License" refers to version 3 of the GNU Lesser General Public License, and the "GNU GPL" refers to version 3 of the GNU General Public License.

"The Library" refers to a covered work governed by this License, other than an Application or a Combined Work as defined below.

An "Application" is any work that makes use of an interface provided by the Library, but which is not otherwise based on the Library. Defining a subclass of a class defined by the Library is deemed a mode of using an interface provided by the Library.

A "Combined Work" is a work produced by combining or linking an Application with the Library. The particular version of the Library with which the Combined Work was made is also called the "Linked Version".

The "Minimal Corresponding Source" for a Combined Work means the Corresponding Source for the Combined Work, excluding any source code for portions of the Combined Work that, considered in isolation, are based on the Application, and not on the Linked Version.

The "Corresponding Application Code" for a Combined Work means the object code and/or source code for the Application, including any data and utility programs needed for reproducing the Combined Work from the Application, but excluding the System Libraries of the Combined Work.

### 1. Exception to Section 3 of the GNU GPL.

You may convey a covered work under sections 3 and 4 of this License without being bound by section 3 of the GNU GPL.

### 2. Conveying Modified Versions.

If you modify a copy of the Library, and, in your modifications, a facility refers to a function or data to be supplied by an Application that uses the facility (other than as an argument passed when the facility is invoked), then you may convey a copy of the modified version:

- a) under this License, provided that you make a good faith effort to ensure that, in the event an Application does not supply the function or data, the facility still operates, and performs whatever part of its purpose remains meaningful, or
- b) under the GNU GPL, with none of the additional permissions of this License applicable to that copy.

### 3. Object Code Incorporating Material from Library Header Files.

The object code form of an Application may incorporate material from a header file that is part of the Library. You may convey such object code under terms of your choice, provided that, if the incorporated material is not limited to numerical parameters, data structure layouts and accessors, or small macros, inline functions and templates (ten or fewer lines in length), you do both of the following:

- a) Give prominent notice with each copy of the object code that the Library is used in it and that the Library and its use are covered by this License.
- b) Accompany the object code with a copy of the GNU GPL and this license document.

### 4. Combined Works.

You may convey a Combined Work under terms of your choice that, taken together, effectively do not restrict modification of the portions of the Library contained in the Combined Work and reverse engineering for debugging such modifications, if you also do each of the following:

- a) Give prominent notice with each copy of the Combined Work that the Library is used in it and that the Library and its use are covered by this License.
- b) Accompany the Combined Work with a copy of the GNU GPL and this license document.
- c) For a Combined Work that displays copyright notices during execution, include the copyright notice for the Library among



these notices, as well as a reference directing the user to the copies of the GNU GPL and this license document.

d) Do one of the following:

0) Convey the Minimal Corresponding Source under the terms of this License, and the Corresponding Application Code in a form suitable for, and under terms that permit, the user to recombine or relink the Application with a modified version of the Linked Version to produce a modified Combined Work, in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.

1) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (a) uses at run time a copy of the Library already present on the user's computer system, and (b) will operate properly with a modified version of the Library that is interface-compatible with the Linked Version.

e) Provide Installation Information, but only if you would otherwise be required to provide such information under section 6 of the GNU GPL, and only to the extent that such information is necessary to install and execute a modified version of the Combined Work produced by recombining or relinking the Application with a modified version of the Linked Version. (If you use option 4d0, the Installation Information must accompany the Minimal Corresponding Source and Corresponding Application Code. If you use option 4d1, you must provide the Installation Information in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.)

## 5. Combined Libraries.

You may place library facilities that are a work based on the Library side by side in a single library together with other library facilities that are not Applications and are not covered by this License, and convey such a combined library under terms of your choice, if you do both of the following:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities, conveyed under the terms of this License.

b) Give prominent notice with the combined library that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

## 6. Revised Versions of the GNU Lesser General Public License.

The Free Software Foundation may publish revised and/or new versions of the GNU Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library as you received it specifies that a certain numbered version of the GNU Lesser General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that published version or of any later version published by the Free Software Foundation. If the Library as you received it does not specify a version number of the GNU Lesser General Public License, you may choose any version of the GNU Lesser General Public License ever published by the Free Software Foundation.

If the Library as you received it specifies that a proxy can decide whether future versions of the GNU Lesser General Public License shall apply, that proxy's public statement of acceptance of any version is permanent authorization for you to choose that version for the Library.

# 1.300 commons-configuration 1.8

## 1.300.1 Available under license :

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the

outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable

copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and

do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Apache Commons Configuration  
Copyright 2001-2012 The Apache Software Foundation

This product includes software developed by  
The Apache Software Foundation (<http://www.apache.org/>).

# 1.301 jakarta xml bind api 2.3.3

## 1.301.1 Available under license :

Copyright (c) 2017, 2018 Oracle and/or its affiliates. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- Neither the name of the Eclipse Foundation, Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

```
[/]: # " Copyright (c) 2018, 2019 Oracle and/or its affiliates. All rights reserved. "
```

```
[/]: # " "
```

```
[/]: # " This program and the accompanying materials are made available under the "
```

```
[/]: # " terms of the Eclipse Distribution License v. 1.0, which is available at "
```

```
[/]: # " http://www.eclipse.org/org/documents/edl-v10.php. "
```

```
[/]: # " "
```

```
[/]: # " SPDX-License-Identifier: BSD-3-Clause "
```

```
Notices for Jakarta XML Binding
```

This content is produced and maintained by the Jakarta XML Binding project.

\* Project home: <https://projects.eclipse.org/projects/ee4j.jaxb>

```
Trademarks
```

Jakarta XML Binding is a trademark of the Eclipse Foundation.

## ## Copyright

All content is the property of the respective authors or their employers. For more information regarding authorship of content, please consult the listed source code repository logs.

## ## Declared Project Licenses

This program and the accompanying materials are made available under the terms of the Eclipse Distribution License v. 1.0 which is available at <http://www.eclipse.org/org/documents/edl-v10.php>.

SPDX-License-Identifier: BSD-3-Clause

## ## Source Code

The project maintains the following source code repositories:

- \* <https://github.com/eclipse-ee4j/jaxb-api>
- \* <https://github.com/eclipse-ee4j/jaxb-tck>

## ## Third-party Content

This project leverages the following third party content.

Apache River (3.0.0)

- \* License: Apache-2.0 AND BSD-3-Clause

ASM 7 (n/a)

- \* License: BSD-3-Clause
- \* Project: <https://asm.ow2.io/>
- \* Source: <https://repository.ow2.org/nexus/#nexus-search;gav~org.ow2.asm~asm-commons~~~~kw,versionexpand>

JTHarness (5.0)

- \* License: (GPL-2.0 OR GPL-2.0 WITH Classpath-exception-2.0)
- \* Project: <https://wiki.openjdk.java.net/display/CodeTools/JT+Harness>
- \* Source: <http://hg.openjdk.java.net/code-tools/jtharness/>

normalize.css (3.0.2)

- \* License: MIT

SigTest (n/a)



\* License: GPL-2.0 OR GPL-2.0 WITH Classpath-exception-2.0

## ## Cryptography

Content may contain encryption software. The country in which you are currently may have restrictions on the import, possession, and use, and/or re-export to another country, of encryption software. BEFORE using any encryption software, please check the country's laws, regulations and policies concerning the import, possession, or use, and re-export of encryption software, to see if this is permitted.

# 1.302 classmate 1.3.4

## 1.302.1 Available under license :

Java ClassMate library was originally written by Tatu Saloranta (tatu.saloranta@iki.fi)

Other developers who have contributed code are:

\* Brian Langel

This copy of Java ClassMate library is licensed under Apache (Software) License, version 2.0 ("the License").

See the License for details about distribution rights, and the specific rights regarding derivate works.

You may obtain a copy of the License at:

<http://www.apache.org/licenses/LICENSE-2.0>

# 1.303 util-linux 2.32.1-35.el8

## 1.303.1 Available under license :

```
7zXZF!t/5]oK3&K6Y^
CP#vMOoYL?6]2z({CLYj0
LFIU<>Q&}7!C}e6]]e`M,J}.dE,4hVmp
RsTk!|r!Quo1OE|FfP+A}XBT9 \<
0<P9{>s\36R)m.S(bCb7S<DP(`ka")^oy`r)7I%tU6@AS.SMoOfF3whA!!WIMcK')e/eJ1F
g|BI'W|j>jf_{JPP}oMd3rfQ+_3<%<6jx{)11D5eg;NtD+~R]w[xiue@F#Em0hu;,x{R7V2!Vq~AG{EX -
"0h*5x)*x(n)#l$*w!:499X1il:"P+=22cmr3J}/0o9nIB?|N&(q=$pPc!ab,6f&v/RS>O./OW[INy(BM~]~uf$Ngl"_W[0;
OXy[aB*"/_U~fQHO(3[b%o)+lq#+_d<QdLd=$1p!h0h6nfN=I+GNRk gKOL3\N3"uGxfIC
zCTJtjSN:$gE11QQ$7*5++V=4Xt9V?r3_Vd2o8h"F8~qM,ZI6=Qgtw|11np#_(+?)zp(;H!E2Nz'WW_WmA,
FSYZE*-exTWFt##
rd>k|R>aXrvXS~"9=U$puaqQb;\k,RD5(fu&#
?)w!nz>SbvY[R+t[BS=)d ;*!;_>KfBqxY(F|0.Ve%S61opMG
1%QsS|11np#_(~*'uM%S61opMG` \YfRXvY[R+t[BS=)d ;*!;_>KfBqxY(F|0.Ve%S61opMG` \YfRXvY[R+t[
BS=)d ;*!;_>KfB }&ea)F~H#@|DExb
Fw=|
```

; }8SPT" \_p;27 \*,D-sS|11np#\_(~\*uM%S61opMG`B=gD7-`rFTvDY(F|0.Ve%S61opMG`\YfRXvY[R+t[ BS=)d  
;\*!;\_>KfBqxY(F|0.Ve%S61opMG`\YfRXx+sS|11np#\_(~\*uM%S61opMG`\YfRXvY[R+t[ BS=)d  
;\*!;\_>KfBqxY(F|0.Ve%S61opMG`\YfRXvY[R+t[ BS=)d ;\*!;\_>KfBqxY(F|0.Ve%Q?f\_{+T@Uo)2fgYZ  
/\*

\* Copyright (c) 1989 The Regents of the University of California.

\* All rights reserved.

\*

\* Redistribution and use in source and binary forms, with or without

\* modification, are permitted provided that the following conditions

\* are met:

\* 1. Redistributions of source code must retain the above copyright

\* notice, this list of conditions and the following disclaimer.

\* 2. Redistributions in binary form must reproduce the above copyright

\* notice, this list of conditions and the following disclaimer in the

\* documentation and/or other materials provided with the distribution.

\* 3. All advertising materials mentioning features or use of this software

\* must display the following acknowledgement:

\* This product includes software developed by the University of

\* California, Berkeley and its contributors.

\* 4. Neither the name of the University nor the names of its contributors

\* may be used to endorse or promote products derived from this software

\* without specific prior written permission.

\*

\* THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS" AND

\* ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE

\* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE

\* ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE

\* FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL

\* DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS

\* OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)

\* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT

\* LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY

\* OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF

\* SUCH DAMAGE.

\*/

This library is free software; you can redistribute it and/or

modify it under the terms of the GNU Lesser General Public

License as published by the Free Software Foundation; either

version 2.1 of the License, or (at your option) any later

version.

The complete text of the license is available in the

../Documentation/licenses/COPYING.LGPLv2.1 file.

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,

51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

## Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any

patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE  
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer

to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent

infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free

Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>



Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions

are met:

1. Redistributions of source code must retain the above copyright notice, and the entire permission notice in its entirety, including the disclaimer of warranties.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ALL OF WHICH ARE HEREBY DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF NOT ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

7zXZF!t]o."w[7gp<G

H:Oed 18uyMQ9]FO6

87I8.mhGl^eb\_X/UQKuB

)Cdk!B\_M/tw|11np#\_(~\*'uM%S61opMG`YfRXvY[R+t[ BS=)d

;\*!;\_>KfBqxY(F)0.Ve%S61opMG`YfRXvY[R+t[ BS=)d

;\*!;\_>KfBqxYm+sS|11np#\_(~\*'uM%S61opMG`YfRXvY[R+t[ BS=)d

;\*!;\_>KfBqxY(F)0.Ve%S61opMG`YfRXvY[R+t[ BS=)d ;\*!;\_>KfBqxY(F)0.Ve%Q?

\*sS|11np#\_(~\*'u7gi}[IgYZ

This library is free software; you can redistribute it and/or modify it under the terms of the Modified BSD License.

The complete text of the license is available in the

../Documentation/licenses/COPYING.BSD-3 file.

Permission to use, copy, modify, and/or distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS" AND THE AUTHOR DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

# 1.304 dmidecode 3.3-4.el8

## 1.304.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain

that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and

distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
  
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
  
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections

1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs



If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
'Gnomovision' (which makes passes at compilers) written by James Hacker.
```

<signature of Ty Coon>, 1 April 1989

Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

## 1.305 commons-compress 1.21

### 1.305.1 Available under license :

Apache Commons Compress

Copyright 2002-2021 The Apache Software Foundation

This product includes software developed at  
The Apache Software Foundation (<https://www.apache.org/>).

---

The files in the package `org.apache.commons.compress.archivers.sevenz` were derived from the LZMA SDK, version 9.20 (C/ and CPP/7zip/), which has been placed in the public domain:

"LZMA SDK is placed in the public domain." (<http://www.7-zip.org/sdk.html>)

---

The test file `lbzip2_32767.bz2` has been copied from `libbzip2`'s source repository:

This program, "bzip2", the associated library "libbzip2", and all documentation, are copyright (C) 1996-2019 Julian R Seward. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated but is not required.

3. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
4. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Julian Seward, [jseward@acm.org](mailto:jseward@acm.org)  
Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made,

use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions

for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability

incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

# 1.306 slf4j-log4j 1.7.21

## 1.306.1 Available under license :

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER

LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

<OWNER> = Regents of the University of California

<ORGANIZATION> = University of California, Berkeley

<YEAR> = 1998

In the original BSD license, both occurrences of the phrase "COPYRIGHT HOLDERS AND CONTRIBUTORS" in the disclaimer read "REGENTS AND CONTRIBUTORS".

Here is the license template:

Copyright (c) <YEAR>, <OWNER>

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

Neither the name of the <ORGANIZATION> nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.



# 1.307 avro 1.11.0

## 1.307.1 Available under license :

Trevni Java Avro  
Copyright 2009-2020 The Apache Software Foundation

This product includes software developed at  
The Apache Software Foundation (<http://www.apache.org/>).

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation,

and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s)

with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.  
Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

## 1.308 apache-commons-text 1.4

### 1.308.1 Available under license :

Apache Commons Text  
Copyright 2014-2018 The Apache Software Foundation

This product includes software developed at  
The Apache Software Foundation (<http://www.apache.org/>).

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

##### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by

the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained

within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be



liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

### APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.

You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

# 1.309 glibc 2.28-189.5.el8\_6

## 1.309.1 Available under license :

@c The GNU Lesser General Public License.

@center Version 2.1, February 1999

@c This file is intended to be included within another document,

@c hence no sectioning command or @node.

@display

Copyright @copyright{ } 1991, 1999 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA

Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts  
as the successor of the GNU Library Public License, version 2, hence the  
version number 2.1.]

@end display

@subheading Preamble

The licenses for most software are designed to take away your  
freedom to share and change it. By contrast, the GNU General Public  
Licenses are intended to guarantee your freedom to share and change  
free software---to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some  
specially designated software---typically libraries---of the Free  
Software Foundation and other authors who decide to use it. You can use  
it too, but we suggest you first think carefully about whether this  
license or the ordinary General Public License is the better strategy to  
use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use,  
not price. Our General Public Licenses are designed to make sure that  
you have the freedom to distribute copies of free software (and charge  
for this service if you wish); that you receive source code or can get  
it if you want it; that you can change the software and use pieces of it  
in new free programs; and that you are informed that you can do these  
things.

To protect your rights, we need to make restrictions that forbid  
distributors to deny you these rights or to ask you to surrender these  
rights. These restrictions translate to certain responsibilities for  
you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the `@dfn{Lesser} General Public License` because it does `@emph{Less}` to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain

special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a ``work based on the library" and a ``work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

@subheading TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

@enumerate 0

@item

This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called ``this License"). Each licensee is addressed as ``you".

A ``library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The ``Library", below, refers to any such software library or work which has been distributed under these terms. A ``work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is

included without limitation in the term ``modification".)

``Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

@item

You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

@item

You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

@enumerate a

@item

The modified work must itself be a software library.

@item

You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.

@item

You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

@item

If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

@end enumerate

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

@item

You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for

that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

@item

You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

@item

A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a ``work that uses the Library''. Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a ``work that uses the Library'' with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a ``work that uses the library''. The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a ``work that uses the Library'' uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may

distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

@item

As an exception to the Sections above, you may also combine or link a ``work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

@enumerate a

@item

Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable ``work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

@item

Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

@item

Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.



@item

If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

@item

Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

@end enumerate

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

@item

You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

@enumerate a

@item

Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

@item

Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

@end enumerate

@item

You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

@item

You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

@item

Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

@item

If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the

integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

@item

If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

@item

The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and ``any later version'', you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

@item

If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

@center @b{NO WARRANTY}

@item

BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO

WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY ``AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

@item

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

@end enumerate

@subheading END OF TERMS AND CONDITIONS

@page

@subheading How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the ``copyright" line and a pointer to where the full notice is found.

@smallexample

@var{one line to give the library's name and an idea of what it does.}

Copyright (C) @var{year} @var{name of author}

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but

WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.

@end smallexample

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a ``copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

@smallexample

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

@var{signature of Ty Coon}, 1 April 1990

Ty Coon, President of Vice

@end smallexample

That's all there is to it!

Copyright 1992, 1993, 1994, 1997 Henry Spencer. All rights reserved. This software is not subject to any license of the American Telephone and Telegraph Company or of the Regents of the University of California.

Permission is granted to anyone to use this software for any purpose on any computer system, and to alter it and redistribute it, subject to the following restrictions:

1. The author is not responsible for the consequences of use of this software, no matter how awful, even if they arise from flaws in it.
2. The origin of this software must not be misrepresented, either by explicit claim or by omission. Since few users ever read sources, credits must appear in the documentation.
3. Altered versions must be plainly marked as such, and must not be misrepresented as being the original software. Since few users ever read sources, credits must appear in the documentation.
4. This notice may not be removed or altered.

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free

program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE  
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any

part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,



c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any

later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
```

```
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

## GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts  
as the successor of the GNU Library Public License, version 2, hence  
the version number 2.1.]

### Preamble

The licenses for most software are designed to take away your  
freedom to share and change it. By contrast, the GNU General Public  
Licenses are intended to guarantee your freedom to share and change  
free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some  
specially designated software packages--typically libraries--of the  
Free Software Foundation and other authors who decide to use it. You  
can use it too, but we suggest you first think carefully about whether  
this license or the ordinary General Public License is the better  
strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use,  
not price. Our General Public Licenses are designed to make sure that  
you have the freedom to distribute copies of free software (and charge  
for this service if you wish); that you receive source code or can get  
it if you want it; that you can change the software and use pieces of  
it in new free programs; and that you are informed that you can do  
these things.

To protect your rights, we need to make restrictions that forbid  
distributors to deny you these rights or to ask you to surrender these  
rights. These restrictions translate to certain responsibilities for  
you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis  
or for a fee, you must give the recipients all the rights that we gave  
you. You must make sure that they, too, receive or can get the source  
code. If you link other code with the library, you must provide  
complete object files to the recipients, so that they can relink them  
with the library after making changes to the library and recompiling  
it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the

library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

## GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from

such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in



themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the

Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under

Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on

the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
- b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to

refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing

and reuse of software generally.

## NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful,  
but WITHOUT ANY WARRANTY; without even the implied warranty of  
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU  
Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public  
License along with this library; if not, write to the Free Software  
Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your  
school, if any, to sign a "copyright disclaimer" for the library, if  
necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the  
library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!

This file contains the copying permission notices for various files in the  
GNU C Library distribution that have copyright owners other than the Free  
Software Foundation. These notices all require that a copy of the notice  
be included in the accompanying documentation and be distributed with  
binary distributions of the code, so be sure to include this file along  
with any binary distributions derived from the GNU C Library.

All code incorporated from 4.4 BSD is distributed under the following  
license:

Copyright (C) 1991 Regents of the University of California.  
All rights reserved.

Redistribution and use in source and binary forms, with or without  
modification, are permitted provided that the following conditions  
are met:

1. Redistributions of source code must retain the above copyright  
notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright  
notice, this list of conditions and the following disclaimer in the  
documentation and/or other materials provided with the distribution.
3. [This condition was removed.]
4. Neither the name of the University nor the names of its contributors  
may be used to endorse or promote products derived from this software

without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The DNS resolver code, taken from BIND 4.9.5, is copyrighted by UC Berkeley, by Digital Equipment Corporation and by Internet Software Consortium. The DEC portions are under the following license:

Portions Copyright (C) 1993 by Digital Equipment Corporation.

Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies, and that the name of Digital Equipment Corporation not be used in advertising or publicity pertaining to distribution of the document or software without specific, written prior permission.

THE SOFTWARE IS PROVIDED ``AS IS" AND DIGITAL EQUIPMENT CORP. DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL DIGITAL EQUIPMENT CORPORATION BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

The ISC portions are under the following license:

Portions Copyright (c) 1996-1999 by Internet Software Consortium.

Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS" AND INTERNET SOFTWARE CONSORTIUM DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL INTERNET SOFTWARE CONSORTIUM BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL



DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

The Sun RPC support (from rpcsrc-4.0) is covered by the following license:

Copyright (c) 2010, Oracle America, Inc.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of the "Oracle America, Inc." nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The following CMU license covers some of the support code for Mach, derived from Mach 3.0:

Mach Operating System  
Copyright (C) 1991,1990,1989 Carnegie Mellon University  
All Rights Reserved.

Permission to use, copy, modify and distribute this software and its documentation is hereby granted, provided that both the copyright notice and this permission notice appear in all copies of the

software, derivative works or modified versions, and any portions thereof, and that both notices appear in supporting documentation.

CARNEGIE MELLON ALLOWS FREE USE OF THIS SOFTWARE IN ITS ``AS IS" CONDITION. CARNEGIE MELLON DISCLAIMS ANY LIABILITY OF ANY KIND FOR ANY DAMAGES WHATSOEVER RESULTING FROM THE USE OF THIS SOFTWARE.

Carnegie Mellon requests users of this software to return to

Software Distribution Coordinator  
School of Computer Science  
Carnegie Mellon University  
Pittsburgh PA 15213-3890

or Software.Distribution@CS.CMU.EDU any improvements or extensions that they make and grant Carnegie Mellon the rights to redistribute these changes.

The file if\_ppp.h is under the following CMU license:

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the University nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY CARNEGIE MELLON UNIVERSITY AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE UNIVERSITY OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The following license covers the files from Intel's "Highly Optimized Mathematical Functions for Itanium" collection:

## Intel License Agreement

Copyright (c) 2000, Intel Corporation

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* The name of Intel Corporation may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL INTEL OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The files `inet/getnameinfo.c` and `sysdeps/posix/getaddrinfo.c` are copyright (C) by Craig Metz and are distributed under the following license:

/\* The Inner Net License, Version 2.00

The author(s) grant permission for redistribution and use in source and binary forms, with or without modification, of the software and documentation provided that the following conditions are met:

0. If you receive a version of the software that is specifically labelled as not being for redistribution (check the version message and/or README), you are not permitted to redistribute that version of the software in any way or form.
1. All terms of the all other applicable copyrights and licenses must be followed.

2. Redistributions of source code must retain the authors' copyright notice(s), this list of conditions, and the following disclaimer.
3. Redistributions in binary form must reproduce the authors' copyright notice(s), this list of conditions, and the following disclaimer in the documentation and/or other materials provided with the distribution.
4. [The copyright holder has authorized the removal of this clause.]
5. Neither the name(s) of the author(s) nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY ITS AUTHORS AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHORS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

If these license terms cause you a real problem, contact the author. \*/

The file sunrpc/des\_impl.c is copyright Eric Young:

Copyright (C) 1992 Eric Young

Collected from libdes and modified for SECURE RPC by Martin Kuck 1994

This file is distributed under the terms of the GNU Lesser General Public License, version 2.1 or later - see the file COPYING.LIB for details.

If you did not receive a copy of the license with this program, please see <<http://www.gnu.org/licenses/>> to obtain a copy.

The file inet/rcmd.c is under a UCB copyright and the following:

Copyright (C) 1998 WIDE Project.

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the project nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE PROJECT AND CONTRIBUTORS ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE PROJECT OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The file posix/runtests.c is copyright Tom Lord:

Copyright 1995 by Tom Lord

All Rights Reserved

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of the copyright holder not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission.

Tom Lord DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS, IN NO EVENT SHALL TOM LORD BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

The posix/rxspencer tests are copyright Henry Spencer:

Copyright 1992, 1993, 1994, 1997 Henry Spencer. All rights reserved. This software is not subject to any license of the American Telephone and Telegraph Company or of the Regents of the University of California.

Permission is granted to anyone to use this software for any purpose on any computer system, and to alter it and redistribute it, subject to the following restrictions:

1. The author is not responsible for the consequences of use of this software, no matter how awful, even if they arise from flaws in it.

2. The origin of this software must not be misrepresented, either by explicit claim or by omission. Since few users ever read sources, credits must appear in the documentation.
3. Altered versions must be plainly marked as such, and must not be misrepresented as being the original software. Since few users ever read sources, credits must appear in the documentation.
4. This notice may not be removed or altered.

The file `posix/PCRE.tests` is copyright University of Cambridge:

Copyright (c) 1997-2003 University of Cambridge

Permission is granted to anyone to use this software for any purpose on any computer system, and to redistribute it freely, subject to the following restrictions:

1. This software is distributed in the hope that it will be useful, but **WITHOUT ANY WARRANTY**; without even the implied warranty of **MERCHANTABILITY** or **FITNESS FOR A PARTICULAR PURPOSE**.
2. The origin of this software must not be misrepresented, either by explicit claim or by omission. In practice, this means that if you use PCRE in software that you distribute to others, commercially or otherwise, you must put a sentence like this

Regular expression support is provided by the PCRE library package, which is open source software, written by Philip Hazel, and copyright by the University of Cambridge, England.

somewhere reasonably visible in your documentation and in any relevant files or online help data or similar. A reference to the ftp site for the source, that is, to

`ftp://ftp.csx.cam.ac.uk/pub/software/programming/pcre/`

should also be given in the documentation. However, this condition is not intended to apply to whole chains of software. If package A includes PCRE, it must acknowledge it, but if package B is software that includes package A, the condition is not imposed on package B (unless it uses PCRE independently).

3. Altered versions must be plainly marked as such, and must not be misrepresented as being the original software.
4. If PCRE is embedded in any software that is released under the GNU General Purpose Licence (GPL), or Lesser General Purpose Licence (LGPL),

then the terms of that licence shall supersede any condition above with which it is incompatible.

Files from Sun fdlibm are copyright Sun Microsystems, Inc.:

Copyright (C) 1993 by Sun Microsystems, Inc. All rights reserved.

Developed at SunPro, a Sun Microsystems, Inc. business.

Permission to use, copy, modify, and distribute this software is freely granted, provided that this notice is preserved.

Various long double libm functions are copyright Stephen L. Moshier:

Copyright 2001 by Stephen L. Moshier <moshier@na-net.ornl.gov>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, see <<http://www.gnu.org/licenses/>>. \*/

UNICODE, INC. LICENSE AGREEMENT - DATA FILES AND SOFTWARE

Unicode Data Files include all data files under the directories <http://www.unicode.org/Public/>, <http://www.unicode.org/reports/>, and <http://www.unicode.org/cldr/data/>. Unicode Data Files do not include PDF online code charts under the directory <http://www.unicode.org/Public/>. Software includes any source code published in the Unicode Standard or under the directories <http://www.unicode.org/Public/>, <http://www.unicode.org/reports/>, and <http://www.unicode.org/cldr/data/>.

NOTICE TO USER: Carefully read the following legal agreement. BY DOWNLOADING, INSTALLING, COPYING OR OTHERWISE USING UNICODE INC.'S DATA FILES ("DATA FILES"), AND/OR SOFTWARE ("SOFTWARE"), YOU UNEQUIVOCALLY ACCEPT, AND AGREE TO BE BOUND BY, ALL OF THE TERMS AND CONDITIONS OF THIS AGREEMENT. IF YOU DO NOT AGREE, DO NOT DOWNLOAD, INSTALL, COPY, DISTRIBUTE OR USE THE DATA FILES OR SOFTWARE.

COPYRIGHT AND PERMISSION NOTICE

Copyright 1991-2013 Unicode, Inc. All rights reserved. Distributed under the Terms of Use in <http://www.unicode.org/copyright.html>.

Permission is hereby granted, free of charge, to any person obtaining a copy of the Unicode data files and any associated documentation (the "Data Files") or Unicode software and any associated documentation (the "Software") to deal in the Data Files or Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, and/or sell copies of the Data Files or Software, and to permit persons to whom the Data Files or Software are furnished to do so, provided that (a) the above copyright notice(s) and this permission notice appear with all copies of the Data Files or Software, (b) both the above copyright notice(s) and this permission notice appear in associated documentation, and (c) there is clear notice in each modified Data File or in the Software as well as in the documentation associated with the Data File(s) or Software that the data or software has been modified.

THE DATA FILES AND SOFTWARE ARE PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF THIRD PARTY RIGHTS. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR HOLDERS INCLUDED IN THIS NOTICE BE LIABLE FOR ANY CLAIM, OR ANY SPECIAL INDIRECT OR CONSEQUENTIAL DAMAGES, OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THE DATA FILES OR SOFTWARE.

Except as contained in this notice, the name of a copyright holder shall not be used in advertising or otherwise to promote the sale, use or other dealings in these Data Files or Software without prior written authorization of the copyright holder.

@c The GNU Free Documentation License.

@center Version 1.3, 3 November 2008

@c This file is intended to be included within another document,

@c hence no sectioning command or @node.

@display

Copyright @copyright{ } 2000, 2001, 2002, 2007, 2008 Free Software Foundation, Inc.

@uref{<http://fsf.org/>}

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

@end display

@enumerate 0

@item

PREAMBLE



The purpose of this License is to make a manual, textbook, or other functional and useful document @dfn{free} in the sense of freedom: to assure everyone the effective freedom to copy and redistribute it, with or without modifying it, either commercially or noncommercially. Secondly, this License preserves for the author and publisher a way to get credit for their work, while not being considered responsible for modifications made by others.

This License is a kind of ``copyleft'', which means that derivative works of the document must themselves be free in the same sense. It complements the GNU General Public License, which is a copyleft license designed for free software.

We have designed this License in order to use it for manuals for free software, because free software needs free documentation: a free program should come with manuals providing the same freedoms that the software does. But this License is not limited to software manuals; it can be used for any textual work, regardless of subject matter or whether it is published as a printed book. We recommend this License principally for works whose purpose is instruction or reference.

@item

#### APPLICABILITY AND DEFINITIONS

This License applies to any manual or other work, in any medium, that contains a notice placed by the copyright holder saying it can be distributed under the terms of this License. Such a notice grants a world-wide, royalty-free license, unlimited in duration, to use that work under the conditions stated herein. The ``Document'', below, refers to any such manual or work. Any member of the public is a licensee, and is addressed as ``you''. You accept the license if you copy, modify or distribute the work in a way requiring permission under copyright law.

A ``Modified Version'' of the Document means any work containing the Document or a portion of it, either copied verbatim, or with modifications and/or translated into another language.

A ``Secondary Section'' is a named appendix or a front-matter section of the Document that deals exclusively with the relationship of the publishers or authors of the Document to the Document's overall subject (or to related matters) and contains nothing that could fall directly within that overall subject. (Thus, if the Document is in part a textbook of mathematics, a Secondary Section may not explain any mathematics.) The relationship could be a matter of historical connection with the subject or with related matters, or of legal, commercial, philosophical, ethical or political position regarding

them.

The "Invariant Sections" are certain Secondary Sections whose titles are designated, as being those of Invariant Sections, in the notice that says that the Document is released under this License. If a section does not fit the above definition of Secondary then it is not allowed to be designated as Invariant. The Document may contain zero Invariant Sections. If the Document does not identify any Invariant Sections then there are none.

The "Cover Texts" are certain short passages of text that are listed, as Front-Cover Texts or Back-Cover Texts, in the notice that says that the Document is released under this License. A Front-Cover Text may be at most 5 words, and a Back-Cover Text may be at most 25 words.

A "Transparent" copy of the Document means a machine-readable copy, represented in a format whose specification is available to the general public, that is suitable for revising the document straightforwardly with generic text editors or (for images composed of pixels) generic paint programs or (for drawings) some widely available drawing editor, and that is suitable for input to text formatters or for automatic translation to a variety of formats suitable for input to text formatters. A copy made in an otherwise Transparent file format whose markup, or absence of markup, has been arranged to thwart or discourage subsequent modification by readers is not Transparent. An image format is not Transparent if used for any substantial amount of text. A copy that is not "Transparent" is called "Opaque".

Examples of suitable formats for Transparent copies include plain ASCII without markup, Texinfo input format, LaTeX input format, SGML or XML using a publicly available DTD, and standard-conforming simple HTML, PostScript or PDF designed for human modification. Examples of transparent image formats include PNG, XCF and JPG. Opaque formats include proprietary formats that can be read and edited only by proprietary word processors, SGML or XML for which the DTD and/or processing tools are not generally available, and the machine-generated HTML, PostScript or PDF produced by some word processors for output purposes only.

The "Title Page" means, for a printed book, the title page itself, plus such following pages as are needed to hold, legibly, the material this License requires to appear in the title page. For works in formats which do not have any title page as such, "Title Page" means the text near the most prominent appearance of the work's title, preceding the beginning of the body of the text.

The "publisher" means any person or entity that distributes copies of the Document to the public.

A section "Entitled XYZ" means a named subunit of the Document whose title either is precisely XYZ or contains XYZ in parentheses following text that translates XYZ in another language. (Here XYZ stands for a specific section name mentioned below, such as "Acknowledgements", "Dedications", "Endorsements", or "History".) To "Preserve the Title" of such a section when you modify the Document means that it remains a section "Entitled XYZ" according to this definition.

The Document may include Warranty Disclaimers next to the notice which states that this License applies to the Document. These Warranty Disclaimers are considered to be included by reference in this License, but only as regards disclaiming warranties: any other implication that these Warranty Disclaimers may have is void and has no effect on the meaning of this License.

@item

#### VERBATIM COPYING

You may copy and distribute the Document in any medium, either commercially or noncommercially, provided that this License, the copyright notices, and the license notice saying this License applies to the Document are reproduced in all copies, and that you add no other conditions whatsoever to those of this License. You may not use technical measures to obstruct or control the reading or further copying of the copies you make or distribute. However, you may accept compensation in exchange for copies. If you distribute a large enough number of copies you must also follow the conditions in section 3.

You may also lend copies, under the same conditions stated above, and you may publicly display copies.

@item

#### COPYING IN QUANTITY

If you publish printed copies (or copies in media that commonly have printed covers) of the Document, numbering more than 100, and the Document's license notice requires Cover Texts, you must enclose the copies in covers that carry, clearly and legibly, all these Cover Texts: Front-Cover Texts on the front cover, and Back-Cover Texts on the back cover. Both covers must also clearly and legibly identify you as the publisher of these copies. The front cover must present the full title with all words of the title equally prominent and visible. You may add other material on the covers in addition.

Copying with changes limited to the covers, as long as they preserve the title of the Document and satisfy these conditions, can be treated

as verbatim copying in other respects.

If the required texts for either cover are too voluminous to fit legibly, you should put the first ones listed (as many as fit reasonably) on the actual cover, and continue the rest onto adjacent pages.

If you publish or distribute Opaque copies of the Document numbering more than 100, you must either include a machine-readable Transparent copy along with each Opaque copy, or state in or with each Opaque copy a computer-network location from which the general network-using public has access to download using public-standard network protocols a complete Transparent copy of the Document, free of added material. If you use the latter option, you must take reasonably prudent steps, when you begin distribution of Opaque copies in quantity, to ensure that this Transparent copy will remain thus accessible at the stated location until at least one year after the last time you distribute an Opaque copy (directly or through your agents or retailers) of that edition to the public.

It is requested, but not required, that you contact the authors of the Document well before redistributing any large number of copies, to give them a chance to provide you with an updated version of the Document.

@item

## MODIFICATIONS

You may copy and distribute a Modified Version of the Document under the conditions of sections 2 and 3 above, provided that you release the Modified Version under precisely this License, with the Modified Version filling the role of the Document, thus licensing distribution and modification of the Modified Version to whoever possesses a copy of it. In addition, you must do these things in the Modified Version:

@enumerate A

@item

Use in the Title Page (and on the covers, if any) a title distinct from that of the Document, and from those of previous versions (which should, if there were any, be listed in the History section of the Document). You may use the same title as a previous version if the original publisher of that version gives permission.

@item

List on the Title Page, as authors, one or more persons or entities responsible for authorship of the modifications in the Modified Version, together with at least five of the principal authors of the Document (all of its principal authors, if it has fewer than five), unless they release you from this requirement.

@item

State on the Title page the name of the publisher of the Modified Version, as the publisher.

@item

Preserve all the copyright notices of the Document.

@item

Add an appropriate copyright notice for your modifications adjacent to the other copyright notices.

@item

Include, immediately after the copyright notices, a license notice giving the public permission to use the Modified Version under the terms of this License, in the form shown in the Addendum below.

@item

Preserve in that license notice the full lists of Invariant Sections and required Cover Texts given in the Document's license notice.

@item

Include an unaltered copy of this License.

@item

Preserve the section Entitled ``History'', Preserve its Title, and add to it an item stating at least the title, year, new authors, and publisher of the Modified Version as given on the Title Page. If there is no section Entitled ``History'' in the Document, create one stating the title, year, authors, and publisher of the Document as given on its Title Page, then add an item describing the Modified Version as stated in the previous sentence.

@item

Preserve the network location, if any, given in the Document for public access to a Transparent copy of the Document, and likewise the network locations given in the Document for previous versions it was based on. These may be placed in the ``History'' section. You may omit a network location for a work that was published at least four years before the Document itself, or if the original publisher of the version it refers to gives permission.

@item

For any section Entitled ``Acknowledgements'' or ``Dedications'', Preserve the Title of the section, and preserve in the section all the substance and tone of each of the contributor acknowledgements and/or dedications given therein.

@item

Preserve all the Invariant Sections of the Document, unaltered in their text and in their titles. Section numbers or the equivalent are not considered part of the section titles.

@item

Delete any section Entitled ``Endorsements''. Such a section may not be included in the Modified Version.

@item

Do not retitle any existing section to be Entitled ``Endorsements'' or to conflict in title with any Invariant Section.

@item

Preserve any Warranty Disclaimers.

@end enumerate

If the Modified Version includes new front-matter sections or appendices that qualify as Secondary Sections and contain no material copied from the Document, you may at your option designate some or all of these sections as invariant. To do this, add their titles to the list of Invariant Sections in the Modified Version's license notice. These titles must be distinct from any other section titles.

You may add a section Entitled ``Endorsements'', provided it contains nothing but endorsements of your Modified Version by various parties---for example, statements of peer review or that the text has been approved by an organization as the authoritative definition of a standard.

You may add a passage of up to five words as a Front-Cover Text, and a passage of up to 25 words as a Back-Cover Text, to the end of the list of Cover Texts in the Modified Version. Only one passage of Front-Cover Text and one of Back-Cover Text may be added by (or through arrangements made by) any one entity. If the Document already includes a cover text for the same cover, previously added by you or by arrangement made by the same entity you are acting on behalf of, you may not add another; but you may replace the old one, on explicit permission from the previous publisher that added the old one.

The author(s) and publisher(s) of the Document do not by this License give permission to use their names for publicity for or to assert or imply endorsement of any Modified Version.

@item

## COMBINING DOCUMENTS

You may combine the Document with other documents released under this

License, under the terms defined in section 4 above for modified versions, provided that you include in the combination all of the Invariant Sections of all of the original documents, unmodified, and list them all as Invariant Sections of your combined work in its license notice, and that you preserve all their Warranty Disclaimers.

The combined work need only contain one copy of this License, and multiple identical Invariant Sections may be replaced with a single copy. If there are multiple Invariant Sections with the same name but different contents, make the title of each such section unique by adding at the end of it, in parentheses, the name of the original author or publisher of that section if known, or else a unique number. Make the same adjustment to the section titles in the list of Invariant Sections in the license notice of the combined work.

In the combination, you must combine any sections Entitled ``History" in the various original documents, forming one section Entitled ``History"; likewise combine any sections Entitled ``Acknowledgements", and any sections Entitled ``Dedications". You must delete all sections Entitled ``Endorsements."

@item

#### COLLECTIONS OF DOCUMENTS

You may make a collection consisting of the Document and other documents released under this License, and replace the individual copies of this License in the various documents with a single copy that is included in the collection, provided that you follow the rules of this License for verbatim copying of each of the documents in all other respects.

You may extract a single document from such a collection, and distribute it individually under this License, provided you insert a copy of this License into the extracted document, and follow this License in all other respects regarding verbatim copying of that document.

@item

#### AGGREGATION WITH INDEPENDENT WORKS

A compilation of the Document or its derivatives with other separate and independent documents or works, in or on a volume of a storage or distribution medium, is called an ``aggregate" if the copyright resulting from the compilation is not used to limit the legal rights of the compilation's users beyond what the individual works permit. When the Document is included in an aggregate, this License does not apply to the other works in the aggregate which are not themselves derivative works of the Document.

If the Cover Text requirement of section 3 is applicable to these

copies of the Document, then if the Document is less than one half of the entire aggregate, the Document's Cover Texts may be placed on covers that bracket the Document within the aggregate, or the electronic equivalent of covers if the Document is in electronic form. Otherwise they must appear on printed covers that bracket the whole aggregate.

@item

## TRANSLATION

Translation is considered a kind of modification, so you may distribute translations of the Document under the terms of section 4. Replacing Invariant Sections with translations requires special permission from their copyright holders, but you may include translations of some or all Invariant Sections in addition to the original versions of these Invariant Sections. You may include a translation of this License, and all the license notices in the Document, and any Warranty Disclaimers, provided that you also include the original English version of this License and the original versions of those notices and disclaimers. In case of a disagreement between the translation and the original version of this License or a notice or disclaimer, the original version will prevail.

If a section in the Document is Entitled ``Acknowledgements'', ``Dedications'', or ``History'', the requirement (section 4) to Preserve its Title (section 1) will typically require changing the actual title.

@item

## TERMINATION

You may not copy, modify, sublicense, or distribute the Document except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, or distribute it is void, and will automatically terminate your rights under this License.

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after



your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, receipt of a copy of some or all of the same material does not give you any rights to use it.

@item

#### FUTURE REVISIONS OF THIS LICENSE

The Free Software Foundation may publish new, revised versions of the GNU Free Documentation License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns. See [@uref{http://www.gnu.org/copyleft/}](http://www.gnu.org/copyleft/).

Each version of the License is given a distinguishing version number. If the Document specifies that a particular numbered version of this License "or any later version" applies to it, you have the option of following the terms and conditions either of that specified version or of any later version that has been published (not as a draft) by the Free Software Foundation. If the Document does not specify a version number of this License, you may choose any version ever published (not as a draft) by the Free Software Foundation. If the Document specifies that a proxy can decide which future versions of this License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Document.

@item

#### RELICENSING

"Massive Multiauthor Collaboration Site" (or "MMC Site") means any World Wide Web server that publishes copyrightable works and also provides prominent facilities for anybody to edit those works. A public wiki that anybody can edit is an example of such a server. A "Massive Multiauthor Collaboration" (or "MMC") contained in the site means any set of copyrightable works thus published on the MMC site.

"CC-BY-SA" means the Creative Commons Attribution-Share Alike 3.0 license published by Creative Commons Corporation, a not-for-profit corporation with a principal place of business in San Francisco, California, as well as future copyleft versions of that license published by that same organization.

"Incorporate" means to publish or republish a Document, in whole or

in part, as part of another Document.

An MMC is "eligible for relicensing" if it is licensed under this License, and if all works that were first published under this License somewhere other than this MMC, and subsequently incorporated in whole or in part into the MMC, (1) had no cover texts or invariant sections, and (2) were thus incorporated prior to November 1, 2008.

The operator of an MMC Site may republish an MMC contained in the site under CC-BY-SA on the same site at any time before August 1, 2009, provided the MMC is eligible for relicensing.

@end enumerate

@page

@heading ADDENDUM: How to use this License for your documents

To use this License in a document you have written, include a copy of the License in the document and put the following copyright and license notices just after the title page:

@smallexample

@group

Copyright (C) @var{year} @var{your name}.

Permission is granted to copy, distribute and/or modify this document under the terms of the GNU Free Documentation License, Version 1.3 or any later version published by the Free Software Foundation; with no Invariant Sections, no Front-Cover Texts, and no Back-Cover Texts. A copy of the license is included in the section entitled "GNU Free Documentation License".

@end group

@end smallexample

If you have Invariant Sections, Front-Cover Texts and Back-Cover Texts, replace the "with@dots{ }Texts."@: line with this:

@smallexample

@group

with the Invariant Sections being @var{list their titles}, with the Front-Cover Texts being @var{list}, and with the Back-Cover Texts being @var{list}.

@end group

@end smallexample

If you have Invariant Sections without Cover Texts, or some other combination of the three, merge those two alternatives to suit the situation.

If your document contains nontrivial examples of program code, we recommend releasing these examples in parallel under your choice of free software license, such as the GNU General Public License, to permit their use in free software.

@c Local Variables:

@c ispell-local-pdict: "ispell-dict"

@c End:

## 1.310 commons-logging 1.1.1

### 1.310.1 Available under license :

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

##### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a

cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise,

any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

```
// -----
// NOTICE file corresponding to the section 4d of The Apache License,
// Version 2.0, in this case for Commons Logging
// -----
```

Commons Logging  
Copyright 2001-2007 The Apache Software Foundation

This product includes/uses software(s) developed by 'an unknown organization'  
- Unnamed - avalon-framework:avalon-framework:jar:4.1.3  
- Unnamed - log4j:log4j:jar:1.2.12  
- Unnamed - logkit:logkit:jar:1.0.1

# 1.311 audit 3.0-0.17.20191104git1c2f876.e18

## 1.311.1 Available under license :

GNU LESSER GENERAL PUBLIC LICENSE  
Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

## Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know



that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

^L

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating

system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

^L

## GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of

this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

^L

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

^L

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified

executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

^L

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work

based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

^L

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to

apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

^L

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY



15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

^L

#### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful,  
but WITHOUT ANY WARRANTY; without even the implied warranty of  
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU  
Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public  
License along with this library; if not, write to the Free Software  
Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper  
mail.

You should also get your employer (if you work as a programmer) or  
your  
school, if any, to sign a "copyright disclaimer" for the library, if  
necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the  
library `Frob' (a library for tweaking knobs) written by James  
Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!

GNU LESSER GENERAL PUBLIC LICENSE  
Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts  
as the successor of the GNU Library Public License, version 2, hence  
the version number 2.1.]

Preamble

The licenses for most software are designed to take away your  
freedom to share and change it. By contrast, the GNU General Public  
Licenses are intended to guarantee your freedom to share and change  
free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some  
specially designated software packages--typically libraries--of the  
Free Software Foundation and other authors who decide to use it. You  
can use it too, but we suggest you first think carefully about whether

this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

## GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or

other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License").

Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.

b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.

c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the

ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the

Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy



from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are

prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add

an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH

DAMAGES.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!

## GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete

machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further



restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest

to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
'Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into

proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

## 1.312 urllib3 1.24.2

### 1.312.1 Available under license :

This is the MIT license: <http://www.opensource.org/licenses/mit-license.php>

Copyright 2008-2016 Andrey Petrov and contributors (see CONTRIBUTORS.txt)

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

# Contributions to the urllib3 project

## Creator & Maintainer

\* Andrey Petrov <[andrey.petrov@shazow.net](mailto:andrey.petrov@shazow.net)>

## Contributors

In chronological order:

\* victor.vde <<http://code.google.com/u/victor.vde/>>

\* HTTPS patch (which inspired HTTPSConnectionPool)

\* erikcederstrand <<http://code.google.com/u/erikcederstrand/>>

\* NTLM-authenticated HTTPSConnectionPool

\* Basic-authenticated HTTPSConnectionPool (merged into make\_headers)

\* niphlod <niphlod@gmail.com>

\* Client-verified SSL certificates for HTTPSConnectionPool

\* Response gzip and deflate encoding support

\* Better unicode support for filepost using StringIO buffers

\* btoconnor <brian@btoconnor.net>

\* Non-multipart encoding for POST requests

\* p.dobrogost <<http://code.google.com/u/@WBRSRIBZDhBFXQB6/>>

\* Code review, PEP8 compliance, benchmark fix

\* kennethreitz <me@kennethreitz.com>

\* Bugfixes, suggestions, Requests integration

\* georgemarshal <<https://github.com/georgemarshal>>

\* Bugfixes, Improvements and Test coverage

\* Thomas Kluyver <thomas@kluyver.me.uk>

\* Python 3 support

\* brandon-rhodes <<http://rhodesmill.org/brandon>>

\* Design review, bugfixes, test coverage.

\* studer <theo.studer@gmail.com>

\* IPv6 url support and test coverage

\* Shivaram Lingamneni <slingamn@cs.stanford.edu>

\* Support for explicitly closing pooled connections

\* hartator <hartator@gmail.com>

\* Corrected multipart behavior for params

\* Thomas Weischuh <thomas@t-8ch.de>

\* Support for TLS SNI

\* API unification of ssl\_version/cert\_reqs

\* SSL fingerprint and alternative hostname verification

\* Bugfixes in testsuite

\* Sune Kirkeby <mig@ibofobi.dk>

\* Optional SNI-support for Python 2 via PyOpenSSL.

\* Marc Schlaich <marc.schlaich@gmail.com>

\* Various bugfixes and test improvements.

\* Bryce Boe <bbzbryce@gmail.com>

\* Correct six.moves conflict

- \* Fixed pickle support of some exceptions
- \* Boris Figovsky <boris.figovsky@ravellosystems.com>
  - \* Allowed to skip SSL hostname verification
- \* Cory Benfield <https://lukasa.co.uk/about/>
  - \* Stream method for Response objects.
  - \* Return native strings in header values.
  - \* Generate 'Host' header when using proxies.
- \* Jason Robinson <jaywink@basshero.org>
  - \* Add missing WrappedSocket.fileno method in PyOpenSSL
- \* Audrius Butkevicius <audrius.butkevicius@elastichosts.com>
  - \* Fixed a race condition
- \* Stanislav Vitkovskiy <stas.vitkovsky@gmail.com>
  - \* Added HTTPS (CONNECT) proxy support
- \* Stephen Holsapple <sholsapp@gmail.com>
  - \* Added abstraction for granular control of request fields
- \* Martin von Gagern <Martin.vGagern@gmx.net>
  - \* Support for non-ASCII header parameters
- \* Kevin Burke <kev@inburke.com> and Pavel Kirichenko <juanych@yandex-team.ru>
  - \* Support for separate connect and request timeouts
- \* Peter Waller <p@pwaller.net>
  - \* HTTPResponse.tell() for determining amount received over the wire
- \* Nipunn Koorapati <nipunn1313@gmail.com>
  - \* Ignore default ports when comparing hosts for equality
- \* Danilo @dbrgn <https://dbrgn.ch/>
  - \* Disabled TLS compression by default on Python 3.2+
  - \* Disabled TLS compression in pyopenssl contrib module
  - \* Configurable cipher suites in pyopenssl contrib module
- \* Roman Bogorodskiy <roman.bogorodskiy@ericsson.com>
  - \* Account retries on proxy errors
- \* Nicolas Delaby <nicolas.delaby@ezeep.com>
  - \* Use the platform-specific CA certificate locations
- \* Josh Schneier <https://github.com/jschneier>
  - \* HTTPHeaderDict and associated tests and docs
  - \* Bugfixes, docs, test coverage

- \* Tahia Khan <<http://tahia.tk/>>
- \* Added Timeout examples in docs
  
- \* Arthur Grunseid <<https://grunseid.com>>
- \* source\_address support and tests (with <https://github.com/bui>)
  
- \* Ian Cordasco <[graffatcolmingov@gmail.com](mailto:graffatcolmingov@gmail.com)>
- \* PEP8 Compliance and Linting
- \* Add ability to pass socket options to an HTTP Connection
  
- \* Erik Tollerud <[erik.tollerud@gmail.com](mailto:erik.tollerud@gmail.com)>
- \* Support for standard library io module.
  
- \* Krishna Prasad <[kprasad.iitd@gmail.com](mailto:kprasad.iitd@gmail.com)>
- \* Google App Engine documentation
  
- \* Aaron Meurer <[asmeurer@gmail.com](mailto:asmeurer@gmail.com)>
- \* Added `Url.url`, which unparses a `Url`
  
- \* Evgeny Kapun <[abacabadabacaba@gmail.com](mailto:abacabadabacaba@gmail.com)>
- \* Bugfixes
  
- \* Benjamin Meyer <[bm\\_witness@yahoo.com](mailto:bm_witness@yahoo.com)>
- \* Security Warning Documentation update for proper capture
  
- \* Shivan Sornarajah <[github@sornars.com](mailto:github@sornars.com)>
- \* Support for using `ConnectionPool` and `PoolManager` as context managers.
  
- \* Alex Gaynor <[alex.gaynor@gmail.com](mailto:alex.gaynor@gmail.com)>
- \* Updates to the default SSL configuration
  
- \* Tomas Tomecek <[ttomecek@redhat.com](mailto:ttomecek@redhat.com)>
- \* Implemented generator for getting chunks from chunked responses.
  
- \* tlynn <<https://github.com/tlynn>>
- \* Respect the warning preferences at import.
  
- \* David D. Riddle <[ddriddle@illinois.edu](mailto:ddriddle@illinois.edu)>
- \* IPv6 bugfixes in testsuite
  
- \* Thea Flowers <[magicalgirl@google.com](mailto:magicalgirl@google.com)>
- \* App Engine environment tests.
- \* Documentation re-write.
  
- \* John Krauss <<https://github.com/talos>>
- \* Clues to debugging problems with `cryptography` dependency in docs

- \* Disassem <<https://github.com/Disassem>>
- \* Fix pool-default headers not applying for url-encoded requests like GET.
  
- \* James Atherfold <[jlatherfold@hotmail.com](mailto:jlatherfold@hotmail.com)>
- \* Bugfixes relating to cleanup of connections during errors.
  
- \* Christian Pedersen <<https://github.com/chripede>>
- \* IPv6 HTTPS proxy bugfix
  
- \* Jordan Moldow <<https://github.com/jmoldow>>
- \* Fix low-level exceptions leaking from ``HTTPResponse.stream()``.
- \* Bugfix for ``ConnectionPool.urlopen(release\_conn=False)``.
- \* Creation of ``HTTPConnectionPool.ResponseCls``.
  
- \* Predrag Gruevski <<https://github.com/obi1kenobi>>
- \* Made cert digest comparison use a constant-time algorithm.
  
- \* Adam Talsma <<https://github.com/a-tal>>
- \* Bugfix to ca\_cert file paths.
  
- \* Evan Meagher <<https://evanmeagher.net>>
- \* Bugfix related to `memoryview` usage in PyOpenSSL adapter
  
- \* John Vandenberg <[jayvdb@gmail.com](mailto:jayvdb@gmail.com)>
- \* Python 2.6 fixes; pyflakes and pep8 compliance
  
- \* Andy Caldwell <[andy.m.caldwell@googlemail.com](mailto:andy.m.caldwell@googlemail.com)>
- \* Bugfix related to reusing connections in indeterminate states.
  
- \* Ville Skytt <[ville.skytta@iki.fi](mailto:ville.skytta@iki.fi)>
- \* Logging efficiency improvements, spelling fixes, Travis config.
  
- \* Shige Takeda <[smtakeda@gmail.com](mailto:smtakeda@gmail.com)>
- \* Started Recipes documentation and added a recipe about handling concatenated gzip data in HTTP response
  
- \* Jesse Shapiro <[jesse@jesseshapiro.net](mailto:jesse@jesseshapiro.net)>
- \* Various character-encoding fixes/tweaks
- \* Disabling IPv6 DNS when IPv6 connections not supported
  
- \* David Foster <<http://dafoster.net/>>
- \* Ensure order of request and response headers are preserved.
  
- \* Jeremy Cline <[jeremy@jcline.org](mailto:jeremy@jcline.org)>
- \* Added connection pool keys by scheme
  
- \* Aviv Palivoda <[palaviv@gmail.com](mailto:palaviv@gmail.com)>
- \* History list to Retry object.
- \* HTTPResponse contains the last Retry object.



- \* Nate Prewitt <nate.prewitt@gmail.com>
- \* Ensure timeouts are not booleans and greater than zero.
- \* Fixed infinite loop in ``stream`` when amt=None.
- \* Added length\_remaining to determine remaining data to be read.
- \* Added enforce\_content\_length to raise exception when incorrect content-length received.
  
- \* Seth Michael Larson <sethmichaellarson@protonmail.com>
- \* Created selectors backport that supports PEP 475.
  
- \* Alexandre Dias <alex.dias@smarkets.com>
- \* Don't retry on timeout if method not in whitelist
  
- \* Moinuddin Quadri <moin18@gmail.com>
- \* Lazily load idna package
  
- \* Tom White <s6yg1ez3@mail2tor.com>
- \* Made SOCKS handler differentiate socks5h from socks5 and socks4a from socks4.
  
- \* Tim Burke <tim.burke@gmail.com>
- \* Stop buffering entire deflate-encoded responses.
  
- \* Tuukka Mustonen <tuukka.mustonen@gmail.com>
- \* Add counter for status\_forcelist retries.
  
- \* Erik Rose <erik@mozilla.com>
- \* Bugfix to pyopenssl vendoring
  
- \* Wolfgang Richter <wolfgang.richter@gmail.com>
- \* Bugfix related to loading full certificate chains with PyOpenSSL backend.
  
- \* Mike Miller <github@mikeage.net>
- \* Logging improvements to include the HTTP(S) port when opening a new connection
  
- \* Ioannis Tziakos <mail@itziakos.gr>
- \* Fix ``util.selectors.\_fileobj\_to\_fd`` to accept ``long``.
- \* Update appveyor tox setup to use the 64bit python.
  
- \* Akamai (through Jesse Shapiro) <jshapiro@akamai.com>
- \* Ongoing maintenance
  
- \* Dominique Leuenberger <dimstar@opensuse.org>
- \* Minor fixes in the test suite
  
- \* Will Bond <will@wbond.net>
- \* Add Python 2.6 support to ``contrib.securetransport``
  
- \* Aleksei Alekseev <alekseev.yeskela@gmail.com>

- \* using auth info for socks proxy
- \* Chris Wilcox <git@crwilcox.com>
- \* Improve contribution guide
- \* Add ``HTTPResponse.geturl`` method to provide ``urllib2.urlopen().geturl()`` behavior
- \* Bruce Merry <https://www.brucemerry.org.za>
- \* Fix leaking exceptions when system calls are interrupted with zero timeout
- \* Hugo van Kemenade <https://github.com/hugovk>
- \* Drop support for EOL Python 2.6
- \* Tim Bell <https://github.com/timb07>
- \* Bugfix for responses with Content-Type: message/\* logging warnings
- \* Justin Bramley <https://github.com/jbramleycl>
- \* Add ability to handle multiple Content-Encodings
- \* Katsuhiko YOSHIDA <https://github.com/kyoshidajp>
- \* Remove Authorization header regardless of case when redirecting to cross-site
- \* [Your name or handle] <[email or website]>
- \* [Brief summary of your changes]

## 1.313 jackson-datatype-jdk8 2.12.6

### 1.313.1 Available under license :

Apache-2.0

## 1.314 json-path 2.4.0

### 1.314.1 Available under license :

No license file was found, but licenses were detected in source scan.

/\*

- \* Copyright 2011 the original author or authors.
- \* Licensed under the Apache License, Version 2.0 (the "License");
- \* you may not use this file except in compliance with the License.
- \* You may obtain a copy of the License at
- \*
- \* <http://www.apache.org/licenses/LICENSE-2.0>
- \*
- \* Unless required by applicable law or agreed to in writing, software
- \* distributed under the License is distributed on an "AS IS" BASIS,
- \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- \* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

- \* /opt/cola/permits/1199743787\_1630577685.84/0/json-path-2-4-0-sources-7-jar/com/jayway/jsonpath/InvalidJsonException.java
- \* /opt/cola/permits/1199743787\_1630577685.84/0/json-path-2-4-0-sources-7-jar/com/jayway/jsonpath/InvalidCriteriaException.java
- \* /opt/cola/permits/1199743787\_1630577685.84/0/json-path-2-4-0-sources-7-jar/com/jayway/jsonpath/JsonPathException.java
- \* /opt/cola/permits/1199743787\_1630577685.84/0/json-path-2-4-0-sources-7-jar/com/jayway/jsonpath/internal/path/PredicateContextImpl.java
- \* /opt/cola/permits/1199743787\_1630577685.84/0/json-path-2-4-0-sources-7-jar/com/jayway/jsonpath/internal/Utils.java
- \* /opt/cola/permits/1199743787\_1630577685.84/0/json-path-2-4-0-sources-7-jar/com/jayway/jsonpath/internal/function/latebinding/PathLateBindingValue.java
- \* /opt/cola/permits/1199743787\_1630577685.84/0/json-path-2-4-0-sources-7-jar/com/jayway/jsonpath/ParseContext.java
- \* /opt/cola/permits/1199743787\_1630577685.84/0/json-path-2-4-0-sources-7-jar/com/jayway/jsonpath/Configuration.java
- \* /opt/cola/permits/1199743787\_1630577685.84/0/json-path-2-4-0-sources-7-jar/com/jayway/jsonpath/EvaluationListener.java
- \* /opt/cola/permits/1199743787\_1630577685.84/0/json-path-2-4-0-sources-7-jar/com/jayway/jsonpath/internal/path/RootPathToken.java
- \* /opt/cola/permits/1199743787\_1630577685.84/0/json-path-2-4-0-sources-7-jar/com/jayway/jsonpath/spi/json/JettisonProvider.java
- \* /opt/cola/permits/1199743787\_1630577685.84/0/json-path-2-4-0-sources-7-jar/com/jayway/jsonpath/internal/path/CompiledPath.java
- \* /opt/cola/permits/1199743787\_1630577685.84/0/json-path-2-4-0-sources-7-jar/com/jayway/jsonpath/WriteContext.java
- \* /opt/cola/permits/1199743787\_1630577685.84/0/json-path-2-4-0-sources-7-jar/com/jayway/jsonpath/Option.java
- \* /opt/cola/permits/1199743787\_1630577685.84/0/json-path-2-4-0-sources-7-jar/com/jayway/jsonpath/internal/path/PredicatePathToken.java
- \* /opt/cola/permits/1199743787\_1630577685.84/0/json-path-2-4-0-sources-7-jar/com/jayway/jsonpath/InvalidPathException.java
- \* /opt/cola/permits/1199743787\_1630577685.84/0/json-path-2-4-0-sources-7-jar/com/jayway/jsonpath/internal/Path.java
- \* /opt/cola/permits/1199743787\_1630577685.84/0/json-path-2-4-0-sources-7-jar/com/jayway/jsonpath/internal/path/ArrayPathToken.java
- \* /opt/cola/permits/1199743787\_1630577685.84/0/json-path-2-4-0-sources-7-jar/com/jayway/jsonpath/spi/json/JsonProvider.java
- \* /opt/cola/permits/1199743787\_1630577685.84/0/json-path-2-4-0-sources-7-jar/com/jayway/jsonpath/ValueCompareException.java
- \* /opt/cola/permits/1199743787\_1630577685.84/0/json-path-2-4-0-sources-7-jar/com/jayway/jsonpath/Predicate.java
- \* /opt/cola/permits/1199743787\_1630577685.84/0/json-path-2-4-0-sources-7-jar/com/jayway/jsonpath/spi/mapper/JsonSmartMappingProvider.java
- \* /opt/cola/permits/1199743787\_1630577685.84/0/json-path-2-4-0-sources-7-

jar/com/jayway/jsonpath/ReadContext.java  
\* /opt/cola/permits/1199743787\_1630577685.84/0/json-path-2-4-0-sources-7-  
jar/com/jayway/jsonpath/internal/path/PathToken.java  
\* /opt/cola/permits/1199743787\_1630577685.84/0/json-path-2-4-0-sources-7-  
jar/com/jayway/jsonpath/spi/json/AbstractJsonProvider.java  
\* /opt/cola/permits/1199743787\_1630577685.84/0/json-path-2-4-0-sources-7-jar/com/jayway/jsonpath/Filter.java  
\* /opt/cola/permits/1199743787\_1630577685.84/0/json-path-2-4-0-sources-7-  
jar/com/jayway/jsonpath/spi/json/JacksonJsonProvider.java  
\* /opt/cola/permits/1199743787\_1630577685.84/0/json-path-2-4-0-sources-7-  
jar/com/jayway/jsonpath/internal/function/latebinding/JsonLateBindingValue.java  
\* /opt/cola/permits/1199743787\_1630577685.84/0/json-path-2-4-0-sources-7-  
jar/com/jayway/jsonpath/internal/path/ScanPathToken.java  
\* /opt/cola/permits/1199743787\_1630577685.84/0/json-path-2-4-0-sources-7-  
jar/com/jayway/jsonpath/spi/cache/LRUCache.java  
\* /opt/cola/permits/1199743787\_1630577685.84/0/json-path-2-4-0-sources-7-  
jar/com/jayway/jsonpath/InvalidModificationException.java  
\* /opt/cola/permits/1199743787\_1630577685.84/0/json-path-2-4-0-sources-7-  
jar/com/jayway/jsonpath/spi/mapper/MappingException.java  
\* /opt/cola/permits/1199743787\_1630577685.84/0/json-path-2-4-0-sources-7-  
jar/com/jayway/jsonpath/internal/path/WildcardPathToken.java  
\* /opt/cola/permits/1199743787\_1630577685.84/0/json-path-2-4-0-sources-7-  
jar/com/jayway/jsonpath/spi/mapper/TapestryMappingProvider.java  
\* /opt/cola/permits/1199743787\_1630577685.84/0/json-path-2-4-0-sources-7-jar/com/jayway/jsonpath/Criteria.java  
\* /opt/cola/permits/1199743787\_1630577685.84/0/json-path-2-4-0-sources-7-  
jar/com/jayway/jsonpath/TypeRef.java  
\* /opt/cola/permits/1199743787\_1630577685.84/0/json-path-2-4-0-sources-7-  
jar/com/jayway/jsonpath/internal/JsonContext.java  
\* /opt/cola/permits/1199743787\_1630577685.84/0/json-path-2-4-0-sources-7-  
jar/com/jayway/jsonpath/internal/EvaluationContext.java  
\* /opt/cola/permits/1199743787\_1630577685.84/0/json-path-2-4-0-sources-7-  
jar/com/jayway/jsonpath/spi/mapper/JacksonMappingProvider.java  
\* /opt/cola/permits/1199743787\_1630577685.84/0/json-path-2-4-0-sources-7-  
jar/com/jayway/jsonpath/DocumentContext.java  
\* /opt/cola/permits/1199743787\_1630577685.84/0/json-path-2-4-0-sources-7-  
jar/com/jayway/jsonpath/spi/json/JsonSmartJsonProvider.java  
\* /opt/cola/permits/1199743787\_1630577685.84/0/json-path-2-4-0-sources-7-  
jar/com/jayway/jsonpath/internal/JsonFormatter.java  
\* /opt/cola/permits/1199743787\_1630577685.84/0/json-path-2-4-0-sources-7-  
jar/com/jayway/jsonpath/spi/mapper/MappingProvider.java  
\* /opt/cola/permits/1199743787\_1630577685.84/0/json-path-2-4-0-sources-7-  
jar/com/jayway/jsonpath/spi/mapper/GsonMappingProvider.java  
\* /opt/cola/permits/1199743787\_1630577685.84/0/json-path-2-4-0-sources-7-  
jar/com/jayway/jsonpath/JsonPath.java  
\* /opt/cola/permits/1199743787\_1630577685.84/0/json-path-2-4-0-sources-7-  
jar/com/jayway/jsonpath/internal/path/EvaluationContextImpl.java  
\* /opt/cola/permits/1199743787\_1630577685.84/0/json-path-2-4-0-sources-7-  
jar/com/jayway/jsonpath/internal/function/latebinding/ILateBindingValue.java  
\* /opt/cola/permits/1199743787\_1630577685.84/0/json-path-2-4-0-sources-7-

jar/com/jayway/jsonpath/internal/path/PropertyPathToken.java  
\* /opt/cola/permits/1199743787\_1630577685.84/0/json-path-2-4-0-sources-7-  
jar/com/jayway/jsonpath/spi/json/GsonJsonProvider.java  
\* /opt/cola/permits/1199743787\_1630577685.84/0/json-path-2-4-0-sources-7-  
jar/com/jayway/jsonpath/PathNotFoundException.java  
\* /opt/cola/permits/1199743787\_1630577685.84/0/json-path-2-4-0-sources-7-  
jar/com/jayway/jsonpath/MapFunction.java

# 1.315 ethtool 0.14-3.ph4

## 1.315.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their

rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

#### GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License

along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not



signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER

PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

```
This program is free software; you can redistribute it and/or modify
it under the terms of the GNU General Public License as published by
the Free Software Foundation; either version 2 of the License, or
(at your option) any later version.
```

```
This program is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
GNU General Public License for more details.
```

```
You should have received a copy of the GNU General Public License along
with this program; if not, write to the Free Software Foundation, Inc.,
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.
```

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program  
'Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989  
Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

## 1.316 libxcrypt 4.1.1-6.el8

### 1.316.1 Available under license :

GNU LESSER GENERAL PUBLIC LICENSE  
Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts  
as the successor of the GNU Library Public License, version 2, hence  
the version number 2.1.]

#### Preamble

The licenses for most software are designed to take away your  
freedom to share and change it. By contrast, the GNU General Public  
Licenses are intended to guarantee your freedom to share and change  
free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some  
specially designated software packages--typically libraries--of the  
Free Software Foundation and other authors who decide to use it. You  
can use it too, but we suggest you first think carefully about whether  
this license or the ordinary General Public License is the better  
strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use,  
not price. Our General Public Licenses are designed to make sure that

you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the

entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

## GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data

prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no

charge to all third parties under the terms of this License.

d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for



that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6,

whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
- b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!

## 1.317 d-bus 1.12.8-18.el8\_6.1

## 1.317.1 Available under license :

D-Bus is licensed to you under your choice of the Academic Free License version 2.1, or the GNU General Public License version 2 (or, at your option any later version).

Both licenses are included here. Some of the standalone binaries are under the GPL only; in particular, but not limited to, tools/dbus-cleanup-sockets.c and test/decode-gcov.c. Each source code file is marked with the proper copyright information - if you find a file that isn't marked please bring it to our attention.

The Academic Free License  
v. 2.1

This Academic Free License (the "License") applies to any original work of authorship (the "Original Work") whose owner (the "Licensor") has placed the following notice immediately following the copyright notice for the Original Work:

Licensed under the Academic Free License version 2.1

1) Grant of Copyright License. Licensor hereby grants You a world-wide, royalty-free, non-exclusive, perpetual, sublicenseable license to do the following:

- a) to reproduce the Original Work in copies;
- b) to prepare derivative works ("Derivative Works") based upon the Original Work;
- c) to distribute copies of the Original Work and Derivative Works to the public;
- d) to perform the Original Work publicly; and
- e) to display the Original Work publicly.

2) Grant of Patent License. Licensor hereby grants You a world-wide, royalty-free, non-exclusive, perpetual, sublicenseable license, under patent claims owned or controlled by the Licensor that are embodied in the Original Work as furnished by the Licensor, to make, use, sell and offer for sale the Original Work and Derivative Works.

3) Grant of Source Code License. The term "Source Code" means the preferred form of the Original Work for making modifications to it and all available documentation describing how to modify the Original Work. Licensor hereby agrees to provide a machine-readable copy of the Source Code of the Original Work along with each copy of the Original Work that Licensor distributes. Licensor reserves the right to satisfy this obligation by placing a machine-readable copy of the Source Code in an information repository reasonably calculated to permit

inexpensive and convenient access by You for as long as Licensor continues to distribute the Original Work, and by publishing the address of that information repository in a notice immediately following the copyright notice that applies to the Original Work.

4) Exclusions From License Grant. Neither the names of Licensor, nor the names of any contributors to the Original Work, nor any of their trademarks or service marks, may be used to endorse or promote products derived from this Original Work without express prior written permission of the Licensor. Nothing in this License shall be deemed to grant any rights to trademarks, copyrights, patents, trade secrets or any other intellectual property of Licensor except as expressly stated herein. No patent license is granted to make, use, sell or offer to sell embodiments of any patent claims other than the licensed claims defined in Section 2. No right is granted to the trademarks of Licensor even if such marks are included in the Original Work. Nothing in this License shall be interpreted to prohibit Licensor from licensing under different terms from this License any Original Work that Licensor otherwise would have a right to license.

5) This section intentionally omitted.

6) Attribution Rights. You must retain, in the Source Code of any Derivative Works that You create, all copyright, patent or trademark notices from the Source Code of the Original Work, as well as any notices of licensing and any descriptive text identified therein as an "Attribution Notice." You must cause the Source Code for any Derivative Works that You create to carry a prominent Attribution Notice reasonably calculated to inform recipients that You have modified the Original Work.

7) Warranty of Provenance and Disclaimer of Warranty. Licensor warrants that the copyright in and to the Original Work and the patent rights granted herein by Licensor are owned by the Licensor or are sublicensed to You under the terms of this License with the permission of the contributor(s) of those copyrights and patent rights. Except as expressly stated in the immediately preceding sentence, the Original Work is provided under this License on an "AS IS" BASIS and WITHOUT WARRANTY, either express or implied, including, without limitation, the warranties of NON-INFRINGEMENT, MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY OF THE ORIGINAL WORK IS WITH YOU. This DISCLAIMER OF WARRANTY constitutes an essential part of this License. No license to Original Work is granted hereunder except under this disclaimer.

8) Limitation of Liability. Under no circumstances and under no legal theory, whether in tort (including negligence), contract, or otherwise, shall the Licensor be liable to any person for any direct,



indirect, special, incidental, or consequential damages of any character arising as a result of this License or the use of the Original Work including, without limitation, damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses. This limitation of liability shall not apply to liability for death or personal injury resulting from Licensor's negligence to the extent applicable law prohibits such limitation. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so this exclusion and limitation may not apply to You.

9) Acceptance and Termination. If You distribute copies of the Original Work or a Derivative Work, You must make a reasonable effort under the circumstances to obtain the express assent of recipients to the terms of this License. Nothing else but this License (or another written agreement between Licensor and You) grants You permission to create Derivative Works based upon the Original Work or to exercise any of the rights granted in Section 1 herein, and any attempt to do so except under the terms of this License (or another written agreement between Licensor and You) is expressly prohibited by U.S. copyright law, the equivalent laws of other countries, and by international treaty. Therefore, by exercising any of the rights granted to You in Section 1 herein, You indicate Your acceptance of this License and all of its terms and conditions.

10) Termination for Patent Action. This License shall terminate automatically and You may no longer exercise any of the rights granted to You by this License as of the date You commence an action, including a cross-claim or counterclaim, against Licensor or any licensee alleging that the Original Work infringes a patent. This termination provision shall not apply for an action alleging patent infringement by combinations of the Original Work with other software or hardware.

11) Jurisdiction, Venue and Governing Law. Any action or suit relating to this License may be brought only in the courts of a jurisdiction wherein the Licensor resides or in which Licensor conducts its primary business, and under the laws of that jurisdiction excluding its conflict-of-law provisions. The application of the United Nations Convention on Contracts for the International Sale of Goods is expressly excluded. Any use of the Original Work outside the scope of this License or after its termination shall be subject to the requirements and penalties of the U.S. Copyright Act, 17 U.S.C. 101 et seq., the equivalent laws of other countries, and international treaty. This section shall survive the termination of this License.

12) Attorneys Fees. In any action to enforce the terms of this License or seeking damages relating thereto, the prevailing party shall be

entitled to recover its costs and expenses, including, without limitation, reasonable attorneys' fees and costs incurred in connection with such action, including any appeal of such action. This section shall survive the termination of this License.

13) Miscellaneous. This License represents the complete agreement concerning the subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable.

14) Definition of "You" in This License. "You" throughout this License, whether in upper or lower case, means an individual or a legal entity exercising rights under, and complying with all of the terms of, this License. For legal entities, "You" includes any entity that controls, is controlled by, or is under common control with you. For purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

15) Right to Use. You may use the Original Work in all ways not otherwise restricted or conditioned by this License or by law, and Licensor promises not to interfere with or be responsible for such uses by You.

This license is Copyright (C) 2003-2004 Lawrence E. Rosen. All rights reserved. Permission is hereby granted to copy and distribute this license without modification. This license may not be modified without the express written permission of its copyright owner.

--

END OF ACADEMIC FREE LICENSE. The following is intended to describe the essential differences between the Academic Free License (AFL) version 1.0 and other open source licenses:

The Academic Free License is similar to the BSD, MIT, UoI/NCSA and Apache licenses in many respects but it is intended to solve a few problems with those licenses.

\* The AFL is written so as to make it clear what software is being licensed (by the inclusion of a statement following the copyright notice in the software). This way, the license functions better than a template license. The BSD, MIT and UoI/NCSA licenses apply to unidentified software.

\* The AFL contains a complete copyright grant to the software. The BSD and Apache licenses are vague and incomplete in that respect.

\* The AFL contains a complete patent grant to the software. The BSD, MIT, UoI/NCSA and Apache licenses rely on an implied patent license and contain no explicit patent grant.

\* The AFL makes it clear that no trademark rights are granted to the licensor's trademarks. The Apache license contains such a provision, but the BSD, MIT and UoI/NCSA licenses do not.

\* The AFL includes the warranty by the licensor that it either owns the copyright or that it is distributing the software under a license. None of the other licenses contain that warranty. All other warranties are disclaimed, as is the case for the other licenses.

\* The AFL is itself copyrighted (with the right granted to copy and distribute without modification). This ensures that the owner of the copyright to the license will control changes. The Apache license contains a copyright notice, but the BSD, MIT and UoI/NCSA licenses do not.

--

START OF GNU GENERAL PUBLIC LICENSE

--

## GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it

in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

#### GNU GENERAL PUBLIC LICENSE

#### TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of

running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the

entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not

compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the

integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS



TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this

when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF

# 1.318 spring-beans 5.3.21

## 1.318.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2002-2021 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1347859843_1655733477.6825383/0/spring-beans-5-3-21-sources-
jar/org/springframework/beans/factory/ListableBeanFactory.java
* /opt/cola/permits/1347859843_1655733477.6825383/0/spring-beans-5-3-21-sources-
jar/org/springframework/beans/factory/support/BeanDefinitionBuilder.java
* /opt/cola/permits/1347859843_1655733477.6825383/0/spring-beans-5-3-21-sources-
jar/org/springframework/beans/factory/xml/ParserContext.java
* /opt/cola/permits/1347859843_1655733477.6825383/0/spring-beans-5-3-21-sources-
jar/org/springframework/beans/propertyeditors/PathEditor.java
* /opt/cola/permits/1347859843_1655733477.6825383/0/spring-beans-5-3-21-sources-
jar/org/springframework/beans/factory/support/CglibSubclassingInstantiationStrategy.java
* /opt/cola/permits/1347859843_1655733477.6825383/0/spring-beans-5-3-21-sources-
jar/org/springframework/beans/factory/support/AbstractBeanDefinition.java
* /opt/cola/permits/1347859843_1655733477.6825383/0/spring-beans-5-3-21-sources-
jar/org/springframework/beans/factory/annotation/AutowiredAnnotationBeanPostProcessor.java
* /opt/cola/permits/1347859843_1655733477.6825383/0/spring-beans-5-3-21-sources-
jar/org/springframework/beans/factory/config/YamlProcessor.java
* /opt/cola/permits/1347859843_1655733477.6825383/0/spring-beans-5-3-21-sources-
jar/org/springframework/beans/factory/groovy/GroovyBeanDefinitionReader.java
* /opt/cola/permits/1347859843_1655733477.6825383/0/spring-beans-5-3-21-sources-
jar/org/springframework/beans/factory/BeanFactory.java
* /opt/cola/permits/1347859843_1655733477.6825383/0/spring-beans-5-3-21-sources-
jar/org/springframework/beans/factory/support/AbstractBeanFactory.java
* /opt/cola/permits/1347859843_1655733477.6825383/0/spring-beans-5-3-21-sources-
```

jar/org/springframework/beans/GenericTypeAwarePropertyDescriptor.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
jar/org/springframework/beans/factory/support/StaticListableBeanFactory.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
jar/org/springframework/beans/factory/support/LookupOverride.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
jar/org/springframework/beans/support/PropertyComparator.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
jar/org/springframework/beans/AbstractNestablePropertyAccessor.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
jar/org/springframework/beans/PropertyEditorRegistrySupport.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
jar/org/springframework/beans/factory/support/ReplaceOverride.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
jar/org/springframework/beans/factory/config/PlaceholderConfigurerSupport.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
jar/org/springframework/beans/TypeMismatchException.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
jar/org/springframework/beans/factory/config/InstantiationAwareBeanPostProcessor.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
jar/org/springframework/beans/factory/support/AbstractBeanDefinitionReader.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
jar/org/springframework/beans/factory/support/BeanDefinitionReader.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
jar/org/springframework/beans/propertyeditors/LocaleEditor.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
jar/org/springframework/beans/factory/support/MethodReplacer.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
jar/org/springframework/beans/factory/config/ConstructorArgumentValues.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2007 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/PropertyValuesEditor.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/parsing/DefaultsDefinition.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/support/BeanNameGenerator.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/serviceloader/ServiceFactoryBean.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/parsing/ReaderEventListener.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/serviceloader/ServiceLoaderFactoryBean.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2010 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/support/BeanDefinitionRegistryPostProcessor.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2018 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/BeanFactoryExtensions.kt  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/support/BeanDefinitionRegistry.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/support/SimpleBeanDefinitionRegistry.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/Aware.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/InitializingBean.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/ObjectProvider.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/xml/DefaultDocumentLoader.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/support/SimpleSecurityContextProvider.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/PropertyMatches.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/support/PagedListHolder.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/UnsatisfiedDependencyException.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/support/BeanDefinitionResource.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/Mergeable.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/NoUniqueBeanDefinitionException.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/NoSuchBeanDefinitionException.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/support/InstantiationStrategy.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/propertyeditors/CustomDateEditor.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/SmartFactoryBean.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/config/FieldRetrievingFactoryBean.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/BeanInstantiationException.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/config/NamedBeanHolder.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/PropertyAccessorFactory.java

\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/BeanCreationException.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/config/PropertyOverrideConfigurer.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/config/AbstractFactoryBean.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/parsing/BeanComponentDefinition.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/support/AutowireCandidateQualifier.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/xml/DefaultNamespaceHandlerResolver.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/config/BeanExpressionContext.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/CannotLoadBeanClassException.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/config/DestructionAwareBeanPostProcessor.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/parsing/CompositeComponentDefinition.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/support/BeanDefinitionOverrideException.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/propertyeditors/CustomBooleanEditor.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/annotation/AnnotationBeanWiringInfoResolver.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/config/CustomScopeConfigurer.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/config/MethodInvokingFactoryBean.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/parsing/FailFastProblemReporter.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/xml/AbstractBeanDefinitionParser.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/support/MergedBeanDefinitionPostProcessor.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/PropertyAccessException.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/DisposableBean.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/ObjectFactory.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/PropertyValues.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/xml/SimpleConstructorNamespaceHandler.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/wiring/BeanConfigurerSupport.java

\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/BeanDefinitionStoreException.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/BeanNotOfRequiredTypeException.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/propertyeditors/CustomNumberEditor.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/xml/XmlBeanFactory.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/MethodInvocationException.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/InvalidPropertyException.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/annotation/BeanFactoryAnnotationUtils.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/support/ManagedArray.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/xml/DefaultBeanDefinitionDocumentReader.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/NotWritablePropertyException.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/support/SimpleInstantiationStrategy.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/annotation/Required.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/config/CustomEditorConfigurer.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2002-2015 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/config/SingletonBeanRegistry.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-



jar/org/springframework/beans/factory/xml/BeanDefinitionDocumentReader.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2014 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/annotation/AnnotatedBeanDefinition.java

\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/NotReadablePropertyException.java

\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/SmartInitializingSingleton.java

\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/xml/AbstractSimpleBeanDefinitionParser.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2011 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-

jar/org/springframework/beans/factory/annotation/Qualifier.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
jar/org/springframework/beans/factory/xml/BeanDefinitionParser.java  
No license file was found, but licenses were detected in source scan.

```
/*
* Copyright 2002-2019 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
```

Found in path(s):

```
* /opt/cola/permits/1347859843_1655733477.6825383/0/spring-beans-5-3-21-sources-
jar/org/springframework/beans/factory/support/DefaultBeanNameGenerator.java
* /opt/cola/permits/1347859843_1655733477.6825383/0/spring-beans-5-3-21-sources-
jar/org/springframework/beans/PropertyValue.java
* /opt/cola/permits/1347859843_1655733477.6825383/0/spring-beans-5-3-21-sources-
jar/org/springframework/beans/factory/xml/ResourceEntityResolver.java
* /opt/cola/permits/1347859843_1655733477.6825383/0/spring-beans-5-3-21-sources-
jar/org/springframework/beans/factory/xml/BeansDtdResolver.java
* /opt/cola/permits/1347859843_1655733477.6825383/0/spring-beans-5-3-21-sources-
jar/org/springframework/beans/propertyeditors/UIEditor.java
* /opt/cola/permits/1347859843_1655733477.6825383/0/spring-beans-5-3-21-sources-
jar/org/springframework/beans/propertyeditors/StringArrayPropertyEditor.java
* /opt/cola/permits/1347859843_1655733477.6825383/0/spring-beans-5-3-21-sources-
jar/org/springframework/beans/factory/config/BeanPostProcessor.java
* /opt/cola/permits/1347859843_1655733477.6825383/0/spring-beans-5-3-21-sources-
jar/org/springframework/beans/factory/support/MethodOverrides.java
* /opt/cola/permits/1347859843_1655733477.6825383/0/spring-beans-5-3-21-sources-
jar/org/springframework/beans/factory/config/BeanFactoryPostProcessor.java
* /opt/cola/permits/1347859843_1655733477.6825383/0/spring-beans-5-3-21-sources-
jar/org/springframework/beans/propertyeditors/CustomMapEditor.java
* /opt/cola/permits/1347859843_1655733477.6825383/0/spring-beans-5-3-21-sources-
jar/org/springframework/beans/factory/annotation/AnnotatedGenericBeanDefinition.java
* /opt/cola/permits/1347859843_1655733477.6825383/0/spring-beans-5-3-21-sources-
jar/org/springframework/beans/factory/config/TypedStringValue.java
* /opt/cola/permits/1347859843_1655733477.6825383/0/spring-beans-5-3-21-sources-
jar/org/springframework/beans/factory/config/BeanDefinitionVisitor.java
```

\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/config/RuntimeBeanReference.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/TypeConverter.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/config/AutowireCapableBeanFactory.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/xml/DelegatingEntityResolver.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/propertyeditors/StringTrimmerEditor.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/PropertyBatchUpdateException.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/TypeConverterSupport.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/BeanFactoryUtils.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/config/PreferencesPlaceholderConfigurer.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/annotation/Autowired.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/config/YamlMapFactoryBean.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/support/GenericBeanDefinition.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/config/PropertyPlaceholderConfigurer.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/annotation/AnnotationBeanUtils.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/ExtendedBeanInfo.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/groovy/GroovyBeanDefinitionWrapper.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/annotation/ParameterResolutionDelegate.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/propertyeditors/CustomCollectionEditor.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/BeanMetadataElement.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/xml/PluggableSchemaResolver.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/config/YamlPropertiesFactoryBean.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/InjectionPoint.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/PropertyDescriptorUtils.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/TypeConverterDelegate.java

\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/config/AutowiredPropertyMarker.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2013 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/SimpleTypeConverter.java

\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/BeanInfoFactory.java

\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/ExtendedBeanInfoFactory.java

\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/groovy/GroovyDynamicElementReader.groovy

\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/propertyeditors/TimeZoneEditor.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2016 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

- \* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/NullValueInNestedPathException.java
- \* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/xml/NamespaceHandlerResolver.java
- \* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/propertyeditors/ZoneIdEditor.java
- \* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/xml/UtilNamespaceHandler.java
- \* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/BeanNameAware.java
- \* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/BeanInitializationException.java
- \* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/propertyeditors/InputStreamEditor.java
- \* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/propertyeditors/ReaderEditor.java
- \* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/NamedBean.java
- \* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/config/SmartInstantiationAwareBeanPostProcessor.java
- \* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/support/ImplicitlyAppearedSingletonException.java
- \* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/parsing/SourceExtractor.java
- \* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/propertyeditors/URLEditor.java
- \* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/config/Scope.java
- \* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/propertyeditors/FileEditor.java
- \* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/config/BeanDefinitionCustomizer.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2009 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

- \* See the License for the specific language governing permissions and
- \* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/annotation/Autowired.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2022 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/PropertyAccessor.java

\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/support/DefaultListableBeanFactory.java

\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/support/ConstructorResolver.java

\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/support/ManagedSet.java

\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/ListableBeanFactoryExtensions.kt

\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/support/ResourceEditorRegistrar.java

\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/support/ManagedMap.java

\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/annotation/RequiredAnnotationBeanPostProcessor.java

\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/BeanUtils.java

\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/support/RootBeanDefinition.java

\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/support/AbstractAutowiredCapableBeanFactory.java

\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/support/DisposableBeanAdapter.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/annotation/InitDestroyAnnotationBeanPostProcessor.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/CachedIntrospectionResults.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/config/BeanExpressionResolver.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/support/ManagedList.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2020 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/config/InstantiationAwareBeanPostProcessorAdapter.java

\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/support/BeanDefinitionValueResolver.java

\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/parsing/ReaderContext.java

\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/support/BeanDefinitionReaderUtils.java

\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/MutablePropertyValues.java

\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/BeanWrapperImpl.java

\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/DirectFieldAccessor.java

\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/xml/BeanDefinitionParserDelegate.java

\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/parsing/ParseState.java

\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-

jar/org/springframework/beans/factory/support/FactoryBeanRegistrySupport.java  
 \* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
 jar/org/springframework/beans/factory/parsing/BeanEntry.java  
 \* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
 jar/org/springframework/beans/factory/config/MapFactoryBean.java  
 \* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
 jar/org/springframework/beans/factory/annotation/InjectionMetadata.java  
 \* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
 jar/org/springframework/beans/factory/serviceloader/ServiceListFactoryBean.java  
 \* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
 jar/org/springframework/beans/factory/support/GenericTypeAwareAutowireCandidateResolver.java  
 \* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
 jar/org/springframework/beans/factory/config/DependencyDescriptor.java  
 \* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
 jar/org/springframework/beans/factory/support/PropertiesBeanDefinitionReader.java  
 \* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
 jar/org/springframework/beans/factory/support/AutowireUtils.java  
 \* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
 jar/org/springframework/beans/factory/support/ScopeNotActiveException.java  
 \* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
 jar/org/springframework/beans/factory/annotation/Value.java  
 \* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
 jar/org/springframework/beans/AbstractPropertyAccessor.java  
 \* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
 jar/org/springframework/beans/factory/support/AutowireCandidateResolver.java  
 \* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
 jar/org/springframework/beans/factory/annotation/QualifierAnnotationAutowireCandidateResolver.java  
 \* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
 jar/org/springframework/beans/factory/parsing/QualifierEntry.java  
 \* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
 jar/org/springframework/beans/propertyeditors/URIEditor.java  
 \* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
 jar/org/springframework/beans/factory/config/BeanDefinition.java  
 \* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
 jar/org/springframework/beans/factory/config/ConfigurableBeanFactory.java  
 \* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
 jar/org/springframework/beans/factory/support/DefaultSingletonBeanRegistry.java  
 \* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
 jar/org/springframework/beans/support/ArgumentConvertingMethodInvoker.java  
 \* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
 jar/org/springframework/beans/factory/annotation/Lookup.java  
 \* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
 jar/org/springframework/beans/factory/support/BeanDefinitionDefaults.java  
 \* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
 jar/org/springframework/beans/factory/xml/XmlBeanDefinitionReader.java  
 \* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
 jar/org/springframework/beans/factory/parsing/PropertyEntry.java  
 \* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-



jar/org/springframework/beans/factory/FactoryBean.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
jar/org/springframework/beans/factory/support/SimpleAutowireCandidateResolver.java  
No license file was found, but licenses were detected in source scan.

```
/*
* Copyright 2002-2012 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
```

Found in path(s):

```
* /opt/cola/permits/1347859843_1655733477.6825383/0/spring-beans-5-3-21-sources-
jar/org/springframework/beans/factory/xml/BeanDefinitionDecorator.java
* /opt/cola/permits/1347859843_1655733477.6825383/0/spring-beans-5-3-21-sources-
jar/org/springframework/beans/factory/config/PropertyResourceConfigurer.java
* /opt/cola/permits/1347859843_1655733477.6825383/0/spring-beans-5-3-21-sources-
jar/org/springframework/beans/propertyeditors/InputSourceEditor.java
* /opt/cola/permits/1347859843_1655733477.6825383/0/spring-beans-5-3-21-sources-
jar/org/springframework/beans/support/MutableSortDefinition.java
* /opt/cola/permits/1347859843_1655733477.6825383/0/spring-beans-5-3-21-sources-
jar/org/springframework/beans/factory/FactoryBeanNotInitializedException.java
* /opt/cola/permits/1347859843_1655733477.6825383/0/spring-beans-5-3-21-sources-
jar/org/springframework/beans/factory/parsing/NullSourceExtractor.java
* /opt/cola/permits/1347859843_1655733477.6825383/0/spring-beans-5-3-21-sources-
jar/org/springframework/beans/factory/config/BeanReference.java
* /opt/cola/permits/1347859843_1655733477.6825383/0/spring-beans-5-3-21-sources-
jar/org/springframework/beans/ConversionNotSupportedException.java
* /opt/cola/permits/1347859843_1655733477.6825383/0/spring-beans-5-3-21-sources-
jar/org/springframework/beans/factory/parsing/PassThroughSourceExtractor.java
* /opt/cola/permits/1347859843_1655733477.6825383/0/spring-beans-5-3-21-sources-
jar/org/springframework/beans/factory/BeanIsNotAFactoryException.java
* /opt/cola/permits/1347859843_1655733477.6825383/0/spring-beans-5-3-21-sources-
jar/org/springframework/beans/PropertyEditorRegistrar.java
* /opt/cola/permits/1347859843_1655733477.6825383/0/spring-beans-5-3-21-sources-
jar/org/springframework/beans/propertyeditors/CurrencyEditor.java
* /opt/cola/permits/1347859843_1655733477.6825383/0/spring-beans-5-3-21-sources-
jar/org/springframework/beans/factory/parsing/BeanDefinitionParsingException.java
```

\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/HierarchicalBeanFactory.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/BeanExpressionException.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/support/SortDefinition.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/support/BeanDefinitionValidationException.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/BeanCreationNotAllowedException.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/xml/XmlBeanDefinitionStoreException.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/parsing/ProblemReporter.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/BeanIsAbstractException.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/wiring/BeanWiringInfoResolver.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/xml/SimplePropertyNamespaceHandler.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/parsing/ComponentDefinition.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/propertyeditors/CharsetEditor.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/parsing/EmptyReaderEventListener.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/BeanCurrentlyInCreationException.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/xml/NamespaceHandler.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/parsing/AbstractComponentDefinition.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/wiring/ClassNameBeanWiringInfoResolver.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/BeanFactoryAware.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/annotation/Configurable.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/parsing/ConstructorArgumentEntry.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/support/SecurityContextProvider.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/PropertyEditorRegistry.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-jar/org/springframework/beans/factory/xml/DocumentLoader.java

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2002-2017 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1347859843_1655733477.6825383/0/spring-beans-5-3-21-sources-
jar/org/springframework/beans/factory/annotation/CustomAutowireConfigurer.java
* /opt/cola/permits/1347859843_1655733477.6825383/0/spring-beans-5-3-21-sources-
jar/org/springframework/beans/FatalBeanException.java
* /opt/cola/permits/1347859843_1655733477.6825383/0/spring-beans-5-3-21-sources-
jar/org/springframework/beans/factory/config/ObjectFactoryCreatingFactoryBean.java
* /opt/cola/permits/1347859843_1655733477.6825383/0/spring-beans-5-3-21-sources-
jar/org/springframework/beans/factory/config/SetFactoryBean.java
* /opt/cola/permits/1347859843_1655733477.6825383/0/spring-beans-5-3-21-sources-
jar/org/springframework/beans/factory/config/ConfigurableListableBeanFactory.java
* /opt/cola/permits/1347859843_1655733477.6825383/0/spring-beans-5-3-21-sources-
jar/org/springframework/beans/propertyeditors/PatternEditor.java
* /opt/cola/permits/1347859843_1655733477.6825383/0/spring-beans-5-3-21-sources-
jar/org/springframework/beans/factory/BeanClassLoaderAware.java
* /opt/cola/permits/1347859843_1655733477.6825383/0/spring-beans-5-3-21-sources-
jar/org/springframework/beans/BeanMetadataAttributeAccessor.java
* /opt/cola/permits/1347859843_1655733477.6825383/0/spring-beans-5-3-21-sources-
jar/org/springframework/beans/factory/xml/DocumentDefaultsDefinition.java
* /opt/cola/permits/1347859843_1655733477.6825383/0/spring-beans-5-3-21-sources-
jar/org/springframework/beans/factory/config/ServiceLocatorFactoryBean.java
* /opt/cola/permits/1347859843_1655733477.6825383/0/spring-beans-5-3-21-sources-
jar/org/springframework/beans/factory/parsing/Problem.java
* /opt/cola/permits/1347859843_1655733477.6825383/0/spring-beans-5-3-21-sources-
jar/org/springframework/beans/propertyeditors/ClassArrayEditor.java
* /opt/cola/permits/1347859843_1655733477.6825383/0/spring-beans-5-3-21-sources-
jar/org/springframework/beans/factory/serviceloader/AbstractServiceLoaderBasedFactoryBean.java
* /opt/cola/permits/1347859843_1655733477.6825383/0/spring-beans-5-3-21-sources-
jar/org/springframework/beans/factory/support/NullBean.java
* /opt/cola/permits/1347859843_1655733477.6825383/0/spring-beans-5-3-21-sources-
jar/org/springframework/beans/ConfigurablePropertyAccessor.java
* /opt/cola/permits/1347859843_1655733477.6825383/0/spring-beans-5-3-21-sources-
```

jar/org/springframework/beans/BeansException.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
jar/org/springframework/beans/propertyeditors/CharArrayPropertyEditor.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
jar/org/springframework/beans/propertyeditors/ClassEditor.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
jar/org/springframework/beans/factory/parsing/Location.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
jar/org/springframework/beans/BeanWrapper.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
jar/org/springframework/beans/propertyeditors/ResourceBundleEditor.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
jar/org/springframework/beans/factory/config/RuntimeBeanNameReference.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
jar/org/springframework/beans/factory/config/PropertiesFactoryBean.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
jar/org/springframework/beans/factory/support/ManagedProperties.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
jar/org/springframework/beans/factory/config/PropertyPathFactoryBean.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
jar/org/springframework/beans/propertyeditors/CharacterEditor.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
jar/org/springframework/beans/propertyeditors/PropertiesEditor.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
jar/org/springframework/beans/factory/config/MethodInvokingBean.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
jar/org/springframework/beans/factory/config/DeprecatedBeanWarner.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
jar/org/springframework/beans/factory/config/ListFactoryBean.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
jar/org/springframework/beans/factory/config/BeanDefinitionHolder.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
jar/org/springframework/beans/factory/parsing/AliasDefinition.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
jar/org/springframework/beans/factory/xml/NamespaceHandlerSupport.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
jar/org/springframework/beans/factory/wiring/BeanWiringInfo.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
jar/org/springframework/beans/factory/config/EmbeddedValueResolver.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
jar/org/springframework/beans/factory/config/ProviderCreatingFactoryBean.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
jar/org/springframework/beans/factory/support/ChildBeanDefinition.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
jar/org/springframework/beans/factory/support/MethodOverride.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
jar/org/springframework/beans/factory/xml/AbstractSingleBeanDefinitionParser.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-

jar/org/springframework/beans/propertyeditors/ByteArrayPropertyEditor.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
jar/org/springframework/beans/PropertyAccessorUtils.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
jar/org/springframework/beans/BeanMetadataAttribute.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
jar/org/springframework/beans/factory/parsing/ImportDefinition.java  
\* /opt/cola/permits/1347859843\_1655733477.6825383/0/spring-beans-5-3-21-sources-  
jar/org/springframework/beans/factory/xml/XmlReaderContext.java

## 1.319 jackson-module-scala 2.12.6

### 1.319.1 Available under license :

This copy of Jackson JSON processor Scala module is licensed under the Apache (Software) License, version 2.0 ("the License").  
See the License for details about distribution rights, and the specific rights regarding derivate works.

You may obtain a copy of the License at:

<http://www.apache.org/licenses/LICENSE-2.0>

## 1.320 librasm 0.0.3-4.el8

### 1.320.1 Available under license :

GNU LESSER GENERAL PUBLIC LICENSE  
Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts  
as the successor of the GNU Library Public License, version 2, hence  
the version number 2.1.]

#### Preamble

The licenses for most software are designed to take away your  
freedom to share and change it. By contrast, the GNU General Public  
Licenses are intended to guarantee your freedom to share and change  
free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some  
specially designated software packages--typically libraries--of the

Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use

this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE  
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:



- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so

that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object

file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not

signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in

certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A

FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!

# 1.321 commons-beanutils 1.9.4

## 1.321.1 Available under license :

Apache Commons BeanUtils

Copyright 2000-2019 The Apache Software Foundation

This product includes software developed at  
The Apache Software Foundation (<http://www.apache.org/>).

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a



copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct

or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of

this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following

boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

## 1.322 simpleclient-hotspot 0.12.0

### 1.322.1 Available under license :

No license file was found, but licenses were detected in source scan.

<url><http://www.apache.org/licenses/LICENSE-2.0.txt></url>

Found in path(s):

\* /opt/cola/permits/1234671772\_1638286975.52/0/simpleclient-hotspot-0-12-0-sources-jar/META-INF/maven/io.prometheus/simpleclient\_hotspot/pom.xml

## 1.323 lvm2 1.02.181-3.el8\_6.2

### 1.323.1 Available under license :

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts  
as the successor of the GNU Library Public License, version 2, hence

the version number 2.1.]

## Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run

that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

## GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any

warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to



exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the

Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining

where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is

implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR

PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!  
BSD 2-Clause License

Copyright (c) 2014, Red Hat, Inc.  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your

freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE



## TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide

a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for

making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you

may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author

to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful,  
but WITHOUT ANY WARRANTY; without even the implied warranty of  
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the  
GNU General Public License for more details.

You should have received a copy of the GNU General Public License  
along with this program; if not, write to the Free Software  
Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this  
when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate  
parts of the General Public License. Of course, the commands you use may  
be called something other than `show w' and `show c'; they could even be  
mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your  
school, if any, to sign a "copyright disclaimer" for the program, if  
necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
'Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into  
proprietary programs. If your program is a subroutine library, you may  
consider it more useful to permit linking proprietary applications with the  
library. If this is what you want to do, use the GNU Library General  
Public License instead of this License.

## 1.324 commons-logging 1.2

## 1.324.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2001-2006 The Apache Software Foundation.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1135840457_1613613080.13/0/commons-logging-1-1-sources-9-
jar/org/apache/commons/logging/LogFactory.java
```

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2001-2004,2006 The Apache Software Foundation.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1135840457_1613613080.13/0/commons-logging-1-1-sources-9-
jar/org/apache/commons/logging/impl/AvalonLogger.java
```

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2004 The Apache Software Foundation.
 *

```

\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <http://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1135840457\_1613613080.13/0/commons-logging-1-1-sources-9-jar/org/apache/commons/logging/impl/WeakHashtable.java  
No license file was found, but licenses were detected in source scan.

2004 The Apache Software Foundation.

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

Found in path(s):

\* /opt/cola/permits/1135840457\_1613613080.13/0/commons-logging-1-1-sources-9-jar/org/apache/commons/logging/package.html  
\* /opt/cola/permits/1135840457\_1613613080.13/0/commons-logging-1-1-sources-9-jar/org/apache/commons/logging/impl/package.html  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2001-2004 The Apache Software Foundation.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <http://www.apache.org/licenses/LICENSE-2.0>



\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1135840457\_1613613080.13/0/commons-logging-1-1-sources-9-jar/org/apache/commons/logging/LogConfigurationException.java  
\* /opt/cola/permits/1135840457\_1613613080.13/0/commons-logging-1-1-sources-9-jar/org/apache/commons/logging/impl/Log4JLogger.java  
\* /opt/cola/permits/1135840457\_1613613080.13/0/commons-logging-1-1-sources-9-jar/org/apache/commons/logging/impl/LogFactoryImpl.java  
\* /opt/cola/permits/1135840457\_1613613080.13/0/commons-logging-1-1-sources-9-jar/org/apache/commons/logging/impl/Jdk13LumberjackLogger.java  
\* /opt/cola/permits/1135840457\_1613613080.13/0/commons-logging-1-1-sources-9-jar/org/apache/commons/logging/impl/SimpleLog.java  
\* /opt/cola/permits/1135840457\_1613613080.13/0/commons-logging-1-1-sources-9-jar/org/apache/commons/logging/impl/Jdk14Logger.java  
\* /opt/cola/permits/1135840457\_1613613080.13/0/commons-logging-1-1-sources-9-jar/org/apache/commons/logging/LogSource.java  
\* /opt/cola/permits/1135840457\_1613613080.13/0/commons-logging-1-1-sources-9-jar/org/apache/commons/logging/impl/NoOpLog.java  
\* /opt/cola/permits/1135840457\_1613613080.13/0/commons-logging-1-1-sources-9-jar/org/apache/commons/logging/impl/LogKitLogger.java  
\* /opt/cola/permits/1135840457\_1613613080.13/0/commons-logging-1-1-sources-9-jar/org/apache/commons/logging/Log.java

No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2005 The Apache Software Foundation.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <http://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1135840457\_1613613080.13/0/commons-logging-1-1-sources-9-jar/org/apache/commons/logging/impl/ServletContextCleaner.java

## 1.325 python-decorator 4.2.1 2.el8

### 1.325.1 Available under license :

Copyright (c) 2005-2017, Michele Simionato  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

Redistributions in bytecode form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## 1.326 cryptsetup 2.3.7-2.el8

### 1.326.1 Available under license :

CREATIVE COMMONS CORPORATION IS NOT A LAW FIRM AND DOES NOT PROVIDE LEGAL SERVICES. DISTRIBUTION OF THIS DOCUMENT DOES NOT CREATE AN ATTORNEY-CLIENT RELATIONSHIP. CREATIVE COMMONS PROVIDES THIS INFORMATION ON AN "AS-IS" BASIS. CREATIVE COMMONS MAKES NO WARRANTIES REGARDING THE USE OF THIS DOCUMENT OR THE INFORMATION OR WORKS PROVIDED HEREUNDER, AND DISCLAIMS LIABILITY FOR DAMAGES RESULTING FROM THE USE OF THIS DOCUMENT OR THE INFORMATION OR WORKS PROVIDED HEREUNDER.

Statement of Purpose

The laws of most jurisdictions throughout the world automatically confer exclusive Copyright and Related Rights (defined below) upon the creator and subsequent owner(s) (each and all, an "owner") of an original work of authorship and/or a database (each, a "Work").

Certain owners wish to permanently relinquish those rights to a Work for the purpose of contributing to a commons of creative, cultural and scientific works ("Commons") that the public can reliably and without fear of later claims of infringement build upon, modify, incorporate in other works, reuse and redistribute as freely as possible in any form whatsoever and for any purposes, including without limitation commercial purposes. These owners may contribute to the Commons to promote the ideal of a free culture and the further production of creative, cultural and scientific works, or to gain reputation or greater distribution for their Work in part through the use and efforts of others.

For these and/or other purposes and motivations, and without any expectation of additional consideration or compensation, the person associating CC0 with a Work (the "Affirmer"), to the extent that he or she is an owner of Copyright and Related Rights in the Work, voluntarily elects to apply CC0 to the Work and publicly distribute the Work under its terms, with knowledge of his or her Copyright and Related Rights in the Work and the meaning and intended legal effect of CC0 on those rights.

1. Copyright and Related Rights. A Work made available under CC0 may be protected by copyright and related or neighboring rights ("Copyright and Related Rights"). Copyright and Related Rights include, but are not limited to, the following:

- the right to reproduce, adapt, distribute, perform, display, communicate, and translate a Work;
- moral rights retained by the original author(s) and/or performer(s);
- publicity and privacy rights pertaining to a person's image or likeness depicted in a Work;
- rights protecting against unfair competition in regards to a Work, subject to the limitations in paragraph 4(a), below;
- rights protecting the extraction, dissemination, use and reuse of data in a Work;
- database rights (such as those arising under Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996 on the legal protection of databases, and under any national implementation thereof, including any amended or successor version of such directive); and
- other similar, equivalent or corresponding rights throughout the world based on applicable law or treaty, and any national implementations thereof.

2. Waiver. To the greatest extent permitted by, but not in contravention of, applicable law, Affirmer hereby overtly, fully, permanently, irrevocably and unconditionally waives, abandons, and surrenders all of Affirmer's Copyright and Related Rights and associated claims and causes of action, whether now known or unknown (including existing as well as future claims and causes of action), in the Work (i) in all territories worldwide, (ii) for the maximum duration provided by applicable law or treaty (including future time extensions), (iii) in any current or future medium and for any number of copies, and (iv) for any purpose whatsoever, including without limitation commercial, advertising or promotional purposes (the "Waiver"). Affirmer makes the Waiver for the benefit of each member of the public at large and to the detriment of Affirmer's heirs and successors, fully intending that such Waiver shall not be subject to revocation, rescission, cancellation, termination, or any other legal or equitable action to disrupt the quiet enjoyment of the Work by the public as contemplated by Affirmer's express Statement of Purpose.

3. Public License Fallback. Should any part of the Waiver for any reason be judged legally invalid or ineffective under applicable law, then the Waiver shall be preserved to the maximum extent permitted taking into account Affirmer's express Statement of Purpose. In addition, to the extent the Waiver is so judged Affirmer hereby grants to

each affected person a royalty-free, non transferable, non sublicensable, non exclusive, irrevocable and unconditional license to exercise Affirmer's Copyright and Related Rights in the Work (i) in all territories worldwide, (ii) for the maximum duration provided by applicable law or treaty (including future time extensions), (iii) in any current or future medium and for any number of copies, and (iv) for any purpose whatsoever, including without limitation commercial, advertising or promotional purposes (the "License"). The License shall be deemed effective as of the date CC0 was applied by Affirmer to the Work. Should any part of the License for any reason be judged legally invalid or ineffective under applicable law, such partial invalidity or ineffectiveness shall not invalidate the remainder of the License, and in such case Affirmer hereby affirms that he or she will not (i) exercise any of his or her remaining Copyright and Related Rights in the Work or (ii) assert any associated claims and causes of action with respect to the Work, in either case contrary to Affirmer's express Statement of Purpose.

#### 4. Limitations and Disclaimers.

No trademark or patent rights held by Affirmer are waived, abandoned, surrendered, licensed or otherwise affected by this document.

Affirmer offers the Work as-is and makes no representations or warranties of any kind concerning the Work, express, implied, statutory or otherwise, including without limitation warranties of title, merchantability, fitness for a particular purpose, non infringement, or the absence of latent or other defects, accuracy, or the present or absence of errors, whether or not discoverable, all to the greatest extent permissible under applicable law.

Affirmer disclaims responsibility for clearing rights of other persons that may apply to the Work or any use thereof, including without limitation any person's Copyright and Related Rights in the Work. Further, Affirmer disclaims responsibility for obtaining any necessary consents, permissions or other rights required for any use of the Work.

Affirmer understands and acknowledges that Creative Commons is not a party to this document and has no duty or obligation with respect to this CC0 or use of the Work.

#### GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts  
as the successor of the GNU Library Public License, version 2, hence  
the version number 2.1.]

#### Preamble

The licenses for most software are designed to take away your  
freedom to share and change it. By contrast, the GNU General Public  
Licenses are intended to guarantee your freedom to share and change  
free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some  
specially designated software packages--typically libraries--of the  
Free Software Foundation and other authors who decide to use it. You  
can use it too, but we suggest you first think carefully about whether

this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

## GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or

other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License").

Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.

b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.

c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the



ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the

Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy

from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are

prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add

an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH

DAMAGES.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!

-----

In addition, as a special exception, the copyright holders give permission to link the code of portions of this program with the OpenSSL library under certain conditions as described in each individual source file, and distribute linked combinations including the two.

You must obey the GNU Lesser General Public License in all respects for all of the code used other than OpenSSL. If you modify file(s) with this exception, you may extend this exception to your version of the file(s), but you are not obligated to do so. If you do not wish to do so, delete this exception statement from your version. If you delete this exception statement from all source files in the program, then also delete it here.

#### GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that

you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the



notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of

a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to

be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED

TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be

mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program  
'Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989  
Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

-----

In addition, as a special exception, the copyright holders give permission to link the code of portions of this program with the OpenSSL library under certain conditions as described in each individual source file, and distribute linked combinations including the two.

You must obey the GNU General Public License in all respects for all of the code used other than OpenSSL. If you modify file(s) with this exception, you may extend this exception to your version of the file(s), but you are not obligated to do so. If you do not wish to do so, delete this exception statement from your version. If you delete this exception statement from all source files in the program, then also delete it here.

## 1.327 xml-commons-resolver 1,2

### 1.327.1 Available under license :

Apache XML Commons Resolver  
Copyright 2006 The Apache Software Foundation.

This product includes software developed at  
The Apache Software Foundation <http://www.apache.org/>

Portions of this code are derived from classes placed in the public domain by Arbortext on 10 Apr 2000. See:  
[http://www.arbortext.com/customer\\_support/updates\\_and\\_technical\\_notes/catalogs/docs/README.htm](http://www.arbortext.com/customer_support/updates_and_technical_notes/catalogs/docs/README.htm)

Apache License  
Version 2.0, January 2004

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally

submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and



- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or

implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
  
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

## 1.328 libffi 3.1-23.el8

### 1.328.1 Available under license :

libffi - Copyright (c) 1996-2014 Anthony Green, Red Hat, Inc and others.  
See source files for details.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

## 1.329 jakarta-annotation-api 1.3.5

### 1.329.1 Available under license :

# Eclipse Public License - v 2.0

THE ACCOMPANYING PROGRAM IS PROVIDED UNDER THE TERMS OF THIS ECLIPSE PUBLIC LICENSE ("AGREEMENT"). ANY USE, REPRODUCTION OR DISTRIBUTION OF THE PROGRAM CONSTITUTES RECIPIENT'S ACCEPTANCE OF THIS AGREEMENT.

#### 1. DEFINITIONS

"Contribution" means:

a) in the case of the initial Contributor, the initial content  
Distributed under this Agreement, and

b) in the case of each subsequent Contributor:

- i) changes to the Program, and
- ii) additions to the Program;

where such changes and/or additions to the Program originate from and are Distributed by that particular Contributor. A Contribution "originates" from a Contributor if it was added to the Program by such Contributor itself or anyone acting on such Contributor's behalf. Contributions do not include changes or additions to the Program that are not Modified Works.

"Contributor" means any person or entity that Distributes the Program.

"Licensed Patents" mean patent claims licensable by a Contributor which are necessarily infringed by the use or sale of its Contribution alone or when combined with the Program.

"Program" means the Contributions Distributed in accordance with this Agreement.

"Recipient" means anyone who receives the Program under this Agreement or any Secondary License (as applicable), including Contributors.

"Derivative Works" shall mean any work, whether in Source Code or other form, that is based on (or derived from) the Program and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship.

"Modified Works" shall mean any work in Source Code or other form that results from an addition to, deletion from, or modification of the contents of the Program, including, for purposes of clarity any new file in Source Code form that contains any contents of the Program. Modified Works shall not include works that contain only declarations, interfaces, types, classes, structures, or files of the Program solely in each case in order to link to, bind by name, or subclass the Program or Modified Works thereof.

"Distribute" means the acts of a) distributing or b) making available in any manner that enables the transfer of a copy.

"Source Code" means the form of a Program preferred for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Secondary License" means either the GNU General Public License, Version 2.0, or any later versions of that license, including any

exceptions or additional permissions as identified by the initial Contributor.

## 2. GRANT OF RIGHTS

a) Subject to the terms of this Agreement, each Contributor hereby grants Recipient a non-exclusive, worldwide, royalty-free copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, Distribute and sublicense the Contribution of such Contributor, if any, and such Derivative Works.

b) Subject to the terms of this Agreement, each Contributor hereby grants Recipient a non-exclusive, worldwide, royalty-free patent license under Licensed Patents to make, use, sell, offer to sell, import and otherwise transfer the Contribution of such Contributor, if any, in Source Code or other form. This patent license shall apply to the combination of the Contribution and the Program if, at the time the Contribution is added by the Contributor, such addition of the Contribution causes such combination to be covered by the Licensed Patents. The patent license shall not apply to any other combinations which include the Contribution. No hardware per se is licensed hereunder.

c) Recipient understands that although each Contributor grants the licenses to its Contributions set forth herein, no assurances are provided by any Contributor that the Program does not infringe the patent or other intellectual property rights of any other entity. Each Contributor disclaims any liability to Recipient for claims brought by any other entity based on infringement of intellectual property rights or otherwise. As a condition to exercising the rights and licenses granted hereunder, each Recipient hereby assumes sole responsibility to secure any other intellectual property rights needed, if any. For example, if a third party patent license is required to allow Recipient to Distribute the Program, it is Recipient's responsibility to acquire that license before distributing the Program.

d) Each Contributor represents that to its knowledge it has sufficient copyright rights in its Contribution, if any, to grant the copyright license set forth in this Agreement.

e) Notwithstanding the terms of any Secondary License, no Contributor makes additional grants to any Recipient (other than those set forth in this Agreement) as a result of such Recipient's receipt of the Program under the terms of a Secondary License (if permitted under the terms of Section 3).

## 3. REQUIREMENTS

3.1 If a Contributor Distributes the Program in any form, then:

- a) the Program must also be made available as Source Code, in accordance with section 3.2, and the Contributor must accompany the Program with a statement that the Source Code for the Program is available under this Agreement, and informs Recipients how to obtain it in a reasonable manner on or through a medium customarily used for software exchange; and
- b) the Contributor may Distribute the Program under a license different than this Agreement, provided that such license:
  - i) effectively disclaims on behalf of all other Contributors all warranties and conditions, express and implied, including warranties or conditions of title and non-infringement, and implied warranties or conditions of merchantability and fitness for a particular purpose;
  - ii) effectively excludes on behalf of all other Contributors all liability for damages, including direct, indirect, special, incidental and consequential damages, such as lost profits;
  - iii) does not attempt to limit or alter the recipients' rights in the Source Code under section 3.2; and
  - iv) requires any subsequent distribution of the Program by any party to be under a license that satisfies the requirements of this section 3.

3.2 When the Program is Distributed as Source Code:

- a) it must be made available under this Agreement, or if the Program (i) is combined with other material in a separate file or files made available under a Secondary License, and (ii) the initial Contributor attached to the Source Code the notice described in Exhibit A of this Agreement, then the Program may be made available under the terms of such Secondary Licenses, and
- b) a copy of this Agreement must be included with each copy of the Program.

3.3 Contributors may not remove or alter any copyright, patent, trademark, attribution notices, disclaimers of warranty, or limitations of liability ("notices") contained within the Program from any copy of the Program which they Distribute, provided that Contributors may add their own appropriate notices.

#### 4. COMMERCIAL DISTRIBUTION

Commercial distributors of software may accept certain responsibilities with respect to end users, business partners and the like. While this license is intended to facilitate the commercial use of the Program, the Contributor who includes the Program in a commercial product offering should do so in a manner which does not create potential liability for other Contributors. Therefore, if a Contributor includes the Program in a commercial product offering, such Contributor ("Commercial Contributor") hereby agrees to defend and indemnify every other Contributor ("Indemnified Contributor") against any losses, damages and costs (collectively "Losses") arising from claims, lawsuits and other legal actions brought by a third party against the Indemnified Contributor to the extent caused by the acts or omissions of such Commercial Contributor in connection with its distribution of the Program in a commercial product offering. The obligations in this section do not apply to any claims or Losses relating to any actual or alleged intellectual property infringement. In order to qualify, an Indemnified Contributor must: a) promptly notify the Commercial Contributor in writing of such claim, and b) allow the Commercial Contributor to control, and cooperate with the Commercial Contributor in, the defense and any related settlement negotiations. The Indemnified Contributor may participate in any such claim at its own expense.

For example, a Contributor might include the Program in a commercial product offering, Product X. That Contributor is then a Commercial Contributor. If that Commercial Contributor then makes performance claims, or offers warranties related to Product X, those performance claims and warranties are such Commercial Contributor's responsibility alone. Under this section, the Commercial Contributor would have to defend claims against the other Contributors related to those performance claims and warranties, and if a court requires any other Contributor to pay any damages as a result, the Commercial Contributor must pay those damages.

## 5. NO WARRANTY

EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, AND TO THE EXTENT PERMITTED BY APPLICABLE LAW, THE PROGRAM IS PROVIDED ON AN "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, EITHER EXPRESS OR IMPLIED INCLUDING, WITHOUT LIMITATION, ANY WARRANTIES OR CONDITIONS OF TITLE, NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Each Recipient is solely responsible for determining the appropriateness of using and distributing the Program and assumes all risks associated with its exercise of rights under this Agreement, including but not limited to the risks and costs of program errors, compliance with applicable laws, damage to or loss of data, programs or equipment, and unavailability or interruption of operations.

## 6. DISCLAIMER OF LIABILITY

EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, AND TO THE EXTENT PERMITTED BY APPLICABLE LAW, NEITHER RECIPIENT NOR ANY CONTRIBUTORS SHALL HAVE ANY LIABILITY FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING WITHOUT LIMITATION LOST PROFITS), HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OR DISTRIBUTION OF THE PROGRAM OR THE EXERCISE OF ANY RIGHTS GRANTED HEREUNDER, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## 7. GENERAL

If any provision of this Agreement is invalid or unenforceable under applicable law, it shall not affect the validity or enforceability of the remainder of the terms of this Agreement, and without further action by the parties hereto, such provision shall be reformed to the minimum extent necessary to make such provision valid and enforceable.

If Recipient institutes patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Program itself (excluding combinations of the Program with other software or hardware) infringes such Recipient's patent(s), then such Recipient's rights granted under Section 2(b) shall terminate as of the date such litigation is filed.

All Recipient's rights under this Agreement shall terminate if it fails to comply with any of the material terms or conditions of this Agreement and does not cure such failure in a reasonable period of time after becoming aware of such noncompliance. If all Recipient's rights under this Agreement terminate, Recipient agrees to cease use and distribution of the Program as soon as reasonably practicable. However, Recipient's obligations under this Agreement and any licenses granted by Recipient relating to the Program shall continue and survive.

Everyone is permitted to copy and distribute copies of this Agreement, but in order to avoid inconsistency the Agreement is copyrighted and may only be modified in the following manner. The Agreement Steward reserves the right to publish new versions (including revisions) of this Agreement from time to time. No one other than the Agreement Steward has the right to modify this Agreement. The Eclipse Foundation is the initial Agreement Steward. The Eclipse Foundation may assign the responsibility to serve as the Agreement Steward to a suitable separate entity. Each new version of the Agreement will be given a distinguishing version number. The Program (including Contributions) may always be Distributed subject to the version of the Agreement under which it was received. In addition, after a new version of the Agreement is published,



Contributor may elect to Distribute the Program (including its Contributions) under the new version.

Except as expressly stated in Sections 2(a) and 2(b) above, Recipient receives no rights or licenses to the intellectual property of any Contributor under this Agreement, whether expressly, by implication, estoppel or otherwise. All rights in the Program not expressly granted under this Agreement are reserved. Nothing in this Agreement is intended to be enforceable by any entity that is not a Contributor or Recipient. No third-party beneficiary rights are created under this Agreement.

#### Exhibit A - Form of Secondary Licenses Notice

"This Source Code may also be made available under the following Secondary Licenses when the conditions for such availability set forth in the Eclipse Public License, v. 2.0 are satisfied: {name license(s), version(s), and exceptions or additional permissions here}."

Simply including a copy of this Agreement, including this Exhibit A is not sufficient to license the Source Code under Secondary Licenses.

If it is not possible or desirable to put the notice in a particular file, then You may include the notice in a location (such as a LICENSE file in a relevant directory) where a recipient would be likely to look for such a notice.

You may add additional accurate notices of copyright ownership.

---

## The GNU General Public License (GPL) Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor  
Boston, MA 02110-1335  
USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free

Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either

verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in

themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR

OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

One line to give the program's name and a brief idea of what it does.  
Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1335 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type
`show w'. This is free software, and you are welcome to redistribute
it under certain conditions; type `show c' for details.
```

The hypothetical commands ``show w'` and ``show c'` should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than ``show w'` and ``show c'`; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the
program `Gnomovision' (which makes passes at compilers) written by
James Hacker.
```

```
signature of Ty Coon, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

---

#### ## CLASSPATH EXCEPTION

Linking this library statically or dynamically with other modules is making a combined work based on this library. Thus, the terms and conditions of the GNU General Public License version 2 cover the whole combination.

As a special exception, the copyright holders of this library give you permission to link this library with independent modules to produce an executable, regardless of the license terms of these independent modules, and to copy and distribute the resulting executable under terms of your choice, provided that you also meet, for each linked independent module, the terms and conditions of the license of that module. An independent module is a module which is not derived from or based on this library. If you modify this library, you may extend this



exception to your version of the library, but you are not obligated to do so. If you do not wish to do so, delete this exception statement from your version.

# Notices for Jakarta Annotations

This content is produced and maintained by the Jakarta Annotations project.

\* Project home: <https://projects.eclipse.org/projects/ee4j.ca>

## Trademarks

Jakarta Annotations is a trademark of the Eclipse Foundation.

## Declared Project Licenses

This program and the accompanying materials are made available under the terms of the Eclipse Public License v. 2.0 which is available at <http://www.eclipse.org/legal/epl-2.0>. This Source Code may also be made available under the following Secondary Licenses when the conditions for such availability set forth in the Eclipse Public License v. 2.0 are satisfied: GNU General Public License, version 2 with the GNU Classpath Exception which is available at <https://www.gnu.org/software/classpath/license.html>.

SPDX-License-Identifier: EPL-2.0 OR GPL-2.0 WITH Classpath-exception-2.0

## Source Code

The project maintains the following source code repositories:

\* <https://github.com/eclipse-ee4j/common-annotations-api>

## Third-party Content

## Cryptography

Content may contain encryption software. The country in which you are currently may have restrictions on the import, possession, and use, and/or re-export to another country, of encryption software. BEFORE using any encryption software, please check the country's laws, regulations and policies concerning the import, possession, or use, and re-export of encryption software, to see if this is permitted.

## 1.330 zookeeper 3.6.3-1.ph4

## 1.330.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/**
```

```
* Licensed to the Apache Software Foundation (ASF) under one
* or more contributor license agreements. See the NOTICE file
* distributed with this work for additional information
* regarding copyright ownership. The ASF licenses this file
* to you under the Apache License, Version 2.0 (the
* "License"); you may not use this file except in compliance
* with the License. You may obtain a copy of the License at
*
* http://www.apache.org/licenses/LICENSE
```

```
2.0
```

```
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
```

Found in path(s):

```
* /opt/cola/permits/1250500870_1643640110.79/0/zookeeper-3-6-3-jar/META-
INF/maven/org.apache.zookeeper/zookeeper/pom.xml
```

## 1.331 urllib3 1.22

### 1.331.1 Available under license :

```
Contributions to the urllib3 project
```

```
Creator & Maintainer
```

```
* Andrey Petrov <andrey.petrov@shazow.net>
```

```
Contributors
```

In chronological order:

```
* victor.vde <http://code.google.com/u/victor.vde/>
```

```
* HTTPS patch (which inspired HTTPSConnectionPool)
```

```
* erikcederstrand <http://code.google.com/u/erikcederstrand/>
```

```
* NTLM-authenticated HTTPSConnectionPool
```

```
* Basic-authenticated HTTPSConnectionPool (merged into make_headers)
```

- \* niphlod <niphlod@gmail.com>
- \* Client-verified SSL certificates for HTTPSConnectionPool
- \* Response gzip and deflate encoding support
- \* Better unicode support for filepost using StringIO buffers
  
- \* btoconnor <brian@btoconnor.net>
- \* Non-multipart encoding for POST requests
  
- \* p.dobrogost <<http://code.google.com/u/@WBRSRIBZDhBFXQB6/>>
- \* Code review, PEP8 compliance, benchmark fix
  
- \* kennethreitz <me@kennethreitz.com>
- \* Bugfixes, suggestions, Requests integration
  
- \* georgemarshall <<http://github.com/georgemarshall>>
- \* Bugfixes, Improvements and Test coverage
  
- \* Thomas Kluyver <thomas@kluyver.me.uk>
- \* Python 3 support
  
- \* brandon-rhodes <<http://rhodesmill.org/brandon>>
- \* Design review, bugfixes, test coverage.
  
- \* studer <theo.studer@gmail.com>
- \* IPv6 url support and test coverage
  
- \* Shivaram Lingamneni <slingamn@cs.stanford.edu>
- \* Support for explicitly closing pooled connections
  
- \* hartator <hartator@gmail.com>
- \* Corrected multipart behavior for params
  
- \* Thomas Weischuh <thomas@t-8ch.de>
- \* Support for TLS SNI
- \* API unification of ssl\_version/cert\_reqs
- \* SSL fingerprint and alternative hostname verification
- \* Bugfixes in testsuite
  
- \* Sune Kirkeby <mig@ibofobi.dk>
- \* Optional SNI-support for Python 2 via PyOpenSSL.
  
- \* Marc Schlaich <marc.schlaich@gmail.com>
- \* Various bugfixes and test improvements.
  
- \* Bryce Boe <bbzbryce@gmail.com>
- \* Correct six.moves conflict
- \* Fixed pickle support of some exceptions

- \* Boris Figovsky <boris.figovsky@ravello systems.com>
- \* Allowed to skip SSL hostname verification
  
- \* Cory Benfield <http://lukasa.co.uk/about/>
- \* Stream method for Response objects.
- \* Return native strings in header values.
- \* Generate 'Host' header when using proxies.
  
- \* Jason Robinson <jaywink@basshero.org>
- \* Add missing WrappedSocket.fileno method in PyOpenSSL
  
- \* Audrius Butkevicius <audrius.butkevicius@elastic hosts.com>
- \* Fixed a race condition
  
- \* Stanislav Vitkovskiy <stas.vitkovsky@gmail.com>
- \* Added HTTPS (CONNECT) proxy support
  
- \* Stephen Holsapple <sholsapp@gmail.com>
- \* Added abstraction for granular control of request fields
  
- \* Martin von Gagern <Martin.vGagern@gmx.net>
- \* Support for non-ASCII header parameters
  
- \* Kevin Burke <kev@inburke.com> and Pavel Kirichenko <juanych@yandex-team.ru>
- \* Support for separate connect and request timeouts
  
- \* Peter Waller <p@pwaller.net>
- \* HTTPResponse.tell() for determining amount received over the wire
  
- \* Nipunn Koorapati <nipunn1313@gmail.com>
- \* Ignore default ports when comparing hosts for equality
  
- \* Danilo @dbrgn <http://dbrgn.ch/>
- \* Disabled TLS compression by default on Python 3.2+
- \* Disabled TLS compression in pyopenssl contrib module
- \* Configurable cipher suites in pyopenssl contrib module
  
- \* Roman Bogorodskiy <roman.bogorodskiy@ericsson.com>
- \* Account retries on proxy errors
  
- \* Nicolas Delaby <nicolas.delaby@ezeep.com>
- \* Use the platform-specific CA certificate locations
  
- \* Josh Schneier <https://github.com/jschneier>
- \* HTTPHeaderDict and associated tests and docs
- \* Bugfixes, docs, test coverage
  
- \* Tahia Khan <http://tahia.tk/>

- \* Added Timeout examples in docs
  
- \* Arthur Grunseid <<http://grunseid.com>>
  - \* source\_address support and tests (with <https://github.com/bui>)
  
- \* Ian Cordasco <[graffatcolmingov@gmail.com](mailto:graffatcolmingov@gmail.com)>
  - \* PEP8 Compliance and Linting
  - \* Add ability to pass socket options to an HTTP Connection
  
- \* Erik Tollerud <[erik.tollerud@gmail.com](mailto:erik.tollerud@gmail.com)>
  - \* Support for standard library io module.
  
- \* Krishna Prasad <[kprasad.iitd@gmail.com](mailto:kprasad.iitd@gmail.com)>
  - \* Google App Engine documentation
  
- \* Aaron Meurer <[asmeurer@gmail.com](mailto:asmeurer@gmail.com)>
  - \* Added `Url.url`, which unparses a `Url`
  
- \* Evgeny Kapun <[abacabadabacaba@gmail.com](mailto:abacabadabacaba@gmail.com)>
  - \* Bugfixes
  
- \* Benjamin Meyer <[bm\\_witness@yahoo.com](mailto:bm_witness@yahoo.com)>
  - \* Security Warning Documentation update for proper capture
  
- \* Shivan Sornarajah <[github@sornars.com](mailto:github@sornars.com)>
  - \* Support for using `ConnectionPool` and `PoolManager` as context managers.
  
- \* Alex Gaynor <[alex.gaynor@gmail.com](mailto:alex.gaynor@gmail.com)>
  - \* Updates to the default SSL configuration
  
- \* Tomas Tomecek <[ttomecek@redhat.com](mailto:ttomecek@redhat.com)>
  - \* Implemented generator for getting chunks from chunked responses.
  
- \* tlynn <<https://github.com/tlynn>>
  - \* Respect the warning preferences at import.
  
- \* David D. Riddle <[ddriddle@illinois.edu](mailto:ddriddle@illinois.edu)>
  - \* IPv6 bugfixes in testsuite
  
- \* Jon Wayne Parrott <[jonwayne@google.com](mailto:jonwayne@google.com)>
  - \* App Engine environment tests.
  
- \* John Krauss <<https://github.com/talos>>
  - \* Clues to debugging problems with ``cryptography`` dependency in docs
  
- \* Disassem <<https://github.com/Disassem>>
  - \* Fix pool-default headers not applying for url-encoded requests like GET.

- \* James Atherfold <jlatherfold@hotmail.com>
- \* Bugfixes relating to cleanup of connections during errors.
  
- \* Christian Pedersen <https://github.com/chripede>
- \* IPv6 HTTPS proxy bugfix
  
- \* Jordan Moldow <https://github.com/jmoldow>
- \* Fix low-level exceptions leaking from ``HTTPResponse.stream()``.
- \* Bugfix for ``ConnectionPool.urlopen(release\_conn=False)``.
- \* Creation of ``HTTPConnectionPool.ResponseCls``.
  
- \* Predrag Gruevski <https://github.com/obi1kenobi>
- \* Made cert digest comparison use a constant-time algorithm.
  
- \* Adam Talsma <https://github.com/a-tal>
- \* Bugfix to ca\_cert file paths.
  
- \* Evan Meagher <https://evanmeagher.net>
- \* Bugfix related to `memoryview` usage in PyOpenSSL adapter
  
- \* John Vandenberg <jayvdb@gmail.com>
- \* Python 2.6 fixes; pyflakes and pep8 compliance
  
- \* Andy Caldwell <andy.m.caldwell@googlemail.com>
- \* Bugfix related to reusing connections in indeterminate states.
  
- \* Ville Skytt <ville.skytta@iki.fi>
- \* Logging efficiency improvements, spelling fixes, Travis config.
  
- \* Shige Takeda <smtakeda@gmail.com>
- \* Started Recipes documentation and added a recipe about handling concatenated gzip data in HTTP response
  
- \* Jesse Shapiro <jesse@jesseshapiro.net>
- \* Various character-encoding fixes/tweaks
- \* Disabling IPv6 DNS when IPv6 connections not supported
  
- \* David Foster <http://dafoster.net/>
- \* Ensure order of request and response headers are preserved.
  
- \* Jeremy Cline <jeremy@jcline.org>
- \* Added connection pool keys by scheme
  
- \* Aviv Palivoda <palaviv@gmail.com>
- \* History list to Retry object.
- \* HTTPResponse contains the last Retry object.
  
- \* Nate Prewitt <nate.prewitt@gmail.com>
- \* Ensure timeouts are not booleans and greater than zero.

- \* Fixed infinite loop in ``stream`` when amt=None.
  - \* Added length\_remaining to determine remaining data to be read.
  - \* Added enforce\_content\_length to raise exception when incorrect content-length received.
  
  - \* Seth Michael Larson <sethmichaellarson@protonmail.com>
  - \* Created selectors backport that supports PEP 475.
  
  - \* Alexandre Dias <alex.dias@smarkets.com>
  - \* Don't retry on timeout if method not in whitelist
  
  - \* Moinuddin Quadri <moin18@gmail.com>
  - \* Lazily load idna package
  
  - \* Tom White <s6yglez3@mail2tor.com>
  - \* Made SOCKS handler differentiate socks5h from socks5 and socks4a from socks4.
  
  - \* Tim Burke <tim.burke@gmail.com>
  - \* Stop buffering entire deflate-encoded responses.
  
  - \* Tuukka Mustonen <tuukka.mustonen@gmail.com>
  - \* Add counter for status\_forcelist retries.
  
  - \* Erik Rose <erik@mozilla.com>
  - \* Bugfix to pyopenssl vendoring
  
  - \* [Your name or handle] <[email or website]>
  - \* [Brief summary of your changes]
- This is the MIT license: <http://www.opensource.org/licenses/mit-license.php>

Copyright 2008-2016 Andrey Petrov and contributors (see CONTRIBUTORS.txt)

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR

OTHER  
DEALINGS IN THE SOFTWARE.

# 1.332 jackson 2.14.0-rc2

## 1.332.1 Available under license :

# Jackson JSON processor

Jackson is a high-performance, Free/Open Source JSON processing library. It was originally written by Tatu Saloranta (tatu.saloranta@iki.fi), and has been in development since 2007. It is currently developed by a community of developers.

### ## Licensing

Jackson 2.x core and extension components are licensed under Apache License 2.0. To find the details that apply to this artifact see the accompanying LICENSE file.

### ## Credits

A list of contributors may be found from CREDITS(-2.x) file, which is included in some artifacts (usually source distributions); but is always available from the source code management (SCM) system project uses.

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity



exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided

that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity,

or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

# 1.333 tar 1.30 5.el8

## 1.333.1 Available under license :

GNU GENERAL PUBLIC LICENSE  
Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we

stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

## TERMS AND CONDITIONS

### 0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2)

tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

#### 1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

## 2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

## 3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

## 4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code;



keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

#### 5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.
- b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".
- c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.
- d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

#### 6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License,

in one of these ways:

- a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.
  
- b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.
  
- c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.
  
- d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.
  
- e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any

tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

## 7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this

License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this

License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

#### 8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

#### 9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or

modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

#### 10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

#### 11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and

propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may

otherwise be available to you under applicable patent law.

#### 12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

#### 13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

#### 14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any



author or copyright holder as a result of your choosing to follow a later version.

#### 15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

#### 16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### 17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see <<http://www.gnu.org/licenses/>>.

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program> Copyright (C) <year> <name of author>
```

```
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
```

```
This is free software, and you are welcome to redistribute it under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary.

For more information on this, and how to apply and follow the GNU GPL, see <<http://www.gnu.org/licenses/>>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <<http://www.gnu.org/philosophy/why-not-lgpl.html>>.

## 1.334 failureaccess 1.0.1

## 1.334.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright (C) 2018 The Guava Authors
 *
 * Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except
 * in compliance with the License. You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software distributed under the License
 * is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either
 * express
 * or implied. See the License for the specific language governing permissions and limitations under
 * the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1349013147_1655879756.6643403/0/failureaccess-1-0-1-sources-4-
jar/com/google/common/util/concurrent/internal/InternalFutures.java
* /opt/cola/permits/1349013147_1655879756.6643403/0/failureaccess-1-0-1-sources-4-
jar/com/google/common/util/concurrent/internal/InternalFutureFailureAccess.java
```

## 1.335 netty-transport-native-unix-common

### 4.1.78.Final

#### 1.335.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2018 The Netty Project
 *
 * The Netty Project licenses this file to you under the Apache License,
 * version 2.0 (the "License"); you may not use this file except in compliance
 * with the License. You may obtain a copy of the License at:
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
 * WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
 * License for the specific language governing permissions and limitations
 * under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1350828745_1656063998.9734578/0/netty-transport-native-unix-common-4-1-78-final-sources-1-jar/io/netty/channel/unix/PreferredDirectByteBufferAllocator.java
* /opt/cola/permits/1350828745_1656063998.9734578/0/netty-transport-native-unix-common-4-1-78-final-sources-1-jar/io/netty/channel/unix/Buffer.java
* /opt/cola/permits/1350828745_1656063998.9734578/0/netty-transport-native-unix-common-4-1-78-final-sources-1-jar/netty_unix_buffer.h
* /opt/cola/permits/1350828745_1656063998.9734578/0/netty-transport-native-unix-common-4-1-78-final-sources-1-jar/netty_unix_buffer.c
```

No license file was found, but licenses were detected in source scan.

<!--

~ Copyright 2016 The Netty Project

~

~ The Netty Project licenses this file to you under the Apache License,  
~ version 2.0 (the "License"); you may not use this file except in compliance  
~ with the License. You may obtain a copy of the License at:

~

~ <https://www.apache.org/licenses/LICENSE-2.0>

~

~ Unless required by applicable law or agreed to in writing, software  
~ distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
~ WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
~ License for the specific language governing permissions and limitations  
~ under the License.

-->

Found in path(s):

```
* /opt/cola/permits/1350828745_1656063998.9734578/0/netty-transport-native-unix-common-4-1-78-final-sources-1-jar/META-INF/maven/io.netty/netty-transport-native-unix-common/pom.xml
```

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2016 The Netty Project

\*

\* The Netty Project licenses this file to you under the Apache License,  
\* version 2.0 (the "License"); you may not use this file except in compliance  
\* with the License. You may obtain a copy of the License at:

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
\* License for the specific language governing permissions and limitations  
\* under the License.

\*/

Found in path(s):

- \* /opt/cola/permits/1350828745\_1656063998.9734578/0/netty-transport-native-unix-common-4-1-78-final-sources-1-jar/netty\_unix\_limits.c
- \* /opt/cola/permits/1350828745\_1656063998.9734578/0/netty-transport-native-unix-common-4-1-78-final-sources-1-jar/io/netty/channel/unix/ErrorsStaticallyReferencedJniMethods.java
- \* /opt/cola/permits/1350828745\_1656063998.9734578/0/netty-transport-native-unix-common-4-1-78-final-sources-1-jar/netty\_unix\_util.c
- \* /opt/cola/permits/1350828745\_1656063998.9734578/0/netty-transport-native-unix-common-4-1-78-final-sources-1-jar/io/netty/channel/unix/LimitsStaticallyReferencedJniMethods.java
- \* /opt/cola/permits/1350828745\_1656063998.9734578/0/netty-transport-native-unix-common-4-1-78-final-sources-1-jar/netty\_unix\_util.h
- \* /opt/cola/permits/1350828745\_1656063998.9734578/0/netty-transport-native-unix-common-4-1-78-final-sources-1-jar/io/netty/channel/unix/SocketWritableByteChannel.java
- \* /opt/cola/permits/1350828745\_1656063998.9734578/0/netty-transport-native-unix-common-4-1-78-final-sources-1-jar/io/netty/channel/unix/PeerCredentials.java
- \* /opt/cola/permits/1350828745\_1656063998.9734578/0/netty-transport-native-unix-common-4-1-78-final-sources-1-jar/netty\_unix\_limits.h
- \* /opt/cola/permits/1350828745\_1656063998.9734578/0/netty-transport-native-unix-common-4-1-78-final-sources-1-jar/io/netty/channel/unix/Limits.java

No license file was found, but licenses were detected in source scan.

/\*

- \* Copyright 2020 The Netty Project
- \*
- \* The Netty Project licenses this file to you under the Apache License,
- \* version 2.0 (the "License"); you may not use this file except in compliance
- \* with the License. You may obtain a copy of the License at:
- \*
- \* <https://www.apache.org/licenses/LICENSE-2.0>
- \*
- \* Unless required by applicable law or agreed to in writing, software
- \* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
- \* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
- \* License for the specific language governing permissions and limitations
- \* under the License.
- \*/

Found in path(s):

- \* /opt/cola/permits/1350828745\_1656063998.9734578/0/netty-transport-native-unix-common-4-1-78-final-sources-1-jar/netty\_unix.h
- \* /opt/cola/permits/1350828745\_1656063998.9734578/0/netty-transport-native-unix-common-4-1-78-final-sources-1-jar/netty\_unix.c

No license file was found, but licenses were detected in source scan.

/\*

- \* Copyright 2017 The Netty Project
- \*

\* The Netty Project licenses this file to you under the Apache License,  
\* version 2.0 (the "License"); you may not use this file except in compliance  
\* with the License. You may obtain a copy of the License at:  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
\* License for the specific language governing permissions and limitations  
\* under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1350828745\_1656063998.9734578/0/netty-transport-native-unix-common-4-1-78-final-sources-1-jar/io/netty/channel/unix/UnixChannelUtil.java  
\* /opt/cola/permits/1350828745\_1656063998.9734578/0/netty-transport-native-unix-common-4-1-78-final-sources-1-jar/netty\_unix\_jni.h

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2015 The Netty Project  
\*  
\* The Netty Project licenses this file to you under the Apache License,  
\* version 2.0 (the "License"); you may not use this file except in compliance  
\* with the License. You may obtain a copy of the License at:  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
\* License for the specific language governing permissions and limitations  
\* under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1350828745\_1656063998.9734578/0/netty-transport-native-unix-common-4-1-78-final-sources-1-jar/io/netty/channel/unix/DomainSocketChannel.java  
\* /opt/cola/permits/1350828745\_1656063998.9734578/0/netty-transport-native-unix-common-4-1-78-final-sources-1-jar/io/netty/channel/unix/Errors.java  
\* /opt/cola/permits/1350828745\_1656063998.9734578/0/netty-transport-native-unix-common-4-1-78-final-sources-1-jar/io/netty/channel/unix/ServerDomainSocketChannel.java  
\* /opt/cola/permits/1350828745\_1656063998.9734578/0/netty-transport-native-unix-common-4-1-78-final-sources-1-jar/netty\_unix\_socket.c  
\* /opt/cola/permits/1350828745\_1656063998.9734578/0/netty-transport-native-unix-common-4-1-78-final-sources-1-jar/netty\_unix\_errors.h  
\* /opt/cola/permits/1350828745\_1656063998.9734578/0/netty-transport-native-unix-common-4-1-78-final-sources-

1-jar/io/netty/channel/unix/UnixChannel.java  
\* /opt/cola/permits/1350828745\_1656063998.9734578/0/netty-transport-native-unix-common-4-1-78-final-sources-1-jar/io/netty/channel/unix/DomainSocketAddress.java  
\* /opt/cola/permits/1350828745\_1656063998.9734578/0/netty-transport-native-unix-common-4-1-78-final-sources-1-jar/io/netty/channel/unix/FileDescriptor.java  
\* /opt/cola/permits/1350828745\_1656063998.9734578/0/netty-transport-native-unix-common-4-1-78-final-sources-1-jar/netty\_unix\_errors.c  
\* /opt/cola/permits/1350828745\_1656063998.9734578/0/netty-transport-native-unix-common-4-1-78-final-sources-1-jar/io/netty/channel/unix/DatagramSocketAddress.java  
\* /opt/cola/permits/1350828745\_1656063998.9734578/0/netty-transport-native-unix-common-4-1-78-final-sources-1-jar/io/netty/channel/unix/NativeInetAddress.java  
\* /opt/cola/permits/1350828745\_1656063998.9734578/0/netty-transport-native-unix-common-4-1-78-final-sources-1-jar/io/netty/channel/unix/Socket.java  
\* /opt/cola/permits/1350828745\_1656063998.9734578/0/netty-transport-native-unix-common-4-1-78-final-sources-1-jar/netty\_unix\_socket.h  
\* /opt/cola/permits/1350828745\_1656063998.9734578/0/netty-transport-native-unix-common-4-1-78-final-sources-1-jar/io/netty/channel/unix/DomainSocketReadMode.java  
\* /opt/cola/permits/1350828745\_1656063998.9734578/0/netty-transport-native-unix-common-4-1-78-final-sources-1-jar/netty\_unix\_filedescriptor.c  
\* /opt/cola/permits/1350828745\_1656063998.9734578/0/netty-transport-native-unix-common-4-1-78-final-sources-1-jar/netty\_unix\_filedescriptor.h  
\* /opt/cola/permits/1350828745\_1656063998.9734578/0/netty-transport-native-unix-common-4-1-78-final-sources-1-jar/io/netty/channel/unix/DomainSocketChannelConfig.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2014 The Netty Project  
\*  
\* The Netty Project licenses this file to you under the Apache License,  
\* version 2.0 (the "License"); you may not use this file except in compliance  
\* with the License. You may obtain a copy of the License at:  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
\* License for the specific language governing permissions and limitations  
\* under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1350828745\_1656063998.9734578/0/netty-transport-native-unix-common-4-1-78-final-sources-1-jar/io/netty/channel/unix/IovArray.java  
\* /opt/cola/permits/1350828745\_1656063998.9734578/0/netty-transport-native-unix-common-4-1-78-final-sources-1-jar/io/netty/channel/unix/UnixChannelOption.java  
\* /opt/cola/permits/1350828745\_1656063998.9734578/0/netty-transport-native-unix-common-4-1-78-final-sources-1-jar/io/netty/channel/unix/package-info.java

\* /opt/cola/permits/1350828745\_1656063998.9734578/0/netty-transport-native-unix-common-4-1-78-final-sources-1-jar/io/netty/channel/unix/Unix.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2021 The Netty Project

\*

\* The Netty Project licenses this file to you under the Apache License,

\* version 2.0 (the "License"); you may not use this file except in compliance

\* with the License. You may obtain a copy of the License at:

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT

\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the

\* License for the specific language governing permissions and limitations

\* under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1350828745\_1656063998.9734578/0/netty-transport-native-unix-common-4-1-78-final-sources-1-jar/io/netty/channel/unix/SegmentedDatagramPacket.java

\* /opt/cola/permits/1350828745\_1656063998.9734578/0/netty-transport-native-unix-common-4-1-78-final-sources-1-jar/io/netty/channel/unix/DomainDatagramSocketAddress.java

\* /opt/cola/permits/1350828745\_1656063998.9734578/0/netty-transport-native-unix-common-4-1-78-final-sources-1-jar/io/netty/channel/unix/DomainDatagramChannel.java

\* /opt/cola/permits/1350828745\_1656063998.9734578/0/netty-transport-native-unix-common-4-1-78-final-sources-1-jar/io/netty/channel/unix/DomainDatagramChannelConfig.java

\* /opt/cola/permits/1350828745\_1656063998.9734578/0/netty-transport-native-unix-common-4-1-78-final-sources-1-jar/io/netty/channel/unix/DomainDatagramPacket.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2022 The Netty Project

\*

\* The Netty Project licenses this file to you under the Apache License,

\* version 2.0 (the "License"); you may not use this file except in compliance

\* with the License. You may obtain a copy of the License at:

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT

\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the

\* License for the specific language governing permissions and limitations

\* under the License.

\*/



Found in path(s):

- \* /opt/cola/permits/1350828745\_1656063998.9734578/0/netty-transport-native-unix-common-4-1-78-final-sources-1-jar/io/netty/channel/unix/GenericUnixChannelOption.java
- \* /opt/cola/permits/1350828745\_1656063998.9734578/0/netty-transport-native-unix-common-4-1-78-final-sources-1-jar/io/netty/channel/unix/RawUnixChannelOption.java
- \* /opt/cola/permits/1350828745\_1656063998.9734578/0/netty-transport-native-unix-common-4-1-78-final-sources-1-jar/io/netty/channel/unix/IntegerUnixChannelOption.java

## 1.336 bean-validation-api 2.0.1.Final

### 1.336.1 Available under license :

Bean Validation API

License: Apache License, Version 2.0

See the license.txt file in the root directory or <<http://www.apache.org/licenses/LICENSE-2.0>>.

## 1.337 safeclib 4.0.45

### 1.337.1 Available under license :

Cisco Safe C Library

Copyright (C) 2012-2015 Cisco Systems

All rights reserved.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

# 1.338 spring-aop 5.3.21

## 1.338.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2002-2006 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1347859462_1655734791.7216063/0/spring-aop-5-3-21-sources-
jar/org/springframework/aop/aspectj/InstantiationModelAwarePointcutAdvisor.java
```

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2002-2020 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1347859462_1655734791.7216063/0/spring-aop-5-3-21-sources-
jar/org/springframework/aop/interceptor/ExposeInvocationInterceptor.java
```

```
* /opt/cola/permits/1347859462_1655734791.7216063/0/spring-aop-5-3-21-sources-
```

jar/org/springframework/aop/interceptor/AbstractMonitoringInterceptor.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/config/AdviceEntry.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/interceptor/DebugInterceptor.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/config/AspectEntry.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/aspectj/autoproxy/AspectJPrecedenceComparator.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/aspectj/AspectJAroundAdvice.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/framework/autoproxy/AbstractAdvisorAutoProxyCreator.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/aspectj/AbstractAspectJAdvice.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/framework/ProxyCreatorSupport.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/config/PointcutEntry.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/interceptor/ConcurrencyThrottleInterceptor.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/framework/JdkDynamicAopProxy.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/aspectj/AspectJProxyUtils.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/config/AopNamespaceHandler.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/framework/AopContext.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/interceptor/AbstractTraceInterceptor.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/aspectj/autoproxy/AspectJAwareAdvisorAutoProxyCreator.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/interceptor/ExposeBeanNameAdvisors.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/interceptor/CustomizableTraceInterceptor.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/framework/autoproxy/target/LazyInitTargetSourceCreator.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/framework/AdvisedSupport.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/framework/Advised.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/framework/autoproxy/BeanNameAutoProxyCreator.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/aspectj/AspectJAfterAdvice.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-

jar/org/springframework/aop/framework/adapter/AfterReturningAdviceInterceptor.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/config/AdvisorEntry.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/interceptor/SimpleTraceInterceptor.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/aspectj/annotation/ReflectiveAspectJAdvisorFactory.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/aspectj/AspectJAfterThrowingAdvice.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/aspectj/annotation/BeanFactoryAspectJAdvisorsBuilder.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/framework/adapter/ThrowsAdviceInterceptor.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/framework/adapter/MethodBeforeAdviceInterceptor.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/support/DelegatingIntroductionInterceptor.java  
No license file was found, but licenses were detected in source scan.

```
/*
* Copyright 2002-2013 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
```

Found in path(s):

\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/aspectj/AspectJWeaverMessageHandler.java  
No license file was found, but licenses were detected in source scan.

```
/*
* Copyright 2002-2014 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
```

\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/target/PrototypeTargetSource.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/support/NameMatchMethodPointcutAdvisor.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2002-2021 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/support/DefaultIntroductionAdvisor.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/framework/autoprox/target/AbstractBeanFactoryBasedTargetSourceCreator.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/DynamicIntroductionAdvice.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/target/AbstractPoolingTargetSource.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/aspectj/AspectJAdviceParameterNameDiscoverer.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/support/ControlFlowPointcut.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/aspectj/annotation/AbstractAspectJAdvisorFactory.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/framework/ProxyConfig.java

\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-jar/org/springframework/aop/aspectj/MethodInvocationProceedingJoinPoint.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-jar/org/springframework/aop/framework/adaptor/ThrowsAdviceAdapter.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-jar/org/aopalliance/intercept/Joinpoint.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-jar/org/springframework/aop/framework/AbstractAdvisingBeanPostProcessor.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-jar/org/springframework/aop/support/AbstractBeanFactoryPointcutAdvisor.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2002-2015 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-jar/org/springframework/aop/aspectj/annotation/PrototypeAspectInstanceFactory.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-jar/org/springframework/aop/aspectj/SingletonAspectInstanceFactory.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-jar/org/springframework/aop/aspectj/AspectJMethodBeforeAdvice.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-jar/org/springframework/aop/TargetClassAware.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-jar/org/springframework/aop/ProxyMethodInvocation.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-jar/org/springframework/aop/aspectj/annotation/AspectJAdvisorFactory.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2002-2008 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/ThrowsAdvice.java

No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2002-2018 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/support/DynamicMethodMatcher.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/config/AopConfigUtils.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/TrueMethodMatcher.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/aspectj/annotation/BeanFactoryAspectInstanceFactory.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/framework/autoproxy/AutoProxyUtils.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/target/AbstractBeanFactoryBasedTargetSource.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/target/CommonsPool2TargetSource.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-

jar/org/springframework/aop/framework/DefaultAdvisorChainFactory.java  
 \* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
 jar/org/springframework/aop/aspectj/RuntimeTestWalker.java  
 \* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
 jar/org/springframework/aop/aspectj/annotation/NotAnAtAspectException.java  
 \* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
 jar/org/springframework/aop/support/RegexpMethodPointcutAdvisor.java  
 \* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
 jar/org/springframework/aop/MethodBeforeAdvice.java  
 \* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
 jar/org/springframework/aop/framework/adapter/AdvisorAdapterRegistry.java  
 \* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
 jar/org/springframework/aop/framework/adapter/DefaultAdvisorAdapterRegistry.java  
 \* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
 jar/org/springframework/aop/target/AbstractPrototypeBasedTargetSource.java  
 \* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
 jar/org/springframework/aop/interceptor/AsyncExecutionInterceptor.java  
 \* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
 jar/org/springframework/aop/framework/autoproxy/DefaultAdvisorAutoProxyCreator.java  
 \* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
 jar/org/springframework/aop/target/SingletonTargetSource.java  
 \* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
 jar/org/springframework/aop/support/AbstractRegexpMethodPointcut.java  
 \* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
 jar/org/springframework/aop/IntroductionAwareMethodMatcher.java  
 \* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
 jar/org/springframework/aop/framework/AdvisorChainFactory.java  
 \* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
 jar/org/springframework/aop/aspectj/DeclareParentsAdvisor.java  
 \* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
 jar/org/springframework/aop/config/AdvisorComponentDefinition.java  
 \* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
 jar/org/aopalliance/aop/AspectException.java  
 \* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
 jar/org/springframework/aop/config/AopNamespaceUtils.java  
 \* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
 jar/org/springframework/aop/framework/autoproxy/AbstractBeanFactoryAwareAdvisingPostProcessor.java  
 \* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
 jar/org/springframework/aop/aspectj/AspectJPointcutAdvisor.java  
 \* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
 jar/org/aopalliance/intercept/MethodInterceptor.java  
 \* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
 jar/org/springframework/aop/target/AbstractLazyCreationTargetSource.java  
 \* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
 jar/org/springframework/aop/target/dynamic/AbstractRefreshableTargetSource.java  
 \* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
 jar/org/springframework/aop/TargetSource.java  
 \* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-



jar/org/aopalliance/intercept/ConstructorInvocation.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/TrueClassFilter.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/framework/AbstractSingletonProxyFactoryBean.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/framework/autoproxy/BeanFactoryAdvisorRetrievalHelper.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/framework/autoproxy/target/QuickTargetSourceCreator.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/aspectj/SimpleAspectInstanceFactory.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/interceptor/SimpleAsyncUncaughtExceptionHandler.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/TruePointcut.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/support/StaticMethodMatcherPointcutAdvisor.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/scope/ScopedProxyFactoryBean.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/target/EmptyTargetSource.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/framework/autoproxy/ProxyCreationContext.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/support/StaticMethodMatcher.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/framework/adapt/GlobalAdvisorAdapterRegistry.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/config/ConfigBeanDefinitionParser.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/target/HotSwappableTargetSource.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/aspectj/annotation/InstantiationModelAwarePointcutAdvisorImpl.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/support/IntroductionInfoSupport.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/aspectj/AspectJPrecedenceInformation.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/framework/ProxyProcessorSupport.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2022 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

- \* <https://www.apache.org/licenses/LICENSE-2.0>
- \*
- \* Unless required by applicable law or agreed to in writing, software
- \* distributed under the License is distributed on an "AS IS" BASIS,
- \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- \* See the License for the specific language governing permissions and
- \* limitations under the License.
- \*/

Found in path(s):

- \* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-jar/org/springframework/aop/framework/AopProxyUtils.java
- \* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-jar/org/springframework/aop/interceptor/AsyncExecutionAspectSupport.java
- \* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-jar/org/springframework/aop/framework/DefaultAopProxyFactory.java
- \* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-jar/org/springframework/aop/support/annotation/AnnotationMethodMatcher.java
- \* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-jar/org/springframework/aop/aspectj/annotation/AspectJProxyFactory.java
- \* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-jar/org/springframework/aop/framework/ProxyFactoryBean.java
- \* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-jar/org/springframework/aop/aspectj/AspectJExpressionPointcut.java
- \* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-jar/org/springframework/aop/aspectj/annotation/AspectMetadata.java
- \* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-jar/org/springframework/aop/support/annotation/AnnotationClassFilter.java
- \* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-jar/org/springframework/aop/support/annotation/AnnotationMatchingPointcut.java
- \* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-jar/org/springframework/aop/support/AopUtils.java
- \* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-jar/org/springframework/aop/framework/CglibAopProxy.java
- \* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-jar/org/springframework/aop/framework/autoproxy/AbstractAutoProxyCreator.java

No license file was found, but licenses were detected in source scan.

- /\*
- \* Copyright 2002-2007 the original author or authors.
- \*
- \* Licensed under the Apache License, Version 2.0 (the "License");
- \* you may not use this file except in compliance with the License.
- \* You may obtain a copy of the License at
- \*
- \* <https://www.apache.org/licenses/LICENSE-2.0>
- \*
- \* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/AfterAdvice.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/framework/AopInfrastructureBean.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/RawTargetAccess.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/framework/InterceptorAndDynamicMethodMatcher.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/BeforeAdvice.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/SpringProxy.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/IntroductionInterceptor.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/framework/AdvisedSupportListener.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2016 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/aspectj/AspectJAfterReturningAdvice.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/aopalliance/intercept/MethodInvocation.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/aopalliance/aop/Advice.java

\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-jar/org/aopalliance/intercept/ConstructorInterceptor.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-jar/org/springframework/aop/aspectj/annotation/SingletonMetadataAwareAspectInstanceFactory.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-jar/org/aopalliance/intercept/Invocation.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-jar/org/springframework/aop/framework/ProxyFactory.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-jar/org/springframework/aop/framework/autoproxy/TargetSourceCreator.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-jar/org/springframework/aop/target/ThreadLocalTargetSource.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-jar/org/springframework/aop/aspectj/annotation/MetadataAwareAspectInstanceFactory.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-jar/org/springframework/aop/aspectj/annotation/SimpleMetadataAwareAspectInstanceFactory.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-jar/org/springframework/aop/config/AspectJAutoProxyBeanDefinitionParser.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2002-2012 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-jar/org/springframework/aop/target/SimpleBeanTargetSource.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-jar/org/springframework/aop/PointcutAdvisor.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-jar/org/springframework/aop/framework/AopProxy.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-jar/org/springframework/aop/scope/ScopedObject.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-jar/org/springframework/aop/support/JdkRegexpMethodPointcut.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-

jar/org/springframework/aop/framework/adapter/UnknownAdviceTypeException.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/Pointcut.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/config/ScopedProxyBeanDefinitionDecorator.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/target/dynamic/Refreshable.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/target/PoolingConfig.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/target/ThreadLocalTargetSourceStats.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/support/DynamicMethodMatcherPointcut.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/scope/DefaultScopedObject.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/target/LazyInitTargetSource.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/AopInvocationException.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/config/PointcutComponentDefinition.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/IntroductionInfo.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/framework/adapter/AdvisorAdapterRegistrationManager.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/framework/adapter/AdvisorAdapter.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/framework/AopProxyFactory.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/framework/adapter/AfterReturningAdviceAdapter.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/target/dynamic/BeanFactoryRefreshableTargetSource.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/support/StaticMethodMatcherPointcut.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/AfterReturningAdvice.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/config/SpringConfiguredBeanDefinitionParser.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/framework/AopConfigException.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/aspectj/AspectJAopUtils.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/framework/adapter/MethodBeforeAdviceAdapter.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/IntroductionAdvisor.java

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2002-2019 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1347859462_1655734791.7216063/0/spring-aop-5-3-21-sources-
jar/org/springframework/aop/scope/ScopedProxyUtils.java
* /opt/cola/permits/1347859462_1655734791.7216063/0/spring-aop-5-3-21-sources-
jar/org/springframework/aop/interceptor/AsyncUncaughtExceptionHandler.java
* /opt/cola/permits/1347859462_1655734791.7216063/0/spring-aop-5-3-21-sources-
jar/org/springframework/aop/support/RootClassFilter.java
* /opt/cola/permits/1347859462_1655734791.7216063/0/spring-aop-5-3-21-sources-
jar/org/springframework/aop/MethodMatcher.java
* /opt/cola/permits/1347859462_1655734791.7216063/0/spring-aop-5-3-21-sources-
jar/org/springframework/aop/support/Pointcuts.java
* /opt/cola/permits/1347859462_1655734791.7216063/0/spring-aop-5-3-21-sources-
jar/org/springframework/aop/support/MethodMatchers.java
* /opt/cola/permits/1347859462_1655734791.7216063/0/spring-aop-5-3-21-sources-
jar/org/springframework/aop/framework/ObjenesisCglibAopProxy.java
* /opt/cola/permits/1347859462_1655734791.7216063/0/spring-aop-5-3-21-sources-
jar/org/aopalliance/intercept/Interceptor.java
* /opt/cola/permits/1347859462_1655734791.7216063/0/spring-aop-5-3-21-sources-
jar/org/springframework/aop/ClassFilter.java
* /opt/cola/permits/1347859462_1655734791.7216063/0/spring-aop-5-3-21-sources-
jar/org/springframework/aop/framework/ReflectiveMethodInvocation.java
* /opt/cola/permits/1347859462_1655734791.7216063/0/spring-aop-5-3-21-sources-
jar/org/springframework/aop/support/NameMatchMethodPointcut.java
* /opt/cola/permits/1347859462_1655734791.7216063/0/spring-aop-5-3-21-sources-
jar/org/springframework/aop/support/ClassFilters.java
* /opt/cola/permits/1347859462_1655734791.7216063/0/spring-aop-5-3-21-sources-
jar/org/springframework/aop/aspectj/TypePatternClassFilter.java
* /opt/cola/permits/1347859462_1655734791.7216063/0/spring-aop-5-3-21-sources-
jar/org/springframework/aop/support/ComposablePointcut.java
```

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2002-2017 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1347859462_1655734791.7216063/0/spring-aop-5-3-21-sources-
jar/org/springframework/aop/interceptor/JamonPerformanceMonitorInterceptor.java
* /opt/cola/permits/1347859462_1655734791.7216063/0/spring-aop-5-3-21-sources-
jar/org/springframework/aop/aspectj/AspectInstanceFactory.java
* /opt/cola/permits/1347859462_1655734791.7216063/0/spring-aop-5-3-21-sources-
jar/org/springframework/aop/config/AspectComponentDefinition.java
* /opt/cola/permits/1347859462_1655734791.7216063/0/spring-aop-5-3-21-sources-
jar/org/springframework/aop/interceptor/PerformanceMonitorInterceptor.java
* /opt/cola/permits/1347859462_1655734791.7216063/0/spring-aop-5-3-21-sources-
jar/org/springframework/aop/support/DelegatePerTargetObjectIntroductionInterceptor.java
* /opt/cola/permits/1347859462_1655734791.7216063/0/spring-aop-5-3-21-sources-
jar/org/springframework/aop/aspectj/annotation/LazySingletonAspectInstanceFactoryDecorator.java
* /opt/cola/permits/1347859462_1655734791.7216063/0/spring-aop-5-3-21-sources-
jar/org/springframework/aop/framework/autoproxy/InfrastructureAdvisorAutoProxyCreator.java
* /opt/cola/permits/1347859462_1655734791.7216063/0/spring-aop-5-3-21-sources-
jar/org/springframework/aop/Advisor.java
* /opt/cola/permits/1347859462_1655734791.7216063/0/spring-aop-5-3-21-sources-
jar/org/springframework/aop/config/MethodLocatingFactoryBean.java
* /opt/cola/permits/1347859462_1655734791.7216063/0/spring-aop-5-3-21-sources-
jar/org/springframework/aop/support/ExpressionPointcut.java
* /opt/cola/permits/1347859462_1655734791.7216063/0/spring-aop-5-3-21-sources-
jar/org/springframework/aop/config/AbstractInterceptorDrivenBeanDefinitionDecorator.java
* /opt/cola/permits/1347859462_1655734791.7216063/0/spring-aop-5-3-21-sources-
jar/org/springframework/aop/config/SimpleBeanFactoryAwareAspectInstanceFactory.java
* /opt/cola/permits/1347859462_1655734791.7216063/0/spring-aop-5-3-21-sources-
jar/org/springframework/aop/support/AbstractExpressionPointcut.java
* /opt/cola/permits/1347859462_1655734791.7216063/0/spring-aop-5-3-21-sources-
jar/org/springframework/aop/aspectj/AspectJExpressionPointcutAdvisor.java
* /opt/cola/permits/1347859462_1655734791.7216063/0/spring-aop-5-3-21-sources-
```

jar/org/springframework/aop/support/AbstractGenericPointcutAdvisor.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/support/AbstractPointcutAdvisor.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/aspectj/annotation/AnnotationAwareAspectJAutoProxyCreator.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/support/DefaultBeanFactoryPointcutAdvisor.java  
\* /opt/cola/permits/1347859462\_1655734791.7216063/0/spring-aop-5-3-21-sources-  
jar/org/springframework/aop/support/DefaultPointcutAdvisor.java

## 1.339 nss 3.79.0-10.el8\_6

### 1.339.1 Available under license :

NSS is available under the Mozilla Public License, version 2, a copy of which is below.

#### Note on GPL Compatibility

-----

The MPL 2, section 3.3, permits you to combine NSS with code under the GNU General Public License (GPL) version 2, or any later version of that license, to make a Larger Work, and distribute the result under the GPL.

The only condition is that you must also make NSS, and any changes you have made to it, available to recipients under the terms of the MPL 2 also.

Anyone who receives the combined code from you does not have to continue to dual licence in this way, and may, if they wish, distribute under the terms of either of the two licences - either the MPL alone or the GPL alone. However, we discourage people from distributing copies of NSS under the GPL alone, because it means that any improvements they make cannot be reincorporated into the main version of NSS. There is never a need to do this for license compatibility reasons.

#### Note on LGPL Compatibility

-----

The above also applies to combining MPLed code in a single library with code under the GNU Lesser General Public License (LGPL) version 2.1, or any later version of that license. If the LGPLed code and the MPLed code are not in the same library, then the copyleft coverage of the two licences does not overlap, so no issues arise.

#### Mozilla Public License Version 2.0

=====

#### 1. Definitions



-----

1.1. "Contributor"

means each individual or legal entity that creates, contributes to the creation of, or owns Covered Software.

1.2. "Contributor Version"

means the combination of the Contributions of others (if any) used by a Contributor and that particular Contributor's Contribution.

1.3. "Contribution"

means Covered Software of a particular Contributor.

1.4. "Covered Software"

means Source Code Form to which the initial Contributor has attached the notice in Exhibit A, the Executable Form of such Source Code Form, and Modifications of such Source Code Form, in each case including portions thereof.

1.5. "Incompatible With Secondary Licenses"

means

(a) that the initial Contributor has attached the notice described in Exhibit B to the Covered Software; or

(b) that the Covered Software was made available under the terms of version 1.1 or earlier of the License, but not also under the terms of a Secondary License.

1.6. "Executable Form"

means any form of the work other than Source Code Form.

1.7. "Larger Work"

means a work that combines Covered Software with other material, in a separate file or files, that is not Covered Software.

1.8. "License"

means this document.

1.9. "Licensable"

means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently, any and all of the rights conveyed by this License.

1.10. "Modifications"

means any of the following:

(a) any file in Source Code Form that results from an addition to,

deletion from, or modification of the contents of Covered Software; or

(b) any new file in Source Code Form that contains any Covered Software.

1.11. "Patent Claims" of a Contributor

means any patent claim(s), including without limitation, method, process, and apparatus claims, in any patent Licensable by such Contributor that would be infringed, but for the grant of the License, by the making, using, selling, offering for sale, having made, import, or transfer of either its Contributions or its Contributor Version.

1.12. "Secondary License"

means either the GNU General Public License, Version 2.0, the GNU Lesser General Public License, Version 2.1, the GNU Affero General Public License, Version 3.0, or any later versions of those licenses.

1.13. "Source Code Form"

means the form of the work preferred for making modifications.

1.14. "You" (or "Your")

means an individual or a legal entity exercising rights under this License. For legal entities, "You" includes any entity that controls, is controlled by, or is under common control with You. For purposes of this definition, "control" means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

2. License Grants and Conditions

-----

2.1. Grants

Each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:

(a) under intellectual property rights (other than patent or trademark) Licensable by such Contributor to use, reproduce, make available, modify, display, perform, distribute, and otherwise exploit its Contributions, either on an unmodified basis, with Modifications, or as part of a Larger Work; and

(b) under Patent Claims of such Contributor to make, use, sell, offer

for sale, have made, import, and otherwise transfer either its Contributions or its Contributor Version.

## 2.2. Effective Date

The licenses granted in Section 2.1 with respect to any Contribution become effective for each Contribution on the date the Contributor first distributes such Contribution.

## 2.3. Limitations on Grant Scope

The licenses granted in this Section 2 are the only rights granted under this License. No additional rights or licenses will be implied from the distribution or licensing of Covered Software under this License. Notwithstanding Section 2.1(b) above, no patent license is granted by a Contributor:

- (a) for any code that a Contributor has removed from Covered Software; or
- (b) for infringements caused by: (i) Your and any other third party's modifications of Covered Software, or (ii) the combination of its Contributions with other software (except as part of its Contributor Version); or
- (c) under Patent Claims infringed by Covered Software in the absence of its Contributions.

This License does not grant any rights in the trademarks, service marks, or logos of any Contributor (except as may be necessary to comply with the notice requirements in Section 3.4).

## 2.4. Subsequent Licenses

No Contributor makes additional grants as a result of Your choice to distribute the Covered Software under a subsequent version of this License (see Section 10.2) or under the terms of a Secondary License (if permitted under the terms of Section 3.3).

## 2.5. Representation

Each Contributor represents that the Contributor believes its Contributions are its original creation(s) or it has sufficient rights to grant the rights to its Contributions conveyed by this License.

## 2.6. Fair Use

This License is not intended to limit any rights You have under

applicable copyright doctrines of fair use, fair dealing, or other equivalents.

## 2.7. Conditions

Sections 3.1, 3.2, 3.3, and 3.4 are conditions of the licenses granted in Section 2.1.

## 3. Responsibilities

-----

### 3.1. Distribution of Source Form

All distribution of Covered Software in Source Code Form, including any Modifications that You create or to which You contribute, must be under the terms of this License. You must inform recipients that the Source Code Form of the Covered Software is governed by the terms of this License, and how they can obtain a copy of this License. You may not attempt to alter or restrict the recipients' rights in the Source Code Form.

### 3.2. Distribution of Executable Form

If You distribute Covered Software in Executable Form then:

- (a) such Covered Software must also be made available in Source Code Form, as described in Section 3.1, and You must inform recipients of the Executable Form how they can obtain a copy of such Source Code Form by reasonable means in a timely manner, at a charge no more than the cost of distribution to the recipient; and
- (b) You may distribute such Executable Form under the terms of this License, or sublicense it under different terms, provided that the license for the Executable Form does not attempt to limit or alter the recipients' rights in the Source Code Form under this License.

### 3.3. Distribution of a Larger Work

You may create and distribute a Larger Work under terms of Your choice, provided that You also comply with the requirements of this License for the Covered Software. If the Larger Work is a combination of Covered Software with a work governed by one or more Secondary Licenses, and the Covered Software is not Incompatible With Secondary Licenses, this License permits You to additionally distribute such Covered Software under the terms of such Secondary License(s), so that the recipient of the Larger Work may, at their option, further distribute the Covered Software under the terms of either this License or such Secondary License(s).

### 3.4. Notices

You may not remove or alter the substance of any license notices (including copyright notices, patent notices, disclaimers of warranty, or limitations of liability) contained within the Source Code Form of the Covered Software, except that You may alter any license notices to the extent required to remedy known factual inaccuracies.

### 3.5. Application of Additional Terms

You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Software. However, You may do so only on Your own behalf, and not on behalf of any Contributor. You must make it absolutely clear that any such warranty, support, indemnity, or liability obligation is offered by You alone, and You hereby agree to indemnify every Contributor for any liability incurred by such Contributor as a result of warranty, support, indemnity or liability terms You offer. You may include additional disclaimers of warranty and limitations of liability specific to any jurisdiction.

## 4. Inability to Comply Due to Statute or Regulation

-----

If it is impossible for You to comply with any of the terms of this License with respect to some or all of the Covered Software due to statute, judicial order, or regulation then You must: (a) comply with the terms of this License to the maximum extent possible; and (b) describe the limitations and the code they affect. Such description must be placed in a text file included with all distributions of the Covered Software under this License. Except to the extent prohibited by statute or regulation, such description must be sufficiently detailed for a recipient of ordinary skill to be able to understand it.

## 5. Termination

-----

5.1. The rights granted under this License will terminate automatically if You fail to comply with any of its terms. However, if You become compliant, then the rights granted under this License from a particular Contributor are reinstated (a) provisionally, unless and until such Contributor explicitly and finally terminates Your grants, and (b) on an ongoing basis, if such Contributor fails to notify You of the non-compliance by some reasonable means prior to 60 days after You have come back into compliance. Moreover, Your grants from a particular Contributor are reinstated on an ongoing basis if such Contributor notifies You of the non-compliance by some reasonable means, this is the



\* shall have been informed of the possibility of such damages. This \*  
 \* limitation of liability shall not apply to liability for death or \*  
 \* personal injury resulting from such party's negligence to the \*  
 \* extent applicable law prohibits such limitation. Some \*  
 \* jurisdictions do not allow the exclusion or limitation of \*  
 \* incidental or consequential damages, so this exclusion and \*  
 \* limitation may not apply to You. \*  
 \* \*  
 \*\*\*\*\*

## 8. Litigation

-----

Any litigation relating to this License may be brought only in the courts of a jurisdiction where the defendant maintains its principal place of business and such litigation shall be governed by laws of that jurisdiction, without reference to its conflict-of-law provisions. Nothing in this Section shall prevent a party's ability to bring cross-claims or counter-claims.

## 9. Miscellaneous

-----

This License represents the complete agreement concerning the subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not be used to construe this License against a Contributor.

## 10. Versions of the License

-----

### 10.1. New Versions

Mozilla Foundation is the license steward. Except as provided in Section 10.3, no one other than the license steward has the right to modify or publish new versions of this License. Each version will be given a distinguishing version number.

### 10.2. Effect of New Versions

You may distribute the Covered Software under the terms of the version of the License under which You originally received the Covered Software, or under the terms of any subsequent version published by the license steward.

### 10.3. Modified Versions

If you create software not governed by this License, and you want to create a new license for such software, you may create and use a modified version of this License if you rename the license and remove any references to the name of the license steward (except to note that such modified license differs from this License).

#### 10.4. Distributing Source Code Form that is Incompatible With Secondary Licenses

If You choose to distribute Source Code Form that is Incompatible With Secondary Licenses under the terms of this version of the License, the notice described in Exhibit B of this License must be attached.

##### Exhibit A - Source Code Form License Notice

-----

This Source Code Form is subject to the terms of the Mozilla Public License, v. 2.0. If a copy of the MPL was not distributed with this file, You can obtain one at <http://mozilla.org/MPL/2.0/>.

If it is not possible or desirable to put the notice in a particular file, then You may include the notice in a location (such as a LICENSE file in a relevant directory) where a recipient would be likely to look for such a notice.

You may add additional accurate notices of copyright ownership.

##### Exhibit B - "Incompatible With Secondary Licenses" Notice

-----

This Source Code Form is "Incompatible With Secondary Licenses", as defined by the Mozilla Public License, v. 2.0.

This Source Code Form is subject to the terms of the Mozilla Public License, v. 2.0. If a copy of the MPL was not distributed with this file, You can obtain one at <http://mozilla.org/MPL/2.0/>.

Copyright 2008, Google Inc.

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the



distribution.

\* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright 2005 Sun Microsystems, Inc. All rights reserved.

Use is subject to license terms.

This Source Code Form is subject to the terms of the Mozilla Public License, v. 2.0. If a copy of the MPL was not distributed with this file, You can obtain one at <http://mozilla.org/MPL/2.0/>.

Copyright (c) 2006, CRYPTOGRAMS by <appro@openssl.org>

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

\* Redistributions of source code must retain copyright notices, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

\* Neither the name of the CRYPTOGRAMS nor the names of its copyright holder and contributors may be used to endorse or promote products derived from this software without specific prior written permission.

ALTERNATIVELY, provided that this notice is retained in full, this product may be distributed under the terms of the GNU General Public License (GPL), in which case the provisions of the GPL apply INSTEAD OF those given above.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDER AND CONTRIBUTORS

"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Within this directory, each of the file listed below is licensed under the terms given in the file LICENSE-MPL, also in this directory.

basecvt.pod

gcd.pod

invmod.pod

isprime.pod

lap.pod

mpi-test.pod

prime.txt

prng.pod

# This file contains a list of people who've made non-trivial  
# contribution to the Google C++ Testing Framework project. People  
# who commit code to the project are encouraged to add their names  
# here. Please keep the list sorted by first names.

Ajay Joshi <jaj@google.com>

Balzs Dn <balazs.dan@gmail.com>

Benoit Sigoure <tsuna@google.com>

Bharat Mediratta <bharat@menalto.com>

Bogdan Pilocla <boo@google.com>

Chandler Carruth <chandlerc@google.com>

Chris Prince <cprince@google.com>

Chris Taylor <taylorc@google.com>

Dan Egnor <egnor@google.com>

Dave MacLachlan <dmaclach@gmail.com>

David Anderson <danderson@google.com>

Dean Sturtevant

Eric Roman <eroman@chromium.org>

Gene Volovich <gv@cite.com>

Hady Zalek <hady.zalek@gmail.com>

Hal Burch <gmock@hburch.com>

Jeffrey Yasskin <jyasskin@google.com>

Jim Keller <jimkeller@google.com>

Joe Walnes <joe@truemesh.com>

Jon Wray <jwray@google.com>

Ji Sigursson <joi@google.com>

Keir Mierle <mierle@gmail.com>

Keith Ray <keith.ray@gmail.com>  
Kenton Varda <kenton@google.com>  
Kostya Serebryany <kcc@google.com>  
Krystian Kuzniarek <krystian.kuzniarek@gmail.com>  
Lev Makhlis  
Manuel Klimek <klimek@google.com>  
Mario Tanev <radix@google.com>  
Mark Paskin  
Markus Heule <markus.heule@gmail.com>  
Matthew Simmons <simmonmt@acm.org>  
Mika Raento <mikie@iki.fi>  
Mike Bland <mbland@google.com>  
Mikls Fazekas <mfazekas@szemafor.com>  
Neal Norwitz <nnorwitz@gmail.com>  
Nermin Ozkiranartli <nermin@google.com>  
Owen Carlsen <ocarlsen@google.com>  
Paneendra Ba <paneendra@google.com>  
Pasi Valminen <pasi.valminen@gmail.com>  
Patrick Hanna <phanna@google.com>  
Patrick Riley <pfr@google.com>  
Paul Menage <menage@google.com>  
Peter Kaminski <piotrk@google.com>  
Piotr Kaminski <piotrk@google.com>  
Preston Jackson <preston.a.jackson@gmail.com>  
Rainer Klaffenboeck <rainer.klaffenboeck@dynatrace.com>  
Russ Cox <rsc@google.com>  
Russ Rufer <russ@pentad.com>  
Sean McAfee <eefacm@gmail.com>  
Sigurur sgeirsson <siggi@google.com>  
Sverre Sundsdal <sundsda@gmail.com>  
Takeshi Yoshino <tyoshino@google.com>  
Tracy Bialik <tracy@pentad.com>  
Vadim Berman <vadimb@google.com>  
Vlad Losev <vladl@google.com>  
Wolfgang Klier <wklier@google.com>  
Zhanyong Wan <wan@google.com>

## 1.340 futures 3.1.1

### 1.340.1 Available under license :

PYTHON SOFTWARE FOUNDATION LICENSE VERSION 2

-----

1. This LICENSE AGREEMENT is between the Python Software Foundation ("PSF"), and the Individual or Organization ("Licensee") accessing and otherwise using this software ("Python") in source or binary form and its associated documentation.

2. Subject to the terms and conditions of this License Agreement, PSF hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use Python alone or in any derivative version, provided, however, that PSF's License Agreement and PSF's notice of copyright, i.e., "Copyright (c) 2001, 2002, 2003, 2004, 2005, 2006 Python Software Foundation; All Rights Reserved" are retained in Python alone or in any derivative version prepared by Licensee.

3. In the event Licensee prepares a derivative work that is based on or incorporates Python or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of the changes made to Python.

4. PSF is making Python available to Licensee on an "AS IS" basis. PSF MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, PSF MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.

5. PSF SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.

6. This License Agreement will automatically terminate upon a material breach of its terms and conditions.

7. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between PSF and Licensee. This License Agreement does not grant permission to use PSF trademarks or trade name in a trademark sense to endorse or promote products or services of Licensee, or any third party.

8. By copying, installing or otherwise using Python, Licensee agrees to be bound by the terms and conditions of this License Agreement.

## 1.341 python-pip 9.0.3-22.el8

## 1.341.1 Available under license :

Copyright (c) 2008-2016 The pip developers (see AUTHORS.txt file)

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

## 1.342 spring-tx 5.2.19.RELEASE

### 1.342.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2002-2008 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
*/opt/cola/permits/1249631541_1640943591.85/0/spring-tx-5-2-19-release-sources-
jar/org/springframework/transaction/support/ResourceHolder.java
```

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2002-2013 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1249631541_1640943591.85/0/spring-tx-5-2-19-release-sources-
jar/org/springframework/transaction/support/SmartTransactionObject.java
No license file was found, but licenses were detected in source scan.
```

```
/*
 * Copyright 2002-2020 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1249631541_1640943591.85/0/spring-tx-5-2-19-release-sources-
jar/org/springframework/transaction/config/TxAdviceBeanDefinitionParser.java
* /opt/cola/permits/1249631541_1640943591.85/0/spring-tx-5-2-19-release-sources-
jar/org/springframework/dao/support/PersistenceExceptionTranslationInterceptor.java
* /opt/cola/permits/1249631541_1640943591.85/0/spring-tx-5-2-19-release-sources-
jar/org/springframework/transaction/reactive/AbstractReactiveTransactionManager.java
* /opt/cola/permits/1249631541_1640943591.85/0/spring-tx-5-2-19-release-sources-
jar/org/springframework/transaction/reactive/TransactionalOperator.java
```

\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/annotation/EnableTransactionManagement.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/annotation/TransactionManagementConfigurer.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/support/SimpleTransactionScope.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/annotation/ProxyTransactionManagementConfiguration.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/PlatformTransactionManager.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/interceptor/TransactionInterceptor.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/interceptor/RuleBasedTransactionAttribute.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/interceptor/TransactionAspectSupport.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/support/TransactionSynchronizationManager.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/jta/WebSphereUowTransactionManager.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/jca/work/WorkManagerTaskExecutor.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/ReactiveTransactionManager.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/interceptor/TransactionAttributeSourcePointcut.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/support/AbstractPlatformTransactionManager.java  
No license file was found, but licenses were detected in source scan.

```
/*
* Copyright 2002-2019 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
```

Found in path(s):

\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-

jar/org/springframework/transaction/reactive/TransactionSynchronization.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-  
jar/org/springframework/transaction/interceptor/TransactionProxyFactoryBean.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-  
jar/org/springframework/transaction/annotation/SpringTransactionAnnotationParser.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-  
jar/org/springframework/transaction/annotation/TransactionAnnotationParser.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-  
jar/org/springframework/transaction/config/JtaTransactionManagerFactoryBean.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-  
jar/org/springframework/transaction/annotation/Propagation.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-  
jar/org/springframework/transaction/interceptor/TransactionAttributeSource.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-  
jar/org/springframework/transaction/interceptor/MethodMapTransactionAttributeSource.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-  
jar/org/springframework/transaction/annotation/JtaTransactionAnnotationParser.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-  
jar/org/springframework/transaction/reactive/TransactionCallback.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-  
jar/org/springframework/transaction/annotation/Ejb3TransactionAnnotationParser.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-  
jar/org/springframework/transaction/reactive/TransactionContextManager.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-  
jar/org/springframework/transaction/reactive/GenericReactiveTransaction.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-  
jar/org/springframework/transaction/TransactionManager.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-  
jar/org/springframework/transaction/TransactionStatus.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-  
jar/org/springframework/transaction/ReactiveTransaction.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-  
jar/org/springframework/transaction/support/TransactionOperations.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-  
jar/org/springframework/transaction/annotation/AbstractTransactionManagementConfiguration.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-  
jar/org/springframework/transaction/interceptor/TransactionAttributeEditor.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-  
jar/org/springframework/transaction/reactive/TransactionSynchronizationUtils.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-  
jar/org/springframework/transaction/support/DefaultTransactionStatus.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-  
jar/org/springframework/transaction/reactive/TransactionContext.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-  
jar/org/springframework/transaction/interceptor/CompositeTransactionAttributeSource.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-  
jar/org/springframework/transaction/reactive/TransactionSynchronizationManager.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-



jar/org/springframework/transaction/support/AbstractTransactionStatus.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-  
jar/org/springframework/transaction/StaticTransactionDefinition.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-  
jar/org/springframework/transaction/support/WithoutTransactionOperations.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-  
jar/org/springframework/transaction/reactive/TransactionalOperatorImpl.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-  
jar/org/springframework/transaction/reactive/TransactionContextHolder.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-  
jar/org/springframework/transaction/TransactionExecution.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-  
jar/org/springframework/transaction/interceptor/TransactionAttribute.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-  
jar/org/springframework/transaction/TransactionDefinition.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-  
jar/org/springframework/transaction/event/ApplicationListenerMethodTransactionalAdapter.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-  
jar/org/springframework/transaction/annotation/AnnotationTransactionAttributeSource.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-  
jar/org/springframework/transaction/reactive/ReactiveResourceSynchronization.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2015 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-  
jar/org/springframework/transaction/interceptor/TransactionalProxy.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2014 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/config/JtaTransactionManagerBeanDefinitionParser.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/SavepointManager.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2002-2018 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/jca/work/SimpleTaskWorkManager.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/interceptor/MatchAlwaysTransactionAttributeSource.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/support/ResourceHolderSynchronization.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/jta/SimpleTransactionFactory.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/dao/IncorrectResultSizeDataAccessException.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/jca/cci/core/InteractionCallback.java

\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/jta/JtaTransactionObject.java

\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/interceptor/NameMatchTransactionAttributeSource.java

\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/annotation/TransactionManagementConfigurationSelector.java

\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/support/ResourceHolderSupport.java

\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/event/TransactionalEventListenerFactory.java

\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/jca/cci/core/RecordExtractor.java

\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/jca/cci/core/CciTemplate.java

\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/jca/cci/core/ConnectionCallback.java

\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/interceptor/RollbackRuleAttribute.java

\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/interceptor/AbstractFallbackTransactionAttributeSource.java

\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/jca/cci/connection/ConnectionHolder.java

\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/jca/cci/object/SimpleRecordOperation.java

\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/jca/endpoint/AbstractMessageEndpointFactory.java

\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/jca/cci/RecordTypeNotSupportedException.java

\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/support/ResourceTransactionDefinition.java

\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/support/TransactionCallback.java

\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/jca/endpoint/GenericMessageEndpointManager.java

\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/jca/cci/connection/SingleConnectionFactory.java

\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/config/AnnotationDrivenBeanDefinitionParser.java

\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/support/TransactionTemplate.java

\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/jca/cci/connection/TransactionAwareConnectionFactoryProxy.java

\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/dao/support/DaoSupport.java

\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/dao/support/DataAccessUtils.java

\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/jca/cci/CannotCreateRecordException.java

\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/jta/JtaTransactionManager.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/jca/context/BootstrapContextAware.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/jca/cci/CannotGetCciConnectionException.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/support/TransactionSynchronization.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/jca/support/LocalConnectionFactoryBean.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/jca/endpoint/GenericMessageEndpointFactory.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/support/SimpleTransactionStatus.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/jca/cci/connection/ConnectionFactoryUtils.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/support/DefaultTransactionDefinition.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/dao/support/ChainedPersistenceExceptionTranslator.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/InvalidTimeoutException.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/config/TransactionManagementConfigUtils.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/jca/cci/CciOperationNotSupportedException.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/jta/SpringJtaSynchronizationAdapter.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/jca/context/SpringContextResourceAdapter.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/jca/cci/core/support/CciDaoSupport.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/jta/WebLogicJtaTransactionManager.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/jca/cci/object/MappingCommAreaOperation.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/HeuristicCompletionException.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/jca/cci/connection/CciLocalTransactionManager.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/interceptor/DefaultTransactionAttribute.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/annotation/Isolation.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/jca/cci/object/MappingRecordOperation.java

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2002-2021 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
*/opt/cola/permits/1249631541_1640943591.85/0/spring-tx-5-2-19-release-sources-
jar/org/springframework/transaction/support/TransactionSynchronizationUtils.java
*/opt/cola/permits/1249631541_1640943591.85/0/spring-tx-5-2-19-release-sources-
jar/org/springframework/dao/annotation/PersistenceExceptionTranslationPostProcessor.java
*/opt/cola/permits/1249631541_1640943591.85/0/spring-tx-5-2-19-release-sources-
jar/org/springframework/transaction/annotation/Transactional.java
*/opt/cola/permits/1249631541_1640943591.85/0/spring-tx-5-2-19-release-sources-
jar/org/springframework/transaction/event/TransactionalEventListener.java
*/opt/cola/permits/1249631541_1640943591.85/0/spring-tx-5-2-19-release-sources-
jar/org/springframework/transaction/event/TransactionPhase.java
```

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2002-2017 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
*/opt/cola/permits/1249631541_1640943591.85/0/spring-tx-5-2-19-release-sources-
jar/org/springframework/transaction/interceptor/BeanFactoryTransactionAttributeSourceAdvisor.java
```

\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/dao/NonTransientDataAccessException.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/dao/UncategorizedDataAccessException.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/jca/cci/core/support/CommAreaRecord.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/dao/DataAccessResourceFailureException.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/dao/OptimisticLockingFailureException.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/jca/cci/core/CciOperations.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/support/CallbackPreferringPlatformTransactionManager.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/jca/context/BootstrapContextAwareProcessor.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/dao/ConcurrencyFailureException.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/jca/cci/object/EisOperation.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/jca/cci/connection/ConnectionSpecConnectionFactoryAdapter.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/jca/cci/connection/DelegatingConnectionFactory.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/jca/support/SimpleBootstrapContext.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/support/TransactionCallbackWithoutResult.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/dao/DataRetrievalFailureException.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/dao/NonTransientDataAccessResourceException.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/jca/support/ResourceAdapterFactoryBean.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/interceptor/TransactionAttributeSourceAdvisor.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/jca/context/ResourceAdapterApplicationContext.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/dao/DataAccessException.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/TransactionSystemException.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/dao/TransientDataAccessException.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2016 the original author or authors.

\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/jca/cci/core/RecordCreator.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/dao/support/PersistenceExceptionTranslator.java

No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2002-2012 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/dao/IncorrectUpdateSemanticsDataAccessException.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/interceptor/TransactionAttributeSourceEditor.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/jca/cci/InvalidResultSetAccessException.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/TransactionUsageException.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/dao/EmptyResultDataAccessException.java

\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/NestedTransactionNotSupportedException.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/CannotCreateTransactionException.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/config/TxNamespaceHandler.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/dao/TypeMismatchDataAccessException.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/TransactionTimedOutException.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/dao/annotation/PersistenceExceptionTranslationAdvisor.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/dao/InvalidDataAccessResourceUsageException.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/TransactionSuspensionNotSupportedException.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/UnexpectedRollbackException.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/TransactionException.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/IllegalTransactionStateException.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/jta/JtaAfterCompletionSynchronization.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/dao/DeadlockLoserDataAccessException.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/support/TransactionSynchronizationAdapter.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/dao/DataIntegrityViolationException.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/jta/ManagedTransactionAdapter.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/jta/TransactionFactory.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/dao/TransientDataAccessResourceException.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/jta/UserTransactionAdapter.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/dao/CannotAcquireLockException.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/interceptor/DelegatingTransactionAttribute.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/NoTransactionException.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/support/ResourceTransactionManager.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/dao/QueryTimeoutException.java



\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/interceptor/NoRollbackRuleAttribute.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/dao/InvalidDataAccessApiUsageException.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/dao/CannotSerializeTransactionException.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/InvalidIsolationLevelException.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/dao/CleanupFailureDataAccessException.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/dao/RecoverableDataAccessException.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/dao/DuplicateKeyException.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/jca/cci/connection/NotSupportedRecordFactory.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/jca/work/DelegatingWork.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/dao/PessimisticLockingFailureException.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/dao/PermissionDeniedDataAccessException.java  
\* /opt/cola/permits/1249631541\_1640943591.85/0/spring-tx-5-2-19-release-sources-jar/org/springframework/transaction/support/DelegatingTransactionDefinition.java

## 1.343 netty 4.1.78.Final

### 1.343.1 Available under license :

Copyright (c) 2003-2008 Yuta Mori All Rights Reserved.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY,

WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

The person or persons who have associated work with this document (the "Dedicator" or "Certifier") hereby either (a) certifies that, to the best of his knowledge, the work of authorship identified is in the public domain of the country from which the work is published, or (b) hereby dedicates whatever copyright the dedicators holds in the work of authorship identified below (the "Work") to the public domain. A certifier, moreover, dedicates any copyright interest he may have in the associated work, and for these purposes, is described as a "dedicator" below.

A certifier has taken reasonable steps to verify the copyright status of this work. Certifier recognizes that his good faith efforts may not shield him from liability if in fact the work certified is not in the public domain.

Dedicator makes this dedication for the benefit of the public at large and to the detriment of the Dedicator's heirs and successors. Dedicator intends this dedication to be an overt act of relinquishment in perpetuity of all present and future rights under copyright law, whether vested or contingent, in the Work. Dedicator understands that such relinquishment of all rights includes the relinquishment of all rights to enforce (by lawsuit or otherwise) those copyrights in the Work.

Dedicator recognizes that, once placed in the public domain, the Work may be freely reproduced, distributed, transmitted, used, modified, built upon, or otherwise exploited by anyone for any purpose, commercial or non-commercial, and in any way, including by methods that have not yet been invented or conceived.

Apache License  
Version 2.0, January 2004  
<https://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or

otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual,

worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents

of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

Apache License  
Version 2.0, January 2004  
<https://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a

cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise,



any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

The MIT License

Copyright (c) 2009 William Kinney

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and

- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or

agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Copyright 2009-2010 Ning, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at <https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

/\*

\* Copyright (c) 2004-2006, 2008, 2009, 2011 Apple Inc. All rights reserved.

\*

\* @APPLE\_LICENSE\_HEADER\_START@

\*

\* This file contains Original Code and/or Modifications of Original Code  
\* as defined in and that are subject to the Apple Public Source License  
\* Version 2.0 (the 'License'). You may not use this file except in  
\* compliance with the License. Please obtain a copy of the License at  
\* <https://www.opensource.apple.com/apsl/> and read it before using this  
\* file.

\*

\* The Original Code and all software distributed under the License are  
\* distributed on an 'AS IS' basis, WITHOUT WARRANTY OF ANY KIND, EITHER  
\* EXPRESS OR IMPLIED, AND APPLE HEREBY DISCLAIMS ALL SUCH WARRANTIES,  
\* INCLUDING WITHOUT LIMITATION, ANY WARRANTIES OF MERCHANTABILITY,  
\* FITNESS FOR A PARTICULAR PURPOSE, QUIET ENJOYMENT OR NON-INFRINGEMENT.  
\* Please see the License for the specific language governing rights and  
\* limitations under the License.

\*

\* @APPLE\_LICENSE\_HEADER\_END@

\*/

The MIT License (MIT)

Copyright (c) 2014 Cory Benfield

Permission is hereby granted, free of charge, to any person obtaining a copy  
of this software and associated documentation files (the "Software"), to deal  
in the Software without restriction, including without limitation the rights  
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell  
copies of the Software, and to permit persons to whom the Software is  
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in  
all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR  
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,  
FITNESS FOR A PARTICULAR PURPOSE AND NON-INFRINGEMENT. IN NO EVENT SHALL THE  
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER  
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,  
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN  
THE SOFTWARE.

Copyright 2011, Google Inc.

All rights reserved.

Redistribution and use in source and binary forms, with or without  
modification, are permitted provided that the following conditions are  
met:

\* Redistributions of source code must retain the above copyright  
notice, this list of conditions and the following disclaimer.

\* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

\* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2010-2011 Matthew J. Francis and Contributors of the jbzip2 Project

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

The person or persons who have associated work with this document (the "Dedicator" or "Certifier") hereby either (a) certifies that, to the best of his knowledge, the work of authorship identified is in the public domain of the country from which the work is published, or (b) hereby dedicates whatever copyright the dedicator holds in the work of authorship identified below (the "Work") to the public domain. A certifier, moreover, dedicates any copyright interest he may have in the associated work, and for these purposes, is described as a "dedicator" below.

A certifier has taken reasonable steps to verify the copyright status of this



work. Certifier recognizes that his good faith efforts may not shield him from liability if in fact the work certified is not in the public domain.

Dedicator makes this dedication for the benefit of the public at large and to the detriment of the Dedicator's heirs and successors. Dedicator intends this dedication to be an overt act of relinquishment in perpetuate of all present and future rights under copyright law, whether vested or contingent, in the Work. Dedicator understands that such relinquishment of all rights includes the relinquishment of all rights to enforce (by lawsuit or otherwise) those copyrights in the Work.

Dedicator recognizes that, once placed in the public domain, the Work may be freely reproduced, distributed, transmitted, used, modified, built upon, or otherwise exploited by anyone for any purpose, commercial or non-commercial, and in any way, including by methods that have not yet been invented or conceived.

Apache License  
Version 2.0, January 2004  
<https://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation,

and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s)

with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.  
Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

## APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

The MIT License

Copyright (c) 2012, 2014, 2015, 2016 Tatsuhiro Tsujikawa  
Copyright (c) 2012, 2014, 2015, 2016 nghttp2 contributors

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including

the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and

- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each



Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright {yyyy} {name of copyright owner}

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License.

You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

(BSD License: <https://www.opensource.org/licenses/bsd-license>)

Copyright (c) 2011, Joe Walnes, Aslak Hellesy and contributors  
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of the Webbit nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The MIT License (MIT)

Copyright (c) 2000 - 2013 The Legion of the Bouncy Castle Inc.

(<https://www.bouncycastle.org>)

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2000,2001,2002,2003,2004 ymnk, JCraft,Inc. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The names of the authors may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED ``AS IS" AND ANY EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL JCRAFT, INC. OR ANY CONTRIBUTORS TO THIS SOFTWARE BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

/\*

\* Copyright (c) 2004-2007 QOS.ch

\* All rights reserved.

\*  
\* Permission is hereby granted, free of charge, to any person obtaining  
\* a copy of this software and associated documentation files (the  
\* "Software"), to deal in the Software without restriction, including  
\* without limitation the rights to use, copy, modify, merge, publish,  
\* distribute, sublicense, and/or sell copies of the Software, and to  
\* permit persons to whom the Software is furnished to do so, subject to  
\* the following conditions:  
\*  
\* The above copyright notice and this permission notice shall be  
\* included in all copies or substantial portions of the Software.  
\*  
\* THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,  
\* EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF  
\* MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND  
\* NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE  
\* LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION  
\* OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION  
\* WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.  
\*/

The Netty Project

=====

Please visit the Netty web site for more information:

\* <https://netty.io/>

Copyright 2014 The Netty Project

The Netty Project licenses this file to you under the Apache License, version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at:

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Also, please refer to each LICENSE.<component>.txt file, which is located in the 'license' directory of the distribution file, for the license terms of the components that this product depends on.

-----  
This product contains the extensions to Java Collections Framework which has

been derived from the works by JSR-166 EG, Doug Lea, and Jason T. Greene:

\* LICENSE:

\* license/LICENSE.jsr166y.txt (Public Domain)

\* HOMEPAGE:

\* <http://gee.cs.oswego.edu/cgi-bin/viewcvs.cgi/jsr166/>

\* <http://viewvc.jboss.org/cgi-bin/viewvc.cgi/jboss/cache/experimental/jsr166/>

This product contains a modified version of Robert Harder's Public Domain Base64 Encoder and Decoder, which can be obtained at:

\* LICENSE:

\* license/LICENSE.base64.txt (Public Domain)

\* HOMEPAGE:

\* <http://iharder.sourceforge.net/current/java/base64/>

This product contains a modified portion of 'Webbit', an event based WebSocket and HTTP server, which can be obtained at:

\* LICENSE:

\* license/LICENSE.webbit.txt (BSD License)

\* HOMEPAGE:

\* <https://github.com/joewalnes/webbit>

This product contains a modified portion of 'SLF4J', a simple logging facade for Java, which can be obtained at:

\* LICENSE:

\* license/LICENSE.slf4j.txt (MIT License)

\* HOMEPAGE:

\* <https://www.slf4j.org/>

This product contains a modified portion of 'Apache Harmony', an open source Java SE, which can be obtained at:

\* NOTICE:

\* license/NOTICE.harmony.txt

\* LICENSE:

\* license/LICENSE.harmony.txt (Apache License 2.0)

\* HOMEPAGE:

\* <https://archive.apache.org/dist/harmony/>

This product contains a modified portion of 'jzip2', a Java bzip2 compression and decompression library written by Matthew J. Francis. It can be obtained at:

\* LICENSE:

\* license/LICENSE.jzip2.txt (MIT License)

\* HOMEPAGE:

\* <https://code.google.com/p/jbzip2/>

This product contains a modified portion of 'libdivsufsort', a C API library to construct the suffix array and the Burrows-Wheeler transformed string for any input string of a constant-size alphabet written by Yuta Mori. It can be obtained at:

\* LICENSE:

\* [license/LICENSE.libdivsufsort.txt](#) (MIT License)

\* HOMEPAGE:

\* <https://github.com/y-256/libdivsufsort>

This product contains a modified portion of Nitsan Wakart's 'JCTools', Java Concurrency Tools for the JVM, which can be obtained at:

\* LICENSE:

\* [license/LICENSE.jctools.txt](#) (ASL2 License)

\* HOMEPAGE:

\* <https://github.com/JCTools/JCTools>

This product optionally depends on 'JZlib', a re-implementation of zlib in pure Java, which can be obtained at:

\* LICENSE:

\* [license/LICENSE.jzlib.txt](#) (BSD style License)

\* HOMEPAGE:

\* <http://www.jcraft.com/jzlib/>

This product optionally depends on 'Compress-LZF', a Java library for encoding and decoding data in LZF format, written by Tatu Saloranta. It can be obtained at:

\* LICENSE:

\* [license/LICENSE.compress-lzf.txt](#) (Apache License 2.0)

\* HOMEPAGE:

\* <https://github.com/ning/compress>

This product optionally depends on 'lz4', a LZ4 Java compression and decompression library written by Adrien Grand. It can be obtained at:

\* LICENSE:

\* [license/LICENSE.lz4.txt](#) (Apache License 2.0)

\* HOMEPAGE:

\* <https://github.com/jpountz/lz4-java>

This product optionally depends on 'lzma-java', a LZMA Java compression and decompression library, which can be obtained at:

\* LICENSE:

\* [license/LICENSE.lzma-java.txt](#) (Apache License 2.0)

\* HOMEPAGE:

\* <https://github.com/jponge/lzma-java>

This product optionally depends on 'zstd-jni', a zstd-jni Java compression and decompression library, which can be obtained at:

\* LICENSE:

\* [license/LICENSE.zstd-jni.txt](#) (Apache License 2.0)

\* HOMEPAGE:

\* <https://github.com/luben/zstd-jni>

This product contains a modified portion of 'jfastlz', a Java port of FastLZ compression and decompression library written by William Kinney. It can be obtained at:

\* LICENSE:

\* [license/LICENSE.jfastlz.txt](#) (MIT License)

\* HOMEPAGE:

\* <https://code.google.com/p/jfastlz/>

This product contains a modified portion of and optionally depends on 'Protocol Buffers', Google's data interchange format, which can be obtained at:

\* LICENSE:

\* [license/LICENSE.protobuf.txt](#) (New BSD License)

\* HOMEPAGE:

\* <https://github.com/google/protobuf>

This product optionally depends on 'Bouncy Castle Crypto APIs' to generate a temporary self-signed X.509 certificate when the JVM does not provide the equivalent functionality. It can be obtained at:

\* LICENSE:

\* [license/LICENSE.bouncycastle.txt](#) (MIT License)

\* HOMEPAGE:

\* <https://www.bouncycastle.org/>

This product optionally depends on 'Snappy', a compression library produced by Google Inc, which can be obtained at:

\* LICENSE:

\* [license/LICENSE.snappy.txt](#) (New BSD License)

\* HOMEPAGE:

\* <https://github.com/google/snappy>

This product optionally depends on 'JBoss Marshalling', an alternative Java serialization API, which can be obtained at:

\* LICENSE:

- \* license/LICENSE.jboss-marshalling.txt (Apache License 2.0)

- \* HOMEPAGE:

- \* <https://github.com/jboss-remoting/jboss-marshalling>

This product optionally depends on 'Caliper', Google's micro-benchmarking framework, which can be obtained at:

- \* LICENSE:

- \* license/LICENSE.caliper.txt (Apache License 2.0)

- \* HOMEPAGE:

- \* <https://github.com/google/caliper>

This product optionally depends on 'Apache Commons Logging', a logging framework, which can be obtained at:

- \* LICENSE:

- \* license/LICENSE.commons-logging.txt (Apache License 2.0)

- \* HOMEPAGE:

- \* <https://commons.apache.org/logging/>

This product optionally depends on 'Apache Log4J', a logging framework, which can be obtained at:

- \* LICENSE:

- \* license/LICENSE.log4j.txt (Apache License 2.0)

- \* HOMEPAGE:

- \* <https://logging.apache.org/log4j/>

This product optionally depends on 'Aalto XML', an ultra-high performance non-blocking XML processor, which can be obtained at:

- \* LICENSE:

- \* license/LICENSE.aalto-xml.txt (Apache License 2.0)

- \* HOMEPAGE:

- \* <https://wiki.fasterxml.com/AaltoHome>

This product contains a modified version of 'HPACK', a Java implementation of the HTTP/2 HPACK algorithm written by Twitter. It can be obtained at:

- \* LICENSE:

- \* license/LICENSE.hpack.txt (Apache License 2.0)

- \* HOMEPAGE:

- \* <https://github.com/twitter/hpack>

This product contains a modified version of 'HPACK', a Java implementation of the HTTP/2 HPACK algorithm written by Cory Benfield. It can be obtained at:

- \* LICENSE:



- \* license/LICENSE.hyper-hpack.txt (MIT License)

- \* HOMEPAGE:

- \* <https://github.com/python-hyper/hpack/>

This product contains a modified version of 'HPACK', a Java implementation of the HTTP/2 HPACK algorithm written by Tatsuhiro Tsujikawa. It can be obtained at:

- \* LICENSE:

- \* license/LICENSE.nghttp2-hpack.txt (MIT License)

- \* HOMEPAGE:

- \* <https://github.com/nghttp2/nghttp2/>

This product contains a modified portion of 'Apache Commons Lang', a Java library provides utilities for the java.lang API, which can be obtained at:

- \* LICENSE:

- \* license/LICENSE.commons-lang.txt (Apache License 2.0)

- \* HOMEPAGE:

- \* <https://commons.apache.org/proper/commons-lang/>

This product contains the Maven wrapper scripts from 'Maven Wrapper', that provides an easy way to ensure a user has everything necessary to run the Maven build.

- \* LICENSE:

- \* license/LICENSE.mvn-wrapper.txt (Apache License 2.0)

- \* HOMEPAGE:

- \* <https://github.com/takari/maven-wrapper>

This product contains the dnsinfo.h header file, that provides a way to retrieve the system DNS configuration on MacOS.

This private header is also used by Apple's open source mDNSResponder (<https://opensource.apple.com/tarballs/mDNSResponder/>).

- \* LICENSE:

- \* license/LICENSE.dnsinfo.txt (Apple Public Source License 2.0)

- \* HOMEPAGE:

- \* <https://www.opensource.apple.com/source/configd/configd-453.19/dnsinfo/dnsinfo.h>

This product optionally depends on 'Brotli4j', Brotli compression and decompression for Java., which can be obtained at:

- \* LICENSE:

- \* license/LICENSE.brotli4j.txt (Apache License 2.0)

- \* HOMEPAGE:

- \* <https://github.com/hyperxpro/Brotli4j>

Protocol Buffers - Google's data interchange format

Copyright 2013 Google Inc. All rights reserved.

<https://developers.google.com/protocol-buffers/>

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Code generated by the Protocol Buffer compiler is owned by the owner of the input file used when generating it. This code is not standalone and requires a support library to be linked with it. This support library is itself covered by the above license.

This copy of Aalto XML processor is licensed under the Apache (Software) License, version 2.0 ("the License"). See the License for details about distribution rights, and the specific rights regarding derivative works.

You may obtain a copy of the License at:

<https://www.apache.org/licenses/>

A copy is also included with both the the downloadable source code package and jar that contains class bytecodes, as file "ASL 2.0". In both cases, that file should be located next to this file: in source distribution the location should be "release-notes/asl"; and in jar "META-INF/" Apache Harmony

Copyright 2006, 2010 The Apache Software Foundation.

This product includes software developed at  
The Apache Software Foundation (<https://www.apache.org/>).

# 1.344 cracklib 2.9.6 15.el8

## 1.344.1 Available under license :

### GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.

51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts  
as the successor of the GNU Library Public License, version 2, hence  
the version number 2.1.]

#### Preamble

The licenses for most software are designed to take away your  
freedom to share and change it. By contrast, the GNU General Public  
Licenses are intended to guarantee your freedom to share and change  
free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some  
specially designated software packages--typically libraries--of the  
Free Software Foundation and other authors who decide to use it. You  
can use it too, but we suggest you first think carefully about whether  
this license or the ordinary General Public License is the better  
strategy to use in any particular case, based on the explanations  
below.

When we speak of free software, we are referring to freedom of use,  
not price. Our General Public Licenses are designed to make sure that  
you have the freedom to distribute copies of free software (and charge  
for this service if you wish); that you receive source code or can get  
it if you want it; that you can change the software and use pieces of  
it in new free programs; and that you are informed that you can do  
these things.

To protect your rights, we need to make restrictions that forbid  
distributors to deny you these rights or to ask you to surrender these  
rights. These restrictions translate to certain responsibilities for  
you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

^L

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain

special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

^L

## GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License").

Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is

included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of

its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

^L

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form

under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

^L

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.



You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies

the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

^L

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

^L

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and

"any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

^L

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

^L

#### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library.  
It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!  
This package was debianized by Jean Pierre LeJacq  
<jplejacq@quoininc.com> on Wed, 25 Feb 1998. Martin Pitt  
<martin@piware.de> was the package's maintainer up to version 2.7.19-1. The current maintainer is Jan Dittberner  
<jandd@debian.org>.

It was downloaded from <http://sourceforge.net/projects/cracklib>

Copyright (c) 1993 Alec Muffett <alecm@crypto.dircon.co.uk>,  
Copyright (c) 2005-2009 Nathan Neulinger <nneul@umr.edu>,  
Copyright (c) 2008-2009 Jan Dittberner <jan@dittberner.info>

Modifications: Added cronjob, configuration file, and man pages.

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

A copy of the GNU Lesser General Public License 2.1 is available as /usr/share/common-licenses/LGPL-2.1 in the Debian GNU/Linux distribution or on the World Wide Web at <http://www.gnu.org/licenses/old-licenses/lgpl-2.1.html>. You can also obtain it by writing to the Free Software Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301, USA.

Copyright information:

CrackLib was originally licensed with a variant of the Artistic license. In the interests of wider acceptance and more modern licensing, it was switched with the original author's blessing to GPL v2.

This approval was carried out in email discussions in 2005, and has been reconfirmed as of 2007-10-01 with the following email from Alec Muffett. Cracklib's license was changed from the GPL to the LGPL after consensus of all previous developers in October 2008, effective with release 2.8.15 released on 2009-11-19. See the email discussion below for both license changes.

-----

-----

EFFECTIVE OCT 2008, LICENSE IS BEING CHANGED TO LGPL-2.1 (though not reflected in released code until Nov 2009 - slow release cycle...)

-----

Discussion thread from mailing list archive, with approval from everyone actively

involved or holding original licensing rights included.

[Cracklib-devel] cracklib license

From: Mike Frysinger <vapier@ge...> - 2007-10-02 01:16

Attachments: Message as HTML

looks like 2.8.11 is out and marked as "GPL-2" ... releasing libraries unde=  
r=20  
GPL-2 is not desirable at all ... this is why the LGPL-2.1 exists  
=2Dmike

Re: [Cracklib-devel] cracklib license

From: Neulinger, Nathan <nneul@um...> - 2007-10-02 01:18

I understand that, and you're welcome to bring it up with Alec directly  
and see if he wants to relicense his code as LGPL... but at this point,  
it was enough to just get it consistent and documented as to what it was  
released under. This wasn't actually a license change, just a  
clarification of the licensing that was already in place.=20

-- Nathan  
=20

-----  
Nathan Neulinger EMail: nneul@um...  
University of Missouri - Rolla Phone: (573) 341-6679  
UMR Information Technology Fax: (573) 341-4216

> -----Original Message-----

> From: cracklib-devel-bounces@li...  
> [mailto:cracklib-devel-bounces@li...] On Behalf Of  
> Mike Frysinger  
> Sent: Monday, October 01, 2007 8:15 PM  
> To: cracklib-devel@li...  
> Subject: [Cracklib-devel] cracklib license  
>=20  
> looks like 2.8.11 is out and marked as "GPL-2" ... releasing  
> libraries under  
> GPL-2 is not desirable at all ... this is why the LGPL-2.1 exists  
> -mike

Re: [Cracklib-devel] cracklib license

From: Mike Frysinger <vapier@ge...> - 2007-10-02 01:33

Attachments: Message as HTML

On Monday 01 October 2007, Neulinger, Nathan wrote:

> I understand that, and you're welcome to bring it up with Alec directly  
> and see if he wants to relicense his code as LGPL... but at this point,  
> it was enough to just get it consistent and documented as to what it was  
> released under. This wasn't actually a license change, just a  
> clarification of the licensing that was already in place.

the original license (before moving to sourceforge -- aka, 2.7) was not=20  
GPL-2 ... it was a modified artistic license ... i didnt notice the license=  
=20  
change until it was mentioned in the latest notes.

unlike the old license, GPL-2 prevents people from using cracklib unless th=  
eir=20  
applications are also GPL-2 which imo is just wrong. it isnt the place of =  
a=20  
library to dictact to application writes what license they should be using.=  
=20  
thus LGPL-2.1 enters to fill this void.  
=20Dmike

Re: [Cracklib-devel] cracklib license

From: Neulinger, Nathan <nneul@um...> - 2007-10-02 01:46

Seems like the ideal thing here would be for you and the other distro  
maintainers to get together with Alec in a conversation and come to a  
decision as to what licensing scheme y'all want. I haven't really done  
much other than cleaning up the packaging and patches and a small bit of  
additional code, so whatever licensing y'all come up with is fine by me.

-- Nathan  
=20

-----  
Nathan Neulinger EMail: nneul@um...  
University of Missouri - Rolla Phone: (573) 341-6679  
UMR Information Technology Fax: (573) 341-4216

> -----Original Message-----  
> From: cracklib-devel-bounces@li...  
> [mailto:cracklib-devel-bounces@li...] On Behalf Of  
> Mike Frysinger  
> Sent: Monday, October 01, 2007 8:33 PM  
> To: Neulinger, Nathan  
> Cc: cracklib-devel@li...; Alec Muffett  
> Subject: Re: [Cracklib-devel] cracklib license  
>=20  
> On Monday 01 October 2007, Neulinger, Nathan wrote:  
>> I understand that, and you're welcome to bring it up with Alec  
> directly



> > and see if he wants to relicense his code as LGPL... but at this  
> point,  
> > it was enough to just get it consistent and documented as to what  
> it was  
> > released under. This wasn't actually a license change, just a  
> > clarification of the licensing that was already in place.  
>=20  
> the original license (before moving to sourceforge -- aka, 2.7) was  
> not  
> GPL-2 ... it was a modified artistic license ... i didnt notice the  
> license  
> change until it was mentioned in the latest notes.  
>=20  
> unlike the old license, GPL-2 prevents people from using cracklib  
> unless their  
> applications are also GPL-2 which imo is just wrong. it isnt the  
> place of a  
> library to dictact to application writes what license they should  
> be using.  
> thus LGPL-2.1 enters to fill this void.  
> -mike

Re: [Cracklib-devel] cracklib license

From: Alec Muffett <alecm@cr...> - 2007-10-02 08:57

> Seems like the ideal thing here would be for you and the other distro  
> maintainers to get together with Alec in a conversation and come to a  
> decision as to what licensing scheme y'all want. I haven't really done  
> much other than cleaning up the packaging and patches and a small  
> bit of  
> additional code, so whatever licensing y'all come up with is fine  
> by me.

I am sympathetic. Guys, what do you reckon?

What I am hearing so far is that LGPL makes sense, since it can be  
linked with any code, not just GPL...

-a

Re: [Cracklib-devel] cracklib license

From: Devin Reade <gdr@gn...> - 2007-10-02 15:04

I would like to see it under LGPL as well. I think it is in everyone's  
best interests to have as secure systems as possible, and I think tainting  
it via GPL will just make it less likely that the library gets used, and  
will not usually cause companies/developers to GPL the dependent code  
(where it is not already GPL).

I like GPL, I use it when I can, but I don't think that it's the correct license in this situation.

Devin

--

If it's sinful, it's more fun.

Re: [Cracklib-devel] cracklib license

From: Nalin Dahyabhai <nalin@re...> - 2008-01-28 16:32

On Tue, Oct 02, 2007 at 09:57:31AM +0100, Alec Muffett wrote:

>> Seems like the ideal thing here would be for you and the other distro  
>> maintainers to get together with Alec in a conversation and come to a  
>> decision as to what licensing scheme y'all want. I haven't really done  
>> much other than cleaning up the packaging and patches and a small  
>> bit of  
>> additional code, so whatever licensing y'all come up with is fine  
>> by me.  
>  
> I am sympathetic. Guys, what do you reckon?  
>  
> What I am hearing so far is that LGPL makes sense, since it can be  
> linked with any code, not just GPL...

My apologies for not chiming in in anything resembling a reasonable timeframe.

I'd also suggest the LGPL, for the reason you noted above. Alternately, GPLv2 with the option of using the library under a later version of the GPL would permit applications which were released under version 3 of the GPL to use the library, too, which would be sufficient for the packages which are included in Fedora. FWIW, I'd personally lean toward LGPL.

In any case, I thank you both for working on sorting this out.

Cheers,

Nalin

Re: [Cracklib-devel] cracklib license

From: Mike Frysinger <vapier@ge...> - 2008-10-05 21:27

Attachments: Message as HTML

On Monday 28 January 2008, Nalin Dahyabhai wrote:

> On Tue, Oct 02, 2007 at 09:57:31AM +0100, Alec Muffett wrote:  
>>> Seems like the ideal thing here would be for you and the other distro

>>> maintainers to get together with Alec in a conversation and come to a  
>>> decision as to what licensing scheme y'all want. I haven't really done  
>>> much other than cleaning up the packaging and patches and a small  
>>> bit of  
>>> additional code, so whatever licensing y'all come up with is fine  
>>> by me.  
>>  
>> I am sympathetic. Guys, what do you reckon?  
>>  
>> What I am hearing so far is that LGPL makes sense, since it can be  
>> linked with any code, not just GPL...  
>  
> My apologies for not chiming in in anything resembling a reasonable  
> timeframe.  
>  
> I'd also suggest the LGPL, for the reason you noted above. Alternately,  
> GPLv2 with the option of using the library under a later version of the  
> GPL would permit applications which were released under version 3 of the  
> GPL to use the library, too, which would be sufficient for the packages  
> which are included in Fedora. FWIW, I'd personally lean toward LGPL.  
>  
> In any case, I thank you both for working on sorting this out.

looks like everyone is OK with LGPL-2.1 (GNU Lesser license), so can we make  
the change now ?

-mike

Re: [Cracklib-devel] cracklib license

From: Alec Muffett <alecm@cr...> - 2008-10-05 23:18

>> In any case, I thank you both for working on sorting this out.

>

> looks like everyone is OK with LGPL-2.1 (GNU Lesser license), so can we make  
> the change now ?

yes. go for it. thanks++

-a

Re: [Cracklib-devel] cracklib license

From: Mike Frysinger <vapier@ge...> - 2008-10-25 22:34

Attachments: Message as HTML

On Sunday 05 October 2008, Alec Muffett wrote:

>>> In any case, I thank you both for working on sorting this out.

>>

>> looks like everyone is OK with LGPL-2.1 (GNU Lesser license), so can we

>> make the change now ?

>

> yes. go for it. thanks++

Nathan Neulinger is the only one who can actually make said change ...

-mike

-----  
BELOW IS ORIGINAL LICENSING DISCUSSION RE CHANGING TO GPL from Artistic.  
-----

CrackLib was originally licensed with a variant of the Artistic license. In the interests of wider acceptance and more modern licensing, it was switched with the original author's blessing to GPL v2.

This approval was carried out in email discussions in 2005, and has been reconfirmed as of 2007-10-01 with the following email from Alec Muffett.

The below email references nneul@umr.edu address, as that is the address that was used at the time. For any future emails regarding this, please use nneul@neulinger.org.

-----

From alecm@crypticide.com Mon Oct 1 12:26:03 2007  
Received: from umr-exproto2.cc.umr.edu ([131.151.0.192]) by UMR-CMAIL1.umr.edu with Microsoft SMTPSVC(6.0.3790.3959);  
Mon, 1 Oct 2007 12:26:03 -0500  
Received: from scansrv2.srv.mst.edu ([131.151.1.114]) by umr-exproto2.cc.umr.edu with Microsoft SMTPSVC(6.0.3790.3959);  
Mon, 1 Oct 2007 12:26:02 -0500  
Received: (qmail 8022 invoked from network); 1 Oct 2007 16:59:55 -0000  
Received: from smtp1.srv.mst.edu (131.151.1.43)  
by scanin-ipvs.cc.umr.edu with SMTP; 1 Oct 2007 16:59:55 -0000  
Received: from spunkymail-mx8.g.dreamhost.com (mx1.spunky.mail.dreamhost.com [208.97.132.47])  
by smtp1.srv.mst.edu (8.13.1/8.13.1) with ESMTP id 191Gxtpr020623  
for <nneul@umr.edu>; Mon, 1 Oct 2007 11:59:55 -0500  
Received: from rutherford.zen.co.uk (rutherford.zen.co.uk [212.23.3.142])  
by spunkymail-mx8.g.dreamhost.com (Postfix) with ESMTP id 2C7734D311  
for <nneul@neulinger.org>; Mon, 1 Oct 2007 09:59:50 -0700 (PDT)  
Received: from [82.68.43.14] (helo=[192.168.1.3])  
by rutherford.zen.co.uk with esmtp (Exim 4.50)  
id 1IcOcX-0004Qt-6L  
for nneul@neulinger.org; Mon, 01 Oct 2007 16:59:49 +0000

Mime-Version: 1.0 (Apple Message framework v752.2)  
In-Reply-To: <1b1b3fd80710010908k11dac0afp1f2dd471059ff9a4@mail.gmail.com>  
References: <1190922867.3457.147.camel@localhost.localdomain>  
<EC90713277D2BE41B7110CCD74E235CEF44F38@UMR-CMAIL1.umr.edu>  
<1b1b3fd80710010908k11dac0afp1f2dd471059ff9a4@mail.gmail.com>  
Content-Type: text/plain; charset=US-ASCII; delsp=yes; format=flowed  
Message-Id: <117A1264-F6DC-4E25-B0DD-56FBFE6E9F@crypticide.com>  
Content-Transfer-Encoding: 7bit  
From: Alec Muffett <alecm@crypticide.com>  
Subject: Re: cracklib license  
Date: Mon, 1 Oct 2007 17:59:46 +0100  
To: Nathan Neulinger <nneul@neulinger.org>  
X-Mailer: Apple Mail (2.752.2)  
X-Originating-Rutherford-IP: [82.68.43.14]  
Return-Path: alecm@crypticide.com  
X-OriginalArrivalTime: 01 Oct 2007 17:26:03.0008 (UTC) FILETIME=[2420C000:01C80450]  
Status: RO  
Content-Length: 585  
Lines: 21

>  
> ----- Forwarded message -----  
> From: Neulinger, Nathan <nneul@umr.edu>  
> Date: Sep 27, 2007 2:58 PM  
> Subject: RE: cracklib license  
> To: alecm@crypto.dircon.co.uk  
>  
> Any chance you could write me a self-contained email stating clearly  
> that the license is being changed to GPL, so I could include that  
> email  
> in the repository and clean up the repository/tarballs? I have all the  
> original discussion, but something succinct and self contained  
> would be  
> ideal.

The license for my code in the Cracklib distribution is henceforth GPL.

Happy now? :-)

-a

-----  
EFFECTIVE OCT 2008, LICENSE IS BEING CHANGED TO LGPL-2.1 (though not reflected  
in released code until Nov 2009 - slow release cycle...)  
-----

Discussion thread from mailing list archive, with approval from everyone actively  
involved or holding original licensing rights included.

[Cracklib-devel] cracklib license

From: Mike Frysinger <vapier@ge...> - 2007-10-02 01:16

Attachments: Message as HTML

looks like 2.8.11 is out and marked as "GPL-2" ... releasing libraries unde=  
r=20

GPL-2 is not desirable at all ... this is why the LGPL-2.1 exists  
=2Dmike

Re: [Cracklib-devel] cracklib license

From: Neulinger, Nathan <nneul@um...> - 2007-10-02 01:18

I understand that, and you're welcome to bring it up with Alec directly  
and see if he wants to relicense his code as LGPL... but at this point,  
it was enough to just get it consistent and documented as to what it was  
released under. This wasn't actually a license change, just a  
clarification of the licensing that was already in place.=20

-- Nathan

=20

-----  
Nathan Neulinger EMail: nneul@um...

University of Missouri - Rolla Phone: (573) 341-6679

UMR Information Technology Fax: (573) 341-4216

> -----Original Message-----

> From: cracklib-devel-bounces@li...

> [mailto:cracklib-devel-bounces@li...] On Behalf Of

> Mike Frysinger

> Sent: Monday, October 01, 2007 8:15 PM

> To: cracklib-devel@li...

> Subject: [Cracklib-devel] cracklib license

>=20

> looks like 2.8.11 is out and marked as "GPL-2" ... releasing

> libraries under

> GPL-2 is not desirable at all ... this is why the LGPL-2.1 exists

> -mike

Re: [Cracklib-devel] cracklib license

From: Mike Frysinger <vapier@ge...> - 2007-10-02 01:33

Attachments: Message as HTML

On Monday 01 October 2007, Neulinger, Nathan wrote:

> I understand that, and you're welcome to bring it up with Alec directly

> and see if he wants to relicense his code as LGPL... but at this point,

> it was enough to just get it consistent and documented as to what it was  
> released under. This wasn't actually a license change, just a  
> clarification of the licensing that was already in place.

the original license (before moving to sourceforge -- aka, 2.7) was not=20  
GPL-2 ... it was a modified artistic license ... i didnt notice the license=  
=20  
change until it was mentioned in the latest notes.

unlike the old license, GPL-2 prevents people from using cracklib unless th=  
eir=20  
applications are also GPL-2 which imo is just wrong. it isnt the place of =  
a=20  
library to dictact to application writes what license they should be using.=  
=20  
thus LGPL-2.1 enters to fill this void.  
=20Dmike

Re: [Cracklib-devel] cracklib license

From: Neulinger, Nathan <nneul@um...> - 2007-10-02 01:46

Seems like the ideal thing here would be for you and the other distro  
maintainers to get together with Alec in a conversation and come to a  
decision as to what licensing scheme y'all want. I haven't really done  
much other than cleaning up the packaging and patches and a small bit of  
additional code, so whatever licensing y'all come up with is fine by me.

-- Nathan

=20

-----  
Nathan Neulinger EMail: nneul@um...

University of Missouri - Rolla Phone: (573) 341-6679

UMR Information Technology Fax: (573) 341-4216

> -----Original Message-----

> From: cracklib-devel-bounces@li...

> [mailto:cracklib-devel-bounces@li...] On Behalf Of

> Mike Frysinger

> Sent: Monday, October 01, 2007 8:33 PM

> To: Neulinger, Nathan

> Cc: cracklib-devel@li...; Alec Muffett

> Subject: Re: [Cracklib-devel] cracklib license

>=20

> On Monday 01 October 2007, Neulinger, Nathan wrote:

>> I understand that, and you're welcome to bring it up with Alec

> directly

>> and see if he wants to relicense his code as LGPL... but at this

> point,

> > it was enough to just get it consistent and documented as to what  
> it was  
> > released under. This wasn't actually a license change, just a  
> > clarification of the licensing that was already in place.  
>=20  
> the original license (before moving to sourceforge -- aka, 2.7) was  
> not  
> GPL-2 ... it was a modified artistic license ... i didnt notice the  
> license  
> change until it was mentioned in the latest notes.  
>=20  
> unlike the old license, GPL-2 prevents people from using cracklib  
> unless their  
> applications are also GPL-2 which imo is just wrong. it isnt the  
> place of a  
> library to dictact to application writes what license they should  
> be using.  
> thus LGPL-2.1 enters to fill this void.  
> -mike

Re: [Cracklib-devel] cracklib license

From: Alec Muffett <alecm@cr...> - 2007-10-02 08:57

> Seems like the ideal thing here would be for you and the other distro  
> maintainers to get together with Alec in a conversation and come to a  
> decision as to what licensing scheme y'all want. I haven't really done  
> much other than cleaning up the packaging and patches and a small  
> bit of  
> additional code, so whatever licensing y'all come up with is fine  
> by me.

I am sympathetic. Guys, what do you reckon?

What I am hearing so far is that LGPL makes sense, since it can be  
linked with any code, not just GPL...

-a

Re: [Cracklib-devel] cracklib license

From: Devin Reade <gdr@gn...> - 2007-10-02 15:04

I would like to see it under LGPL as well. I think it is in everyone's  
best interests to have as secure systems as possible, and I think tainting  
it via GPL will just make it less likely that the library gets used, and  
will not usually cause companies/developers to GPL the dependent code  
(where it is not already GPL).

I like GPL, I use it when I can, but I don't think that it's the correct



license in this situation.

Devin

--

If it's sinful, it's more fun.

Re: [Cracklib-devel] cracklib license

From: Nalin Dahyabhai <nalin@re...> - 2008-01-28 16:32

On Tue, Oct 02, 2007 at 09:57:31AM +0100, Alec Muffett wrote:

>> Seems like the ideal thing here would be for you and the other distro  
>> maintainers to get together with Alec in a conversation and come to a  
>> decision as to what licensing scheme y'all want. I haven't really done  
>> much other than cleaning up the packaging and patches and a small  
>> bit of  
>> additional code, so whatever licensing y'all come up with is fine  
>> by me.  
>  
> I am sympathetic. Guys, what do you reckon?  
>  
> What I am hearing so far is that LGPL makes sense, since it can be  
> linked with any code, not just GPL...

My apologies for not chiming in in anything resembling a reasonable  
timeframe.

I'd also suggest the LGPL, for the reason you noted above. Alternately,  
GPLv2 with the option of using the library under a later version of the  
GPL would permit applications which were released under version 3 of the  
GPL to use the library, too, which would be sufficient for the packages  
which are included in Fedora. FWIW, I'd personally lean toward LGPL.

In any case, I thank you both for working on sorting this out.

Cheers,

Nalin

Re: [Cracklib-devel] cracklib license

From: Mike Frysinger <vapier@ge...> - 2008-10-05 21:27

Attachments: Message as HTML

On Monday 28 January 2008, Nalin Dahyabhai wrote:

> On Tue, Oct 02, 2007 at 09:57:31AM +0100, Alec Muffett wrote:  
>>> Seems like the ideal thing here would be for you and the other distro  
>>> maintainers to get together with Alec in a conversation and come to a  
>>> decision as to what licensing scheme y'all want. I haven't really done

>>> much other than cleaning up the packaging and patches and a small  
>>> bit of  
>>> additional code, so whatever licensing y'all come up with is fine  
>>> by me.  
>>  
>> I am sympathetic. Guys, what do you reckon?  
>>  
>> What I am hearing so far is that LGPL makes sense, since it can be  
>> linked with any code, not just GPL...  
>  
> My apologies for not chiming in in anything resembling a reasonable  
> timeframe.  
>  
> I'd also suggest the LGPL, for the reason you noted above. Alternately,  
> GPLv2 with the option of using the library under a later version of the  
> GPL would permit applications which were released under version 3 of the  
> GPL to use the library, too, which would be sufficient for the packages  
> which are included in Fedora. FWIW, I'd personally lean toward LGPL.  
>  
> In any case, I thank you both for working on sorting this out.

looks like everyone is OK with LGPL-2.1 (GNU Lesser license), so can we make  
the change now ?

-mike

Re: [Cracklib-devel] cracklib license

From: Alec Muffett <alecm@cr...> - 2008-10-05 23:18

>> In any case, I thank you both for working on sorting this out.

>

> looks like everyone is OK with LGPL-2.1 (GNU Lesser license), so can we make  
> the change now ?

yes. go for it. thanks++

-a

Re: [Cracklib-devel] cracklib license

From: Mike Frysinger <vapier@ge...> - 2008-10-25 22:34

Attachments: Message as HTML

On Sunday 05 October 2008, Alec Muffett wrote:

>>> In any case, I thank you both for working on sorting this out.

>>

>> looks like everyone is OK with LGPL-2.1 (GNU Lesser license), so can we  
>> make the change now ?

>

> yes. go for it. thanks++

Nathan Neulinger is the only one who can actually make said change ...  
-mike

-----

BELOW IS ORIGINAL LICENSING DISCUSSION RE CHANGING TO GPL from Artistic.

-----

CrackLib was originally licensed with a variant of the Artistic license. In the interests of wider acceptance and more modern licensing, it was switched with the original author's blessing to GPL v2.

This approval was carried out in email discussions in 2005, and has been reconfirmed as of 2007-10-01 with the following email from Alec Muffett.

The below email references nneul@umr.edu address, as that is the address that was used at the time. For any future emails regarding this, please use nneul@neulinger.org.

-----

From alecm@crypticide.com Mon Oct 1 12:26:03 2007  
Received: from umr-exproto2.cc.umr.edu ([131.151.0.192]) by UMR-CMAIL1.umr.edu with Microsoft SMTPSVC(6.0.3790.3959);  
Mon, 1 Oct 2007 12:26:03 -0500  
Received: from scansrv2.srv.mst.edu ([131.151.1.114]) by umr-exproto2.cc.umr.edu with Microsoft SMTPSVC(6.0.3790.3959);  
Mon, 1 Oct 2007 12:26:02 -0500  
Received: (qmail 8022 invoked from network); 1 Oct 2007 16:59:55 -0000  
Received: from smtp1.srv.mst.edu (131.151.1.43)  
by scanin-ipvs.cc.umr.edu with SMTP; 1 Oct 2007 16:59:55 -0000  
Received: from spunkymail-mx8.g.dreamhost.com (mx1.spunky.mail.dreamhost.com [208.97.132.47])  
by smtp1.srv.mst.edu (8.13.1/8.13.1) with ESMTP id 191Gxtpr020623  
for <nneul@umr.edu>; Mon, 1 Oct 2007 11:59:55 -0500  
Received: from rutherford.zen.co.uk (rutherford.zen.co.uk [212.23.3.142])  
by spunkymail-mx8.g.dreamhost.com (Postfix) with ESMTP id 2C7734D311  
for <nneul@neulinger.org>; Mon, 1 Oct 2007 09:59:50 -0700 (PDT)  
Received: from [82.68.43.14] (helo=[192.168.1.3])  
by rutherford.zen.co.uk with esmtp (Exim 4.50)  
id 1IcOcX-0004Qt-6L  
for nneul@neulinger.org; Mon, 01 Oct 2007 16:59:49 +0000  
Mime-Version: 1.0 (Apple Message framework v752.2)  
In-Reply-To: <1b1b3fd80710010908k11dac0afp1f2dd471059ff9a4@mail.gmail.com>

References: <1190922867.3457.147.camel@localhost.localdomain>  
<EC90713277D2BE41B7110CCD74E235CEF44F38@UMR-CMAIL1.umr.edu>  
<1b1b3fd80710010908k11dac0afp1f2dd471059ff9a4@mail.gmail.com>  
Content-Type: text/plain; charset=US-ASCII; delsp=yes; format=flowed  
Message-Id: <117A1264-F6DC-4E25-B0DD-56FBFE6E9F@crypticide.com>  
Content-Transfer-Encoding: 7bit  
From: Alec Muffett <alecm@crypticide.com>  
Subject: Re: cracklib license  
Date: Mon, 1 Oct 2007 17:59:46 +0100  
To: Nathan Neulinger <nneul@neulinger.org>  
X-Mailer: Apple Mail (2.752.2)  
X-Originating-Rutherford-IP: [82.68.43.14]  
Return-Path: alecm@crypticide.com  
X-OriginalArrivalTime: 01 Oct 2007 17:26:03.0008 (UTC) FILETIME=[2420C000:01C80450]  
Status: RO  
Content-Length: 585  
Lines: 21

>  
> ----- Forwarded message -----  
> From: Neulinger, Nathan <nneul@umr.edu>  
> Date: Sep 27, 2007 2:58 PM  
> Subject: RE: cracklib license  
> To: alecm@crypto.dircon.co.uk  
>  
> Any chance you could write me a self-contained email stating clearly  
> that the license is being changed to GPL, so I could include that  
> email  
> in the repository and clean up the repository/tarballs? I have all the  
> original discussion, but something succinct and self contained  
> would be  
> ideal.

The license for my code in the Cracklib distribution is henceforth GPL.

Happy now? :-)

-a

## 1.345 jstl 1.2

### 1.345.1 Available under license :

No license file was found, but licenses were detected in source scan.

/\*

- \* The contents of this file are subject to the terms
- \* of the Common Development and Distribution License

\* (the "License"). You may not use this file except  
\* in compliance with the License.  
\*  
\* You can obtain a copy of the license at  
\* glassfish/bootstrap/legal/CDDLv1.0.txt or  
\* <https://glassfish.dev.java.net/public/CDDLv1.0.html>.  
\* See the License for the specific language governing  
\* permissions and limitations under the License.  
\*  
\* When distributing Covered Code, include this CDDL  
\* HEADER in each file and include the License file at  
\* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,  
\* add the following below this CDDL HEADER, with the  
\* fields enclosed by brackets "[]" replaced with your  
\* own identifying information: Portions Copyright [yyyy]  
\* [name of copyright owner]  
\*  
\* Copyright 2005 Sun Microsystems, Inc. All rights reserved.  
\*\*/ Generated By:JavaCC: Do not edit this line. SPathParserTokenManager.java \*/

Found in path(s):

\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/extra/spath/SPathParserTokenManager.java  
No license file was found, but licenses were detected in source scan.

/\*

\* The contents of this file are subject to the terms  
\* of the Common Development and Distribution License  
\* (the "License"). You may not use this file except  
\* in compliance with the License.  
\*  
\* You can obtain a copy of the license at  
\* glassfish/bootstrap/legal/CDDLv1.0.txt or  
\* <https://glassfish.dev.java.net/public/CDDLv1.0.html>.  
\* See the License for the specific language governing  
\* permissions and limitations under the License.  
\*  
\* When distributing Covered Code, include this CDDL  
\* HEADER in each file and include the License file at  
\* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,  
\* add the following below this CDDL HEADER, with the  
\* fields enclosed by brackets "[]" replaced with your  
\* own identifying information: Portions Copyright [yyyy]  
\* [name of copyright owner]  
\*  
\* Copyright 2005 Sun Microsystems, Inc. All rights reserved.  
\*\*/ Generated By:JavaCC: Do not edit this line. ELParser.java \*/

Found in path(s):

\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/lang/jstl/parser/ELParser.java

No license file was found, but licenses were detected in source scan.

/\*

\* The contents of this file are subject to the terms  
\* of the Common Development and Distribution License  
\* (the "License"). You may not use this file except  
\* in compliance with the License.

\*

\* You can obtain a copy of the license at  
\* glassfish/bootstrap/legal/CDDLv1.0.txt or  
\* <https://glassfish.dev.java.net/public/CDDLv1.0.html>.  
\* See the License for the specific language governing  
\* permissions and limitations under the License.

\*

\* When distributing Covered Code, include this CDDL  
\* HEADER in each file and include the License file at  
\* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,  
\* add the following below this CDDL HEADER, with the  
\* fields enclosed by brackets "[]" replaced with your  
\* own identifying information: Portions Copyright [yyyy]  
\* [name of copyright owner]

\*

\* Copyright 2005 Sun Microsystems, Inc. All rights reserved.

/\*\* Generated By:JavaCC: Do not edit this line. ASCII\_CharStream.java Version 0.7pre6 \*/

Found in path(s):

\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/extra/spath/ASCII\_CharStream.java

No license file was found, but licenses were detected in source scan.

/\*

\* The contents of this file are subject to the terms  
\* of the Common Development and Distribution License  
\* (the "License"). You may not use this file except  
\* in compliance with the License.

\*

\* You can obtain a copy of the license at  
\* glassfish/bootstrap/legal/CDDLv1.0.txt or  
\* <https://glassfish.dev.java.net/public/CDDLv1.0.html>.  
\* See the License for the specific language governing  
\* permissions and limitations under the License.

\*

\* When distributing Covered Code, include this CDDL  
\* HEADER in each file and include the License file at  
\* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,

\* add the following below this CDDL HEADER, with the  
\* fields enclosed by brackets "[]" replaced with your  
\* own identifying information: Portions Copyright [yyyy]  
\* [name of copyright owner]  
\*  
\* Copyright 2005 Sun Microsystems, Inc. All rights reserved.  
\*\*/\* Generated By:JavaCC: Do not edit this line. Token.java Version 0.7pre3 \*/

Found in path(s):

\*/opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/extra/spath/Token.java

No license file was found, but licenses were detected in source scan.

/\*

\* The contents of this file are subject to the terms  
\* of the Common Development and Distribution License  
\* (the "License"). You may not use this file except  
\* in compliance with the License.

\*

\* You can obtain a copy of the license at  
\* glassfish/bootstrap/legal/CDDLv1.0.txt or  
\* <https://glassfish.dev.java.net/public/CDDLv1.0.html>.  
\* See the License for the specific language governing  
\* permissions and limitations under the License.

\*

\* When distributing Covered Code, include this CDDL  
\* HEADER in each file and include the License file at  
\* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,  
\* add the following below this CDDL HEADER, with the  
\* fields enclosed by brackets "[]" replaced with your  
\* own identifying information: Portions Copyright [yyyy]  
\* [name of copyright owner]

\*

\* Copyright 2005 Sun Microsystems, Inc. All rights reserved.  
\*\*/\* Generated By:JavaCC: Do not edit this line. SPathParser.java \*/

Found in path(s):

\*/opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/extra/spath/SPathParser.java

No license file was found, but licenses were detected in source scan.

/\*

\* The contents of this file are subject to the terms  
\* of the Common Development and Distribution License  
\* (the "License"). You may not use this file except  
\* in compliance with the License.

\*

\* You can obtain a copy of the license at

\* glassfish/bootstrap/legal/CDDLv1.0.txt or  
\* <https://glassfish.dev.java.net/public/CDDLv1.0.html>.  
\* See the License for the specific language governing  
\* permissions and limitations under the License.  
\*  
\* When distributing Covered Code, include this CDDL  
\* HEADER in each file and include the License file at  
\* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,  
\* add the following below this CDDL HEADER, with the  
\* fields enclosed by brackets "[]" replaced with your  
\* own identifying information: Portions Copyright [yyyy]  
\* [name of copyright owner]  
\*  
\* Copyright 2005 Sun Microsystems, Inc. All rights reserved.  
\*\*/\* Generated By:JavaCC: Do not edit this line. ParseException.java Version 0.7pre6 \*/

Found in path(s):

\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/extra/spath/ParseException.java

No license file was found, but licenses were detected in source scan.

/\*

\* The contents of this file are subject to the terms  
\* of the Common Development and Distribution License  
\* (the "License"). You may not use this file except  
\* in compliance with the License.  
\*  
\* You can obtain a copy of the license at  
\* glassfish/bootstrap/legal/CDDLv1.0.txt or  
\* <https://glassfish.dev.java.net/public/CDDLv1.0.html>.  
\* See the License for the specific language governing  
\* permissions and limitations under the License.  
\*  
\* When distributing Covered Code, include this CDDL  
\* HEADER in each file and include the License file at  
\* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,  
\* add the following below this CDDL HEADER, with the  
\* fields enclosed by brackets "[]" replaced with your  
\* own identifying information: Portions Copyright [yyyy]  
\* [name of copyright owner]  
\*  
\* Copyright 2005 Sun Microsystems, Inc. All rights reserved.  
\*\*/\* Generated By:JavaCC: Do not edit this line. ELParserTokenManager.java \*/

Found in path(s):

\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/lang/jstl/parser/ELParserTokenManager.java



No license file was found, but licenses were detected in source scan.

```
/*
 * The contents of this file are subject to the terms
 * of the Common Development and Distribution License
 * (the "License"). You may not use this file except
 * in compliance with the License.
 *
 * You can obtain a copy of the license at
 * glassfish/bootstrap/legal/CDDLv1.0.txt or
 * https://glassfish.dev.java.net/public/CDDLv1.0.html.
 * See the License for the specific language governing
 * permissions and limitations under the License.
 *
 * When distributing Covered Code, include this CDDL
 * HEADER in each file and include the License file at
 * glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
 * add the following below this CDDL HEADER, with the
 * fields enclosed by brackets "[]" replaced with your
 * own identifying information: Portions Copyright [yyyy]
 * [name of copyright owner]
 *
 * Copyright 2005 Sun Microsystems, Inc. All rights reserved.
 */
```

Found in path(s):

```
* /opt/cola/permits/1177945123_1654022942.3547654/0/jstl-1-2-sources-1-
jar/javax/servlet/jsp/jstl/core/IteratedValueExpression.java
* /opt/cola/permits/1177945123_1654022942.3547654/0/jstl-1-2-sources-1-
jar/javax/servlet/jsp/jstl/core/IndexedValueExpression.java
* /opt/cola/permits/1177945123_1654022942.3547654/0/jstl-1-2-sources-1-
jar/javax/servlet/jsp/jstl/core/IteratedExpression.java
```

No license file was found, but licenses were detected in source scan.

```
/*
 * The contents of this file are subject to the terms
 * of the Common Development and Distribution License
 * (the "License"). You may not use this file except
 * in compliance with the License.
 *
 * You can obtain a copy of the license at
 * glassfish/bootstrap/legal/CDDLv1.0.txt or
 * https://glassfish.dev.java.net/public/CDDLv1.0.html.
 * See the License for the specific language governing
 * permissions and limitations under the License.
 *
 * When distributing Covered Code, include this CDDL
 * HEADER in each file and include the License file at
```

```
* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
* add the following below this CDDL HEADER, with the
* fields enclosed by brackets "[]" replaced with your
* own identifying information: Portions Copyright [yyyy]
* [name of copyright owner]
*
* Copyright 2005 Sun Microsystems, Inc. All rights reserved.
**/* Generated By:JavaCC: Do not edit this line. SPathParserConstants.java */
```

Found in path(s):

```
*/opt/cola/permits/1177945123_1654022942.3547654/0/jstl-1-2-sources-1-
jar/org/apache/taglibs/standard/extra/spath/SPathParserConstants.java
No license file was found, but licenses were detected in source scan.
```

```
/*
```

```
* The contents of this file are subject to the terms
* of the Common Development and Distribution License
* (the "License"). You may not use this file except
* in compliance with the License.
```

```
*
```

```
* You can obtain a copy of the license at
* glassfish/bootstrap/legal/CDDLv1.0.txt or
* https://glassfish.dev.java.net/public/CDDLv1.0.html.
* See the License for the specific language governing
* permissions and limitations under the License.
```

```
*
```

```
* When distributing Covered Code, include this CDDL
* HEADER in each file and include the License file at
* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
* add the following below this CDDL HEADER, with the
* fields enclosed by brackets "[]" replaced with your
* own identifying information: Portions Copyright [yyyy]
* [name of copyright owner]
```

```
*
```

```
* Copyright 2005 Sun Microsystems, Inc. All rights reserved.
```

```
**/* Generated By:JavaCC: Do not edit this line. ASCII_UCodeESC_CharStream.java Version 0.7pre6 */
```

Found in path(s):

```
*/opt/cola/permits/1177945123_1654022942.3547654/0/jstl-1-2-sources-1-
jar/org/apache/taglibs/standard/extra/spath/ASCII_UCodeESC_CharStream.java
No license file was found, but licenses were detected in source scan.
```

```
/*
```

```
* The contents of this file are subject to the terms
* of the Common Development and Distribution License
* (the "License"). You may not use this file except
* in compliance with the License.
```

```
*
```

\* You can obtain a copy of the license at  
\* [glassfish/bootstrap/legal/CDDLv1.0.txt](http://glassfish/bootstrap/legal/CDDLv1.0.txt) or  
\* <https://glassfish.dev.java.net/public/CDDLv1.0.html>.  
\* See the License for the specific language governing  
\* permissions and limitations under the License.  
\*  
\* When distributing Covered Code, include this CDDL  
\* HEADER in each file and include the License file at  
\* [glassfish/bootstrap/legal/CDDLv1.0.txt](http://glassfish/bootstrap/legal/CDDLv1.0.txt). If applicable,  
\* add the following below this CDDL HEADER, with the  
\* fields enclosed by brackets "[]" replaced with your  
\* own identifying information: Portions Copyright [yyyy]  
\* [name of copyright owner]  
\*  
\* Copyright 2005 Sun Microsystems, Inc. All rights reserved.  
\*/\* Generated By:JavaCC: Do not edit this line. TokenMgrError.java Version 0.7pre2 \*/

Found in path(s):

\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/extra/spath/TokenMgrError.java  
No license file was found, but licenses were detected in source scan.

/\*

\* The contents of this file are subject to the terms  
\* of the Common Development and Distribution License  
\* (the "License"). You may not use this file except  
\* in compliance with the License.  
\*  
\* You can obtain a copy of the license at  
\* [glassfish/bootstrap/legal/CDDLv1.0.txt](http://glassfish/bootstrap/legal/CDDLv1.0.txt) or  
\* <https://glassfish.dev.java.net/public/CDDLv1.0.html>.  
\* See the License for the specific language governing  
\* permissions and limitations under the License.  
\*  
\* When distributing Covered Code, include this CDDL  
\* HEADER in each file and include the License file at  
\* [glassfish/bootstrap/legal/CDDLv1.0.txt](http://glassfish/bootstrap/legal/CDDLv1.0.txt). If applicable,  
\* add the following below this CDDL HEADER, with the  
\* fields enclosed by brackets "[]" replaced with your  
\* own identifying information: Portions Copyright [yyyy]  
\* [name of copyright owner]  
\*  
\* Copyright 2005 Sun Microsystems, Inc. All rights reserved.  
\*/\* Generated By:JavaCC: Do not edit this line. ParseException.java Version 2.1 \*/

Found in path(s):

\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/lang/jstl/parser/ParseException.java

No license file was found, but licenses were detected in source scan.

```
/*
 * The contents of this file are subject to the terms
 * of the Common Development and Distribution License
 * (the "License"). You may not use this file except
 * in compliance with the License.
 *
 * You can obtain a copy of the license at
 * glassfish/bootstrap/legal/CDDLv1.0.txt or
 * https://glassfish.dev.java.net/public/CDDLv1.0.html.
 * See the License for the specific language governing
 * permissions and limitations under the License.
 *
 * When distributing Covered Code, include this CDDL
 * HEADER in each file and include the License file at
 * glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
 * add the following below this CDDL HEADER, with the
 * fields enclosed by brackets "[]" replaced with your
 * own identifying information: Portions Copyright [yyyy]
 * [name of copyright owner]
 *
 * Copyright 2005 Sun Microsystems, Inc. All rights reserved.
 //
 * JSTLXPathFactory.java
 *
 * Created on March 4, 2005, 3:27 PM
 */
```

Found in path(s):

```
*/opt/cola/permits/1177945123_1654022942.3547654/0/jstl-1-2-sources-1-
jar/org/apache/taglibs/standard/tag/common/xml/JSTLXPathFactory.java
No license file was found, but licenses were detected in source scan.
```

```
/*
 * The contents of this file are subject to the terms
 * of the Common Development and Distribution License
 * (the "License"). You may not use this file except
 * in compliance with the License.
 *
 * You can obtain a copy of the license at
 * glassfish/bootstrap/legal/CDDLv1.0.txt or
 * https://glassfish.dev.java.net/public/CDDLv1.0.html.
 * See the License for the specific language governing
 * permissions and limitations under the License.
 *
 * When distributing Covered Code, include this CDDL
 * HEADER in each file and include the License file at
```

```
* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
* add the following below this CDDL HEADER, with the
* fields enclosed by brackets "[]" replaced with your
* own identifying information: Portions Copyright [yyyy]
* [name of copyright owner]
*
* Copyright 2005 Sun Microsystems, Inc. All rights reserved.
**/* Generated By:JavaCC: Do not edit this line. TokenMgrError.java Version 2.1 */
```

Found in path(s):

```
*/opt/cola/permits/1177945123_1654022942.3547654/0/jstl-1-2-sources-1-
jar/org/apache/taglibs/standard/lang/jstl/parser/TokenMgrError.java
No license file was found, but licenses were detected in source scan.
```

```
/*
```

```
* The contents of this file are subject to the terms
* of the Common Development and Distribution License
* (the "License"). You may not use this file except
* in compliance with the License.
```

```
*
```

```
* You can obtain a copy of the license at
* glassfish/bootstrap/legal/CDDLv1.0.txt or
* https://glassfish.dev.java.net/public/CDDLv1.0.html.
* See the License for the specific language governing
* permissions and limitations under the License.
```

```
*
```

```
* When distributing Covered Code, include this CDDL
* HEADER in each file and include the License file at
* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
* add the following below this CDDL HEADER, with the
* fields enclosed by brackets "[]" replaced with your
* own identifying information: Portions Copyright [yyyy]
* [name of copyright owner]
```

```
*
```

```
* Copyright 2005 Sun Microsystems, Inc. All rights reserved.
**/* Generated By:JavaCC: Do not edit this line. ELParserConstants.java */
```

Found in path(s):

```
*/opt/cola/permits/1177945123_1654022942.3547654/0/jstl-1-2-sources-1-
jar/org/apache/taglibs/standard/lang/jstl/parser/ELParserConstants.java
No license file was found, but licenses were detected in source scan.
```

```
/*
```

```
* The contents of this file are subject to the terms
* of the Common Development and Distribution License
* (the "License"). You may not use this file except
* in compliance with the License.
```

```
*
```

- \* You can obtain a copy of the license at
- \* [glassfish/bootstrap/legal/CDDLv1.0.txt](http://glassfish/bootstrap/legal/CDDLv1.0.txt) or
- \* <https://glassfish.dev.java.net/public/CDDLv1.0.html>.
- \* See the License for the specific language governing
- \* permissions and limitations under the License.
- \*
- \* When distributing Covered Code, include this CDDL
- \* HEADER in each file and include the License file at
- \* [glassfish/bootstrap/legal/CDDLv1.0.txt](http://glassfish/bootstrap/legal/CDDLv1.0.txt). If applicable,
- \* add the following below this CDDL HEADER, with the
- \* fields enclosed by brackets "[]" replaced with your
- \* own identifying information: Portions Copyright [yyyy]
- \* [name of copyright owner]
- \*
- \* Copyright 2005 Sun Microsystems, Inc. All rights reserved.
- \*
- \* Portions Copyright Apache Software Foundation.
- \*/

Found in path(s):

- \* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/lang/jstl/MinusOperator.java
- \* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/tag/common/fmt/FormatNumberSupport.java
- \* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/lang/jstl/NullLiteral.java
- \* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/tag/common/fmt/MessageSupport.java
- \* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/lang/jstl/Literal.java
- \* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/javax/servlet/jsp/jstl/tlv/ScriptFreeTLV.java
- \* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/lang/jstl/Coercions.java
- \* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/lang/jstl/BeanInfoProperty.java
- \* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/lang/jstl/ELException.java
- \* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/tag/common/sql/DataSourceWrapper.java
- \* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/lang/jstl/RelationalOperator.java
- \* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/tag/el/core/WhenTag.java
- \* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/tag/rt/xml/ParamTag.java
- \* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/tag/el/fmt/ParseNumberTag.java

\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/tag/rt/core/IfTag.java

\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/tag/common/xml/JSTLXPathImpl.java

\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/tag/rt/fmt/FormatDateTag.java

\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/tag/rt/xml/TransformTag.java

\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/javax/servlet/jsp/jstl/core/LoopTag.java

\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/tag/rt/sql/ParamTag.java

\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/tag/el/sql/SetDataSourceTag.java

\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/javax/servlet/jsp/jstl/fmt/LocaleSupport.java

\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/lang/jstl/PropertySuffix.java

\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/tag/common/core/RemoveTag.java

\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/tag/el/fmt/RequestEncodingTag.java

\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/javax/servlet/jsp/jstl/core/ConditionalTagSupport.java

\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/tlv/JstlXmlTLV.java

\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/tag/common/xml/ExprSupport.java

\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/tag/common/core/NullAttributeException.java

\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/tag/rt/fmt/RequestEncodingTag.java

\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/lang/jstl/Constants.java

\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/javax/servlet/jsp/jstl/sql/ResultSupport.java

\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/tag/el/xml/ParamTag.java

\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/extra/spath/Predicate.java

\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/tei/Util.java

\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/tag/common/xml/IfTag.java

\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/tag/el/sql/QueryTag.java

\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/tag/common/core/ChooseTag.java

\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/tag/common/core/ParamParent.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/tag/rt/sql/DateParamTag.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/tag/common/xml/SetTag.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/tag/el/core/ForTokensTag.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/javax/servlet/jsp/jstl/sql/Result.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/tag/rt/fmt/ParseNumberTag.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/tag/rt/fmt/SetBundleTag.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/lang/jstl/EqualsOperator.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/tag/common/sql/DateParamTagSupport.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/lang/jstl/NotOperator.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/lang/jstl/EmptyOperator.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/tag/common/fmt/SetLocaleSupport.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/tag/el/fmt/ParseDateTag.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/lang/jstl/test/StaticFunctionTests.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/javax/servlet/jsp/jstl/core/LoopTagSupport.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/tag/el/core/ParamTag.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/extra/spath/SPathTag.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/tag/rt/sql/SetDataSourceTag.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/tag/common/fmt/ParseDateSupport.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/lang/jstl/test/Bean2Editor.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/tag/common/sql/SetDataSourceTagSupport.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/lang/jstl/test/beans/PrivateBean2d.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/tag/common/core/Util.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/lang/jstl/FloatingPointLiteral.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-



jar/org/apache/taglibs/standard/lang/jstl/IntegerLiteral.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/lang/jstl/NotEqualsOperator.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/el/fmt/FormatDateTag.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/rt/core/ImportTag.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/lang/jstl/StringLiteral.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/extra/spath/SPathFilter.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/lang/jstl/JSTLVariableResolver.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/common/core/ImportSupport.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/el/xml/ExprTag.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/rt/core/WhenTag.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/common/core/ForEachSupport.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/lang/support/ExpressionEvaluatorManager.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/el/core/OutTag.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/rt/xml/ParseTag.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tei/XmlTransformTEI.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/rt/fmt/SetLocaleTag.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/rt/sql/TransactionTag.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/lang/jstl/test/beans/PublicBean2a.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/lang/jstl/UnaryMinusOperator.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/javax/servlet/jsp/jstl/tlv/PermittedTaglibsTLV.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/javax/servlet/jsp/jstl/core/Config.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/lang/jstl/Logger.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/lang/jstl/NamedValue.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/javax/servlet/jsp/jstl/fmt/LocalizationContext.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-

jar/org/apache/taglibs/standard/lang/jstl/ImplicitObjects.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/el/fmt/SetTimeZoneTag.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/common/core/ForTokensSupport.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tei/DeclareTEI.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/lang/jstl/UnaryOperatorExpression.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/lang/jstl/test/Bean1.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/rt/core/RedirectTag.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/lang/jstl/ModulusOperator.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/extra/spath/AttributePredicate.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/lang/jstl/BinaryOperator.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tei/ImportTEI.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/rt/sql/UpdateTag.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/lang/jstl/GreaterThanOperator.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/extra/spath/RelativePath.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/lang/jstl/FunctionInvocation.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/extra/spath/AbsolutePath.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/el/core/IfTag.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/lang/jstl/Expression.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/common/fmt/FormatDateSupport.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/el/core/UrlTag.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/common/xml/XPathUtil.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/rt/core/ForEachTag.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/lang/jstl/LessThanOrEqualsOperator.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/common/fmt/BundleSupport.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-

jar/org/apache/taglibs/standard/tei/XmlParseTEI.java  
 \* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
 jar/org/apache/taglibs/standard/tag/el/sql/UpdateTag.java  
 \* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
 jar/org/apache/taglibs/standard/lang/jstl/ArraySuffix.java  
 \* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
 jar/org/apache/taglibs/standard/tag/common/sql/DataSourceUtil.java  
 \* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
 jar/org/apache/taglibs/standard/tag/common/core/OtherwiseTag.java  
 \* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
 jar/org/apache/taglibs/standard/lang/jstl/test/beans/PublicBean1b.java  
 \* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
 jar/org/apache/taglibs/standard/tag/el/fmt/FormatNumberTag.java  
 \* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
 jar/org/apache/taglibs/standard/lang/jstl/test/PageContextImpl.java  
 \* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
 jar/org/apache/taglibs/standard/tag/common/xml/ForEachTag.java  
 \* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
 jar/org/apache/taglibs/standard/tag/el/xml/ParseTag.java  
 \* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
 jar/org/apache/taglibs/standard/lang/jstl/BinaryOperatorExpression.java  
 \* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
 jar/org/apache/taglibs/standard/lang/jstl/ValueSuffix.java  
 \* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
 jar/org/apache/taglibs/standard/tag/common/sql/TransactionTagSupport.java  
 \* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
 jar/org/apache/taglibs/standard/tag/el/fmt/BundleTag.java  
 \* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
 jar/org/apache/taglibs/standard/tag/rt/fmt/TimeZoneTag.java  
 \* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
 jar/org/apache/taglibs/standard/tag/common/sql/DriverTag.java  
 \* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
 jar/org/apache/taglibs/standard/tag/el/fmt/TimeZoneTag.java  
 \* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
 jar/org/apache/taglibs/standard/tag/rt/core/OutTag.java  
 \* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
 jar/org/apache/taglibs/standard/tag/common/fmt/ParamSupport.java  
 \* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
 jar/org/apache/taglibs/standard/tag/common/xml/JSTLXPathVariableResolver.java  
 \* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
 jar/org/apache/taglibs/standard/tag/common/fmt/ParseNumberSupport.java  
 \* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
 jar/org/apache/taglibs/standard/tag/rt/sql/QueryTag.java  
 \* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
 jar/org/apache/taglibs/standard/lang/jstl/PrimitiveObjects.java  
 \* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
 jar/org/apache/taglibs/standard/tlv/JstlBaseTLV.java  
 \* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-

jar/org/apache/taglibs/standard/lang/jstl/ELEvaluator.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/lang/jstl/ExpressionString.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/javax/servlet/jsp/jstl/sql/ResultImpl.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/lang/jstl/AndOperator.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/common/core/DeclareTag.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/lang/jstl/VariableResolver.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/rt/fmt/BundleTag.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/common/core/SetSupport.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/rt/core/UrlTag.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/common/fmt/TimeZoneSupport.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/functions/Functions.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/el/core/ImportTag.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/common/xml/ParseSupport.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tlv/JstlSqlTLV.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/el/xml/TransformTag.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/lang/jstl/ComplexValue.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/common/fmt/SetBundleSupport.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/lang/support/ExpressionEvaluator.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/lang/jstl/UnaryOperator.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/rt/fmt/MessageTag.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/el/core/ForEachTag.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/common/sql/QueryTagSupport.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/lang/jstl/test/ParserTest.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/common/sql/ResultImpl.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-

jar/org/apache/taglibs/standard/lang/jstl/test/Bean2.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/el/sql/DateParamTag.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/extra/spath/Step.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/rt/xml/ExprTag.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/lang/jstl/Evaluator.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/el/core/RedirectTag.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/rt/core/ForTokensTag.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/rt/fmt/ParamTag.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/common/core/RedirectSupport.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/lang/jstl/LessThanOperator.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/lang/jstl/test/beans/PublicBean1.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/lang/jstl/test/beans/PublicInterface2.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/lang/jstl/test/beans/PrivateBean2b.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/common/fmt/SetTimeZoneSupport.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/extra/spath/Path.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/common/xml/WhenTag.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/lang/jstl/EnumeratedMap.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/lang/jstl/PlusOperator.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/common/core/UrlSupport.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/el/core/ExpressionUtil.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/lang/jstl/OrOperator.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/common/xml/ParamSupport.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/lang/jstl/DivideOperator.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/common/sql/UpdateTagSupport.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-

jar/org/apache/taglibs/standard/tag/el/core/SetTag.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/rt/core/SetTag.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/rt/fmt/ParseDateTag.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/lang/jstl/BeanInfoIndexedProperty.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/lang/jstl/test/beans/PrivateBean2c.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/resources/Resources.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/common/core/CatchTag.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/common/xml/UnresolvableException.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/lang/jstl/test/beans/Factory.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tei/ForEachTEI.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/el/fmt/ParamTag.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/rt/core/ParamTag.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/common/core/OutSupport.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/common/sql/ParamTagSupport.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/common/xml/TransformSupport.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/el/sql/ParamTag.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/lang/jstl/ArithmeticOperator.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/common/fmt/RequestEncodingSupport.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/el/fmt/SetLocaleTag.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/lang/jstl/BeanInfoManager.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/lang/jstl/test/EvaluationTest.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/lang/jstl/IntegerDivideOperator.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/lang/jstl/GreaterThanOrEqualsOperator.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/el/fmt/SetBundleTag.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-

jar/org/apache/taglibs/standard/tag/common/xml/JSTLXPathNamespaceContext.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/javax/servlet/jsp/jstl/core/LoopTagStatus.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/el/fmt/MessageTag.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/lang/jstl/MultiplyOperator.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/el/sql/TransactionTag.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/javax/servlet/jsp/jstl/sql/SQLExecutionTag.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/lang/jstl/test/beans/PrivateBean1a.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tlv/JstlCoreTLV.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/rt/fmt/SetTimeZoneTag.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/lang/jstl/BooleanLiteral.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/rt/fmt/FormatNumberTag.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tlv/JstlFmtTLV.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/common/core/ParamSupport.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/lang/jstl/EqualityOperator.java  
\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-  
jar/org/apache/taglibs/standard/tag/common/core/WhenTagSupport.java  
No license file was found, but licenses were detected in source scan.

/\*

- \* The contents of this file are subject to the terms
- \* of the Common Development and Distribution License
- \* (the "License"). You may not use this file except
- \* in compliance with the License.
- \*
- \* You can obtain a copy of the license at
- \* [glassfish/bootstrap/legal/CDDLv1.0.txt](https://glassfish.bootstrap/legal/CDDLv1.0.txt) or
- \* <https://glassfish.dev.java.net/public/CDDLv1.0.html>.
- \* See the License for the specific language governing
- \* permissions and limitations under the License.
- \*
- \* When distributing Covered Code, include this CDDL
- \* HEADER in each file and include the License file at
- \* [glassfish/bootstrap/legal/CDDLv1.0.txt](https://glassfish.bootstrap/legal/CDDLv1.0.txt). If applicable,
- \* add the following below this CDDL HEADER, with the
- \* fields enclosed by brackets "[]" replaced with your

```
* own identifying information: Portions Copyright [yyyy]
* [name of copyright owner]
*
* Copyright 2005 Sun Microsystems, Inc. All rights reserved.
*
* Portions Copyright Apache Software Foundation.
*/
```

```
/**
```

```
* Major version number.
* Version number. This changes only when there is a
* significant, externally apparent enhancement from
* the previous release. 'n' represents the n'th
* version.
*
* Clients should carefully consider the implications
* of new versions as external interfaces and behaviour
* may have changed.
*/
```

Found in path(s):

```
* /opt/cola/permits/1177945123_1654022942.3547654/0/jstl-1-2-sources-1-
jar/org/apache/taglibs/standard/Version.java
```

No license file was found, but licenses were detected in source scan.

```
/*
```

```
* The contents of this file are subject to the terms
* of the Common Development and Distribution License
* (the "License"). You may not use this file except
* in compliance with the License.
*
* You can obtain a copy of the license at
* glassfish/bootstrap/legal/CDDLv1.0.txt or
* https://glassfish.dev.java.net/public/CDDLv1.0.html.
* See the License for the specific language governing
* permissions and limitations under the License.
*
* When distributing Covered Code, include this CDDL
* HEADER in each file and include the License file at
* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
* add the following below this CDDL HEADER, with the
* fields enclosed by brackets "[]" replaced with your
* own identifying information: Portions Copyright [yyyy]
* [name of copyright owner]
*
* Copyright 2005 Sun Microsystems, Inc. All rights reserved.
**/ *Generated By:JavaCC: Do not edit this line. Token.java Version 2.1 */
```

Found in path(s):



\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/lang/jstl/parser/Token.java

No license file was found, but licenses were detected in source scan.

/\*

\* The contents of this file are subject to the terms  
\* of the Common Development and Distribution License  
\* (the "License"). You may not use this file except  
\* in compliance with the License.

\*

\* You can obtain a copy of the license at  
\* glassfish/bootstrap/legal/CDDLv1.0.txt or  
\* <https://glassfish.dev.java.net/public/CDDLv1.0.html>.  
\* See the License for the specific language governing  
\* permissions and limitations under the License.

\*

\* When distributing Covered Code, include this CDDL  
\* HEADER in each file and include the License file at  
\* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,  
\* add the following below this CDDL HEADER, with the  
\* fields enclosed by brackets "[]" replaced with your  
\* own identifying information: Portions Copyright [yyyy]  
\* [name of copyright owner]

\*

\* Copyright 2005 Sun Microsystems, Inc. All rights reserved.

/\*\*

\* JSTLXPathConstants.java

\*

\* Created on March 4, 2005, 4:24 PM

\*/

Found in path(s):

\* /opt/cola/permits/1177945123\_1654022942.3547654/0/jstl-1-2-sources-1-jar/org/apache/taglibs/standard/tag/common/xml/JSTLXPathConstants.java

No license file was found, but licenses were detected in source scan.

/\*

\* The contents of this file are subject to the terms  
\* of the Common Development and Distribution License  
\* (the "License"). You may not use this file except  
\* in compliance with the License.

\*

\* You can obtain a copy of the license at  
\* glassfish/bootstrap/legal/CDDLv1.0.txt or  
\* <https://glassfish.dev.java.net/public/CDDLv1.0.html>.  
\* See the License for the specific language governing  
\* permissions and limitations under the License.

\*

```
* When distributing Covered Code, include this CDDL
* HEADER in each file and include the License file at
* glassfish/bootstrap/legal/CDDLv1.0.txt. If applicable,
* add the following below this CDDL HEADER, with the
* fields enclosed by brackets "[]" replaced with your
* own identifying information: Portions Copyright [yyyy]
* [name of copyright owner]
*
* Copyright 2005 Sun Microsystems, Inc. All rights reserved.
**/* Generated By:JavaCC: Do not edit this line. SimpleCharStream.java Version 2.1 */
```

Found in path(s):

```
* /opt/cola/permits/1177945123_1654022942.3547654/0/jstl-1-2-sources-1-
jar/org/apache/taglibs/standard/lang/jstl/parser/SimpleCharStream.java
```

# 1.346 springfox-spring-webflux 3.0.0

## 1.346.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/*
*
* Copyright 2016-2017 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* http://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*
*
*/
```

Found in path(s):

```
* /opt/ws_local/PERMITS_SQL/1082519010_1597959698.08/0/springfox-spring-webflux-3-0-0-sources-
jar/springfox/documentation/spring/web/WebFluxRequestHandler.java
```

No license file was found, but licenses were detected in source scan.

```
/*
*
* Copyright 2015-2017 the original author or authors.
```

```
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* http://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*
*
*/
```

Found in path(s):

```
* /opt/ws_local/PERMITS_SQL/1082519010_1597959698.08/0/springfox-spring-webflux-3-0-0-sources-
jar/springfox/documentation/spring/web/plugins/WebFluxRequestHandlerProvider.java
```

No license file was found, but licenses were detected in source scan.

```
/*
*
* Copyright 2015-2018 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* http://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*
*
*/
```

Found in path(s):

```
* /opt/ws_local/PERMITS_SQL/1082519010_1597959698.08/0/springfox-spring-webflux-3-0-0-sources-
jar/springfox/documentation/spring/web/SpringfoxWebFluxConfiguration.java
```

No license file was found, but licenses were detected in source scan.

```
/*
*
* Copyright 2015 the original author or authors.
```

\*  
 \* Licensed under the Apache License, Version 2.0 (the "License");  
 \* you may not use this file except in compliance with the License.  
 \* You may obtain a copy of the License at  
 \*  
 \* <http://www.apache.org/licenses/LICENSE-2.0>  
 \*  
 \* Unless required by applicable law or agreed to in writing, software  
 \* distributed under the License is distributed on an "AS IS" BASIS,  
 \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
 \* See the License for the specific language governing permissions and  
 \* limitations under the License.  
 \*  
 \*  
 \*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1082519010\_1597959698.08/0/springfox-spring-webflux-3-0-0-sources-jar/springfox/documentation/spring/web/WebFluxObjectMapperConfigurer.java  
 \* /opt/ws\_local/PERMITS\_SQL/1082519010\_1597959698.08/0/springfox-spring-webflux-3-0-0-sources-jar/springfox/documentation/spring/web/WebFluxNameValueExpressionWrapper.java  
 \* /opt/ws\_local/PERMITS\_SQL/1082519010\_1597959698.08/0/springfox-spring-webflux-3-0-0-sources-jar/springfox/documentation/spring/web/WebFluxPatternsRequestConditionWrapper.java

## 1.347 dmidecode 3.12.2-15.el8

### 1.347.1 Available under license :

GNU GENERAL PUBLIC LICENSE  
 Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,  
 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
 Everyone is permitted to copy and distribute verbatim copies  
 of this license document, but changing it is not allowed.

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another

language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in

themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other



circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

**NO WARRANTY**

**11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY**

FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands ``show w'` and ``show c'` should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than ``show w'` and ``show c'`; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

## 1.348 taglibs-standard 1.2.5

### 1.348.1 Available under license :

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

##### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by

the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained

within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be

liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.

You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Apache Standard Taglib

Copyright 2001-2015 The Apache Software Foundation

This product includes software developed at  
The Apache Software Foundation (<http://www.apache.org/>).

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of,



the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
  
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
  
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

### APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

## 1.349 packaging 16.8

### 1.349.1 Available under license :

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

##### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction,  
and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by  
the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all  
other entities that control, are controlled by, or are under common  
control with that entity. For the purposes of this definition,  
"control" means (i) the power, direct or indirect, to cause the  
direction or management of such entity, whether by contract or  
otherwise, or (ii) ownership of fifty percent (50%) or more of the  
outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity  
exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications,  
including but not limited to software source code, documentation  
source, and configuration files.

"Object" form shall mean any form resulting from mechanical

transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable

by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use,

reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.  
Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

This software is made available under the terms of \*either\* of the licenses found in LICENSE.APACHE or LICENSE.BSD. Contributions to this software is made under the terms of \*both\* these licenses.

Copyright (c) Donald Stufft and individual contributors.

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

# 1.350 idna 2.4

## 1.350.1 Available under license :

No license file was found, but licenses were detected in source scan.

\*\*\*\*

A library to support the Internationalised Domain Names in Applications (IDNA) protocol as specified in RFC 5890 et.al. This new methodology, known as IDNA 2008, can generate materially different results to the previous standard. The library can act as a drop-in replacement for the "encodings.idna" module.

\*\*\*\*

```
import io, sys
from setuptools import setup
```

```
version = "2.4"
```



```

def main():

 python_version = sys.version_info[:2]
 if python_version < (2,6):
 raise SystemExit("Sorry, Python 2.6 or newer required")

 arguments = {
 'name': 'idna',
 'packages': ['idna'],
 'version': version,
 'description': 'Internationalized Domain Names in Applications (IDNA)',
 'long_description': io.open("README.rst", encoding="UTF-8").read(),
 'author': 'Kim Davies',
 'author_email': 'kim@cynosure.com.au',
 'license': 'BSD-like',
 'url': 'https://github.com/kjd/idna',
 'classifiers': [
 'Development Status :: 5 - Production/Stable',
 'Intended Audience :: Developers',
 'Intended Audience :: System Administrators',
 'License :: OSI Approved :: BSD License',
 'Operating System :: OS Independent',
 'Programming Language :: Python',
 'Programming Language :: Python :: 2.6',
 'Programming Language :: Python :: 2.7',
 'Programming Language :: Python :: 3',
 'Programming Language :: Python :: 3.3',
 'Programming Language :: Python :: 3.4',
 'Programming Language :: Python :: 3.5',
 'Topic :: Internet :: Name Service (DNS)',
 'Topic :: Software Development :: Libraries :: Python Modules',
 'Topic :: Utilities',
],
 'test_suite': 'tests',
 }

 setup(**arguments)

if __name__ == '__main__':
 main()

```

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1073192095\_1596538050.69/0/python-idna-2.4-1.e17-1.src.rpm-cosi-expand-archive-T43oinCV/idna-2.4.tar.gz-cosi-expand-archive-7rjKdsgo/idna-2.4/setup.py

No license file was found, but licenses were detected in source scan.

License: BSD-like

Classifier: License :: OSI Approved :: BSD License

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1073192095\_1596538050.69/0/python-idna-2.4-1.el7-1.src.rpm-cosi-expand-archive-T43oinCV/idna-2.4.tar.gz-cosi-expand-archive-7rjKdsgo/idna-2.4/idna.egg-info/PKG-INFO  
\* /opt/ws\_local/PERMITS\_SQL/1073192095\_1596538050.69/0/python-idna-2.4-1.el7-1.src.rpm-cosi-expand-archive-T43oinCV/idna-2.4.tar.gz-cosi-expand-archive-7rjKdsgo/idna-2.4/PKG-INFO

No license file was found, but licenses were detected in source scan.

License: BSD and Python and Unicode

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1073192095\_1596538050.69/0/python-idna-2.4-1.el7-1.src.rpm-cosi-expand-archive-T43oinCV/python-idna.spec

No license file was found, but licenses were detected in source scan.

License

-----

Copyright (c) 2013-2017, Kim Davies. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- #. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- #. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- #. Neither the name of the copyright holder nor the names of the contributors may be used to endorse or promote products derived from this software without specific prior written permission.
- #. THIS SOFTWARE IS PROVIDED BY THE CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Portions of the codec implementation and unit tests are derived from the Python standard library, which carries the Python Software Foundation License <<https://docs.python.org/2/license.html>>`\_`:

Copyright (c) 2001-2014 Python Software Foundation; All Rights Reserved

Portions of the unit tests are derived from the Unicode standard, which is subject to the Unicode, Inc. License Agreement:

Copyright (c) 1991-2014 Unicode, Inc. All rights reserved.

Distributed under the Terms of Use in

<<http://www.unicode.org/copyright.html>>.

Permission is hereby granted, free of charge, to any person obtaining a copy of the Unicode data files and any associated documentation (the "Data Files") or Unicode software and any associated documentation (the "Software") to deal in the Data Files or Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, and/or sell copies of the Data Files or Software, and to permit persons to whom the Data Files or Software are furnished to do so, provided that

(a) this copyright and permission notice appear with all copies of the Data Files or Software,

(b) this copyright and permission notice appear in associated documentation, and

(c) there is clear notice in each modified Data File or in the Software as well as in the documentation associated with the Data File(s) or Software that the data or software has been modified.

THE DATA FILES AND SOFTWARE ARE PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF THIRD PARTY RIGHTS.

IN NO EVENT SHALL THE COPYRIGHT HOLDER OR HOLDERS INCLUDED IN THIS NOTICE BE LIABLE FOR ANY CLAIM, OR ANY SPECIAL INDIRECT OR CONSEQUENTIAL DAMAGES, OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THE DATA FILES OR SOFTWARE.

Except as contained in this notice, the name of a copyright holder shall not be used in advertising or otherwise to promote the sale, use or other dealings in these Data Files or Software without prior written authorization of the copyright holder.

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1073192095\_1596538050.69/0/python-idna-2.4-1.el7-1.src.rpm-cosi-expand-archive-T43oinCV/idna-2.4.tar.gz-cosi-expand-archive-7rjKdsgo/idna-2.4/LICENSE.rst

# 1.351 gzip 1.9-13.el8\_5

## 1.351.1 Available under license :

GNU Free Documentation License

Version 1.3, 3 November 2008

Copyright (C) 2000, 2001, 2002, 2007, 2008 Free Software Foundation, Inc.

<<http://fsf.org/>>

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

### 0. PREAMBLE

The purpose of this License is to make a manual, textbook, or other functional and useful document "free" in the sense of freedom: to assure everyone the effective freedom to copy and redistribute it, with or without modifying it, either commercially or noncommercially. Secondly, this License preserves for the author and publisher a way to get credit for their work, while not being considered responsible for modifications made by others.

This License is a kind of "copyleft", which means that derivative works of the document must themselves be free in the same sense. It complements the GNU General Public License, which is a copyleft license designed for free software.

We have designed this License in order to use it for manuals for free software, because free software needs free documentation: a free program should come with manuals providing the same freedoms that the software does. But this License is not limited to software manuals; it can be used for any textual work, regardless of subject matter or whether it is published as a printed book. We recommend this License principally for works whose purpose is instruction or reference.

### 1. APPLICABILITY AND DEFINITIONS

This License applies to any manual or other work, in any medium, that contains a notice placed by the copyright holder saying it can be distributed under the terms of this License. Such a notice grants a world-wide, royalty-free license, unlimited in duration, to use that

work under the conditions stated herein. The "Document", below, refers to any such manual or work. Any member of the public is a licensee, and is addressed as "you". You accept the license if you copy, modify or distribute the work in a way requiring permission under copyright law.

A "Modified Version" of the Document means any work containing the Document or a portion of it, either copied verbatim, or with modifications and/or translated into another language.

A "Secondary Section" is a named appendix or a front-matter section of the Document that deals exclusively with the relationship of the publishers or authors of the Document to the Document's overall subject (or to related matters) and contains nothing that could fall directly within that overall subject. (Thus, if the Document is in part a textbook of mathematics, a Secondary Section may not explain any mathematics.) The relationship could be a matter of historical connection with the subject or with related matters, or of legal, commercial, philosophical, ethical or political position regarding them.

The "Invariant Sections" are certain Secondary Sections whose titles are designated, as being those of Invariant Sections, in the notice that says that the Document is released under this License. If a section does not fit the above definition of Secondary then it is not allowed to be designated as Invariant. The Document may contain zero Invariant Sections. If the Document does not identify any Invariant Sections then there are none.

The "Cover Texts" are certain short passages of text that are listed, as Front-Cover Texts or Back-Cover Texts, in the notice that says that the Document is released under this License. A Front-Cover Text may be at most 5 words, and a Back-Cover Text may be at most 25 words.

A "Transparent" copy of the Document means a machine-readable copy, represented in a format whose specification is available to the general public, that is suitable for revising the document straightforwardly with generic text editors or (for images composed of pixels) generic paint programs or (for drawings) some widely available drawing editor, and that is suitable for input to text formatters or for automatic translation to a variety of formats suitable for input to text formatters. A copy made in an otherwise Transparent file format whose markup, or absence of markup, has been arranged to thwart or discourage subsequent modification by readers is not Transparent. An image format is not Transparent if used for any substantial amount of text. A copy that is not "Transparent" is called "Opaque".

Examples of suitable formats for Transparent copies include plain

ASCII without markup, Texinfo input format, LaTeX input format, SGML or XML using a publicly available DTD, and standard-conforming simple HTML, PostScript or PDF designed for human modification. Examples of transparent image formats include PNG, XCF and JPG. Opaque formats include proprietary formats that can be read and edited only by proprietary word processors, SGML or XML for which the DTD and/or processing tools are not generally available, and the machine-generated HTML, PostScript or PDF produced by some word processors for output purposes only.

The "Title Page" means, for a printed book, the title page itself, plus such following pages as are needed to hold, legibly, the material this License requires to appear in the title page. For works in formats which do not have any title page as such, "Title Page" means the text near the most prominent appearance of the work's title, preceding the beginning of the body of the text.

The "publisher" means any person or entity that distributes copies of the Document to the public.

A section "Entitled XYZ" means a named subunit of the Document whose title either is precisely XYZ or contains XYZ in parentheses following text that translates XYZ in another language. (Here XYZ stands for a specific section name mentioned below, such as "Acknowledgements", "Dedications", "Endorsements", or "History".) To "Preserve the Title" of such a section when you modify the Document means that it remains a section "Entitled XYZ" according to this definition.

The Document may include Warranty Disclaimers next to the notice which states that this License applies to the Document. These Warranty Disclaimers are considered to be included by reference in this License, but only as regards disclaiming warranties: any other implication that these Warranty Disclaimers may have is void and has no effect on the meaning of this License.

## 2. VERBATIM COPYING

You may copy and distribute the Document in any medium, either commercially or noncommercially, provided that this License, the copyright notices, and the license notice saying this License applies to the Document are reproduced in all copies, and that you add no other conditions whatsoever to those of this License. You may not use technical measures to obstruct or control the reading or further copying of the copies you make or distribute. However, you may accept compensation in exchange for copies. If you distribute a large enough number of copies you must also follow the conditions in section 3.

You may also lend copies, under the same conditions stated above, and

you may publicly display copies.

### 3. COPYING IN QUANTITY

If you publish printed copies (or copies in media that commonly have printed covers) of the Document, numbering more than 100, and the Document's license notice requires Cover Texts, you must enclose the copies in covers that carry, clearly and legibly, all these Cover Texts: Front-Cover Texts on the front cover, and Back-Cover Texts on the back cover. Both covers must also clearly and legibly identify you as the publisher of these copies. The front cover must present the full title with all words of the title equally prominent and visible. You may add other material on the covers in addition. Copying with changes limited to the covers, as long as they preserve the title of the Document and satisfy these conditions, can be treated as verbatim copying in other respects.

If the required texts for either cover are too voluminous to fit legibly, you should put the first ones listed (as many as fit reasonably) on the actual cover, and continue the rest onto adjacent pages.

If you publish or distribute Opaque copies of the Document numbering more than 100, you must either include a machine-readable Transparent copy along with each Opaque copy, or state in or with each Opaque copy a computer-network location from which the general network-using public has access to download using public-standard network protocols a complete Transparent copy of the Document, free of added material. If you use the latter option, you must take reasonably prudent steps, when you begin distribution of Opaque copies in quantity, to ensure that this Transparent copy will remain thus accessible at the stated location until at least one year after the last time you distribute an Opaque copy (directly or through your agents or retailers) of that edition to the public.

It is requested, but not required, that you contact the authors of the Document well before redistributing any large number of copies, to give them a chance to provide you with an updated version of the Document.

### 4. MODIFICATIONS

You may copy and distribute a Modified Version of the Document under the conditions of sections 2 and 3 above, provided that you release the Modified Version under precisely this License, with the Modified Version filling the role of the Document, thus licensing distribution

and modification of the Modified Version to whoever possesses a copy of it. In addition, you must do these things in the Modified Version:

- A. Use in the Title Page (and on the covers, if any) a title distinct from that of the Document, and from those of previous versions (which should, if there were any, be listed in the History section of the Document). You may use the same title as a previous version if the original publisher of that version gives permission.
- B. List on the Title Page, as authors, one or more persons or entities responsible for authorship of the modifications in the Modified Version, together with at least five of the principal authors of the Document (all of its principal authors, if it has fewer than five), unless they release you from this requirement.
- C. State on the Title page the name of the publisher of the Modified Version, as the publisher.
- D. Preserve all the copyright notices of the Document.
- E. Add an appropriate copyright notice for your modifications adjacent to the other copyright notices.
- F. Include, immediately after the copyright notices, a license notice giving the public permission to use the Modified Version under the terms of this License, in the form shown in the Addendum below.
- G. Preserve in that license notice the full lists of Invariant Sections and required Cover Texts given in the Document's license notice.
- H. Include an unaltered copy of this License.
- I. Preserve the section Entitled "History", Preserve its Title, and add to it an item stating at least the title, year, new authors, and publisher of the Modified Version as given on the Title Page. If there is no section Entitled "History" in the Document, create one stating the title, year, authors, and publisher of the Document as given on its Title Page, then add an item describing the Modified Version as stated in the previous sentence.
- J. Preserve the network location, if any, given in the Document for public access to a Transparent copy of the Document, and likewise the network locations given in the Document for previous versions it was based on. These may be placed in the "History" section. You may omit a network location for a work that was published at least four years before the Document itself, or if the original publisher of the version it refers to gives permission.
- K. For any section Entitled "Acknowledgements" or "Dedications", Preserve the Title of the section, and preserve in the section all the substance and tone of each of the contributor acknowledgements and/or dedications given therein.
- L. Preserve all the Invariant Sections of the Document, unaltered in their text and in their titles. Section numbers or the equivalent are not considered part of the section titles.
- M. Delete any section Entitled "Endorsements". Such a section may not be included in the Modified Version.
- N. Do not retitle any existing section to be Entitled "Endorsements"



or to conflict in title with any Invariant Section.

O. Preserve any Warranty Disclaimers.

If the Modified Version includes new front-matter sections or appendices that qualify as Secondary Sections and contain no material copied from the Document, you may at your option designate some or all of these sections as invariant. To do this, add their titles to the list of Invariant Sections in the Modified Version's license notice.

These titles must be distinct from any other section titles.

You may add a section Entitled "Endorsements", provided it contains nothing but endorsements of your Modified Version by various parties--for example, statements of peer review or that the text has been approved by an organization as the authoritative definition of a standard.

You may add a passage of up to five words as a Front-Cover Text, and a passage of up to 25 words as a Back-Cover Text, to the end of the list of Cover Texts in the Modified Version. Only one passage of Front-Cover Text and one of Back-Cover Text may be added by (or through arrangements made by) any one entity. If the Document already includes a cover text for the same cover, previously added by you or by arrangement made by the same entity you are acting on behalf of, you may not add another; but you may replace the old one, on explicit permission from the previous publisher that added the old one.

The author(s) and publisher(s) of the Document do not by this License give permission to use their names for publicity for or to assert or imply endorsement of any Modified Version.

## 5. COMBINING DOCUMENTS

You may combine the Document with other documents released under this License, under the terms defined in section 4 above for modified versions, provided that you include in the combination all of the Invariant Sections of all of the original documents, unmodified, and list them all as Invariant Sections of your combined work in its license notice, and that you preserve all their Warranty Disclaimers.

The combined work need only contain one copy of this License, and multiple identical Invariant Sections may be replaced with a single copy. If there are multiple Invariant Sections with the same name but different contents, make the title of each such section unique by adding at the end of it, in parentheses, the name of the original author or publisher of that section if known, or else a unique number. Make the same adjustment to the section titles in the list of Invariant Sections in the license notice of the combined work.

In the combination, you must combine any sections Entitled "History" in the various original documents, forming one section Entitled "History"; likewise combine any sections Entitled "Acknowledgements", and any sections Entitled "Dedications". You must delete all sections Entitled "Endorsements".

## 6. COLLECTIONS OF DOCUMENTS

You may make a collection consisting of the Document and other documents released under this License, and replace the individual copies of this License in the various documents with a single copy that is included in the collection, provided that you follow the rules of this License for verbatim copying of each of the documents in all other respects.

You may extract a single document from such a collection, and distribute it individually under this License, provided you insert a copy of this License into the extracted document, and follow this License in all other respects regarding verbatim copying of that document.

## 7. AGGREGATION WITH INDEPENDENT WORKS

A compilation of the Document or its derivatives with other separate and independent documents or works, in or on a volume of a storage or distribution medium, is called an "aggregate" if the copyright resulting from the compilation is not used to limit the legal rights of the compilation's users beyond what the individual works permit. When the Document is included in an aggregate, this License does not apply to the other works in the aggregate which are not themselves derivative works of the Document.

If the Cover Text requirement of section 3 is applicable to these copies of the Document, then if the Document is less than one half of the entire aggregate, the Document's Cover Texts may be placed on covers that bracket the Document within the aggregate, or the electronic equivalent of covers if the Document is in electronic form. Otherwise they must appear on printed covers that bracket the whole aggregate.

## 8. TRANSLATION

Translation is considered a kind of modification, so you may distribute translations of the Document under the terms of section 4.

Replacing Invariant Sections with translations requires special permission from their copyright holders, but you may include translations of some or all Invariant Sections in addition to the original versions of these Invariant Sections. You may include a translation of this License, and all the license notices in the Document, and any Warranty Disclaimers, provided that you also include the original English version of this License and the original versions of those notices and disclaimers. In case of a disagreement between the translation and the original version of this License or a notice or disclaimer, the original version will prevail.

If a section in the Document is Entitled "Acknowledgements", "Dedications", or "History", the requirement (section 4) to Preserve its Title (section 1) will typically require changing the actual title.

## 9. TERMINATION

You may not copy, modify, sublicense, or distribute the Document except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, or distribute it is void, and will automatically terminate your rights under this License.

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, receipt of a copy of some or all of the same material does not give you any rights to use it.

## 10. FUTURE REVISIONS OF THIS LICENSE

The Free Software Foundation may publish new, revised versions of the

GNU Free Documentation License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns. See <http://www.gnu.org/copyleft/>.

Each version of the License is given a distinguishing version number. If the Document specifies that a particular numbered version of this License "or any later version" applies to it, you have the option of following the terms and conditions either of that specified version or of any later version that has been published (not as a draft) by the Free Software Foundation. If the Document does not specify a version number of this License, you may choose any version ever published (not as a draft) by the Free Software Foundation. If the Document specifies that a proxy can decide which future versions of this License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Document.

## 11. RELICENSING

"Massive Multiauthor Collaboration Site" (or "MMC Site") means any World Wide Web server that publishes copyrightable works and also provides prominent facilities for anybody to edit those works. A public wiki that anybody can edit is an example of such a server. A "Massive Multiauthor Collaboration" (or "MMC") contained in the site means any set of copyrightable works thus published on the MMC site.

"CC-BY-SA" means the Creative Commons Attribution-Share Alike 3.0 license published by Creative Commons Corporation, a not-for-profit corporation with a principal place of business in San Francisco, California, as well as future copyleft versions of that license published by that same organization.

"Incorporate" means to publish or republish a Document, in whole or in part, as part of another Document.

An MMC is "eligible for relicensing" if it is licensed under this License, and if all works that were first published under this License somewhere other than this MMC, and subsequently incorporated in whole or in part into the MMC, (1) had no cover texts or invariant sections, and (2) were thus incorporated prior to November 1, 2008.

The operator of an MMC Site may republish an MMC contained in the site under CC-BY-SA on the same site at any time before August 1, 2009, provided the MMC is eligible for relicensing.

ADDENDUM: How to use this License for your documents

To use this License in a document you have written, include a copy of the License in the document and put the following copyright and license notices just after the title page:

Copyright (c) YEAR YOUR NAME.

Permission is granted to copy, distribute and/or modify this document under the terms of the GNU Free Documentation License, Version 1.3 or any later version published by the Free Software Foundation; with no Invariant Sections, no Front-Cover Texts, and no Back-Cover Texts. A copy of the license is included in the section entitled "GNU Free Documentation License".

If you have Invariant Sections, Front-Cover Texts and Back-Cover Texts, replace the "with...Texts." line with this:

with the Invariant Sections being LIST THEIR TITLES, with the Front-Cover Texts being LIST, and with the Back-Cover Texts being LIST.

If you have Invariant Sections without Cover Texts, or some other combination of the three, merge those two alternatives to suit the situation.

If your document contains nontrivial examples of program code, we recommend releasing these examples in parallel under your choice of free software license, such as the GNU General Public License, to permit their use in free software.

GNU GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>  
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

#### Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

## TERMS AND CONDITIONS

### 0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

### 1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

## 2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains



in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

### 3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

### 4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

### 5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

a) The work must carry prominent notices stating that you modified it, and giving a relevant date.

b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".

c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.

d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

## 6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a

copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

## 7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place

additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

## 8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

## 9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

## 10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an

organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

#### 11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a

publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

#### 12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this



License would be to refrain entirely from conveying the Program.

13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF

ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program> Copyright (C) <year> <name of author>
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <http://www.gnu.org/licenses/>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <http://www.gnu.org/philosophy/why-not-lgpl.html>.

## 1.352 readline 7.0 10.el8

### 1.352.1 Available under license :

GNU GENERAL PUBLIC LICENSE  
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.  
59 Temple Place, Suite 330, Boston, MA 02111-1307 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This

General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE  
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains

a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but

does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to

control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then

the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals



of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

## NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of

MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands ``show w'` and ``show c'` should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than ``show w'` and ``show c'`; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

GNU GENERAL PUBLIC LICENSE  
Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>  
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The GNU General Public License is a free, copyleft license for

software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions

of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

## TERMS AND CONDITIONS

### 0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the

extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

## 1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

## 2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

### 3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

### 4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all

recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

#### 5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.
- b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".
- c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.
- d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

#### 6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family,



or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

## 7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions.

Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms

of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

## 8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

## 9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do

not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

#### 10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

#### 11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

## 12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

## 13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

## 14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a

later version.

#### 15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

#### 16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### 17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see <<http://www.gnu.org/licenses/>>.

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program> Copyright (C) <year> <name of author>
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <<http://www.gnu.org/licenses/>>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <<http://www.gnu.org/philosophy/why-not-lgpl.html>>.

@c The GNU Free Documentation License.  
@center Version 1.3, 3 November 2008

@c This file is intended to be included within another document,  
@c hence no sectioning command or @node.

@display

Copyright @copyright{ } 2000, 2001, 2002, 2007, 2008 Free Software Foundation, Inc.



[@uref{http://fsf.org/}](http://fsf.org/)

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

@end display

@enumerate 0

@item

PREAMBLE

The purpose of this License is to make a manual, textbook, or other functional and useful document @dfn{free} in the sense of freedom: to assure everyone the effective freedom to copy and redistribute it, with or without modifying it, either commercially or noncommercially. Secondly, this License preserves for the author and publisher a way to get credit for their work, while not being considered responsible for modifications made by others.

This License is a kind of ``copyleft'', which means that derivative works of the document must themselves be free in the same sense. It complements the GNU General Public License, which is a copyleft license designed for free software.

We have designed this License in order to use it for manuals for free software, because free software needs free documentation: a free program should come with manuals providing the same freedoms that the software does. But this License is not limited to software manuals; it can be used for any textual work, regardless of subject matter or whether it is published as a printed book. We recommend this License principally for works whose purpose is instruction or reference.

@item

APPLICABILITY AND DEFINITIONS

This License applies to any manual or other work, in any medium, that contains a notice placed by the copyright holder saying it can be distributed under the terms of this License. Such a notice grants a world-wide, royalty-free license, unlimited in duration, to use that work under the conditions stated herein. The ``Document'', below, refers to any such manual or work. Any member of the public is a licensee, and is addressed as ``you''. You accept the license if you copy, modify or distribute the work in a way requiring permission under copyright law.

A ``Modified Version'' of the Document means any work containing the Document or a portion of it, either copied verbatim, or with modifications and/or translated into another language.

A "Secondary Section" is a named appendix or a front-matter section of the Document that deals exclusively with the relationship of the publishers or authors of the Document to the Document's overall subject (or to related matters) and contains nothing that could fall directly within that overall subject. (Thus, if the Document is in part a textbook of mathematics, a Secondary Section may not explain any mathematics.) The relationship could be a matter of historical connection with the subject or with related matters, or of legal, commercial, philosophical, ethical or political position regarding them.

The "Invariant Sections" are certain Secondary Sections whose titles are designated, as being those of Invariant Sections, in the notice that says that the Document is released under this License. If a section does not fit the above definition of Secondary then it is not allowed to be designated as Invariant. The Document may contain zero Invariant Sections. If the Document does not identify any Invariant Sections then there are none.

The "Cover Texts" are certain short passages of text that are listed, as Front-Cover Texts or Back-Cover Texts, in the notice that says that the Document is released under this License. A Front-Cover Text may be at most 5 words, and a Back-Cover Text may be at most 25 words.

A "Transparent" copy of the Document means a machine-readable copy, represented in a format whose specification is available to the general public, that is suitable for revising the document straightforwardly with generic text editors or (for images composed of pixels) generic paint programs or (for drawings) some widely available drawing editor, and that is suitable for input to text formatters or for automatic translation to a variety of formats suitable for input to text formatters. A copy made in an otherwise Transparent file format whose markup, or absence of markup, has been arranged to thwart or discourage subsequent modification by readers is not Transparent. An image format is not Transparent if used for any substantial amount of text. A copy that is not "Transparent" is called "Opaque".

Examples of suitable formats for Transparent copies include plain `@sc{ascii}` without markup, Texinfo input format, `La@TeX{}` input format, `@acronym{SGML}` or `@acronym{XML}` using a publicly available `@acronym{DTD}`, and standard-conforming simple `@acronym{HTML}`, PostScript or `@acronym{PDF}` designed for human modification. Examples of transparent image formats include `@acronym{PNG}`, `@acronym{XCF}` and `@acronym{JPG}`. Opaque formats include proprietary formats that can be read and edited only by proprietary word processors, `@acronym{SGML}` or `@acronym{XML}` for which the `@acronym{DTD}` and/or processing tools are not generally available, and the machine-generated `@acronym{HTML}`, PostScript or `@acronym{PDF}` produced by some word processors for

output purposes only.

The "Title Page" means, for a printed book, the title page itself, plus such following pages as are needed to hold, legibly, the material this License requires to appear in the title page. For works in formats which do not have any title page as such, "Title Page" means the text near the most prominent appearance of the work's title, preceding the beginning of the body of the text.

The "publisher" means any person or entity that distributes copies of the Document to the public.

A section "Entitled XYZ" means a named subunit of the Document whose title either is precisely XYZ or contains XYZ in parentheses following text that translates XYZ in another language. (Here XYZ stands for a specific section name mentioned below, such as "Acknowledgements", "Dedications", "Endorsements", or "History".) To "Preserve the Title" of such a section when you modify the Document means that it remains a section "Entitled XYZ" according to this definition.

The Document may include Warranty Disclaimers next to the notice which states that this License applies to the Document. These Warranty Disclaimers are considered to be included by reference in this License, but only as regards disclaiming warranties: any other implication that these Warranty Disclaimers may have is void and has no effect on the meaning of this License.

@item

#### VERBATIM COPYING

You may copy and distribute the Document in any medium, either commercially or noncommercially, provided that this License, the copyright notices, and the license notice saying this License applies to the Document are reproduced in all copies, and that you add no other conditions whatsoever to those of this License. You may not use technical measures to obstruct or control the reading or further copying of the copies you make or distribute. However, you may accept compensation in exchange for copies. If you distribute a large enough number of copies you must also follow the conditions in section 3.

You may also lend copies, under the same conditions stated above, and you may publicly display copies.

@item

#### COPYING IN QUANTITY

If you publish printed copies (or copies in media that commonly have printed covers) of the Document, numbering more than 100, and the

Document's license notice requires Cover Texts, you must enclose the copies in covers that carry, clearly and legibly, all these Cover Texts: Front-Cover Texts on the front cover, and Back-Cover Texts on the back cover. Both covers must also clearly and legibly identify you as the publisher of these copies. The front cover must present the full title with all words of the title equally prominent and visible. You may add other material on the covers in addition. Copying with changes limited to the covers, as long as they preserve the title of the Document and satisfy these conditions, can be treated as verbatim copying in other respects.

If the required texts for either cover are too voluminous to fit legibly, you should put the first ones listed (as many as fit reasonably) on the actual cover, and continue the rest onto adjacent pages.

If you publish or distribute Opaque copies of the Document numbering more than 100, you must either include a machine-readable Transparent copy along with each Opaque copy, or state in or with each Opaque copy a computer-network location from which the general network-using public has access to download using public-standard network protocols a complete Transparent copy of the Document, free of added material. If you use the latter option, you must take reasonably prudent steps, when you begin distribution of Opaque copies in quantity, to ensure that this Transparent copy will remain thus accessible at the stated location until at least one year after the last time you distribute an Opaque copy (directly or through your agents or retailers) of that edition to the public.

It is requested, but not required, that you contact the authors of the Document well before redistributing any large number of copies, to give them a chance to provide you with an updated version of the Document.

@item

## MODIFICATIONS

You may copy and distribute a Modified Version of the Document under the conditions of sections 2 and 3 above, provided that you release the Modified Version under precisely this License, with the Modified Version filling the role of the Document, thus licensing distribution and modification of the Modified Version to whoever possesses a copy of it. In addition, you must do these things in the Modified Version:

@enumerate A

@item

Use in the Title Page (and on the covers, if any) a title distinct from that of the Document, and from those of previous versions (which should, if there were any, be listed in the History section

of the Document). You may use the same title as a previous version if the original publisher of that version gives permission.

@item

List on the Title Page, as authors, one or more persons or entities responsible for authorship of the modifications in the Modified Version, together with at least five of the principal authors of the Document (all of its principal authors, if it has fewer than five), unless they release you from this requirement.

@item

State on the Title page the name of the publisher of the Modified Version, as the publisher.

@item

Preserve all the copyright notices of the Document.

@item

Add an appropriate copyright notice for your modifications adjacent to the other copyright notices.

@item

Include, immediately after the copyright notices, a license notice giving the public permission to use the Modified Version under the terms of this License, in the form shown in the Addendum below.

@item

Preserve in that license notice the full lists of Invariant Sections and required Cover Texts given in the Document's license notice.

@item

Include an unaltered copy of this License.

@item

Preserve the section Entitled ``History'', Preserve its Title, and add to it an item stating at least the title, year, new authors, and publisher of the Modified Version as given on the Title Page. If there is no section Entitled ``History'' in the Document, create one stating the title, year, authors, and publisher of the Document as given on its Title Page, then add an item describing the Modified Version as stated in the previous sentence.

@item

Preserve the network location, if any, given in the Document for public access to a Transparent copy of the Document, and likewise the network locations given in the Document for previous versions it was based on. These may be placed in the ``History'' section.

You may omit a network location for a work that was published at

least four years before the Document itself, or if the original publisher of the version it refers to gives permission.

@item

For any section Entitled ``Acknowledgements" or ``Dedications", Preserve the Title of the section, and preserve in the section all the substance and tone of each of the contributor acknowledgements and/or dedications given therein.

@item

Preserve all the Invariant Sections of the Document, unaltered in their text and in their titles. Section numbers or the equivalent are not considered part of the section titles.

@item

Delete any section Entitled ``Endorsements". Such a section may not be included in the Modified Version.

@item

Do not retile any existing section to be Entitled ``Endorsements" or to conflict in title with any Invariant Section.

@item

Preserve any Warranty Disclaimers.

@end enumerate

If the Modified Version includes new front-matter sections or appendices that qualify as Secondary Sections and contain no material copied from the Document, you may at your option designate some or all of these sections as invariant. To do this, add their titles to the list of Invariant Sections in the Modified Version's license notice. These titles must be distinct from any other section titles.

You may add a section Entitled ``Endorsements", provided it contains nothing but endorsements of your Modified Version by various parties---for example, statements of peer review or that the text has been approved by an organization as the authoritative definition of a standard.

You may add a passage of up to five words as a Front-Cover Text, and a passage of up to 25 words as a Back-Cover Text, to the end of the list of Cover Texts in the Modified Version. Only one passage of Front-Cover Text and one of Back-Cover Text may be added by (or through arrangements made by) any one entity. If the Document already includes a cover text for the same cover, previously added by you or by arrangement made by the same entity you are acting on behalf of, you may not add another; but you may replace the old one, on explicit permission from the previous publisher that added the old one.

The author(s) and publisher(s) of the Document do not by this License give permission to use their names for publicity for or to assert or imply endorsement of any Modified Version.

@item

## COMBINING DOCUMENTS

You may combine the Document with other documents released under this License, under the terms defined in section 4 above for modified versions, provided that you include in the combination all of the Invariant Sections of all of the original documents, unmodified, and list them all as Invariant Sections of your combined work in its license notice, and that you preserve all their Warranty Disclaimers.

The combined work need only contain one copy of this License, and multiple identical Invariant Sections may be replaced with a single copy. If there are multiple Invariant Sections with the same name but different contents, make the title of each such section unique by adding at the end of it, in parentheses, the name of the original author or publisher of that section if known, or else a unique number. Make the same adjustment to the section titles in the list of Invariant Sections in the license notice of the combined work.

In the combination, you must combine any sections Entitled ``History" in the various original documents, forming one section Entitled ``History"; likewise combine any sections Entitled ``Acknowledgements", and any sections Entitled ``Dedications". You must delete all sections Entitled ``Endorsements."

@item

## COLLECTIONS OF DOCUMENTS

You may make a collection consisting of the Document and other documents released under this License, and replace the individual copies of this License in the various documents with a single copy that is included in the collection, provided that you follow the rules of this License for verbatim copying of each of the documents in all other respects.

You may extract a single document from such a collection, and distribute it individually under this License, provided you insert a copy of this License into the extracted document, and follow this License in all other respects regarding verbatim copying of that document.

@item

## AGGREGATION WITH INDEPENDENT WORKS

A compilation of the Document or its derivatives with other separate

and independent documents or works, in or on a volume of a storage or distribution medium, is called an ``aggregate" if the copyright resulting from the compilation is not used to limit the legal rights of the compilation's users beyond what the individual works permit. When the Document is included in an aggregate, this License does not apply to the other works in the aggregate which are not themselves derivative works of the Document.

If the Cover Text requirement of section 3 is applicable to these copies of the Document, then if the Document is less than one half of the entire aggregate, the Document's Cover Texts may be placed on covers that bracket the Document within the aggregate, or the electronic equivalent of covers if the Document is in electronic form. Otherwise they must appear on printed covers that bracket the whole aggregate.

@item

## TRANSLATION

Translation is considered a kind of modification, so you may distribute translations of the Document under the terms of section 4. Replacing Invariant Sections with translations requires special permission from their copyright holders, but you may include translations of some or all Invariant Sections in addition to the original versions of these Invariant Sections. You may include a translation of this License, and all the license notices in the Document, and any Warranty Disclaimers, provided that you also include the original English version of this License and the original versions of those notices and disclaimers. In case of a disagreement between the translation and the original version of this License or a notice or disclaimer, the original version will prevail.

If a section in the Document is Entitled ``Acknowledgements", ``Dedications", or ``History", the requirement (section 4) to Preserve its Title (section 1) will typically require changing the actual title.

@item

## TERMINATION

You may not copy, modify, sublicense, or distribute the Document except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, or distribute it is void, and will automatically terminate your rights under this License.

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally



terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, receipt of a copy of some or all of the same material does not give you any rights to use it.

@item

#### FUTURE REVISIONS OF THIS LICENSE

The Free Software Foundation may publish new, revised versions of the GNU Free Documentation License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns. See [@uref{http://www.gnu.org/copyleft/}](http://www.gnu.org/copyleft/).

Each version of the License is given a distinguishing version number. If the Document specifies that a particular numbered version of this License "or any later version" applies to it, you have the option of following the terms and conditions either of that specified version or of any later version that has been published (not as a draft) by the Free Software Foundation. If the Document does not specify a version number of this License, you may choose any version ever published (not as a draft) by the Free Software Foundation. If the Document specifies that a proxy can decide which future versions of this License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Document.

@item

#### RELICENSING

"Massive Multiauthor Collaboration Site" (or "MMC Site") means any World Wide Web server that publishes copyrightable works and also provides prominent facilities for anybody to edit those works. A public wiki that anybody can edit is an example of such a server. A "Massive Multiauthor Collaboration" (or "MMC") contained in the site means any set of copyrightable works thus published on the MMC

site.

``CC-BY-SA" means the Creative Commons Attribution-Share Alike 3.0 license published by Creative Commons Corporation, a not-for-profit corporation with a principal place of business in San Francisco, California, as well as future copyleft versions of that license published by that same organization.

``Incorporate" means to publish or republish a Document, in whole or in part, as part of another Document.

An MMC is ``eligible for relicensing" if it is licensed under this License, and if all works that were first published under this License somewhere other than this MMC, and subsequently incorporated in whole or in part into the MMC, (1) had no cover texts or invariant sections, and (2) were thus incorporated prior to November 1, 2008.

The operator of an MMC Site may republish an MMC contained in the site under CC-BY-SA on the same site at any time before August 1, 2009, provided the MMC is eligible for relicensing.

@end enumerate

@page

@heading ADDENDUM: How to use this License for your documents

To use this License in a document you have written, include a copy of the License in the document and put the following copyright and license notices just after the title page:

@smallexample

@group

Copyright (C) @var{year} @var{your name}.

Permission is granted to copy, distribute and/or modify this document under the terms of the GNU Free Documentation License, Version 1.3 or any later version published by the Free Software Foundation; with no Invariant Sections, no Front-Cover Texts, and no Back-Cover Texts. A copy of the license is included in the section entitled ``GNU Free Documentation License".

@end group

@end smallexample

If you have Invariant Sections, Front-Cover Texts and Back-Cover Texts, replace the ``with@dots{ }Texts." line with this:

@smallexample

@group

with the Invariant Sections being @var{list their titles}, with

the Front-Cover Texts being @var{list}, and with the Back-Cover Texts being @var{list}.

@end group

@end smallexample

If you have Invariant Sections without Cover Texts, or some other combination of the three, merge those two alternatives to suit the situation.

If your document contains nontrivial examples of program code, we recommend releasing these examples in parallel under your choice of free software license, such as the GNU General Public License, to permit their use in free software.

@c Local Variables:  
@c ispell-local-pdict: "ispell-dict"  
@c End:

## 1.353 zstd 1.4.4 1.e18

### 1.353.1 Available under license :

BSD License

For Zstandard software

Copyright (c) 2016-present, Facebook, Inc. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name Facebook nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;

LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free

software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1

above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.



9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest

possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
'Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
```

Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

# 1.354 springfox-spring-webmvc 3.0.0

## 1.354.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/*
 *
 * Copyright 2015 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 *
 *
 */
```

Found in path(s):

```
* /opt/ws_local/PERMITS_SQL/1082517930_1597959663.43/0/springfox-spring-webmvc-3-0-0-sources-
jar/springfox/documentation/spring/web/WebMvcNameValueExpressionWrapper.java
* /opt/ws_local/PERMITS_SQL/1082517930_1597959663.43/0/springfox-spring-webmvc-3-0-0-sources-
jar/springfox/documentation/spring/web/WebMvcPatternsRequestConditionWrapper.java
* /opt/ws_local/PERMITS_SQL/1082517930_1597959663.43/0/springfox-spring-webmvc-3-0-0-sources-
jar/springfox/documentation/spring/web/WebMvcRequestMappingInfoWrapper.java
```

No license file was found, but licenses were detected in source scan.

```
/*
 *
 * Copyright 2015-2019 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
```

\* You may obtain a copy of the License at  
\*  
\* <http://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*  
\*  
\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1082517930\_1597959663.43/0/springfox-spring-webmvc-3-0-0-sources-jar/springfox/documentation/spring/web/WebMvcObjectMapperConfigurer.java  
No license file was found, but licenses were detected in source scan.

/\*  
\*  
\* Copyright 2015-2018 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <http://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*  
\*  
\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1082517930\_1597959663.43/0/springfox-spring-webmvc-3-0-0-sources-jar/springfox/documentation/spring/web/SpringfoxWebMvcConfiguration.java  
No license file was found, but licenses were detected in source scan.

/\*  
\*  
\* Copyright 2016-2017 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at  
\*  
\* <http://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*  
\*  
\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1082517930\_1597959663.43/0/springfox-spring-webmvc-3-0-0-sources-jar/springfox/documentation/spring/web/WebMvcRequestHandler.java  
No license file was found, but licenses were detected in source scan.

/\*  
\*  
\* Copyright 2015-2017 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <http://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*  
\*  
\*/

Found in path(s):

\* /opt/ws\_local/PERMITS\_SQL/1082517930\_1597959663.43/0/springfox-spring-webmvc-3-0-0-sources-jar/springfox/documentation/spring/web/plugins/WebMvcRequestHandlerProvider.java

## 1.355 jackson-dataformat-csv 2.12.6

### 1.355.1 Available under license :

Apache-2.0

# 1.356 berkeley-db 5.1.19

## 1.356.1 Available under license :

```
/*-
* Id
*/
```

The following is the license that applies to this copy of the Berkeley DB software. For a license to use the Berkeley DB software under conditions other than those described here, or to purchase support for this software, please contact Oracle at [berkeleydb-info\\_us@oracle.com](mailto:berkeleydb-info_us@oracle.com).

```

```

```
/*
* Copyright (c) 1990, 2011 Oracle and/or its affiliates. All rights reserved.
*
* Redistribution and use in source and binary forms, with or without
* modification, are permitted provided that the following conditions
* are met:
* 1. Redistributions of source code must retain the above copyright
* notice, this list of conditions and the following disclaimer.
* 2. Redistributions in binary form must reproduce the above copyright
* notice, this list of conditions and the following disclaimer in the
* documentation and/or other materials provided with the distribution.
* 3. Redistributions in any form must be accompanied by information on
* how to obtain complete source code for the DB software and any
* accompanying software that uses the DB software. The source code
* must either be included in the distribution or be available for no
* more than the cost of distribution plus a nominal fee, and must be
* freely redistributable under reasonable conditions. For an
* executable file, complete source code means the source code for all
* modules it contains. It does not include source code for modules or
* files that typically accompany the major components of the operating
* system on which the executable file runs.
*
* THIS SOFTWARE IS PROVIDED BY ORACLE ``AS IS" AND ANY EXPRESS OR
* IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
* WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR
* NON-INFRINGEMENT, ARE DISCLAIMED. IN NO EVENT SHALL ORACLE BE LIABLE
* FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
* CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
* SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR
* BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY,
* WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE
* OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN
* IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
*/
```

/\*

\* Copyright (c) 1990, 1993, 1994, 1995

\* The Regents of the University of California. All rights reserved.

\*

\* Redistribution and use in source and binary forms, with or without

\* modification, are permitted provided that the following conditions

\* are met:

\* 1. Redistributions of source code must retain the above copyright

\* notice, this list of conditions and the following disclaimer.

\* 2. Redistributions in binary form must reproduce the above copyright

\* notice, this list of conditions and the following disclaimer in the

\* documentation and/or other materials provided with the distribution.

\* 3. Neither the name of the University nor the names of its contributors

\* may be used to endorse or promote products derived from this software

\* without specific prior written permission.

\*

\* THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS" AND

\* ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE

\* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE

\* ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE

\* FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL

\* DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS

\* OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)

\* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT

\* LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY

\* OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF

\* SUCH DAMAGE.

\*/

/\*

\* Copyright (c) 1995, 1996

\* The President and Fellows of Harvard University. All rights reserved.

\*

\* Redistribution and use in source and binary forms, with or without

\* modification, are permitted provided that the following conditions

\* are met:

\* 1. Redistributions of source code must retain the above copyright

\* notice, this list of conditions and the following disclaimer.

\* 2. Redistributions in binary form must reproduce the above copyright

\* notice, this list of conditions and the following disclaimer in the

\* documentation and/or other materials provided with the distribution.

\* 3. Neither the name of the University nor the names of its contributors

\* may be used to endorse or promote products derived from this software

\* without specific prior written permission.

\*

\* THIS SOFTWARE IS PROVIDED BY HARVARD AND ITS CONTRIBUTORS ``AS IS" AND

\* ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE

\* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE

\* ARE DISCLAIMED. IN NO EVENT SHALL HARVARD OR ITS CONTRIBUTORS BE LIABLE

\* FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL  
\* DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS  
\* OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)  
\* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT  
\* LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY  
\* OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF  
\* SUCH DAMAGE.

\*/

-----

/\*\*

\* ASM: a very small and fast Java bytecode manipulation framework

\* Copyright (c) 2000-2005 INRIA, France Telecom

\* All rights reserved.

\*

\* Redistribution and use in source and binary forms, with or without

\* modification, are permitted provided that the following conditions

\* are met:

\* 1. Redistributions of source code must retain the above copyright

\* notice, this list of conditions and the following disclaimer.

\* 2. Redistributions in binary form must reproduce the above copyright

\* notice, this list of conditions and the following disclaimer in the

\* documentation and/or other materials provided with the distribution.

\* 3. Neither the name of the copyright holders nor the names of its

\* contributors may be used to endorse or promote products derived from

\* this software without specific prior written permission.

\*

\* THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"

\* AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE

\* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE

\* ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE

\* LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR

\* CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF

\* SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS

\* INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN

\* CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)

\* ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF

\* THE POSSIBILITY OF SUCH DAMAGE.

\*/

## 1.357 zlib 1.2.11-18.el8\_5

### 1.357.1 Available under license :

Boost Software License - Version 1.0 - August 17th, 2003

Permission is hereby granted, free of charge, to any person or organization  
obtaining a copy of the software and accompanying documentation covered by  
this license (the "Software") to use, reproduce, display, distribute,



execute, and transmit the Software, and to prepare derivative works of the Software, and to permit third-parties to whom the Software is furnished to do so, all subject to the following:

The copyright notices in the Software and this entire statement, including the above license grant, this restriction and the following disclaimer, must be included in all copies of the Software, in whole or in part, and all derivative works of the Software, unless such copies or derivative works are solely in the form of machine-executable object code generated by a source language processor.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE AND NON-INFRINGEMENT. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR ANYONE DISTRIBUTING THE SOFTWARE BE LIABLE FOR ANY DAMAGES OR OTHER LIABILITY, WHETHER IN CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

## 1.358 python-certifi 2018.01.18

### 1.358.1 Available under license :

This package contains a modified version of ca-bundle.crt:

ca-bundle.crt -- Bundle of CA Root Certificates

Certificate data from Mozilla as of: Thu Nov 3 19:04:19 2011#

This is a bundle of X.509 certificates of public Certificate Authorities (CA). These were automatically extracted from Mozilla's root certificates file (certdata.txt). This file can be found in the mozilla source tree:

<http://mxr.mozilla.org/mozilla/source/security/nss/lib/ckfw/builtins/certdata.txt?raw=1#>

It contains the certificates in PEM format and therefore can be directly used with curl / libcurl / php\_curl, or with an Apache+mod\_ssl webserver for SSL client authentication. Just configure this file as the SSLCertificateFile.#

\*\*\*\*\* BEGIN LICENSE BLOCK \*\*\*\*\*

This Source Code Form is subject to the terms of the Mozilla Public License, v. 2.0. If a copy of the MPL was not distributed with this file, You can obtain one at <http://mozilla.org/MPL/2.0/>.

\*\*\*\*\* END LICENSE BLOCK \*\*\*\*\*

@(#) \$RCSfile: certdata.txt,v \$ \$Revision: 1.80 \$ \$Date: 2011/11/03 15:11:58 \$

# 1.359 jcl-over-slf4j 1.7.21

## 1.359.1 Available under license :

MIT License

<http://www.opensource.org/licenses/mit-license.php>

# 1.360 bouncy-castle 124

## 1.360.1 Available under license :

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

# 1.361 xsdlib 2013.6.1

## 1.361.1 Available under license :

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright (c) 2001-2013 Oracle and/or its affiliates. All rights reserved.

\*

\* Redistribution and use in source and binary forms, with or without

\* modification, are permitted provided that the following conditions

\* are met:

\*  
 \* - Redistributions of source code must retain the above copyright  
 \* notice, this list of conditions and the following disclaimer.  
 \*  
 \* - Redistributions in binary form must reproduce the above copyright  
 \* notice, this list of conditions and the following disclaimer in the  
 \* documentation and/or other materials provided with the distribution.  
 \*  
 \* - Neither the name of Oracle nor the names of its  
 \* contributors may be used to endorse or promote products derived  
 \* from this software without specific prior written permission.  
 \*  
 \* THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS  
 \* IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO,  
 \* THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR  
 \* PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR  
 \* CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,  
 \* EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO,  
 \* PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR  
 \* PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF  
 \* LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING  
 \* NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS  
 \* SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.  
 \*/

Found in path(s):

\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlb-2013-6-1-sources-  
 jar/com/sun/msv/datatype/xsd/LongType.java  
 \* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlb-2013-6-1-sources-  
 jar/com/sun/msv/datatype/xsd/BuiltinAtomicType.java  
 \* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlb-2013-6-1-sources-  
 jar/com/sun/msv/datatype/xsd/XSDatatypeImpl.java  
 \* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlb-2013-6-1-sources-  
 jar/com/sun/msv/datatype/xsd/ListType.java  
 \* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlb-2013-6-1-sources-jar/com/sun/xml/util/XmlChars.java  
 \* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlb-2013-6-1-sources-  
 jar/com/sun/msv/datatype/xsd/Base64BinaryType.java  
 \* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlb-2013-6-1-sources-  
 jar/com/sun/msv/datatype/xsd/GYearMonthType.java  
 \* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlb-2013-6-1-sources-  
 jar/com/sun/msv/datatype/xsd/IntegerDerivedType.java  
 \* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlb-2013-6-1-sources-  
 jar/com/sun/msv/datatype/xsd/MinLengthFacet.java  
 \* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlb-2013-6-1-sources-  
 jar/com/sun/msv/datatype/xsd/TypeIncubator.java  
 \* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlb-2013-6-1-sources-  
 jar/com/sun/msv/datatype/xsd/DurationType.java  
 \* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlb-2013-6-1-sources-

jar/com/sun/msv/datatype/xsd/TokenType.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlb-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/MaxLengthFacet.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlb-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/datetime/PreciseCalendarFormatter.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlb-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/TimeType.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlb-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/NormalizedStringType.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlb-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/HexBinaryType.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlb-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/UnsignedLongType.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlb-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/IntegerValueType.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlb-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/FinalComponent.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlb-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/MaxExclusiveFacet.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlb-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/UnionType.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlb-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/MinExclusiveFacet.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlb-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/EnumerationFacet.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlb-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/datetime/PreciseCalendarParser.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlb-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/BooleanType.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlb-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/MaxInclusiveFacet.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlb-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/NegativeIntegerType.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlb-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/datetime/IDateTimeValueType.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlb-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/datetime/DateTimeFactory.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlb-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/datetime/AbstractCalendarFormatter.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlb-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/datetime/BigDateTimeValueType.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlb-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/datetime/Util.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlb-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/NumberType.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlb-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/WhiteSpaceProcessor.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlb-2013-6-1-sources-

jar/com/sun/msv/datatype/xsd/MinInclusiveFacet.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/DoubleType.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/XmlNames.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/ByteType.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/WhiteSpaceFacet.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/DataTypeWithLexicalConstraintFacet.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/DatatypeFactory.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/datetime/ITimeDurationValueType.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/QnameValueType.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/NcnameType.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/StringType.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/DatabindableDatatype.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/EntityType.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/SimpleURType.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/regex/RegExp.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/FloatType.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/NmtokenType.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/UnsignedIntType.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/DateTimeBaseType.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/BinaryValueType.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/Proxy.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/LengthFacet.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/datetime/CalendarFormatter.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/datetime/TimeZone.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-

jar/com/sun/msv/datatype/ErrorDatatypeLibrary.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/ListValueType.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/FractionDigitsFacet.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/ngimpl/DatatypeBuilderImpl.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/UnicodeUtil.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/XSDatatype.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/LanguageType.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/RangeFacet.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/datetime/AbstractCalendarParser.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/ErrorHandler.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/GMonthType.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/ngimpl/DataTypeLibraryImpl.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/ShortType.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/GMonthDayType.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/NonPositiveIntegerType.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/DateTimeType.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/regex/JDKImpl.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/PatternFacet.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/FloatingNumberType.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/SerializationContext.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/AnyURIType.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/IntType.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/TotalDigitsFacet.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/UnsignedShortType.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-

jar/com/sun/msv/datatype/xsd/DataTypeWithFacet.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/PositiveIntegerType.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/DateType.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/Discrete.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/regex/XercesImpl.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/regex/RegExpFactory.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/ConcreteType.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/Comparator.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/GYearType.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/NameType.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/DataTypeWithValueConstraintFacet.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/UnsignedByteType.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/datetime/BigTimeDurationValueType.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/NonNegativeIntegerType.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/datetime/CalendarParser.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/GDayType.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/IntegerType.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/IDType.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/QnameType.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/BinaryBaseType.java  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/IDREFTType.java

No license file was found, but licenses were detected in source scan.

/\*

\* The Apache Software License, Version 1.1

\*

\*

\* Copyright (c) 1999-2003 The Apache Software Foundation. All rights

\* reserved.  
\*  
\* Redistribution and use in source and binary forms, with or without  
\* modification, are permitted provided that the following conditions  
\* are met:  
\*  
\* 1. Redistributions of source code must retain the above copyright  
\* notice, this list of conditions and the following disclaimer.  
\*  
\* 2. Redistributions in binary form must reproduce the above copyright  
\* notice, this list of conditions and the following disclaimer in  
\* the documentation and/or other materials provided with the  
\* distribution.  
\*  
\* 3. The end-user documentation included with the redistribution,  
\* if any, must include the following acknowledgment:  
\* "This product includes software developed by the  
\* Apache Software Foundation (<http://www.apache.org/>)."  
\* Alternately, this acknowledgment may appear in the software itself,  
\* if and wherever such third-party acknowledgments normally appear.  
\*  
\* 4. The names "Xerces" and "Apache Software Foundation" must  
\* not be used to endorse or promote products derived from this  
\* software without prior written permission. For written  
\* permission, please contact [apache@apache.org](mailto:apache@apache.org).  
\*  
\* 5. Products derived from this software may not be called "Apache",  
\* nor may "Apache" appear in their name, without prior written  
\* permission of the Apache Software Foundation.  
\*  
\* THIS SOFTWARE IS PROVIDED ``AS IS" AND ANY EXPRESSED OR IMPLIED  
\* WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES  
\* OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE  
\* DISCLAIMED. IN NO EVENT SHALL THE APACHE SOFTWARE FOUNDATION OR  
\* ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,  
\* SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT  
\* LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF  
\* USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND  
\* ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,  
\* OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT  
\* OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF  
\* SUCH DAMAGE.  
\* =====  
\*  
\* This software consists of voluntary contributions made by many  
\* individuals on behalf of the Apache Software Foundation and was  
\* originally based on software copyright (c) 1999, International  
\* Business Machines, Inc., <http://www.apache.org>. For more



\* information on the Apache Software Foundation, please see

\* <<http://www.apache.org/>>.

\*/

Found in path(s):

\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-jar/com/sun/msv/datatype/regexp/ParserForXMLSchema.java

\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-jar/com/sun/msv/datatype/regexp/RegexParser.java

No license file was found, but licenses were detected in source scan.

2013 Oracle and/or its affiliates. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

Neither the name of Oracle nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Found in path(s):

\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlib-2013-6-1-sources-jar/com/sun/msv/datatype/xsd/package.html

No license file was found, but licenses were detected in source scan.

/\*

\* The Apache Software License, Version 1.1

\*

\*

\* Copyright (c) 1999-2013 The Apache Software Foundation. All rights

\* reserved.

\*  
 \* Redistribution and use in source and binary forms, with or without  
 \* modification, are permitted provided that the following conditions  
 \* are met:  
 \*  
 \* 1. Redistributions of source code must retain the above copyright  
 \* notice, this list of conditions and the following disclaimer.  
 \*  
 \* 2. Redistributions in binary form must reproduce the above copyright  
 \* notice, this list of conditions and the following disclaimer in  
 \* the documentation and/or other materials provided with the  
 \* distribution.  
 \*  
 \* 3. The end-user documentation included with the redistribution,  
 \* if any, must include the following acknowledgment:  
 \* "This product includes software developed by the  
 \* Apache Software Foundation (<http://www.apache.org/>)."  
 \* Alternately, this acknowledgment may appear in the software itself,  
 \* if and wherever such third-party acknowledgments normally appear.  
 \*  
 \* 4. The names "Xerces" and "Apache Software Foundation" must  
 \* not be used to endorse or promote products derived from this  
 \* software without prior written permission. For written  
 \* permission, please contact [apache@apache.org](mailto:apache@apache.org).  
 \*  
 \* 5. Products derived from this software may not be called "Apache",  
 \* nor may "Apache" appear in their name, without prior written  
 \* permission of the Apache Software Foundation.  
 \*  
 \* THIS SOFTWARE IS PROVIDED ``AS IS" AND ANY EXPRESSED OR IMPLIED  
 \* WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES  
 \* OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE  
 \* DISCLAIMED. IN NO EVENT SHALL THE APACHE SOFTWARE FOUNDATION OR  
 \* ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,  
 \* SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT  
 \* LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF  
 \* USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND  
 \* ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,  
 \* OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT  
 \* OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF  
 \* SUCH DAMAGE.  
 \* =====  
 \*  
 \* This software consists of voluntary contributions made by many  
 \* individuals on behalf of the Apache Software Foundation and was  
 \* originally based on software copyright (c) 1999, International  
 \* Business Machines, Inc., <http://www.apache.org>. For more  
 \* information on the Apache Software Foundation, please see

\* <<http://www.apache.org/>>.

\*/

Found in path(s):

\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlb-2013-6-1-sources-jar/com/sun/msv/datatype/regexp/RangeToken.java

No license file was found, but licenses were detected in source scan.

# Copyright (c) 2001-2013 Oracle and/or its affiliates. All rights reserved.

# modification, are permitted provided that the following conditions are

# - Redistributions of source code must retain the above copyright

# notice, this list of conditions and the following disclaimer.

# notice, this list of conditions and the following disclaimer in the

# documentation and/or other materials provided with the distribution.

# this software without specific prior written permission.

Found in path(s):

\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlb-2013-6-1-sources-jar/com/sun/msv/datatype/regexp/message.properties

\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlb-2013-6-1-sources-jar/com/sun/msv/datatype/regexp/message\_ja.properties

\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlb-2013-6-1-sources-jar/com/sun/msv/datatype/regexp/message\_fr.properties

No license file was found, but licenses were detected in source scan.

/\*

\* DO NOT ALTER OR REMOVE COPYRIGHT NOTICES OR THIS HEADER.

\*

\* Copyright (c) 2001-2013 Oracle and/or its affiliates. All rights reserved.

\*

\* Redistribution and use in source and binary forms, with or without

\* modification, are permitted provided that the following conditions are

\* met:

\*

\* - Redistributions of source code must retain the above copyright

\* notice, this list of conditions and the following disclaimer.

\*

\* - Redistribution in binary form must reproduce the above copyright

\* notice, this list of conditions and the following disclaimer in the

\* documentation and/or other materials provided with the distribution.

\*

\* Neither the name of Sun Microsystems, Inc. or the names of

\* contributors may be used to endorse or promote products derived from

\* this software without specific prior written permission.

\*

\* This software is provided "AS IS," without a warranty of any kind. ALL

\* EXPRESS OR IMPLIED CONDITIONS, REPRESENTATIONS AND WARRANTIES,

\* INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A

\* PARTICULAR PURPOSE OR NON-INFRINGEMENT, ARE HEREBY EXCLUDED. SUN AND  
\* ITS LICENSORS SHALL NOT BE LIABLE FOR ANY DAMAGES OR LIABILITIES  
\* SUFFERED BY LICENSEE AS A RESULT OF OR RELATING TO USE, MODIFICATION  
\* OR DISTRIBUTION OF THE SOFTWARE OR ITS DERIVATIVES. IN NO EVENT WILL  
\* SUN OR ITS LICENSORS BE LIABLE FOR ANY LOST REVENUE, PROFIT OR DATA,  
\* OR FOR DIRECT, INDIRECT, SPECIAL, CONSEQUENTIAL, INCIDENTAL OR  
\* PUNITIVE DAMAGES, HOWEVER CAUSED AND REGARDLESS OF THE THEORY OF  
\* LIABILITY, ARISING OUT OF THE USE OF OR INABILITY TO USE SOFTWARE,  
\* EVEN IF SUN HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.  
\*/

Found in path(s):

\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlb-2013-6-1-sources-  
jar/com/sun/msv/datatype/regexp/InternalImpl.java

No license file was found, but licenses were detected in source scan.

/\*

\* The Apache Software License, Version 1.1

\*

\*

\* Copyright (c) 1999-2002 The Apache Software Foundation. All rights  
\* reserved.

\*

\* Redistribution and use in source and binary forms, with or without  
\* modification, are permitted provided that the following conditions  
\* are met:

\*

\* 1. Redistributions of source code must retain the above copyright  
\* notice, this list of conditions and the following disclaimer.

\*

\* 2. Redistributions in binary form must reproduce the above copyright  
\* notice, this list of conditions and the following disclaimer in  
\* the documentation and/or other materials provided with the  
\* distribution.

\*

\* 3. The end-user documentation included with the redistribution,  
\* if any, must include the following acknowledgment:

\* "This product includes software developed by the

\* Apache Software Foundation (<http://www.apache.org/>)."

\* Alternately, this acknowledgment may appear in the software itself,  
\* if and wherever such third-party acknowledgments normally appear.

\*

\* 4. The names "Xerces" and "Apache Software Foundation" must  
\* not be used to endorse or promote products derived from this  
\* software without prior written permission. For written  
\* permission, please contact [apache@apache.org](mailto:apache@apache.org).

\*

\* 5. Products derived from this software may not be called "Apache",

```

* nor may "Apache" appear in their name, without prior written
* permission of the Apache Software Foundation.
*
* THIS SOFTWARE IS PROVIDED ``AS IS" AND ANY EXPRESSED OR IMPLIED
* WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES
* OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
* DISCLAIMED. IN NO EVENT SHALL THE APACHE SOFTWARE FOUNDATION OR
* ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
* SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
* LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF
* USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND
* ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
* OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT
* OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
* SUCH DAMAGE.
* =====
*
* This software consists of voluntary contributions made by many
* individuals on behalf of the Apache Software Foundation and was
* originally based on software copyright (c) 1999, International
* Business Machines, Inc., http://www.apache.org. For more
* information on the Apache Software Foundation, please see
* <http://www.apache.org/>.
*/

```

Found in path(s):

```

* /opt/cola/permits/1257217844_1642790354.82/0/xsdlb-2013-6-1-sources-
jar/com/sun/msv/datatype/regexp/BMPattern.java
* /opt/cola/permits/1257217844_1642790354.82/0/xsdlb-2013-6-1-sources-
jar/com/sun/msv/datatype/regexp/RegularExpression.java
* /opt/cola/permits/1257217844_1642790354.82/0/xsdlb-2013-6-1-sources-
jar/com/sun/msv/datatype/regexp/Op.java
* /opt/cola/permits/1257217844_1642790354.82/0/xsdlb-2013-6-1-sources-
jar/com/sun/msv/datatype/regexp/ParseException.java
* /opt/cola/permits/1257217844_1642790354.82/0/xsdlb-2013-6-1-sources-
jar/com/sun/msv/datatype/regexp/Match.java
* /opt/cola/permits/1257217844_1642790354.82/0/xsdlb-2013-6-1-sources-
jar/com/sun/msv/datatype/regexp/REUtil.java
* /opt/cola/permits/1257217844_1642790354.82/0/xsdlb-2013-6-1-sources-
jar/com/sun/msv/datatype/regexp/Token.java

```

No license file was found, but licenses were detected in source scan.

```

Copyright (c) 2001-2013 Oracle and/or its affiliates. All rights reserved.
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:
- Redistributions of source code must retain the above copyright
notice, this list of conditions and the following disclaimer.

```

# - Redistributions in binary form must reproduce the above copyright  
# notice, this list of conditions and the following disclaimer in the  
# documentation and/or other materials provided with the distribution.  
# - Neither the name of Oracle nor the names of its  
# from this software without specific prior written permission.

Found in path(s):

\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlb-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/Messages.properties  
\* /opt/cola/permits/1257217844\_1642790354.82/0/xsdlb-2013-6-1-sources-  
jar/com/sun/msv/datatype/xsd/Messages\_ja.properties

# 1.362 Iksctp-tools 1.0.18 3.el8

## 1.362.1 Available under license :

### GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

675 Mass Ave, Cambridge, MA 02139, USA

Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's

source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.



In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License.

However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot

impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR

REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

#### Appendix: How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) 19yy <name of author>
```

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 675 Mass Ave, Cambridge, MA 02139, USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) 19yy name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands ``show w'` and ``show c'` should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than ``show w'` and ``show c'`; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program  
'Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989  
Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

GNU LESSER GENERAL PUBLIC LICENSE  
Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.  
59 Temple Place, Suite 330, Boston, MA 02111-1307 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts  
as the successor of the GNU Library Public License, version 2, hence  
the version number 2.1.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that

you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the

entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

## GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data

prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no



charge to all third parties under the terms of this License.

d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for

that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6,

whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
- b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

# 1.363 passwd 0.80-4.el8

## 1.363.1 Available under license :

Copyright Red Hat, Inc., 1998, 1999, 2001, 2002.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, and the entire permission notice in its entirety, including the disclaimer of warranties.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

ALTERNATIVELY, this product may be distributed under the terms of the GNU Public License, in which case the provisions of the GPL are required INSTEAD OF the above restrictions. (This clause is necessary due to a potential bad interaction between the GPL and the restrictions contained in a BSD-style copyright.)

THIS SOFTWARE IS PROVIDED ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The full text of the GNU GENERAL PUBLIC LICENSE Version 2 is included below.

-----  
  
GNU GENERAL PUBLIC LICENSE  
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any



patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE  
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer

to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent

infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free

Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

# 1.364 taglibs-standard-spec 1.2.5

## 1.364.1 Available under license :

Apache Standard Taglib Specification API  
Copyright 2001-2015 The Apache Software Foundation

This product includes software developed at  
The Apache Software Foundation (<http://www.apache.org/>).

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a

copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct



or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of

this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following

boilerplate notice, with the fields enclosed by brackets "[ ]"  
replaced with your own identifying information. (Don't include  
the brackets!) The text should be enclosed in the appropriate  
comment syntax for the file format. We also recommend that a  
file or class name and description of purpose be included on the  
same "printed page" as the copyright notice for easier  
identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

## 1.365 tiny-radius 1.0.0-BAC

### 1.365.1 Available under license :

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.

51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts  
as the successor of the GNU Library Public License, version 2, hence  
the version number 2.1.]

Preamble

The licenses for most software are designed to take away your  
freedom to share and change it. By contrast, the GNU General Public  
Licenses are intended to guarantee your freedom to share and change  
free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some  
specially designated software packages--typically libraries--of the  
Free Software Foundation and other authors who decide to use it. You

can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those

libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

## GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other

program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
  
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
  
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
  
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2,

instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative



work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or

distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the

original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF

SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990

Ty Coon, President of Vice

That's all there is to it!

# 1.366 cxf-rt-frontend-jaxws 3.4.5

## 1.366.1 Available under license :

Apache CXF

Copyright 2006-2021 The Apache Software Foundation

This product includes software developed at  
The Apache Software Foundation (<http://www.apache.org/>).

Java classes (source and binary) under org.apache.cxf.jaxws.javaee  
are generated from schema available here:  
([http://java.sun.com/xml/ns/javaee/javaee\\_5.xsd](http://java.sun.com/xml/ns/javaee/javaee_5.xsd))

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction,  
and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by  
the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all  
other entities that control, are controlled by, or are under common  
control with that entity. For the purposes of this definition,  
"control" means (i) the power, direct or indirect, to cause the  
direction or management of such entity, whether by contract or  
otherwise, or (ii) ownership of fifty percent (50%) or more of the  
outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity  
exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications,  
including but not limited to software source code, documentation  
source, and configuration files.

"Object" form shall mean any form resulting from mechanical  
transformation or translation of a Source form, including but

not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their

Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with



the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.  
Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

# 1.367 spring-security-core 5.2.15.RELEASE

## 1.367.1 Available under license :

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2011-2018 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/crypto/password/Digester.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2015-2018 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/jackson2/UsernamePasswordAuthenticationTokenDeserializer.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/jackson2/UserDeserializer.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/jackson2/SecurityJackson2Modules.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2016 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

/\*\*

\* A token issued by { @link TokenService }.

```
*
* <p>
* It is important that the keys assigned to tokens are sufficiently randomised and
* secured that they can serve as identifying a unique user session. Implementations of
* {@link TokenService} are free to use encryption or encoding strategies of their choice.
* It is strongly recommended that keys are of sufficient length to balance safety against
* persistence cost. In relation to persistence cost, it is strongly recommended that
* returned keys are small enough for encoding in a cookie.
* </p>
*
* @author Ben Alex
* @since 2.0.1
*/
```

Found in path(s):

```
* /opt/cola/permits/1348346176_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-
jar/org/springframework/security/core/token/Token.java
```

No license file was found, but licenses were detected in source scan.

```
/*
* Copyright 2012-2016 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
```

Found in path(s):

```
* /opt/cola/permits/1348346176_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-
jar/org/springframework/security/access/hierarchicalroles/RoleHierarchyUtils.java
```

No license file was found, but licenses were detected in source scan.

```
/*
* Copyright 2002-2017 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*/
```

- \*
  - \* Unless required by applicable law or agreed to in writing, software
  - \* distributed under the License is distributed on an "AS IS" BASIS,
  - \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
  - \* See the License for the specific language governing permissions and
  - \* limitations under the License.
- \*/

Found in path(s):

- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/authentication/ReactiveAuthenticationManager.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/core/userdetails/ReactiveUserDetailsService.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/crypto/password/Md4.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/authorization/AuthenticatedReactiveAuthorizationManager.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/core/parameters/P.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/authorization/ReactiveAuthorizationManager.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/core/AuthenticatedPrincipal.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/core/SpringSecurityCoreVersion.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/authorization/AuthorizationDecision.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/core/userdetails/MapReactiveUserDetailsService.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/core/context/ReactiveSecurityContextHolder.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/crypto/factory/PasswordEncoderFactories.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/crypto/password/PasswordEncoderUtils.java

No license file was found, but licenses were detected in source scan.

- /\*
  - \* Copyright 2002-2019 the original author or authors.
  - \*
    - \* Licensed under the Apache License, Version 2.0 (the "License");
    - \* you may not use this file except in compliance with the License.
    - \* You may obtain a copy of the License at
    - \*
      - \* <https://www.apache.org/licenses/LICENSE-2.0>
  - \* Unless required by applicable law or agreed to in writing, software
  - \* distributed under the License is distributed on an "AS IS" BASIS,

- \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- \* See the License for the specific language governing permissions and
- \* limitations under the License.
- \*/

Found in path(s):

- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/authentication/ReactiveAuthenticationManagerResolver.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/crypto/argon2/Argon2PasswordEncoder.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/core/userdetails/UserDetailsPasswordService.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/authentication/event/LogoutSuccessEvent.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/authentication/UserDetailsRepositoryReactiveAuthenticationManager.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/authentication/AbstractUserDetailsReactiveAuthenticationManager.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/authentication/AuthenticationManagerResolver.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/crypto/scrypt/SCryptPasswordEncoder.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/expression/method/ExpressionBasedPreInvocationAdvice.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/converter/RsaKeyConverters.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/core/annotation/CurrentSecurityContext.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/crypto/argon2/Argon2EncodingUtils.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/hierarchicalroles/RoleHierarchyImpl.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/authentication/ReactiveAuthenticationManagerAdapter.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/core/token/SecureRandomFactoryBean.java

No license file was found, but licenses were detected in source scan.

- /\*
- \* Copyright 2015-2016 the original author or authors.
- \*
- \* Licensed under the Apache License, Version 2.0 (the "License");
- \* you may not use this file except in compliance with the License.
- \* You may obtain a copy of the License at
- \*
- \* <https://www.apache.org/licenses/LICENSE-2.0>
- \*
- \* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/jackson2/UnmodifiableSetDeserializer.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/jackson2/UnmodifiableSetMixin.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/jackson2/AnonymousAuthenticationTokenMixin.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/jackson2/RememberMeAuthenticationTokenMixin.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/jackson2/UsernamePasswordAuthenticationTokenMixin.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/jackson2/UserMixin.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/jackson2/CoreJackson2Module.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/jackson2/SimpleGrantedAuthorityMixin.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2016 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

/\*\*

\* Base64 encoder which is a reduced version of Robert Harder's public domain

\* implementation (version 2.3.7). See <a

\* href="http://iharder.sourceforge.net/current/java/base64/">http://iharder.sourceforge.net/current/java/base64/</a>

for more information.

\* <p>

\* For internal use only.

\*

```
* @author Luke Taylor
* @since 3.0
* @deprecated Use java.util.Base64
*/
```

Found in path(s):

```
* /opt/cola/permits/1348346176_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-
jar/org/springframework/security/crypto/codec/Base64.java
```

No license file was found, but licenses were detected in source scan.

```
// Permission to use, copy, modify, and distribute this software for any
// purpose with or without fee is hereby granted, provided that the above
// copyright notice and this permission notice appear in all copies.
```

Found in path(s):

```
* /opt/cola/permits/1348346176_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-
jar/org/springframework/security/crypto/bcrypt/BCrypt.java
```

No license file was found, but licenses were detected in source scan.

```
/*
* Copyright 2002-2016 the original author or authors.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
```

```
*/
/**
*
* @param authentication represents the user in question. Should not be null.
* @param targetDomainObject the domain object for which permissions should be
* checked. May be null in which case implementations should return false, as the null
* condition can be checked explicitly in the expression.
* @param permission a representation of the permission object as supplied by the
* expression system. Not null.
* @return true if the permission is granted, false otherwise
*/
```

Found in path(s):

```
* /opt/cola/permits/1348346176_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-
jar/org/springframework/security/access/PermissionEvaluator.java
```



No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2010-2021 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1348346176_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-
jar/org/springframework/security/authentication/jaas/AbstractJaasAuthenticationProvider.java
No license file was found, but licenses were detected in source scan.
```

```
/*
 * Copyright 2002-2011 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1348346176_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-
jar/org/springframework/security/crypto/bcrypt/BCryptPasswordEncoder.java
No license file was found, but licenses were detected in source scan.
```

```
/*
 * Copyright 2011-2020 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
```

\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/crypto/encrypt/Encryptors.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2002-2016 the original author or authors.  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/  
/\*\*  
\* Determines if the { @link #getAuthentication() } has permission to access the target  
\* given the permission  
\* @param target the target domain object to check permission on  
\* @param permission the permission to check on the domain object (i.e. "read",  
\* "write", etc).  
\* @return true if permission is granted to the { @link #getAuthentication() }, else  
\* false  
\*/

Found in path(s):

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/expression/SecurityExpressionOperations.java  
No license file was found, but licenses were detected in source scan.

/\*

- \* Copyright 2002-2016 the original author or authors.
- \*
- \* Licensed under the Apache License, Version 2.0 (the "License");
- \* you may not use this file except in compliance with the License.
- \* You may obtain a copy of the License at
- \*
- \* <https://www.apache.org/licenses/LICENSE-2.0>
- \*
- \* Unless required by applicable law or agreed to in writing, software
- \* distributed under the License is distributed on an "AS IS" BASIS,
- \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- \* See the License for the specific language governing permissions and
- \* limitations under the License.
- \*/

Found in path(s):

- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/core/userdetails/cache/package-info.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/core/token/package-info.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/core/authority/SimpleGrantedAuthority.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/core/parameters/DefaultSecurityParameterNameDiscoverer.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/core/authority/mapping/NullAuthoritiesMapper.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/task/DelegatingSecurityContextTaskExecutor.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/crypto/password/AbstractPasswordEncoder.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/core/userdetails/AuthenticationUserDetailsService.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/crypto/codecs/Utf8.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/crypto/codecs/Hex.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/authentication/rcp/package-info.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/prepost/PostAuthorize.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/expression/method/MethodSecurityExpressionHandler.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/prepost/PostFilter.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/core/session/SessionDestroyedEvent.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/method/DelegatingMethodSecurityMetadataSource.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/hierarchicalroles/RoleHierarchy.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/core/userdetails/UserDetailsByNameServiceWrapper.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/package-info.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/provisioning/MutableUser.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/intercept/aspectj/AspectJMethodSecurityInterceptor.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/expression/DenyAllPermissionEvaluator.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/prepost/package-info.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/method/AbstractFallbackMethodSecurityMetadataSource.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/prepost/PreInvocationAuthorizationAdviceVoter.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/concurrent/DelegatingSecurityContextExecutorService.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/core/authority/GrantedAuthoritiesContainer.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/expression/SecurityExpressionHandler.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/authentication/DefaultAuthenticationEventPublisher.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/core/context/package-info.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/authentication/jaas/package-info.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/core/token/TokenService.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/authentication/event/package-info.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/intercept/aspectj/MethodInvocationAdapter.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/core/session/SessionCreationEvent.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/authentication/jaas/event/package-info.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/prepost/PrePostInvocationAttributeFactory.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/core/token/DefaultToken.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/authentication/AccountStatusUserDetailsChecker.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/authentication/AuthenticationEventPublisher.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/core/userdetails/package-info.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/core/userdetails/cache/SpringCacheBasedUserCache.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/scheduling/DelegatingSecurityContextSchedulingTaskExecutor.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/expression/method/MethodSecurityExpressionOperations.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/authentication/dao/package-info.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/authentication/package-info.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/hierarchicalroles/CycleInRoleHierarchyException.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/core/userdetails/jdbc/package-info.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/core/authority/package-info.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/authentication/AccountStatusException.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/core/session/package-info.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/expression/AbstractSecurityExpressionHandler.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/core/authority/mapping/Attributes2GrantedAuthoritiesMapper.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/core/package-info.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/vote/RoleHierarchyVoter.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/hierarchicalroles/package-info.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/core/authority/mapping/package-info.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/util/package-info.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/provisioning/MutableUserDetails.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/expression/method/ExpressionBasedAnnotationAttributeFactory.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/authentication/jaas/memory/package-info.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/annotation/AnnotationMetadataExtractor.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/intercept/aspectj/package-info.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/annotation/Js250SecurityConfig.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/intercept/package-info.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/prepost/PostInvocationAdviceProvider.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/prepost/PreFilter.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/annotation/package-info.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/expression/method/package-info.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/intercept/aopalliance/package-info.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/expression/ExpressionUtils.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/expression/method/AbstractExpressionBasedMethodConfigAttribute.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/context/DelegatingApplicationListener.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/concurrent/AbstractDelegatingSecurityContextSupport.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/concurrent/DelegatingSecurityContextScheduledExecutorService.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/provisioning/UserDetailsManager.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/core/authority/mapping/SimpleAttributes2GrantedAuthoritiesMapper.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/vote/package-info.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/prepost/PostInvocationAuthorizationAdvice.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/provisioning/package-info.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/expression/method/PostInvocationExpressionAttribute.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/expression/method/MethodSecurityExpressionRoot.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/core/authority/AuthorityUtils.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/task/DelegatingSecurityContextAsyncTaskExecutor.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/expression/method/MethodSecurityEvaluationContext.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/core/authority/mapping/SimpleAuthorityMapper.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/expression/method/ExpressionBasedPostInvocationAdvice.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/prepost/PreInvocationAuthorizationAdvice.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/event/package-info.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/prepost/PrePostAnnotationSecurityMetadataSource.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/prepost/PreAuthorize.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/jackson2/package-info.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/hierarchicalroles/RoleHierarchyAuthoritiesMapper.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/prepost/PreInvocationAttribute.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/expression/method/PreInvocationExpressionAttribute.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/method/package-info.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/prepost/PostInvocationAttribute.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/crypto/codecs/package-info.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/authentication/InternalAuthenticationServiceException.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/core/userdetails/memory/package-info.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/core/userdetails/UserDetailsChecker.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/provisioning/GroupManager.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/PermissionCacheOptimizer.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/hierarchicalroles/NullRoleHierarchy.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/core/authority/mapping/GrantedAuthoritiesMapper.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/provisioning/InMemoryUserDetailsManager.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/core/authority/mapping/SimpleMappableAttributesRetriever.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/core/token/Sha512DigestUtils.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/annotation/Jsrf250Voter.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/core/CredentialsContainer.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/method/P.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/core/authority/mapping/MappableAttributesRetriever.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/core/authority/mapping/MapBasedAttributes2GrantedAuthoritiesMapper.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/expression/package-info.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/concurrent/DelegatingSecurityContextExecutor.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/expression/SecurityExpressionRoot.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2010-2016 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/authentication/jaas/memory/InMemoryConfiguration.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/authentication/jaas/DefaultJaasAuthenticationProvider.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2002-2018 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/



Found in path(s):

- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/jackson2/UnmodifiableListMixin.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/expression/method/DefaultMethodSecurityExpressionHandler.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/core/userdetails/ReactiveUserDetailsPasswordService.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/concurrent/DelegatingSecurityContextCallable.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/core/token/KeyBasedPersistenceTokenService.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/authentication/DelegatingReactiveAuthenticationManager.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/crypto/password/MessageDigestPasswordEncoder.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/core/Transient.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/authentication/CachingUserDetailsService.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/crypto/password/LdapShaPasswordEncoder.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/crypto/keygen/Base64StringKeyGenerator.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/crypto/password/DelegatingPasswordEncoder.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/concurrent/DelegatingSecurityContextRunnable.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/provisioning/JdbcUserDetailsManager.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/jackson2/BadCredentialsExceptionMixin.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/authentication/ProviderManager.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/scheduling/DelegatingSecurityContextTaskScheduler.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/authorization/AuthorityReactiveAuthorizationManager.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/prepost/PrePostAdviceReactiveMethodInterceptor.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/crypto/password/Md4PasswordEncoder.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/crypto/password/Pbkdf2PasswordEncoder.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/jackson2/UnmodifiableListDeserializer.java

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2002-2016 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

```
/*
 * Licensed to the Apache Software Foundation (ASF) under one
 * or more contributor license agreements. See the NOTICE file
 * distributed with this work for additional information
 * regarding copyright ownership. The ASF licenses this file
 * to you under the Apache License, Version 2.0 (the
 * "License"); you may not use this file except in compliance
 * with the License. You may obtain a copy of the License at
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing,
 * software distributed under the License is distributed on an
 * "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY
 * KIND, either express or implied. See the License for the
 * specific language governing permissions and limitations
 * under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1348346176_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-
jar/org/springframework/security/core/ComparableVersion.java
No license file was found, but licenses were detected in source scan.
```

```
/*
 * Copyright 2002-2013 the original author or authors.
 *
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 */
```

- \* Unless required by applicable law or agreed to in writing, software
- \* distributed under the License is distributed on an "AS IS" BASIS,
- \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- \* See the License for the specific language governing permissions and
- \* limitations under the License.

\*/

Found in path(s):

- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/core/annotation/AuthenticationPrincipal.java
- \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/core/parameters/AnnotationParameterNameDiscoverer.java

No license file was found, but licenses were detected in source scan.

/\*

- \* Copyright 2004, 2005, 2006 Acegi Technology Pty Limited
- \*
- \* Licensed under the Apache License, Version 2.0 (the "License");
- \* you may not use this file except in compliance with the License.
- \* You may obtain a copy of the License at

\*

- \* <https://www.apache.org/licenses/LICENSE-2.0>

\*

- \* Unless required by applicable law or agreed to in writing, software
- \* distributed under the License is distributed on an "AS IS" BASIS,
- \* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
- \* See the License for the specific language governing permissions and
- \* limitations under the License.

\*/

/\*\*

- \* Reviews the `Object` returned from a secure object invocation, being able to
- \* modify the `Object` or throw an `{ @link AccessDeniedException }`.

- \* `<p>`

- \* Typically used to ensure the principal is permitted to access the domain object
- \* instance returned by a service layer bean. Can also be used to mutate the domain object
- \* instance so the principal is only able to access authorised bean properties or
- \* `<code>Collection</code> elements.`

- \* `<p>`

- \* Special consideration should be given to using an `<code>AfterInvocationManager</code>`
- \* on bean methods that modify a database. Typically an
- \* `<code>AfterInvocationManager</code>` is used with read-only methods, such as
- \* `<code>public DomainObject getById(id)</code>`. If used with methods that modify a
- \* database, a transaction manager should be used to ensure any
- \* `<code>AccessDeniedException</code>` will cause a rollback of the changes made by the
- \* transaction.

- \* `</p>`

\*

- \* @author Ben Alex

\*/

Found in path(s):

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/intercept/AfterInvocationManager.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2011-2016 the original author or authors.

\*

\* Licensed under the Apache License, Version 2.0 (the "License");

\* you may not use this file except in compliance with the License.

\* You may obtain a copy of the License at

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS,

\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

\* See the License for the specific language governing permissions and

\* limitations under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/crypto/encrypt/BouncyCastleAesCbcBytesEncryptor.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/crypto/keygen/HexEncodingStringKeyGenerator.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/crypto/encrypt/TextEncryptor.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/crypto/keygen/KeyGenerators.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/crypto/util/EncodingUtils.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/crypto/keygen/SecureRandomBytesKeyGenerator.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/crypto/encrypt/CipherUtils.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/crypto/keygen/StringKeyGenerator.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/crypto/keygen/BytesKeyGenerator.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/crypto/encrypt/AesBytesEncryptor.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/crypto/password/PasswordEncoder.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/crypto/encrypt/BouncyCastleAesGcmBytesEncryptor.java

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/crypto/encrypt/BytesEncryptor.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/crypto/password/NoOpPasswordEncoder.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/crypto/encrypt/HexEncodingTextEncryptor.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/crypto/keygen/SharedKeyGenerator.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/crypto/password/StandardPasswordEncoder.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/crypto/encrypt/BouncyCastleAesBytesEncryptor.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2004, 2005, 2006 Acegi Technology Pty Limited  
\*  
\* Licensed under the Apache License, Version 2.0 (the "License");  
\* you may not use this file except in compliance with the License.  
\* You may obtain a copy of the License at  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS,  
\* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
\* See the License for the specific language governing permissions and  
\* limitations under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/core/userdetails/jdbc/JdbcDaoImpl.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/authentication/AccountExpiredException.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/vote/AuthenticatedVoter.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/authentication/AnonymousAuthenticationProvider.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/core/context/SecurityContextHolderStrategy.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/event/AuthorizedEvent.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/authentication/AuthenticationDetailsSource.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-jar/org/springframework/security/access/event/LoggerListener.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-

jar/org/springframework/security/authentication/event/AuthenticationFailureCredentialsExpiredEvent.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
jar/org/springframework/security/core/GrantedAuthority.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
jar/org/springframework/security/authentication/AuthenticationTrustResolverImpl.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
jar/org/springframework/security/access/method/AbstractMethodSecurityMetadataSource.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
jar/org/springframework/security/core/userdetails/memory/UserAttribute.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
jar/org/springframework/security/access/SecurityMetadataSource.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
jar/org/springframework/security/access/event/PublicInvocationEvent.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
jar/org/springframework/security/authentication/TestingAuthenticationProvider.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
jar/org/springframework/security/access/intercept/MethodInvocationPrivilegeEvaluator.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
jar/org/springframework/security/core/session/SessionInformation.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
jar/org/springframework/security/authentication/AuthenticationCredentialsNotFoundException.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
jar/org/springframework/security/authentication/jaas/SecurityContextLoginModule.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
jar/org/springframework/security/authentication/dao/DaoAuthenticationProvider.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
jar/org/springframework/security/authentication/event/LoggerListener.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
jar/org/springframework/security/access/intercept/NullRunAsManager.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
jar/org/springframework/security/access/annotation/Jsrf250MethodSecurityMetadataSource.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
jar/org/springframework/security/core/userdetails/UserDetails.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
jar/org/springframework/security/authentication/event/AuthenticationFailureExpiredEvent.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
jar/org/springframework/security/core/userdetails/UsernameNotFoundException.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
jar/org/springframework/security/authentication/jaas/event/JaasAuthenticationFailedEvent.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
jar/org/springframework/security/authentication/event/InteractiveAuthenticationSuccessEvent.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
jar/org/springframework/security/core/session/SessionRegistry.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
jar/org/springframework/security/access/intercept/RunAsManagerImpl.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
jar/org/springframework/security/access/annotation/SecuredAnnotationSecurityMetadataSource.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-

jar/org/springframework/security/access/intercept/AbstractSecurityInterceptor.java  
 \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
 jar/org/springframework/security/authentication/jaas/JaasPasswordCallbackHandler.java  
 \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
 jar/org/springframework/security/core/userdetails/cache/EhCacheBasedUserCache.java  
 \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
 jar/org/springframework/security/access/intercept/InterceptorStatusToken.java  
 \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
 jar/org/springframework/security/authentication/event/AuthenticationFailureServiceExceptionEvent.java  
 \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
 jar/org/springframework/security/authentication/jaas/event/JaasAuthenticationEvent.java  
 \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
 jar/org/springframework/security/util/MethodInvocationUtils.java  
 \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
 jar/org/springframework/security/authentication/RememberMeAuthenticationToken.java  
 \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
 jar/org/springframework/security/access/AuthorizationServiceException.java  
 \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
 jar/org/springframework/security/access/ConfigAttribute.java  
 \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
 jar/org/springframework/security/authentication/event/AuthenticationFailureLockedEvent.java  
 \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
 jar/org/springframework/security/authentication/RememberMeAuthenticationProvider.java  
 \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
 jar/org/springframework/security/authentication/event/AuthenticationFailureBadCredentialsEvent.java  
 \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
 jar/org/springframework/security/access/intercept/RunAsManager.java  
 \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
 jar/org/springframework/security/access/intercept/AfterInvocationProviderManager.java  
 \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
 jar/org/springframework/security/authentication/AbstractAuthenticationToken.java  
 \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
 jar/org/springframework/security/authentication/InsufficientAuthenticationException.java  
 \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
 jar/org/springframework/security/authentication/event/AuthenticationFailureProviderNotFoundEvent.java  
 \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
 jar/org/springframework/security/core/AuthenticationException.java  
 \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
 jar/org/springframework/security/authentication/rcp/RemoteAuthenticationManagerImpl.java  
 \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
 jar/org/springframework/security/authentication/LockedException.java  
 \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
 jar/org/springframework/security/authentication/rcp/RemoteAuthenticationException.java  
 \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
 jar/org/springframework/security/access/vote/UnanimousBased.java  
 \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
 jar/org/springframework/security/core/userdetails/memory/UserAttributeEditor.java  
 \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-

jar/org/springframework/security/core/context/SecurityContextImpl.java  
 \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
 jar/org/springframework/security/authentication/event/AuthenticationFailureProxyUntrustedEvent.java  
 \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
 jar/org/springframework/security/access/intercept/aspectj/AspectJCallback.java  
 \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
 jar/org/springframework/security/authentication/BadCredentialsException.java  
 \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
 jar/org/springframework/security/access/vote/ConsensusBased.java  
 \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
 jar/org/springframework/security/authentication/ProviderNotFoundException.java  
 \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
 jar/org/springframework/security/authentication/dao/AbstractUserDetailsAuthenticationProvider.java  
 \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
 jar/org/springframework/security/authentication/jaas/JaasGrantedAuthority.java  
 \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
 jar/org/springframework/security/access/method/MethodSecurityMetadataSource.java  
 \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
 jar/org/springframework/security/authentication/AuthenticationServiceException.java  
 \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
 jar/org/springframework/security/core/userdetails/cache/NullUserCache.java  
 \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
 jar/org/springframework/security/core/context/ThreadLocalSecurityContextHolderStrategy.java  
 \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
 jar/org/springframework/security/core/SpringSecurityMessageSource.java  
 \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
 jar/org/springframework/security/authentication/AnonymousAuthenticationToken.java  
 \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
 jar/org/springframework/security/util/SimpleMethodInvocation.java  
 \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
 jar/org/springframework/security/authentication/rcp/RemoteAuthenticationManager.java  
 \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
 jar/org/springframework/security/core/context/SecurityContext.java  
 \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
 jar/org/springframework/security/access/intercept/aopalliance/MethodSecurityMetadataSourceAdvisor.java  
 \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
 jar/org/springframework/security/core/userdetails/UserDetailsService.java  
 \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
 jar/org/springframework/security/authentication/TestingAuthenticationToken.java  
 \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
 jar/org/springframework/security/authentication/AuthenticationTrustResolver.java  
 \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
 jar/org/springframework/security/access/annotation/Secured.java  
 \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
 jar/org/springframework/security/authentication/jaas/DefaultLoginExceptionResolver.java  
 \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
 jar/org/springframework/security/core/context/GlobalSecurityContextHolderStrategy.java  
 \* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-



jar/org/springframework/security/access/AccessDeniedException.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
jar/org/springframework/security/access/vote/AbstractAclVoter.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
jar/org/springframework/security/authentication/jaas/JaasAuthenticationCallbackHandler.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
jar/org/springframework/security/core/context/SecurityContextHolder.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
jar/org/springframework/security/authentication/event/AuthenticationFailureDisabledEvent.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
jar/org/springframework/security/util/FieldUtils.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
jar/org/springframework/security/access/intercept/RunAsImplAuthenticationProvider.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
jar/org/springframework/security/authentication/jaas/JaasNameCallbackHandler.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
jar/org/springframework/security/authentication/jaas/event/JaasAuthenticationSuccessEvent.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
jar/org/springframework/security/access/vote/AffirmativeBased.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
jar/org/springframework/security/authentication/UsernamePasswordAuthenticationToken.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
jar/org/springframework/security/core/context/InheritableThreadLocalSecurityContextHolderStrategy.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
jar/org/springframework/security/core/userdetails/User.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
jar/org/springframework/security/access/intercept/RunAsUserToken.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
jar/org/springframework/security/authentication/event/AbstractAuthenticationEvent.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
jar/org/springframework/security/authentication/jaas/JaasAuthenticationToken.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
jar/org/springframework/security/authentication/event/AbstractAuthenticationFailureEvent.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
jar/org/springframework/security/access/method/MapBasedMethodSecurityMetadataSource.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
jar/org/springframework/security/authentication/jaas/JaasAuthenticationProvider.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
jar/org/springframework/security/authentication/AuthenticationManager.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
jar/org/springframework/security/access/intercept/aopalliance/MethodSecurityInterceptor.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
jar/org/springframework/security/util/InMemoryResource.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
jar/org/springframework/security/authentication/rcp/RemoteAuthenticationProvider.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-  
jar/org/springframework/security/core/session/SessionRegistryImpl.java  
\* /opt/cola/permits/1348346176\_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-

```

jar/org/springframework/security/authentication/DisabledException.java
* /opt/cola/permits/1348346176_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-
jar/org/springframework/security/core/Authentication.java
* /opt/cola/permits/1348346176_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-
jar/org/springframework/security/access/SecurityConfig.java
* /opt/cola/permits/1348346176_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-
jar/org/springframework/security/access/event/AuthenticationCredentialsNotFoundEvent.java
* /opt/cola/permits/1348346176_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-
jar/org/springframework/security/access/AccessDecisionVoter.java
* /opt/cola/permits/1348346176_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-
jar/org/springframework/security/access/AfterInvocationProvider.java
* /opt/cola/permits/1348346176_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-
jar/org/springframework/security/access/vote/RoleVoter.java
* /opt/cola/permits/1348346176_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-
jar/org/springframework/security/authentication/jaas/LoginExceptionResolver.java
* /opt/cola/permits/1348346176_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-
jar/org/springframework/security/access/event/AbstractAuthorizationEvent.java
* /opt/cola/permits/1348346176_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-
jar/org/springframework/security/authentication/AuthenticationProvider.java
* /opt/cola/permits/1348346176_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-
jar/org/springframework/security/access/event/AuthorizationFailureEvent.java
* /opt/cola/permits/1348346176_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-
jar/org/springframework/security/authentication/jaas/AuthorityGranter.java
* /opt/cola/permits/1348346176_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-
jar/org/springframework/security/core/userdetails/UserCache.java
* /opt/cola/permits/1348346176_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-
jar/org/springframework/security/authentication/event/AuthenticationSuccessEvent.java
* /opt/cola/permits/1348346176_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-
jar/org/springframework/security/access/vote/AbstractAccessDecisionManager.java
* /opt/cola/permits/1348346176_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-
jar/org/springframework/security/authentication/CredentialsExpiredException.java
* /opt/cola/permits/1348346176_1655814102.9862938/0/spring-security-core-5-2-15-release-sources-
jar/org/springframework/security/access/AccessDecisionManager.java

```

# 1.368 netty-transport 4.1.78.Final

## 1.368.1 Available under license :

No license file was found, but licenses were detected in source scan.

```

/*
 * Copyright 2021 The Netty Project
 *
 * The Netty Project licenses this file to you under the Apache License,
 * version 2.0 (the "License"); you may not use this file except in compliance
 * with the License. You may obtain a copy of the License at:
 *
 * https://www.apache.org/licenses/LICENSE-2.0

```

\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
\* License for the specific language governing permissions and limitations  
\* under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/ServerChannelRecvByteBufAllocator.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2018 The Netty Project

\*

\* The Netty Project licenses this file to you under the Apache License,  
\* version 2.0 (the "License"); you may not use this file except in compliance  
\* with the License. You may obtain a copy of the License at:

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
\* License for the specific language governing permissions and limitations  
\* under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/socket/nio/NioChannelOption.java

\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/SimpleUserEventChannelHandler.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2012 The Netty Project

\*

\* The Netty Project licenses this file to you under the Apache License,  
\* version 2.0 (the "License"); you may not use this file except in compliance  
\* with the License. You may obtain a copy of the License at:

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the

- \* License for the specific language governing permissions and limitations
- \* under the License.
- \*/

Found in path(s):

- \* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/socket/oio/OioDatagramChannel.java
- \* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/oio/AbstractOioMessageChannel.java
- \* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/ChannelPipeline.java
- \* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/ChannelFutureListener.java
- \* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/FixedRecvByteBufAllocator.java
- \* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/group/ChannelGroupFuture.java
- \* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/DefaultFileRegion.java
- \* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/socket/nio/NioServerSocketChannel.java
- \* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/oio/package-info.java
- \* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/DefaultChannelConfig.java
- \* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/ChannelFlushPromiseNotifier.java
- \* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/EventLoopException.java
- \* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/FileRegion.java
- \* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/group/ChannelGroupFutureListener.java
- \* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/VoidChannelPromise.java
- \* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/group/package-info.java
- \* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/socket/nio/NioDatagramChannel.java
- \* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/bootstrap/ServerBootstrap.java
- \* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/Channel.java
- \* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/ChannelPromiseNotifier.java
- \* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/AdaptiveRecvByteBufAllocator.java
- \* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-

jar/io/netty/channel/ChannelException.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/ChannelOutboundHandlerAdapter.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/socket/nio/NioSocketChannel.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/socket/DatagramChannelConfig.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/bootstrap/AbstractBootstrap.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/ChannelInboundHandler.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/socket/ChannelInputShutdownEvent.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/socket/DefaultSocketChannelConfig.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/socket/ServerSocketChannelConfig.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/nio/NioEventLoop.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/ChannelConfig.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/ChannelDuplexHandler.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/nio/NioEventLoopGroup.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/embedded/EmbeddedEventLoop.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/socket/ServerSocketChannel.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/nio/package-info.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/socket/DefaultServerSocketChannelConfig.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/ChannelPromise.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/oio/AbstractOioChannel.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/CombinedChannelDuplexHandler.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/ChannelOption.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/nio/NioTask.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/local/LocalChannelRegistry.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/ThreadPerChannelEventLoop.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-

jar/io/netty/channel/package-info.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/ServerChannel.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/ChannelHandlerContext.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/oio/AbstractOioByteChannel.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/socket/nio/NioDatagramChannelConfig.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/ThreadPerChannelEventLoopGroup.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/socket/DatagramChannel.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/bootstrap/Bootstrap.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/embedded/EmbeddedSocketAddress.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/embedded/EmbeddedChannel.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/ChannelPromiseAggregator.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/local/LocalAddress.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/DefaultChannelPromise.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/socket/package-info.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/socket/oio/OioSocketChannel.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/ChannelMetadata.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/socket/oio/package-info.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/EventLoop.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/local/LocalChannel.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/local/LocalServerChannel.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/local/package-info.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/DefaultChannelPipeline.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/FailedChannelFuture.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/socket/DefaultDatagramChannelConfig.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-

jar/io/netty/channel/SucceededChannelFuture.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/AbstractServerChannel.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/embedded/package-info.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/socket/nio/package-info.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/DefaultEventLoop.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/ChannelFuture.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/socket/DatagramPacket.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/MultithreadEventLoopGroup.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/group/CombinedIterator.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/nio/AbstractNioByteChannel.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/socket/SocketChannel.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/nio/AbstractNioChannel.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/socket/InternetProtocolFamily.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/SingleThreadEventLoop.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/nio/AbstractNioMessageChannel.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/ChannelOutboundHandler.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/AbstractChannelHandlerContext.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/socket/oio/OioServerSocketChannel.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/oio/OioEventLoopGroup.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/RecvByteBufAllocator.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/DefaultEventLoopGroup.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/ChannelInitializer.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/socket/nio/ProtocolFamilyConverter.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/local/LocalEventLoopGroup.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-

jar/io/netty/channel/socket/SocketChannelConfig.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/EventLoopGroup.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/bootstrap/package-info.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/group/DefaultChannelGroupFuture.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/ChannelPipelineException.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/CompleteChannelFuture.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/ChannelInboundHandlerAdapter.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/AbstractChannel.java

No license file was found, but licenses were detected in source scan.

```
/*
* Copyright 2017 The Netty Project
*
* The Netty Project licenses this file to you under the Apache License,
* version 2.0 (the "License"); you may not use this file except in compliance
* with the License. You may obtain a copy of the License at:
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
* License for the specific language governing permissions and limitations
* under the License.
*/
```

Found in path(s):

\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/socket/ChannelOutputShutdownEvent.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/socket/ChannelOutputShutdownException.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/PendingBytesTracker.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/DelegatingChannelPromiseNotifier.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/internal/package-info.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/bootstrap/FailedChannel.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/nio/SelectedSelectionKeySetSelector.java



```
* /opt/cola/permits/1350828746_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-
jar/io/netty/channel/socket/oio/DefaultOioDatagramChannelConfig.java
* /opt/cola/permits/1350828746_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-
jar/io/netty/channel/socket/ChannelInputShutdownReadComplete.java
* /opt/cola/permits/1350828746_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-
jar/io/netty/channel/internal/ChannelUtils.java
* /opt/cola/permits/1350828746_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-
jar/io/netty/channel/socket/oio/OioDatagramChannelConfig.java
```

No license file was found, but licenses were detected in source scan.

```
/*
```

```
* Copyright 2014 The Netty Project
```

```
*
```

```
* The Netty Project licenses this file to you under the Apache License,
* version 2.0 (the "License"); you may not use this file except in compliance
* with the License. You may obtain a copy of the License at:
```

```
*
```

```
* https://www.apache.org/licenses/LICENSE-2.0
```

```
*
```

```
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
* License for the specific language governing permissions and limitations
* under the License.
```

```
*/
```

Found in path(s):

```
* /opt/cola/permits/1350828746_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-
jar/io/netty/channel/DefaultChannelHandlerContext.java
```

No license file was found, but licenses were detected in source scan.

```
/*
```

```
* Copyright 2020 The Netty Project
```

```
*
```

```
* The Netty Project licenses this file to you under the Apache License,
* version 2.0 (the "License"); you may not use this file except in compliance
* with the License. You may obtain a copy of the License at:
```

```
*
```

```
* https://www.apache.org/licenses/LICENSE-2.0
```

```
*
```

```
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
* License for the specific language governing permissions and limitations
* under the License.
```

```
*/
```

Found in path(s):

```
* /opt/cola/permits/1350828746_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-
jar/io/netty/channel/socket/DuplexChannelConfig.java
* /opt/cola/permits/1350828746_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-
jar/io/netty/channel/StacklessClosedChannelException.java
No license file was found, but licenses were detected in source scan.
```

```
/*
* Copyright 2022 The Netty Project
*
* The Netty Project licenses this file to you under the Apache License,
* version 2.0 (the "License"); you may not use this file except in compliance
* with the License. You may obtain a copy of the License at:
*
* https://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
* License for the specific language governing permissions and limitations
* under the License.
*/
```

Found in path(s):

```
* /opt/cola/permits/1350828746_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-
jar/io/netty/channel/socket/nio/SelectorProviderUtil.java
No license file was found, but licenses were detected in source scan.
```

```
<!--
~ Copyright 2012 The Netty Project
~
~ The Netty Project licenses this file to you under the Apache License,
~ version 2.0 (the "License"); you may not use this file except in compliance
~ with the License. You may obtain a copy of the License at:
~
~ https://www.apache.org/licenses/LICENSE-2.0
~
~ Unless required by applicable law or agreed to in writing, software
~ distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
~ WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
~ License for the specific language governing permissions and limitations
~ under the License.
-->
```

Found in path(s):

```
* /opt/cola/permits/1350828746_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/META-
INF/maven/io.netty/netty-transport/pom.xml
No license file was found, but licenses were detected in source scan.
```

```
/*
 * Copyright 2014 The Netty Project
 *
 * The Netty Project licenses this file to you under the Apache License,
 * version 2.0 (the "License"); you may not use this file except in compliance
 * with the License. You may obtain a copy of the License at:
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
 * WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
 * License for the specific language governing permissions and limitations
 * under the License.
 */
```

Found in path(s):

```
*/opt/cola/permits/1350828746_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-
jar/io/netty/channel/ChannelFactory.java
*/opt/cola/permits/1350828746_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-
jar/io/netty/channel/ReflectiveChannelFactory.java
*/opt/cola/permits/1350828746_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-
jar/io/netty/channel/PendingWriteQueue.java
*/opt/cola/permits/1350828746_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-
jar/io/netty/channel/embedded/EmbeddedChannelId.java
*/opt/cola/permits/1350828746_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-
jar/io/netty/channel/AbstractEventLoop.java
```

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2013 The Netty Project
 *
 * The Netty Project licenses this file to you under the Apache License,
 * version 2.0 (the "License"); you may not use this file except in compliance
 * with the License. You may obtain a copy of the License at:
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
 * WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
 * License for the specific language governing permissions and limitations
 * under the License.
 */
```

Found in path(s):

```
*/opt/cola/permits/1350828746_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-
jar/io/netty/channel/oio/OioByteStreamChannel.java
```

No license file was found, but licenses were detected in source scan.

```
/*
 * Copyright 2016 The Netty Project
 *
 * The Netty Project licenses this file to you under the Apache License,
 * version 2.0 (the "License"); you may not use this file except in compliance
 * with the License. You may obtain a copy of the License at:
 *
 * https://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
 * WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
 * License for the specific language governing permissions and limitations
 * under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1350828746_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-
jar/io/netty/bootstrap/BootstrapConfig.java
* /opt/cola/permits/1350828746_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-
jar/io/netty/channel/WriteBufferWaterMark.java
* /opt/cola/permits/1350828746_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-
jar/io/netty/channel/group/VoidChannelGroupFuture.java
* /opt/cola/permits/1350828746_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-
jar/io/netty/channel/PreferHeapByteBufAllocator.java
* /opt/cola/permits/1350828746_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-
jar/io/netty/channel/SelectStrategy.java
* /opt/cola/permits/1350828746_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-
jar/io/netty/channel/DefaultSelectStrategyFactory.java
* /opt/cola/permits/1350828746_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-
jar/io/netty/channel/ChannelOutboundInvoker.java
* /opt/cola/permits/1350828746_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-
jar/io/netty/bootstrap/AbstractBootstrapConfig.java
* /opt/cola/permits/1350828746_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-
jar/io/netty/channel/socket/DuplexChannel.java
* /opt/cola/permits/1350828746_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-
jar/io/netty/channel/ChannelInboundInvoker.java
* /opt/cola/permits/1350828746_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-
jar/io/netty/channel/SelectStrategyFactory.java
* /opt/cola/permits/1350828746_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-
jar/io/netty/bootstrap/ServerBootstrapConfig.java
* /opt/cola/permits/1350828746_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-
jar/io/netty/channel/DefaultSelectStrategy.java
```

No license file was found, but licenses were detected in source scan.

```
/*
```

\* Copyright 2015 The Netty Project  
\*  
\* The Netty Project licenses this file to you under the Apache License,  
\* version 2.0 (the "License"); you may not use this file except in compliance  
\* with the License. You may obtain a copy of the License at:  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
\* License for the specific language governing permissions and limitations  
\* under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/pool/SimpleChannelPool.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/MaxBytesRecvByteBufAllocator.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/pool/ChannelPoolMap.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/pool/ChannelPool.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/pool/ChannelHealthChecker.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/DefaultMaxMessagesRecvByteBufAllocator.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/pool/ChannelPoolHandler.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/DefaultMaxBytesRecvByteBufAllocator.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/pool/package-info.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/MaxMessagesRecvByteBufAllocator.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/pool/FixedChannelPool.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/pool/AbstractChannelPoolMap.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/pool/AbstractChannelPoolHandler.java

No license file was found, but licenses were detected in source scan.

/\*  
\* Copyright 2012 The Netty Project  
\*  
\* The Netty Project licenses this file to you under the Apache License,

\* version 2.0 (the "License"); you may not use this file except in compliance  
 \* with the License. You may obtain a copy of the License at:  
 \*  
 \* <https://www.apache.org/licenses/LICENSE-2.0>  
 \*  
 \* Unless required by applicable law or agreed to in writing, software  
 \* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
 \* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
 \* License for the specific language governing permissions and limitations  
 \* under the License.  
 \*/  
 /\*\*  
 \* Handles an I/O event or intercepts an I/O operation, and forwards it to its next handler in  
 \* its { @link ChannelPipeline }.  
 \*  
 \* <h3>Sub-types</h3>  
 \* <p>  
 \* { @link ChannelHandler } itself does not provide many methods, but you usually have to implement one of its  
 subtypes:  
 \* <ul>  
 \* <li>{ @link ChannelInboundHandler } to handle inbound I/O events, and</li>  
 \* <li>{ @link ChannelOutboundHandler } to handle outbound I/O operations.</li>  
 \* </ul>  
 \* </p>  
 \* <p>  
 \* Alternatively, the following adapter classes are provided for your convenience:  
 \* <ul>  
 \* <li>{ @link ChannelInboundHandlerAdapter } to handle inbound I/O events,</li>  
 \* <li>{ @link ChannelOutboundHandlerAdapter } to handle outbound I/O operations, and</li>  
 \* <li>{ @link ChannelDuplexHandler } to handle both inbound and outbound events</li>  
 \* </ul>  
 \* </p>  
 \* <p>  
 \* For more information, please refer to the documentation of each subtype.  
 \* </p>  
 \*  
 \* <h3>The context object</h3>  
 \* <p>  
 \* A { @link ChannelHandler } is provided with a { @link ChannelHandlerContext }  
 \* object. A { @link ChannelHandler } is supposed to interact with the  
 \* { @link ChannelPipeline } it belongs to via a context object. Using the  
 \* context object, the { @link ChannelHandler } can pass events upstream or  
 \* downstream, modify the pipeline dynamically, or store the information  
 \* (using { @link AttributeKey }s) which is specific to the handler.  
 \*  
 \* <h3>State management</h3>  
 \*  
 \* A { @link ChannelHandler } often needs to store some stateful information.

\* The simplest and recommended approach is to use member variables:

```
* <pre>
* public interface Message {
* // your methods here
* }
*
* public class DataServerHandler extends { @link SimpleChannelInboundHandler } <Message > {
*
* private boolean loggedIn;
*
* { @code @Override }
* public void channelRead0({ @link ChannelHandlerContext } ctx, Message message) {
* if (message instanceof LoginMessage) {
* authenticate((LoginMessage) message);
* loggedIn = true;
* } else (message instanceof GetDataMessage) {
* if (loggedIn) {
* ctx.writeAndFlush(fetchSecret((GetDataMessage) message));
* } else {
* fail();
* }
* }
* }
* ...
* }
* </pre>
```

\* Because the handler instance has a state variable which is dedicated to one connection, you have to create a new handler instance for each new channel to avoid a race condition where a unauthenticated client can get the confidential information:

```
* <pre>
* // Create a new handler instance per channel.
* // See { @link ChannelInitializer#initChannel(Channel) }.
* public class DataServerInitializer extends { @link ChannelInitializer } < { @link Channel } > {
* { @code @Override }
* public void initChannel({ @link Channel } channel) {
* channel.pipeline().addLast("handler", new DataServerHandler());
* }
* }
*
* </pre>
```

\* <h4>Using { @link AttributeKey }s</h4>

\* Although it's recommended to use member variables to store the state of a handler, for some reason you might not want to create many handler instances. In such a case, you can use { @link AttributeKey }s which is provided by { @link ChannelHandlerContext }:

```

* <pre>
* public interface Message {
* // your methods here
* }
*
* { @code @Sharable }
* public class DataServerHandler extends { @link SimpleChannelInboundHandler}<&Message> {
* private final { @link AttributeKey}<&{ @link Boolean}>; auth =
* { @link AttributeKey#valueOf(String) AttributeKey.valueOf("auth")};
*
* { @code @Override }
* public void channelRead({ @link ChannelHandlerContext} ctx, Message message) {
* { @link Attribute}<&{ @link Boolean}>; attr = ctx.attr(auth);
* if (message instanceof LoginMessage) {
* authenticate((LoginMessage) o);
* attr.set(true);
* } else (message instanceof GetDataMessage) {
* if (Boolean.TRUE.equals(attr.get())) {
* ctx.writeAndFlush(fetchSecret((GetDataMessage) o));
* } else {
* fail();
* }
* }
* }
* }
* ...
* }
* </pre>

```

\* Now that the state of the handler is attached to the { @link ChannelHandlerContext}, you can add the same handler instance to different pipelines:

```

* <pre>
* public class DataServerInitializer extends { @link ChannelInitializer}<&{ @link Channel}> {
*
* private static final DataServerHandler SHARED = new DataServerHandler();
*
* { @code @Override }
* public void initChannel({ @link Channel} channel) {
* channel.pipeline().addLast("handler", SHARED);
* }
* }
* </pre>

```

\* <h4>The { @code @Sharable} annotation</h4>

\* <p>

\* In the example above which used an { @link AttributeKey}, you might have noticed the { @code @Sharable} annotation.

\* <p>

\* If a { @link ChannelHandler} is annotated with the { @code @Sharable}



- \* annotation, it means you can create an instance of the handler just once and
- \* add it to one or more { @link ChannelPipeline}s multiple times without
- \* a race condition.
- \* <p>
- \* If this annotation is not specified, you have to create a new handler
- \* instance every time you add it to a pipeline because it has unshared state
- \* such as member variables.
- \* <p>
- \* This annotation is provided for documentation purpose, just like
- \* <a href="http://www.javaconcurrencyinpractice.com/annotations/doc/">the JCIP annotations</a>.
- \*
- \* <h3>Additional resources worth reading</h3>
- \* <p>
- \* Please refer to the { @link ChannelHandler}, and
- \* { @link ChannelPipeline} to find out more about inbound and outbound operations,
- \* what fundamental differences they have, how they flow in a pipeline, and how to handle
- \* the operation in your application.
- \*/

Found in path(s):

- \* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/ChannelHandler.java

No license file was found, but licenses were detected in source scan.

/\*

- \* Copyright 2015 The Netty Project

\*

- \* The Netty Project licenses this file to you under the Apache License, version 2.0 (the

- \* "License"); you may not use this file except in compliance with the License. You may obtain a

- \* copy of the License at:

\*

- \* <https://www.apache.org/licenses/LICENSE-2.0>

\*

- \* Unless required by applicable law or agreed to in writing, software distributed under the License

- \* is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express

- \* or implied. See the License for the specific language governing permissions and limitations under

- \* the License.

\*/

Found in path(s):

- \* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/CoalescingBufferQueue.java

No license file was found, but licenses were detected in source scan.

/\*

- \* Copyright 2019 The Netty Project

\*

\* The Netty Project licenses this file to you under the Apache License,  
\* version 2.0 (the "License"); you may not use this file except in compliance  
\* with the License. You may obtain a copy of the License at:  
\*  
\* <https://www.apache.org/licenses/LICENSE-2.0>  
\*  
\* Unless required by applicable law or agreed to in writing, software  
\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT  
\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the  
\* License for the specific language governing permissions and limitations  
\* under the License.  
\*/

Found in path(s):

\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/EventLoopTaskQueueFactory.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/ExtendedClosedChannelException.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/ChannelHandlerMask.java

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2017 The Netty Project

\*

\* The Netty Project licenses this file to you under the Apache License, version 2.0 (the  
\* "License"); you may not use this file except in compliance with the License. You may obtain a  
\* copy of the License at:

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software distributed under the License  
\* is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either  
express  
\* or implied. See the License for the specific language governing permissions and limitations under  
\* the License.

\*/

Found in path(s):

\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-  
jar/io/netty/channel/AbstractCoalescingBufferQueue.java

No license file was found, but licenses were detected in source scan.

# The Netty Project licenses this file to you under the Apache License,  
# version 2.0 (the "License"); you may not use this file except in compliance  
# with the License. You may obtain a copy of the License at:  
# distributed under the License is distributed on an "AS IS" BASIS, WITHOUT

Found in path(s):

\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/META-INF/native-image/io.netty/transport/native-image.properties

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2013 The Netty Project

\*

\* The Netty Project licenses this file to you under the Apache License,

\* version 2.0 (the "License"); you may not use this file except in compliance

\* with the License. You may obtain a copy of the License at:

\*

\* <https://www.apache.org/licenses/LICENSE-2.0>

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT

\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the

\* License for the specific language governing permissions and limitations

\* under the License.

\*/

Found in path(s):

\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/socket/oio/DefaultOioServerSocketChannelConfig.java

\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/AbstractEventLoopGroup.java

\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/AddressedEnvelope.java

\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/group/ChannelGroup.java

\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/socket/oio/OioSocketChannelConfig.java

\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/ChannelProgressivePromise.java

\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/ChannelHandlerAdapter.java

\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/ChannelProgressiveFutureListener.java

\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/ChannelId.java

\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/DefaultMessageSizeEstimator.java

\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/nio/SelectedSelectionKeySet.java

\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/SimpleChannelInboundHandler.java

\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/ConnectTimeoutException.java

\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/socket/oio/DefaultOioSocketChannelConfig.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/bootstrap/ChannelFactory.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/ChannelProgressiveFuture.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/group/ChannelMatcher.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/DefaultChannelId.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/socket/oio/OioServerSocketChannelConfig.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/DefaultChannelProgressivePromise.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/ChannelOutboundBuffer.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/MessageSizeEstimator.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/group/ChannelGroupException.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/DefaultAddressedEnvelope.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/group/DefaultChannelGroup.java  
\* /opt/cola/permits/1350828746\_1656063997.4516613/0/netty-transport-4-1-78-final-sources-1-jar/io/netty/channel/group/ChannelMatchers.java

## 1.369 python-dmidecode 3.12.2 15.el8

### 1.369.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by

the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program"

means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary

form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.



If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

## NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands ``show w'` and ``show c'` should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than ``show w'` and ``show c'`; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

## 1.370 acl 2.2.53 1.e18

### 1.370.1 Available under license :

Most components of the "acl" package are licensed under Version 2.1 of the GNU Lesser General Public License (see COPYING.LGPL).

Some components (as annotated in the source) are licensed under Version 2 of the GNU General Public License (see below),

-----  
GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be

distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein.

You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.



Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively

convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

Gnomovision version 69, Copyright (C) year name of author  
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.  
This is free software, and you are welcome to redistribute it under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program  
`Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989  
Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the

library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

Most components of the "acl" package are licensed under Version 2.1 of the GNU Lesser General Public License (see below).  
below.

Some components (as annotated in the source) are licensed under Version 2 of the GNU General Public License (see COPYING).

-----  
**GNU LESSER GENERAL PUBLIC LICENSE**

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.  
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA  
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

**Preamble**

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for

you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many

libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

#### GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is

included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany

it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.



You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by

the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

##### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively

convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!

## 1.371 json-java 20080701

### 1.371.1 Available under license :

No license file was found, but licenses were detected in source scan.

/\*

Copyright (c) 2008 JSON.org

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is

furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

The Software shall be used for Good, not Evil.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

\*/

Found in path(s):

\* /opt/cola/permits/1020251895\_1611190176.5/0/json-20080701-sources-jar-zip/json-20080701-sources-jar/org/json/JSONML.java

No license file was found, but licenses were detected in source scan.

/\*

Copyright (c) 2002 JSON.org

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

The Software shall be used for Good, not Evil.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

\*/

Found in path(s):

\* /opt/cola/permits/1020251895\_1611190176.5/0/json-20080701-sources-jar-zip/json-20080701-sources-jar/org/json/XMLTokener.java

\* /opt/cola/permits/1020251895\_1611190176.5/0/json-20080701-sources-jar-zip/json-20080701-sources-jar/org/json/HTTPTokener.java  
\* /opt/cola/permits/1020251895\_1611190176.5/0/json-20080701-sources-jar-zip/json-20080701-sources-jar/org/json/JSONTokener.java  
\* /opt/cola/permits/1020251895\_1611190176.5/0/json-20080701-sources-jar-zip/json-20080701-sources-jar/org/json/XML.java  
\* /opt/cola/permits/1020251895\_1611190176.5/0/json-20080701-sources-jar-zip/json-20080701-sources-jar/org/json/CookieList.java  
\* /opt/cola/permits/1020251895\_1611190176.5/0/json-20080701-sources-jar-zip/json-20080701-sources-jar/org/json/CDL.java  
\* /opt/cola/permits/1020251895\_1611190176.5/0/json-20080701-sources-jar-zip/json-20080701-sources-jar/org/json/JSONObject.java  
\* /opt/cola/permits/1020251895\_1611190176.5/0/json-20080701-sources-jar-zip/json-20080701-sources-jar/org/json/Cookie.java  
\* /opt/cola/permits/1020251895\_1611190176.5/0/json-20080701-sources-jar-zip/json-20080701-sources-jar/org/json/JSONArray.java  
\* /opt/cola/permits/1020251895\_1611190176.5/0/json-20080701-sources-jar-zip/json-20080701-sources-jar/org/json/HTTP.java

No license file was found, but licenses were detected in source scan.

/\*

Copyright (c) 2006 JSON.org

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

The Software shall be used for Good, not Evil.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

\*/

Found in path(s):

\* /opt/cola/permits/1020251895\_1611190176.5/0/json-20080701-sources-jar-zip/json-20080701-sources-jar/org/json/JSONWriter.java  
\* /opt/cola/permits/1020251895\_1611190176.5/0/json-20080701-sources-jar-zip/json-20080701-sources-

# 1.372 istack-commons 3.0.12

## 1.372.1 Available under license :

COMMON DEVELOPMENT AND DISTRIBUTION LICENSE (CDDL)Version 1.1

### 1. Definitions.

1.1. "Contributor" means each individual or entity that creates or contributes to the creation of Modifications.

1.2. "Contributor Version" means the combination of the Original Software, prior Modifications used by a Contributor (if any), and the Modifications made by that particular Contributor.

1.3. "Covered Software" means (a) the Original Software, or (b) Modifications, or (c) the combination of files containing Original Software with files containing Modifications, in each case including portions thereof.

1.4. "Executable" means the Covered Software in any form other than Source Code.

1.5. "Initial Developer" means the individual or entity that first makes Original Software available under this License.

1.6. "Larger Work" means a work which combines Covered Software or portions thereof with code not governed by the terms of this License.

1.7. "License" means this document.

1.8. "Licensable" means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently acquired, any and all of the rights conveyed herein.

1.9. "Modifications" means the Source Code and Executable form of any of the following:

A. Any file that results from an addition to, deletion from or modification of the contents of a file containing Original Software or previous Modifications;

B. Any new file that contains any part of the Original Software or previous Modification; or

C. Any new file that is contributed or otherwise made available under the terms of this License.

1.10. "Original Software" means the Source Code and Executable form of computer software code that is originally released under this License.

1.11. "Patent Claims" means any patent claim(s), now owned or hereafter acquired, including without limitation, method, process, and apparatus claims, in any patent Licensable by grantor.

1.12. "Source Code" means (a) the common form of computer software code in which modifications are made and (b) associated documentation included in or with such code.



1.13. "You" (or "Your") means an individual or a legal entity exercising rights under, and complying with all of the terms of, this License. For legal entities, "You" includes any entity which controls, is controlled by, or is under common control with You. For purposes of this definition, "control" means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

## 2. License Grants.

### 2.1. The Initial Developer Grant.

Conditioned upon Your compliance with Section 3.1 below and subject to third party intellectual property claims, the Initial Developer hereby grants You a world-wide, royalty-free, non-exclusive license:

(a) under intellectual property rights (other than patent or trademark) Licensable by Initial Developer, to use, reproduce, modify, display, perform, sublicense and distribute the Original Software (or portions thereof), with or without Modifications, and/or as part of a Larger Work; and

(b) under Patent Claims infringed by the making, using or selling of Original Software, to make, have made, use, practice, sell, and offer for sale, and/or otherwise dispose of the Original Software (or portions thereof).

(c) The licenses granted in Sections 2.1(a) and (b) are effective on the date Initial Developer first distributes or otherwise makes the Original Software available to a third party under the terms of this License.

(d) Notwithstanding Section 2.1(b) above, no patent license is granted: (1) for code that You delete from the Original Software, or (2) for infringements caused by: (i) the modification of the Original Software, or (ii) the combination of the Original Software with other software or devices.

### 2.2. Contributor Grant.

Conditioned upon Your compliance with Section 3.1 below and subject to third party intellectual property claims, each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:

(a) under intellectual property rights (other than patent or trademark) Licensable by Contributor to use, reproduce, modify, display, perform, sublicense and distribute the Modifications created by such Contributor (or portions thereof), either on an unmodified basis, with other Modifications, as Covered Software and/or as part of a Larger Work; and

(b) under Patent Claims infringed by the making, using, or selling of Modifications made by that Contributor either alone and/or in combination with its Contributor Version (or portions of such combination), to make, use, sell, offer for sale, have made, and/or otherwise dispose of: (1) Modifications made by that Contributor (or portions thereof); and (2) the combination of Modifications made by that Contributor with its Contributor Version (or portions of such combination).

(c) The licenses granted in Sections 2.2(a) and 2.2(b) are effective on the date Contributor first distributes or otherwise makes the Modifications available to a third party.

(d) Notwithstanding Section 2.2(b) above, no patent license is granted: (1) for any code that Contributor has

deleted from the Contributor Version; (2) for infringements caused by: (i) third party modifications of Contributor Version, or (ii) the combination of Modifications made by that Contributor with other software (except as part of the Contributor Version) or other devices; or (3) under Patent Claims infringed by Covered Software in the absence of Modifications made by that Contributor.

### 3. Distribution Obligations.

#### 3.1. Availability of Source Code.

Any Covered Software that You distribute or otherwise make available in Executable form must also be made available in Source Code form and that Source Code form must be distributed only under the terms of this License. You must include a copy of this License with every copy of the Source Code form of the Covered Software You distribute or otherwise make available. You must inform recipients of any such Covered Software in Executable form as to how they can obtain such Covered Software in Source Code form in a reasonable manner on or through a medium customarily used for software exchange.

#### 3.2. Modifications.

The Modifications that You create or to which You contribute are governed by the terms of this License. You represent that You believe Your Modifications are Your original creation(s) and/or You have sufficient rights to grant the rights conveyed by this License.

#### 3.3. Required Notices.

You must include a notice in each of Your Modifications that identifies You as the Contributor of the Modification. You may not remove or alter any copyright, patent or trademark notices contained within the Covered Software, or any notices of licensing or any descriptive text giving attribution to any Contributor or the Initial Developer.

#### 3.4. Application of Additional Terms.

You may not offer or impose any terms on any Covered Software in Source Code form that alters or restricts the applicable version of this License or the recipients' rights hereunder. You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Software. However, you may do so only on Your own behalf, and not on behalf of the Initial Developer or any Contributor. You must make it absolutely clear that any such warranty, support, indemnity or liability obligation is offered by You alone, and You hereby agree to indemnify the Initial Developer and every Contributor for any liability incurred by the Initial Developer or such Contributor as a result of warranty, support, indemnity or liability terms You offer.

#### 3.5. Distribution of Executable Versions.

You may distribute the Executable form of the Covered Software under the terms of this License or under the terms of a license of Your choice, which may contain terms different from this License, provided that You are in compliance with the terms of this License and that the license for the Executable form does not attempt to limit or alter the recipient's rights in the Source Code form from the rights set forth in this License. If You distribute the Covered Software in Executable form under a different license, You must make it absolutely clear that any terms which differ from this License are offered by You alone, not by the Initial Developer or Contributor. You hereby agree to indemnify the Initial Developer and every Contributor for any liability incurred by the Initial Developer or

such Contributor as a result of any such terms You offer.

### 3.6. Larger Works.

You may create a Larger Work by combining Covered Software with other code not governed by the terms of this License and distribute the Larger Work as a single product. In such a case, You must make sure the requirements of this License are fulfilled for the Covered Software.

## 4. Versions of the License.

### 4.1. New Versions.

Oracle is the initial license steward and may publish revised and/or new versions of this License from time to time. Each version will be given a distinguishing version number. Except as provided in Section 4.3, no one other than the license steward has the right to modify this License.

### 4.2. Effect of New Versions.

You may always continue to use, distribute or otherwise make the Covered Software available under the terms of the version of the License under which You originally received the Covered Software. If the Initial Developer includes a notice in the Original Software prohibiting it from being distributed or otherwise made available under any subsequent version of the License, You must distribute and make the Covered Software available under the terms of the version of the License under which You originally received the Covered Software. Otherwise, You may also choose to use, distribute or otherwise make the Covered Software available under the terms of any subsequent version of the License published by the license steward.

### 4.3. Modified Versions.

When You are an Initial Developer and You want to create a new license for Your Original Software, You may create and use a modified version of this License if You: (a) rename the license and remove any references to the name of the license steward (except to note that the license differs from this License); and (b) otherwise make it clear that the license contains terms which differ from this License.

## 5. DISCLAIMER OF WARRANTY.

COVERED SOFTWARE IS PROVIDED UNDER THIS LICENSE ON AN "AS IS" BASIS, WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTIES THAT THE COVERED SOFTWARE IS FREE OF DEFECTS, MERCHANTABILITY, FIT FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE COVERED SOFTWARE IS WITH YOU. SHOULD ANY COVERED SOFTWARE PROVE DEFECTIVE IN ANY RESPECT, YOU (NOT THE INITIAL DEVELOPER OR ANY OTHER CONTRIBUTOR) ASSUME THE COST OF ANY NECESSARY SERVICING, REPAIR OR CORRECTION. THIS DISCLAIMER OF WARRANTY CONSTITUTES AN ESSENTIAL PART OF THIS LICENSE. NO USE OF ANY COVERED SOFTWARE IS AUTHORIZED HEREUNDER EXCEPT UNDER THIS DISCLAIMER.

## 6. TERMINATION.

6.1. This License and the rights granted hereunder will terminate automatically if You fail to comply with terms

herein and fail to cure such breach within 30 days of becoming aware of the breach. Provisions which, by their nature, must remain in effect beyond the termination of this License shall survive.

6.2. If You assert a patent infringement claim (excluding declaratory judgment actions) against Initial Developer or a Contributor (the Initial Developer or Contributor against whom You assert such claim is referred to as "Participant") alleging that the Participant Software (meaning the Contributor Version where the Participant is a Contributor or the Original Software where the Participant is the Initial Developer) directly or indirectly infringes any patent, then any and all rights granted directly or indirectly to You by such Participant, the Initial Developer (if the Initial Developer is not the Participant) and all Contributors under Sections 2.1 and/or 2.2 of this License shall, upon 60 days notice from Participant terminate prospectively and automatically at the expiration of such 60 day notice period, unless if within such 60 day period You withdraw Your claim with respect to the Participant Software against such Participant either unilaterally or pursuant to a written agreement with Participant.

6.3. If You assert a patent infringement claim against Participant alleging that the Participant Software directly or indirectly infringes any patent where such claim is resolved (such as by license or settlement) prior to the initiation of patent infringement litigation, then the reasonable value of the licenses granted by such Participant under Sections 2.1 or 2.2 shall be taken into account in determining the amount or value of any payment or license.

6.4. In the event of termination under Sections 6.1 or 6.2 above, all end user licenses that have been validly granted by You or any distributor hereunder prior to termination (excluding licenses granted to You by any distributor) shall survive termination.

## 7. LIMITATION OF LIABILITY.

UNDER NO CIRCUMSTANCES AND UNDER NO LEGAL THEORY, WHETHER TORT (INCLUDING NEGLIGENCE), CONTRACT, OR OTHERWISE, SHALL YOU, THE INITIAL DEVELOPER, ANY OTHER CONTRIBUTOR, OR ANY DISTRIBUTOR OF COVERED SOFTWARE, OR ANY SUPPLIER OF ANY OF SUCH PARTIES, BE LIABLE TO ANY PERSON FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES OF ANY CHARACTER INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOSS OF GOODWILL, WORK STOPPAGE, COMPUTER FAILURE OR MALFUNCTION, OR ANY AND ALL OTHER COMMERCIAL DAMAGES OR LOSSES, EVEN IF SUCH PARTY SHALL HAVE BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. THIS LIMITATION OF LIABILITY SHALL NOT APPLY TO LIABILITY FOR DEATH OR PERSONAL INJURY RESULTING FROM SUCH PARTY'S NEGLIGENCE TO THE EXTENT APPLICABLE LAW PROHIBITS SUCH LIMITATION. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THIS EXCLUSION AND LIMITATION MAY NOT APPLY TO YOU.

## 8. U.S. GOVERNMENT END USERS.

The Covered Software is a "commercial item," as that term is defined in 48 C.F.R. 2.101 (Oct. 1995), consisting of "commercial computer software" (as that term is defined at 48 C.F.R. ? 252.227-7014(a)(1)) and "commercial computer software documentation" as such terms are used in 48 C.F.R. 12.212 (Sept. 1995). Consistent with 48 C.F.R. 12.212 and 48 C.F.R. 227.7202-1 through 227.7202-4 (June 1995), all U.S. Government End Users acquire Covered Software with only those rights set forth herein. This U.S. Government Rights clause is in lieu of, and supersedes, any other FAR, DFAR, or other clause or provision that addresses Government rights in computer software under this License.

## 9. MISCELLANEOUS.

This License represents the complete agreement concerning subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable. This License shall be governed by the law of the jurisdiction specified in a notice contained within the Original Software (except to the extent applicable law, if any, provides otherwise), excluding such jurisdiction's conflict-of-law provisions. Any litigation relating to this License shall be subject to the jurisdiction of the courts located in the jurisdiction and venue specified in a notice contained within the Original Software, with the losing party responsible for costs, including, without limitation, court costs and reasonable attorneys' fees and expenses. The application of the United Nations Convention on Contracts for the International Sale of Goods is expressly excluded. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not apply to this License. You agree that You alone are responsible for compliance with the United States export administration regulations (and the export control laws and regulation of any other countries) when You use, distribute or otherwise make available any Covered Software.

#### 10. RESPONSIBILITY FOR CLAIMS.

As between Initial Developer and the Contributors, each party is responsible for claims and damages arising, directly or indirectly, out of its utilization of rights under this License and You agree to work with Initial Developer and Contributors to distribute such responsibility on an equitable basis. Nothing herein is intended or shall be deemed to constitute any admission of liability.

-----

#### NOTICE PURSUANT TO SECTION 9 OF THE COMMON DEVELOPMENT AND DISTRIBUTION LICENSE (CDDL)

The code released under the CDDL shall be governed by the laws of the State of California (excluding conflict-of-law provisions). Any litigation relating to this License shall be subject to the jurisdiction of the Federal Courts of the Northern District of California and the state courts of the State of California, with venue lying in Santa Clara County, California.

The GNU General Public License (GPL) Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc. 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or

executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.



8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to

achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

One line to give the program's name and a brief idea of what it does.

Copyright (C)

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

Gnomovision version 69, Copyright (C) year name of author

Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'. This is free software, and you are welcome to redistribute it under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program `Gnomovision' (which makes passes at compilers) written by James Hacker.

signature of Ty Coon, 1 April 1989

Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

"CLASSPATH" EXCEPTION TO THE GPL VERSION 2

Certain source files distributed by Oracle are subject to the following clarification and special exception to the GPL Version 2, but only where Oracle has expressly included in the particular source file's header the words "Oracle designates this particular file as subject to the "Classpath" exception as provided by Oracle in the License file that accompanied this code."

Linking this library statically or dynamically with other modules is making a combined work based on this library. Thus, the terms and conditions of the GNU General Public License Version 2 cover the whole combination.

As a special exception, the copyright holders of this library give you permission to link this library with independent modules to produce an executable, regardless of the license terms of these independent modules, and to copy and distribute the resulting executable under terms of your choice, provided that you also meet, for each linked independent module, the terms and conditions of the license of that module. An independent module is a module which is not derived from or based on this library. If you modify this library, you may extend this exception to your version of the library, but you are not obligated to do so. If you do not wish to do so, delete this exception statement from your version.

/\*

\* DO NOT ALTER OR REMOVE COPYRIGHT NOTICES OR THIS HEADER.

\*

\* Copyright (c) YYYY Oracle and/or its affiliates. All rights reserved.

\*

\* The contents of this file are subject to the terms of either the GNU

\* General Public License Version 2 only ("GPL") or the Common Development

\* and Distribution License("CDDL") (collectively, the "License"). You

\* may not use this file except in compliance with the License. You can

\* obtain a copy of the License at

\* [http://glassfish.java.net/public/CDDL+GPL\\_1\\_1.html](http://glassfish.java.net/public/CDDL+GPL_1_1.html)

\* or packager/legal/LICENSE.txt. See the License for the specific

\* language governing permissions and limitations under the License.

\*

\* When distributing the software, include this License Header Notice in each

\* file and include the License file at packager/legal/LICENSE.txt.

\*

\* GPL Classpath Exception:

\* Oracle designates this particular file as subject to the "Classpath"

\* exception as provided by Oracle in the GPL Version 2 section of the License

\* file that accompanied this code.

\*

\* Modifications:

\* If applicable, add the following below the License Header, with the fields

\* enclosed by brackets [] replaced by your own identifying information:

\* "Portions Copyright [year] [name of copyright owner]"

\*

\* Contributor(s):

\* If you wish your version of this file to be governed by only the CDDL or

\* only the GPL Version 2, indicate your decision by adding "[Contributor]

\* elects to include this software in this distribution under the [CDDL or GPL

\* Version 2] license." If you don't indicate a single choice of license, a

\* recipient has the option to distribute your version of this file under  
\* either the CDDL, the GPL Version 2 or to extend the choice of license to  
\* its licensees as provided above. However, if you add GPL Version 2 code  
\* and therefore, elected the GPL Version 2 license, then the option applies  
\* only if the new code is made subject to such option by the copyright  
\* holder.  
\*/

## 1.373 metrics 4.1.12.1

### 1.373.1 Available under license :

Metrics

Copyright 2010-2013 Coda Hale and Yammer, Inc., 2014-2017 Dropwizard Team

This product includes software developed by Coda Hale and Yammer, Inc.

This product includes code derived from the JSR-166 project (ThreadLocalRandom, Striped64, LongAdder), which was released with the following comments:

Written by Doug Lea with assistance from members of JCP JSR-166  
Expert Group and released to the public domain, as explained at  
<http://creativecommons.org/publicdomain/zero/1.0/>

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

##### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction,  
and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by  
the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all  
other entities that control, are controlled by, or are under common  
control with that entity. For the purposes of this definition,  
"control" means (i) the power, direct or indirect, to cause the  
direction or management of such entity, whether by contract or  
otherwise, or (ii) ownership of fifty percent (50%) or more of the  
outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity  
exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed

as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. **Submission of Contributions.** Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. **Trademarks.** This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. **Disclaimer of Warranty.** Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. **Limitation of Liability.** In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. **Accepting Warranty or Additional Liability.** While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this

License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright 2010-2012 Coda Hale and Yammer, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

# 1.374 tomcat-coyote 8.5.82

## 1.374.1 Available under license :

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction,



and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the

Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory,

whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Apache Tomcat  
Copyright 1999-2022 The Apache Software Foundation

This product includes software developed at  
The Apache Software Foundation (<http://www.apache.org/>).

# 1.375 apache-log4j 2.17.1

## 1.375.1 Available under license :

Apache Log4j Core  
Copyright 1999-2012 Apache Software Foundation

This product includes software developed at  
The Apache Software Foundation (<http://www.apache.org/>).

ResolverUtil.java  
Copyright 2005-2006 Tim Fennell

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work,

where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or

for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason



of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright 1999-2005 The Apache Software Foundation

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

# 1.376 hibernate-validator 6.0.23.Final

## 1.376.1 Available under license :

Apache-2.0

# 1.377 libdb 5.3.28-42.el8\_4

## 1.377.1 Available under license :

/\*\_

- \* Copyright (c) 1991, 1993, 1994
- \* The Regents of the University of California. All rights reserved.
- \*
- \* Redistribution and use in source and binary forms, with or without
- \* modification, are permitted provided that the following conditions
- \* are met:
- \* 1. Redistributions of source code must retain the above copyright
- \* notice, this list of conditions and the following disclaimer.

```

* 2. Redistributions in binary form must reproduce the above copyright
* notice, this list of conditions and the following disclaimer in the
* documentation and/or other materials provided with the distribution.
* 3. All advertising materials mentioning features or use of this software
* must display the following acknowledgement:
* This product includes software developed by the University of
* California, Berkeley and its contributors.
* 4. Neither the name of the University nor the names of its contributors
* may be used to endorse or promote products derived from this software
* without specific prior written permission.
*
* THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS" AND
* ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
* ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE
* FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
* DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS
* OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
* LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
* OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
* SUCH DAMAGE.
/*-
* Id
*/

```

The following is the license that applies to this copy of the Berkeley DB software. For a license to use the Berkeley DB software under conditions other than those described here, or to purchase support for this software, please contact Oracle at [berkeleydb-info\\_us@oracle.com](mailto:berkeleydb-info_us@oracle.com).

```

==-----
/*
* Copyright (c) 1990, 2013 Oracle and/or its affiliates. All rights reserved.
*
* Redistribution and use in source and binary forms, with or without
* modification, are permitted provided that the following conditions
* are met:
* 1. Redistributions of source code must retain the above copyright
* notice, this list of conditions and the following disclaimer.
* 2. Redistributions in binary form must reproduce the above copyright
* notice, this list of conditions and the following disclaimer in the
* documentation and/or other materials provided with the distribution.
* 3. Redistributions in any form must be accompanied by information on
* how to obtain complete source code for the DB software and any
* accompanying software that uses the DB software. The source code
* must either be included in the distribution or be available for no
* more than the cost of distribution plus a nominal fee, and must be

```

\* freely redistributable under reasonable conditions. For an  
\* executable file, complete source code means the source code for all  
\* modules it contains. It does not include source code for modules or  
\* files that typically accompany the major components of the operating  
\* system on which the executable file runs.

\*

\* THIS SOFTWARE IS PROVIDED BY ORACLE ``AS IS" AND ANY EXPRESS OR  
\* IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED  
\* WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR  
\* NON-INFRINGEMENT, ARE DISCLAIMED. IN NO EVENT SHALL ORACLE BE LIABLE  
\* FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR  
\* CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF  
\* SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR  
\* BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY,  
\* WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE  
\* OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN  
\* IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

\*/

/\*

\* Copyright (c) 1990, 1993, 1994, 1995  
\* The Regents of the University of California. All rights reserved.

\*

\* Redistribution and use in source and binary forms, with or without  
\* modification, are permitted provided that the following conditions  
\* are met:

- \* 1. Redistributions of source code must retain the above copyright  
\* notice, this list of conditions and the following disclaimer.
- \* 2. Redistributions in binary form must reproduce the above copyright  
\* notice, this list of conditions and the following disclaimer in the  
\* documentation and/or other materials provided with the distribution.
- \* 3. Neither the name of the University nor the names of its contributors  
\* may be used to endorse or promote products derived from this software  
\* without specific prior written permission.

\*

\* THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS" AND  
\* ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE  
\* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE  
\* ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE  
\* FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL  
\* DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS  
\* OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)  
\* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT  
\* LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY  
\* OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF  
\* SUCH DAMAGE.

\*/

/\*

\* Copyright (c) 1995, 1996

\* The President and Fellows of Harvard University. All rights reserved.

\*

\* Redistribution and use in source and binary forms, with or without  
\* modification, are permitted provided that the following conditions  
\* are met:

- \* 1. Redistributions of source code must retain the above copyright  
\* notice, this list of conditions and the following disclaimer.
- \* 2. Redistributions in binary form must reproduce the above copyright  
\* notice, this list of conditions and the following disclaimer in the  
\* documentation and/or other materials provided with the distribution.
- \* 3. Neither the name of the University nor the names of its contributors  
\* may be used to endorse or promote products derived from this software  
\* without specific prior written permission.

\*

\* THIS SOFTWARE IS PROVIDED BY HARVARD AND ITS CONTRIBUTORS ``AS IS" AND  
\* ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE  
\* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE  
\* ARE DISCLAIMED. IN NO EVENT SHALL HARVARD OR ITS CONTRIBUTORS BE LIABLE  
\* FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL  
\* DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS  
\* OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)  
\* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT  
\* LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY  
\* OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF  
\* SUCH DAMAGE.

\*/

-----

/\*\*

\* ASM: a very small and fast Java bytecode manipulation framework  
\* Copyright (c) 2000-2005 INRIA, France Telecom  
\* All rights reserved.

\*

\* Redistribution and use in source and binary forms, with or without  
\* modification, are permitted provided that the following conditions  
\* are met:

- \* 1. Redistributions of source code must retain the above copyright  
\* notice, this list of conditions and the following disclaimer.
- \* 2. Redistributions in binary form must reproduce the above copyright  
\* notice, this list of conditions and the following disclaimer in the  
\* documentation and/or other materials provided with the distribution.
- \* 3. Neither the name of the copyright holders nor the names of its  
\* contributors may be used to endorse or promote products derived from  
\* this software without specific prior written permission.

\*

\* THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"  
\* AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE  
\* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE  
\* ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE

\* LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR  
\* CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF  
\* SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS  
\* INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN  
\* CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)  
\* ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF  
\* THE POSSIBILITY OF SUCH DAMAGE.  
\*/

Berkeley DB Product License

The license that applies to this copy of the Berkeley DB software may be found in the "LICENSE" file included in each Berkeley DB distribution.

For a license to use the Berkeley DB software under conditions other than those described in the "LICENSE" file, or to purchase support for this software, please send email to [berkeleydb-info\\_us@oracle.com](mailto:berkeleydb-info_us@oracle.com).

Copyright (c) 1996, 2013 Oracle and/or its affiliates. All rights reserved.

## 1.378 chardet 3.0.4

### 1.378.1 Available under license :

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.

51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a

combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

#### GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License").

Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.



c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may

distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

- e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
- b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and

all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if

written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

## How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>  
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!

# 1.379 python-idna 2.5 5.el8

## 1.379.1 Available under license :

No license file was found, but licenses were detected in source scan.

License: BSD and Python and Unicode

Found in path(s):

```
* /opt/ws_local/PERMITS_SQL/1018810534_1591381484.4/0/python-idna-2.5-5.el8.src.rpm-cosi-expand-archive-x48w3eme/python-idna.spec
```

No license file was found, but licenses were detected in source scan.

"""

A library to support the Internationalised Domain Names in Applications (IDNA) protocol as specified in RFC 5890 et.al. This new methodology, known as IDNA 2008, can generate materially different results to the previous standard. The library can act as a drop-in replacement for the "encodings.idna" module.

"""

```
import io, sys
```

```
from setuptools import setup
```

```
version = "2.5"
```

```
def main():
```

```
 python_version = sys.version_info[:2]
```

```
 if python_version < (2,6):
```

```
 raise SystemExit("Sorry, Python 2.6 or newer required")
```

```
 arguments = {
```

```
 'name': 'idna',
```

```
 'packages': ['idna'],
```

```
 'version': version,
```

```
 'description': 'Internationalized Domain Names in Applications (IDNA)',
```

```
 'long_description': io.open("README.rst", encoding="UTF-8").read(),
```

```
 'author': 'Kim Davies',
```

```
 'author_email': 'kim@cynosure.com.au',
```

```
 'license': 'BSD-like',
```

```
 'url': 'https://github.com/kjd/idna',
```

```
 'classifiers': [
```

```
 'Development Status :: 5 - Production/Stable',
```

```
 'Intended Audience :: Developers',
```

```
 'Intended Audience :: System Administrators',
```

```
 'License :: OSI Approved :: BSD License',
```

```
 'Operating System :: OS Independent',
```



```

'Programming Language :: Python',
'Programming Language :: Python :: 2.6',
'Programming Language :: Python :: 2.7',
'Programming Language :: Python :: 3',
'Programming Language :: Python :: 3.3',
'Programming Language :: Python :: 3.4',
'Programming Language :: Python :: 3.5',
'Programming Language :: Python :: 3.6',
'Topic :: Internet :: Name Service (DNS)',
'Topic :: Software Development :: Libraries :: Python Modules',
'Topic :: Utilities',
],
'test_suite': 'tests',
}

```

```

setup(**arguments)

```

```

if __name__ == '__main__':
 main()

```

Found in path(s):

```

* /opt/ws_local/PERMITS_SQL/1018810534_1591381484.4/0/python-idna-2.5-5.el8.src.rpm-cosi-expand-archive-x48w3eme/idna-2.5.tar.gz-cosi-expand-archive-XsxtdB65/idna-2.5/setup.py

```

No license file was found, but licenses were detected in source scan.

License: BSD-like

Classifier: License :: OSI Approved :: BSD License

Found in path(s):

```

* /opt/ws_local/PERMITS_SQL/1018810534_1591381484.4/0/python-idna-2.5-5.el8.src.rpm-cosi-expand-archive-x48w3eme/idna-2.5.tar.gz-cosi-expand-archive-XsxtdB65/idna-2.5/idna.egg-info/PKG-INFO

```

```

* /opt/ws_local/PERMITS_SQL/1018810534_1591381484.4/0/python-idna-2.5-5.el8.src.rpm-cosi-expand-archive-x48w3eme/idna-2.5.tar.gz-cosi-expand-archive-XsxtdB65/idna-2.5/PKG-INFO

```

No license file was found, but licenses were detected in source scan.

License

-----

Copyright (c) 2013-2017, Kim Davies. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

#. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

#. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following

disclaimer in the documentation and/or other materials provided with the distribution.

#. Neither the name of the copyright holder nor the names of the contributors may be used to endorse or promote products derived from this software without specific prior written permission.

#. THIS SOFTWARE IS PROVIDED BY THE CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Portions of the codec implementation and unit tests are derived from the Python standard library, which carries the Python Software Foundation License <<https://docs.python.org/2/license.html>>`\_`:

Copyright (c) 2001-2014 Python Software Foundation; All Rights Reserved

Portions of the unit tests are derived from the Unicode standard, which is subject to the Unicode, Inc. License Agreement:

Copyright (c) 1991-2014 Unicode, Inc. All rights reserved.

Distributed under the Terms of Use in  
<<http://www.unicode.org/copyright.html>>.

Permission is hereby granted, free of charge, to any person obtaining a copy of the Unicode data files and any associated documentation (the "Data Files") or Unicode software and any associated documentation (the "Software") to deal in the Data Files or Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, and/or sell copies of the Data Files or Software, and to permit persons to whom the Data Files or Software are furnished to do so, provided that

(a) this copyright and permission notice appear with all copies of the Data Files or Software,

(b) this copyright and permission notice appear in associated documentation, and

(c) there is clear notice in each modified Data File or in the Software as well as in the documentation associated with the Data File(s) or Software that the data or software has been modified.

THE DATA FILES AND SOFTWARE ARE PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF THIRD PARTY RIGHTS.

IN NO EVENT SHALL THE COPYRIGHT HOLDER OR HOLDERS INCLUDED IN THIS NOTICE BE LIABLE FOR ANY CLAIM, OR ANY SPECIAL INDIRECT OR CONSEQUENTIAL DAMAGES, OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THE DATA FILES OR SOFTWARE.

Except as contained in this notice, the name of a copyright holder shall not be used in advertising or otherwise to promote the sale, use or other dealings in these Data Files or Software without prior written authorization of the copyright holder.

Found in path(s):

```
* /opt/ws_local/PERMITS_SQL/1018810534_1591381484.4/0/python-idna-2.5-5.el8.src.rpm-cosi-expand-archive-x48w3eme/idna-2.5.tar.gz-cosi-expand-archive-XsxtdB65/idna-2.5/LICENSE.rst
```

## 1.380 texinfo 6.5-7.el8

### 1.380.1 Available under license :

@c The GNU Free Documentation License.

@center Version 1.3, 3 November 2008

@c This file is intended to be included within another document,

@c hence no sectioning command or @node.

@display

Copyright @copyright{} 2000, 2001, 2002, 2007, 2008 Free Software Foundation, Inc.

@uref{http://fsf.org/}

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

@end display

@enumerate 0

@item

PREAMBLE

The purpose of this License is to make a manual, textbook, or other functional and useful document @dfn{free} in the sense of freedom: to

assure everyone the effective freedom to copy and redistribute it, with or without modifying it, either commercially or noncommercially. Secondly, this License preserves for the author and publisher a way to get credit for their work, while not being considered responsible for modifications made by others.

This License is a kind of ``copyleft'', which means that derivative works of the document must themselves be free in the same sense. It complements the GNU General Public License, which is a copyleft license designed for free software.

We have designed this License in order to use it for manuals for free software, because free software needs free documentation: a free program should come with manuals providing the same freedoms that the software does. But this License is not limited to software manuals; it can be used for any textual work, regardless of subject matter or whether it is published as a printed book. We recommend this License principally for works whose purpose is instruction or reference.

@item

#### APPLICABILITY AND DEFINITIONS

This License applies to any manual or other work, in any medium, that contains a notice placed by the copyright holder saying it can be distributed under the terms of this License. Such a notice grants a world-wide, royalty-free license, unlimited in duration, to use that work under the conditions stated herein. The ``Document'', below, refers to any such manual or work. Any member of the public is a licensee, and is addressed as ``you''. You accept the license if you copy, modify or distribute the work in a way requiring permission under copyright law.

A ``Modified Version'' of the Document means any work containing the Document or a portion of it, either copied verbatim, or with modifications and/or translated into another language.

A ``Secondary Section'' is a named appendix or a front-matter section of the Document that deals exclusively with the relationship of the publishers or authors of the Document to the Document's overall subject (or to related matters) and contains nothing that could fall directly within that overall subject. (Thus, if the Document is in part a textbook of mathematics, a Secondary Section may not explain any mathematics.) The relationship could be a matter of historical connection with the subject or with related matters, or of legal, commercial, philosophical, ethical or political position regarding them.

The ``Invariant Sections'' are certain Secondary Sections whose titles

are designated, as being those of Invariant Sections, in the notice that says that the Document is released under this License. If a section does not fit the above definition of Secondary then it is not allowed to be designated as Invariant. The Document may contain zero Invariant Sections. If the Document does not identify any Invariant Sections then there are none.

The ``Cover Texts" are certain short passages of text that are listed, as Front-Cover Texts or Back-Cover Texts, in the notice that says that the Document is released under this License. A Front-Cover Text may be at most 5 words, and a Back-Cover Text may be at most 25 words.

A ``Transparent" copy of the Document means a machine-readable copy, represented in a format whose specification is available to the general public, that is suitable for revising the document straightforwardly with generic text editors or (for images composed of pixels) generic paint programs or (for drawings) some widely available drawing editor, and that is suitable for input to text formatters or for automatic translation to a variety of formats suitable for input to text formatters. A copy made in an otherwise Transparent file format whose markup, or absence of markup, has been arranged to thwart or discourage subsequent modification by readers is not Transparent. An image format is not Transparent if used for any substantial amount of text. A copy that is not ``Transparent" is called ``Opaque".

Examples of suitable formats for Transparent copies include plain ASCII without markup, Texinfo input format, LaTeX input format, SGML or XML using a publicly available DTD, and standard-conforming simple HTML, PostScript or PDF designed for human modification. Examples of transparent image formats include PNG, XCF and JPG@. Opaque formats include proprietary formats that can be read and edited only by proprietary word processors, SGML or XML for which the DTD and/or processing tools are not generally available, and the machine-generated HTML, PostScript or PDF produced by some word processors for output purposes only.

The ``Title Page" means, for a printed book, the title page itself, plus such following pages as are needed to hold, legibly, the material this License requires to appear in the title page. For works in formats which do not have any title page as such, ``Title Page" means the text near the most prominent appearance of the work's title, preceding the beginning of the body of the text.

The ``publisher" means any person or entity that distributes copies of the Document to the public.

A section ``Entitled XYZ" means a named subunit of the Document whose title either is precisely XYZ or contains XYZ in parentheses following text that translates XYZ in another language. (Here XYZ stands for a specific section name mentioned below, such as ``Acknowledgements", ``Dedications", ``Endorsements", or ``History".) To ``Preserve the Title" of such a section when you modify the Document means that it remains a section ``Entitled XYZ" according to this definition.

The Document may include Warranty Disclaimers next to the notice which states that this License applies to the Document. These Warranty Disclaimers are considered to be included by reference in this License, but only as regards disclaiming warranties: any other implication that these Warranty Disclaimers may have is void and has no effect on the meaning of this License.

@item

### VERBATIM COPYING

You may copy and distribute the Document in any medium, either commercially or noncommercially, provided that this License, the copyright notices, and the license notice saying this License applies to the Document are reproduced in all copies, and that you add no other conditions whatsoever to those of this License. You may not use technical measures to obstruct or control the reading or further copying of the copies you make or distribute. However, you may accept compensation in exchange for copies. If you distribute a large enough number of copies you must also follow the conditions in section 3.

You may also lend copies, under the same conditions stated above, and you may publicly display copies.

@item

### COPYING IN QUANTITY

If you publish printed copies (or copies in media that commonly have printed covers) of the Document, numbering more than 100, and the Document's license notice requires Cover Texts, you must enclose the copies in covers that carry, clearly and legibly, all these Cover Texts: Front-Cover Texts on the front cover, and Back-Cover Texts on the back cover. Both covers must also clearly and legibly identify you as the publisher of these copies. The front cover must present the full title with all words of the title equally prominent and visible. You may add other material on the covers in addition. Copying with changes limited to the covers, as long as they preserve the title of the Document and satisfy these conditions, can be treated as verbatim copying in other respects.

If the required texts for either cover are too voluminous to fit

legibly, you should put the first ones listed (as many as fit reasonably) on the actual cover, and continue the rest onto adjacent pages.

If you publish or distribute Opaque copies of the Document numbering more than 100, you must either include a machine-readable Transparent copy along with each Opaque copy, or state in or with each Opaque copy a computer-network location from which the general network-using public has access to download using public-standard network protocols a complete Transparent copy of the Document, free of added material. If you use the latter option, you must take reasonably prudent steps, when you begin distribution of Opaque copies in quantity, to ensure that this Transparent copy will remain thus accessible at the stated location until at least one year after the last time you distribute an Opaque copy (directly or through your agents or retailers) of that edition to the public.

It is requested, but not required, that you contact the authors of the Document well before redistributing any large number of copies, to give them a chance to provide you with an updated version of the Document.

@item

## MODIFICATIONS

You may copy and distribute a Modified Version of the Document under the conditions of sections 2 and 3 above, provided that you release the Modified Version under precisely this License, with the Modified Version filling the role of the Document, thus licensing distribution and modification of the Modified Version to whoever possesses a copy of it. In addition, you must do these things in the Modified Version:

@enumerate A

@item

Use in the Title Page (and on the covers, if any) a title distinct from that of the Document, and from those of previous versions (which should, if there were any, be listed in the History section of the Document). You may use the same title as a previous version if the original publisher of that version gives permission.

@item

List on the Title Page, as authors, one or more persons or entities responsible for authorship of the modifications in the Modified Version, together with at least five of the principal authors of the Document (all of its principal authors, if it has fewer than five), unless they release you from this requirement.

@item

State on the Title page the name of the publisher of the

Modified Version, as the publisher.

@item

Preserve all the copyright notices of the Document.

@item

Add an appropriate copyright notice for your modifications adjacent to the other copyright notices.

@item

Include, immediately after the copyright notices, a license notice giving the public permission to use the Modified Version under the terms of this License, in the form shown in the Addendum below.

@item

Preserve in that license notice the full lists of Invariant Sections and required Cover Texts given in the Document's license notice.

@item

Include an unaltered copy of this License.

@item

Preserve the section Entitled ``History'', Preserve its Title, and add to it an item stating at least the title, year, new authors, and publisher of the Modified Version as given on the Title Page. If there is no section Entitled ``History'' in the Document, create one stating the title, year, authors, and publisher of the Document as given on its Title Page, then add an item describing the Modified Version as stated in the previous sentence.

@item

Preserve the network location, if any, given in the Document for public access to a Transparent copy of the Document, and likewise the network locations given in the Document for previous versions it was based on. These may be placed in the ``History'' section. You may omit a network location for a work that was published at least four years before the Document itself, or if the original publisher of the version it refers to gives permission.

@item

For any section Entitled ``Acknowledgements'' or ``Dedications'', Preserve the Title of the section, and preserve in the section all the substance and tone of each of the contributor acknowledgements and/or dedications given therein.

@item

Preserve all the Invariant Sections of the Document, unaltered in their text and in their titles. Section numbers



or the equivalent are not considered part of the section titles.

@item

Delete any section Entitled ``Endorsements''. Such a section may not be included in the Modified Version.

@item

Do not retitle any existing section to be Entitled ``Endorsements'' or to conflict in title with any Invariant Section.

@item

Preserve any Warranty Disclaimers.

@end enumerate

If the Modified Version includes new front-matter sections or appendices that qualify as Secondary Sections and contain no material copied from the Document, you may at your option designate some or all of these sections as invariant. To do this, add their titles to the list of Invariant Sections in the Modified Version's license notice. These titles must be distinct from any other section titles.

You may add a section Entitled ``Endorsements'', provided it contains nothing but endorsements of your Modified Version by various parties---for example, statements of peer review or that the text has been approved by an organization as the authoritative definition of a standard.

You may add a passage of up to five words as a Front-Cover Text, and a passage of up to 25 words as a Back-Cover Text, to the end of the list of Cover Texts in the Modified Version. Only one passage of Front-Cover Text and one of Back-Cover Text may be added by (or through arrangements made by) any one entity. If the Document already includes a cover text for the same cover, previously added by you or by arrangement made by the same entity you are acting on behalf of, you may not add another; but you may replace the old one, on explicit permission from the previous publisher that added the old one.

The author(s) and publisher(s) of the Document do not by this License give permission to use their names for publicity for or to assert or imply endorsement of any Modified Version.

@item

## COMBINING DOCUMENTS

You may combine the Document with other documents released under this License, under the terms defined in section 4 above for modified versions, provided that you include in the combination all of the Invariant Sections of all of the original documents, unmodified, and

list them all as Invariant Sections of your combined work in its license notice, and that you preserve all their Warranty Disclaimers.

The combined work need only contain one copy of this License, and multiple identical Invariant Sections may be replaced with a single copy. If there are multiple Invariant Sections with the same name but different contents, make the title of each such section unique by adding at the end of it, in parentheses, the name of the original author or publisher of that section if known, or else a unique number. Make the same adjustment to the section titles in the list of Invariant Sections in the license notice of the combined work.

In the combination, you must combine any sections Entitled ``History" in the various original documents, forming one section Entitled ``History"; likewise combine any sections Entitled ``Acknowledgements", and any sections Entitled ``Dedications". You must delete all sections Entitled ``Endorsements."

@item

#### COLLECTIONS OF DOCUMENTS

You may make a collection consisting of the Document and other documents released under this License, and replace the individual copies of this License in the various documents with a single copy that is included in the collection, provided that you follow the rules of this License for verbatim copying of each of the documents in all other respects.

You may extract a single document from such a collection, and distribute it individually under this License, provided you insert a copy of this License into the extracted document, and follow this License in all other respects regarding verbatim copying of that document.

@item

#### AGGREGATION WITH INDEPENDENT WORKS

A compilation of the Document or its derivatives with other separate and independent documents or works, in or on a volume of a storage or distribution medium, is called an ``aggregate" if the copyright resulting from the compilation is not used to limit the legal rights of the compilation's users beyond what the individual works permit. When the Document is included in an aggregate, this License does not apply to the other works in the aggregate which are not themselves derivative works of the Document.

If the Cover Text requirement of section 3 is applicable to these copies of the Document, then if the Document is less than one half of the entire aggregate, the Document's Cover Texts may be placed on covers that bracket the Document within the aggregate, or the

electronic equivalent of covers if the Document is in electronic form. Otherwise they must appear on printed covers that bracket the whole aggregate.

@item

## TRANSLATION

Translation is considered a kind of modification, so you may distribute translations of the Document under the terms of section 4. Replacing Invariant Sections with translations requires special permission from their copyright holders, but you may include translations of some or all Invariant Sections in addition to the original versions of these Invariant Sections. You may include a translation of this License, and all the license notices in the Document, and any Warranty Disclaimers, provided that you also include the original English version of this License and the original versions of those notices and disclaimers. In case of a disagreement between the translation and the original version of this License or a notice or disclaimer, the original version will prevail.

If a section in the Document is Entitled ``Acknowledgements'', ``Dedications'', or ``History'', the requirement (section 4) to Preserve its Title (section 1) will typically require changing the actual title.

@item

## TERMINATION

You may not copy, modify, sublicense, or distribute the Document except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, or distribute it is void, and will automatically terminate your rights under this License.

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the

licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, receipt of a copy of some or all of the same material does not give you any rights to use it.

@item

## FUTURE REVISIONS OF THIS LICENSE

The Free Software Foundation may publish new, revised versions of the GNU Free Documentation License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns. See [@uref{http://www.gnu.org/copyleft/}](http://www.gnu.org/copyleft/).

Each version of the License is given a distinguishing version number. If the Document specifies that a particular numbered version of this License "or any later version" applies to it, you have the option of following the terms and conditions either of that specified version or of any later version that has been published (not as a draft) by the Free Software Foundation. If the Document does not specify a version number of this License, you may choose any version ever published (not as a draft) by the Free Software Foundation. If the Document specifies that a proxy can decide which future versions of this License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Document.

@item

## RELICENSING

"Massive Multiauthor Collaboration Site" (or "MMC Site") means any World Wide Web server that publishes copyrightable works and also provides prominent facilities for anybody to edit those works. A public wiki that anybody can edit is an example of such a server. A "Massive Multiauthor Collaboration" (or "MMC") contained in the site means any set of copyrightable works thus published on the MMC site.

"CC-BY-SA" means the Creative Commons Attribution-Share Alike 3.0 license published by Creative Commons Corporation, a not-for-profit corporation with a principal place of business in San Francisco, California, as well as future copyleft versions of that license published by that same organization.

"Incorporate" means to publish or republish a Document, in whole or in part, as part of another Document.

An MMC is "eligible for relicensing" if it is licensed under this

License, and if all works that were first published under this License somewhere other than this MMC, and subsequently incorporated in whole or in part into the MMC, (1) had no cover texts or invariant sections, and (2) were thus incorporated prior to November 1, 2008.

The operator of an MMC Site may republish an MMC contained in the site under CC-BY-SA on the same site at any time before August 1, 2009, provided the MMC is eligible for relicensing.

@end enumerate

@page

@heading ADDENDUM: How to use this License for your documents

To use this License in a document you have written, include a copy of the License in the document and put the following copyright and license notices just after the title page:

@smallexample

@group

Copyright (C) @var{year} @var{your name}.

Permission is granted to copy, distribute and/or modify this document under the terms of the GNU Free Documentation License, Version 1.3 or any later version published by the Free Software Foundation; with no Invariant Sections, no Front-Cover Texts, and no Back-Cover Texts. A copy of the license is included in the section entitled ``GNU Free Documentation License".

@end group

@end smallexample

If you have Invariant Sections, Front-Cover Texts and Back-Cover Texts, replace the ``with@dots{ }Texts."@: line with this:

@smallexample

@group

with the Invariant Sections being @var{list their titles}, with the Front-Cover Texts being @var{list}, and with the Back-Cover Texts being @var{list}.

@end group

@end smallexample

If you have Invariant Sections without Cover Texts, or some other combination of the three, merge those two alternatives to suit the situation.

If your document contains nontrivial examples of program code, we recommend releasing these examples in parallel under your choice of free software license, such as the GNU General Public License,

to permit their use in free software.

@c Local Variables:

@c ispell-local-pdict: "ispell-dict"

@c End:

## GNU GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

### Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

## TERMS AND CONDITIONS

### 0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

#### 1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but



which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

## 2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

## 3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid

circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

#### 4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

#### 5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.
- b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".
- c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.
- d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent

works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

#### 6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

- a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.
- b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.
- c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.
- d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the

Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for

the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

## 7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some

trade names, trademarks, or service marks; or

f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

## 8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

#### 9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

#### 10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

#### 11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are



specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

#### 12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

#### 13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

#### 14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General

Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

#### 15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

#### 16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### 17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

## END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program> Copyright (C) <year> <name of author>
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <http://www.gnu.org/licenses/>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <<http://www.gnu.org/philosophy/why-not-lgpl.html>>.

## GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.

59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

^L

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

^L

## GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

^L

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany



it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

^L

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

^L

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

^L

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and

conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

^L

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

^L

#### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library.

It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

That's all there is to it!

## 1.381 objenesis 2.1

### 1.381.1 Available under license :

```
// -----
// NOTICE file corresponding to the section 4d of The Apache License,
// Version 2.0, in this case for Objenesis
```

// -----

Objenesis

Copyright 2006-2013 Joe Walnes, Henri Tremblay, Leonardo Mesquita

Apache License  
Version 2.0, January 2004  
<http://www.apache.org/licenses/>

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes

of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You



meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor,

except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.

# 1.382 chardet 3.0.4-2.ph4

## 1.382.1 Available under license :

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.

51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts  
as the successor of the GNU Library Public License, version 2, hence  
the version number 2.1.]

### Preamble

The licenses for most software are designed to take away your  
freedom to share and change it. By contrast, the GNU General Public  
Licenses are intended to guarantee your freedom to share and change  
free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some  
specially designated software packages--typically libraries--of the  
Free Software Foundation and other authors who decide to use it. You  
can use it too, but we suggest you first think carefully about whether  
this license or the ordinary General Public License is the better  
strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use,  
not price. Our General Public Licenses are designed to make sure that  
you have the freedom to distribute copies of free software (and charge

for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General

Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

## GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs

(which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all

subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.



6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
- b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new

versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

```
<signature of Ty Coon>, 1 April 1990
Ty Coon, President of Vice
```

That's all there is to it!

## 1.383 stlport 5.1.0

## 1.383.1 Available under license :

```
/*
 * Copyright (c) 1999
 * Boris Fomitchev
 *
 * This material is provided "as is", with absolutely no warranty expressed
 * or implied. Any use is at your own risk.
 *
 * Permission to use or copy this software for any purpose is hereby granted
 * without fee, provided the above notices are retained on all copies.
 * Permission to modify the code and to distribute modified code is granted,
 * provided the above notices are retained, and a notice that the code was
 * modified is included with the above copyright notice.
 *
 */
```

## 1.384 findutils 4.6.0 20.e18

### 1.384.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

#### Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

## TERMS AND CONDITIONS

### 0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

#### 1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other



than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

## 2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction

and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

### 3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

### 4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

### 5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.
- b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to

"keep intact all notices".

c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.

d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

## 6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because

modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

## 7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

## 8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under

this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

#### 9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

#### 10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the

Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

## 11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have



actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

#### 12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

#### 13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed

under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

#### 14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

#### 15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

#### 16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS

THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### 17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

```
This program is free software: you can redistribute it and/or modify
it under the terms of the GNU General Public License as published by
the Free Software Foundation, either version 3 of the License, or
(at your option) any later version.
```

```
This program is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
GNU General Public License for more details.
```

```
You should have received a copy of the GNU General Public License
along with this program. If not, see <http://www.gnu.org/licenses/>.
```

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program> Copyright (C) <year> <name of author>
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <http://www.gnu.org/licenses/>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <http://www.gnu.org/philosophy/why-not-lgpl.html>.

```
@c The GNU Free Documentation License.
@center Version 1.3, 3 November 2008
```

```
@c This file is intended to be included within another document,
@c hence no sectioning command or @node.
```

```
@display
Copyright @copyright{ } 2000, 2001, 2002, 2007, 2008 Free Software Foundation, Inc.
@uref{http://fsf.org/}
```

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

```
@end display
```

```
@enumerate 0
@item
PREAMBLE
```

The purpose of this License is to make a manual, textbook, or other functional and useful document @dfn{free} in the sense of freedom: to assure everyone the effective freedom to copy and redistribute it, with or without modifying it, either commercially or noncommercially. Secondly, this License preserves for the author and publisher a way to get credit for their work, while not being considered responsible for modifications made by others.

This License is a kind of "copyleft", which means that derivative works of the document must themselves be free in the same sense. It complements the GNU General Public License, which is a copyleft license designed for free software.

We have designed this License in order to use it for manuals for free software, because free software needs free documentation: a free program should come with manuals providing the same freedoms that the software does. But this License is not limited to software manuals; it can be used for any textual work, regardless of subject matter or whether it is published as a printed book. We recommend this License principally for works whose purpose is instruction or reference.

@item

## APPLICABILITY AND DEFINITIONS

This License applies to any manual or other work, in any medium, that contains a notice placed by the copyright holder saying it can be distributed under the terms of this License. Such a notice grants a world-wide, royalty-free license, unlimited in duration, to use that work under the conditions stated herein. The "Document", below, refers to any such manual or work. Any member of the public is a licensee, and is addressed as "you". You accept the license if you copy, modify or distribute the work in a way requiring permission under copyright law.

A "Modified Version" of the Document means any work containing the Document or a portion of it, either copied verbatim, or with modifications and/or translated into another language.

A "Secondary Section" is a named appendix or a front-matter section of the Document that deals exclusively with the relationship of the publishers or authors of the Document to the Document's overall subject (or to related matters) and contains nothing that could fall directly within that overall subject. (Thus, if the Document is in part a textbook of mathematics, a Secondary Section may not explain any mathematics.) The relationship could be a matter of historical connection with the subject or with related matters, or of legal, commercial, philosophical, ethical or political position regarding them.

The "Invariant Sections" are certain Secondary Sections whose titles are designated, as being those of Invariant Sections, in the notice that says that the Document is released under this License. If a section does not fit the above definition of Secondary then it is not allowed to be designated as Invariant. The Document may contain zero Invariant Sections. If the Document does not identify any Invariant

Sections then there are none.

The ``Cover Texts" are certain short passages of text that are listed, as Front-Cover Texts or Back-Cover Texts, in the notice that says that the Document is released under this License. A Front-Cover Text may be at most 5 words, and a Back-Cover Text may be at most 25 words.

A ``Transparent" copy of the Document means a machine-readable copy, represented in a format whose specification is available to the general public, that is suitable for revising the document straightforwardly with generic text editors or (for images composed of pixels) generic paint programs or (for drawings) some widely available drawing editor, and that is suitable for input to text formatters or for automatic translation to a variety of formats suitable for input to text formatters. A copy made in an otherwise Transparent file format whose markup, or absence of markup, has been arranged to thwart or discourage subsequent modification by readers is not Transparent. An image format is not Transparent if used for any substantial amount of text. A copy that is not ``Transparent" is called ``Opaque".

Examples of suitable formats for Transparent copies include plain ASCII without markup, Texinfo input format, La@TeX{ } input format, SGML or XML using a publicly available DTD, and standard-conforming simple HTML, PostScript or PDF designed for human modification. Examples of transparent image formats include PNG, XCF and JPG@. Opaque formats include proprietary formats that can be read and edited only by proprietary word processors, SGML or XML for which the DTD and/or processing tools are not generally available, and the machine-generated HTML, PostScript or PDF produced by some word processors for output purposes only.

The ``Title Page" means, for a printed book, the title page itself, plus such following pages as are needed to hold, legibly, the material this License requires to appear in the title page. For works in formats which do not have any title page as such, ``Title Page" means the text near the most prominent appearance of the work's title, preceding the beginning of the body of the text.

The ``publisher" means any person or entity that distributes copies of the Document to the public.

A section ``Entitled XYZ" means a named subunit of the Document whose title either is precisely XYZ or contains XYZ in parentheses following text that translates XYZ in another language. (Here XYZ stands for a specific section name mentioned below, such as ``Acknowledgements", ``Dedications", ``Endorsements", or ``History".) To ``Preserve the Title"

of such a section when you modify the Document means that it remains a section ``Entitled XYZ" according to this definition.

The Document may include Warranty Disclaimers next to the notice which states that this License applies to the Document. These Warranty Disclaimers are considered to be included by reference in this License, but only as regards disclaiming warranties: any other implication that these Warranty Disclaimers may have is void and has no effect on the meaning of this License.

@item

#### VERBATIM COPYING

You may copy and distribute the Document in any medium, either commercially or noncommercially, provided that this License, the copyright notices, and the license notice saying this License applies to the Document are reproduced in all copies, and that you add no other conditions whatsoever to those of this License. You may not use technical measures to obstruct or control the reading or further copying of the copies you make or distribute. However, you may accept compensation in exchange for copies. If you distribute a large enough number of copies you must also follow the conditions in section 3.

You may also lend copies, under the same conditions stated above, and you may publicly display copies.

@item

#### COPYING IN QUANTITY

If you publish printed copies (or copies in media that commonly have printed covers) of the Document, numbering more than 100, and the Document's license notice requires Cover Texts, you must enclose the copies in covers that carry, clearly and legibly, all these Cover Texts: Front-Cover Texts on the front cover, and Back-Cover Texts on the back cover. Both covers must also clearly and legibly identify you as the publisher of these copies. The front cover must present the full title with all words of the title equally prominent and visible. You may add other material on the covers in addition. Copying with changes limited to the covers, as long as they preserve the title of the Document and satisfy these conditions, can be treated as verbatim copying in other respects.

If the required texts for either cover are too voluminous to fit legibly, you should put the first ones listed (as many as fit reasonably) on the actual cover, and continue the rest onto adjacent pages.

If you publish or distribute Opaque copies of the Document numbering

more than 100, you must either include a machine-readable Transparent copy along with each Opaque copy, or state in or with each Opaque copy a computer-network location from which the general network-using public has access to download using public-standard network protocols a complete Transparent copy of the Document, free of added material. If you use the latter option, you must take reasonably prudent steps, when you begin distribution of Opaque copies in quantity, to ensure that this Transparent copy will remain thus accessible at the stated location until at least one year after the last time you distribute an Opaque copy (directly or through your agents or retailers) of that edition to the public.

It is requested, but not required, that you contact the authors of the Document well before redistributing any large number of copies, to give them a chance to provide you with an updated version of the Document.

@item

## MODIFICATIONS

You may copy and distribute a Modified Version of the Document under the conditions of sections 2 and 3 above, provided that you release the Modified Version under precisely this License, with the Modified Version filling the role of the Document, thus licensing distribution and modification of the Modified Version to whoever possesses a copy of it. In addition, you must do these things in the Modified Version:

@enumerate A

@item

Use in the Title Page (and on the covers, if any) a title distinct from that of the Document, and from those of previous versions (which should, if there were any, be listed in the History section of the Document). You may use the same title as a previous version if the original publisher of that version gives permission.

@item

List on the Title Page, as authors, one or more persons or entities responsible for authorship of the modifications in the Modified Version, together with at least five of the principal authors of the Document (all of its principal authors, if it has fewer than five), unless they release you from this requirement.

@item

State on the Title page the name of the publisher of the Modified Version, as the publisher.

@item

Preserve all the copyright notices of the Document.



@item

Add an appropriate copyright notice for your modifications adjacent to the other copyright notices.

@item

Include, immediately after the copyright notices, a license notice giving the public permission to use the Modified Version under the terms of this License, in the form shown in the Addendum below.

@item

Preserve in that license notice the full lists of Invariant Sections and required Cover Texts given in the Document's license notice.

@item

Include an unaltered copy of this License.

@item

Preserve the section Entitled ``History'', Preserve its Title, and add to it an item stating at least the title, year, new authors, and publisher of the Modified Version as given on the Title Page. If there is no section Entitled ``History'' in the Document, create one stating the title, year, authors, and publisher of the Document as given on its Title Page, then add an item describing the Modified Version as stated in the previous sentence.

@item

Preserve the network location, if any, given in the Document for public access to a Transparent copy of the Document, and likewise the network locations given in the Document for previous versions it was based on. These may be placed in the ``History'' section. You may omit a network location for a work that was published at least four years before the Document itself, or if the original publisher of the version it refers to gives permission.

@item

For any section Entitled ``Acknowledgements'' or ``Dedications'', Preserve the Title of the section, and preserve in the section all the substance and tone of each of the contributor acknowledgements and/or dedications given therein.

@item

Preserve all the Invariant Sections of the Document, unaltered in their text and in their titles. Section numbers or the equivalent are not considered part of the section titles.

@item

Delete any section Entitled ``Endorsements''. Such a section may not be included in the Modified Version.

@item

Do not retitle any existing section to be Entitled ``Endorsements" or to conflict in title with any Invariant Section.

@item

Preserve any Warranty Disclaimers.

@end enumerate

If the Modified Version includes new front-matter sections or appendices that qualify as Secondary Sections and contain no material copied from the Document, you may at your option designate some or all of these sections as invariant. To do this, add their titles to the list of Invariant Sections in the Modified Version's license notice. These titles must be distinct from any other section titles.

You may add a section Entitled ``Endorsements", provided it contains nothing but endorsements of your Modified Version by various parties---for example, statements of peer review or that the text has been approved by an organization as the authoritative definition of a standard.

You may add a passage of up to five words as a Front-Cover Text, and a passage of up to 25 words as a Back-Cover Text, to the end of the list of Cover Texts in the Modified Version. Only one passage of Front-Cover Text and one of Back-Cover Text may be added by (or through arrangements made by) any one entity. If the Document already includes a cover text for the same cover, previously added by you or by arrangement made by the same entity you are acting on behalf of, you may not add another; but you may replace the old one, on explicit permission from the previous publisher that added the old one.

The author(s) and publisher(s) of the Document do not by this License give permission to use their names for publicity for or to assert or imply endorsement of any Modified Version.

@item

## COMBINING DOCUMENTS

You may combine the Document with other documents released under this License, under the terms defined in section 4 above for modified versions, provided that you include in the combination all of the Invariant Sections of all of the original documents, unmodified, and list them all as Invariant Sections of your combined work in its license notice, and that you preserve all their Warranty Disclaimers.

The combined work need only contain one copy of this License, and multiple identical Invariant Sections may be replaced with a single

copy. If there are multiple Invariant Sections with the same name but different contents, make the title of each such section unique by adding at the end of it, in parentheses, the name of the original author or publisher of that section if known, or else a unique number. Make the same adjustment to the section titles in the list of Invariant Sections in the license notice of the combined work.

In the combination, you must combine any sections Entitled ``History" in the various original documents, forming one section Entitled ``History"; likewise combine any sections Entitled ``Acknowledgements", and any sections Entitled ``Dedications". You must delete all sections Entitled ``Endorsements."

@item

## COLLECTIONS OF DOCUMENTS

You may make a collection consisting of the Document and other documents released under this License, and replace the individual copies of this License in the various documents with a single copy that is included in the collection, provided that you follow the rules of this License for verbatim copying of each of the documents in all other respects.

You may extract a single document from such a collection, and distribute it individually under this License, provided you insert a copy of this License into the extracted document, and follow this License in all other respects regarding verbatim copying of that document.

@item

## AGGREGATION WITH INDEPENDENT WORKS

A compilation of the Document or its derivatives with other separate and independent documents or works, in or on a volume of a storage or distribution medium, is called an ``aggregate" if the copyright resulting from the compilation is not used to limit the legal rights of the compilation's users beyond what the individual works permit. When the Document is included in an aggregate, this License does not apply to the other works in the aggregate which are not themselves derivative works of the Document.

If the Cover Text requirement of section 3 is applicable to these copies of the Document, then if the Document is less than one half of the entire aggregate, the Document's Cover Texts may be placed on covers that bracket the Document within the aggregate, or the electronic equivalent of covers if the Document is in electronic form. Otherwise they must appear on printed covers that bracket the whole aggregate.

@item

## TRANSLATION

Translation is considered a kind of modification, so you may distribute translations of the Document under the terms of section 4. Replacing Invariant Sections with translations requires special permission from their copyright holders, but you may include translations of some or all Invariant Sections in addition to the original versions of these Invariant Sections. You may include a translation of this License, and all the license notices in the Document, and any Warranty Disclaimers, provided that you also include the original English version of this License and the original versions of those notices and disclaimers. In case of a disagreement between the translation and the original version of this License or a notice or disclaimer, the original version will prevail.

If a section in the Document is Entitled ``Acknowledgements'', ``Dedications'', or ``History'', the requirement (section 4) to Preserve its Title (section 1) will typically require changing the actual title.

@item

## TERMINATION

You may not copy, modify, sublicense, or distribute the Document except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, or distribute it is void, and will automatically terminate your rights under this License.

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, receipt of a copy of some or all of the same material does not give you any rights to use it.

@item

## FUTURE REVISIONS OF THIS LICENSE

The Free Software Foundation may publish new, revised versions of the GNU Free Documentation License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns. See [@uref{http://www.gnu.org/copyleft/}](http://www.gnu.org/copyleft/).

Each version of the License is given a distinguishing version number. If the Document specifies that a particular numbered version of this License "or any later version" applies to it, you have the option of following the terms and conditions either of that specified version or of any later version that has been published (not as a draft) by the Free Software Foundation. If the Document does not specify a version number of this License, you may choose any version ever published (not as a draft) by the Free Software Foundation. If the Document specifies that a proxy can decide which future versions of this License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Document.

@item

## RELICENSING

"Massive Multiauthor Collaboration Site" (or "MMC Site") means any World Wide Web server that publishes copyrightable works and also provides prominent facilities for anybody to edit those works. A public wiki that anybody can edit is an example of such a server. A "Massive Multiauthor Collaboration" (or "MMC") contained in the site means any set of copyrightable works thus published on the MMC site.

"CC-BY-SA" means the Creative Commons Attribution-Share Alike 3.0 license published by Creative Commons Corporation, a not-for-profit corporation with a principal place of business in San Francisco, California, as well as future copyleft versions of that license published by that same organization.

"Incorporate" means to publish or republish a Document, in whole or in part, as part of another Document.

An MMC is "eligible for relicensing" if it is licensed under this License, and if all works that were first published under this License somewhere other than this MMC, and subsequently incorporated in whole or in part into the MMC, (1) had no cover texts or invariant sections, and (2) were thus incorporated prior to November 1, 2008.

The operator of an MMC Site may republish an MMC contained in the site under CC-BY-SA on the same site at any time before August 1, 2009, provided the MMC is eligible for relicensing.

@end enumerate

@page

@heading ADDENDUM: How to use this License for your documents

To use this License in a document you have written, include a copy of the License in the document and put the following copyright and license notices just after the title page:

@smallexample

@group

Copyright (C) @var{year} @var{your name}.

Permission is granted to copy, distribute and/or modify this document under the terms of the GNU Free Documentation License, Version 1.3 or any later version published by the Free Software Foundation; with no Invariant Sections, no Front-Cover Texts, and no Back-Cover Texts. A copy of the license is included in the section entitled ``GNU Free Documentation License''.

@end group

@end smallexample

If you have Invariant Sections, Front-Cover Texts and Back-Cover Texts, replace the ``with@dots{ }Texts.''@: line with this:

@smallexample

@group

with the Invariant Sections being @var{list their titles}, with the Front-Cover Texts being @var{list}, and with the Back-Cover Texts being @var{list}.

@end group

@end smallexample

If you have Invariant Sections without Cover Texts, or some other combination of the three, merge those two alternatives to suit the situation.

If your document contains nontrivial examples of program code, we recommend releasing these examples in parallel under your choice of free software license, such as the GNU General Public License, to permit their use in free software.

@c Local Variables:

@c ispell-local-pdict: "ispell-dict"

@c End:

# 1.385 popt 1.18-1.el8

## 1.385.1 Available under license :

Copyright (c) 1998 Red Hat Software

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE X CONSORTIUM BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Except as contained in this notice, the name of the X Consortium shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization from the X Consortium.

# 1.386 ca-certificates 2022.2.54-80.2.el8\_6

## 1.386.1 Available under license :

No license file was found, but licenses were detected in source scan.

////

Copyright (C) 2013 Red Hat, Inc.

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

////

ca-legacy(8)

=====

:doctype: manpage

:man source: ca-legacy

## NAME

----

ca-legacy - Manage the system configuration for legacy CA certificates

## SYNOPSIS

-----

\*ca-legacy\* ['COMMAND']

## DESCRIPTION

-----

ca-legacy(8) is used to include or exclude a set of legacy Certificate Authority (CA) certificates in the system's list of trusted CA certificates.

The list of CA certificates and trust flags included in the ca-certificates package are based on the decisions made by Mozilla.org according to the Mozilla CA policy.

Occasionally, removal or distrust decisions made by Mozilla.org might be incompatible with the requirements or limitations of some applications that also use the CA certificates list in the Linux environment.

The ca-certificates package might keep some CA certificates included and trusted by default, as long as it is seen necessary by the maintainers, despite the fact that they have been removed by Mozilla. These certificates are called legacy CA certificates.

The general requirements to keep legacy CA certificates included and trusted might change over time, for example if functional limitations of software packages have been resolved.

Future versions of the ca-certificates package might reduce the set of legacy CA certificates that are included and trusted by default.

The ca-legacy(8) command can be used to override the default behaviour.

The mechanisms to individually trust or distrust CA certificates as described in update-ca-trust(8) still apply.

## COMMANDS

-----

\*check\*::

The current configuration will be shown.

\*default\*::



Configure the system to use the default configuration, as recommended by the package maintainers.

**\*disable\*::**

Configure the system to explicitly disable legacy CA certificates. Using this configuration, the system will use the set of included and trusted CA certificates as released by Mozilla.

**\*install\*::**

The configuration file will be read and the system configuration will be set accordingly. This command is executed automatically during upgrades of the ca-certificates package.

**FILES**

-----

/etc/pki/ca-trust/ca-legacy.conf::

A configuration file that will be used and modified by the ca-legacy command. The contents of the configuration file will be read on package upgrades.

**AUTHOR**

-----

Written by Kai Engert.

Found in path(s):

\* /opt/cola/permits/1424607275\_1663921779.3008218/0/ca-certificates-2022.2.54-80.2.el8.src.rpm-cosi-expand-archive-1VafRX8f/ca-legacy.8.txt

No license file was found, but licenses were detected in source scan.

#

# This Source Code Form is subject to the terms of the Mozilla Public License, v. 2.0. If a copy of the MPL was not distributed with this file, You can obtain one at <http://mozilla.org/MPL/2.0/>.

#

# certdata.txt

#

# This file contains the object definitions for the certs and other information "built into" NSS.

#

# Object definitions:

#

# Certificates

#

# -- Attribute --            -- type --            -- value --

# CKA\_CLASS                    CK\_OBJECT\_CLASS    CKO\_CERTIFICATE

# CKA\_TOKEN                    CK\_BBOOL            CK\_TRUE

# CKA\_PRIVATE                  CK\_BBOOL            CK\_FALSE

```

CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 (varies)
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT DER+base64 (varies)
CKA_ID byte array (varies)
CKA_ISSUER DER+base64 (varies)
CKA_SERIAL_NUMBER DER+base64 (varies)
CKA_VALUE DER+base64 (varies)
CKA_NSS_EMAIL ASCII7 (unused here)
CKA_NSS_SERVER_DISTRICT_AFTER DER+base64 (varies)
CKA_NSS_EMAIL_DISTRICT_AFTER DER+base64 (varies)
#
Trust
#
-- Attribute -- -- type -- -- value --
CKA_CLASS CK_OBJECT_CLASS CKO_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 (varies)
CKA_ISSUER DER+base64 (varies)
CKA_SERIAL_NUMBER DER+base64 (varies)
CKA_CERT_HASH binary+base64 (varies)
CKA_EXPIRES CK_DATE (not used here)
CKA_TRUST_DIGITAL_SIGNATURE CK_TRUST (varies)
CKA_TRUST_NON_REPUDIATION CK_TRUST (varies)
CKA_TRUST_KEY_ENCIPHERMENT CK_TRUST (varies)
CKA_TRUST_DATA_ENCIPHERMENT CK_TRUST (varies)
CKA_TRUST_KEY_AGREEMENT CK_TRUST (varies)
CKA_TRUST_KEY_CERT_SIGN CK_TRUST (varies)
CKA_TRUST_CRL_SIGN CK_TRUST (varies)
CKA_TRUST_SERVER_AUTH CK_TRUST (varies)
CKA_TRUST_CLIENT_AUTH CK_TRUST (varies)
CKA_TRUST_CODE_SIGNING CK_TRUST (varies)
CKA_TRUST_EMAIL_PROTECTION CK_TRUST (varies)
CKA_TRUST_IPSEC_END_SYSTEM CK_TRUST (varies)
CKA_TRUST_IPSEC_TUNNEL CK_TRUST (varies)
CKA_TRUST_IPSEC_USER CK_TRUST (varies)
CKA_TRUST_TIME_STAMPING CK_TRUST (varies)
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL (varies)
(other trust attributes can be defined)
#
#
The object to tell NSS that this is a root list and we don't
have to go looking for others.
#
BEGINDATA

```

```

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_BUILTIN_ROOT_LIST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Mozilla Builtin Roots"

#
Certificate "GlobalSign Root CA"
#
Issuer: CN=GlobalSign Root CA,OU=Root CA,O=GlobalSign nv-sa,C=BE
Serial Number:04:00:00:00:00:01:15:4b:5a:c3:94
Subject: CN=GlobalSign Root CA,OU=Root CA,O=GlobalSign nv-sa,C=BE
Not Valid Before: Tue Sep 01 12:00:00 1998
Not Valid After : Fri Jan 28 12:00:00 2028
Fingerprint (SHA-256):
EB:D4:10:40:E4:BB:3E:C7:42:C9:E3:81:D3:1E:F2:A4:1A:48:B6:68:5C:96:E7:CE:F3:C1:DF:6C:D4:33:1C:99
Fingerprint (SHA1): B1:BC:96:8B:D4:F4:9D:62:2A:A8:9A:81:F2:15:01:52:A4:1D:82:9C
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GlobalSign Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\127\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154
\123\151\147\156\040\156\166\055\163\141\061\020\060\016\006\003
\125\004\013\023\007\122\157\157\164\040\103\101\061\033\060\031
\006\003\125\004\003\023\022\107\154\157\142\141\154\123\151\147
\156\040\122\157\157\164\040\103\101
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\127\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154
\123\151\147\156\040\156\166\055\163\141\061\020\060\016\006\003
\125\004\013\023\007\122\157\157\164\040\103\101\061\033\060\031
\006\003\125\004\003\023\022\107\154\157\142\141\154\123\151\147
\156\040\122\157\157\164\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\013\004\000\000\000\000\001\025\113\132\303\224
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\165\060\202\002\135\240\003\002\001\002\002\013\004
\000\000\000\000\001\025\113\132\303\224\060\015\006\011\052\206
\110\206\367\015\001\001\005\005\000\060\127\061\013\060\011\006
\003\125\004\006\023\002\102\105\061\031\060\027\006\003\125\004

```

\012\023\020\107\154\157\142\141\154\123\151\147\156\040\156\166  
\055\163\141\061\020\060\016\006\003\125\004\013\023\007\122\157  
\157\164\040\103\101\061\033\060\031\006\003\125\004\003\023\022  
\107\154\157\142\141\154\123\151\147\156\040\122\157\157\164\040  
\103\101\060\036\027\015\071\070\060\071\060\061\061\062\060\060  
\060\060\132\027\015\062\070\060\061\062\070\061\062\060\060\060  
\060\132\060\127\061\013\060\011\006\003\125\004\006\023\002\102  
\105\061\031\060\027\006\003\125\004\012\023\020\107\154\157\142  
\141\154\123\151\147\156\040\156\166\055\163\141\061\020\060\016  
\006\003\125\004\013\023\007\122\157\157\164\040\103\101\061\033  
\060\031\006\003\125\004\003\023\022\107\154\157\142\141\154\123  
\151\147\156\040\122\157\157\164\040\103\101\060\202\001\042\060  
\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202  
\001\017\000\060\202\001\012\002\202\001\001\000\332\016\346\231  
\215\316\243\343\117\212\176\373\361\213\203\045\153\352\110\037  
\361\052\260\271\225\021\004\275\360\143\321\342\147\146\317\034  
\335\317\033\110\053\356\215\211\216\232\257\051\200\145\253\351  
\307\055\022\313\253\034\114\160\007\241\075\012\060\315\025\215  
\117\370\335\324\214\120\025\034\357\120\356\304\056\367\374\351  
\122\362\221\175\340\155\325\065\060\216\136\103\163\362\101\351  
\325\152\343\262\211\072\126\071\070\157\006\074\210\151\133\052  
\115\305\247\124\270\154\211\314\233\371\074\312\345\375\211\365  
\022\074\222\170\226\326\334\164\156\223\104\141\321\215\307\106  
\262\165\016\206\350\031\212\325\155\154\325\170\026\225\242\351  
\310\012\070\353\362\044\023\117\163\124\223\023\205\072\033\274  
\036\064\265\213\005\214\271\167\213\261\333\037\040\221\253\011  
\123\156\220\316\173\067\164\271\160\107\221\042\121\143\026\171  
\256\261\256\101\046\010\310\031\053\321\106\252\110\326\144\052  
\327\203\064\377\054\052\301\154\031\103\112\007\205\347\323\174  
\366\041\150\357\352\362\122\237\177\223\220\317\002\003\001\000  
\001\243\102\060\100\060\016\006\003\125\035\017\001\001\377\004  
\004\003\002\001\006\060\017\006\003\125\035\023\001\001\377\004  
\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026\004  
\024\140\173\146\032\105\015\227\312\211\120\057\175\004\315\064  
\250\377\374\375\113\060\015\006\011\052\206\110\206\367\015\001  
\001\005\005\000\003\202\001\001\000\326\163\347\174\117\166\320  
\215\277\354\272\242\276\064\305\050\062\265\174\374\154\234\054  
\053\275\011\236\123\277\153\136\252\021\110\266\345\010\243\263  
\312\075\141\115\323\106\011\263\076\303\240\343\143\125\033\362  
\272\357\255\071\341\103\271\070\243\346\057\212\046\073\357\240  
\120\126\371\306\012\375\070\315\304\013\160\121\224\227\230\004  
\337\303\137\224\325\025\311\024\101\234\304\135\165\144\025\015  
\377\125\060\354\206\217\377\015\357\054\271\143\106\366\252\374  
\337\274\151\375\056\022\110\144\232\340\225\360\246\357\051\217  
\001\261\025\265\014\035\245\376\151\054\151\044\170\036\263\247  
\034\161\142\356\312\310\227\254\027\135\212\302\370\107\206\156  
\052\304\126\061\225\320\147\211\205\053\371\154\246\135\106\235  
\014\252\202\344\231\121\335\160\267\333\126\075\141\344\152\341

```
\134\326\366\376\075\336\101\314\007\256\143\122\277\123\123\364
\053\351\307\375\266\367\202\137\205\322\101\030\333\201\263\004
\034\305\037\244\200\157\025\040\311\336\014\210\012\035\326\146
\125\342\374\110\311\051\046\151\340
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

# Trust for "GlobalSign Root CA"

# Issuer: CN=GlobalSign Root CA,OU=Root CA,O=GlobalSign nv-sa,C=BE

# Serial Number:04:00:00:00:00:01:15:4b:5a:c3:94

# Subject: CN=GlobalSign Root CA,OU=Root CA,O=GlobalSign nv-sa,C=BE

# Not Valid Before: Tue Sep 01 12:00:00 1998

# Not Valid After : Fri Jan 28 12:00:00 2028

# Fingerprint (SHA-256):

EB:D4:10:40:E4:BB:3E:C7:42:C9:E3:81:D3:1E:F2:A4:1A:48:B6:68:5C:96:E7:CE:F3:C1:DF:6C:D4:33:1C:99

# Fingerprint (SHA1): B1:BC:96:8B:D4:F4:9D:62:2A:A8:9A:81:F2:15:01:52:A4:1D:82:9C

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "GlobalSign Root CA"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\261\274\226\213\324\364\235\142\052\250\232\201\362\025\001\122
\244\035\202\234
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\076\105\122\025\011\121\222\341\267\135\067\237\261\207\051\212
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\127\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154
\123\151\147\156\040\156\166\055\163\141\061\020\060\016\006\003
\125\004\013\023\007\122\157\157\164\040\103\101\061\033\060\031
\006\003\125\004\003\023\022\107\154\157\142\141\154\123\151\147
\156\040\122\157\157\164\040\103\101
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\013\004\000\000\000\000\001\025\113\132\303\224
```

END

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

```
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

```
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

```
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

#

# Certificate "Verisign Class 1 Public Primary Certification Authority - G3"

```
#
Issuer: CN=VeriSign Class 1 Public Primary Certification Authority - G3,OU="(c) 1999 VeriSign, Inc. - For
authorized use only",OU=VeriSign Trust Network,O="VeriSign, Inc.",C=US
Serial Number:00:8b:5b:75:56:84:54:85:0b:00:cf:af:38:48:ce:b1:a4
Subject: CN=VeriSign Class 1 Public Primary Certification Authority - G3,OU="(c) 1999 VeriSign, Inc. - For
authorized use only",OU=VeriSign Trust Network,O="VeriSign, Inc.",C=US
Not Valid Before: Fri Oct 01 00:00:00 1999
Not Valid After : Wed Jul 16 23:59:59 2036
Fingerprint (SHA-256):
CB:B5:AF:18:5E:94:2A:24:02:F9:EA:CB:C0:ED:5B:B8:76:EE:A3:C1:22:36:23:D0:04:47:E4:F3:BA:55:4B:65
Fingerprint (SHA1): 20:42:85:DC:F7:EB:76:41:95:57:8E:13:6B:D4:B7:D1:E9:8E:46:A5
For Email Distrust After: Wed Aug 31 00:00:00 2022
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Verisign Class 1 Public Primary Certification Authority - G3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\312\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\027\060\025\006\003\125\004\012\023\016\126\145\162\151\123
\151\147\156\054\040\111\156\143\056\061\037\060\035\006\003\125
\004\013\023\026\126\145\162\151\123\151\147\156\040\124\162\165
\163\164\040\116\145\164\167\157\162\153\061\072\060\070\006\003
\125\004\013\023\061\050\143\051\040\061\071\071\071\040\126\145
\162\151\123\151\147\156\054\040\111\156\143\056\040\055\040\106
\157\162\040\141\165\164\150\157\162\151\172\145\144\040\165\163
\145\040\157\156\154\171\061\105\060\103\006\003\125\004\003\023
\074\126\145\162\151\123\151\147\156\040\103\154\141\163\163\040
\061\040\120\165\142\154\151\143\040\120\162\151\155\141\162\171
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101
\165\164\150\157\162\151\164\171\040\055\040\107\063
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\312\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\027\060\025\006\003\125\004\012\023\016\126\145\162\151\123
\151\147\156\054\040\111\156\143\056\061\037\060\035\006\003\125
\004\013\023\026\126\145\162\151\123\151\147\156\040\124\162\165
\163\164\040\116\145\164\167\157\162\153\061\072\060\070\006\003
\125\004\013\023\061\050\143\051\040\061\071\071\071\040\126\145
\162\151\123\151\147\156\054\040\111\156\143\056\040\055\040\106
\157\162\040\141\165\164\150\157\162\151\172\145\144\040\165\163
\145\040\157\156\154\171\061\105\060\103\006\003\125\004\003\023
\074\126\145\162\151\123\151\147\156\040\103\154\141\163\163\040
\061\040\120\165\142\154\151\143\040\120\162\151\155\141\162\171
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101
\165\164\150\157\162\151\164\171\040\055\040\107\063
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\021\000\213\133\165\126\204\124\205\013\000\317\257\070\110  
\316\261\244

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\032\060\202\003\002\002\021\000\213\133\165\126\204  
\124\205\013\000\317\257\070\110\316\261\244\060\015\006\011\052  
\206\110\206\367\015\001\001\005\005\000\060\201\312\061\013\060  
\011\006\003\125\004\006\023\002\125\123\061\027\060\025\006\003  
\125\004\012\023\016\126\145\162\151\123\151\147\156\054\040\111  
\156\143\056\061\037\060\035\006\003\125\004\013\023\026\126\145  
\162\151\123\151\147\156\040\124\162\165\163\164\040\116\145\164  
\167\157\162\153\061\072\060\070\006\003\125\004\013\023\061\050  
\143\051\040\061\071\071\071\040\126\145\162\151\123\151\147\156  
\054\040\111\156\143\056\040\055\040\106\157\162\040\141\165\164  
\150\157\162\151\172\145\144\040\165\163\145\040\157\156\154\171  
\061\105\060\103\006\003\125\004\003\023\074\126\145\162\151\123  
\151\147\156\040\103\154\141\163\163\040\061\040\120\165\142\154  
\151\143\040\120\162\151\155\141\162\171\040\103\145\162\164\151  
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151  
\164\171\040\055\040\107\063\060\036\027\015\071\071\061\060\060  
\061\060\060\060\060\060\060\132\027\015\063\066\060\067\061\066  
\062\063\065\071\065\071\132\060\201\312\061\013\060\011\006\003  
\125\004\006\023\002\125\123\061\027\060\025\006\003\125\004\012  
\023\016\126\145\162\151\123\151\147\156\054\040\111\156\143\056  
\061\037\060\035\006\003\125\004\013\023\026\126\145\162\151\123  
\151\147\156\040\124\162\165\163\164\040\116\145\164\167\157\162  
\153\061\072\060\070\006\003\125\004\013\023\061\050\143\051\040  
\061\071\071\071\040\126\145\162\151\123\151\147\156\054\040\111  
\156\143\056\040\055\040\106\157\162\040\141\165\164\150\157\162  
\151\172\145\144\040\165\163\145\040\157\156\154\171\061\105\060  
\103\006\003\125\004\003\023\074\126\145\162\151\123\151\147\156  
\040\103\154\141\163\163\040\061\040\120\165\142\154\151\143\040  
\120\162\151\155\141\162\171\040\103\145\162\164\151\146\151\143  
\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171\040  
\055\040\107\063\060\202\001\042\060\015\006\011\052\206\110\206  
\367\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012  
\002\202\001\001\000\335\204\324\271\264\371\247\330\363\004\170  
\234\336\075\334\154\023\026\331\172\335\044\121\146\300\307\046  
\131\015\254\006\010\302\224\321\063\037\360\203\065\037\156\033  
\310\336\252\156\025\116\124\047\357\304\155\032\354\013\343\016  
\360\104\245\127\307\100\130\036\243\107\037\161\354\140\366\155  
\224\310\030\071\355\376\102\030\126\337\344\114\111\020\170\116  
\001\166\065\143\022\066\335\146\274\001\004\066\243\125\150\325  
\242\066\011\254\253\041\046\124\006\255\077\312\024\340\254\312  
\255\006\035\225\342\370\235\361\340\140\377\302\177\165\053\114  
\314\332\376\207\231\041\352\272\376\076\124\327\322\131\170\333

\074\156\317\240\023\000\032\270\047\241\344\276\147\226\312\240  
\305\263\234\335\311\165\236\353\060\232\137\243\315\331\256\170  
\031\077\043\351\134\333\051\275\255\125\310\033\124\214\143\366  
\350\246\352\307\067\022\134\243\051\036\002\331\333\037\073\264  
\327\017\126\107\201\025\004\112\257\203\047\321\305\130\210\301  
\335\366\252\247\243\030\332\150\252\155\021\121\341\277\145\153  
\237\226\166\321\075\002\003\001\000\001\060\015\006\011\052\206  
\110\206\367\015\001\001\005\005\000\003\202\001\001\000\253\146  
\215\327\263\272\307\232\266\346\125\320\005\361\237\061\215\132  
\252\331\252\106\046\017\161\355\245\255\123\126\142\001\107\052  
\104\351\376\077\164\013\023\233\271\364\115\033\262\321\137\262  
\266\322\210\134\263\237\315\313\324\247\331\140\225\204\072\370  
\301\067\035\141\312\347\260\305\345\221\332\124\246\254\061\201  
\256\227\336\315\010\254\270\300\227\200\177\156\162\244\347\151  
\023\225\145\037\304\223\074\375\171\217\004\324\076\117\352\367  
\236\316\315\147\174\117\145\002\377\221\205\124\163\307\377\066  
\367\206\055\354\320\136\117\377\021\237\162\006\326\270\032\361  
\114\015\046\145\342\104\200\036\307\237\343\335\350\012\332\354  
\245\040\200\151\150\241\117\176\341\153\317\007\101\372\203\216  
\274\070\335\260\056\021\261\153\262\102\314\232\274\371\110\042  
\171\112\031\017\262\034\076\040\164\331\152\303\276\362\050\170  
\023\126\171\117\155\120\352\033\260\265\127\261\067\146\130\043  
\363\334\017\337\012\207\304\357\206\005\325\070\024\140\231\243  
\113\336\006\226\161\054\362\333\266\037\244\357\077\356

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER MULTILINE\_OCTAL  
\062\062\060\070\063\061\060\060\060\060\060\060\132

END

# Trust for "Verisign Class 1 Public Primary Certification Authority - G3"  
# Issuer: CN=VeriSign Class 1 Public Primary Certification Authority - G3,OU="(c) 1999 VeriSign, Inc. - For  
authorized use only",OU=VeriSign Trust Network,O="VeriSign, Inc.",C=US  
# Serial Number:00:8b:5b:75:56:84:54:85:0b:00:cf:af:38:48:ce:b1:a4  
# Subject: CN=VeriSign Class 1 Public Primary Certification Authority - G3,OU="(c) 1999 VeriSign, Inc. - For  
authorized use only",OU=VeriSign Trust Network,O="VeriSign, Inc.",C=US  
# Not Valid Before: Fri Oct 01 00:00:00 1999  
# Not Valid After : Wed Jul 16 23:59:59 2036  
# Fingerprint (SHA-256):  
CB:B5:AF:18:5E:94:2A:24:02:F9:EA:CB:C0:ED:5B:B8:76:EE:A3:C1:22:36:23:D0:04:47:E4:F3:BA:55:4B:65  
# Fingerprint (SHA1): 20:42:85:DC:F7:EB:76:41:95:57:8E:13:6B:D4:B7:D1:E9:8E:46:A5  
CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "Verisign Class 1 Public Primary Certification Authority - G3"  
CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL



\040\102\205\334\367\353\166\101\225\127\216\023\153\324\267\321  
\351\216\106\245

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\261\107\274\030\127\321\030\240\170\055\354\161\350\052\225\163

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\312\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\027\060\025\006\003\125\004\012\023\016\126\145\162\151\123  
\151\147\156\054\040\111\156\143\056\061\037\060\035\006\003\125  
\004\013\023\026\126\145\162\151\123\151\147\156\040\124\162\165  
\163\164\040\116\145\164\167\157\162\153\061\072\060\070\006\003  
\125\004\013\023\061\050\143\051\040\061\071\071\071\040\126\145  
\162\151\123\151\147\156\054\040\111\156\143\056\040\055\040\106  
\157\162\040\141\165\164\150\157\162\151\172\145\144\040\165\163  
\145\040\157\156\154\171\061\105\060\103\006\003\125\004\003\023  
\074\126\145\162\151\123\151\147\156\040\103\154\141\163\163\040  
\061\040\120\165\142\154\151\143\040\120\162\151\155\141\162\171  
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101  
\165\164\150\157\162\151\164\171\040\055\040\107\063

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\021\000\213\133\165\126\204\124\205\013\000\317\257\070\110  
\316\261\244

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "Verisign Class 2 Public Primary Certification Authority - G3"

#

# Issuer: CN=VeriSign Class 2 Public Primary Certification Authority - G3,OU="(c) 1999 VeriSign, Inc. - For  
authorized use only",OU=VeriSign Trust Network,O="VeriSign, Inc.",C=US

# Serial Number:61:70:cb:49:8c:5f:98:45:29:e7:b0:a6:d9:50:5b:7a

# Subject: CN=VeriSign Class 2 Public Primary Certification Authority - G3,OU="(c) 1999 VeriSign, Inc. - For  
authorized use only",OU=VeriSign Trust Network,O="VeriSign, Inc.",C=US

# Not Valid Before: Fri Oct 01 00:00:00 1999

# Not Valid After : Wed Jul 16 23:59:59 2036

# Fingerprint (SHA-256):

92:A9:D9:83:3F:E1:94:4D:B3:66:E8:BF:AE:7A:95:B6:48:0C:2D:6C:6C:2A:1B:E6:5D:42:36:B6:08:FC:A1:BB

# Fingerprint (SHA1): 61:EF:43:D7:7F:CA:D4:61:51:BC:98:E0:C3:59:12:AF:9F:EB:63:11

# For Email Distrust After: Wed Aug 31 00:00:00 2022

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Verisign Class 2 Public Primary Certification Authority - G3"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\201\312\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\027\060\025\006\003\125\004\012\023\016\126\145\162\151\123  
\151\147\156\054\040\111\156\143\056\061\037\060\035\006\003\125  
\004\013\023\026\126\145\162\151\123\151\147\156\040\124\162\165  
\163\164\040\116\145\164\167\157\162\153\061\072\060\070\006\003  
\125\004\013\023\061\050\143\051\040\061\071\071\071\040\126\145  
\162\151\123\151\147\156\054\040\111\156\143\056\040\055\040\106  
\157\162\040\141\165\164\150\157\162\151\172\145\144\040\165\163  
\145\040\157\156\154\171\061\105\060\103\006\003\125\004\003\023  
\074\126\145\162\151\123\151\147\156\040\103\154\141\163\163\040  
\062\040\120\165\142\154\151\143\040\120\162\151\155\141\162\171  
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101  
\165\164\150\157\162\151\164\171\040\055\040\107\063

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\312\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\027\060\025\006\003\125\004\012\023\016\126\145\162\151\123  
\151\147\156\054\040\111\156\143\056\061\037\060\035\006\003\125  
\004\013\023\026\126\145\162\151\123\151\147\156\040\124\162\165  
\163\164\040\116\145\164\167\157\162\153\061\072\060\070\006\003  
\125\004\013\023\061\050\143\051\040\061\071\071\071\040\126\145  
\162\151\123\151\147\156\054\040\111\156\143\056\040\055\040\106  
\157\162\040\141\165\164\150\157\162\151\172\145\144\040\165\163  
\145\040\157\156\154\171\061\105\060\103\006\003\125\004\003\023  
\074\126\145\162\151\123\151\147\156\040\103\154\141\163\163\040  
\062\040\120\165\142\154\151\143\040\120\162\151\155\141\162\171  
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101  
\165\164\150\157\162\151\164\171\040\055\040\107\063

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\141\160\313\111\214\137\230\105\051\347\260\246\331\120  
\133\172

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\031\060\202\003\001\002\020\141\160\313\111\214\137  
\230\105\051\347\260\246\331\120\133\172\060\015\006\011\052\206  
\110\206\367\015\001\001\005\005\000\060\201\312\061\013\060\011  
\006\003\125\004\006\023\002\125\123\061\027\060\025\006\003\125  
\004\012\023\016\126\145\162\151\123\151\147\156\054\040\111\156  
\143\056\061\037\060\035\006\003\125\004\013\023\026\126\145\162  
\151\123\151\147\156\040\124\162\165\163\164\040\116\145\164\167  
\157\162\153\061\072\060\070\006\003\125\004\013\023\061\050\143  
\051\040\061\071\071\071\040\126\145\162\151\123\151\147\156\054  
\040\111\156\143\056\040\055\040\106\157\162\040\141\165\164\150

\157\162\151\172\145\144\040\165\163\145\040\157\156\154\171\061  
\105\060\103\006\003\125\004\003\023\074\126\145\162\151\123\151  
\147\156\040\103\154\141\163\163\040\062\040\120\165\142\154\151  
\143\040\120\162\151\155\141\162\171\040\103\145\162\164\151\146  
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164  
\171\040\055\040\107\063\060\036\027\015\071\071\061\060\060\061  
\060\060\060\060\060\060\132\027\015\063\066\060\067\061\066\062  
\063\065\071\065\071\132\060\201\312\061\013\060\011\006\003\125  
\004\006\023\002\125\123\061\027\060\025\006\003\125\004\012\023  
\016\126\145\162\151\123\151\147\156\054\040\111\156\143\056\061  
\037\060\035\006\003\125\004\013\023\026\126\145\162\151\123\151  
\147\156\040\124\162\165\163\164\040\116\145\164\167\157\162\153  
\061\072\060\070\006\003\125\004\013\023\061\050\143\051\040\061  
\071\071\071\040\126\145\162\151\123\151\147\156\054\040\111\156  
\143\056\040\055\040\106\157\162\040\141\165\164\150\157\162\151  
\172\145\144\040\165\163\145\040\157\156\154\171\061\105\060\103  
\006\003\125\004\003\023\074\126\145\162\151\123\151\147\156\040  
\103\154\141\163\163\040\062\040\120\165\142\154\151\143\040\120  
\162\151\155\141\162\171\040\103\145\162\164\151\146\151\143\141  
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\040\055  
\040\107\063\060\202\001\042\060\015\006\011\052\206\110\206\367  
\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002  
\202\001\001\000\257\012\015\302\325\054\333\147\271\055\345\224  
\047\335\245\276\340\260\115\217\263\141\126\074\326\174\303\364  
\315\076\206\313\242\210\342\341\330\244\151\305\265\342\277\301  
\246\107\120\136\106\071\213\325\226\272\265\157\024\277\020\316  
\047\023\236\005\107\233\061\172\023\330\037\331\323\002\067\213  
\255\054\107\360\216\201\006\247\015\060\014\353\367\074\017\040  
\035\334\162\106\356\245\002\310\133\303\311\126\151\114\305\030  
\301\221\173\013\325\023\000\233\274\357\303\110\076\106\140\040  
\205\052\325\220\266\315\213\240\314\062\335\267\375\100\125\262  
\120\034\126\256\314\215\167\115\307\040\115\247\061\166\357\150  
\222\212\220\036\010\201\126\262\255\151\243\122\320\313\034\304  
\043\075\037\231\376\114\350\026\143\216\306\010\216\366\061\366  
\322\372\345\166\335\265\034\222\243\111\315\315\001\315\150\315  
\251\151\272\243\353\035\015\234\244\040\246\301\240\305\321\106  
\114\027\155\322\254\146\077\226\214\340\204\324\066\377\042\131  
\305\371\021\140\250\137\004\175\362\032\366\045\102\141\017\304  
\112\270\076\211\002\003\001\000\001\060\015\006\011\052\206\110  
\206\367\015\001\001\005\005\000\003\202\001\001\000\064\046\025  
\074\300\215\115\103\111\035\275\351\041\222\327\146\234\267\336  
\305\270\320\344\135\137\166\042\300\046\371\204\072\072\371\214  
\265\373\354\140\361\350\316\004\260\310\335\247\003\217\060\363  
\230\337\244\346\244\061\337\323\034\013\106\334\162\040\077\256  
\356\005\074\244\063\077\013\071\254\160\170\163\113\231\053\337  
\060\302\124\260\250\073\125\241\376\026\050\315\102\275\164\156  
\200\333\047\104\247\316\104\135\324\033\220\230\015\036\102\224  
\261\000\054\004\320\164\243\002\005\042\143\143\315\203\265\373

```
\301\155\142\153\151\165\375\135\160\101\271\365\277\174\337\276
\301\062\163\042\041\213\130\201\173\025\221\172\272\343\144\110
\260\177\373\066\045\332\225\320\361\044\024\027\335\030\200\153
\106\043\071\124\365\216\142\011\004\035\224\220\246\233\346\045
\342\102\105\252\270\220\255\276\010\217\251\013\102\030\224\317
\162\071\341\261\103\340\050\317\267\347\132\154\023\153\111\263
\377\343\030\174\211\213\063\135\254\063\327\247\371\332\072\125
\311\130\020\371\252\357\132\266\317\113\113\337\052
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER MULTILINE_OCTAL
\062\062\060\070\063\061\060\060\060\060\060\060\132
```

END

```
Trust for "Verisign Class 2 Public Primary Certification Authority - G3"
Issuer: CN=VeriSign Class 2 Public Primary Certification Authority - G3,OU="(c) 1999 VeriSign, Inc. - For
authorized use only",OU=VeriSign Trust Network,O="VeriSign, Inc.",C=US
Serial Number:61:70:cb:49:8c:5f:98:45:29:e7:b0:a6:d9:50:5b:7a
Subject: CN=VeriSign Class 2 Public Primary Certification Authority - G3,OU="(c) 1999 VeriSign, Inc. - For
authorized use only",OU=VeriSign Trust Network,O="VeriSign, Inc.",C=US
Not Valid Before: Fri Oct 01 00:00:00 1999
Not Valid After : Wed Jul 16 23:59:59 2036
Fingerprint (SHA-256):
92:A9:D9:83:3F:E1:94:4D:B3:66:E8:BF:AE:7A:95:B6:48:0C:2D:6C:6C:2A:1B:E6:5D:42:36:B6:08:FC:A1:BB
Fingerprint (SHA1): 61:EF:43:D7:7F:CA:D4:61:51:BC:98:E0:C3:59:12:AF:9F:EB:63:11
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Verisign Class 2 Public Primary Certification Authority - G3"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\141\357\103\327\177\312\324\141\121\274\230\340\303\131\022\257
\237\353\143\021
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\370\276\304\143\042\311\250\106\164\213\270\035\036\112\053\366
```

END

```
CKA_ISSUER MULTILINE_OCTAL
\060\201\312\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\027\060\025\006\003\125\004\012\023\016\126\145\162\151\123
\151\147\156\054\040\111\156\143\056\061\037\060\035\006\003\125
\004\013\023\026\126\145\162\151\123\151\147\156\040\124\162\165
\163\164\040\116\145\164\167\157\162\153\061\072\060\070\006\003
\125\004\013\023\061\050\143\051\040\061\071\071\071\040\126\145
\162\151\123\151\147\156\054\040\111\156\143\056\040\055\040\106
\157\162\040\141\165\164\150\157\162\151\172\145\144\040\165\163
\145\040\157\156\154\171\061\105\060\103\006\003\125\004\003\023
```

```
\074\126\145\162\151\123\151\147\156\040\103\154\141\163\163\040
\062\040\120\165\142\154\151\143\040\120\162\151\155\141\162\171
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101
\165\164\150\157\162\151\164\171\040\055\040\107\063
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\020\141\160\313\111\214\137\230\105\051\347\260\246\331\120
\133\172
```

END

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

#

# Certificate "Entrust.net Premium 2048 Secure Server CA"

#

```
Issuer: CN=Entrust.net Certification Authority (2048),OU=(c) 1999 Entrust.net
Limited,OU=www.entrust.net/CPS_2048 incorp. by ref. (limits liab.),O=Entrust.net
Serial Number: 946069240 (0x3863def8)
```

```
Subject: CN=Entrust.net Certification Authority (2048),OU=(c) 1999 Entrust.net
Limited,OU=www.entrust.net/CPS_2048 incorp. by ref. (limits liab.),O=Entrust.net
```

```
Not Valid Before: Fri Dec 24 17:50:51 1999
```

```
Not Valid After : Tue Jul 24 14:15:12 2029
```

```
Fingerprint (SHA-256):
```

```
6D:C4:71:72:E0:1C:BC:B0:BF:62:58:0D:89:5F:E2:B8:AC:9A:D4:F8:73:80:1E:0C:10:B9:C8:37:D2:1E:B1:77
```

```
Fingerprint (SHA1): 50:30:06:09:1D:97:D4:F5:AE:39:F7:CB:E7:92:7D:7D:65:2D:34:31
```

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Entrust.net Premium 2048 Secure Server CA"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

```
\060\201\264\061\024\060\022\006\003\125\004\012\023\013\105\156
\164\162\165\163\164\056\156\145\164\061\100\060\076\006\003\125
\004\013\024\067\167\167\167\056\145\156\164\162\165\163\164\056
\156\145\164\057\103\120\123\137\062\060\064\070\040\151\156\143
\157\162\160\056\040\142\171\040\162\145\146\056\040\050\154\151
\155\151\164\163\040\154\151\141\142\056\051\061\045\060\043\006
\003\125\004\013\023\034\050\143\051\040\061\071\071\071\040\105
\156\164\162\165\163\164\056\156\145\164\040\114\151\155\151\164
\145\144\061\063\060\061\006\003\125\004\003\023\052\105\156\164
\162\165\163\164\056\156\145\164\040\103\145\162\164\151\146\151
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171
\040\050\062\060\064\070\051
```

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\264\061\024\060\022\006\003\125\004\012\023\013\105\156  
\164\162\165\163\164\056\156\145\164\061\100\060\076\006\003\125  
\004\013\024\067\167\167\167\056\145\156\164\162\165\163\164\056  
\156\145\164\057\103\120\123\137\062\060\064\070\040\151\156\143  
\157\162\160\056\040\142\171\040\162\145\146\056\040\050\154\151  
\155\151\164\163\040\154\151\141\142\056\051\061\045\060\043\006  
\003\125\004\013\023\034\050\143\051\040\061\071\071\071\040\105  
\156\164\162\165\163\164\056\156\145\164\040\114\151\155\151\164  
\145\144\061\063\060\061\006\003\125\004\003\023\052\105\156\164  
\162\165\163\164\056\156\145\164\040\103\145\162\164\151\146\151  
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171  
\040\050\062\060\064\070\051

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\004\070\143\336\370

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\052\060\202\003\022\240\003\002\001\002\002\004\070  
\143\336\370\060\015\006\011\052\206\110\206\367\015\001\001\005  
\005\000\060\201\264\061\024\060\022\006\003\125\004\012\023\013  
\105\156\164\162\165\163\164\056\156\145\164\061\100\060\076\006  
\003\125\004\013\024\067\167\167\167\056\145\156\164\162\165\163  
\164\056\156\145\164\057\103\120\123\137\062\060\064\070\040\151  
\156\143\157\162\160\056\040\142\171\040\162\145\146\056\040\050  
\154\151\155\151\164\163\040\154\151\141\142\056\051\061\045\060  
\043\006\003\125\004\013\023\034\050\143\051\040\061\071\071\071  
\040\105\156\164\162\165\163\164\056\156\145\164\040\114\151\155  
\151\164\145\144\061\063\060\061\006\003\125\004\003\023\052\105  
\156\164\162\165\163\164\056\156\145\164\040\103\145\162\164\151  
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151  
\164\171\040\050\062\060\064\070\051\060\036\027\015\071\071\061  
\062\062\064\061\067\065\060\065\061\132\027\015\062\071\060\067  
\062\064\061\064\061\065\061\062\132\060\201\264\061\024\060\022  
\006\003\125\004\012\023\013\105\156\164\162\165\163\164\056\156  
\145\164\061\100\060\076\006\003\125\004\013\024\067\167\167\167  
\056\145\156\164\162\165\163\164\056\156\145\164\057\103\120\123  
\137\062\060\064\070\040\151\156\143\157\162\160\056\040\142\171  
\040\162\145\146\056\040\050\154\151\155\151\164\163\040\154\151  
\141\142\056\051\061\045\060\043\006\003\125\004\013\023\034\050  
\143\051\040\061\071\071\071\040\105\156\164\162\165\163\164\056  
\156\145\164\040\114\151\155\151\164\145\144\061\063\060\061\006  
\003\125\004\003\023\052\105\156\164\162\165\163\164\056\156\145  
\164\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040  
\101\165\164\150\157\162\151\164\171\040\050\062\060\064\070\051  
\060\202\001\042\060\015\006\011\052\206\110\206\367\015\001\001  
\001\005\000\003\202\001\017\000\060\202\001\012\002\202\001\001  
\000\255\115\113\251\022\206\262\352\243\040\007\025\026\144\052

\053\113\321\277\013\112\115\216\355\200\166\245\147\267\170\100  
\300\163\102\310\150\300\333\123\053\335\136\270\166\230\065\223  
\213\032\235\174\023\072\016\037\133\267\036\317\345\044\024\036  
\261\201\251\215\175\270\314\153\113\003\361\002\014\334\253\245  
\100\044\000\177\164\224\241\235\010\051\263\210\013\365\207\167  
\235\125\315\344\303\176\327\152\144\253\205\024\206\225\133\227  
\062\120\157\075\310\272\146\014\343\374\275\270\111\301\166\211  
\111\031\375\300\250\275\211\243\147\057\306\237\274\161\031\140  
\270\055\351\054\311\220\166\146\173\224\342\257\170\326\145\123  
\135\074\326\234\262\317\051\003\371\057\244\120\262\324\110\316  
\005\062\125\212\375\262\144\114\016\344\230\007\165\333\177\337  
\271\010\125\140\205\060\051\371\173\110\244\151\206\343\065\077  
\036\206\135\172\172\025\275\357\000\216\025\042\124\027\000\220  
\046\223\274\016\111\150\221\277\370\107\323\235\225\102\301\016  
\115\337\157\046\317\303\030\041\142\146\103\160\326\325\300\007  
\341\002\003\001\000\001\243\102\060\100\060\016\006\003\125\035  
\017\001\001\377\004\004\003\002\001\006\060\017\006\003\125\035  
\023\001\001\377\004\005\060\003\001\001\377\060\035\006\003\125  
\035\016\004\026\004\024\125\344\201\321\021\200\276\330\211\271  
\010\243\061\371\241\044\011\026\271\160\060\015\006\011\052\206  
\110\206\367\015\001\001\005\005\000\003\202\001\001\000\073\233  
\217\126\233\060\347\123\231\174\172\171\247\115\227\327\031\225  
\220\373\006\037\312\063\174\106\143\217\226\146\044\372\100\033  
\041\047\312\346\162\163\362\117\376\061\231\375\310\014\114\150  
\123\306\200\202\023\230\372\266\255\332\135\075\361\316\156\366  
\025\021\224\202\014\356\077\225\257\021\253\017\327\057\336\037  
\003\217\127\054\036\311\273\232\032\104\225\353\030\117\246\037  
\315\175\127\020\057\233\004\011\132\204\265\156\330\035\072\341  
\326\236\321\154\171\136\171\034\024\305\343\320\114\223\073\145  
\074\355\337\075\276\246\345\225\032\303\265\031\303\275\136\133  
\273\377\043\357\150\031\313\022\223\047\134\003\055\157\060\320  
\036\266\032\254\336\132\367\321\252\250\047\246\376\171\201\304  
\171\231\063\127\272\022\260\251\340\102\154\223\312\126\336\376  
\155\204\013\010\213\176\215\352\327\230\041\306\363\347\074\171  
\057\136\234\321\114\025\215\341\354\042\067\314\232\103\013\227  
\334\200\220\215\263\147\233\157\110\010\025\126\317\277\361\053  
\174\136\232\166\351\131\220\305\174\203\065\021\145\121

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Entrust.net Premium 2048 Secure Server CA"

# Issuer: CN=Entrust.net Certification Authority (2048),OU=(c) 1999 Entrust.net  
Limited,OU=www.entrust.net/CPS\_2048 incorp. by ref. (limits liab.),O=Entrust.net  
# Serial Number: 946069240 (0x3863def8)

# Subject: CN=Entrust.net Certification Authority (2048),OU=(c) 1999 Entrust.net  
Limited,OU=www.entrust.net/CPS\_2048 incorp. by ref. (limits liab.),O=Entrust.net

```

Not Valid Before: Fri Dec 24 17:50:51 1999
Not Valid After : Tue Jul 24 14:15:12 2029
Fingerprint (SHA-256):
6D:C4:71:72:E0:1C:BC:B0:BF:62:58:0D:89:5F:E2:B8:AC:9A:D4:F8:73:80:1E:0C:10:B9:C8:37:D2:1E:B1:77
Fingerprint (SHA1): 50:30:06:09:1D:97:D4:F5:AE:39:F7:CB:E7:92:7D:7D:65:2D:34:31
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Entrust.net Premium 2048 Secure Server CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\120\060\006\011\035\227\324\365\256\071\367\313\347\222\175\175
\145\055\064\061
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\356\051\061\274\062\176\232\346\350\265\367\121\264\064\161\220
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\264\061\024\060\022\006\003\125\004\012\023\013\105\156
\164\162\165\163\164\056\156\145\164\061\100\060\076\006\003\125
\004\013\024\067\167\167\167\056\145\156\164\162\165\163\164\056
\156\145\164\057\103\120\123\137\062\060\064\070\040\151\156\143
\157\162\160\056\040\142\171\040\162\145\146\056\040\050\154\151
\155\151\164\163\040\154\151\141\142\056\051\061\045\060\043\006
\003\125\004\013\023\034\050\143\051\040\061\071\071\071\040\105
\156\164\162\165\163\164\056\156\145\164\040\114\151\155\151\164
\145\144\061\063\060\061\006\003\125\004\003\023\052\105\156\164
\162\165\163\164\056\156\145\164\040\103\145\162\164\151\146\151
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171
\040\050\062\060\064\070\051
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\004\070\143\336\370
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "Baltimore CyberTrust Root"
#
Issuer: CN=Baltimore CyberTrust Root,OU=CyberTrust,O=Baltimore,C=IE
Serial Number: 33554617 (0x20000b9)
Subject: CN=Baltimore CyberTrust Root,OU=CyberTrust,O=Baltimore,C=IE
Not Valid Before: Fri May 12 18:46:00 2000
Not Valid After : Mon May 12 23:59:00 2025
Fingerprint (SHA-256):

```



16:AF:57:A9:F6:76:B0:AB:12:60:95:AA:5E:BA:DE:F2:2A:B3:11:19:D6:44:AC:95:CD:4B:93:DB:F3:F2:6A:EB

# Fingerprint (SHA1): D4:DE:20:D0:5E:66:FC:53:FE:1A:50:88:2C:78:DB:28:52:CA:E4:74

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Baltimore CyberTrust Root"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\132\061\013\060\011\006\003\125\004\006\023\002\111\105\061  
\022\060\020\006\003\125\004\012\023\011\102\141\154\164\151\155  
\157\162\145\061\023\060\021\006\003\125\004\013\023\012\103\171  
\142\145\162\124\162\165\163\164\061\042\060\040\006\003\125\004  
\003\023\031\102\141\154\164\151\155\157\162\145\040\103\171\142  
\145\162\124\162\165\163\164\040\122\157\157\164

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\132\061\013\060\011\006\003\125\004\006\023\002\111\105\061  
\022\060\020\006\003\125\004\012\023\011\102\141\154\164\151\155  
\157\162\145\061\023\060\021\006\003\125\004\013\023\012\103\171  
\142\145\162\124\162\165\163\164\061\042\060\040\006\003\125\004  
\003\023\031\102\141\154\164\151\155\157\162\145\040\103\171\142  
\145\162\124\162\165\163\164\040\122\157\157\164

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\004\002\000\000\271

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\167\060\202\002\137\240\003\002\001\002\002\004\002  
\000\000\271\060\015\006\011\052\206\110\206\367\015\001\001\005  
\005\000\060\132\061\013\060\011\006\003\125\004\006\023\002\111  
\105\061\022\060\020\006\003\125\004\012\023\011\102\141\154\164  
\151\155\157\162\145\061\023\060\021\006\003\125\004\013\023\012  
\103\171\142\145\162\124\162\165\163\164\061\042\060\040\006\003  
\125\004\003\023\031\102\141\154\164\151\155\157\162\145\040\103  
\171\142\145\162\124\162\165\163\164\040\122\157\157\164\060\036  
\027\015\060\060\060\065\061\062\061\070\064\066\060\060\132\027  
\015\062\065\060\065\061\062\062\063\065\071\060\060\132\060\132  
\061\013\060\011\006\003\125\004\006\023\002\111\105\061\022\060  
\020\006\003\125\004\012\023\011\102\141\154\164\151\155\157\162  
\145\061\023\060\021\006\003\125\004\013\023\012\103\171\142\145  
\162\124\162\165\163\164\061\042\060\040\006\003\125\004\003\023  
\031\102\141\154\164\151\155\157\162\145\040\103\171\142\145\162  
\124\162\165\163\164\040\122\157\157\164\060\202\001\042\060\015  
\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001  
\017\000\060\202\001\012\002\202\001\001\000\243\004\273\042\253  
\230\075\127\350\046\162\232\265\171\324\051\342\341\350\225\200

\261\260\343\133\216\053\051\232\144\337\241\135\355\260\011\005  
\155\333\050\056\316\142\242\142\376\264\210\332\022\353\070\353  
\041\235\300\101\053\001\122\173\210\167\323\034\217\307\272\271  
\210\265\152\011\347\163\350\021\100\247\321\314\312\142\215\055  
\345\217\013\246\120\322\250\120\303\050\352\365\253\045\207\212  
\232\226\034\251\147\270\077\014\325\367\371\122\023\057\302\033  
\325\160\160\360\217\300\022\312\006\313\232\341\331\312\063\172  
\167\326\370\354\271\361\150\104\102\110\023\322\300\302\244\256  
\136\140\376\266\246\005\374\264\335\007\131\002\324\131\030\230  
\143\365\245\143\340\220\014\175\135\262\006\172\363\205\352\353  
\324\003\256\136\204\076\137\377\025\355\151\274\371\071\066\162  
\165\317\167\122\115\363\311\220\054\271\075\345\311\043\123\077  
\037\044\230\041\134\007\231\051\275\306\072\354\347\156\206\072  
\153\227\164\143\063\275\150\030\061\360\170\215\166\277\374\236  
\216\135\052\206\247\115\220\334\047\032\071\002\003\001\000\001  
\243\105\060\103\060\035\006\003\125\035\016\004\026\004\024\345  
\235\131\060\202\107\130\314\254\372\010\124\066\206\173\072\265  
\004\115\360\060\022\006\003\125\035\023\001\001\377\004\010\060  
\006\001\001\377\002\001\003\060\016\006\003\125\035\017\001\001  
\377\004\004\003\002\001\006\060\015\006\011\052\206\110\206\367  
\015\001\001\005\005\000\003\202\001\001\000\205\014\135\216\344  
\157\121\150\102\005\240\335\273\117\047\045\204\003\275\367\144  
\375\055\327\060\343\244\020\027\353\332\051\051\266\171\077\166  
\366\031\023\043\270\020\012\371\130\244\324\141\160\275\004\141  
\152\022\212\027\325\012\275\305\274\060\174\326\351\014\045\215  
\206\100\117\354\314\243\176\070\306\067\021\117\355\335\150\061  
\216\114\322\263\001\164\356\276\165\136\007\110\032\177\160\377  
\026\134\204\300\171\205\270\005\375\177\276\145\021\243\017\300  
\002\264\370\122\067\071\004\325\251\061\172\030\277\240\052\364  
\022\231\367\243\105\202\343\074\136\365\235\236\265\310\236\174  
\056\310\244\236\116\010\024\113\155\375\160\155\153\032\143\275  
\144\346\037\267\316\360\362\237\056\273\033\267\362\120\210\163  
\222\302\342\343\026\215\232\062\002\253\216\030\335\351\020\021  
\356\176\065\253\220\257\076\060\224\172\320\063\075\247\145\017  
\365\374\216\236\142\317\107\104\054\001\135\273\035\265\062\322  
\107\322\070\056\320\376\201\334\062\152\036\265\356\074\325\374  
\347\201\035\031\303\044\102\352\143\071\251

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Baltimore CyberTrust Root"

# Issuer: CN=Baltimore CyberTrust Root,OU=CyberTrust,O=Baltimore,C=IE

# Serial Number: 33554617 (0x20000b9)

# Subject: CN=Baltimore CyberTrust Root,OU=CyberTrust,O=Baltimore,C=IE

# Not Valid Before: Fri May 12 18:46:00 2000

# Not Valid After : Mon May 12 23:59:00 2025

```

Fingerprint (SHA-256):
16:AF:57:A9:F6:76:B0:AB:12:60:95:AA:5E:BA:DE:F2:2A:B3:11:19:D6:44:AC:95:CD:4B:93:DB:F3:F2:6A:EB
Fingerprint (SHA1): D4:DE:20:D0:5E:66:FC:53:FE:1A:50:88:2C:78:DB:28:52:CA:E4:74
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Baltimore CyberTrust Root"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\324\336\040\320\136\146\374\123\376\032\120\210\054\170\333\050
\122\312\344\164
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\254\266\224\245\234\027\340\327\221\122\233\261\227\006\246\344
END
CKA_ISSUER MULTILINE_OCTAL
\060\132\061\013\060\011\006\003\125\004\006\023\002\111\105\061
\022\060\020\006\003\125\004\012\023\011\102\141\154\164\151\155
\157\162\145\061\023\060\021\006\003\125\004\013\023\012\103\171
\142\145\162\124\162\165\163\164\061\042\060\040\006\003\125\004
\003\023\031\102\141\154\164\151\155\157\162\145\040\103\171\142
\145\162\124\162\165\163\164\040\122\157\157\164
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\004\002\000\000\271
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "Entrust Root Certification Authority"
#
Issuer: CN=Entrust Root Certification Authority,OU="(c) 2006 Entrust, Inc.",OU=www.entrust.net/CPS is
incorporated by reference,O="Entrust, Inc.",C=US
Serial Number: 1164660820 (0x456b5054)
Subject: CN=Entrust Root Certification Authority,OU="(c) 2006 Entrust, Inc.",OU=www.entrust.net/CPS is
incorporated by reference,O="Entrust, Inc.",C=US
Not Valid Before: Mon Nov 27 20:23:42 2006
Not Valid After : Fri Nov 27 20:53:42 2026
Fingerprint (SHA-256):
73:C1:76:43:4F:1B:C6:D5:AD:F4:5B:0E:76:E7:27:28:7C:8D:E5:76:16:C1:E6:E6:14:1A:2B:2C:BC:7D:8E:4C
Fingerprint (SHA1): B3:1E:B1:B7:40:E3:6C:84:02:DA:DC:37:D4:4D:F5:D4:67:49:52:F9
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE

```

```
CKA_LABEL UTF8 "Entrust Root Certification Authority"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\260\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\026\060\024\006\003\125\004\012\023\015\105\156\164\162\165
\163\164\054\040\111\156\143\056\061\071\060\067\006\003\125\004
\013\023\060\167\167\167\056\145\156\164\162\165\163\164\056\156
\145\164\057\103\120\123\040\151\163\040\151\156\143\157\162\160
\157\162\141\164\145\144\040\142\171\040\162\145\146\145\162\145
\156\143\145\061\037\060\035\006\003\125\004\013\023\026\050\143
\051\040\062\060\060\066\040\105\156\164\162\165\163\164\054\040
\111\156\143\056\061\055\060\053\006\003\125\004\003\023\044\105
\156\164\162\165\163\164\040\122\157\157\164\040\103\145\162\164
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162
\151\164\171
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\260\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\026\060\024\006\003\125\004\012\023\015\105\156\164\162\165
\163\164\054\040\111\156\143\056\061\071\060\067\006\003\125\004
\013\023\060\167\167\167\056\145\156\164\162\165\163\164\056\156
\145\164\057\103\120\123\040\151\163\040\151\156\143\157\162\160
\157\162\141\164\145\144\040\142\171\040\162\145\146\145\162\145
\156\143\145\061\037\060\035\006\003\125\004\013\023\026\050\143
\051\040\062\060\060\066\040\105\156\164\162\165\163\164\054\040
\111\156\143\056\061\055\060\053\006\003\125\004\003\023\044\105
\156\164\162\165\163\164\040\122\157\157\164\040\103\145\162\164
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162
\151\164\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\004\105\153\120\124
END
CKA_VALUE MULTILINE_OCTAL
\060\202\004\221\060\202\003\171\240\003\002\001\002\002\004\105
\153\120\124\060\015\006\011\052\206\110\206\367\015\001\001\005
\005\000\060\201\260\061\013\060\011\006\003\125\004\006\023\002
\125\123\061\026\060\024\006\003\125\004\012\023\015\105\156\164
\162\165\163\164\054\040\111\156\143\056\061\071\060\067\006\003
\125\004\013\023\060\167\167\167\056\145\156\164\162\165\163\164
\056\156\145\164\057\103\120\123\040\151\163\040\151\156\143\157
\162\160\157\162\141\164\145\144\040\142\171\040\162\145\146\145
\162\145\156\143\145\061\037\060\035\006\003\125\004\013\023\026
\050\143\051\040\062\060\060\066\040\105\156\164\162\165\163\164
\054\040\111\156\143\056\061\055\060\053\006\003\125\004\003\023
\044\105\156\164\162\165\163\164\040\122\157\157\164\040\103\145
\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150
```

\157\162\151\164\171\060\036\027\015\060\066\061\061\062\067\062  
\060\062\063\064\062\132\027\015\062\066\061\061\062\067\062\060  
\065\063\064\062\132\060\201\260\061\013\060\011\006\003\125\004  
\006\023\002\125\123\061\026\060\024\006\003\125\004\012\023\015  
\105\156\164\162\165\163\164\054\040\111\156\143\056\061\071\060  
\067\006\003\125\004\013\023\060\167\167\167\056\145\156\164\162  
\165\163\164\056\156\145\164\057\103\120\123\040\151\163\040\151  
\156\143\157\162\160\157\162\141\164\145\144\040\142\171\040\162  
\145\146\145\162\145\156\143\145\061\037\060\035\006\003\125\004  
\013\023\026\050\143\051\040\062\060\060\066\040\105\156\164\162  
\165\163\164\054\040\111\156\143\056\061\055\060\053\006\003\125  
\004\003\023\044\105\156\164\162\165\163\164\040\122\157\157\164  
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101  
\165\164\150\157\162\151\164\171\060\202\001\042\060\015\006\011  
\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017\000  
\060\202\001\012\002\202\001\001\000\266\225\266\103\102\372\306  
\155\052\157\110\337\224\114\071\127\005\356\303\171\021\101\150  
\066\355\354\376\232\001\217\241\070\050\374\367\020\106\146\056  
\115\036\032\261\032\116\306\321\300\225\210\260\311\377\061\213  
\063\003\333\267\203\173\076\040\204\136\355\262\126\050\247\370  
\340\271\100\161\067\305\313\107\016\227\052\150\300\042\225\142  
\025\333\107\331\365\320\053\377\202\113\311\255\076\336\114\333  
\220\200\120\077\011\212\204\000\354\060\012\075\030\315\373\375  
\052\131\232\043\225\027\054\105\236\037\156\103\171\155\014\134  
\230\376\110\247\305\043\107\134\136\375\156\347\036\264\366\150  
\105\321\206\203\133\242\212\215\261\343\051\200\376\045\161\210  
\255\276\274\217\254\122\226\113\252\121\215\344\023\061\031\350  
\116\115\237\333\254\263\152\325\274\071\124\161\312\172\172\177  
\220\335\175\035\200\331\201\273\131\046\302\021\376\346\223\342  
\367\200\344\145\373\064\067\016\051\200\160\115\257\070\206\056  
\236\177\127\257\236\027\256\353\034\313\050\041\137\266\034\330  
\347\242\004\042\371\323\332\330\313\002\003\001\000\001\243\201  
\260\060\201\255\060\016\006\003\125\035\017\001\001\377\004\004  
\003\002\001\006\060\017\006\003\125\035\023\001\001\377\004\005  
\060\003\001\001\377\060\053\006\003\125\035\020\004\044\060\042  
\200\017\062\060\060\066\061\061\062\067\062\060\062\063\064\062  
\132\201\017\062\060\062\066\061\061\062\067\062\060\065\063\064  
\062\132\060\037\006\003\125\035\043\004\030\060\026\200\024\150  
\220\344\147\244\246\123\200\307\206\146\244\361\367\113\103\373  
\204\275\155\060\035\006\003\125\035\016\004\026\004\024\150\220  
\344\147\244\246\123\200\307\206\146\244\361\367\113\103\373\204  
\275\155\060\035\006\011\052\206\110\206\366\175\007\101\000\004  
\020\060\016\033\010\126\067\056\061\072\064\056\060\003\002\004  
\220\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000  
\003\202\001\001\000\223\324\060\260\327\003\040\052\320\371\143  
\350\221\014\005\040\251\137\031\312\173\162\116\324\261\333\320  
\226\373\124\132\031\054\014\010\367\262\274\205\250\235\177\155  
\073\122\263\052\333\347\324\204\214\143\366\017\313\046\001\221

```
\120\154\364\137\024\342\223\164\300\023\236\060\072\120\343\264
\140\305\034\360\042\104\215\161\107\254\310\032\311\351\233\232
\000\140\023\377\160\176\137\021\115\111\033\263\025\122\173\311
\124\332\277\235\225\257\153\232\330\236\351\361\344\103\215\342
\021\104\072\277\257\275\203\102\163\122\213\252\273\247\051\317
\365\144\034\012\115\321\274\252\254\237\052\320\377\177\177\332
\175\352\261\355\060\045\301\204\332\064\322\133\170\203\126\354
\234\066\303\046\342\021\366\147\111\035\222\253\214\373\353\377
\172\356\205\112\247\120\200\360\247\134\112\224\056\137\005\231
\074\122\101\340\315\264\143\317\001\103\272\234\203\334\217\140
\073\363\132\264\264\173\256\332\013\220\070\165\357\201\035\146
\322\367\127\160\066\263\277\374\050\257\161\045\205\133\023\376
\036\177\132\264\074
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Entrust Root Certification Authority"

# Issuer: CN=Entrust Root Certification Authority,OU="(c) 2006 Entrust, Inc.",OU=www.entrust.net/CPS is incorporated by reference,O="Entrust, Inc.",C=US

# Serial Number: 1164660820 (0x456b5054)

# Subject: CN=Entrust Root Certification Authority,OU="(c) 2006 Entrust, Inc.",OU=www.entrust.net/CPS is incorporated by reference,O="Entrust, Inc.",C=US

# Not Valid Before: Mon Nov 27 20:23:42 2006

# Not Valid After : Fri Nov 27 20:53:42 2026

# Fingerprint (SHA-256):

73:C1:76:43:4F:1B:C6:D5:AD:F4:5B:0E:76:E7:27:28:7C:8D:E5:76:16:C1:E6:E6:14:1A:2B:2C:BC:7D:8E:4C

# Fingerprint (SHA1): B3:1E:B1:B7:40:E3:6C:84:02:DA:DC:37:D4:4D:F5:D4:67:49:52:F9

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Entrust Root Certification Authority"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\263\036\261\267\100\343\154\204\002\332\334\067\324\115\365\324
\147\111\122\371
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\326\245\303\355\135\335\076\000\301\075\207\222\037\035\077\344
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\201\260\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\026\060\024\006\003\125\004\012\023\015\105\156\164\162\165
\163\164\054\040\111\156\143\056\061\071\060\067\006\003\125\004
\013\023\060\167\167\167\056\145\156\164\162\165\163\164\056\156
\145\164\057\103\120\123\040\151\163\040\151\156\143\157\162\160
\157\162\141\164\145\144\040\142\171\040\162\145\146\145\162\145
```

```
\156\143\145\061\037\060\035\006\003\125\004\013\023\026\050\143
\051\040\062\060\060\066\040\105\156\164\162\165\163\164\054\040
\111\156\143\056\061\055\060\053\006\003\125\004\003\023\044\105
\156\164\162\165\163\164\040\122\157\157\164\040\103\145\162\164
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162
\151\164\171
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\004\105\153\120\124
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "Certum Root CA"

#

# Issuer: CN=Certum CA,O=Unizeto Sp. z o.o.,C=PL

# Serial Number: 65568 (0x10020)

# Subject: CN=Certum CA,O=Unizeto Sp. z o.o.,C=PL

# Not Valid Before: Tue Jun 11 10:46:39 2002

# Not Valid After : Fri Jun 11 10:46:39 2027

# Fingerprint (SHA-256):

D8:E0:FE:BC:1D:B2:E3:8D:00:94:0F:37:D2:7D:41:34:4D:99:3E:73:4B:99:D5:65:6D:97:78:D4:D8:14:36:24

# Fingerprint (SHA1): 62:52:DC:40:F7:11:43:A2:2F:DE:9E:F7:34:8E:06:42:51:B1:81:18

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Certum Root CA"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

```
\060\076\061\013\060\011\006\003\125\004\006\023\002\120\114\061
\033\060\031\006\003\125\004\012\023\022\125\156\151\172\145\164
\157\040\123\160\056\040\172\040\157\056\157\056\061\022\060\020
\006\003\125\004\003\023\011\103\145\162\164\165\155\040\103\101
```

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\076\061\013\060\011\006\003\125\004\006\023\002\120\114\061
\033\060\031\006\003\125\004\012\023\022\125\156\151\172\145\164
\157\040\123\160\056\040\172\040\157\056\157\056\061\022\060\020
\006\003\125\004\003\023\011\103\145\162\164\165\155\040\103\101
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\003\001\000\040
```

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\014\060\202\001\364\240\003\002\001\002\002\003\001  
\000\040\060\015\006\011\052\206\110\206\367\015\001\001\005\005  
\000\060\076\061\013\060\011\006\003\125\004\006\023\002\120\114  
\061\033\060\031\006\003\125\004\012\023\022\125\156\151\172\145  
\164\157\040\123\160\056\040\172\040\157\056\157\056\061\022\060  
\020\006\003\125\004\003\023\011\103\145\162\164\165\155\040\103  
\101\060\036\027\015\060\062\060\066\061\061\061\060\064\066\063  
\071\132\027\015\062\067\060\066\061\061\061\060\064\066\063\071  
\132\060\076\061\013\060\011\006\003\125\004\006\023\002\120\114  
\061\033\060\031\006\003\125\004\012\023\022\125\156\151\172\145  
\164\157\040\123\160\056\040\172\040\157\056\157\056\061\022\060  
\020\006\003\125\004\003\023\011\103\145\162\164\165\155\040\103  
\101\060\202\001\042\060\015\006\011\052\206\110\206\367\015\001  
\001\001\005\000\003\202\001\017\000\060\202\001\012\002\202\001  
\001\000\316\261\301\056\323\117\174\315\045\316\030\076\117\304  
\214\157\200\152\163\310\133\121\370\233\322\334\273\000\134\261  
\240\374\165\003\356\201\360\210\356\043\122\351\346\025\063\215  
\254\055\011\305\166\371\053\071\200\211\344\227\113\220\245\250  
\170\370\163\103\173\244\141\260\330\130\314\341\154\146\176\234  
\363\011\136\125\143\204\325\250\357\363\261\056\060\150\263\304  
\074\330\254\156\215\231\132\220\116\064\334\066\232\217\201\210  
\120\267\155\226\102\011\363\327\225\203\015\101\113\260\152\153  
\370\374\017\176\142\237\147\304\355\046\137\020\046\017\010\117  
\360\244\127\050\316\217\270\355\105\366\156\356\045\135\252\156  
\071\276\344\223\057\331\107\240\162\353\372\246\133\257\312\123  
\077\342\016\306\226\126\021\156\367\351\146\251\046\330\177\225  
\123\355\012\205\210\272\117\051\245\102\214\136\266\374\205\040  
\000\252\150\013\241\032\205\001\234\304\106\143\202\210\266\042  
\261\356\376\252\106\131\176\317\065\054\325\266\332\135\367\110  
\063\024\124\266\353\331\157\316\315\210\326\253\033\332\226\073  
\035\131\002\003\001\000\001\243\023\060\021\060\017\006\003\125  
\035\023\001\001\377\004\005\060\003\001\001\377\060\015\006\011  
\052\206\110\206\367\015\001\001\005\005\000\003\202\001\001\000  
\270\215\316\357\347\024\272\317\356\260\104\222\154\264\071\076  
\242\204\156\255\270\041\167\322\324\167\202\207\346\040\101\201  
\356\342\370\021\267\143\321\027\067\276\031\166\044\034\004\032  
\114\353\075\252\147\157\055\324\315\376\145\061\160\305\033\246  
\002\012\272\140\173\155\130\302\232\111\376\143\062\013\153\343  
\072\300\254\253\073\260\350\323\011\121\214\020\203\306\064\340  
\305\053\340\032\266\140\024\047\154\062\167\214\274\262\162\230  
\317\315\314\077\271\310\044\102\024\326\127\374\346\046\103\251  
\035\345\200\220\316\003\124\050\076\367\077\323\370\115\355\152  
\012\072\223\023\233\073\024\043\023\143\234\077\321\207\047\171  
\345\114\121\343\001\255\205\135\032\073\261\325\163\020\244\323  
\362\274\156\144\365\132\126\220\250\307\016\114\164\017\056\161  
\073\367\310\107\364\151\157\025\362\021\136\203\036\234\174\122  
\256\375\002\332\022\250\131\147\030\333\274\160\335\233\261\151



\355\200\316\211\100\110\152\016\065\312\051\146\025\041\224\054

\350\140\052\233\205\112\100\363\153\212\044\354\006\026\054\163

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Certum Root CA"

# Issuer: CN=Certum CA,O=Unizeto Sp. z o.o.,C=PL

# Serial Number: 65568 (0x10020)

# Subject: CN=Certum CA,O=Unizeto Sp. z o.o.,C=PL

# Not Valid Before: Tue Jun 11 10:46:39 2002

# Not Valid After : Fri Jun 11 10:46:39 2027

# Fingerprint (SHA-256):

D8:E0:FE:BC:1D:B2:E3:8D:00:94:0F:37:D2:7D:41:34:4D:99:3E:73:4B:99:D5:65:6D:97:78:D4:D8:14:36:24

# Fingerprint (SHA1): 62:52:DC:40:F7:11:43:A2:2F:DE:9E:F7:34:8E:06:42:51:B1:81:18

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Certum Root CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\142\122\334\100\367\021\103\242\057\336\236\367\064\216\006\102

\121\261\201\030

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\054\217\237\146\035\030\220\261\107\046\235\216\206\202\214\251

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\076\061\013\060\011\006\003\125\004\006\023\002\120\114\061

\033\060\031\006\003\125\004\012\023\022\125\156\151\172\145\164

\157\040\123\160\056\040\172\040\157\056\157\056\061\022\060\020

\006\003\125\004\003\023\011\103\145\162\164\165\155\040\103\101

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\003\001\000\040

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "Comodo AAA Services root"

#

# Issuer: CN=AAA Certificate Services,O=Comodo CA Limited,L=Salford,ST=Greater Manchester,C=GB

# Serial Number: 1 (0x1)

# Subject: CN=AAA Certificate Services,O=Comodo CA Limited,L=Salford,ST=Greater Manchester,C=GB

```
Not Valid Before: Thu Jan 01 00:00:00 2004
Not Valid After : Sun Dec 31 23:59:59 2028
Fingerprint (SHA-256):
D7:A7:A0:FB:5D:7E:27:31:D7:71:E9:48:4E:BC:DE:F7:1D:5F:0C:3E:0A:29:48:78:2B:C8:3E:E0:EA:69:9E:F4
Fingerprint (SHA1): D1:EB:23:A4:6D:17:D6:8F:D9:25:64:C2:F1:F1:60:17:64:D8:E3:49
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Comodo AAA Services root"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\173\061\013\060\011\006\003\125\004\006\023\002\107\102\061
\033\060\031\006\003\125\004\010\014\022\107\162\145\141\164\145
\162\040\115\141\156\143\150\145\163\164\145\162\061\020\060\016
\006\003\125\004\007\014\007\123\141\154\146\157\162\144\061\032
\060\030\006\003\125\004\012\014\021\103\157\155\157\144\157\040
\103\101\040\114\151\155\151\164\145\144\061\041\060\037\006\003
\125\004\003\014\030\101\101\101\040\103\145\162\164\151\146\151
\143\141\164\145\040\123\145\162\166\151\143\145\163
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\173\061\013\060\011\006\003\125\004\006\023\002\107\102\061
\033\060\031\006\003\125\004\010\014\022\107\162\145\141\164\145
\162\040\115\141\156\143\150\145\163\164\145\162\061\020\060\016
\006\003\125\004\007\014\007\123\141\154\146\157\162\144\061\032
\060\030\006\003\125\004\012\014\021\103\157\155\157\144\157\040
\103\101\040\114\151\155\151\164\145\144\061\041\060\037\006\003
\125\004\003\014\030\101\101\101\040\103\145\162\164\151\146\151
\143\141\164\145\040\123\145\162\166\151\143\145\163
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\001
END
CKA_VALUE MULTILINE_OCTAL
\060\202\004\062\060\202\003\032\240\003\002\001\002\002\001\001
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\173\061\013\060\011\006\003\125\004\006\023\002\107\102\061\033
\060\031\006\003\125\004\010\014\022\107\162\145\141\164\145\162
\040\115\141\156\143\150\145\163\164\145\162\061\020\060\016\006
\003\125\004\007\014\007\123\141\154\146\157\162\144\061\032\060
\030\006\003\125\004\012\014\021\103\157\155\157\144\157\040\103
\101\040\114\151\155\151\164\145\144\061\041\060\037\006\003\125
\004\003\014\030\101\101\101\040\103\145\162\164\151\146\151\143
\141\164\145\040\123\145\162\166\151\143\145\163\060\036\027\015
\060\064\060\061\060\061\060\060\060\060\060\060\132\027\015\062
\070\061\062\063\061\062\063\065\071\065\071\132\060\173\061\013
```

\060\011\006\003\125\004\006\023\002\107\102\061\033\060\031\006  
\003\125\004\010\014\022\107\162\145\141\164\145\162\040\115\141  
\156\143\150\145\163\164\145\162\061\020\060\016\006\003\125\004  
\007\014\007\123\141\154\146\157\162\144\061\032\060\030\006\003  
\125\004\012\014\021\103\157\155\157\144\157\040\103\101\040\114  
\151\155\151\164\145\144\061\041\060\037\006\003\125\004\003\014  
\030\101\101\101\040\103\145\162\164\151\146\151\143\141\164\145  
\040\123\145\162\166\151\143\145\163\060\202\001\042\060\015\006  
\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017  
\000\060\202\001\012\002\202\001\001\000\276\100\235\364\156\341  
\352\166\207\034\115\105\104\216\276\106\310\203\006\235\301\052  
\376\030\037\216\344\002\372\363\253\135\120\212\026\061\013\232  
\006\320\305\160\042\315\111\055\124\143\314\266\156\150\106\013  
\123\352\313\114\044\300\274\162\116\352\361\025\256\364\124\232  
\022\012\303\172\262\063\140\342\332\211\125\363\042\130\363\336  
\334\317\357\203\206\242\214\224\117\237\150\362\230\220\106\204  
\047\307\166\277\343\314\065\054\213\136\007\144\145\202\300\110  
\260\250\221\371\141\237\166\040\120\250\221\307\146\265\353\170  
\142\003\126\360\212\032\023\352\061\243\036\240\231\375\070\366  
\366\047\062\130\157\007\365\153\270\373\024\053\257\267\252\314  
\326\143\137\163\214\332\005\231\250\070\250\313\027\170\066\121  
\254\351\236\364\170\072\215\317\017\331\102\342\230\014\253\057  
\237\016\001\336\357\237\231\111\361\055\337\254\164\115\033\230  
\265\107\305\345\051\321\371\220\030\307\142\234\276\203\307\046  
\173\076\212\045\307\300\335\235\346\065\150\020\040\235\217\330  
\336\322\303\204\234\015\136\350\057\311\002\003\001\000\001\243  
\201\300\060\201\275\060\035\006\003\125\035\016\004\026\004\024  
\240\021\012\043\076\226\361\007\354\342\257\051\357\202\245\177  
\320\060\244\264\060\016\006\003\125\035\017\001\001\377\004\004  
\003\002\001\006\060\017\006\003\125\035\023\001\001\377\004\005  
\060\003\001\001\377\060\173\006\003\125\035\037\004\164\060\162  
\060\070\240\066\240\064\206\062\150\164\164\160\072\057\057\143  
\162\154\056\143\157\155\157\144\157\143\141\056\143\157\155\057  
\101\101\101\103\145\162\164\151\146\151\143\141\164\145\123\145  
\162\166\151\143\145\163\056\143\162\154\060\066\240\064\240\062  
\206\060\150\164\164\160\072\057\057\143\162\154\056\143\157\155  
\157\144\157\056\156\145\164\057\101\101\101\103\145\162\164\151  
\146\151\143\141\164\145\123\145\162\166\151\143\145\163\056\143  
\162\154\060\015\006\011\052\206\110\206\367\015\001\001\005\005  
\000\003\202\001\001\000\010\126\374\002\360\233\350\377\244\372  
\326\173\306\104\200\316\117\304\305\366\000\130\314\246\266\274  
\024\111\150\004\166\350\346\356\135\354\002\017\140\326\215\120  
\030\117\046\116\001\343\346\260\245\356\277\274\164\124\101\277  
\375\374\022\270\307\117\132\364\211\140\005\177\140\267\005\112  
\363\366\361\302\277\304\271\164\206\266\055\175\153\314\322\363  
\106\335\057\306\340\152\303\303\064\003\054\175\226\335\132\302  
\016\247\012\231\301\005\213\253\014\057\363\134\072\317\154\067  
\125\011\207\336\123\100\154\130\357\374\266\253\145\156\004\366

```
\033\334\074\340\132\025\306\236\331\361\131\110\060\041\145\003
\154\354\351\041\163\354\233\003\241\340\067\255\240\025\030\217
\372\272\002\316\247\054\251\020\023\054\324\345\010\046\253\042
\227\140\370\220\136\164\324\242\232\123\275\362\251\150\340\242
\156\302\327\154\261\243\017\236\277\353\150\347\126\362\256\362
\343\053\070\072\011\201\265\153\205\327\276\055\355\077\032\267
\262\143\342\365\142\054\202\324\152\000\101\120\361\071\203\237
\225\351\066\226\230\156
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Trust for "Comodo AAA Services root"
```

```
Issuer: CN=AAA Certificate Services,O=Comodo CA Limited,L=Salford,ST=Greater Manchester,C=GB
```

```
Serial Number: 1 (0x1)
```

```
Subject: CN=AAA Certificate Services,O=Comodo CA Limited,L=Salford,ST=Greater Manchester,C=GB
```

```
Not Valid Before: Thu Jan 01 00:00:00 2004
```

```
Not Valid After : Sun Dec 31 23:59:59 2028
```

```
Fingerprint (SHA-256):
```

```
D7:A7:A0:FB:5D:7E:27:31:D7:71:E9:48:4E:BC:DE:F7:1D:5F:0C:3E:0A:29:48:78:2B:C8:3E:E0:EA:69:9E:F4
```

```
Fingerprint (SHA1): D1:EB:23:A4:6D:17:D6:8F:D9:25:64:C2:F1:F1:60:17:64:D8:E3:49
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "Comodo AAA Services root"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\321\353\043\244\155\027\326\217\331\045\144\302\361\361\140\027
\144\330\343\111
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\111\171\004\260\353\207\031\254\107\260\274\021\121\233\164\320
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\173\061\013\060\011\006\003\125\004\006\023\002\107\102\061
\033\060\031\006\003\125\004\010\014\022\107\162\145\141\164\145
\162\040\115\141\156\143\150\145\163\164\145\162\061\020\060\016
\006\003\125\004\007\014\007\123\141\154\146\157\162\144\061\032
\060\030\006\003\125\004\012\014\021\103\157\155\157\144\157\040
\103\101\040\114\151\155\151\164\145\144\061\041\060\037\006\003
\125\004\003\014\030\101\101\101\040\103\145\162\164\151\146\151
\143\141\164\145\040\123\145\162\166\151\143\145\163
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\001\001
```

END

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "QuoVadis Root CA 2"

#

# Issuer: CN=QuoVadis Root CA 2,O=QuoVadis Limited,C=BM

# Serial Number: 1289 (0x509)

# Subject: CN=QuoVadis Root CA 2,O=QuoVadis Limited,C=BM

# Not Valid Before: Fri Nov 24 18:27:00 2006

# Not Valid After : Mon Nov 24 18:23:33 2031

# Fingerprint (SHA-256):

85:A0:DD:7D:D7:20:AD:B7:FF:05:F8:3D:54:2B:20:9D:C7:FF:45:28:F7:D6:77:B1:83:89:FE:A5:E5:C4:9E:86

# Fingerprint (SHA1): CA:3A:FB:CF:12:40:36:4B:44:B2:16:20:88:80:48:39:19:93:7C:F7

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "QuoVadis Root CA 2"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\105\061\013\060\011\006\003\125\004\006\023\002\102\115\061  
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144  
\151\163\040\114\151\155\151\164\145\144\061\033\060\031\006\003  
\125\004\003\023\022\121\165\157\126\141\144\151\163\040\122\157  
\157\164\040\103\101\040\062

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\105\061\013\060\011\006\003\125\004\006\023\002\102\115\061  
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144  
\151\163\040\114\151\155\151\164\145\144\061\033\060\031\006\003  
\125\004\003\023\022\121\165\157\126\141\144\151\163\040\122\157  
\157\164\040\103\101\040\062

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\002\005\011

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\267\060\202\003\237\240\003\002\001\002\002\002\005  
\011\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000  
\060\105\061\013\060\011\006\003\125\004\006\023\002\102\115\061  
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144  
\151\163\040\114\151\155\151\164\145\144\061\033\060\031\006\003  
\125\004\003\023\022\121\165\157\126\141\144\151\163\040\122\157  
\157\164\040\103\101\040\062\060\036\027\015\060\066\061\061\062  
\064\061\070\062\067\060\060\132\027\015\063\061\061\061\062\064

\061\070\062\063\063\063\132\060\105\061\013\060\011\006\003\125  
\004\006\023\002\102\115\061\031\060\027\006\003\125\004\012\023  
\020\121\165\157\126\141\144\151\163\040\114\151\155\151\164\145  
\144\061\033\060\031\006\003\125\004\003\023\022\121\165\157\126  
\141\144\151\163\040\122\157\157\164\040\103\101\040\062\060\202  
\002\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005  
\000\003\202\002\017\000\060\202\002\012\002\202\002\001\000\232  
\030\312\113\224\015\000\055\257\003\051\212\360\017\201\310\256  
\114\031\205\035\010\237\253\051\104\205\363\057\201\255\062\036  
\220\106\277\243\206\046\032\036\376\176\034\030\072\134\234\140  
\027\052\072\164\203\063\060\175\141\124\021\313\355\253\340\346  
\322\242\176\365\153\157\030\267\012\013\055\375\351\076\357\012  
\306\263\020\351\334\302\106\027\370\135\375\244\332\377\236\111  
\132\234\346\063\346\044\226\367\077\272\133\053\034\172\065\302  
\326\147\376\253\146\120\213\155\050\140\053\357\327\140\303\307  
\223\274\215\066\221\363\177\370\333\021\023\304\234\167\166\301  
\256\267\002\152\201\172\251\105\203\342\005\346\271\126\301\224  
\067\217\110\161\143\042\354\027\145\007\225\212\113\337\217\306  
\132\012\345\260\343\137\136\153\021\253\014\371\205\353\104\351  
\370\004\163\362\351\376\134\230\214\365\163\257\153\264\176\315  
\324\134\002\053\114\071\341\262\225\225\055\102\207\327\325\263  
\220\103\267\154\023\361\336\335\366\304\370\211\077\321\165\365  
\222\303\221\325\212\210\320\220\354\334\155\336\211\302\145\161  
\226\213\015\003\375\234\277\133\026\254\222\333\352\376\171\174  
\255\353\257\367\026\313\333\315\045\053\345\037\373\232\237\342  
\121\314\072\123\014\110\346\016\275\311\264\166\006\122\346\021  
\023\205\162\143\003\004\340\004\066\053\040\031\002\350\164\247  
\037\266\311\126\146\360\165\045\334\147\301\016\141\140\210\263  
\076\321\250\374\243\332\035\260\321\261\043\124\337\104\166\155  
\355\101\330\301\262\042\266\123\034\337\065\035\334\241\167\052  
\061\344\055\365\345\345\333\310\340\377\345\200\327\013\143\240  
\377\063\241\017\272\054\025\025\352\227\263\322\242\265\276\362  
\214\226\036\032\217\035\154\244\141\067\271\206\163\063\327\227  
\226\236\043\175\202\244\114\201\342\241\321\272\147\137\225\007  
\243\047\021\356\026\020\173\274\105\112\114\262\004\322\253\357  
\325\375\014\121\316\120\152\010\061\371\221\332\014\217\144\134  
\003\303\072\213\040\077\156\215\147\075\072\326\376\175\133\210  
\311\136\373\314\141\334\213\063\167\323\104\062\065\011\142\004  
\222\026\020\330\236\047\107\373\073\041\343\370\353\035\133\002  
\003\001\000\001\243\201\260\060\201\255\060\017\006\003\125\035  
\023\001\001\377\004\005\060\003\001\001\377\060\013\006\003\125  
\035\017\004\004\003\002\001\006\060\035\006\003\125\035\016\004  
\026\004\024\032\204\142\274\110\114\063\045\004\324\356\320\366  
\003\304\031\106\321\224\153\060\156\006\003\125\035\043\004\147  
\060\145\200\024\032\204\142\274\110\114\063\045\004\324\356\320  
\366\003\304\031\106\321\224\153\241\111\244\107\060\105\061\013  
\060\011\006\003\125\004\006\023\002\102\115\061\031\060\027\006  
\003\125\004\012\023\020\121\165\157\126\141\144\151\163\040\114

\151\155\151\164\145\144\061\033\060\031\006\003\125\004\003\023  
\022\121\165\157\126\141\144\151\163\040\122\157\157\164\040\103  
\101\040\062\202\002\005\011\060\015\006\011\052\206\110\206\367  
\015\001\001\005\005\000\003\202\002\001\000\076\012\026\115\237  
\006\133\250\256\161\135\057\005\057\147\346\023\105\203\304\066  
\366\363\300\046\014\015\265\107\144\135\370\264\162\311\106\245  
\003\030\047\125\211\170\175\166\352\226\064\200\027\040\334\347  
\203\370\215\374\007\270\332\137\115\056\147\262\204\375\331\104  
\374\167\120\201\346\174\264\311\015\013\162\123\370\166\007\007  
\101\107\226\014\373\340\202\046\223\125\214\376\042\037\140\145  
\174\137\347\046\263\367\062\220\230\120\324\067\161\125\366\222  
\041\170\367\225\171\372\370\055\046\207\146\126\060\167\246\067  
\170\063\122\020\130\256\077\141\216\362\152\261\357\030\176\112  
\131\143\312\215\242\126\325\247\057\274\126\037\317\071\301\342  
\373\012\250\025\054\175\115\172\143\306\154\227\104\074\322\157  
\303\112\027\012\370\220\322\127\242\031\121\245\055\227\101\332  
\007\117\251\120\332\220\215\224\106\341\076\360\224\375\020\000  
\070\365\073\350\100\341\264\156\126\032\040\314\157\130\215\355  
\056\105\217\326\351\223\077\347\261\054\337\072\326\042\214\334  
\204\273\042\157\320\370\344\306\071\351\004\210\074\303\272\353  
\125\172\155\200\231\044\365\154\001\373\370\227\260\224\133\353  
\375\322\157\361\167\150\015\065\144\043\254\270\125\241\003\321  
\115\102\031\334\370\165\131\126\243\371\250\111\171\370\257\016  
\271\021\240\174\267\152\355\064\320\266\046\142\070\032\207\014  
\370\350\375\056\323\220\177\007\221\052\035\326\176\134\205\203  
\231\260\070\010\077\351\136\371\065\007\344\311\142\156\127\177  
\247\120\225\367\272\310\233\346\216\242\001\305\326\146\277\171  
\141\363\074\034\341\271\202\134\135\240\303\351\330\110\275\031  
\242\021\024\031\156\262\206\033\150\076\110\067\032\210\267\135  
\226\136\234\307\357\047\142\010\342\221\031\134\322\361\041\335  
\272\027\102\202\227\161\201\123\061\251\237\366\175\142\277\162  
\341\243\223\035\314\212\046\132\011\070\320\316\327\015\200\026  
\264\170\245\072\207\114\215\212\245\325\106\227\362\054\020\271  
\274\124\042\300\001\120\151\103\236\364\262\357\155\370\354\332  
\361\343\261\357\337\221\217\124\052\013\045\301\046\031\304\122  
\020\005\145\325\202\020\352\302\061\315\056

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "QuoVadis Root CA 2"  
# Issuer: CN=QuoVadis Root CA 2,O=QuoVadis Limited,C=BM  
# Serial Number: 1289 (0x509)  
# Subject: CN=QuoVadis Root CA 2,O=QuoVadis Limited,C=BM  
# Not Valid Before: Fri Nov 24 18:27:00 2006  
# Not Valid After : Mon Nov 24 18:23:33 2031  
# Fingerprint (SHA-256):

```

85:A0:DD:7D:D7:20:AD:B7:FF:05:F8:3D:54:2B:20:9D:C7:FF:45:28:F7:D6:77:B1:83:89:FE:A5:E5:C4:9E:86
Fingerprint (SHA1): CA:3A:FB:CF:12:40:36:4B:44:B2:16:20:88:80:48:39:19:93:7C:F7
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "QuoVadis Root CA 2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\312\072\373\317\022\100\066\113\104\262\026\040\210\200\110\071
\031\223\174\367
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\136\071\173\335\370\272\354\202\351\254\142\272\014\124\000\053
END
CKA_ISSUER MULTILINE_OCTAL
\060\105\061\013\060\011\006\003\125\004\006\023\002\102\115\061
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144
\151\163\040\114\151\155\151\164\145\144\061\033\060\031\006\003
\125\004\003\023\022\121\165\157\126\141\144\151\163\040\122\157
\157\164\040\103\101\040\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\002\005\011
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "QuoVadis Root CA 3"
#
Issuer: CN=QuoVadis Root CA 3,O=QuoVadis Limited,C=BM
Serial Number: 1478 (0x5c6)
Subject: CN=QuoVadis Root CA 3,O=QuoVadis Limited,C=BM
Not Valid Before: Fri Nov 24 19:11:23 2006
Not Valid After : Mon Nov 24 19:06:44 2031
Fingerprint (SHA-256):
18:F1:FC:7F:20:5D:F8:AD:DD:EB:7F:E0:07:DD:57:E3:AF:37:5A:9C:4D:8D:73:54:6B:F4:F1:FE:D1:E1:8D:35
Fingerprint (SHA1): 1F:49:14:F7:D8:74:95:1D:DD:AE:02:C0:BE:FD:3A:2D:82:75:51:85
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "QuoVadis Root CA 3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\105\061\013\060\011\006\003\125\004\006\023\002\102\115\061

```



\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144  
\151\163\040\114\151\155\151\164\145\144\061\033\060\031\006\003  
\125\004\003\023\022\121\165\157\126\141\144\151\163\040\122\157  
\157\164\040\103\101\040\063

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\105\061\013\060\011\006\003\125\004\006\023\002\102\115\061  
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144  
\151\163\040\114\151\155\151\164\145\144\061\033\060\031\006\003  
\125\004\003\023\022\121\165\157\126\141\144\151\163\040\122\157  
\157\164\040\103\101\040\063

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\002\005\306

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\006\235\060\202\004\205\240\003\002\001\002\002\002\005  
\306\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000  
\060\105\061\013\060\011\006\003\125\004\006\023\002\102\115\061  
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144  
\151\163\040\114\151\155\151\164\145\144\061\033\060\031\006\003  
\125\004\003\023\022\121\165\157\126\141\144\151\163\040\122\157  
\157\164\040\103\101\040\063\060\036\027\015\060\066\061\061\062  
\064\061\071\061\061\062\063\132\027\015\063\061\061\061\062\064  
\061\071\060\066\064\064\132\060\105\061\013\060\011\006\003\125  
\004\006\023\002\102\115\061\031\060\027\006\003\125\004\012\023  
\020\121\165\157\126\141\144\151\163\040\114\151\155\151\164\145  
\144\061\033\060\031\006\003\125\004\003\023\022\121\165\157\126  
\141\144\151\163\040\122\157\157\164\040\103\101\040\063\060\202  
\002\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005  
\000\003\202\002\017\000\060\202\002\012\002\202\002\001\000\314  
\127\102\026\124\234\346\230\323\323\115\356\376\355\307\237\103  
\071\112\145\263\350\026\210\064\333\015\131\221\164\317\222\270  
\004\100\255\002\113\061\253\274\215\221\150\330\040\016\032\001  
\342\032\173\116\027\135\342\212\267\077\231\032\315\353\141\253  
\302\145\246\037\267\267\275\267\217\374\375\160\217\013\240\147  
\276\001\242\131\317\161\346\017\051\166\377\261\126\171\105\053  
\037\236\172\124\350\243\051\065\150\244\001\117\017\244\056\067  
\357\033\277\343\217\020\250\162\253\130\127\347\124\206\310\311  
\363\133\332\054\332\135\216\156\074\243\076\332\373\202\345\335  
\362\134\262\005\063\157\212\066\316\320\023\116\377\277\112\014  
\064\114\246\303\041\275\120\004\125\353\261\273\235\373\105\036  
\144\025\336\125\001\214\002\166\265\313\241\077\102\151\274\057  
\275\150\103\026\126\211\052\067\141\221\375\246\256\116\300\313  
\024\145\224\067\113\222\006\357\004\320\310\234\210\333\013\173  
\201\257\261\075\052\304\145\072\170\266\356\334\200\261\322\323  
\231\234\072\356\153\132\153\263\215\267\325\316\234\302\276\245

\113\057\026\261\236\150\073\006\157\256\175\237\370\336\354\314  
\051\247\230\243\045\103\057\357\361\137\046\341\210\115\370\136  
\156\327\331\024\156\031\063\151\247\073\204\211\223\304\123\125  
\023\241\121\170\100\370\270\311\242\356\173\272\122\102\203\236  
\024\355\005\122\132\131\126\247\227\374\235\077\012\051\330\334  
\117\221\016\023\274\336\225\244\337\213\231\276\254\233\063\210  
\357\265\201\257\033\306\042\123\310\366\307\356\227\024\260\305  
\174\170\122\310\360\316\156\167\140\204\246\351\052\166\040\355  
\130\001\027\060\223\351\032\213\340\163\143\331\152\222\224\111  
\116\264\255\112\205\304\243\042\060\374\011\355\150\042\163\246  
\210\014\125\041\130\305\341\072\237\052\335\312\341\220\340\331  
\163\253\154\200\270\350\013\144\223\240\234\214\031\377\263\322  
\014\354\221\046\207\212\263\242\341\160\217\054\012\345\315\155  
\150\121\353\332\077\005\177\213\062\346\023\134\153\376\137\100  
\342\042\310\264\264\144\117\326\272\175\110\076\250\151\014\327  
\273\206\161\311\163\270\077\073\235\045\113\332\377\100\353\002  
\003\001\000\001\243\202\001\225\060\202\001\221\060\017\006\003  
\125\035\023\001\001\377\004\005\060\003\001\001\377\060\201\341  
\006\003\125\035\040\004\201\331\060\201\326\060\201\323\006\011  
\053\006\001\004\001\276\130\000\003\060\201\305\060\201\223\006  
\010\053\006\001\005\005\007\002\002\060\201\206\032\201\203\101  
\156\171\040\165\163\145\040\157\146\040\164\150\151\163\040\103  
\145\162\164\151\146\151\143\141\164\145\040\143\157\156\163\164  
\151\164\165\164\145\163\040\141\143\143\145\160\164\141\156\143  
\145\040\157\146\040\164\150\145\040\121\165\157\126\141\144\151  
\163\040\122\157\157\164\040\103\101\040\063\040\103\145\162\164  
\151\146\151\143\141\164\145\040\120\157\154\151\143\171\040\057  
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\120  
\162\141\143\164\151\143\145\040\123\164\141\164\145\155\145\156  
\164\056\060\055\006\010\053\006\001\005\005\007\002\001\026\041  
\150\164\164\160\072\057\057\167\167\167\056\161\165\157\166\141  
\144\151\163\147\154\157\142\141\154\056\143\157\155\057\143\160  
\163\060\013\006\003\125\035\017\004\004\003\002\001\006\060\035  
\006\003\125\035\016\004\026\004\024\362\300\023\340\202\103\076  
\373\356\057\147\062\226\065\134\333\270\313\002\320\060\156\006  
\003\125\035\043\004\147\060\145\200\024\362\300\023\340\202\103  
\076\373\356\057\147\062\226\065\134\333\270\313\002\320\241\111  
\244\107\060\105\061\013\060\011\006\003\125\004\006\023\002\102  
\115\061\031\060\027\006\003\125\004\012\023\020\121\165\157\126  
\141\144\151\163\040\114\151\155\151\164\145\144\061\033\060\031  
\006\003\125\004\003\023\022\121\165\157\126\141\144\151\163\040  
\122\157\157\164\040\103\101\040\063\202\002\005\306\060\015\006  
\011\052\206\110\206\367\015\001\001\005\005\000\003\202\002\001  
\000\117\255\240\054\114\372\300\362\157\367\146\125\253\043\064  
\356\347\051\332\303\133\266\260\203\331\320\320\342\041\373\363  
\140\247\073\135\140\123\047\242\233\366\010\042\052\347\277\240  
\162\345\234\044\152\061\261\220\172\047\333\204\021\211\047\246  
\167\132\070\327\277\254\206\374\356\135\203\274\006\306\321\167

\153\017\155\044\057\113\172\154\247\007\226\312\343\204\237\255  
\210\213\035\253\026\215\133\146\027\331\026\364\213\200\322\335  
\370\262\166\303\374\070\023\252\014\336\102\151\053\156\363\074  
\353\200\047\333\365\246\104\015\237\132\125\131\013\325\015\122  
\110\305\256\237\362\057\200\305\352\062\120\065\022\227\056\301  
\341\377\361\043\210\121\070\237\362\146\126\166\347\017\121\227  
\245\122\014\115\111\121\225\066\075\277\242\113\014\020\035\206  
\231\114\252\363\162\021\223\344\352\366\233\332\250\135\247\115  
\267\236\002\256\163\000\310\332\043\003\350\371\352\031\164\142  
\000\224\313\042\040\276\224\247\131\265\202\152\276\231\171\172  
\251\362\112\044\122\367\164\375\272\116\346\250\035\002\156\261  
\015\200\104\301\256\323\043\067\137\273\205\174\053\222\056\350  
\176\245\213\335\231\341\277\047\157\055\135\252\173\207\376\012  
\335\113\374\216\365\046\344\156\160\102\156\063\354\061\236\173  
\223\301\344\311\151\032\075\300\153\116\042\155\356\253\130\115  
\306\320\101\301\053\352\117\022\207\136\353\105\330\154\365\230  
\002\323\240\330\125\212\006\231\031\242\240\167\321\060\236\254  
\314\165\356\203\365\260\142\071\317\154\127\342\114\322\221\013  
\016\165\050\033\232\277\375\032\103\361\312\167\373\073\217\141  
\270\151\050\026\102\004\136\160\052\034\041\330\217\341\275\043  
\133\055\164\100\222\331\143\031\015\163\335\151\274\142\107\274  
\340\164\053\262\353\175\276\101\033\265\300\106\305\241\042\313  
\137\116\301\050\222\336\030\272\325\052\050\273\021\213\027\223  
\230\231\140\224\134\043\317\132\047\227\136\013\005\006\223\067  
\036\073\151\066\353\251\236\141\035\217\062\332\216\014\326\164  
\076\173\011\044\332\001\167\107\304\073\315\064\214\231\365\312  
\341\045\141\063\262\131\033\342\156\327\067\127\266\015\251\022  
\332

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "QuoVadis Root CA 3"

# Issuer: CN=QuoVadis Root CA 3,O=QuoVadis Limited,C=BM

# Serial Number: 1478 (0x5c6)

# Subject: CN=QuoVadis Root CA 3,O=QuoVadis Limited,C=BM

# Not Valid Before: Fri Nov 24 19:11:23 2006

# Not Valid After : Mon Nov 24 19:06:44 2031

# Fingerprint (SHA-256):

18:F1:FC:7F:20:5D:F8:AD:DD:EB:7F:E0:07:DD:57:E3:AF:37:5A:9C:4D:8D:73:54:6B:F4:F1:FE:D1:E1:8D:35

# Fingerprint (SHA1): 1F:49:14:F7:D8:74:95:1D:DD:AE:02:C0:BE:FD:3A:2D:82:75:51:85

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "QuoVadis Root CA 3"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```

\037\111\024\367\330\164\225\035\335\256\002\300\276\375\072\055
\202\165\121\205
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\061\205\074\142\224\227\143\271\252\375\211\116\257\157\340\317
END
CKA_ISSUER MULTILINE_OCTAL
\060\105\061\013\060\011\006\003\125\004\006\023\002\102\115\061
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144
\151\163\040\114\151\155\151\164\145\144\061\033\060\031\006\003
\125\004\003\023\022\121\165\157\126\141\144\151\163\040\122\157
\157\164\040\103\101\040\063
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\002\005\306
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "Security Communication Root CA"
#
Issuer: OU=Security Communication RootCA1,O=SECOM Trust.net,C=JP
Serial Number: 0 (0x0)
Subject: OU=Security Communication RootCA1,O=SECOM Trust.net,C=JP
Not Valid Before: Tue Sep 30 04:20:49 2003
Not Valid After : Sat Sep 30 04:20:49 2023
Fingerprint (SHA-256):
E7:5E:72:ED:9F:56:0E:EC:6E:B4:80:00:73:A4:3F:C3:AD:19:19:5A:39:22:82:01:78:95:97:4A:99:02:6B:6C
Fingerprint (SHA1): 36:B1:2B:49:F9:81:9E:D7:4C:9E:BC:38:0F:C6:56:8F:5D:AC:B2:F7
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Security Communication Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\120\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\030\060\026\006\003\125\004\012\023\017\123\105\103\117\115\040
\124\162\165\163\164\056\156\145\164\061\047\060\045\006\003\125
\004\013\023\036\123\145\143\165\162\151\164\171\040\103\157\155
\155\165\156\151\143\141\164\151\157\156\040\122\157\157\164\103
\101\061
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL

```

\060\120\061\013\060\011\006\003\125\004\006\023\002\112\120\061  
\030\060\026\006\003\125\004\012\023\017\123\105\103\117\115\040  
\124\162\165\163\164\056\156\145\164\061\047\060\045\006\003\125  
\004\013\023\036\123\145\143\165\162\151\164\171\040\103\157\155  
\155\165\156\151\143\141\164\151\157\156\040\122\157\157\164\103  
\101\061

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\000

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\132\060\202\002\102\240\003\002\001\002\002\001\000  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060  
\120\061\013\060\011\006\003\125\004\006\023\002\112\120\061\030  
\060\026\006\003\125\004\012\023\017\123\105\103\117\115\040\124  
\162\165\163\164\056\156\145\164\061\047\060\045\006\003\125\004  
\013\023\036\123\145\143\165\162\151\164\171\040\103\157\155\155  
\165\156\151\143\141\164\151\157\156\040\122\157\157\164\103\101  
\061\060\036\027\015\060\063\060\071\063\060\060\064\062\060\064  
\071\132\027\015\062\063\060\071\063\060\060\064\062\060\064\071  
\132\060\120\061\013\060\011\006\003\125\004\006\023\002\112\120  
\061\030\060\026\006\003\125\004\012\023\017\123\105\103\117\115  
\040\124\162\165\163\164\056\156\145\164\061\047\060\045\006\003  
\125\004\013\023\036\123\145\143\165\162\151\164\171\040\103\157  
\155\155\165\156\151\143\141\164\151\157\156\040\122\157\157\164  
\103\101\061\060\202\001\042\060\015\006\011\052\206\110\206\367  
\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002  
\202\001\001\000\263\263\376\177\323\155\261\357\026\174\127\245  
\014\155\166\212\057\113\277\144\373\114\356\212\360\363\051\174  
\365\377\356\052\340\351\351\272\133\144\042\232\232\157\054\072  
\046\151\121\005\231\046\334\325\034\152\161\306\232\175\036\235  
\335\174\154\306\214\147\147\112\076\370\161\260\031\047\251\011  
\014\246\225\277\113\214\014\372\125\230\073\330\350\042\241\113  
\161\070\171\254\227\222\151\263\211\176\352\041\150\006\230\024  
\226\207\322\141\066\274\155\047\126\236\127\356\300\300\126\375  
\062\317\244\331\216\302\043\327\215\250\363\330\045\254\227\344  
\160\070\364\266\072\264\235\073\227\046\103\243\241\274\111\131  
\162\114\043\060\207\001\130\366\116\276\034\150\126\146\257\315  
\101\135\310\263\115\052\125\106\253\037\332\036\342\100\075\333  
\315\175\271\222\200\234\067\335\014\226\144\235\334\042\367\144  
\213\337\141\336\025\224\122\025\240\175\122\311\113\250\041\311  
\306\261\355\313\303\225\140\321\017\360\253\160\370\337\313\115  
\176\354\326\372\253\331\275\177\124\362\245\351\171\372\331\326  
\166\044\050\163\002\003\001\000\001\243\077\060\075\060\035\006  
\003\125\035\016\004\026\004\024\240\163\111\231\150\334\205\133  
\145\343\233\050\057\127\237\275\063\274\007\110\060\013\006\003  
\125\035\017\004\004\003\002\001\006\060\017\006\003\125\035\023  
\001\001\377\004\005\060\003\001\001\377\060\015\006\011\052\206

\110\206\367\015\001\001\005\005\000\003\202\001\001\000\150\100  
\251\250\273\344\117\135\171\263\005\265\027\263\140\023\353\306  
\222\135\340\321\323\152\376\373\276\233\155\277\307\005\155\131  
\040\304\034\360\267\332\204\130\002\143\372\110\026\357\117\245  
\013\367\112\230\362\077\236\033\255\107\153\143\316\010\107\353  
\122\077\170\234\257\115\256\370\325\117\317\232\230\052\020\101  
\071\122\304\335\331\233\016\357\223\001\256\262\056\312\150\102  
\044\102\154\260\263\072\076\315\351\332\110\304\025\313\351\371  
\007\017\222\120\111\212\335\061\227\137\311\351\067\252\073\131  
\145\227\224\062\311\263\237\076\072\142\130\305\111\255\142\016  
\161\245\062\252\057\306\211\166\103\100\023\023\147\075\242\124  
\045\020\313\361\072\362\331\372\333\111\126\273\246\376\247\101  
\065\303\340\210\141\311\210\307\337\066\020\042\230\131\352\260  
\112\373\126\026\163\156\254\115\367\042\241\117\255\035\172\055  
\105\047\345\060\301\136\362\332\023\313\045\102\121\225\107\003  
\214\154\041\314\164\102\355\123\377\063\213\217\017\127\001\026  
\057\317\246\356\311\160\042\024\275\375\276\154\013\003

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Security Communication Root CA"

# Issuer: OU=Security Communication RootCA1,O=SECOM Trust.net,C=JP

# Serial Number: 0 (0x0)

# Subject: OU=Security Communication RootCA1,O=SECOM Trust.net,C=JP

# Not Valid Before: Tue Sep 30 04:20:49 2003

# Not Valid After : Sat Sep 30 04:20:49 2023

# Fingerprint (SHA-256):

E7:5E:72:ED:9F:56:0E:EC:6E:B4:80:00:73:A4:3F:C3:AD:19:19:5A:39:22:82:01:78:95:97:4A:99:02:6B:6C

# Fingerprint (SHA1): 36:B1:2B:49:F9:81:9E:D7:4C:9E:BC:38:0F:C6:56:8F:5D:AC:B2:F7

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Security Communication Root CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\066\261\053\111\371\201\236\327\114\236\274\070\017\306\126\217  
\135\254\262\367

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\361\274\143\152\124\340\265\047\365\315\347\032\343\115\156\112

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\120\061\013\060\011\006\003\125\004\006\023\002\112\120\061  
\030\060\026\006\003\125\004\012\023\017\123\105\103\117\115\040  
\124\162\165\163\164\056\156\145\164\061\047\060\045\006\003\125  
\004\013\023\036\123\145\143\165\162\151\164\171\040\103\157\155

```

\155\165\156\151\143\141\164\151\157\156\040\122\157\157\164\103
\101\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\000
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "Camerfirma Chambers of Commerce Root"
#
Issuer: CN=Chambers of Commerce Root,OU=http://www.chambersign.org,O=AC Camerfirma SA CIF
A82743287,C=EU
Serial Number: 0 (0x0)
Subject: CN=Chambers of Commerce Root,OU=http://www.chambersign.org,O=AC Camerfirma SA CIF
A82743287,C=EU
Not Valid Before: Tue Sep 30 16:13:43 2003
Not Valid After : Wed Sep 30 16:13:44 2037
Fingerprint (SHA-256):
0C:25:8A:12:A5:67:4A:EF:25:F2:8B:A7:DC:FA:EC:EE:A3:48:E5:41:E6:F5:CC:4E:E6:3B:71:B3:61:60:6A:C3
Fingerprint (SHA1): 6E:3A:55:A4:19:0C:19:5C:93:84:3C:C0:DB:72:2E:31:30:61:F0:B1
For Email Distrust After: Mon Mar 01 00:00:00 2021
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Camerfirma Chambers of Commerce Root"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\177\061\013\060\011\006\003\125\004\006\023\002\105\125\061
\047\060\045\006\003\125\004\012\023\036\101\103\040\103\141\155
\145\162\146\151\162\155\141\040\123\101\040\103\111\106\040\101
\070\062\067\064\063\062\070\067\061\043\060\041\006\003\125\004
\013\023\032\150\164\164\160\072\057\057\167\167\167\056\143\150
\141\155\142\145\162\163\151\147\156\056\157\162\147\061\042\060
\040\006\003\125\004\003\023\031\103\150\141\155\142\145\162\163
\040\157\146\040\103\157\155\155\145\162\143\145\040\122\157\157
\164
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\177\061\013\060\011\006\003\125\004\006\023\002\105\125\061
\047\060\045\006\003\125\004\012\023\036\101\103\040\103\141\155
\145\162\146\151\162\155\141\040\123\101\040\103\111\106\040\101
\070\062\067\064\063\062\070\067\061\043\060\041\006\003\125\004

```

\013\023\032\150\164\164\160\072\057\057\167\167\167\056\143\150  
\141\155\142\145\162\163\151\147\156\056\157\162\147\061\042\060  
\040\006\003\125\004\003\023\031\103\150\141\155\142\145\162\163  
\040\157\146\040\103\157\155\155\145\162\143\145\040\122\157\157  
\164

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\000

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\275\060\202\003\245\240\003\002\001\002\002\001\000  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060  
\177\061\013\060\011\006\003\125\004\006\023\002\105\125\061\047  
\060\045\006\003\125\004\012\023\036\101\103\040\103\141\155\145  
\162\146\151\162\155\141\040\123\101\040\103\111\106\040\101\070  
\062\067\064\063\062\070\067\061\043\060\041\006\003\125\004\013  
\023\032\150\164\164\160\072\057\057\167\167\167\056\143\150\141  
\155\142\145\162\163\151\147\156\056\157\162\147\061\042\060\040  
\006\003\125\004\003\023\031\103\150\141\155\142\145\162\163\040  
\157\146\040\103\157\155\155\145\162\143\145\040\122\157\157\164  
\060\036\027\015\060\063\060\071\063\060\061\066\061\063\064\063  
\132\027\015\063\067\060\071\063\060\061\066\061\063\064\064\132  
\060\177\061\013\060\011\006\003\125\004\006\023\002\105\125\061  
\047\060\045\006\003\125\004\012\023\036\101\103\040\103\141\155  
\145\162\146\151\162\155\141\040\123\101\040\103\111\106\040\101  
\070\062\067\064\063\062\070\067\061\043\060\041\006\003\125\004  
\013\023\032\150\164\164\160\072\057\057\167\167\167\056\143\150  
\141\155\142\145\162\163\151\147\156\056\157\162\147\061\042\060  
\040\006\003\125\004\003\023\031\103\150\141\155\142\145\162\163  
\040\157\146\040\103\157\155\155\145\162\143\145\040\122\157\157  
\164\060\202\001\040\060\015\006\011\052\206\110\206\367\015\001  
\001\001\005\000\003\202\001\015\000\060\202\001\010\002\202\001  
\001\000\267\066\125\345\245\135\030\060\340\332\211\124\221\374  
\310\307\122\370\057\120\331\357\261\165\163\145\107\175\033\133  
\272\165\305\374\241\210\044\372\057\355\312\010\112\071\124\304  
\121\172\265\332\140\352\070\074\201\262\313\361\273\331\221\043  
\077\110\001\160\165\251\005\052\255\037\161\363\311\124\075\035  
\006\152\100\076\263\014\205\356\134\033\171\302\142\304\270\066  
\216\065\135\001\014\043\004\107\065\252\233\140\116\240\146\075  
\313\046\012\234\100\241\364\135\230\277\161\253\245\000\150\052  
\355\203\172\017\242\024\265\324\042\263\200\260\074\014\132\121  
\151\055\130\030\217\355\231\236\361\256\342\225\346\366\107\250  
\326\014\017\260\130\130\333\303\146\067\236\233\221\124\063\067  
\322\224\034\152\110\311\311\362\245\332\245\014\043\367\043\016  
\234\062\125\136\161\234\204\005\121\232\055\375\346\116\052\064  
\132\336\312\100\067\147\014\124\041\125\167\332\012\014\314\227  
\256\200\334\224\066\112\364\076\316\066\023\036\123\344\254\116  
\072\005\354\333\256\162\234\070\213\320\071\073\211\012\076\167



\376\165\002\001\003\243\202\001\104\060\202\001\100\060\022\006  
\003\125\035\023\001\001\377\004\010\060\006\001\001\377\002\001  
\014\060\074\006\003\125\035\037\004\065\060\063\060\061\240\057  
\240\055\206\053\150\164\164\160\072\057\057\143\162\154\056\143  
\150\141\155\142\145\162\163\151\147\156\056\157\162\147\057\143  
\150\141\155\142\145\162\163\162\157\157\164\056\143\162\154\060  
\035\006\003\125\035\016\004\026\004\024\343\224\365\261\115\351  
\333\241\051\133\127\213\115\166\006\166\341\321\242\212\060\016  
\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060\021  
\006\011\140\206\110\001\206\370\102\001\001\004\004\003\002\000  
\007\060\047\006\003\125\035\021\004\040\060\036\201\034\143\150  
\141\155\142\145\162\163\162\157\157\164\100\143\150\141\155\142  
\145\162\163\151\147\156\056\157\162\147\060\047\006\003\125\035  
\022\004\040\060\036\201\034\143\150\141\155\142\145\162\163\162  
\157\157\164\100\143\150\141\155\142\145\162\163\151\147\156\056  
\157\162\147\060\130\006\003\125\035\040\004\121\060\117\060\115  
\006\013\053\006\001\004\001\201\207\056\012\003\001\060\076\060  
\074\006\010\053\006\001\005\005\007\002\001\026\060\150\164\164  
\160\072\057\057\143\160\163\056\143\150\141\155\142\145\162\163  
\151\147\156\056\157\162\147\057\143\160\163\057\143\150\141\155  
\142\145\162\163\162\157\157\164\056\150\164\155\154\060\015\006  
\011\052\206\110\206\367\015\001\001\005\005\000\003\202\001\001  
\000\014\101\227\302\032\206\300\042\174\237\373\220\363\032\321  
\003\261\357\023\371\041\137\004\234\332\311\245\215\047\154\226  
\207\221\276\101\220\001\162\223\347\036\175\137\366\211\306\135  
\247\100\011\075\254\111\105\105\334\056\215\060\150\262\011\272  
\373\303\057\314\272\013\337\077\167\173\106\175\072\022\044\216  
\226\217\074\005\012\157\322\224\050\035\155\014\300\056\210\042  
\325\330\317\035\023\307\360\110\327\327\005\247\317\307\107\236  
\073\074\064\310\200\117\324\024\273\374\015\120\367\372\263\354  
\102\137\251\335\155\310\364\165\317\173\301\162\046\261\001\034  
\134\054\375\172\116\264\001\305\005\127\271\347\074\252\005\331  
\210\351\007\106\101\316\357\101\201\256\130\337\203\242\256\312  
\327\167\037\347\000\074\235\157\216\344\062\011\035\115\170\064  
\170\064\074\224\233\046\355\117\161\306\031\172\275\040\042\110  
\132\376\113\175\003\267\347\130\276\306\062\116\164\036\150\335  
\250\150\133\263\076\356\142\175\331\200\350\012\165\172\267\356  
\264\145\232\041\220\340\252\320\230\274\070\265\163\074\213\370  
\334

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER MULTILINE\_OCTAL  
\062\061\060\063\060\061\060\060\060\060\060\060\132

END

# Trust for "Camerfirma Chambers of Commerce Root"

# Issuer: CN=Chambers of Commerce Root,OU=http://www.chambersign.org,O=AC Camerfirma SA CIF

```

A82743287,C=EU
Serial Number: 0 (0x0)
Subject: CN=Chambers of Commerce Root,OU=http://www.chambersign.org,O=AC Camerfirma SA CIF
A82743287,C=EU
Not Valid Before: Tue Sep 30 16:13:43 2003
Not Valid After : Wed Sep 30 16:13:44 2037
Fingerprint (SHA-256):
0C:25:8A:12:A5:67:4A:EF:25:F2:8B:A7:DC:FA:EC:EE:A3:48:E5:41:E6:F5:CC:4E:E6:3B:71:B3:61:60:6A:C3
Fingerprint (SHA1): 6E:3A:55:A4:19:0C:19:5C:93:84:3C:C0:DB:72:2E:31:30:61:F0:B1
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Camerfirma Chambers of Commerce Root"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\156\072\125\244\031\014\031\134\223\204\074\300\333\162\056\061
\060\141\360\261
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\260\001\356\024\331\257\051\030\224\166\216\361\151\063\052\204
END
CKA_ISSUER MULTILINE_OCTAL
\060\177\061\013\060\011\006\003\125\004\006\023\002\105\125\061
\047\060\045\006\003\125\004\012\023\036\101\103\040\103\141\155
\145\162\146\151\162\155\141\040\123\101\040\103\111\106\040\101
\070\062\067\064\063\062\070\067\061\043\060\041\006\003\125\004
\013\023\032\150\164\164\160\072\057\057\167\167\167\056\143\150
\141\155\142\145\162\163\151\147\156\056\157\162\147\061\042\060
\040\006\003\125\004\003\023\031\103\150\141\155\142\145\162\163
\040\157\146\040\103\157\155\155\145\162\143\145\040\122\157\157
\164
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\000
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "Camerfirma Global Chambersign Root"
#
Issuer: CN=Global Chambersign Root,OU=http://www.chambersign.org,O=AC Camerfirma SA CIF
A82743287,C=EU
Serial Number: 0 (0x0)
Subject: CN=Global Chambersign Root,OU=http://www.chambersign.org,O=AC Camerfirma SA CIF
A82743287,C=EU

```

```
Not Valid Before: Tue Sep 30 16:14:18 2003
Not Valid After : Wed Sep 30 16:14:18 2037
Fingerprint (SHA-256):
EF:3C:B4:17:FC:8E:BF:6F:97:87:6C:9E:4E:CE:39:DE:1E:A5:FE:64:91:41:D1:02:8B:7D:11:C0:B2:29:8C:ED
Fingerprint (SHA1): 33:9B:6B:14:50:24:9B:55:7A:01:87:72:84:D9:E0:2F:C3:D2:D8:E9
For Email Distrust After: Mon Mar 01 00:00:00 2021
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Camerfirma Global Chambersign Root"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\175\061\013\060\011\006\003\125\004\006\023\002\105\125\061
\047\060\045\006\003\125\004\012\023\036\101\103\040\103\141\155
\145\162\146\151\162\155\141\040\123\101\040\103\111\106\040\101
\070\062\067\064\063\062\070\067\061\043\060\041\006\003\125\004
\013\023\032\150\164\164\160\072\057\057\167\167\167\056\143\150
\141\155\142\145\162\163\151\147\156\056\157\162\147\061\040\060
\036\006\003\125\004\003\023\027\107\154\157\142\141\154\040\103
\150\141\155\142\145\162\163\151\147\156\040\122\157\157\164
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\175\061\013\060\011\006\003\125\004\006\023\002\105\125\061
\047\060\045\006\003\125\004\012\023\036\101\103\040\103\141\155
\145\162\146\151\162\155\141\040\123\101\040\103\111\106\040\101
\070\062\067\064\063\062\070\067\061\043\060\041\006\003\125\004
\013\023\032\150\164\164\160\072\057\057\167\167\167\056\143\150
\141\155\142\145\162\163\151\147\156\056\157\162\147\061\040\060
\036\006\003\125\004\003\023\027\107\154\157\142\141\154\040\103
\150\141\155\142\145\162\163\151\147\156\040\122\157\157\164
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\000
END
CKA_VALUE MULTILINE_OCTAL
\060\202\004\305\060\202\003\255\240\003\002\001\002\002\001\000
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\175\061\013\060\011\006\003\125\004\006\023\002\105\125\061\047
\060\045\006\003\125\004\012\023\036\101\103\040\103\141\155\145
\162\146\151\162\155\141\040\123\101\040\103\111\106\040\101\070
\062\067\064\063\062\070\067\061\043\060\041\006\003\125\004\013
\023\032\150\164\164\160\072\057\057\167\167\167\056\143\150\141
\155\142\145\162\163\151\147\156\056\157\162\147\061\040\060\036
\006\003\125\004\003\023\027\107\154\157\142\141\154\040\103\150
\141\155\142\145\162\163\151\147\156\040\122\157\157\164\060\036
\027\015\060\063\060\071\063\060\061\066\061\064\061\070\132\027
```

\015\063\067\060\071\063\060\061\066\061\064\061\070\132\060\175  
\061\013\060\011\006\003\125\004\006\023\002\105\125\061\047\060  
\045\006\003\125\004\012\023\036\101\103\040\103\141\155\145\162  
\146\151\162\155\141\040\123\101\040\103\111\106\040\101\070\062  
\067\064\063\062\070\067\061\043\060\041\006\003\125\004\013\023  
\032\150\164\164\160\072\057\057\167\167\167\056\143\150\141\155  
\142\145\162\163\151\147\156\056\157\162\147\061\040\060\036\006  
\003\125\004\003\023\027\107\154\157\142\141\154\040\103\150\141  
\155\142\145\162\163\151\147\156\040\122\157\157\164\060\202\001  
\040\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000  
\003\202\001\015\000\060\202\001\010\002\202\001\001\000\242\160  
\242\320\237\102\256\133\027\307\330\175\317\024\203\374\117\311  
\241\267\023\257\212\327\236\076\004\012\222\213\140\126\372\264  
\062\057\210\115\241\140\010\364\267\011\116\240\111\057\111\326  
\323\337\235\227\132\237\224\004\160\354\077\131\331\267\314\146  
\213\230\122\050\011\002\337\305\057\204\215\172\227\167\277\354  
\100\235\045\162\253\265\077\062\230\373\267\267\374\162\204\345  
\065\207\371\125\372\243\037\016\157\056\050\335\151\240\331\102  
\020\306\370\265\104\302\320\103\177\333\274\344\242\074\152\125  
\170\012\167\251\330\352\031\062\267\057\376\134\077\033\356\261  
\230\354\312\255\172\151\105\343\226\017\125\366\346\355\165\352  
\145\350\062\126\223\106\211\250\045\212\145\006\356\153\277\171  
\007\320\361\267\257\355\054\115\222\273\300\250\137\247\147\175  
\004\362\025\010\160\254\222\326\175\004\322\063\373\114\266\013  
\013\373\032\311\304\215\003\251\176\134\362\120\253\022\245\241  
\317\110\120\245\357\322\310\032\023\372\260\177\261\202\034\167  
\152\017\137\334\013\225\217\357\103\176\346\105\011\045\002\001  
\003\243\202\001\120\060\202\001\114\060\022\006\003\125\035\023  
\001\001\377\004\010\060\006\001\001\377\002\001\014\060\077\006  
\003\125\035\037\004\070\060\066\060\064\240\062\240\060\206\056  
\150\164\164\160\072\057\057\143\162\154\056\143\150\141\155\142  
\145\162\163\151\147\156\056\157\162\147\057\143\150\141\155\142  
\145\162\163\151\147\156\162\157\157\164\056\143\162\154\060\035  
\006\003\125\035\016\004\026\004\024\103\234\066\237\260\236\060  
\115\306\316\137\255\020\253\345\003\245\372\251\024\060\016\006  
\003\125\035\017\001\001\377\004\004\003\002\001\006\060\021\006  
\011\140\206\110\001\206\370\102\001\001\004\004\003\002\000\007  
\060\052\006\003\125\035\021\004\043\060\041\201\037\143\150\141  
\155\142\145\162\163\151\147\156\162\157\157\164\100\143\150\141  
\155\142\145\162\163\151\147\156\056\157\162\147\060\052\006\003  
\125\035\022\004\043\060\041\201\037\143\150\141\155\142\145\162  
\163\151\147\156\162\157\157\164\100\143\150\141\155\142\145\162  
\163\151\147\156\056\157\162\147\060\133\006\003\125\035\040\004  
\124\060\122\060\120\006\013\053\006\001\004\001\201\207\056\012  
\001\001\060\101\060\077\006\010\053\006\001\005\005\007\002\001  
\026\063\150\164\164\160\072\057\057\143\160\163\056\143\150\141  
\155\142\145\162\163\151\147\156\056\157\162\147\057\143\160\163  
\057\143\150\141\155\142\145\162\163\151\147\156\162\157\157\164

```
\056\150\164\155\154\060\015\006\011\052\206\110\206\367\015\001
\001\005\005\000\003\202\001\001\000\074\073\160\221\371\004\124
\047\221\341\355\355\376\150\177\141\135\345\101\145\117\062\361
\030\005\224\152\034\336\037\160\333\076\173\062\002\064\265\014
\154\241\212\174\245\364\217\377\324\330\255\027\325\055\004\321
\077\130\200\342\201\131\210\276\300\343\106\223\044\376\220\275
\046\242\060\055\350\227\046\127\065\211\164\226\030\366\025\342
\257\044\031\126\002\002\262\272\017\024\352\306\212\146\301\206
\105\125\213\276\222\276\234\244\004\307\111\074\236\350\051\172
\211\327\376\257\377\150\365\245\027\220\275\254\231\314\245\206
\127\011\147\106\333\326\026\302\106\361\344\251\120\365\217\321
\222\025\323\137\076\306\000\111\072\156\130\262\321\321\047\015
\045\310\062\370\040\021\315\175\062\063\110\224\124\114\335\334
\171\304\060\237\353\216\270\125\265\327\210\134\305\152\044\075
\262\323\005\003\121\306\007\357\314\024\162\164\075\156\162\316
\030\050\214\112\240\167\345\011\053\105\104\107\254\267\147\177
\001\212\005\132\223\276\241\301\377\370\347\016\147\244\107\111
\166\135\165\220\032\365\046\217\360
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRUST_AFTER MULTILINE_OCTAL
\062\061\060\063\060\061\060\060\060\060\060\060\132
END
```

# Trust for "Camerfirma Global Chambersign Root"

# Issuer: CN=Global Chambersign Root,OU=http://www.chambersign.org,O=AC Camerfirma SA CIF  
A82743287,C=EU

# Serial Number: 0 (0x0)

# Subject: CN=Global Chambersign Root,OU=http://www.chambersign.org,O=AC Camerfirma SA CIF  
A82743287,C=EU

# Not Valid Before: Tue Sep 30 16:14:18 2003

# Not Valid After : Wed Sep 30 16:14:18 2037

# Fingerprint (SHA-256):

EF:3C:B4:17:FC:8E:BF:6F:97:87:6C:9E:4E:CE:39:DE:1E:A5:FE:64:91:41:D1:02:8B:7D:11:C0:B2:29:8C:ED

# Fingerprint (SHA1): 33:9B:6B:14:50:24:9B:55:7A:01:87:72:84:D9:E0:2F:C3:D2:D8:E9

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Camerfirma Global Chambersign Root"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\063\233\153\024\120\044\233\125\172\001\207\162\204\331\340\057
\303\322\330\351
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\305\346\173\277\006\320\117\103\355\304\172\145\212\373\153\031
END
```

```
CKA_ISSUER MULTILINE_OCTAL
\060\175\061\013\060\011\006\003\125\004\006\023\002\105\125\061
\047\060\045\006\003\125\004\012\023\036\101\103\040\103\141\155
\145\162\146\151\162\155\141\040\123\101\040\103\111\106\040\101
\070\062\067\064\063\062\070\067\061\043\060\041\006\003\125\004
\013\023\032\150\164\164\160\072\057\057\167\167\167\056\143\150
\141\155\142\145\162\163\151\147\156\056\157\162\147\061\040\060
\036\006\003\125\004\003\023\027\107\154\157\142\141\154\040\103
\150\141\155\142\145\162\163\151\147\156\040\122\157\157\164
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\001\000
```

END

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

#

```
Certificate "XRamp Global CA Root"
```

#

```
Issuer: CN=XRamp Global Certification Authority,O=XRamp Security Services
Inc,OU=www.xrampsecurity.com,C=US
```

```
Serial Number:50:94:6c:ec:18:ea:d5:9c:4d:d5:97:ef:75:8f:a0:ad
```

```
Subject: CN=XRamp Global Certification Authority,O=XRamp Security Services
Inc,OU=www.xrampsecurity.com,C=US
```

```
Not Valid Before: Mon Nov 01 17:14:04 2004
```

```
Not Valid After : Mon Jan 01 05:37:19 2035
```

```
Fingerprint (SHA-256):
```

```
CE:CD:DC:90:50:99:D8:DA:DF:C5:B1:D2:09:B7:37:CB:E2:C1:8C:FB:2C:10:C0:FF:0B:CF:0D:32:86:FC:1A:A2
```

```
Fingerprint (SHA1): B8:01:86:D1:EB:9C:86:A5:41:04:CF:30:54:F3:4C:52:B7:E5:58:C6
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "XRamp Global CA Root"
```

```
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
```

```
CKA_SUBJECT MULTILINE_OCTAL
```

```
\060\201\202\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\036\060\034\006\003\125\004\013\023\025\167\167\167\056\170
\162\141\155\160\163\145\143\165\162\151\164\171\056\143\157\155
\061\044\060\042\006\003\125\004\012\023\033\130\122\141\155\160
\040\123\145\143\165\162\151\164\171\040\123\145\162\166\151\143
\145\163\040\111\156\143\061\055\060\053\006\003\125\004\003\023
\044\130\122\141\155\160\040\107\154\157\142\141\154\040\103\145
\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150
\157\162\151\164\171
```

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\202\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\036\060\034\006\003\125\004\013\023\025\167\167\167\056\170  
\162\141\155\160\163\145\143\165\162\151\164\171\056\143\157\155  
\061\044\060\042\006\003\125\004\012\023\033\130\122\141\155\160  
\040\123\145\143\165\162\151\164\171\040\123\145\162\166\151\143  
\145\163\040\111\156\143\061\055\060\053\006\003\125\004\003\023  
\044\130\122\141\155\160\040\107\154\157\142\141\154\040\103\145  
\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150  
\157\162\151\164\171

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\120\224\154\354\030\352\325\234\115\325\227\357\165\217  
\240\255

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\060\060\202\003\030\240\003\002\001\002\002\020\120  
\224\154\354\030\352\325\234\115\325\227\357\165\217\240\255\060  
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\201  
\202\061\013\060\011\006\003\125\004\006\023\002\125\123\061\036  
\060\034\006\003\125\004\013\023\025\167\167\167\056\170\162\141  
\155\160\163\145\143\165\162\151\164\171\056\143\157\155\061\044  
\060\042\006\003\125\004\012\023\033\130\122\141\155\160\040\123  
\145\143\165\162\151\164\171\040\123\145\162\166\151\143\145\163  
\040\111\156\143\061\055\060\053\006\003\125\004\003\023\044\130  
\122\141\155\160\040\107\154\157\142\141\154\040\103\145\162\164  
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162  
\151\164\171\060\036\027\015\060\064\061\061\060\061\061\067\061  
\064\060\064\132\027\015\063\065\060\061\060\061\060\065\063\067  
\061\071\132\060\201\202\061\013\060\011\006\003\125\004\006\023  
\002\125\123\061\036\060\034\006\003\125\004\013\023\025\167\167  
\167\056\170\162\141\155\160\163\145\143\165\162\151\164\171\056  
\143\157\155\061\044\060\042\006\003\125\004\012\023\033\130\122  
\141\155\160\040\123\145\143\165\162\151\164\171\040\123\145\162  
\166\151\143\145\163\040\111\156\143\061\055\060\053\006\003\125  
\004\003\023\044\130\122\141\155\160\040\107\154\157\142\141\154  
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101  
\165\164\150\157\162\151\164\171\060\202\001\042\060\015\006\011  
\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017\000  
\060\202\001\012\002\202\001\001\000\230\044\036\275\025\264\272  
\337\307\214\245\047\266\070\013\151\363\266\116\250\054\056\041  
\035\134\104\337\041\135\176\043\164\376\136\176\264\112\267\246  
\255\037\256\340\006\026\342\233\133\331\147\164\153\135\200\217  
\051\235\206\033\331\234\015\230\155\166\020\050\130\344\145\260  
\177\112\230\171\237\340\303\061\176\200\053\265\214\300\100\073  
\021\206\320\313\242\206\066\140\244\325\060\202\155\331\156\320  
\017\022\004\063\227\137\117\141\132\360\344\371\221\253\347\035

\073\274\350\317\364\153\055\064\174\342\110\141\034\216\363\141  
\104\314\157\240\112\251\224\260\115\332\347\251\064\172\162\070  
\250\101\314\074\224\021\175\353\310\246\214\267\206\313\312\063  
\073\331\075\067\213\373\172\076\206\054\347\163\327\012\127\254  
\144\233\031\353\364\017\004\010\212\254\003\027\031\144\364\132  
\045\042\215\064\054\262\366\150\035\022\155\323\212\036\024\332  
\304\217\246\342\043\205\325\172\015\275\152\340\351\354\354\027  
\273\102\033\147\252\045\355\105\203\041\374\301\311\174\325\142  
\076\372\362\305\055\323\375\324\145\002\003\001\000\001\243\201  
\237\060\201\234\060\023\006\011\053\006\001\004\001\202\067\024  
\002\004\006\036\004\000\103\000\101\060\013\006\003\125\035\017  
\004\004\003\002\001\206\060\017\006\003\125\035\023\001\001\377  
\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026  
\004\024\306\117\242\075\006\143\204\011\234\316\142\344\004\254  
\215\134\265\351\266\033\060\066\006\003\125\035\037\004\057\060  
\055\060\053\240\051\240\047\206\045\150\164\164\160\072\057\057  
\143\162\154\056\170\162\141\155\160\163\145\143\165\162\151\164  
\171\056\143\157\155\057\130\107\103\101\056\143\162\154\060\020  
\006\011\053\006\001\004\001\202\067\025\001\004\003\002\001\001  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003  
\202\001\001\000\221\025\071\003\001\033\147\373\112\034\371\012  
\140\133\241\332\115\227\142\371\044\123\047\327\202\144\116\220  
\056\303\111\033\053\232\334\374\250\170\147\065\361\035\360\021  
\275\267\110\343\020\366\015\337\077\322\311\266\252\125\244\110  
\272\002\333\336\131\056\025\133\073\235\026\175\107\327\067\352  
\137\115\166\022\066\273\037\327\241\201\004\106\040\243\054\155  
\251\236\001\176\077\051\316\000\223\337\375\311\222\163\211\211  
\144\236\347\053\344\034\221\054\322\271\316\175\316\157\061\231  
\323\346\276\322\036\220\360\011\024\171\134\043\253\115\322\332  
\041\037\115\231\171\235\341\317\047\237\020\233\034\210\015\260  
\212\144\101\061\270\016\154\220\044\244\233\134\161\217\272\273  
\176\034\033\333\152\200\017\041\274\351\333\246\267\100\364\262  
\213\251\261\344\357\232\032\320\075\151\231\356\250\050\243\341  
\074\263\360\262\021\234\317\174\100\346\335\347\103\175\242\330  
\072\265\251\215\362\064\231\304\324\020\341\006\375\011\204\020  
\073\356\304\114\364\354\047\174\102\302\164\174\202\212\011\311  
\264\003\045\274

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "XRamp Global CA Root"  
# Issuer: CN=XRamp Global Certification Authority,O=XRamp Security Services  
Inc,OU=www.xrampsecurity.com,C=US  
# Serial Number:50:94:6c:ec:18:ea:d5:9c:4d:d5:97:ef:75:8f:a0:ad  
# Subject: CN=XRamp Global Certification Authority,O=XRamp Security Services  
Inc,OU=www.xrampsecurity.com,C=US



```
Not Valid Before: Mon Nov 01 17:14:04 2004
Not Valid After : Mon Jan 01 05:37:19 2035
Fingerprint (SHA-256):
CE:CD:DC:90:50:99:D8:DA:DF:C5:B1:D2:09:B7:37:CB:E2:C1:8C:FB:2C:10:C0:FF:0B:CF:0D:32:86:FC:1A:A2
Fingerprint (SHA1): B8:01:86:D1:EB:9C:86:A5:41:04:CF:30:54:F3:4C:52:B7:E5:58:C6
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "XRamp Global CA Root"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\270\001\206\321\353\234\206\245\101\004\317\060\124\363\114\122
\267\345\130\306
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\241\013\104\263\312\020\330\000\156\235\017\330\017\222\012\321
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\202\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\036\060\034\006\003\125\004\013\023\025\167\167\167\056\170
\162\141\155\160\163\145\143\165\162\151\164\171\056\143\157\155
\061\044\060\042\006\003\125\004\012\023\033\130\122\141\155\160
\040\123\145\143\165\162\151\164\171\040\123\145\162\166\151\143
\145\163\040\111\156\143\061\055\060\053\006\003\125\004\003\023
\044\130\122\141\155\160\040\107\154\157\142\141\154\040\103\145
\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150
\157\162\151\164\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\120\224\154\354\030\352\325\234\115\325\227\357\165\217
\240\255
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "Go Daddy Class 2 CA"
#
Issuer: OU=Go Daddy Class 2 Certification Authority,O="The Go Daddy Group, Inc.",C=US
Serial Number: 0 (0x0)
Subject: OU=Go Daddy Class 2 Certification Authority,O="The Go Daddy Group, Inc.",C=US
Not Valid Before: Tue Jun 29 17:06:20 2004
Not Valid After : Thu Jun 29 17:06:20 2034
Fingerprint (SHA-256):
C3:84:6B:F2:4B:9E:93:CA:64:27:4C:0E:C6:7C:1E:CC:5E:02:4F:FC:AC:D2:D7:40:19:35:0E:81:FE:54:6A:E4
Fingerprint (SHA1): 27:96:BA:E6:3F:18:01:E2:77:26:1B:A0:D7:77:70:02:8F:20:EE:E4
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Go Daddy Class 2 CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\143\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\041\060\037\006\003\125\004\012\023\030\124\150\145\040\107\157
\040\104\141\144\144\171\040\107\162\157\165\160\054\040\111\156
\143\056\061\061\060\057\006\003\125\004\013\023\050\107\157\040
\104\141\144\144\171\040\103\154\141\163\163\040\062\040\103\145
\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150
\157\162\151\164\171
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\143\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\041\060\037\006\003\125\004\012\023\030\124\150\145\040\107\157
\040\104\141\144\144\171\040\107\162\157\165\160\054\040\111\156
\143\056\061\061\060\057\006\003\125\004\013\023\050\107\157\040
\104\141\144\144\171\040\103\154\141\163\163\040\062\040\103\145
\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150
\157\162\151\164\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\000
END
CKA_VALUE MULTILINE_OCTAL
\060\202\004\000\060\202\002\350\240\003\002\001\002\002\001\000
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\143\061\013\060\011\006\003\125\004\006\023\002\125\123\061\041
\060\037\006\003\125\004\012\023\030\124\150\145\040\107\157\040
\104\141\144\144\171\040\107\162\157\165\160\054\040\111\156\143
\056\061\061\060\057\006\003\125\004\013\023\050\107\157\040\104
\141\144\144\171\040\103\154\141\163\163\040\062\040\103\145\162
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157
\162\151\164\171\060\036\027\015\060\064\060\066\062\071\061\067
\060\066\062\060\132\027\015\063\064\060\066\062\071\061\067\060
\066\062\060\132\060\143\061\013\060\011\006\003\125\004\006\023
\002\125\123\061\041\060\037\006\003\125\004\012\023\030\124\150
\145\040\107\157\040\104\141\144\144\171\040\107\162\157\165\160
\054\040\111\156\143\056\061\061\060\057\006\003\125\004\013\023
\050\107\157\040\104\141\144\144\171\040\103\154\141\163\163\040
\062\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040
\101\165\164\150\157\162\151\164\171\060\202\001\040\060\015\006
\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001\015
\000\060\202\001\010\002\202\001\001\000\336\235\327\352\127\030
```

\111\241\133\353\327\137\110\206\352\276\335\377\344\357\147\034  
\364\145\150\263\127\161\240\136\167\273\355\233\111\351\160\200  
\075\126\030\143\010\157\332\362\314\320\077\177\002\124\042\124  
\020\330\262\201\324\300\165\075\113\177\307\167\303\076\170\253  
\032\003\265\040\153\057\152\053\261\305\210\176\304\273\036\260  
\301\330\105\047\157\252\067\130\367\207\046\327\330\055\366\251  
\027\267\037\162\066\116\246\027\077\145\230\222\333\052\156\135  
\242\376\210\340\013\336\177\345\215\025\341\353\313\072\325\342  
\022\242\023\055\330\216\257\137\022\075\240\010\005\010\266\134  
\245\145\070\004\105\231\036\243\140\140\164\305\101\245\162\142  
\033\142\305\037\157\137\032\102\276\002\121\145\250\256\043\030  
\152\374\170\003\251\115\177\200\303\372\253\132\374\241\100\244  
\312\031\026\376\262\310\357\136\163\015\356\167\275\232\366\171  
\230\274\261\007\147\242\025\015\335\240\130\306\104\173\012\076  
\142\050\137\272\101\007\123\130\317\021\176\070\164\305\370\377  
\265\151\220\217\204\164\352\227\033\257\002\001\003\243\201\300  
\060\201\275\060\035\006\003\125\035\016\004\026\004\024\322\304  
\260\322\221\324\114\021\161\263\141\313\075\241\376\335\250\152  
\324\343\060\201\215\006\003\125\035\043\004\201\205\060\201\202  
\200\024\322\304\260\322\221\324\114\021\161\263\141\313\075\241  
\376\335\250\152\324\343\241\147\244\145\060\143\061\013\060\011  
\006\003\125\004\006\023\002\125\123\061\041\060\037\006\003\125  
\004\012\023\030\124\150\145\040\107\157\040\104\141\144\144\171  
\040\107\162\157\165\160\054\040\111\156\143\056\061\061\060\057  
\006\003\125\004\013\023\050\107\157\040\104\141\144\144\171\040  
\103\154\141\163\163\040\062\040\103\145\162\164\151\146\151\143  
\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171\202  
\001\000\060\014\006\003\125\035\023\004\005\060\003\001\001\377  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003  
\202\001\001\000\062\113\363\262\312\076\221\374\022\306\241\007  
\214\216\167\240\063\006\024\134\220\036\030\367\010\246\075\012  
\031\371\207\200\021\156\151\344\226\027\060\377\064\221\143\162  
\070\356\314\034\001\243\035\224\050\244\061\366\172\304\124\327  
\366\345\061\130\003\242\314\316\142\333\224\105\163\265\277\105  
\311\044\265\325\202\002\255\043\171\151\215\270\266\115\316\317  
\114\312\063\043\350\034\210\252\235\213\101\156\026\311\040\345  
\211\236\315\073\332\160\367\176\231\046\040\024\124\045\253\156  
\163\205\346\233\041\235\012\154\202\016\250\370\302\014\372\020  
\036\154\226\357\207\015\304\017\141\213\255\356\203\053\225\370  
\216\222\204\162\071\353\040\352\203\355\203\315\227\156\010\274  
\353\116\046\266\163\053\344\323\366\114\376\046\161\342\141\021  
\164\112\377\127\032\207\017\165\110\056\317\121\151\027\240\002  
\022\141\225\325\321\100\262\020\114\356\304\254\020\103\246\245  
\236\012\325\225\142\232\015\317\210\202\305\062\014\344\053\237  
\105\346\015\237\050\234\261\271\052\132\127\255\067\017\257\035  
\177\333\275\237

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Go Daddy Class 2 CA"

# Issuer: OU=Go Daddy Class 2 Certification Authority,O="The Go Daddy Group, Inc.",C=US

# Serial Number: 0 (0x0)

# Subject: OU=Go Daddy Class 2 Certification Authority,O="The Go Daddy Group, Inc.",C=US

# Not Valid Before: Tue Jun 29 17:06:20 2004

# Not Valid After : Thu Jun 29 17:06:20 2034

# Fingerprint (SHA-256):

C3:84:6B:F2:4B:9E:93:CA:64:27:4C:0E:C6:7C:1E:CC:5E:02:4F:FC:AC:D2:D7:40:19:35:0E:81:FE:54:6A:E4

# Fingerprint (SHA1): 27:96:BA:E6:3F:18:01:E2:77:26:1B:A0:D7:77:70:02:8F:20:EE:E4

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Go Daddy Class 2 CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\047\226\272\346\077\030\001\342\167\046\033\240\327\167\160\002

\217\040\356\344

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\221\336\006\045\253\332\375\062\027\014\273\045\027\052\204\147

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\143\061\013\060\011\006\003\125\004\006\023\002\125\123\061

\041\060\037\006\003\125\004\012\023\030\124\150\145\040\107\157

\040\104\141\144\144\171\040\107\162\157\165\160\054\040\111\156

\143\056\061\061\060\057\006\003\125\004\013\023\050\107\157\040

\104\141\144\144\171\040\103\154\141\163\163\040\062\040\103\145

\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150

\157\162\151\164\171

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\000

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "Starfield Class 2 CA"

#

# Issuer: OU=Starfield Class 2 Certification Authority,O="Starfield Technologies, Inc.",C=US

# Serial Number: 0 (0x0)

# Subject: OU=Starfield Class 2 Certification Authority,O="Starfield Technologies, Inc.",C=US

# Not Valid Before: Tue Jun 29 17:39:16 2004

# Not Valid After : Thu Jun 29 17:39:16 2034

# Fingerprint (SHA-256):

14:65:FA:20:53:97:B8:76:FA:A6:F0:A9:95:8E:55:90:E4:0F:CC:7F:AA:4F:B7:C2:C8:67:75:21:FB:5F:B6:58

# Fingerprint (SHA1): AD:7E:1C:28:B0:64:EF:8F:60:03:40:20:14:C3:D0:E3:37:0E:B5:8A

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Starfield Class 2 CA"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\150\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\045\060\043\006\003\125\004\012\023\034\123\164\141\162\146\151  
\145\154\144\040\124\145\143\150\156\157\154\157\147\151\145\163  
\054\040\111\156\143\056\061\062\060\060\006\003\125\004\013\023  
\051\123\164\141\162\146\151\145\154\144\040\103\154\141\163\163  
\040\062\040\103\145\162\164\151\146\151\143\141\164\151\157\156  
\040\101\165\164\150\157\162\151\164\171

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\150\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\045\060\043\006\003\125\004\012\023\034\123\164\141\162\146\151  
\145\154\144\040\124\145\143\150\156\157\154\157\147\151\145\163  
\054\040\111\156\143\056\061\062\060\060\006\003\125\004\013\023  
\051\123\164\141\162\146\151\145\154\144\040\103\154\141\163\163  
\040\062\040\103\145\162\164\151\146\151\143\141\164\151\157\156  
\040\101\165\164\150\157\162\151\164\171

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\000

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\017\060\202\002\367\240\003\002\001\002\002\001\000  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060  
\150\061\013\060\011\006\003\125\004\006\023\002\125\123\061\045  
\060\043\006\003\125\004\012\023\034\123\164\141\162\146\151\145  
\154\144\040\124\145\143\150\156\157\154\157\147\151\145\163\054  
\040\111\156\143\056\061\062\060\060\006\003\125\004\013\023\051  
\123\164\141\162\146\151\145\154\144\040\103\154\141\163\163\040  
\062\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040  
\101\165\164\150\157\162\151\164\171\060\036\027\015\060\064\060  
\066\062\071\061\067\063\071\061\066\132\027\015\063\064\060\066  
\062\071\061\067\063\071\061\066\132\060\150\061\013\060\011\006  
\003\125\004\006\023\002\125\123\061\045\060\043\006\003\125\004  
\012\023\034\123\164\141\162\146\151\145\154\144\040\124\145\143  
\150\156\157\154\157\147\151\145\163\054\040\111\156\143\056\061  
\062\060\060\006\003\125\004\013\023\051\123\164\141\162\146\151

\145\154\144\040\103\154\141\163\163\040\062\040\103\145\162\164  
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162  
\151\164\171\060\202\001\040\060\015\006\011\052\206\110\206\367  
\015\001\001\001\005\000\003\202\001\015\000\060\202\001\010\002  
\202\001\001\000\267\062\310\376\351\161\246\004\205\255\014\021  
\144\337\316\115\357\310\003\030\207\077\241\253\373\074\246\237  
\360\303\241\332\324\330\156\053\123\220\373\044\244\076\204\360  
\236\350\137\354\345\047\104\365\050\246\077\173\336\340\052\360  
\310\257\123\057\236\312\005\001\223\036\217\146\034\071\247\115  
\372\132\266\163\004\045\146\353\167\177\347\131\306\112\231\045  
\024\124\353\046\307\363\177\031\325\060\160\217\257\260\106\052  
\377\255\353\051\355\327\237\252\004\207\243\324\371\211\245\064  
\137\333\103\221\202\066\331\146\074\261\270\271\202\375\234\072  
\076\020\310\073\357\006\145\146\172\233\031\030\075\377\161\121  
\074\060\056\137\276\075\167\163\262\135\006\154\303\043\126\232  
\053\205\046\222\034\247\002\263\344\077\015\257\010\171\202\270  
\066\075\352\234\323\065\263\274\151\312\365\314\235\350\375\144  
\215\027\200\063\156\136\112\135\231\311\036\207\264\235\032\300  
\325\156\023\065\043\136\337\233\137\075\357\326\367\166\302\352  
\076\273\170\015\034\102\147\153\004\330\370\326\332\157\213\362  
\104\240\001\253\002\001\003\243\201\305\060\201\302\060\035\006  
\003\125\035\016\004\026\004\024\277\137\267\321\316\335\037\206  
\364\133\125\254\334\327\020\302\016\251\210\347\060\201\222\006  
\003\125\035\043\004\201\212\060\201\207\200\024\277\137\267\321  
\316\335\037\206\364\133\125\254\334\327\020\302\016\251\210\347  
\241\154\244\152\060\150\061\013\060\011\006\003\125\004\006\023  
\002\125\123\061\045\060\043\006\003\125\004\012\023\034\123\164  
\141\162\146\151\145\154\144\040\124\145\143\150\156\157\154\157  
\147\151\145\163\054\040\111\156\143\056\061\062\060\060\006\003  
\125\004\013\023\051\123\164\141\162\146\151\145\154\144\040\103  
\154\141\163\163\040\062\040\103\145\162\164\151\146\151\143\141  
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\202\001  
\000\060\014\006\003\125\035\023\004\005\060\003\001\001\377\060  
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003\202  
\001\001\000\005\235\077\210\235\321\311\032\125\241\254\151\363  
\363\131\332\233\001\207\032\117\127\251\241\171\011\052\333\367  
\057\262\036\314\307\136\152\330\203\207\241\227\357\111\065\076  
\167\006\101\130\142\277\216\130\270\012\147\077\354\263\335\041  
\146\037\311\124\372\162\314\075\114\100\330\201\257\167\236\203  
\172\273\242\307\365\064\027\216\331\021\100\364\374\054\052\115  
\025\177\247\142\135\056\045\323\000\013\040\032\035\150\371\027  
\270\364\275\213\355\050\131\335\115\026\213\027\203\310\262\145  
\307\055\172\245\252\274\123\206\155\335\127\244\312\370\040\101  
\013\150\360\364\373\164\276\126\135\172\171\365\371\035\205\343  
\055\225\276\365\161\220\103\314\215\037\232\000\012\207\051\351  
\125\042\130\000\043\352\343\022\103\051\133\107\010\335\214\101  
\152\145\006\250\345\041\252\101\264\225\041\225\271\175\321\064  
\253\023\326\255\274\334\342\075\071\315\275\076\165\160\241\030

```
\131\003\311\042\264\217\234\325\136\052\327\245\266\324\012\155
\370\267\100\021\106\232\037\171\016\142\277\017\227\354\340\057
\037\027\224
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

# Trust for "Starfield Class 2 CA"

# Issuer: OU=Starfield Class 2 Certification Authority,O="Starfield Technologies, Inc.",C=US

# Serial Number: 0 (0x0)

# Subject: OU=Starfield Class 2 Certification Authority,O="Starfield Technologies, Inc.",C=US

# Not Valid Before: Tue Jun 29 17:39:16 2004

# Not Valid After : Thu Jun 29 17:39:16 2034

# Fingerprint (SHA-256):

14:65:FA:20:53:97:B8:76:FA:A6:F0:A9:95:8E:55:90:E4:0F:CC:7F:AA:4F:B7:C2:C8:67:75:21:FB:5F:B6:58

# Fingerprint (SHA1): AD:7E:1C:28:B0:64:EF:8F:60:03:40:20:14:C3:D0:E3:37:0E:B5:8A

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "Starfield Class 2 CA"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\255\176\034\050\260\144\357\217\140\003\100\040\024\303\320\343
\067\016\265\212
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\062\112\113\273\310\143\151\233\276\164\232\306\335\035\106\044
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\150\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\045\060\043\006\003\125\004\012\023\034\123\164\141\162\146\151
\145\154\144\040\124\145\143\150\156\157\154\157\147\151\145\163
\054\040\111\156\143\056\061\062\060\060\006\003\125\004\013\023
\051\123\164\141\162\146\151\145\154\144\040\103\154\141\163\163
\040\062\040\103\145\162\164\151\146\151\143\141\164\151\157\156
\040\101\165\164\150\157\162\151\164\171
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\001\000
```

END

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

```
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

```
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

```
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

#

# Certificate "DigiCert Assured ID Root CA"

```
#
Issuer: CN=DigiCert Assured ID Root CA,OU=www.digicert.com,O=DigiCert Inc,C=US
Serial Number:0c:e7:e0:e5:17:d8:46:fe:8f:e5:60:fc:1b:f0:30:39
Subject: CN=DigiCert Assured ID Root CA,OU=www.digicert.com,O=DigiCert Inc,C=US
Not Valid Before: Fri Nov 10 00:00:00 2006
Not Valid After : Mon Nov 10 00:00:00 2031
Fingerprint (SHA-256):
3E:90:99:B5:01:5E:8F:48:6C:00:BC:EA:9D:11:1E:E7:21:FA:BA:35:5A:89:BC:F1:DF:69:56:1E:3D:C6:32:5C
Fingerprint (SHA1): 05:63:B8:63:0D:62:D7:5A:BB:C8:AB:1E:4B:DF:B5:A8:99:B2:4D:43
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "DigiCert Assured ID Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\145\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\044\060\042\006\003\125\004\003\023\033\104\151\147\151
\103\145\162\164\040\101\163\163\165\162\145\144\040\111\104\040
\122\157\157\164\040\103\101
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\145\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\044\060\042\006\003\125\004\003\023\033\104\151\147\151
\103\145\162\164\040\101\163\163\165\162\145\144\040\111\104\040
\122\157\157\164\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\014\347\340\345\027\330\106\376\217\345\140\374\033\360
\060\071
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\267\060\202\002\237\240\003\002\001\002\002\020\014
\347\340\345\027\330\106\376\217\345\140\374\033\360\060\071\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\145
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\025\060
\023\006\003\125\004\012\023\014\104\151\147\151\103\145\162\164
\040\111\156\143\061\031\060\027\006\003\125\004\013\023\020\167
\167\167\056\144\151\147\151\143\145\162\164\056\143\157\155\061
\044\060\042\006\003\125\004\003\023\033\104\151\147\151\103\145
\162\164\040\101\163\163\165\162\145\144\040\111\104\040\122\157
```



\157\164\040\103\101\060\036\027\015\060\066\061\061\061\060\060  
\060\060\060\060\060\060\132\027\015\063\061\061\061\061\060\060\060  
\060\060\060\060\132\060\145\061\013\060\011\006\003\125\004\006  
\023\002\125\123\061\025\060\023\006\003\125\004\012\023\014\104  
\151\147\151\103\145\162\164\040\111\156\143\061\031\060\027\006  
\003\125\004\013\023\020\167\167\167\056\144\151\147\151\143\145  
\162\164\056\143\157\155\061\044\060\042\006\003\125\004\003\023  
\033\104\151\147\151\103\145\162\164\040\101\163\163\165\162\145  
\144\040\111\104\040\122\157\157\164\040\103\101\060\202\001\042  
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003  
\202\001\017\000\060\202\001\012\002\202\001\001\000\255\016\025  
\316\344\103\200\134\261\207\363\267\140\371\161\022\245\256\334  
\046\224\210\252\364\316\365\040\071\050\130\140\014\370\200\332  
\251\025\225\062\141\074\265\261\050\204\212\212\334\237\012\014  
\203\027\172\217\220\254\212\347\171\123\134\061\204\052\366\017  
\230\062\066\166\314\336\335\074\250\242\357\152\373\041\362\122  
\141\337\237\040\327\037\342\261\331\376\030\144\322\022\133\137  
\371\130\030\065\274\107\315\241\066\371\153\177\324\260\070\076  
\301\033\303\214\063\331\330\057\030\376\050\017\263\247\203\326  
\303\156\104\300\141\065\226\026\376\131\234\213\166\155\327\361  
\242\113\015\053\377\013\162\332\236\140\320\216\220\065\306\170  
\125\207\040\241\317\345\155\012\310\111\174\061\230\063\154\042  
\351\207\320\062\132\242\272\023\202\021\355\071\027\235\231\072  
\162\241\346\372\244\331\325\027\061\165\256\205\175\042\256\077  
\001\106\206\366\050\171\310\261\332\344\127\027\304\176\034\016  
\260\264\222\246\126\263\275\262\227\355\252\247\360\267\305\250  
\077\225\026\320\377\241\226\353\010\137\030\167\117\002\003\001  
\000\001\243\143\060\141\060\016\006\003\125\035\017\001\001\377  
\004\004\003\002\001\206\060\017\006\003\125\035\023\001\001\377  
\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026  
\004\024\105\353\242\257\364\222\313\202\061\055\121\213\247\247  
\041\235\363\155\310\017\060\037\006\003\125\035\043\004\030\060  
\026\200\024\105\353\242\257\364\222\313\202\061\055\121\213\247  
\247\041\235\363\155\310\017\060\015\006\011\052\206\110\206\367  
\015\001\001\005\005\000\003\202\001\001\000\242\016\274\337\342  
\355\360\343\162\163\172\144\224\277\367\162\146\330\062\344\102  
\165\142\256\207\353\362\325\331\336\126\263\237\314\316\024\050  
\271\015\227\140\134\022\114\130\344\323\075\203\111\105\130\227  
\065\151\032\250\107\352\126\306\171\253\022\330\147\201\204\337  
\177\011\074\224\346\270\046\054\040\275\075\263\050\211\367\137  
\377\042\342\227\204\037\351\145\357\207\340\337\301\147\111\263  
\135\353\262\011\052\353\046\355\170\276\175\077\053\363\267\046  
\065\155\137\211\001\266\111\133\237\001\005\233\253\075\045\301  
\314\266\177\302\361\157\206\306\372\144\150\353\201\055\224\353  
\102\267\372\214\036\335\142\361\276\120\147\267\154\275\363\361  
\037\153\014\066\007\026\177\067\174\251\133\155\172\361\022\106  
\140\203\327\047\004\276\113\316\227\276\303\147\052\150\021\337  
\200\347\014\063\146\277\023\015\024\156\363\177\037\143\020\036

\372\215\033\045\155\154\217\245\267\141\001\261\322\243\046\241  
\020\161\235\255\342\303\371\303\231\121\267\053\007\010\316\056  
\346\120\262\247\372\012\105\057\242\360\362

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "DigiCert Assured ID Root CA"

# Issuer: CN=DigiCert Assured ID Root CA,OU=www.digicert.com,O=DigiCert Inc,C=US

# Serial Number:0c:e7:e0:e5:17:d8:46:fe:8f:e5:60:fc:1b:f0:30:39

# Subject: CN=DigiCert Assured ID Root CA,OU=www.digicert.com,O=DigiCert Inc,C=US

# Not Valid Before: Fri Nov 10 00:00:00 2006

# Not Valid After : Mon Nov 10 00:00:00 2031

# Fingerprint (SHA-256):

3E:90:99:B5:01:5E:8F:48:6C:00:BC:EA:9D:11:1E:E7:21:FA:BA:35:5A:89:BC:F1:DF:69:56:1E:3D:C6:32:5C

# Fingerprint (SHA1): 05:63:B8:63:0D:62:D7:5A:BB:C8:AB:1E:4B:DF:B5:A8:99:B2:4D:43

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "DigiCert Assured ID Root CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\005\143\270\143\015\142\327\132\273\310\253\036\113\337\265\250  
\231\262\115\103

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\207\316\013\173\052\016\111\000\341\130\161\233\067\250\223\162

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\145\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145  
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023  
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157  
\155\061\044\060\042\006\003\125\004\003\023\033\104\151\147\151  
\103\145\162\164\040\101\163\163\165\162\145\144\040\111\104\040  
\122\157\157\164\040\103\101

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\014\347\340\345\027\330\106\376\217\345\140\374\033\360  
\060\071

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

```

Certificate "DigiCert Global Root CA"
#
Issuer: CN=DigiCert Global Root CA,OU=www.digicert.com,O=DigiCert Inc,C=US
Serial Number:08:3b:e0:56:90:42:46:b1:a1:75:6a:c9:59:91:c7:4a
Subject: CN=DigiCert Global Root CA,OU=www.digicert.com,O=DigiCert Inc,C=US
Not Valid Before: Fri Nov 10 00:00:00 2006
Not Valid After : Mon Nov 10 00:00:00 2031
Fingerprint (SHA-256):
43:48:A0:E9:44:4C:78:CB:26:5E:05:8D:5E:89:44:B4:D8:4F:96:62:BD:26:DB:25:7F:89:34:A4:43:C7:01:61
Fingerprint (SHA1): A8:98:5D:3A:65:E5:E5:C4:B2:D7:D6:6D:40:C6:DD:2F:B1:9C:54:36
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "DigiCert Global Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\141\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\040\060\036\006\003\125\004\003\023\027\104\151\147\151
\103\145\162\164\040\107\154\157\142\141\154\040\122\157\157\164
\040\103\101
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\141\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\040\060\036\006\003\125\004\003\023\027\104\151\147\151
\103\145\162\164\040\107\154\157\142\141\154\040\122\157\157\164
\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\010\073\340\126\220\102\106\261\241\165\152\311\131\221
\307\112
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\257\060\202\002\227\240\003\002\001\002\002\020\010
\073\340\126\220\102\106\261\241\165\152\311\131\221\307\112\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\141
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\025\060
\023\006\003\125\004\012\023\014\104\151\147\151\103\145\162\164
\040\111\156\143\061\031\060\027\006\003\125\004\013\023\020\167
\167\167\056\144\151\147\151\143\145\162\164\056\143\157\155\061
\040\060\036\006\003\125\004\003\023\027\104\151\147\151\103\145

```

\162\164\040\107\154\157\142\141\154\040\122\157\157\164\040\103  
\101\060\036\027\015\060\066\061\061\061\060\060\060\060\060\060  
\060\132\027\015\063\061\061\061\061\060\060\060\060\060\060  
\132\060\141\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103  
\145\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013  
\023\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143  
\157\155\061\040\060\036\006\003\125\004\003\023\027\104\151\147  
\151\103\145\162\164\040\107\154\157\142\141\154\040\122\157\157  
\164\040\103\101\060\202\001\042\060\015\006\011\052\206\110\206  
\367\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012  
\002\202\001\001\000\342\073\341\021\162\336\250\244\323\243\127  
\252\120\242\217\013\167\220\311\242\245\356\022\316\226\133\001  
\011\040\314\001\223\247\116\060\267\123\367\103\304\151\000\127  
\235\342\215\042\335\207\006\100\000\201\011\316\316\033\203\277  
\337\315\073\161\106\342\326\146\307\005\263\166\047\026\217\173  
\236\036\225\175\356\267\110\243\010\332\326\257\172\014\071\006  
\145\177\112\135\037\274\027\370\253\276\356\050\327\164\177\172  
\170\231\131\205\150\156\134\043\062\113\277\116\300\350\132\155  
\343\160\277\167\020\277\374\001\366\205\331\250\104\020\130\062  
\251\165\030\325\321\242\276\107\342\047\152\364\232\063\370\111  
\010\140\213\324\137\264\072\204\277\241\252\112\114\175\076\317  
\117\137\154\166\136\240\113\067\221\236\334\042\346\155\316\024  
\032\216\152\313\376\315\263\024\144\027\307\133\051\236\062\277  
\362\356\372\323\013\102\324\253\267\101\062\332\014\324\357\370  
\201\325\273\215\130\077\265\033\350\111\050\242\160\332\061\004  
\335\367\262\026\362\114\012\116\007\250\355\112\075\136\265\177  
\243\220\303\257\047\002\003\001\000\001\243\143\060\141\060\016  
\006\003\125\035\017\001\001\377\004\004\003\002\001\206\060\017  
\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060  
\035\006\003\125\035\016\004\026\004\024\003\336\120\065\126\321  
\114\273\146\360\243\342\033\033\303\227\262\075\321\125\060\037  
\006\003\125\035\043\004\030\060\026\200\024\003\336\120\065\126  
\321\114\273\146\360\243\342\033\033\303\227\262\075\321\125\060  
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003\202  
\001\001\000\313\234\067\252\110\023\022\012\372\335\104\234\117  
\122\260\364\337\256\004\365\171\171\010\243\044\030\374\113\053  
\204\300\055\271\325\307\376\364\301\037\130\313\270\155\234\172  
\164\347\230\051\253\021\265\343\160\240\241\315\114\210\231\223  
\214\221\160\342\253\017\034\276\223\251\377\143\325\344\007\140  
\323\243\277\235\133\011\361\325\216\343\123\364\216\143\372\077  
\247\333\264\146\337\142\146\326\321\156\101\215\362\055\265\352  
\167\112\237\235\130\342\053\131\300\100\043\355\055\050\202\105  
\076\171\124\222\046\230\340\200\110\250\067\357\360\326\171\140  
\026\336\254\350\016\315\156\254\104\027\070\057\111\332\341\105  
\076\052\271\066\123\317\072\120\006\367\056\350\304\127\111\154  
\141\041\030\325\004\255\170\074\054\072\200\153\247\353\257\025  
\024\351\330\211\301\271\070\154\342\221\154\212\377\144\271\167

```
\045\127\060\300\033\044\243\341\334\351\337\107\174\265\264\044
\010\005\060\354\055\275\013\277\105\277\120\271\251\363\353\230
\001\022\255\310\210\306\230\064\137\215\012\074\306\351\325\225
\225\155\336
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Trust for "DigiCert Global Root CA"
```

```
Issuer: CN=DigiCert Global Root CA,OU=www.digicert.com,O=DigiCert Inc,C=US
```

```
Serial Number:08:3b:e0:56:90:42:46:b1:a1:75:6a:c9:59:91:c7:4a
```

```
Subject: CN=DigiCert Global Root CA,OU=www.digicert.com,O=DigiCert Inc,C=US
```

```
Not Valid Before: Fri Nov 10 00:00:00 2006
```

```
Not Valid After : Mon Nov 10 00:00:00 2031
```

```
Fingerprint (SHA-256):
```

```
43:48:A0:E9:44:4C:78:CB:26:5E:05:8D:5E:89:44:B4:D8:4F:96:62:BD:26:DB:25:7F:89:34:A4:43:C7:01:61
```

```
Fingerprint (SHA1): A8:98:5D:3A:65:E5:E5:C4:B2:D7:D6:6D:40:C6:DD:2F:B1:9C:54:36
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "DigiCert Global Root CA"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\250\230\135\072\145\345\345\304\262\327\326\155\100\306\335\057
\261\234\124\066
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\171\344\251\204\015\175\072\226\327\300\117\342\103\114\211\056
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\141\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\040\060\036\006\003\125\004\003\023\027\104\151\147\151
\103\145\162\164\040\107\154\157\142\141\154\040\122\157\157\164
\040\103\101
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\020\010\073\340\126\220\102\106\261\241\165\152\311\131\221
\307\112
```

END

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

```
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

```
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

```
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```

#
Certificate "DigiCert High Assurance EV Root CA"
#
Issuer: CN=DigiCert High Assurance EV Root CA,OU=www.digicert.com,O=DigiCert Inc,C=US
Serial Number:02:ac:5c:26:6a:0b:40:9b:8f:0b:79:f2:ae:46:25:77
Subject: CN=DigiCert High Assurance EV Root CA,OU=www.digicert.com,O=DigiCert Inc,C=US
Not Valid Before: Fri Nov 10 00:00:00 2006
Not Valid After : Mon Nov 10 00:00:00 2031
Fingerprint (SHA-256):
74:31:E5:F4:C3:C1:CE:46:90:77:4F:0B:61:E0:54:40:88:3B:A9:A0:1E:D0:0B:A6:AB:D7:80:6E:D3:B1:18:CF
Fingerprint (SHA1): 5F:B7:EE:06:33:E2:59:DB:AD:0C:4C:9A:E6:D3:8F:1A:61:C7:DC:25
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "DigiCert High Assurance EV Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\154\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\053\060\051\006\003\125\004\003\023\042\104\151\147\151
\103\145\162\164\040\110\151\147\150\040\101\163\163\165\162\141
\156\143\145\040\105\126\040\122\157\157\164\040\103\101
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\154\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\053\060\051\006\003\125\004\003\023\042\104\151\147\151
\103\145\162\164\040\110\151\147\150\040\101\163\163\165\162\141
\156\143\145\040\105\126\040\122\157\157\164\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\002\254\134\046\152\013\100\233\217\013\171\362\256\106
\045\167
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\305\060\202\002\255\240\003\002\001\002\002\020\002
\254\134\046\152\013\100\233\217\013\171\362\256\106\045\167\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\154
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\025\060
\023\006\003\125\004\012\023\014\104\151\147\151\103\145\162\164
\040\111\156\143\061\031\060\027\006\003\125\004\013\023\020\167
\167\167\056\144\151\147\151\143\145\162\164\056\143\157\155\061

```

\053\060\051\006\003\125\004\003\023\042\104\151\147\151\103\145  
\162\164\040\110\151\147\150\040\101\163\163\165\162\141\156\143  
\145\040\105\126\040\122\157\157\164\040\103\101\060\036\027\015  
\060\066\061\061\061\060\060\060\060\060\060\060\132\027\015\063  
\061\061\061\061\060\060\060\060\060\060\060\132\060\154\061\013  
\060\011\006\003\125\004\006\023\002\125\123\061\025\060\023\006  
\003\125\004\012\023\014\104\151\147\151\103\145\162\164\040\111  
\156\143\061\031\060\027\006\003\125\004\013\023\020\167\167\167  
\056\144\151\147\151\143\145\162\164\056\143\157\155\061\053\060  
\051\006\003\125\004\003\023\042\104\151\147\151\103\145\162\164  
\040\110\151\147\150\040\101\163\163\165\162\141\156\143\145\040  
\105\126\040\122\157\157\164\040\103\101\060\202\001\042\060\015  
\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001  
\017\000\060\202\001\012\002\202\001\001\000\306\314\345\163\346  
\373\324\273\345\055\055\062\246\337\345\201\077\311\315\045\111  
\266\161\052\303\325\224\064\147\242\012\034\260\137\151\246\100  
\261\304\267\262\217\320\230\244\251\101\131\072\323\334\224\326  
\074\333\164\070\244\112\314\115\045\202\367\112\245\123\022\070  
\356\363\111\155\161\221\176\143\266\253\246\137\303\244\204\370  
\117\142\121\276\370\305\354\333\070\222\343\006\345\010\221\014  
\304\050\101\125\373\313\132\211\025\176\161\350\065\277\115\162  
\011\075\276\072\070\120\133\167\061\033\215\263\307\044\105\232  
\247\254\155\000\024\132\004\267\272\023\353\121\012\230\101\101  
\042\116\145\141\207\201\101\120\246\171\134\211\336\031\112\127  
\325\056\346\135\034\123\054\176\230\315\032\006\026\244\150\163  
\320\064\004\023\134\241\161\323\132\174\125\333\136\144\341\067  
\207\060\126\004\345\021\264\051\200\022\361\171\071\210\242\002  
\021\174\047\146\267\210\267\170\362\312\012\250\070\253\012\144  
\302\277\146\135\225\204\301\241\045\036\207\135\032\120\013\040  
\022\314\101\273\156\013\121\070\270\113\313\002\003\001\000\001  
\243\143\060\141\060\016\006\003\125\035\017\001\001\377\004\004  
\003\002\001\206\060\017\006\003\125\035\023\001\001\377\004\005  
\060\003\001\001\377\060\035\006\003\125\035\016\004\026\004\024  
\261\076\303\151\003\370\277\107\001\324\230\046\032\010\002\357  
\143\144\053\303\060\037\006\003\125\035\043\004\030\060\026\200  
\024\261\076\303\151\003\370\277\107\001\324\230\046\032\010\002  
\357\143\144\053\303\060\015\006\011\052\206\110\206\367\015\001  
\001\005\005\000\003\202\001\001\000\034\032\006\227\334\327\234  
\237\074\210\146\006\010\127\041\333\041\107\370\052\147\252\277  
\030\062\166\100\020\127\301\212\363\172\331\021\145\216\065\372  
\236\374\105\265\236\331\114\061\113\270\221\350\103\054\216\263  
\170\316\333\343\123\171\161\326\345\041\224\001\332\125\207\232  
\044\144\366\212\146\314\336\234\067\315\250\064\261\151\233\043  
\310\236\170\042\053\160\103\343\125\107\061\141\031\357\130\305  
\205\057\116\060\366\240\061\026\043\310\347\342\145\026\063\313  
\277\032\033\240\075\370\312\136\213\061\213\140\010\211\055\014  
\006\134\122\267\304\371\012\230\321\025\137\237\022\276\174\066  
\143\070\275\104\244\177\344\046\053\012\304\227\151\015\351\214

```
\342\300\020\127\270\310\166\022\221\125\362\110\151\330\274\052
\002\133\017\104\324\040\061\333\364\272\160\046\135\220\140\236
\274\113\027\011\057\264\313\036\103\150\311\007\047\301\322\134
\367\352\041\271\150\022\234\074\234\277\236\374\200\134\233\143
\315\354\107\252\045\047\147\240\067\363\000\202\175\124\327\251
\370\351\056\023\243\167\350\037\112
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Trust for "DigiCert High Assurance EV Root CA"
```

```
Issuer: CN=DigiCert High Assurance EV Root CA,OU=www.digicert.com,O=DigiCert Inc,C=US
```

```
Serial Number:02:ac:5c:26:6a:0b:40:9b:8f:0b:79:f2:ae:46:25:77
```

```
Subject: CN=DigiCert High Assurance EV Root CA,OU=www.digicert.com,O=DigiCert Inc,C=US
```

```
Not Valid Before: Fri Nov 10 00:00:00 2006
```

```
Not Valid After : Mon Nov 10 00:00:00 2031
```

```
Fingerprint (SHA-256):
```

```
74:31:E5:F4:C3:C1:CE:46:90:77:4F:0B:61:E0:54:40:88:3B:A9:A0:1E:D0:0B:A6:AB:D7:80:6E:D3:B1:18:CF
```

```
Fingerprint (SHA1): 5F:B7:EE:06:33:E2:59:DB:AD:0C:4C:9A:E6:D3:8F:1A:61:C7:DC:25
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "DigiCert High Assurance EV Root CA"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\137\267\356\006\063\342\131\333\255\014\114\232\346\323\217\032
\141\307\334\045
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\324\164\336\127\134\071\262\323\234\205\203\305\300\145\111\212
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\154\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\053\060\051\006\003\125\004\003\023\042\104\151\147\151
\103\145\162\164\040\110\151\147\150\040\101\163\163\165\162\141
\156\143\145\040\105\126\040\122\157\157\164\040\103\101
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\020\002\254\134\046\152\013\100\233\217\013\171\362\256\106
\045\167
```

END

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

```
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

```
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```



CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "SwissSign Platinum CA - G2"

#

# Issuer: CN=SwissSign Platinum CA - G2,O=SwissSign AG,C=CH

# Serial Number:4e:b2:00:67:0c:03:5d:4f

# Subject: CN=SwissSign Platinum CA - G2,O=SwissSign AG,C=CH

# Not Valid Before: Wed Oct 25 08:36:00 2006

# Not Valid After : Sat Oct 25 08:36:00 2036

# Fingerprint (SHA-256):

3B:22:2E:56:67:11:E9:92:30:0D:C0:B1:5A:B9:47:3D:AF:DE:F8:C8:4D:0C:EF:7D:33:17:B4:C1:82:1D:14:36

# Fingerprint (SHA1): 56:E0:FA:C0:3B:8F:18:23:55:18:E5:D3:11:CA:E8:C2:43:31:AB:66

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "SwissSign Platinum CA - G2"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\111\061\013\060\011\006\003\125\004\006\023\002\103\110\061  
\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123  
\151\147\156\040\101\107\061\043\060\041\006\003\125\004\003\023  
\032\123\167\151\163\163\123\151\147\156\040\120\154\141\164\151  
\156\165\155\040\103\101\040\055\040\107\062

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\111\061\013\060\011\006\003\125\004\006\023\002\103\110\061  
\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123  
\151\147\156\040\101\107\061\043\060\041\006\003\125\004\003\023  
\032\123\167\151\163\163\123\151\147\156\040\120\154\141\164\151  
\156\165\155\040\103\101\040\055\040\107\062

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\010\116\262\000\147\014\003\135\117

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\301\060\202\003\251\240\003\002\001\002\002\010\116  
\262\000\147\014\003\135\117\060\015\006\011\052\206\110\206\367  
\015\001\001\005\005\000\060\111\061\013\060\011\006\003\125\004  
\006\023\002\103\110\061\025\060\023\006\003\125\004\012\023\014  
\123\167\151\163\163\123\151\147\156\040\101\107\061\043\060\041  
\006\003\125\004\003\023\032\123\167\151\163\163\123\151\147\156  
\040\120\154\141\164\151\156\165\155\040\103\101\040\055\040\107  
\062\060\036\027\015\060\066\061\060\062\065\060\070\063\066\060  
\060\132\027\015\063\066\061\060\062\065\060\070\063\066\060\060  
\132\060\111\061\013\060\011\006\003\125\004\006\023\002\103\110

\061\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163  
\123\151\147\156\040\101\107\061\043\060\041\006\003\125\004\003  
\023\032\123\167\151\163\163\123\151\147\156\040\120\154\141\164  
\151\156\165\155\040\103\101\040\055\040\107\062\060\202\002\042  
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003  
\202\002\017\000\060\202\002\012\002\202\002\001\000\312\337\242  
\002\342\332\370\374\007\026\261\336\140\252\336\226\134\144\037  
\307\057\176\317\147\372\104\102\326\166\143\225\256\353\257\162  
\040\212\105\107\206\142\170\206\326\040\071\046\364\256\243\375  
\043\347\245\234\265\042\041\031\267\067\223\042\300\120\234\202  
\173\324\325\004\104\134\313\264\302\237\222\276\044\330\173\147  
\042\342\151\137\345\005\170\324\207\331\161\160\063\045\123\264  
\207\073\051\220\050\066\232\125\104\060\150\244\203\227\177\015  
\036\234\166\377\025\235\140\227\000\215\212\205\003\354\200\276  
\352\054\156\020\121\222\314\176\325\243\063\330\326\111\336\130  
\052\257\366\026\353\113\173\220\062\227\271\272\235\130\361\370  
\127\111\004\036\242\135\006\160\335\161\333\371\335\213\232\033  
\214\317\075\243\115\316\313\174\366\273\234\240\372\011\316\043  
\142\262\351\015\037\342\162\050\217\237\254\150\040\175\157\073  
\250\205\061\011\177\013\307\350\145\351\343\170\016\011\147\060  
\213\064\202\373\135\340\314\235\201\155\142\356\010\036\004\054  
\116\233\354\376\251\117\137\375\151\170\357\011\037\241\264\277  
\372\363\357\220\036\114\005\213\036\352\172\221\172\303\327\345  
\373\060\274\154\033\020\130\230\367\032\137\320\051\062\003\023  
\106\115\141\152\205\114\122\164\057\006\037\173\021\342\204\227  
\306\231\363\155\177\327\147\203\176\023\150\330\161\050\132\330  
\316\335\350\020\024\232\376\155\043\207\156\216\132\160\074\325  
\215\011\000\247\252\274\260\061\067\155\310\204\024\036\133\275  
\105\143\040\153\113\164\214\275\333\072\016\301\317\132\026\217  
\245\230\362\166\211\262\023\022\073\013\167\167\254\273\345\074  
\051\112\222\162\312\141\032\053\136\114\342\203\164\167\372\065  
\110\172\205\115\215\232\123\304\337\170\312\227\221\110\053\105  
\053\001\367\034\032\242\355\030\272\012\275\203\372\157\274\215  
\127\223\073\324\324\246\316\036\361\240\261\316\253\375\053\050  
\232\117\033\327\303\162\333\244\304\277\135\114\365\335\173\226  
\151\356\150\200\346\347\230\272\066\267\376\156\355\053\275\040  
\370\145\031\332\125\011\176\045\334\376\141\142\162\371\176\030  
\002\357\143\264\320\373\257\345\073\143\214\147\217\002\003\001  
\000\001\243\201\254\060\201\251\060\016\006\003\125\035\017\001  
\001\377\004\004\003\002\001\006\060\017\006\003\125\035\023\001  
\001\377\004\005\060\003\001\001\377\060\035\006\003\125\035\016  
\004\026\004\024\120\257\314\007\207\025\107\157\070\305\264\145  
\321\336\225\252\351\337\234\314\060\037\006\003\125\035\043\004  
\030\060\026\200\024\120\257\314\007\207\025\107\157\070\305\264  
\145\321\336\225\252\351\337\234\314\060\106\006\003\125\035\040  
\004\077\060\075\060\073\006\011\140\205\164\001\131\001\001\001  
\001\060\056\060\054\006\010\053\006\001\005\005\007\002\001\026  
\040\150\164\164\160\072\057\057\162\145\160\157\163\151\164\157

\162\171\056\163\167\151\163\163\163\151\147\156\056\143\157\155  
\057\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000  
\003\202\002\001\000\010\205\246\365\026\014\374\104\032\301\143  
\340\371\125\106\010\374\160\034\102\050\226\216\267\305\301\101  
\165\116\011\161\171\345\155\226\312\113\245\210\140\320\060\164  
\270\312\010\334\264\060\236\100\007\026\153\145\225\167\001\256  
\244\267\065\013\201\332\161\025\251\164\027\070\173\130\312\371  
\057\373\300\145\166\215\133\001\271\175\336\202\075\144\270\276  
\024\164\243\012\124\323\054\225\030\027\065\365\121\153\077\217  
\242\226\141\071\170\153\113\345\246\240\370\123\337\121\020\223  
\142\347\200\057\342\321\340\274\216\066\106\167\063\354\270\373  
\216\232\054\211\115\061\021\017\046\236\004\273\267\004\215\013  
\362\271\374\132\235\073\026\267\057\310\230\253\376\212\120\131  
\056\243\073\374\051\135\213\301\113\311\342\212\023\035\261\277  
\273\102\035\122\335\116\330\024\136\020\306\061\007\357\161\047  
\367\033\071\011\334\202\352\213\263\225\206\136\375\365\332\135  
\061\246\340\061\266\224\346\104\111\164\305\026\345\367\037\003  
\141\050\305\310\313\022\240\102\113\371\153\210\010\215\264\062  
\030\363\165\237\304\177\000\117\005\225\234\243\027\002\303\263  
\123\233\252\040\071\051\053\146\372\235\257\136\263\222\322\265  
\246\341\032\371\055\101\151\201\024\264\264\265\355\211\075\316  
\373\251\235\065\102\104\261\034\024\163\201\317\052\001\065\232  
\061\325\055\217\155\204\337\200\115\127\343\077\305\204\165\332  
\211\306\060\273\353\217\313\042\010\240\256\252\361\003\154\072  
\113\115\011\245\016\162\306\126\153\041\102\116\043\045\024\150  
\256\166\012\174\014\007\160\144\371\232\057\366\005\071\046\306  
\014\217\031\177\103\136\156\364\133\025\057\333\141\135\346\147  
\057\077\010\224\371\140\264\230\061\332\164\361\204\223\161\115  
\137\373\140\130\321\373\304\301\155\211\242\273\040\037\235\161  
\221\313\062\233\023\075\076\175\222\122\065\254\222\224\242\323  
\030\302\174\307\352\257\166\005\026\335\147\047\302\176\034\007  
\042\041\363\100\012\033\064\007\104\023\302\204\152\216\337\031  
\132\277\177\353\035\342\032\070\321\134\257\107\222\153\200\265  
\060\245\311\215\330\253\061\201\037\337\302\146\067\323\223\251  
\205\206\171\145\322

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "SwissSign Platinum CA - G2"

# Issuer: CN=SwissSign Platinum CA - G2,O=SwissSign AG,C=CH

# Serial Number:4e:b2:00:67:0c:03:5d:4f

# Subject: CN=SwissSign Platinum CA - G2,O=SwissSign AG,C=CH

# Not Valid Before: Wed Oct 25 08:36:00 2006

# Not Valid After : Sat Oct 25 08:36:00 2036

# Fingerprint (SHA-256):

3B:22:2E:56:67:11:E9:92:30:0D:C0:B1:5A:B9:47:3D:AF:DE:F8:C8:4D:0C:EF:7D:33:17:B4:C1:82:1D:14:36

# Fingerprint (SHA1): 56:E0:FA:C0:3B:8F:18:23:55:18:E5:D3:11:CA:E8:C2:43:31:AB:66

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "SwissSign Platinum CA - G2"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\126\340\372\300\073\217\030\043\125\030\345\323\021\312\350\302  
\103\061\253\146

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\311\230\047\167\050\036\075\016\025\074\204\000\270\205\003\346

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\111\061\013\060\011\006\003\125\004\006\023\002\103\110\061  
\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123  
\151\147\156\040\101\107\061\043\060\041\006\003\125\004\003\023  
\032\123\167\151\163\163\123\151\147\156\040\120\154\141\164\151  
\156\165\155\040\103\101\040\055\040\107\062

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\010\116\262\000\147\014\003\135\117

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "SwissSign Gold CA - G2"

#

# Issuer: CN=SwissSign Gold CA - G2,O=SwissSign AG,C=CH

# Serial Number:00:bb:40:1c:43:f5:5e:4f:b0

# Subject: CN=SwissSign Gold CA - G2,O=SwissSign AG,C=CH

# Not Valid Before: Wed Oct 25 08:30:35 2006

# Not Valid After : Sat Oct 25 08:30:35 2036

# Fingerprint (SHA-256):

62:DD:0B:E9:B9:F5:0A:16:3E:A0:F8:E7:5C:05:3B:1E:CA:57:EA:55:C8:68:8F:64:7C:68:81:F2:C8:35:7B:95

# Fingerprint (SHA1): D8:C5:38:8A:B7:30:1B:1B:6E:D4:7A:E6:45:25:3A:6F:9F:1A:27:61

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "SwissSign Gold CA - G2"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\105\061\013\060\011\006\003\125\004\006\023\002\103\110\061  
\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123

\151\147\156\040\101\107\061\037\060\035\006\003\125\004\003\023  
\026\123\167\151\163\163\123\151\147\156\040\107\157\154\144\040  
\103\101\040\055\040\107\062

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\105\061\013\060\011\006\003\125\004\006\023\002\103\110\061  
\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123  
\151\147\156\040\101\107\061\037\060\035\006\003\125\004\003\023  
\026\123\167\151\163\163\123\151\147\156\040\107\157\154\144\040  
\103\101\040\055\040\107\062

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\011\000\273\100\034\103\365\136\117\260

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\272\060\202\003\242\240\003\002\001\002\002\011\000  
\273\100\034\103\365\136\117\260\060\015\006\011\052\206\110\206  
\367\015\001\001\005\005\000\060\105\061\013\060\011\006\003\125  
\004\006\023\002\103\110\061\025\060\023\006\003\125\004\012\023  
\014\123\167\151\163\163\123\151\147\156\040\101\107\061\037\060  
\035\006\003\125\004\003\023\026\123\167\151\163\163\123\151\147  
\156\040\107\157\154\144\040\103\101\040\055\040\107\062\060\036  
\027\015\060\066\061\060\062\065\060\070\063\060\063\065\132\027  
\015\063\066\061\060\062\065\060\070\063\060\063\065\132\060\105  
\061\013\060\011\006\003\125\004\006\023\002\103\110\061\025\060  
\023\006\003\125\004\012\023\014\123\167\151\163\163\123\151\147  
\156\040\101\107\061\037\060\035\006\003\125\004\003\023\026\123  
\167\151\163\163\123\151\147\156\040\107\157\154\144\040\103\101  
\040\055\040\107\062\060\202\002\042\060\015\006\011\052\206\110  
\206\367\015\001\001\001\005\000\003\202\002\017\000\060\202\002  
\012\002\202\002\001\000\257\344\356\176\213\044\016\022\156\251  
\120\055\026\104\073\222\222\134\312\270\135\204\222\102\023\052  
\274\145\127\202\100\076\127\044\315\120\213\045\052\267\157\374  
\357\242\320\300\037\002\044\112\023\226\217\043\023\346\050\130  
\000\243\107\307\006\247\204\043\053\273\275\226\053\177\125\314  
\213\301\127\037\016\142\145\017\335\075\126\212\163\332\256\176  
\155\272\201\034\176\102\214\040\065\331\103\115\204\372\204\333  
\122\054\363\016\047\167\013\153\277\021\057\162\170\237\056\330  
\076\346\030\067\132\052\162\371\332\142\220\222\225\312\037\234  
\351\263\074\053\313\363\001\023\277\132\317\301\265\012\140\275  
\335\265\231\144\123\270\240\226\263\157\342\046\167\221\214\340  
\142\020\002\237\064\017\244\325\222\063\121\336\276\215\272\204  
\172\140\074\152\333\237\053\354\336\336\001\077\156\115\345\120  
\206\313\264\257\355\104\100\305\312\132\214\332\322\053\174\250  
\356\276\246\345\012\252\016\245\337\005\122\267\125\307\042\135  
\062\152\227\227\143\023\333\311\333\171\066\173\205\072\112\305  
\122\211\371\044\347\235\167\251\202\377\125\034\245\161\151\053

\321\002\044\362\263\046\324\153\332\004\125\345\301\012\307\155  
\060\067\220\052\344\236\024\063\136\026\027\125\305\133\265\313  
\064\211\222\361\235\046\217\241\007\324\306\262\170\120\333\014  
\014\013\174\013\214\101\327\271\351\335\214\210\367\243\115\262  
\062\314\330\027\332\315\267\316\146\235\324\375\136\377\275\227  
\076\051\165\347\176\247\142\130\257\045\064\245\101\307\075\274  
\015\120\312\003\003\017\010\132\037\225\163\170\142\277\257\162  
\024\151\016\245\345\003\016\170\216\046\050\102\360\007\013\142  
\040\020\147\071\106\372\251\003\314\004\070\172\146\357\040\203  
\265\214\112\126\216\221\000\374\216\134\202\336\210\240\303\342  
\150\156\175\215\357\074\335\145\364\135\254\121\357\044\200\256  
\252\126\227\157\371\255\175\332\141\077\230\167\074\245\221\266  
\034\214\046\332\145\242\011\155\301\342\124\343\271\312\114\114  
\200\217\167\173\140\232\036\337\266\362\110\036\016\272\116\124  
\155\230\340\341\242\032\242\167\120\317\304\143\222\354\107\031  
\235\353\346\153\316\301\002\003\001\000\001\243\201\254\060\201  
\251\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001  
\006\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001  
\001\377\060\035\006\003\125\035\016\004\026\004\024\133\045\173  
\226\244\145\121\176\270\071\363\300\170\146\136\350\072\347\360  
\356\060\037\006\003\125\035\043\004\030\060\026\200\024\133\045  
\173\226\244\145\121\176\270\071\363\300\170\146\136\350\072\347  
\360\356\060\106\006\003\125\035\040\004\077\060\075\060\073\006  
\011\140\205\164\001\131\001\002\001\001\060\056\060\054\006\010  
\053\006\001\005\005\007\002\001\026\040\150\164\164\160\072\057  
\057\162\145\160\157\163\151\164\157\162\171\056\163\167\151\163  
\163\163\151\147\156\056\143\157\155\057\060\015\006\011\052\206  
\110\206\367\015\001\001\005\005\000\003\202\002\001\000\047\272  
\343\224\174\361\256\300\336\027\346\345\330\325\365\124\260\203  
\364\273\315\136\005\173\117\237\165\146\257\074\350\126\176\374  
\162\170\070\003\331\053\142\033\000\271\370\351\140\315\314\316  
\121\212\307\120\061\156\341\112\176\030\057\151\131\266\075\144  
\201\053\343\203\204\346\042\207\216\175\340\356\002\231\141\270  
\036\364\270\053\210\022\026\204\302\061\223\070\226\061\246\271  
\073\123\077\303\044\223\126\133\151\222\354\305\301\273\070\000  
\343\354\027\251\270\334\307\174\001\203\237\062\107\272\122\042  
\064\035\062\172\011\126\247\174\045\066\251\075\113\332\300\202  
\157\012\273\022\310\207\113\047\021\371\036\055\307\223\077\236  
\333\137\046\153\122\331\056\212\361\024\306\104\215\025\251\267  
\277\275\336\246\032\356\256\055\373\110\167\027\376\273\354\257  
\030\365\052\121\360\071\204\227\225\154\156\033\303\053\304\164  
\140\171\045\260\012\047\337\337\136\322\071\317\105\175\102\113  
\337\263\054\036\305\306\135\312\125\072\240\234\151\232\217\332  
\357\262\260\074\237\207\154\022\053\145\160\025\122\061\032\044  
\317\157\061\043\120\037\214\117\217\043\303\164\101\143\034\125  
\250\024\335\076\340\121\120\317\361\033\060\126\016\222\260\202  
\205\330\203\313\042\144\274\055\270\045\325\124\242\270\006\352  
\255\222\244\044\240\301\206\265\112\023\152\107\317\056\013\126

```
\225\124\313\316\232\333\152\264\246\262\333\101\010\206\047\167
\367\152\240\102\154\013\070\316\327\165\120\062\222\302\337\053
\060\042\110\320\325\101\070\045\135\244\351\135\237\306\224\165
\320\105\375\060\227\103\217\220\253\012\307\206\163\140\112\151
\055\336\245\170\327\006\332\152\236\113\076\167\072\040\023\042
\001\320\277\150\236\143\140\153\065\115\013\155\272\241\075\300
\223\340\177\043\263\125\255\162\045\116\106\371\322\026\357\260
\144\301\001\236\351\312\240\152\230\016\317\330\140\362\057\111
\270\344\102\341\070\065\026\364\310\156\117\367\201\126\350\272
\243\276\043\257\256\375\157\003\340\002\073\060\166\372\033\155
\101\317\001\261\351\270\311\146\364\333\046\363\072\244\164\362
\111\044\133\311\260\320\127\301\372\076\172\341\227\311
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Trust for "SwissSign Gold CA - G2"
```

```
Issuer: CN=SwissSign Gold CA - G2,O=SwissSign AG,C=CH
```

```
Serial Number:00:bb:40:1c:43:f5:5e:4f:b0
```

```
Subject: CN=SwissSign Gold CA - G2,O=SwissSign AG,C=CH
```

```
Not Valid Before: Wed Oct 25 08:30:35 2006
```

```
Not Valid After : Sat Oct 25 08:30:35 2036
```

```
Fingerprint (SHA-256):
```

```
62:DD:0B:E9:B9:F5:0A:16:3E:A0:F8:E7:5C:05:3B:1E:CA:57:EA:55:C8:68:8F:64:7C:68:81:F2:C8:35:7B:95
```

```
Fingerprint (SHA1): D8:C5:38:8A:B7:30:1B:1B:6E:D4:7A:E6:45:25:3A:6F:9F:1A:27:61
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "SwissSign Gold CA - G2"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\330\305\070\212\267\060\033\033\156\324\172\346\105\045\072\157
\237\032\047\141
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\044\167\331\250\221\321\073\372\210\055\302\377\370\315\063\223
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\105\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123
\151\147\156\040\101\107\061\037\060\035\006\003\125\004\003\023
\026\123\167\151\163\163\123\151\147\156\040\107\157\154\144\040
\103\101\040\055\040\107\062
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\011\000\273\100\034\103\365\136\117\260
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "SwissSign Silver CA - G2"

#

# Issuer: CN=SwissSign Silver CA - G2,O=SwissSign AG,C=CH

# Serial Number:4f:1b:d4:2f:54:bb:2f:4b

# Subject: CN=SwissSign Silver CA - G2,O=SwissSign AG,C=CH

# Not Valid Before: Wed Oct 25 08:32:46 2006

# Not Valid After : Sat Oct 25 08:32:46 2036

# Fingerprint (SHA-256):

BE:6C:4D:A2:BB:B9:BA:59:B6:F3:93:97:68:37:42:46:C3:C0:05:99:3F:A9:8F:02:0D:1D:ED:BE:D4:8A:81:D5

# Fingerprint (SHA1): 9B:AA:E5:9F:56:EE:21:CB:43:5A:BE:25:93:DF:A7:F0:40:D1:1D:CB

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "SwissSign Silver CA - G2"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\107\061\013\060\011\006\003\125\004\006\023\002\103\110\061  
\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123  
\151\147\156\040\101\107\061\041\060\037\006\003\125\004\003\023  
\030\123\167\151\163\163\123\151\147\156\040\123\151\154\166\145  
\162\040\103\101\040\055\040\107\062

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\107\061\013\060\011\006\003\125\004\006\023\002\103\110\061  
\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123  
\151\147\156\040\101\107\061\041\060\037\006\003\125\004\003\023  
\030\123\167\151\163\163\123\151\147\156\040\123\151\154\166\145  
\162\040\103\101\040\055\040\107\062

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\010\117\033\324\057\124\273\057\113

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\275\060\202\003\245\240\003\002\001\002\002\010\117  
\033\324\057\124\273\057\113\060\015\006\011\052\206\110\206\367  
\015\001\001\005\005\000\060\107\061\013\060\011\006\003\125\004  
\006\023\002\103\110\061\025\060\023\006\003\125\004\012\023\014  
\123\167\151\163\163\123\151\147\156\040\101\107\061\041\060\037  
\006\003\125\004\003\023\030\123\167\151\163\163\123\151\147\156  
\040\123\151\154\166\145\162\040\103\101\040\055\040\107\062\060



\036\027\015\060\066\061\060\062\065\060\070\063\062\064\066\132  
\027\015\063\066\061\060\062\065\060\070\063\062\064\066\132\060  
\107\061\013\060\011\006\003\125\004\006\023\002\103\110\061\025  
\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123\151  
\147\156\040\101\107\061\041\060\037\006\003\125\004\003\023\030  
\123\167\151\163\163\123\151\147\156\040\123\151\154\166\145\162  
\040\103\101\040\055\040\107\062\060\202\002\042\060\015\006\011  
\052\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000  
\060\202\002\012\002\202\002\001\000\304\361\207\177\323\170\061  
\367\070\311\370\303\231\103\274\307\367\274\067\347\116\161\272  
\113\217\245\163\035\134\156\230\256\003\127\256\070\067\103\057  
\027\075\037\310\316\150\020\301\170\256\031\003\053\020\372\054  
\171\203\366\350\271\150\271\125\362\004\104\247\071\371\374\004  
\213\036\361\242\115\047\371\141\173\272\267\345\242\023\266\353  
\141\076\320\154\321\346\373\372\136\355\035\264\236\240\065\133  
\241\222\313\360\111\222\376\205\012\005\076\346\331\013\342\117  
\273\334\225\067\374\221\351\062\065\042\321\037\072\116\047\205  
\235\260\025\224\062\332\141\015\107\115\140\102\256\222\107\350  
\203\132\120\130\351\212\213\271\135\241\334\335\231\112\037\066  
\147\273\110\344\203\266\067\353\110\072\257\017\147\217\027\007  
\350\004\312\357\152\061\207\324\300\266\371\224\161\173\147\144  
\270\266\221\112\102\173\145\056\060\152\014\365\220\356\225\346  
\362\315\202\354\331\241\112\354\366\262\113\345\105\205\346\155  
\170\223\004\056\234\202\155\066\251\304\061\144\037\206\203\013  
\052\364\065\012\170\311\125\317\101\260\107\351\060\237\231\276  
\141\250\006\204\271\050\172\137\070\331\033\251\070\260\203\177  
\163\301\303\073\110\052\202\017\041\233\270\314\250\065\303\204  
\033\203\263\076\276\244\225\151\001\072\211\000\170\004\331\311  
\364\231\031\253\126\176\133\213\206\071\025\221\244\020\054\011  
\062\200\140\263\223\300\052\266\030\013\235\176\215\111\362\020  
\112\177\371\325\106\057\031\222\243\231\247\046\254\273\214\074  
\346\016\274\107\007\334\163\121\361\160\144\057\010\371\264\107  
\035\060\154\104\352\051\067\205\222\150\146\274\203\070\376\173  
\071\056\323\120\360\037\373\136\140\266\251\246\372\047\101\361  
\233\030\162\362\365\204\164\112\311\147\304\124\256\110\144\337  
\214\321\156\260\035\341\007\217\010\036\231\234\161\351\114\330  
\245\367\107\022\037\164\321\121\236\206\363\302\242\043\100\013  
\163\333\113\246\347\163\006\214\301\240\351\301\131\254\106\372  
\346\057\370\317\161\234\106\155\271\304\025\215\070\171\003\105  
\110\357\304\135\327\010\356\207\071\042\206\262\015\017\130\103  
\367\161\251\110\056\375\352\326\037\002\003\001\000\001\243\201  
\254\060\201\251\060\016\006\003\125\035\017\001\001\377\004\004  
\003\002\001\006\060\017\006\003\125\035\023\001\001\377\004\005  
\060\003\001\001\377\060\035\006\003\125\035\016\004\026\004\024  
\027\240\315\301\344\101\266\072\133\073\313\105\235\275\034\302  
\230\372\206\130\060\037\006\003\125\035\043\004\030\060\026\200  
\024\027\240\315\301\344\101\266\072\133\073\313\105\235\275\034  
\302\230\372\206\130\060\106\006\003\125\035\040\004\077\060\075

\060\073\006\011\140\205\164\001\131\001\003\001\001\060\056\060  
\054\006\010\053\006\001\005\005\007\002\001\026\040\150\164\164  
\160\072\057\057\162\145\160\157\163\151\164\157\162\171\056\163  
\167\151\163\163\163\151\147\156\056\143\157\155\057\060\015\006  
\011\052\206\110\206\367\015\001\001\005\005\000\003\202\002\001  
\000\163\306\201\340\047\322\055\017\340\225\060\342\232\101\177  
\120\054\137\137\142\141\251\206\152\151\030\014\164\111\326\135  
\204\352\101\122\030\157\130\255\120\126\040\152\306\275\050\151  
\130\221\334\221\021\065\251\072\035\274\032\245\140\236\330\037  
\177\105\221\151\331\176\273\170\162\301\006\017\052\316\217\205  
\160\141\254\240\315\013\270\071\051\126\204\062\116\206\273\075  
\304\052\331\327\037\162\356\376\121\241\042\101\261\161\002\143  
\032\202\260\142\253\136\127\022\037\337\313\335\165\240\300\135  
\171\220\214\033\340\120\346\336\061\376\230\173\160\137\245\220  
\330\255\370\002\266\157\323\140\335\100\113\042\305\075\255\072  
\172\237\032\032\107\221\171\063\272\202\334\062\151\003\226\156  
\037\113\360\161\376\343\147\162\240\261\277\134\213\344\372\231  
\042\307\204\271\033\215\043\227\077\355\045\340\317\145\273\365  
\141\004\357\335\036\262\132\101\042\132\241\237\135\054\350\133  
\311\155\251\014\014\170\252\140\306\126\217\001\132\014\150\274  
\151\031\171\304\037\176\227\005\277\305\351\044\121\136\324\325  
\113\123\355\331\043\132\066\003\145\243\301\003\255\101\060\363  
\106\033\205\220\257\145\265\325\261\344\026\133\170\165\035\227  
\172\155\131\251\052\217\173\336\303\207\211\020\231\111\163\170  
\310\075\275\121\065\164\052\325\361\176\151\033\052\273\073\275  
\045\270\232\132\075\162\141\220\146\207\356\014\326\115\324\021  
\164\013\152\376\013\003\374\243\125\127\211\376\112\313\256\133  
\027\005\310\362\215\043\061\123\070\322\055\152\077\202\271\215  
\010\152\367\136\101\164\156\303\021\176\007\254\051\140\221\077  
\070\312\127\020\015\275\060\057\307\245\346\101\240\332\256\005  
\207\232\240\244\145\154\114\011\014\211\272\270\323\271\300\223  
\212\060\372\215\345\232\153\025\001\116\147\252\332\142\126\076  
\204\010\146\322\304\066\175\247\076\020\374\210\340\324\200\345  
\000\275\252\363\116\006\243\172\152\371\142\162\343\011\117\353  
\233\016\001\043\361\237\273\174\334\334\154\021\227\045\262\362  
\264\143\024\322\006\052\147\214\203\365\316\352\007\330\232\152  
\036\354\344\012\273\052\114\353\011\140\071\316\312\142\330\056  
\156

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "SwissSign Silver CA - G2"

# Issuer: CN=SwissSign Silver CA - G2,O=SwissSign AG,C=CH

# Serial Number:4f:1b:d4:2f:54:bb:2f:4b

# Subject: CN=SwissSign Silver CA - G2,O=SwissSign AG,C=CH

# Not Valid Before: Wed Oct 25 08:32:46 2006

```

Not Valid After : Sat Oct 25 08:32:46 2036
Fingerprint (SHA-256):
BE:6C:4D:A2:BB:B9:BA:59:B6:F3:93:97:68:37:42:46:C3:C0:05:99:3F:A9:8F:02:0D:1D:ED:BE:D4:8A:81:D5
Fingerprint (SHA1): 9B:AA:E5:9F:56:EE:21:CB:43:5A:BE:25:93:DF:A7:F0:40:D1:1D:CB
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SwissSign Silver CA - G2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\233\252\345\237\126\356\041\313\103\132\276\045\223\337\247\360
\100\321\035\313
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\340\006\241\311\175\317\311\374\015\300\126\165\226\330\142\023
END
CKA_ISSUER MULTILINE_OCTAL
\060\107\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123
\151\147\156\040\101\107\061\041\060\037\006\003\125\004\003\023
\030\123\167\151\163\163\123\151\147\156\040\123\151\154\166\145
\162\040\103\101\040\055\040\107\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\117\033\324\057\124\273\057\113
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "SecureTrust CA"
#
Issuer: CN=SecureTrust CA,O=SecureTrust Corporation,C=US
Serial Number:0c:f0:8e:5c:08:16:a5:ad:42:7f:f0:eb:27:18:59:d0
Subject: CN=SecureTrust CA,O=SecureTrust Corporation,C=US
Not Valid Before: Tue Nov 07 19:31:18 2006
Not Valid After : Mon Dec 31 19:40:55 2029
Fingerprint (SHA-256):
F1:C1:B5:0A:E5:A2:0D:D8:03:0E:C9:F6:BC:24:82:3D:D3:67:B5:25:57:59:B4:E7:1B:61:FC:E9:F7:37:5D:73
Fingerprint (SHA1): 87:82:C6:C3:04:35:3B:CF:D2:96:92:D2:59:3E:7D:44:D9:34:FF:11
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SecureTrust CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

```

CKA\_SUBJECT MULTILINE\_OCTAL

\060\110\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\040\060\036\006\003\125\004\012\023\027\123\145\143\165\162\145  
\124\162\165\163\164\040\103\157\162\160\157\162\141\164\151\157  
\156\061\027\060\025\006\003\125\004\003\023\016\123\145\143\165  
\162\145\124\162\165\163\164\040\103\101

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\110\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\040\060\036\006\003\125\004\012\023\027\123\145\143\165\162\145  
\124\162\165\163\164\040\103\157\162\160\157\162\141\164\151\157  
\156\061\027\060\025\006\003\125\004\003\023\016\123\145\143\165  
\162\145\124\162\165\163\164\040\103\101

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\014\360\216\134\010\026\245\255\102\177\360\353\047\030  
\131\320

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\270\060\202\002\240\240\003\002\001\002\002\020\014  
\360\216\134\010\026\245\255\102\177\360\353\047\030\131\320\060  
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\110  
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\040\060  
\036\006\003\125\004\012\023\027\123\145\143\165\162\145\124\162  
\165\163\164\040\103\157\162\160\157\162\141\164\151\157\156\061  
\027\060\025\006\003\125\004\003\023\016\123\145\143\165\162\145  
\124\162\165\163\164\040\103\101\060\036\027\015\060\066\061\061  
\060\067\061\071\063\061\061\070\132\027\015\062\071\061\062\063  
\061\061\071\064\060\065\065\132\060\110\061\013\060\011\006\003  
\125\004\006\023\002\125\123\061\040\060\036\006\003\125\004\012  
\023\027\123\145\143\165\162\145\124\162\165\163\164\040\103\157  
\162\160\157\162\141\164\151\157\156\061\027\060\025\006\003\125  
\004\003\023\016\123\145\143\165\162\145\124\162\165\163\164\040  
\103\101\060\202\001\042\060\015\006\011\052\206\110\206\367\015  
\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002\202  
\001\001\000\253\244\201\345\225\315\365\366\024\216\302\117\312  
\324\342\170\225\130\234\101\341\015\231\100\044\027\071\221\063  
\146\351\276\341\203\257\142\134\211\321\374\044\133\141\263\340  
\021\021\101\034\035\156\360\270\273\370\336\247\201\272\246\110  
\306\237\035\275\276\216\251\101\076\270\224\355\051\032\324\216  
\322\003\035\003\357\155\015\147\034\127\327\006\255\312\310\365  
\376\016\257\146\045\110\004\226\013\135\243\272\026\303\010\117  
\321\106\370\024\134\362\310\136\001\231\155\375\210\314\206\250  
\301\157\061\102\154\122\076\150\313\363\031\064\337\273\207\030  
\126\200\046\304\320\334\300\157\337\336\240\302\221\026\240\144  
\021\113\104\274\036\366\347\372\143\336\146\254\166\244\161\243  
\354\066\224\150\172\167\244\261\347\016\057\201\172\342\265\162

\206\357\242\153\213\360\017\333\323\131\077\272\162\274\104\044  
\234\343\163\263\367\257\127\057\102\046\235\251\164\272\000\122  
\362\113\315\123\174\107\013\066\205\016\146\251\010\227\026\064  
\127\301\146\367\200\343\355\160\124\307\223\340\056\050\025\131  
\207\272\273\002\003\001\000\001\243\201\235\060\201\232\060\023  
\006\011\053\006\001\004\001\202\067\024\002\004\006\036\004\000  
\103\000\101\060\013\006\003\125\035\017\004\004\003\002\001\206  
\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001  
\377\060\035\006\003\125\035\016\004\026\004\024\102\062\266\026  
\372\004\375\376\135\113\172\303\375\367\114\100\035\132\103\257  
\060\064\006\003\125\035\037\004\055\060\053\060\051\240\047\240  
\045\206\043\150\164\164\160\072\057\057\143\162\154\056\163\145  
\143\165\162\145\164\162\165\163\164\056\143\157\155\057\123\124  
\103\101\056\143\162\154\060\020\006\011\053\006\001\004\001\202  
\067\025\001\004\003\002\001\000\060\015\006\011\052\206\110\206  
\367\015\001\001\005\005\000\003\202\001\001\000\060\355\117\112  
\341\130\072\122\162\133\265\246\243\145\030\246\273\121\073\167  
\351\235\352\323\237\134\340\105\145\173\015\312\133\342\160\120  
\262\224\005\024\256\111\307\215\101\007\022\163\224\176\014\043  
\041\375\274\020\177\140\020\132\162\365\230\016\254\354\271\177  
\335\172\157\135\323\034\364\377\210\005\151\102\251\005\161\310  
\267\254\046\350\056\264\214\152\377\161\334\270\261\337\231\274  
\174\041\124\053\344\130\242\273\127\051\256\236\251\243\031\046  
\017\231\056\010\260\357\375\151\317\231\032\011\215\343\247\237  
\053\311\066\064\173\044\263\170\114\225\027\244\006\046\036\266  
\144\122\066\137\140\147\331\234\305\005\164\013\347\147\043\322  
\010\374\210\351\256\213\177\341\060\364\067\176\375\306\062\332  
\055\236\104\060\060\154\356\007\336\322\064\374\322\377\100\366  
\113\364\146\106\006\124\246\362\062\012\143\046\060\153\233\321  
\334\213\107\272\341\271\325\142\320\242\240\364\147\005\170\051  
\143\032\157\004\326\370\306\114\243\232\261\067\264\215\345\050  
\113\035\236\054\302\270\150\274\355\002\356\061

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "SecureTrust CA"

# Issuer: CN=SecureTrust CA,O=SecureTrust Corporation,C=US

# Serial Number:0c:f0:8e:5c:08:16:a5:ad:42:7f:f0:eb:27:18:59:d0

# Subject: CN=SecureTrust CA,O=SecureTrust Corporation,C=US

# Not Valid Before: Tue Nov 07 19:31:18 2006

# Not Valid After : Mon Dec 31 19:40:55 2029

# Fingerprint (SHA-256):

F1:C1:B5:0A:E5:A2:0D:D8:03:0E:C9:F6:BC:24:82:3D:D3:67:B5:25:57:59:B4:E7:1B:61:FC:E9:F7:37:5D:73

# Fingerprint (SHA1): 87:82:C6:C3:04:35:3B:CF:D2:96:92:D2:59:3E:7D:44:D9:34:FF:11

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

```

CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SecureTrust CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\207\202\306\303\004\065\073\317\322\226\222\322\131\076\175\104
\331\064\377\021
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\334\062\303\247\155\045\127\307\150\011\235\352\055\251\242\321
END
CKA_ISSUER MULTILINE_OCTAL
\060\110\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\040\060\036\006\003\125\004\012\023\027\123\145\143\165\162\145
\124\162\165\163\164\040\103\157\162\160\157\162\141\164\151\157
\156\061\027\060\025\006\003\125\004\003\023\016\123\145\143\165
\162\145\124\162\165\163\164\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\014\360\216\134\010\026\245\255\102\177\360\353\047\030
\131\320
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "Secure Global CA"
#
Issuer: CN=Secure Global CA,O=SecureTrust Corporation,C=US
Serial Number:07:56:22:a4:e8:d4:8a:89:4d:f4:13:c8:f0:f8:ea:a5
Subject: CN=Secure Global CA,O=SecureTrust Corporation,C=US
Not Valid Before: Tue Nov 07 19:42:28 2006
Not Valid After : Mon Dec 31 19:52:06 2029
Fingerprint (SHA-256):
42:00:F5:04:3A:C8:59:0E:BB:52:7D:20:9E:D1:50:30:29:FB:CB:D4:1C:A1:B5:06:EC:27:F1:5A:DE:7D:AC:69
Fingerprint (SHA1): 3A:44:73:5A:E5:81:90:1F:24:86:61:46:1E:3B:9C:C4:5F:F5:3A:1B
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Secure Global CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\112\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\040\060\036\006\003\125\004\012\023\027\123\145\143\165\162\145
\124\162\165\163\164\040\103\157\162\160\157\162\141\164\151\157
\156\061\031\060\027\006\003\125\004\003\023\020\123\145\143\165

```

\162\145\040\107\154\157\142\141\154\040\103\101

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\112\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\040\060\036\006\003\125\004\012\023\027\123\145\143\165\162\145  
\124\162\165\163\164\040\103\157\162\160\157\162\141\164\151\157  
\156\061\031\060\027\006\003\125\004\003\023\020\123\145\143\165  
\162\145\040\107\154\157\142\141\154\040\103\101

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\007\126\042\244\350\324\212\211\115\364\023\310\360\370  
\352\245

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\274\060\202\002\244\240\003\002\001\002\002\020\007  
\126\042\244\350\324\212\211\115\364\023\310\360\370\352\245\060  
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\112  
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\040\060  
\036\006\003\125\004\012\023\027\123\145\143\165\162\145\124\162  
\165\163\164\040\103\157\162\160\157\162\141\164\151\157\156\061  
\031\060\027\006\003\125\004\003\023\020\123\145\143\165\162\145  
\040\107\154\157\142\141\154\040\103\101\060\036\027\015\060\066  
\061\061\060\067\061\071\064\062\062\070\132\027\015\062\071\061  
\062\063\061\061\071\065\062\060\066\132\060\112\061\013\060\011  
\006\003\125\004\006\023\002\125\123\061\040\060\036\006\003\125  
\004\012\023\027\123\145\143\165\162\145\124\162\165\163\164\040  
\103\157\162\160\157\162\141\164\151\157\156\061\031\060\027\006  
\003\125\004\003\023\020\123\145\143\165\162\145\040\107\154\157  
\142\141\154\040\103\101\060\202\001\042\060\015\006\011\052\206  
\110\206\367\015\001\001\001\005\000\003\202\001\017\000\060\202  
\001\012\002\202\001\001\000\257\065\056\330\254\154\125\151\006  
\161\345\023\150\044\263\117\330\314\041\107\370\361\140\070\211  
\211\003\351\275\352\136\106\123\011\334\134\365\132\350\367\105  
\052\002\353\061\141\327\051\063\114\316\307\174\012\067\176\017  
\272\062\230\341\035\227\257\217\307\334\311\070\226\363\333\032  
\374\121\355\150\306\320\156\244\174\044\321\256\102\310\226\120  
\143\056\340\376\165\376\230\247\137\111\056\225\343\071\063\144  
\216\036\244\137\220\322\147\074\262\331\376\101\271\125\247\011  
\216\162\005\036\213\335\104\205\202\102\320\111\300\035\140\360  
\321\027\054\225\353\366\245\301\222\243\305\302\247\010\140\015  
\140\004\020\226\171\236\026\064\346\251\266\372\045\105\071\310  
\036\145\371\223\365\252\361\122\334\231\230\075\245\206\032\014  
\065\063\372\113\245\004\006\025\034\061\200\357\252\030\153\302  
\173\327\332\316\371\063\040\325\365\275\152\063\055\201\004\373  
\260\134\324\234\243\342\134\035\343\251\102\165\136\173\324\167  
\357\071\124\272\311\012\030\033\022\231\111\057\210\113\375\120  
\142\321\163\347\217\172\103\002\003\001\000\001\243\201\235\060

\201\232\060\023\006\011\053\006\001\004\001\202\067\024\002\004  
\006\036\004\000\103\000\101\060\013\006\003\125\035\017\004\004  
\003\002\001\206\060\017\006\003\125\035\023\001\001\377\004\005  
\060\003\001\001\377\060\035\006\003\125\035\016\004\026\004\024  
\257\104\004\302\101\176\110\203\333\116\071\002\354\354\204\172  
\346\316\311\244\060\064\006\003\125\035\037\004\055\060\053\060  
\051\240\047\240\045\206\043\150\164\164\160\072\057\057\143\162  
\154\056\163\145\143\165\162\145\164\162\165\163\164\056\143\157  
\155\057\123\107\103\101\056\143\162\154\060\020\006\011\053\006  
\001\004\001\202\067\025\001\004\003\002\001\000\060\015\006\011  
\052\206\110\206\367\015\001\001\005\005\000\003\202\001\001\000  
\143\032\010\100\175\244\136\123\015\167\330\172\256\037\015\013  
\121\026\003\357\030\174\310\343\257\152\130\223\024\140\221\262  
\204\334\210\116\276\071\212\072\363\346\202\211\135\001\067\263  
\253\044\244\025\016\222\065\132\112\104\136\116\127\372\165\316  
\037\110\316\146\364\074\100\046\222\230\154\033\356\044\106\014  
\027\263\122\245\333\245\221\221\317\067\323\157\347\047\010\072  
\116\031\037\072\247\130\134\027\317\171\077\213\344\247\323\046  
\043\235\046\017\130\151\374\107\176\262\320\215\213\223\277\051  
\117\103\151\164\166\147\113\317\007\214\346\002\367\265\341\264  
\103\265\113\055\024\237\371\334\046\015\277\246\107\164\006\330  
\210\321\072\051\060\204\316\322\071\200\142\033\250\307\127\111  
\274\152\125\121\147\025\112\276\065\007\344\325\165\230\067\171  
\060\024\333\051\235\154\305\151\314\107\125\242\060\367\314\134  
\177\302\303\230\034\153\116\026\200\353\172\170\145\105\242\000  
\032\257\014\015\125\144\064\110\270\222\271\361\264\120\051\362  
\117\043\037\332\154\254\037\104\341\335\043\170\121\133\307\026  
END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Secure Global CA"

# Issuer: CN=Secure Global CA,O=SecureTrust Corporation,C=US

# Serial Number:07:56:22:a4:e8:d4:8a:89:4d:f4:13:c8:f0:f8:ea:a5

# Subject: CN=Secure Global CA,O=SecureTrust Corporation,C=US

# Not Valid Before: Tue Nov 07 19:42:28 2006

# Not Valid After : Mon Dec 31 19:52:06 2029

# Fingerprint (SHA-256):

42:00:F5:04:3A:C8:59:0E:BB:52:7D:20:9E:D1:50:30:29:FB:CB:D4:1C:A1:B5:06:EC:27:F1:5A:DE:7D:AC:69

# Fingerprint (SHA1): 3A:44:73:5A:E5:81:90:1F:24:86:61:46:1E:3B:9C:C4:5F:F5:3A:1B

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Secure Global CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\072\104\163\132\345\201\220\037\044\206\141\106\036\073\234\304



```

\137\365\072\033
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\317\364\047\015\324\355\334\145\026\111\155\075\332\277\156\336
END
CKA_ISSUER MULTILINE_OCTAL
\060\112\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\040\060\036\006\003\125\004\012\023\027\123\145\143\165\162\145
\124\162\165\163\164\040\103\157\162\160\157\162\141\164\151\157
\156\061\031\060\027\006\003\125\004\003\023\020\123\145\143\165
\162\145\040\107\154\157\142\141\154\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\007\126\042\244\350\324\212\211\115\364\023\310\360\370
\352\245
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "COMODO Certification Authority"
#
Issuer: CN=COMODO Certification Authority,O=COMODO CA Limited,L=Salford,ST=Greater
Manchester,C=GB
Serial Number:4e:81:2d:8a:82:65:e0:0b:02:ee:3e:35:02:46:e5:3d
Subject: CN=COMODO Certification Authority,O=COMODO CA Limited,L=Salford,ST=Greater
Manchester,C=GB
Not Valid Before: Fri Dec 01 00:00:00 2006
Not Valid After : Mon Dec 31 23:59:59 2029
Fingerprint (SHA-256):
0C:2C:D6:3D:F7:80:6F:A3:99:ED:E8:09:11:6B:57:5B:F8:79:89:F0:65:18:F9:80:8C:86:05:03:17:8B:AF:66
Fingerprint (SHA1): 66:31:BF:9E:F7:4F:9E:B6:C9:D5:A6:0C:BA:6A:BE:D1:F7:BD:EF:7B
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "COMODO Certification Authority"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\201\061\013\060\011\006\003\125\004\006\023\002\107\102
\061\033\060\031\006\003\125\004\010\023\022\107\162\145\141\164
\145\162\040\115\141\156\143\150\145\163\164\145\162\061\020\060
\016\006\003\125\004\007\023\007\123\141\154\146\157\162\144\061
\032\060\030\006\003\125\004\012\023\021\103\117\115\117\104\117
\040\103\101\040\114\151\155\151\164\145\144\061\047\060\045\006
\003\125\004\003\023\036\103\117\115\117\104\117\040\103\145\162

```

\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157  
\162\151\164\171  
END  
CKA\_ID UTF8 "0"  
CKA\_ISSUER MULTILINE\_OCTAL  
\060\201\201\061\013\060\011\006\003\125\004\006\023\002\107\102  
\061\033\060\031\006\003\125\004\010\023\022\107\162\145\141\164  
\145\162\040\115\141\156\143\150\145\163\164\145\162\061\020\060  
\016\006\003\125\004\007\023\007\123\141\154\146\157\162\144\061  
\032\060\030\006\003\125\004\012\023\021\103\117\115\117\104\117  
\040\103\101\040\114\151\155\151\164\145\144\061\047\060\045\006  
\003\125\004\003\023\036\103\117\115\117\104\117\040\103\145\162  
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157  
\162\151\164\171  
END  
CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL  
\002\020\116\201\055\212\202\145\340\013\002\356\076\065\002\106  
\345\075  
END  
CKA\_VALUE MULTILINE\_OCTAL  
\060\202\004\035\060\202\003\005\240\003\002\001\002\002\020\116  
\201\055\212\202\145\340\013\002\356\076\065\002\106\345\075\060  
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\201  
\201\061\013\060\011\006\003\125\004\006\023\002\107\102\061\033  
\060\031\006\003\125\004\010\023\022\107\162\145\141\164\145\162  
\040\115\141\156\143\150\145\163\164\145\162\061\020\060\016\006  
\003\125\004\007\023\007\123\141\154\146\157\162\144\061\032\060  
\030\006\003\125\004\012\023\021\103\117\115\117\104\117\040\103  
\101\040\114\151\155\151\164\145\144\061\047\060\045\006\003\125  
\004\003\023\036\103\117\115\117\104\117\040\103\145\162\164\151  
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151  
\164\171\060\036\027\015\060\066\061\062\060\061\060\060\060\060  
\060\060\132\027\015\062\071\061\062\063\061\062\063\065\071\065  
\071\132\060\201\201\061\013\060\011\006\003\125\004\006\023\002  
\107\102\061\033\060\031\006\003\125\004\010\023\022\107\162\145  
\141\164\145\162\040\115\141\156\143\150\145\163\164\145\162\061  
\020\060\016\006\003\125\004\007\023\007\123\141\154\146\157\162  
\144\061\032\060\030\006\003\125\004\012\023\021\103\117\115\117  
\104\117\040\103\101\040\114\151\155\151\164\145\144\061\047\060  
\045\006\003\125\004\003\023\036\103\117\115\117\104\117\040\103  
\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164  
\150\157\162\151\164\171\060\202\001\042\060\015\006\011\052\206  
\110\206\367\015\001\001\001\005\000\003\202\001\017\000\060\202  
\001\012\002\202\001\001\000\320\100\213\213\162\343\221\033\367  
\121\301\033\124\004\230\323\251\277\301\346\212\135\073\207\373  
\273\210\316\015\343\057\077\006\226\360\242\051\120\231\256\333  
\073\241\127\260\164\121\161\315\355\102\221\115\101\376\251\310  
\330\152\206\167\104\273\131\146\227\120\136\264\324\054\160\104

\317\332\067\225\102\151\074\060\304\161\263\122\360\041\115\241  
\330\272\071\174\034\236\243\044\235\362\203\026\230\252\026\174  
\103\233\025\133\267\256\064\221\376\324\142\046\030\106\232\077  
\353\301\371\361\220\127\353\254\172\015\213\333\162\060\152\146  
\325\340\106\243\160\334\150\331\377\004\110\211\167\336\265\351  
\373\147\155\101\351\274\071\275\062\331\142\002\361\261\250\075  
\156\067\234\342\057\342\323\242\046\213\306\270\125\103\210\341  
\043\076\245\322\044\071\152\107\253\000\324\241\263\251\045\376  
\015\077\247\035\272\323\121\301\013\244\332\254\070\357\125\120  
\044\005\145\106\223\064\117\055\215\255\306\324\041\031\322\216  
\312\005\141\161\007\163\107\345\212\031\022\275\004\115\316\116  
\234\245\110\254\273\046\367\002\003\001\000\001\243\201\216\060  
\201\213\060\035\006\003\125\035\016\004\026\004\024\013\130\345  
\213\306\114\025\067\244\100\251\060\251\041\276\107\066\132\126  
\377\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001  
\006\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001  
\001\377\060\111\006\003\125\035\037\004\102\060\100\060\076\240  
\074\240\072\206\070\150\164\164\160\072\057\057\143\162\154\056  
\143\157\155\157\144\157\143\141\056\143\157\155\057\103\117\115  
\117\104\117\103\145\162\164\151\146\151\143\141\164\151\157\156  
\101\165\164\150\157\162\151\164\171\056\143\162\154\060\015\006  
\011\052\206\110\206\367\015\001\001\005\005\000\003\202\001\001  
\000\076\230\236\233\366\033\351\327\071\267\170\256\035\162\030  
\111\323\207\344\103\202\353\077\311\252\365\250\265\357\125\174  
\041\122\145\371\325\015\341\154\364\076\214\223\163\221\056\002  
\304\116\007\161\157\300\217\070\141\010\250\036\201\012\300\057  
\040\057\101\213\221\334\110\105\274\361\306\336\272\166\153\063  
\310\000\055\061\106\114\355\347\235\317\210\224\377\063\300\126  
\350\044\206\046\270\330\070\070\337\052\153\335\022\314\307\077  
\107\027\114\242\302\006\226\011\326\333\376\077\074\106\101\337  
\130\342\126\017\074\073\301\034\223\065\331\070\122\254\356\310  
\354\056\060\116\224\065\264\044\037\113\170\151\332\362\002\070  
\314\225\122\223\360\160\045\131\234\040\147\304\356\371\213\127  
\141\364\222\166\175\077\204\215\125\267\350\345\254\325\361\365  
\031\126\246\132\373\220\034\257\223\353\345\034\324\147\227\135  
\004\016\276\013\203\246\027\203\271\060\022\240\305\063\025\005  
\271\015\373\307\005\166\343\330\112\215\374\064\027\243\306\041  
\050\276\060\105\061\036\307\170\276\130\141\070\254\073\342\001  
\145

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "COMODO Certification Authority"

# Issuer: CN=COMODO Certification Authority,O=COMODO CA Limited,L=Salford,ST=Greater  
Manchester,C=GB

# Serial Number:4e:81:2d:8a:82:65:e0:0b:02:ee:3e:35:02:46:e5:3d

```

Subject: CN=COMODO Certification Authority,O=COMODO CA Limited,L=Salford,ST=Greater
Manchester,C=GB
Not Valid Before: Fri Dec 01 00:00:00 2006
Not Valid After : Mon Dec 31 23:59:59 2029
Fingerprint (SHA-256):
0C:2C:D6:3D:F7:80:6F:A3:99:ED:E8:09:11:6B:57:5B:F8:79:89:F0:65:18:F9:80:8C:86:05:03:17:8B:AF:66
Fingerprint (SHA1): 66:31:BF:9E:F7:4F:9E:B6:C9:D5:A6:0C:BA:6A:BE:D1:F7:BD:EF:7B
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "COMODO Certification Authority"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\146\061\277\236\367\117\236\266\311\325\246\014\272\152\276\321
\367\275\357\173
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\134\110\334\367\102\162\354\126\224\155\034\314\161\065\200\165
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\201\061\013\060\011\006\003\125\004\006\023\002\107\102
\061\033\060\031\006\003\125\004\010\023\022\107\162\145\141\164
\145\162\040\115\141\156\143\150\145\163\164\145\162\061\020\060
\016\006\003\125\004\007\023\007\123\141\154\146\157\162\144\061
\032\060\030\006\003\125\004\012\023\021\103\117\115\117\104\117
\040\103\101\040\114\151\155\151\164\145\144\061\047\060\045\006
\003\125\004\003\023\036\103\117\115\117\104\117\040\103\145\162
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157
\162\151\164\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\116\201\055\212\202\145\340\013\002\356\076\065\002\106
\345\075
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "Network Solutions Certificate Authority"
#
Issuer: CN=Network Solutions Certificate Authority,O=Network Solutions L.L.C.,C=US
Serial Number:57:cb:33:6f:c2:5c:16:e6:47:16:17:e3:90:31:68:e0
Subject: CN=Network Solutions Certificate Authority,O=Network Solutions L.L.C.,C=US
Not Valid Before: Fri Dec 01 00:00:00 2006
Not Valid After : Mon Dec 31 23:59:59 2029
Fingerprint (SHA-256):

```

15:F0:BA:00:A3:AC:7A:F3:AC:88:4C:07:2B:10:11:A0:77:BD:77:C0:97:F4:01:64:B2:F8:59:8A:BD:83:86:0C

# Fingerprint (SHA1): 74:F8:A3:C3:EF:E7:B3:90:06:4B:83:90:3C:21:64:60:20:E5:DF:CE

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Network Solutions Certificate Authority"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\142\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\041\060\037\006\003\125\004\012\023\030\116\145\164\167\157\162  
\153\040\123\157\154\165\164\151\157\156\163\040\114\056\114\056  
\103\056\061\060\060\056\006\003\125\004\003\023\047\116\145\164  
\167\157\162\153\040\123\157\154\165\164\151\157\156\163\040\103  
\145\162\164\151\146\151\143\141\164\145\040\101\165\164\150\157  
\162\151\164\171

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\142\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\041\060\037\006\003\125\004\012\023\030\116\145\164\167\157\162  
\153\040\123\157\154\165\164\151\157\156\163\040\114\056\114\056  
\103\056\061\060\060\056\006\003\125\004\003\023\047\116\145\164  
\167\157\162\153\040\123\157\154\165\164\151\157\156\163\040\103  
\145\162\164\151\146\151\143\141\164\145\040\101\165\164\150\157  
\162\151\164\171

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\127\313\063\157\302\134\026\346\107\026\027\343\220\061  
\150\340

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\346\060\202\002\316\240\003\002\001\002\002\020\127  
\313\063\157\302\134\026\346\107\026\027\343\220\061\150\340\060  
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\142  
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\041\060  
\037\006\003\125\004\012\023\030\116\145\164\167\157\162\153\040  
\123\157\154\165\164\151\157\156\163\040\114\056\114\056\103\056  
\061\060\060\056\006\003\125\004\003\023\047\116\145\164\167\157  
\162\153\040\123\157\154\165\164\151\157\156\163\040\103\145\162  
\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151  
\164\171\060\036\027\015\060\066\061\062\060\061\060\060\060\060  
\060\060\132\027\015\062\071\061\062\063\061\062\063\065\071\065  
\071\132\060\142\061\013\060\011\006\003\125\004\006\023\002\125  
\123\061\041\060\037\006\003\125\004\012\023\030\116\145\164\167  
\157\162\153\040\123\157\154\165\164\151\157\156\163\040\114\056  
\114\056\103\056\061\060\060\056\006\003\125\004\003\023\047\116  
\145\164\167\157\162\153\040\123\157\154\165\164\151\157\156\163

\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164  
\150\157\162\151\164\171\060\202\001\042\060\015\006\011\052\206  
\110\206\367\015\001\001\001\005\000\003\202\001\017\000\060\202  
\001\012\002\202\001\001\000\344\274\176\222\060\155\306\330\216  
\053\013\274\106\316\340\047\226\336\336\371\372\022\323\074\063  
\163\263\004\057\274\161\214\345\237\266\042\140\076\137\135\316  
\011\377\202\014\033\232\121\120\032\046\211\335\325\141\135\031  
\334\022\017\055\012\242\103\135\027\320\064\222\040\352\163\317  
\070\054\006\046\011\172\162\367\372\120\062\370\302\223\323\151  
\242\043\316\101\261\314\344\325\037\066\321\212\072\370\214\143  
\342\024\131\151\355\015\323\177\153\350\270\003\345\117\152\345  
\230\143\151\110\005\276\056\377\063\266\351\227\131\151\370\147  
\031\256\223\141\226\104\025\323\162\260\077\274\152\175\354\110  
\177\215\303\253\252\161\053\123\151\101\123\064\265\260\271\305  
\006\012\304\260\105\365\101\135\156\211\105\173\075\073\046\214  
\164\302\345\322\321\175\262\021\324\373\130\062\042\232\200\311  
\334\375\014\351\177\136\003\227\316\073\000\024\207\047\160\070  
\251\216\156\263\047\166\230\121\340\005\343\041\253\032\325\205  
\042\074\051\265\232\026\305\200\250\364\273\153\060\217\057\106  
\002\242\261\014\042\340\323\002\003\001\000\001\243\201\227\060  
\201\224\060\035\006\003\125\035\016\004\026\004\024\041\060\311  
\373\000\327\116\230\332\207\252\052\320\247\056\261\100\061\247  
\114\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001  
\006\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001  
\001\377\060\122\006\003\125\035\037\004\113\060\111\060\107\240  
\105\240\103\206\101\150\164\164\160\072\057\057\143\162\154\056  
\156\145\164\163\157\154\163\163\154\056\143\157\155\057\116\145  
\164\167\157\162\153\123\157\154\165\164\151\157\156\163\103\145  
\162\164\151\146\151\143\141\164\145\101\165\164\150\157\162\151  
\164\171\056\143\162\154\060\015\006\011\052\206\110\206\367\015  
\001\001\005\005\000\003\202\001\001\000\273\256\113\347\267\127  
\353\177\252\055\267\163\107\205\152\301\344\245\035\344\347\074  
\351\364\131\145\167\265\172\133\132\215\045\066\340\172\227\056  
\070\300\127\140\203\230\006\203\237\271\166\172\156\120\340\272  
\210\054\374\105\314\030\260\231\225\121\016\354\035\270\210\377  
\207\120\034\202\302\343\340\062\200\277\240\013\107\310\303\061  
\357\231\147\062\200\117\027\041\171\014\151\134\336\136\064\256  
\002\265\046\352\120\337\177\030\145\054\311\362\143\341\251\007  
\376\174\161\037\153\063\044\152\036\005\367\005\150\300\152\022  
\313\056\136\141\313\256\050\323\176\302\264\146\221\046\137\074  
\056\044\137\313\130\017\353\050\354\257\021\226\363\334\173\157  
\300\247\210\362\123\167\263\140\136\256\256\050\332\065\054\157  
\064\105\323\046\341\336\354\133\117\047\153\026\174\275\104\004  
\030\202\263\211\171\027\020\161\075\172\242\026\116\365\001\315  
\244\154\145\150\241\111\166\134\103\311\330\274\066\147\154\245  
\224\265\324\314\271\275\152\065\126\041\336\330\303\353\373\313  
\244\140\114\260\125\240\240\173\127\262

END

```

CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "Network Solutions Certificate Authority"
Issuer: CN=Network Solutions Certificate Authority,O=Network Solutions L.L.C.,C=US
Serial Number:57:cb:33:6f:c2:5c:16:e6:47:16:17:e3:90:31:68:e0
Subject: CN=Network Solutions Certificate Authority,O=Network Solutions L.L.C.,C=US
Not Valid Before: Fri Dec 01 00:00:00 2006
Not Valid After : Mon Dec 31 23:59:59 2029
Fingerprint (SHA-256):
15:F0:BA:00:A3:AC:7A:F3:AC:88:4C:07:2B:10:11:A0:77:BD:77:C0:97:F4:01:64:B2:F8:59:8A:BD:83:86:0C
Fingerprint (SHA1): 74:F8:A3:C3:EF:E7:B3:90:06:4B:83:90:3C:21:64:60:20:E5:DF:CE
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Network Solutions Certificate Authority"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\164\370\243\303\357\347\263\220\006\113\203\220\074\041\144\140
\040\345\337\316
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\323\363\246\026\300\372\153\035\131\261\055\226\115\016\021\056
END
CKA_ISSUER MULTILINE_OCTAL
\060\142\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\041\060\037\006\003\125\004\012\023\030\116\145\164\167\157\162
\153\040\123\157\154\165\164\151\157\156\163\040\114\056\114\056
\103\056\061\060\060\056\006\003\125\004\003\023\047\116\145\164
\167\157\162\153\040\123\157\154\165\164\151\157\156\163\040\103
\145\162\164\151\146\151\143\141\164\145\040\101\165\164\150\157
\162\151\164\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\127\313\063\157\302\134\026\346\107\026\027\343\220\061
\150\340
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "COMODO ECC Certification Authority"
#
Issuer: CN=COMODO ECC Certification Authority,O=COMODO CA Limited,L=Salford,ST=Greater
Manchester,C=GB

```

```
Serial Number:1f:47:af:aa:62:00:70:50:54:4c:01:9e:9b:63:99:2a
Subject: CN=COMODO ECC Certification Authority,O=COMODO CA Limited,L=Salford,ST=Greater
Manchester,C=GB
Not Valid Before: Thu Mar 06 00:00:00 2008
Not Valid After : Mon Jan 18 23:59:59 2038
Fingerprint (SHA-256):
17:93:92:7A:06:14:54:97:89:AD:CE:2F:8F:34:F7:F0:B6:6D:0F:3A:E3:A3:B8:4D:21:EC:15:DB:BA:4F:AD:C7
Fingerprint (SHA1): 9F:74:4E:9F:2B:4D:BA:EC:0F:31:2C:50:B6:56:3B:8E:2D:93:C3:11
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "COMODO ECC Certification Authority"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\205\061\013\060\011\006\003\125\004\006\023\002\107\102
\061\033\060\031\006\003\125\004\010\023\022\107\162\145\141\164
\145\162\040\115\141\156\143\150\145\163\164\145\162\061\020\060
\016\006\003\125\004\007\023\007\123\141\154\146\157\162\144\061
\032\060\030\006\003\125\004\012\023\021\103\117\115\117\104\117
\040\103\101\040\114\151\155\151\164\145\144\061\053\060\051\006
\003\125\004\003\023\042\103\117\115\117\104\117\040\105\103\103
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101
\165\164\150\157\162\151\164\171
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\205\061\013\060\011\006\003\125\004\006\023\002\107\102
\061\033\060\031\006\003\125\004\010\023\022\107\162\145\141\164
\145\162\040\115\141\156\143\150\145\163\164\145\162\061\020\060
\016\006\003\125\004\007\023\007\123\141\154\146\157\162\144\061
\032\060\030\006\003\125\004\012\023\021\103\117\115\117\104\117
\040\103\101\040\114\151\155\151\164\145\144\061\053\060\051\006
\003\125\004\003\023\042\103\117\115\117\104\117\040\105\103\103
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101
\165\164\150\157\162\151\164\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\037\107\257\252\142\000\160\120\124\114\001\236\233\143
\231\052
END
CKA_VALUE MULTILINE_OCTAL
\060\202\002\211\060\202\002\017\240\003\002\001\002\002\020\037
\107\257\252\142\000\160\120\124\114\001\236\233\143\231\052\060
\012\006\010\052\206\110\316\075\004\003\003\060\201\205\061\013
\060\011\006\003\125\004\006\023\002\107\102\061\033\060\031\006
\003\125\004\010\023\022\107\162\145\141\164\145\162\040\115\141
\156\143\150\145\163\164\145\162\061\020\060\016\006\003\125\004
```



\007\023\007\123\141\154\146\157\162\144\061\032\060\030\006\003  
\125\004\012\023\021\103\117\115\117\104\117\040\103\101\040\114  
\151\155\151\164\145\144\061\053\060\051\006\003\125\004\003\023  
\042\103\117\115\117\104\117\040\105\103\103\040\103\145\162\164  
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162  
\151\164\171\060\036\027\015\060\070\060\063\060\066\060\060\060  
\060\060\060\132\027\015\063\070\060\061\061\070\062\063\065\071  
\065\071\132\060\201\205\061\013\060\011\006\003\125\004\006\023  
\002\107\102\061\033\060\031\006\003\125\004\010\023\022\107\162  
\145\141\164\145\162\040\115\141\156\143\150\145\163\164\145\162  
\061\020\060\016\006\003\125\004\007\023\007\123\141\154\146\157  
\162\144\061\032\060\030\006\003\125\004\012\023\021\103\117\115  
\117\104\117\040\103\101\040\114\151\155\151\164\145\144\061\053  
\060\051\006\003\125\004\003\023\042\103\117\115\117\104\117\040  
\105\103\103\040\103\145\162\164\151\146\151\143\141\164\151\157  
\156\040\101\165\164\150\157\162\151\164\171\060\166\060\020\006  
\007\052\206\110\316\075\002\001\006\005\053\201\004\000\042\003  
\142\000\004\003\107\173\057\165\311\202\025\205\373\165\344\221  
\026\324\253\142\231\365\076\122\013\006\316\101\000\177\227\341  
\012\044\074\035\001\004\356\075\322\215\011\227\014\340\165\344  
\372\373\167\212\052\365\003\140\113\066\213\026\043\026\255\011  
\161\364\112\364\050\120\264\376\210\034\156\077\154\057\057\011  
\131\133\245\133\013\063\231\342\303\075\211\371\152\054\357\262  
\323\006\351\243\102\060\100\060\035\006\003\125\035\016\004\026  
\004\024\165\161\247\031\110\031\274\235\235\352\101\107\337\224  
\304\110\167\231\323\171\060\016\006\003\125\035\017\001\001\377  
\004\004\003\002\001\006\060\017\006\003\125\035\023\001\001\377  
\004\005\060\003\001\001\377\060\012\006\010\052\206\110\316\075  
\004\003\003\003\150\000\060\145\002\061\000\357\003\133\172\254  
\267\170\012\162\267\210\337\377\265\106\024\011\012\372\240\346  
\175\010\306\032\207\275\030\250\163\275\046\312\140\014\235\316  
\231\237\317\134\017\060\341\276\024\061\352\002\060\024\364\223  
\074\111\247\063\172\220\106\107\263\143\175\023\233\116\267\157  
\030\067\200\123\376\335\040\340\065\232\066\321\307\001\271\346  
\334\335\363\377\035\054\072\026\127\331\222\071\326

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "COMODO ECC Certification Authority"  
# Issuer: CN=COMODO ECC Certification Authority,O=COMODO CA Limited,L=Salford,ST=Greater  
Manchester,C=GB  
# Serial Number: 1f:47:af:aa:62:00:70:50:54:4c:01:9e:9b:63:99:2a  
# Subject: CN=COMODO ECC Certification Authority,O=COMODO CA Limited,L=Salford,ST=Greater  
Manchester,C=GB  
# Not Valid Before: Thu Mar 06 00:00:00 2008  
# Not Valid After : Mon Jan 18 23:59:59 2038

```

Fingerprint (SHA-256):
17:93:92:7A:06:14:54:97:89:AD:CE:2F:8F:34:F7:F0:B6:6D:0F:3A:E3:A3:B8:4D:21:EC:15:DB:BA:4F:AD:C7
Fingerprint (SHA1): 9F:74:4E:9F:2B:4D:BA:EC:0F:31:2C:50:B6:56:3B:8E:2D:93:C3:11
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "COMODO ECC Certification Authority"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\237\164\116\237\053\115\272\354\017\061\054\120\266\126\073\216
\055\223\303\021
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\174\142\377\164\235\061\123\136\150\112\325\170\252\036\277\043
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\205\061\013\060\011\006\003\125\004\006\023\002\107\102
\061\033\060\031\006\003\125\004\010\023\022\107\162\145\141\164
\145\162\040\115\141\156\143\150\145\163\164\145\162\061\020\060
\016\006\003\125\004\007\023\007\123\141\154\146\157\162\144\061
\032\060\030\006\003\125\004\012\023\021\103\117\115\117\104\117
\040\103\101\040\114\151\155\151\164\145\144\061\053\060\051\006
\003\125\004\003\023\042\103\117\115\117\104\117\040\105\103\103
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101
\165\164\150\157\162\151\164\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\037\107\257\252\142\000\160\120\124\114\001\236\233\143
\231\052
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "OISTE WISeKey Global Root GA CA"
#
Issuer: CN=OISTE WISeKey Global Root GA CA,OU=OISTE Foundation Endorsed,OU=Copyright (c)
2005,O=WISeKey,C=CH
Serial Number:41:3d:72:c7:f4:6b:1f:81:43:7d:f1:d2:28:54:df:9a
Subject: CN=OISTE WISeKey Global Root GA CA,OU=OISTE Foundation Endorsed,OU=Copyright (c)
2005,O=WISeKey,C=CH
Not Valid Before: Sun Dec 11 16:03:44 2005
Not Valid After : Fri Dec 11 16:09:51 2037
Fingerprint (SHA-256):
41:C9:23:86:6A:B4:CA:D6:B7:AD:57:80:81:58:2E:02:07:97:A6:CB:DF:4F:FF:78:CE:83:96:B3:89:37:D7:F5
Fingerprint (SHA1): 59:22:A1:E1:5A:EA:16:35:21:F8:98:39:6A:46:46:B0:44:1B:0F:A9

```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "OISTE WISeKey Global Root GA CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\212\061\013\060\011\006\003\125\004\006\023\002\103\110
\061\020\060\016\006\003\125\004\012\023\007\127\111\123\145\113
\145\171\061\033\060\031\006\003\125\004\013\023\022\103\157\160
\171\162\151\147\150\164\040\050\143\051\040\062\060\060\065\061
\042\060\040\006\003\125\004\013\023\031\117\111\123\124\105\040
\106\157\165\156\144\141\164\151\157\156\040\105\156\144\157\162
\163\145\144\061\050\060\046\006\003\125\004\003\023\037\117\111
\123\124\105\040\127\111\123\145\113\145\171\040\107\154\157\142
\141\154\040\122\157\157\164\040\107\101\040\103\101
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\212\061\013\060\011\006\003\125\004\006\023\002\103\110
\061\020\060\016\006\003\125\004\012\023\007\127\111\123\145\113
\145\171\061\033\060\031\006\003\125\004\013\023\022\103\157\160
\171\162\151\147\150\164\040\050\143\051\040\062\060\060\065\061
\042\060\040\006\003\125\004\013\023\031\117\111\123\124\105\040
\106\157\165\156\144\141\164\151\157\156\040\105\156\144\157\162
\163\145\144\061\050\060\046\006\003\125\004\003\023\037\117\111
\123\124\105\040\127\111\123\145\113\145\171\040\107\154\157\142
\141\154\040\122\157\157\164\040\107\101\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\101\075\162\307\364\153\037\201\103\175\361\322\050\124
\337\232
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\361\060\202\002\331\240\003\002\001\002\002\020\101
\075\162\307\364\153\037\201\103\175\361\322\050\124\337\232\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\201
\212\061\013\060\011\006\003\125\004\006\023\002\103\110\061\020
\060\016\006\003\125\004\012\023\007\127\111\123\145\113\145\171
\061\033\060\031\006\003\125\004\013\023\022\103\157\160\171\162
\151\147\150\164\040\050\143\051\040\062\060\060\065\061\042\060
\040\006\003\125\004\013\023\031\117\111\123\124\105\040\106\157
\165\156\144\141\164\151\157\156\040\105\156\144\157\162\163\145
\144\061\050\060\046\006\003\125\004\003\023\037\117\111\123\124
\105\040\127\111\123\145\113\145\171\040\107\154\157\142\141\154
\040\122\157\157\164\040\107\101\040\103\101\060\036\027\015\060
\065\061\062\061\061\061\066\060\063\064\064\132\027\015\063\067
\061\062\061\061\061\066\060\071\065\061\132\060\201\212\061\013
```

\060\011\006\003\125\004\006\023\002\103\110\061\020\060\016\006  
\003\125\004\012\023\007\127\111\123\145\113\145\171\061\033\060  
\031\006\003\125\004\013\023\022\103\157\160\171\162\151\147\150  
\164\040\050\143\051\040\062\060\060\065\061\042\060\040\006\003  
\125\004\013\023\031\117\111\123\124\105\040\106\157\165\156\144  
\141\164\151\157\156\040\105\156\144\157\162\163\145\144\061\050  
\060\046\006\003\125\004\003\023\037\117\111\123\124\105\040\127  
\111\123\145\113\145\171\040\107\154\157\142\141\154\040\122\157  
\157\164\040\107\101\040\103\101\060\202\001\042\060\015\006\011  
\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017\000  
\060\202\001\012\002\202\001\001\000\313\117\263\000\233\075\066  
\335\371\321\111\152\153\020\111\037\354\330\053\262\306\370\062  
\201\051\103\225\114\232\031\043\041\025\105\336\343\310\034\121  
\125\133\256\223\350\067\377\053\153\351\324\352\276\052\335\250  
\121\053\327\146\303\141\134\140\002\310\365\316\162\173\073\270  
\362\116\145\010\232\315\244\152\031\301\001\273\163\246\327\366  
\303\335\315\274\244\213\265\231\141\270\001\242\243\324\115\324  
\005\075\221\255\370\264\010\161\144\257\160\361\034\153\176\366  
\303\167\235\044\163\173\344\014\214\341\331\066\341\231\213\005  
\231\013\355\105\061\011\312\302\000\333\367\162\240\226\252\225  
\207\320\216\307\266\141\163\015\166\146\214\334\033\264\143\242  
\237\177\223\023\060\361\241\047\333\331\377\054\125\210\221\240  
\340\117\007\260\050\126\214\030\033\227\104\216\211\335\340\027  
\156\347\052\357\217\071\012\061\204\202\330\100\024\111\056\172  
\101\344\247\376\343\144\314\301\131\161\113\054\041\247\133\175  
\340\035\321\056\201\233\303\330\150\367\275\226\033\254\160\261  
\026\024\013\333\140\271\046\001\005\002\003\001\000\001\243\121  
\060\117\060\013\006\003\125\035\017\004\004\003\002\001\206\060  
\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377  
\060\035\006\003\125\035\016\004\026\004\024\263\003\176\256\066  
\274\260\171\321\334\224\046\266\021\276\041\262\151\206\224\060  
\020\006\011\053\006\001\004\001\202\067\025\001\004\003\002\001  
\000\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000  
\003\202\001\001\000\113\241\377\013\207\156\263\371\301\103\261  
\110\363\050\300\035\056\311\011\101\372\224\000\034\244\244\253  
\111\117\217\075\036\357\115\157\275\274\244\366\362\046\060\311  
\020\312\035\210\373\164\031\037\205\105\275\260\154\121\371\066  
\176\333\365\114\062\072\101\117\133\107\317\350\013\055\266\304  
\031\235\164\305\107\306\073\152\017\254\024\333\074\364\163\234  
\251\005\337\000\334\164\170\372\370\065\140\131\002\023\030\174  
\274\373\115\260\040\155\103\273\140\060\172\147\063\134\305\231  
\321\370\055\071\122\163\373\214\252\227\045\134\162\331\010\036  
\253\116\074\343\201\061\237\003\246\373\300\376\051\210\125\332  
\204\325\120\003\266\342\204\243\246\066\252\021\072\001\341\030  
\113\326\104\150\263\075\371\123\164\204\263\106\221\106\226\000  
\267\200\054\266\341\343\020\342\333\242\347\050\217\001\226\142  
\026\076\000\343\034\245\066\201\030\242\114\122\166\300\021\243  
\156\346\035\272\343\132\276\066\123\305\076\165\217\206\151\051

\130\123\265\234\273\157\237\134\305\030\354\335\057\341\230\311  
\374\276\337\012\015

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "OISTE WISeKey Global Root GA CA"

# Issuer: CN=OISTE WISeKey Global Root GA CA,OU=OISTE Foundation Endorsed,OU=Copyright (c)  
2005,O=WISeKey,C=CH

# Serial Number:41:3d:72:c7:f4:6b:1f:81:43:7d:f1:d2:28:54:df:9a

# Subject: CN=OISTE WISeKey Global Root GA CA,OU=OISTE Foundation Endorsed,OU=Copyright (c)  
2005,O=WISeKey,C=CH

# Not Valid Before: Sun Dec 11 16:03:44 2005

# Not Valid After : Fri Dec 11 16:09:51 2037

# Fingerprint (SHA-256):

41:C9:23:86:6A:B4:CA:D6:B7:AD:57:80:81:58:2E:02:07:97:A6:CB:DF:4F:FF:78:CE:83:96:B3:89:37:D7:F5

# Fingerprint (SHA1): 59:22:A1:E1:5A:EA:16:35:21:F8:98:39:6A:46:46:B0:44:1B:0F:A9

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "OISTE WISeKey Global Root GA CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\131\042\241\341\132\352\026\065\041\370\230\071\152\106\106\260  
\104\033\017\251

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\274\154\121\063\247\351\323\146\143\124\025\162\033\041\222\223

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\212\061\013\060\011\006\003\125\004\006\023\002\103\110  
\061\020\060\016\006\003\125\004\012\023\007\127\111\123\145\113  
\145\171\061\033\060\031\006\003\125\004\013\023\022\103\157\160  
\171\162\151\147\150\164\040\050\143\051\040\062\060\060\065\061  
\042\060\040\006\003\125\004\013\023\031\117\111\123\124\105\040  
\106\157\165\156\144\141\164\151\157\156\040\105\156\144\157\162  
\163\145\144\061\050\060\046\006\003\125\004\003\023\037\117\111  
\123\124\105\040\127\111\123\145\113\145\171\040\107\154\157\142  
\141\154\040\122\157\157\164\040\107\101\040\103\101

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\101\075\162\307\364\153\037\201\103\175\361\322\050\124  
\337\232

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "Certigna"

#

# Issuer: CN=Certigna,O=Dhimyotis,C=FR

# Serial Number:00:fe:dc:e3:01:0f:c9:48:ff

# Subject: CN=Certigna,O=Dhimyotis,C=FR

# Not Valid Before: Fri Jun 29 15:13:05 2007

# Not Valid After : Tue Jun 29 15:13:05 2027

# Fingerprint (SHA-256):

E3:B6:A2:DB:2E:D7:CE:48:84:2F:7A:C5:32:41:C7:B7:1D:54:14:4B:FB:40:C1:1F:3F:1D:0B:42:F5:EE:A1:2D

# Fingerprint (SHA1): B1:2E:13:63:45:86:A4:6F:1A:B2:60:68:37:58:2D:C4:AC:FD:94:97

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Certigna"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\064\061\013\060\011\006\003\125\004\006\023\002\106\122\061  
\022\060\020\006\003\125\004\012\014\011\104\150\151\155\171\157  
\164\151\163\061\021\060\017\006\003\125\004\003\014\010\103\145  
\162\164\151\147\156\141

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\064\061\013\060\011\006\003\125\004\006\023\002\106\122\061  
\022\060\020\006\003\125\004\012\014\011\104\150\151\155\171\157  
\164\151\163\061\021\060\017\006\003\125\004\003\014\010\103\145  
\162\164\151\147\156\141

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\011\000\376\334\343\001\017\311\110\377

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\250\060\202\002\220\240\003\002\001\002\002\011\000  
\376\334\343\001\017\311\110\377\060\015\006\011\052\206\110\206  
\367\015\001\001\005\005\000\060\064\061\013\060\011\006\003\125  
\004\006\023\002\106\122\061\022\060\020\006\003\125\004\012\014  
\011\104\150\151\155\171\157\164\151\163\061\021\060\017\006\003  
\125\004\003\014\010\103\145\162\164\151\147\156\141\060\036\027  
\015\060\067\060\066\062\071\061\065\061\063\060\065\132\027\015  
\062\067\060\066\062\071\061\065\061\063\060\065\132\060\064\061  
\013\060\011\006\003\125\004\006\023\002\106\122\061\022\060\020  
\006\003\125\004\012\014\011\104\150\151\155\171\157\164\151\163  
\061\021\060\017\006\003\125\004\003\014\010\103\145\162\164\151  
\147\156\141\060\202\001\042\060\015\006\011\052\206\110\206\367

\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002  
\202\001\001\000\310\150\361\311\326\326\263\064\165\046\202\036  
\354\264\276\352\134\341\046\355\021\107\141\341\242\174\026\170  
\100\041\344\140\236\132\310\143\341\304\261\226\222\377\030\155  
\151\043\341\053\142\367\335\342\066\057\221\007\271\110\317\016  
\354\171\266\054\347\064\113\160\010\045\243\074\207\033\031\362  
\201\007\017\070\220\031\323\021\376\206\264\362\321\136\036\036  
\226\315\200\154\316\073\061\223\266\362\240\320\251\225\022\175  
\245\232\314\153\310\204\126\212\063\251\347\042\025\123\026\360  
\314\027\354\127\137\351\242\012\230\011\336\343\137\234\157\334  
\110\343\205\013\025\132\246\272\237\254\110\343\011\262\367\364  
\062\336\136\064\276\034\170\135\102\133\316\016\042\217\115\220  
\327\175\062\030\263\013\054\152\277\216\077\024\021\211\040\016  
\167\024\265\075\224\010\207\367\045\036\325\262\140\000\354\157  
\052\050\045\156\052\076\030\143\027\045\077\076\104\040\026\366  
\046\310\045\256\005\112\264\347\143\054\363\214\026\123\176\134  
\373\021\032\010\301\106\142\237\042\270\361\302\215\151\334\372  
\072\130\006\337\002\003\001\000\001\243\201\274\060\201\271\060  
\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377  
\060\035\006\003\125\035\016\004\026\004\024\032\355\376\101\071  
\220\264\044\131\276\001\362\122\325\105\366\132\071\334\021\060  
\144\006\003\125\035\043\004\135\060\133\200\024\032\355\376\101  
\071\220\264\044\131\276\001\362\122\325\105\366\132\071\334\021  
\241\070\244\066\060\064\061\013\060\011\006\003\125\004\006\023  
\002\106\122\061\022\060\020\006\003\125\004\012\014\011\104\150  
\151\155\171\157\164\151\163\061\021\060\017\006\003\125\004\003  
\014\010\103\145\162\164\151\147\156\141\202\011\000\376\334\343  
\001\017\311\110\377\060\016\006\003\125\035\017\001\001\377\004  
\004\003\002\001\006\060\021\006\011\140\206\110\001\206\370\102  
\001\001\004\004\003\002\000\007\060\015\006\011\052\206\110\206  
\367\015\001\001\005\005\000\003\202\001\001\000\205\003\036\222  
\161\366\102\257\341\243\141\236\353\363\300\017\362\245\324\332  
\225\346\326\276\150\066\075\176\156\037\114\212\357\321\017\041  
\155\136\245\122\143\316\022\370\357\052\332\157\353\067\376\023  
\002\307\313\073\076\042\153\332\141\056\177\324\162\075\335\060  
\341\036\114\100\031\214\017\327\234\321\203\060\173\230\131\334  
\175\306\271\014\051\114\241\063\242\353\147\072\145\204\323\226  
\342\355\166\105\160\217\265\053\336\371\043\326\111\156\074\024  
\265\306\237\065\036\120\320\301\217\152\160\104\002\142\313\256  
\035\150\101\247\252\127\350\123\252\007\322\006\366\325\024\006  
\013\221\003\165\054\154\162\265\141\225\232\015\213\271\015\347  
\365\337\124\315\336\346\330\326\011\010\227\143\345\301\056\260  
\267\104\046\300\046\300\257\125\060\236\073\325\066\052\031\004  
\364\134\036\377\317\054\267\377\320\375\207\100\021\325\021\043  
\273\110\300\041\251\244\050\055\375\025\370\260\116\053\364\060  
\133\041\374\021\221\064\276\101\357\173\235\227\165\377\227\225  
\300\226\130\057\352\273\106\327\273\344\331\056

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Certigna"

# Issuer: CN=Certigna,O=Dhimyotis,C=FR

# Serial Number:00:fe:dc:e3:01:0f:c9:48:ff

# Subject: CN=Certigna,O=Dhimyotis,C=FR

# Not Valid Before: Fri Jun 29 15:13:05 2007

# Not Valid After : Tue Jun 29 15:13:05 2027

# Fingerprint (SHA-256):

E3:B6:A2:DB:2E:D7:CE:48:84:2F:7A:C5:32:41:C7:B7:1D:54:14:4B:FB:40:C1:1F:3F:1D:0B:42:F5:EE:A1:2D

# Fingerprint (SHA1): B1:2E:13:63:45:86:A4:6F:1A:B2:60:68:37:58:2D:C4:AC:FD:94:97

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Certigna"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\261\056\023\143\105\206\244\157\032\262\140\150\067\130\055\304  
\254\375\224\227

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\253\127\246\133\175\102\202\031\265\330\130\046\050\136\375\377

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\064\061\013\060\011\006\003\125\004\006\023\002\106\122\061  
\022\060\020\006\003\125\004\012\014\011\104\150\151\155\171\157  
\164\151\163\061\021\060\017\006\003\125\004\003\014\010\103\145  
\162\164\151\147\156\141

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\011\000\376\334\343\001\017\311\110\377

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "ePKI Root Certification Authority"

#

# Issuer: OU=ePKI Root Certification Authority,O="Chunghwa Telecom Co., Ltd.",C=TW

# Serial Number:15:c8:bd:65:47:5c:af:b8:97:00:5e:e4:06:d2:bc:9d

# Subject: OU=ePKI Root Certification Authority,O="Chunghwa Telecom Co., Ltd.",C=TW

# Not Valid Before: Mon Dec 20 02:31:27 2004

# Not Valid After : Wed Dec 20 02:31:27 2034

# Fingerprint (SHA-256):



C0:A6:F4:DC:63:A2:4B:FD:CF:54:EF:2A:6A:08:2A:0A:72:DE:35:80:3E:2F:F5:FF:52:7A:E5:D8:72:06:DF:D5

# Fingerprint (SHA1): 67:65:0D:F1:7E:8E:7E:5B:82:40:A4:F4:56:4B:CF:E2:3D:69:C6:F0

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "ePKI Root Certification Authority"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\136\061\013\060\011\006\003\125\004\006\023\002\124\127\061  
\043\060\041\006\003\125\004\012\014\032\103\150\165\156\147\150  
\167\141\040\124\145\154\145\143\157\155\040\103\157\056\054\040  
\114\164\144\056\061\052\060\050\006\003\125\004\013\014\041\145  
\120\113\111\040\122\157\157\164\040\103\145\162\164\151\146\151  
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\136\061\013\060\011\006\003\125\004\006\023\002\124\127\061  
\043\060\041\006\003\125\004\012\014\032\103\150\165\156\147\150  
\167\141\040\124\145\154\145\143\157\155\040\103\157\056\054\040  
\114\164\144\056\061\052\060\050\006\003\125\004\013\014\041\145  
\120\113\111\040\122\157\157\164\040\103\145\162\164\151\146\151  
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\025\310\275\145\107\134\257\270\227\000\136\344\006\322  
\274\235

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\260\060\202\003\230\240\003\002\001\002\002\020\025  
\310\275\145\107\134\257\270\227\000\136\344\006\322\274\235\060  
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\136  
\061\013\060\011\006\003\125\004\006\023\002\124\127\061\043\060  
\041\006\003\125\004\012\014\032\103\150\165\156\147\150\167\141  
\040\124\145\154\145\143\157\155\040\103\157\056\054\040\114\164  
\144\056\061\052\060\050\006\003\125\004\013\014\041\145\120\113  
\111\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141  
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\060\036  
\027\015\060\064\061\062\062\060\060\062\063\061\062\067\132\027  
\015\063\064\061\062\062\060\060\062\063\061\062\067\132\060\136  
\061\013\060\011\006\003\125\004\006\023\002\124\127\061\043\060  
\041\006\003\125\004\012\014\032\103\150\165\156\147\150\167\141  
\040\124\145\154\145\143\157\155\040\103\157\056\054\040\114\164  
\144\056\061\052\060\050\006\003\125\004\013\014\041\145\120\113  
\111\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141  
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\060\202  
\002\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005

\000\003\202\002\017\000\060\202\002\012\002\202\002\001\000\341  
\045\017\356\215\333\210\063\165\147\315\255\037\175\072\116\155  
\235\323\057\024\363\143\164\313\001\041\152\067\352\204\120\007  
\113\046\133\011\103\154\041\236\152\310\325\003\365\140\151\217  
\314\360\042\344\037\347\367\152\042\061\267\054\025\362\340\376  
\000\152\103\377\207\145\306\265\032\301\247\114\155\042\160\041  
\212\061\362\227\164\211\011\022\046\034\236\312\331\022\242\225  
\074\332\351\147\277\010\240\144\343\326\102\267\105\357\227\364  
\366\365\327\265\112\025\002\130\175\230\130\113\140\274\315\327  
\015\232\023\063\123\321\141\371\172\325\327\170\263\232\063\367  
\000\206\316\035\115\224\070\257\250\354\170\121\160\212\134\020  
\203\121\041\367\021\075\064\206\136\345\110\315\227\201\202\065  
\114\031\354\145\366\153\305\005\241\356\107\023\326\263\041\047  
\224\020\012\331\044\073\272\276\104\023\106\060\077\227\074\330  
\327\327\152\356\073\070\343\053\324\227\016\271\033\347\007\111  
\177\067\052\371\167\170\317\124\355\133\106\235\243\200\016\221  
\103\301\326\133\137\024\272\237\246\215\044\107\100\131\277\162  
\070\262\066\154\067\377\231\321\135\016\131\012\253\151\367\300  
\262\004\105\172\124\000\256\276\123\366\265\347\341\370\074\243  
\061\322\251\376\041\122\144\305\246\147\360\165\007\006\224\024  
\201\125\306\047\344\001\217\027\301\152\161\327\276\113\373\224  
\130\175\176\021\063\261\102\367\142\154\030\326\317\011\150\076  
\177\154\366\036\217\142\255\245\143\333\011\247\037\042\102\101  
\036\157\231\212\076\327\371\077\100\172\171\260\245\001\222\322  
\235\075\010\025\245\020\001\055\263\062\166\250\225\015\263\172  
\232\373\007\020\170\021\157\341\217\307\272\017\045\032\164\052  
\345\034\230\101\231\337\041\207\350\225\006\152\012\263\152\107  
\166\145\366\072\317\217\142\027\031\173\012\050\315\032\322\203  
\036\041\307\054\277\276\377\141\150\267\147\033\273\170\115\215  
\316\147\345\344\301\216\267\043\146\342\235\220\165\064\230\251  
\066\053\212\232\224\271\235\354\314\212\261\370\045\211\134\132  
\266\057\214\037\155\171\044\247\122\150\303\204\065\342\146\215  
\143\016\045\115\325\031\262\346\171\067\247\042\235\124\061\002  
\003\001\000\001\243\152\060\150\060\035\006\003\125\035\016\004  
\026\004\024\036\014\367\266\147\362\341\222\046\011\105\300\125  
\071\056\167\077\102\112\242\060\014\006\003\125\035\023\004\005  
\060\003\001\001\377\060\071\006\004\147\052\007\000\004\061\060  
\057\060\055\002\001\000\060\011\006\005\053\016\003\002\032\005  
\000\060\007\006\005\147\052\003\000\000\004\024\105\260\302\307  
\012\126\174\356\133\170\014\225\371\030\123\301\246\034\330\020  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003  
\202\002\001\000\011\263\203\123\131\001\076\225\111\271\361\201  
\272\371\166\040\043\265\047\140\164\324\152\231\064\136\154\000  
\123\331\237\362\246\261\044\007\104\152\052\306\245\216\170\022  
\350\107\331\130\033\023\052\136\171\233\237\012\052\147\246\045  
\077\006\151\126\163\303\212\146\110\373\051\201\127\164\006\312  
\234\352\050\350\070\147\046\053\361\325\265\077\145\223\370\066  
\135\216\215\215\100\040\207\031\352\357\047\300\075\264\071\017

\045\173\150\120\164\125\234\014\131\175\132\075\101\224\045\122  
\010\340\107\054\025\061\031\325\277\007\125\306\273\022\265\227  
\364\137\203\205\272\161\301\331\154\201\021\166\012\012\260\277  
\202\227\367\352\075\372\372\354\055\251\050\224\073\126\335\322  
\121\056\256\300\275\010\025\214\167\122\064\226\326\233\254\323  
\035\216\141\017\065\173\233\256\071\151\013\142\140\100\040\066  
\217\257\373\066\356\055\010\112\035\270\277\233\134\370\352\245  
\033\240\163\246\330\370\156\340\063\004\137\150\252\047\207\355  
\331\301\220\234\355\275\343\152\065\257\143\337\253\030\331\272  
\346\351\112\352\120\212\017\141\223\036\342\055\031\342\060\224  
\065\222\135\016\266\007\257\031\200\217\107\220\121\113\056\115  
\335\205\342\322\012\122\012\027\232\374\032\260\120\002\345\001  
\243\143\067\041\114\104\304\233\121\231\021\016\163\234\006\217  
\124\056\247\050\136\104\071\207\126\055\067\275\205\104\224\341  
\014\113\054\234\303\222\205\064\141\313\017\270\233\112\103\122  
\376\064\072\175\270\351\051\334\166\251\310\060\370\024\161\200  
\306\036\066\110\164\042\101\134\207\202\350\030\161\213\101\211  
\104\347\176\130\133\250\270\215\023\351\247\154\303\107\355\263  
\032\235\142\256\215\202\352\224\236\335\131\020\303\255\335\342  
\115\343\061\325\307\354\350\362\260\376\222\036\026\012\032\374  
\331\363\370\047\266\311\276\035\264\154\144\220\177\364\344\304  
\133\327\067\256\102\016\335\244\032\157\174\210\124\305\026\156  
\341\172\150\056\370\072\277\015\244\074\211\073\170\247\116\143  
\203\004\041\010\147\215\362\202\111\320\133\375\261\315\017\203  
\204\324\076\040\205\367\112\075\053\234\375\052\012\011\115\352  
\201\370\021\234

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "ePKI Root Certification Authority"

# Issuer: OU=ePKI Root Certification Authority,O="Chunghwa Telecom Co., Ltd.",C=TW

# Serial Number: 15:c8:bd:65:47:5c:af:b8:97:00:5e:e4:06:d2:bc:9d

# Subject: OU=ePKI Root Certification Authority,O="Chunghwa Telecom Co., Ltd.",C=TW

# Not Valid Before: Mon Dec 20 02:31:27 2004

# Not Valid After : Wed Dec 20 02:31:27 2034

# Fingerprint (SHA-256):

C0:A6:F4:DC:63:A2:4B:FD:CF:54:EF:2A:6A:08:2A:0A:72:DE:35:80:3E:2F:F5:FF:52:7A:E5:D8:72:06:DF:D5

# Fingerprint (SHA1): 67:65:0D:F1:7E:8E:7E:5B:82:40:A4:F4:56:4B:CF:E2:3D:69:C6:F0

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "ePKI Root Certification Authority"

CKA\_CERT\_SHA1\_HASH MULTILINE OCTAL

\147\145\015\361\176\216\176\133\202\100\244\364\126\113\317\342

\075\151\306\360

```

END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\033\056\000\312\046\006\220\075\255\376\157\025\150\323\153\263
END
CKA_ISSUER MULTILINE_OCTAL
\060\136\061\013\060\011\006\003\125\004\006\023\002\124\127\061
\043\060\041\006\003\125\004\012\014\032\103\150\165\156\147\150
\167\141\040\124\145\154\145\143\157\155\040\103\157\056\054\040
\114\164\144\056\061\052\060\050\006\003\125\004\013\014\041\145
\120\113\111\040\122\157\157\164\040\103\145\162\164\151\146\151
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\025\310\275\145\107\134\257\270\227\000\136\344\006\322
\274\235
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "certSIGN ROOT CA"
#
Issuer: OU=certSIGN ROOT CA,O=certSIGN,C=RO
Serial Number:20:06:05:16:70:02
Subject: OU=certSIGN ROOT CA,O=certSIGN,C=RO
Not Valid Before: Tue Jul 04 17:20:04 2006
Not Valid After : Fri Jul 04 17:20:04 2031
Fingerprint (SHA-256):
EA:A9:62:C4:FA:4A:6B:AF:EB:E4:15:19:6D:35:1C:CD:88:8D:4F:53:F3:FA:8A:E6:D7:C4:66:A9:4E:60:42:BB
Fingerprint (SHA1): FA:B7:EE:36:97:26:62:FB:2D:B0:2A:F6:BF:03:FD:E8:7C:4B:2F:9B
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "certSIGN ROOT CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\073\061\013\060\011\006\003\125\004\006\023\002\122\117\061
\021\060\017\006\003\125\004\012\023\010\143\145\162\164\123\111
\107\116\061\031\060\027\006\003\125\004\013\023\020\143\145\162
\164\123\111\107\116\040\122\117\117\124\040\103\101
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\073\061\013\060\011\006\003\125\004\006\023\002\122\117\061
\021\060\017\006\003\125\004\012\023\010\143\145\162\164\123\111

```

\107\116\061\031\060\027\006\003\125\004\013\023\020\143\145\162  
\164\123\111\107\116\040\122\117\117\124\040\103\101  
END  
CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL  
\002\006\040\006\005\026\160\002  
END  
CKA\_VALUE MULTILINE\_OCTAL  
\060\202\003\070\060\202\002\040\240\003\002\001\002\002\006\040  
\006\005\026\160\002\060\015\006\011\052\206\110\206\367\015\001  
\001\005\005\000\060\073\061\013\060\011\006\003\125\004\006\023  
\002\122\117\061\021\060\017\006\003\125\004\012\023\010\143\145  
\162\164\123\111\107\116\061\031\060\027\006\003\125\004\013\023  
\020\143\145\162\164\123\111\107\116\040\122\117\117\124\040\103  
\101\060\036\027\015\060\066\060\067\060\064\061\067\062\060\060  
\064\132\027\015\063\061\060\067\060\064\061\067\062\060\060\064  
\132\060\073\061\013\060\011\006\003\125\004\006\023\002\122\117  
\061\021\060\017\006\003\125\004\012\023\010\143\145\162\164\123  
\111\107\116\061\031\060\027\006\003\125\004\013\023\020\143\145  
\162\164\123\111\107\116\040\122\117\117\124\040\103\101\060\202  
\001\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005  
\000\003\202\001\017\000\060\202\001\012\002\202\001\001\000\267  
\063\271\176\310\045\112\216\265\333\264\050\033\252\127\220\350  
\321\042\323\144\272\323\223\350\324\254\206\141\100\152\140\127  
\150\124\204\115\274\152\124\002\005\377\337\233\232\052\256\135  
\007\217\112\303\050\177\357\373\053\372\171\361\307\255\360\020  
\123\044\220\213\146\311\250\210\253\257\132\243\000\351\276\272  
\106\356\133\163\173\054\027\202\201\136\142\054\241\002\145\263  
\275\305\053\000\176\304\374\003\063\127\015\355\342\372\316\135  
\105\326\070\315\065\266\262\301\320\234\201\112\252\344\262\001  
\134\035\217\137\231\304\261\255\333\210\041\353\220\010\202\200  
\363\060\243\103\346\220\202\256\125\050\111\355\133\327\251\020  
\070\016\376\217\114\133\233\106\352\101\365\260\010\164\303\320  
\210\063\266\174\327\164\337\334\204\321\103\016\165\071\241\045  
\100\050\352\170\313\016\054\056\071\235\214\213\156\026\034\057  
\046\202\020\342\343\145\224\012\004\300\136\367\135\133\370\020  
\342\320\272\172\113\373\336\067\000\000\032\133\050\343\322\234  
\163\076\062\207\230\241\311\121\057\327\336\254\063\263\117\002  
\003\001\000\001\243\102\060\100\060\017\006\003\125\035\023\001  
\001\377\004\005\060\003\001\001\377\060\016\006\003\125\035\017  
\001\001\377\004\004\003\002\001\306\060\035\006\003\125\035\016  
\004\026\004\024\340\214\233\333\045\111\263\361\174\206\326\262  
\102\207\013\320\153\240\331\344\060\015\006\011\052\206\110\206  
\367\015\001\001\005\005\000\003\202\001\001\000\076\322\034\211  
\056\065\374\370\165\335\346\177\145\210\364\162\114\311\054\327  
\062\116\363\335\031\171\107\275\216\073\133\223\017\120\111\044  
\023\153\024\006\162\357\011\323\241\241\343\100\204\311\347\030  
\062\164\074\110\156\017\237\113\324\367\036\323\223\206\144\124  
\227\143\162\120\325\125\317\372\040\223\002\242\233\303\043\223

\116\026\125\166\240\160\171\155\315\041\037\317\057\055\274\031  
\343\210\061\370\131\032\201\011\310\227\246\164\307\140\304\133  
\314\127\216\262\165\375\033\002\011\333\131\157\162\223\151\367  
\061\101\326\210\070\277\207\262\275\026\171\371\252\344\276\210  
\045\335\141\047\043\034\265\061\007\004\066\264\032\220\275\240  
\164\161\120\211\155\274\024\343\017\206\256\361\253\076\307\240  
\011\314\243\110\321\340\333\144\347\222\265\317\257\162\103\160  
\213\371\303\204\074\023\252\176\222\233\127\123\223\372\160\302  
\221\016\061\371\233\147\135\351\226\070\136\137\263\163\116\210  
\025\147\336\236\166\020\142\040\276\125\151\225\103\000\071\115  
\366\356\260\132\116\111\104\124\130\137\102\203

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "certSIGN ROOT CA"

# Issuer: OU=certSIGN ROOT CA,O=certSIGN,C=RO

# Serial Number:20:06:05:16:70:02

# Subject: OU=certSIGN ROOT CA,O=certSIGN,C=RO

# Not Valid Before: Tue Jul 04 17:20:04 2006

# Not Valid After : Fri Jul 04 17:20:04 2031

# Fingerprint (SHA-256):

EA:A9:62:C4:FA:4A:6B:AF:EB:E4:15:19:6D:35:1C:CD:88:8D:4F:53:F3:FA:8A:E6:D7:C4:66:A9:4E:60:42:BB

# Fingerprint (SHA1): FA:B7:EE:36:97:26:62:FB:2D:B0:2A:F6:BF:03:FD:E8:7C:4B:2F:9B

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "certSIGN ROOT CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\372\267\356\066\227\046\142\373\055\260\052\366\277\003\375\350  
\174\113\057\233

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\030\230\300\326\351\072\374\371\260\365\014\367\113\001\104\027

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\073\061\013\060\011\006\003\125\004\006\023\002\122\117\061  
\021\060\017\006\003\125\004\012\023\010\143\145\162\164\123\111  
\107\116\061\031\060\027\006\003\125\004\013\023\020\143\145\162  
\164\123\111\107\116\040\122\117\117\124\040\103\101

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\006\040\006\005\026\160\002

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "NetLock Arany (Class Gold) Ftanúsítvány"

#

# Issuer: CN=NetLock Arany (Class Gold) F..tan..s..tv..ny,OU=Tan..s..tv..nykiad..k (Certification Services),O=NetLock Kft.,L=Budapest,C=HU

# Serial Number:49:41:2c:e4:00:10

# Subject: CN=NetLock Arany (Class Gold) F..tan..s..tv..ny,OU=Tan..s..tv..nykiad..k (Certification Services),O=NetLock Kft.,L=Budapest,C=HU

# Not Valid Before: Thu Dec 11 15:08:21 2008

# Not Valid After : Wed Dec 06 15:08:21 2028

# Fingerprint (SHA-256):

6C:61:DA:C3:A2:DE:F0:31:50:6B:E0:36:D2:A6:FE:40:19:94:FB:D1:3D:F9:C8:D4:66:59:92:74:C4:46:EC:98

# Fingerprint (SHA1): 06:08:3F:59:3F:15:A1:04:A0:69:A4:6B:A9:03:D0:06:B7:97:09:91

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "NetLock Arany (Class Gold) Ftanúsítvány"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\201\247\061\013\060\011\006\003\125\004\006\023\002\110\125  
\061\021\060\017\006\003\125\004\007\014\010\102\165\144\141\160  
\145\163\164\061\025\060\023\006\003\125\004\012\014\014\116\145  
\164\114\157\143\153\040\113\146\164\056\061\067\060\065\006\003  
\125\004\013\014\056\124\141\156\303\272\163\303\255\164\166\303  
\241\156\171\153\151\141\144\303\263\153\040\050\103\145\162\164  
\151\146\151\143\141\164\151\157\156\040\123\145\162\166\151\143  
\145\163\051\061\065\060\063\006\003\125\004\003\014\054\116\145  
\164\114\157\143\153\040\101\162\141\156\171\040\050\103\154\141  
\163\163\040\107\157\154\144\051\040\106\305\221\164\141\156\303  
\272\163\303\255\164\166\303\241\156\171

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\247\061\013\060\011\006\003\125\004\006\023\002\110\125  
\061\021\060\017\006\003\125\004\007\014\010\102\165\144\141\160  
\145\163\164\061\025\060\023\006\003\125\004\012\014\014\116\145  
\164\114\157\143\153\040\113\146\164\056\061\067\060\065\006\003  
\125\004\013\014\056\124\141\156\303\272\163\303\255\164\166\303  
\241\156\171\153\151\141\144\303\263\153\040\050\103\145\162\164  
\151\146\151\143\141\164\151\157\156\040\123\145\162\166\151\143  
\145\163\051\061\065\060\063\006\003\125\004\003\014\054\116\145  
\164\114\157\143\153\040\101\162\141\156\171\040\050\103\154\141  
\163\163\040\107\157\154\144\051\040\106\305\221\164\141\156\303  
\272\163\303\255\164\166\303\241\156\171

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\006\111\101\054\344\000\020

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\025\060\202\002\375\240\003\002\001\002\002\006\111  
\101\054\344\000\020\060\015\006\011\052\206\110\206\367\015\001  
\001\013\005\000\060\201\247\061\013\060\011\006\003\125\004\006  
\023\002\110\125\061\021\060\017\006\003\125\004\007\014\010\102  
\165\144\141\160\145\163\164\061\025\060\023\006\003\125\004\012  
\014\014\116\145\164\114\157\143\153\040\113\146\164\056\061\067  
\060\065\006\003\125\004\013\014\056\124\141\156\303\272\163\303  
\255\164\166\303\241\156\171\153\151\141\144\303\263\153\040\050  
\103\145\162\164\151\146\151\143\141\164\151\157\156\040\123\145  
\162\166\151\143\145\163\051\061\065\060\063\006\003\125\004\003  
\014\054\116\145\164\114\157\143\153\040\101\162\141\156\171\040  
\050\103\154\141\163\163\040\107\157\154\144\051\040\106\305\221  
\164\141\156\303\272\163\303\255\164\166\303\241\156\171\060\036  
\027\015\060\070\061\062\061\061\061\065\060\070\062\061\132\027  
\015\062\070\061\062\060\066\061\065\060\070\062\061\132\060\201  
\247\061\013\060\011\006\003\125\004\006\023\002\110\125\061\021  
\060\017\006\003\125\004\007\014\010\102\165\144\141\160\145\163  
\164\061\025\060\023\006\003\125\004\012\014\014\116\145\164\114  
\157\143\153\040\113\146\164\056\061\067\060\065\006\003\125\004  
\013\014\056\124\141\156\303\272\163\303\255\164\166\303\241\156  
\171\153\151\141\144\303\263\153\040\050\103\145\162\164\151\146  
\151\143\141\164\151\157\156\040\123\145\162\166\151\143\145\163  
\051\061\065\060\063\006\003\125\004\003\014\054\116\145\164\114  
\157\143\153\040\101\162\141\156\171\040\050\103\154\141\163\163  
\040\107\157\154\144\051\040\106\305\221\164\141\156\303\272\163  
\303\255\164\166\303\241\156\171\060\202\001\042\060\015\006\011  
\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017\000  
\060\202\001\012\002\202\001\001\000\304\044\136\163\276\113\155  
\024\303\241\364\343\227\220\156\322\060\105\036\074\356\147\331  
\144\340\032\212\177\312\060\312\203\343\040\301\343\364\072\323  
\224\137\032\174\133\155\277\060\117\204\047\366\237\037\111\274  
\306\231\012\220\362\017\365\177\103\204\067\143\121\213\172\245  
\160\374\172\130\315\216\233\355\303\106\154\204\160\135\332\363  
\001\220\043\374\116\060\251\176\341\047\143\347\355\144\074\240  
\270\311\063\143\376\026\220\377\260\270\375\327\250\300\300\224  
\103\013\266\325\131\246\236\126\320\044\037\160\171\257\333\071  
\124\015\145\165\331\025\101\224\001\257\136\354\366\215\361\377  
\255\144\376\040\232\327\134\353\376\246\037\010\144\243\213\166  
\125\255\036\073\050\140\056\207\045\350\252\257\037\306\144\106  
\040\267\160\177\074\336\110\333\226\123\267\071\167\344\032\342  
\307\026\204\166\227\133\057\273\031\025\205\370\151\205\365\231  
\247\251\362\064\247\251\266\246\003\374\157\206\075\124\174\166  
\004\233\153\371\100\135\000\064\307\056\231\165\235\345\210\003



\252\115\370\003\322\102\166\300\033\002\003\000\250\213\243\105  
\060\103\060\022\006\003\125\035\023\001\001\377\004\010\060\006  
\001\001\377\002\001\004\060\016\006\003\125\035\017\001\001\377  
\004\004\003\002\001\006\060\035\006\003\125\035\016\004\026\004  
\024\314\372\147\223\360\266\270\320\245\300\036\363\123\375\214  
\123\337\203\327\226\060\015\006\011\052\206\110\206\367\015\001  
\001\013\005\000\003\202\001\001\000\253\177\356\034\026\251\234  
\074\121\000\240\300\021\010\005\247\231\346\157\001\210\124\141  
\156\361\271\030\255\112\255\376\201\100\043\224\057\373\165\174  
\057\050\113\142\044\201\202\013\365\141\361\034\156\270\141\070  
\353\201\372\142\241\073\132\142\323\224\145\304\341\346\155\202  
\370\057\045\160\262\041\046\301\162\121\037\214\054\303\204\220  
\303\132\217\272\317\364\247\145\245\353\230\321\373\005\262\106  
\165\025\043\152\157\205\143\060\200\360\325\236\037\051\034\302  
\154\260\120\131\135\220\133\073\250\015\060\317\277\175\177\316  
\361\235\203\275\311\106\156\040\246\371\141\121\272\041\057\173  
\276\245\025\143\241\324\225\207\361\236\271\363\211\363\075\205  
\270\270\333\276\265\271\051\371\332\067\005\000\111\224\003\204  
\104\347\277\103\061\317\165\213\045\321\364\246\144\365\222\366  
\253\005\353\075\351\245\013\066\142\332\314\006\137\066\213\266  
\136\061\270\052\373\136\366\161\337\104\046\236\304\346\015\221  
\264\056\165\225\200\121\152\113\060\246\260\142\241\223\361\233  
\330\316\304\143\165\077\131\107\261

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "NetLock Arany (Class Gold) Ftanúsítvány"

# Issuer: CN=NetLock Arany (Class Gold) F..tan...s..tv..ny,OU=Tan...s..tv..nykiad..k (Certification Services),O=NetLock Kft.,L=Budapest,C=HU

# Serial Number:49:41:2c:e4:00:10

# Subject: CN=NetLock Arany (Class Gold) F..tan...s..tv..ny,OU=Tan...s..tv..nykiad..k (Certification Services),O=NetLock Kft.,L=Budapest,C=HU

# Not Valid Before: Thu Dec 11 15:08:21 2008

# Not Valid After : Wed Dec 06 15:08:21 2028

# Fingerprint (SHA-256):

6C:61:DA:C3:A2:DE:F0:31:50:6B:E0:36:D2:A6:FE:40:19:94:FB:D1:3D:F9:C8:D4:66:59:92:74:C4:46:EC:98

# Fingerprint (SHA1): 06:08:3F:59:3F:15:A1:04:A0:69:A4:6B:A9:03:D0:06:B7:97:09:91

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "NetLock Arany (Class Gold) Ftanúsítvány"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\006\010\077\131\077\025\241\004\240\151\244\153\251\003\320\006  
\267\227\011\221

END

```

CKA_CERT_MD5_HASH MULTILINE_OCTAL
\305\241\267\377\163\335\326\327\064\062\030\337\374\074\255\210
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\247\061\013\060\011\006\003\125\004\006\023\002\110\125
\061\021\060\017\006\003\125\004\007\014\010\102\165\144\141\160
\145\163\164\061\025\060\023\006\003\125\004\012\014\014\116\145
\164\114\157\143\153\040\113\146\164\056\061\067\060\065\006\003
\125\004\013\014\056\124\141\156\303\272\163\303\255\164\166\303
\241\156\171\153\151\141\144\303\263\153\040\050\103\145\162\164
\151\146\151\143\141\164\151\157\156\040\123\145\162\166\151\143
\145\163\051\061\065\060\063\006\003\125\004\003\014\054\116\145
\164\114\157\143\153\040\101\162\141\156\171\040\050\103\154\141
\163\163\040\107\157\154\144\051\040\106\305\221\164\141\156\303
\272\163\303\255\164\166\303\241\156\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\006\111\101\054\344\000\020
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "Hongkong Post Root CA 1"
#
Issuer: CN=Hongkong Post Root CA 1,O=Hongkong Post,C=HK
Serial Number: 1000 (0x3e8)
Subject: CN=Hongkong Post Root CA 1,O=Hongkong Post,C=HK
Not Valid Before: Thu May 15 05:13:14 2003
Not Valid After : Mon May 15 04:52:29 2023
Fingerprint (SHA-256):
F9:E6:7D:33:6C:51:00:2A:C0:54:C6:32:02:2D:66:DD:A2:E7:E3:FF:F1:0A:D0:61:ED:31:D8:BB:B4:10:CF:B2
Fingerprint (SHA1): D6:DA:A8:20:8D:09:D2:15:4D:24:B5:2F:CB:34:6E:B2:58:B2:8A:58
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Hongkong Post Root CA 1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\107\061\013\060\011\006\003\125\004\006\023\002\110\113\061
\026\060\024\006\003\125\004\012\023\015\110\157\156\147\153\157
\156\147\040\120\157\163\164\061\040\060\036\006\003\125\004\003
\023\027\110\157\156\147\153\157\156\147\040\120\157\163\164\040
\122\157\157\164\040\103\101\040\061
END

```

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\107\061\013\060\011\006\003\125\004\006\023\002\110\113\061  
\026\060\024\006\003\125\004\012\023\015\110\157\156\147\153\157  
\156\147\040\120\157\163\164\061\040\060\036\006\003\125\004\003  
\023\027\110\157\156\147\153\157\156\147\040\120\157\163\164\040  
\122\157\157\164\040\103\101\040\061

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\002\003\350

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\060\060\202\002\030\240\003\002\001\002\002\002\003  
\350\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000  
\060\107\061\013\060\011\006\003\125\004\006\023\002\110\113\061  
\026\060\024\006\003\125\004\012\023\015\110\157\156\147\153\157  
\156\147\040\120\157\163\164\061\040\060\036\006\003\125\004\003  
\023\027\110\157\156\147\153\157\156\147\040\120\157\163\164\040  
\122\157\157\164\040\103\101\040\061\060\036\027\015\060\063\060  
\065\061\065\060\065\061\063\061\064\132\027\015\062\063\060\065  
\061\065\060\064\065\062\062\071\132\060\107\061\013\060\011\006  
\003\125\004\006\023\002\110\113\061\026\060\024\006\003\125\004  
\012\023\015\110\157\156\147\153\157\156\147\040\120\157\163\164  
\061\040\060\036\006\003\125\004\003\023\027\110\157\156\147\153  
\157\156\147\040\120\157\163\164\040\122\157\157\164\040\103\101  
\040\061\060\202\001\042\060\015\006\011\052\206\110\206\367\015  
\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002\202  
\001\001\000\254\377\070\266\351\146\002\111\343\242\264\341\220  
\371\100\217\171\371\342\275\171\376\002\275\356\044\222\035\042  
\366\332\205\162\151\376\327\077\011\324\335\221\265\002\234\320  
\215\132\341\125\303\120\206\271\051\046\302\343\331\240\361\151  
\003\050\040\200\105\042\055\126\247\073\124\225\126\042\131\037  
\050\337\037\040\075\155\242\066\276\043\240\261\156\265\261\047  
\077\071\123\011\352\253\152\350\164\262\302\145\134\216\277\174  
\303\170\204\315\236\026\374\365\056\117\040\052\010\237\167\363  
\305\036\304\232\122\146\036\110\136\343\020\006\217\042\230\341  
\145\216\033\135\043\146\073\270\245\062\121\310\206\252\241\251  
\236\177\166\224\302\246\154\267\101\360\325\310\006\070\346\324  
\014\342\363\073\114\155\120\214\304\203\047\301\023\204\131\075  
\236\165\164\266\330\002\136\072\220\172\300\102\066\162\354\152  
\115\334\357\304\000\337\023\030\127\137\046\170\310\326\012\171  
\167\277\367\257\267\166\271\245\013\204\027\135\020\352\157\341  
\253\225\021\137\155\074\243\134\115\203\133\362\263\031\212\200  
\213\013\207\002\003\001\000\001\243\046\060\044\060\022\006\003  
\125\035\023\001\001\377\004\010\060\006\001\001\377\002\001\003  
\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\306  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003  
\202\001\001\000\016\106\325\074\256\342\207\331\136\201\213\002

```
\230\101\010\214\114\274\332\333\356\047\033\202\347\152\105\354
\026\213\117\205\240\363\262\160\275\132\226\272\312\156\155\356
\106\213\156\347\052\056\226\263\031\063\353\264\237\250\262\067
\356\230\250\227\266\056\266\147\047\324\246\111\375\034\223\145
\166\236\102\057\334\042\154\232\117\362\132\025\071\261\161\327
\053\121\350\155\034\230\300\331\052\364\241\202\173\325\311\101
\242\043\001\164\070\125\213\017\271\056\147\242\040\004\067\332
\234\013\323\027\041\340\217\227\171\064\157\204\110\002\040\063
\033\346\064\104\237\221\160\364\200\136\204\103\302\051\322\154
\022\024\344\141\215\254\020\220\236\204\120\273\360\226\157\105
\237\212\363\312\154\117\372\021\072\025\025\106\303\315\037\203
\133\055\101\022\355\120\147\101\023\075\041\253\224\212\252\116
\174\301\261\373\247\326\265\047\057\227\253\156\340\035\342\321
\034\054\037\104\342\374\276\221\241\234\373\326\051\123\163\206
\237\123\330\103\016\135\326\143\202\161\035\200\164\312\366\342
\002\153\331\132
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

# Trust for "Hongkong Post Root CA 1"

# Issuer: CN=Hongkong Post Root CA 1,O=Hongkong Post,C=HK

# Serial Number: 1000 (0x3e8)

# Subject: CN=Hongkong Post Root CA 1,O=Hongkong Post,C=HK

# Not Valid Before: Thu May 15 05:13:14 2003

# Not Valid After : Mon May 15 04:52:29 2023

# Fingerprint (SHA-256):

F9:E6:7D:33:6C:51:00:2A:C0:54:C6:32:02:2D:66:DD:A2:E7:E3:FF:F1:0A:D0:61:ED:31:D8:BB:B4:10:CF:B2

# Fingerprint (SHA1): D6:DA:A8:20:8D:09:D2:15:4D:24:B5:2F:CB:34:6E:B2:58:B2:8A:58

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "Hongkong Post Root CA 1"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\326\332\250\040\215\011\322\025\115\044\265\057\313\064\156\262
\130\262\212\130
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\250\015\157\071\170\271\103\155\167\102\155\230\132\314\043\312
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\107\061\013\060\011\006\003\125\004\006\023\002\110\113\061
\026\060\024\006\003\125\004\012\023\015\110\157\156\147\153\157
\156\147\040\120\157\163\164\061\040\060\036\006\003\125\004\003
\023\027\110\157\156\147\153\157\156\147\040\120\157\163\164\040
\122\157\157\164\040\103\101\040\061
```

```

END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\002\003\350
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "SecureSign RootCA11"
#
Issuer: CN=SecureSign RootCA11,O="Japan Certification Services, Inc.",C=JP
Serial Number: 1 (0x1)
Subject: CN=SecureSign RootCA11,O="Japan Certification Services, Inc.",C=JP
Not Valid Before: Wed Apr 08 04:56:47 2009
Not Valid After : Sun Apr 08 04:56:47 2029
Fingerprint (SHA-256):
BF:0F:EE:FB:9E:3A:58:1A:D5:F9:E9:DB:75:89:98:57:43:D2:61:08:5C:4D:31:4F:6F:5D:72:59:AA:42:16:12
Fingerprint (SHA1): 3B:C4:9F:48:F8:F3:73:A0:9C:1E:BD:F8:5B:B1:C3:65:C7:D8:11:B3
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SecureSign RootCA11"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\130\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\053\060\051\006\003\125\004\012\023\042\112\141\160\141\156\040
\103\145\162\164\151\146\151\143\141\164\151\157\156\040\123\145
\162\166\151\143\145\163\054\040\111\156\143\056\061\034\060\032
\006\003\125\004\003\023\023\123\145\143\165\162\145\123\151\147
\156\040\122\157\157\164\103\101\061\061
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\130\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\053\060\051\006\003\125\004\012\023\042\112\141\160\141\156\040
\103\145\162\164\151\146\151\143\141\164\151\157\156\040\123\145
\162\166\151\143\145\163\054\040\111\156\143\056\061\034\060\032
\006\003\125\004\003\023\023\123\145\143\165\162\145\123\151\147
\156\040\122\157\157\164\103\101\061\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\001
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\155\060\202\002\125\240\003\002\001\002\002\001\001

```

\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060  
\130\061\013\060\011\006\003\125\004\006\023\002\112\120\061\053  
\060\051\006\003\125\004\012\023\042\112\141\160\141\156\040\103  
\145\162\164\151\146\151\143\141\164\151\157\156\040\123\145\162  
\166\151\143\145\163\054\040\111\156\143\056\061\034\060\032\006  
\003\125\004\003\023\023\123\145\143\165\162\145\123\151\147\156  
\040\122\157\157\164\103\101\061\061\060\036\027\015\060\071\060  
\064\060\070\060\064\065\066\064\067\132\027\015\062\071\060\064  
\060\070\060\064\065\066\064\067\132\060\130\061\013\060\011\006  
\003\125\004\006\023\002\112\120\061\053\060\051\006\003\125\004  
\012\023\042\112\141\160\141\156\040\103\145\162\164\151\146\151  
\143\141\164\151\157\156\040\123\145\162\166\151\143\145\163\054  
\040\111\156\143\056\061\034\060\032\006\003\125\004\003\023\023  
\123\145\143\165\162\145\123\151\147\156\040\122\157\157\164\103  
\101\061\061\060\202\001\042\060\015\006\011\052\206\110\206\367  
\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002  
\202\001\001\000\375\167\252\245\034\220\005\073\313\114\233\063  
\213\132\024\105\244\347\220\026\321\337\127\322\041\020\244\027  
\375\337\254\326\037\247\344\333\174\367\354\337\270\003\332\224  
\130\375\135\162\174\214\077\137\001\147\164\025\226\343\002\074  
\207\333\256\313\001\216\302\363\146\306\205\105\364\002\306\072  
\265\142\262\257\372\234\277\244\346\324\200\060\230\363\015\266  
\223\217\251\324\330\066\362\260\374\212\312\054\241\025\063\225  
\061\332\300\033\362\356\142\231\206\143\077\277\335\223\052\203  
\250\166\271\023\037\267\316\116\102\205\217\042\347\056\032\362  
\225\011\262\005\265\104\116\167\241\040\275\251\362\116\012\175  
\120\255\365\005\015\105\117\106\161\375\050\076\123\373\004\330  
\055\327\145\035\112\033\372\317\073\260\061\232\065\156\310\213  
\006\323\000\221\362\224\010\145\114\261\064\006\000\172\211\342  
\360\307\003\131\317\325\326\350\247\062\263\346\230\100\206\305  
\315\047\022\213\314\173\316\267\021\074\142\140\007\043\076\053  
\100\156\224\200\011\155\266\263\157\167\157\065\010\120\373\002  
\207\305\076\211\002\003\001\000\001\243\102\060\100\060\035\006  
\003\125\035\016\004\026\004\024\133\370\115\117\262\245\206\324  
\072\322\361\143\232\240\276\011\366\127\267\336\060\016\006\003  
\125\035\017\001\001\377\004\004\003\002\001\006\060\017\006\003  
\125\035\023\001\001\377\004\005\060\003\001\001\377\060\015\006  
\011\052\206\110\206\367\015\001\001\005\005\000\003\202\001\001  
\000\240\241\070\026\146\056\247\126\037\041\234\006\372\035\355  
\271\042\305\070\046\330\116\117\354\243\177\171\336\106\041\241  
\207\167\217\007\010\232\262\244\305\257\017\062\230\013\174\146  
\051\266\233\175\045\122\111\103\253\114\056\053\156\172\160\257  
\026\016\343\002\154\373\102\346\030\235\105\330\125\310\350\073  
\335\347\341\364\056\013\034\064\134\154\130\112\373\214\210\120  
\137\225\034\277\355\253\042\265\145\263\205\272\236\017\270\255  
\345\172\033\212\120\072\035\275\015\274\173\124\120\013\271\102  
\257\125\240\030\201\255\145\231\357\276\344\234\277\304\205\253  
\101\262\124\157\334\045\315\355\170\342\216\014\215\011\111\335

```
\143\173\132\151\226\002\041\250\275\122\131\351\175\065\313\310
\122\312\177\201\376\331\153\323\367\021\355\045\337\370\347\371
\244\372\162\227\204\123\015\245\320\062\030\121\166\131\024\154
\017\353\354\137\200\214\165\103\203\303\205\230\377\114\236\055
\015\344\167\203\223\116\265\226\007\213\050\023\233\214\031\215
\101\047\111\100\356\336\346\043\104\071\334\241\042\326\272\003
\362
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Trust for "SecureSign RootCA11"
```

```
Issuer: CN=SecureSign RootCA11,O="Japan Certification Services, Inc.",C=JP
```

```
Serial Number: 1 (0x1)
```

```
Subject: CN=SecureSign RootCA11,O="Japan Certification Services, Inc.",C=JP
```

```
Not Valid Before: Wed Apr 08 04:56:47 2009
```

```
Not Valid After : Sun Apr 08 04:56:47 2029
```

```
Fingerprint (SHA-256):
```

```
BF:0F:EE:FB:9E:3A:58:1A:D5:F9:E9:DB:75:89:98:57:43:D2:61:08:5C:4D:31:4F:6F:5D:72:59:AA:42:16:12
```

```
Fingerprint (SHA1): 3B:C4:9F:48:F8:F3:73:A0:9C:1E:BD:F8:5B:B1:C3:65:C7:D8:11:B3
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "SecureSign RootCA11"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\073\304\237\110\370\363\163\240\234\036\275\370\133\261\303\145
\307\330\021\263
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\267\122\164\342\222\264\200\223\362\165\344\314\327\362\352\046
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\130\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\053\060\051\006\003\125\004\012\023\042\112\141\160\141\156\040
\103\145\162\164\151\146\151\143\141\164\151\157\156\040\123\145
\162\166\151\143\145\163\054\040\111\156\143\056\061\034\060\032
\006\003\125\004\003\023\023\123\145\143\165\162\145\123\151\147
\156\040\122\157\157\164\103\101\061\061
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\001\001
```

END

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

```
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

```
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

```
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```

#
Certificate "Microsec e-Szigno Root CA 2009"
#
Issuer: E=info@e-szigno.hu,CN=Microsec e-Szigno Root CA 2009,O=Microsec Ltd.,L=Budapest,C=HU
Serial Number:00:c2:7e:43:04:4e:47:3f:19
Subject: E=info@e-szigno.hu,CN=Microsec e-Szigno Root CA 2009,O=Microsec Ltd.,L=Budapest,C=HU
Not Valid Before: Tue Jun 16 11:30:18 2009
Not Valid After : Sun Dec 30 11:30:18 2029
Fingerprint (SHA-256):
3C:5F:81:FE:A5:FA:B8:2C:64:BF:A2:EA:EC:AF:CD:E8:E0:77:FC:86:20:A7:CA:E5:37:16:3D:F3:6E:DB:F3:78
Fingerprint (SHA1): 89:DF:74:FE:5C:F4:0F:4A:80:F9:E3:37:7D:54:DA:91:E1:01:31:8E
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Microsec e-Szigno Root CA 2009"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\202\061\013\060\011\006\003\125\004\006\023\002\110\125
\061\021\060\017\006\003\125\004\007\014\010\102\165\144\141\160
\145\163\164\061\026\060\024\006\003\125\004\012\014\015\115\151
\143\162\157\163\145\143\040\114\164\144\056\061\047\060\045\006
\003\125\004\003\014\036\115\151\143\162\157\163\145\143\040\145
\055\123\172\151\147\156\157\040\122\157\157\164\040\103\101\040
\062\060\060\071\061\037\060\035\006\011\052\206\110\206\367\015
\001\011\001\026\020\151\156\146\157\100\145\055\163\172\151\147
\156\157\056\150\165
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\202\061\013\060\011\006\003\125\004\006\023\002\110\125
\061\021\060\017\006\003\125\004\007\014\010\102\165\144\141\160
\145\163\164\061\026\060\024\006\003\125\004\012\014\015\115\151
\143\162\157\163\145\143\040\114\164\144\056\061\047\060\045\006
\003\125\004\003\014\036\115\151\143\162\157\163\145\143\040\145
\055\123\172\151\147\156\157\040\122\157\157\164\040\103\101\040
\062\060\060\071\061\037\060\035\006\011\052\206\110\206\367\015
\001\011\001\026\020\151\156\146\157\100\145\055\163\172\151\147
\156\157\056\150\165
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\011\000\302\176\103\004\116\107\077\031
END
CKA_VALUE MULTILINE_OCTAL
\060\202\004\012\060\202\002\362\240\003\002\001\002\002\011\000
\302\176\103\004\116\107\077\031\060\015\006\011\052\206\110\206
\367\015\001\001\013\005\000\060\201\202\061\013\060\011\006\003

```



\125\004\006\023\002\110\125\061\021\060\017\006\003\125\004\007  
\014\010\102\165\144\141\160\145\163\164\061\026\060\024\006\003  
\125\004\012\014\015\115\151\143\162\157\163\145\143\040\114\164  
\144\056\061\047\060\045\006\003\125\004\003\014\036\115\151\143  
\162\157\163\145\143\040\145\055\123\172\151\147\156\157\040\122  
\157\157\164\040\103\101\040\062\060\060\071\061\037\060\035\006  
\011\052\206\110\206\367\015\001\011\001\026\020\151\156\146\157  
\100\145\055\163\172\151\147\156\157\056\150\165\060\036\027\015  
\060\071\060\066\061\066\061\061\063\060\061\070\132\027\015\062  
\071\061\062\063\060\061\061\063\060\061\070\132\060\201\202\061  
\013\060\011\006\003\125\004\006\023\002\110\125\061\021\060\017  
\006\003\125\004\007\014\010\102\165\144\141\160\145\163\164\061  
\026\060\024\006\003\125\004\012\014\015\115\151\143\162\157\163  
\145\143\040\114\164\144\056\061\047\060\045\006\003\125\004\003  
\014\036\115\151\143\162\157\163\145\143\040\145\055\123\172\151  
\147\156\157\040\122\157\157\164\040\103\101\040\062\060\060\071  
\061\037\060\035\006\011\052\206\110\206\367\015\001\011\001\026  
\020\151\156\146\157\100\145\055\163\172\151\147\156\157\056\150  
\165\060\202\001\042\060\015\006\011\052\206\110\206\367\015\001  
\001\001\005\000\003\202\001\017\000\060\202\001\012\002\202\001  
\001\000\351\370\217\363\143\255\332\206\330\247\340\102\373\317  
\221\336\246\046\370\231\245\143\160\255\233\256\312\063\100\175  
\155\226\156\241\016\104\356\341\023\235\224\102\122\232\275\165  
\205\164\054\250\016\035\223\266\030\267\214\054\250\317\373\134  
\161\271\332\354\376\350\176\217\344\057\035\262\250\165\207\330  
\267\241\345\073\317\231\112\106\320\203\031\175\300\241\022\034  
\225\155\112\364\330\307\245\115\063\056\205\071\100\165\176\024  
\174\200\022\230\120\307\101\147\270\240\200\141\124\246\154\116  
\037\340\235\016\007\351\311\272\063\347\376\300\125\050\054\002  
\200\247\031\365\236\334\125\123\003\227\173\007\110\377\231\373  
\067\212\044\304\131\314\120\020\143\216\252\251\032\260\204\032  
\206\371\137\273\261\120\156\244\321\012\314\325\161\176\037\247  
\033\174\365\123\156\042\137\313\053\346\324\174\135\256\326\302  
\306\114\345\005\001\331\355\127\374\301\043\171\374\372\310\044  
\203\225\363\265\152\121\001\320\167\326\351\022\241\371\032\203  
\373\202\033\271\260\227\364\166\006\063\103\111\240\377\013\265  
\372\265\002\003\001\000\001\243\201\200\060\176\060\017\006\003  
\125\035\023\001\001\377\004\005\060\003\001\001\377\060\016\006  
\003\125\035\017\001\001\377\004\004\003\002\001\006\060\035\006  
\003\125\035\016\004\026\004\024\313\017\306\337\102\103\314\075  
\313\265\110\043\241\032\172\246\052\273\064\150\060\037\006\003  
\125\035\043\004\030\060\026\200\024\313\017\306\337\102\103\314  
\075\313\265\110\043\241\032\172\246\052\273\064\150\060\033\006  
\003\125\035\021\004\024\060\022\201\020\151\156\146\157\100\145  
\055\163\172\151\147\156\157\056\150\165\060\015\006\011\052\206  
\110\206\367\015\001\001\013\005\000\003\202\001\001\000\311\321  
\016\136\056\325\314\263\174\076\313\374\075\377\015\050\225\223  
\004\310\277\332\315\171\270\103\220\360\244\276\357\362\357\041

```
\230\274\324\324\135\006\366\356\102\354\060\154\240\252\251\312
\361\257\212\372\077\013\163\152\076\352\056\100\176\037\256\124
\141\171\353\056\010\067\327\043\363\214\237\276\035\261\341\244
\165\333\240\342\124\024\261\272\034\051\244\030\366\022\272\242
\024\024\343\061\065\310\100\377\267\340\005\166\127\301\034\131
\362\370\277\344\355\045\142\134\204\360\176\176\037\263\276\371
\267\041\021\314\003\001\126\160\247\020\222\036\033\064\201\036
\255\234\032\303\004\074\355\002\141\326\036\006\363\137\072\207
\362\053\361\105\207\345\075\254\321\307\127\204\275\153\256\334
\330\371\266\033\142\160\013\075\066\311\102\362\062\327\172\141
\346\322\333\075\317\310\251\311\233\334\333\130\104\327\157\070
\257\177\170\323\243\255\032\165\272\034\301\066\174\217\036\155
\034\303\165\106\256\065\005\246\366\134\075\041\356\126\360\311
\202\042\055\172\124\253\160\303\175\042\145\202\160\226
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Trust for "Microsec e-Szigno Root CA 2009"
```

```
Issuer: E=info@e-szigno.hu,CN=Microsec e-Szigno Root CA 2009,O=Microsec Ltd.,L=Budapest,C=HU
```

```
Serial Number:00:c2:7e:43:04:4e:47:3f:19
```

```
Subject: E=info@e-szigno.hu,CN=Microsec e-Szigno Root CA 2009,O=Microsec Ltd.,L=Budapest,C=HU
```

```
Not Valid Before: Tue Jun 16 11:30:18 2009
```

```
Not Valid After : Sun Dec 30 11:30:18 2029
```

```
Fingerprint (SHA-256):
```

```
3C:5F:81:FE:A5:FA:B8:2C:64:BF:A2:EA:EC:AF:CD:E8:E0:77:FC:86:20:A7:CA:E5:37:16:3D:F3:6E:DB:F3:78
```

```
Fingerprint (SHA1): 89:DF:74:FE:5C:F4:0F:4A:80:F9:E3:37:7D:54:DA:91:E1:01:31:8E
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "Microsec e-Szigno Root CA 2009"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\211\337\164\376\134\364\017\112\200\371\343\067\175\124\332\221
\341\001\061\216
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\370\111\364\003\274\104\055\203\276\110\151\175\051\144\374\261
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\201\202\061\013\060\011\006\003\125\004\006\023\002\110\125
\061\021\060\017\006\003\125\004\007\014\010\102\165\144\141\160
\145\163\164\061\026\060\024\006\003\125\004\012\014\015\115\151
\143\162\157\163\145\143\040\114\164\144\056\061\047\060\045\006
\003\125\004\003\014\036\115\151\143\162\157\163\145\143\040\145
\055\123\172\151\147\156\157\040\122\157\157\164\040\103\101\040
\062\060\060\071\061\037\060\035\006\011\052\206\110\206\367\015
```

```

\001\011\001\026\020\151\156\146\157\100\145\055\163\172\151\147
\156\157\056\150\165
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\011\000\302\176\103\004\116\107\077\031
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "GlobalSign Root CA - R3"
#
Issuer: CN=GlobalSign,O=GlobalSign,OU=GlobalSign Root CA - R3
Serial Number:04:00:00:00:01:21:58:53:08:a2
Subject: CN=GlobalSign,O=GlobalSign,OU=GlobalSign Root CA - R3
Not Valid Before: Wed Mar 18 10:00:00 2009
Not Valid After : Sun Mar 18 10:00:00 2029
Fingerprint (SHA-256):
CB:B5:22:D7:B7:F1:27:AD:6A:01:13:86:5B:DF:1C:D4:10:2E:7D:07:59:AF:63:5A:7C:F4:72:0D:C9:63:C5:3B
Fingerprint (SHA1): D6:9B:56:11:48:F0:1C:77:C5:45:78:C1:09:26:DF:5B:85:69:76:AD
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GlobalSign Root CA - R3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\114\061\040\060\036\006\003\125\004\013\023\027\107\154\157
\142\141\154\123\151\147\156\040\122\157\157\164\040\103\101\040
\055\040\122\063\061\023\060\021\006\003\125\004\012\023\012\107
\154\157\142\141\154\123\151\147\156\061\023\060\021\006\003\125
\004\003\023\012\107\154\157\142\141\154\123\151\147\156
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\114\061\040\060\036\006\003\125\004\013\023\027\107\154\157
\142\141\154\123\151\147\156\040\122\157\157\164\040\103\101\040
\055\040\122\063\061\023\060\021\006\003\125\004\012\023\012\107
\154\157\142\141\154\123\151\147\156\061\023\060\021\006\003\125
\004\003\023\012\107\154\157\142\141\154\123\151\147\156
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\013\004\000\000\000\000\001\041\130\123\010\242
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\137\060\202\002\107\240\003\002\001\002\002\013\004

```

\000\000\000\000\001\041\130\123\010\242\060\015\006\011\052\206  
\110\206\367\015\001\001\013\005\000\060\114\061\040\060\036\006  
\003\125\004\013\023\027\107\154\157\142\141\154\123\151\147\156  
\040\122\157\157\164\040\103\101\040\055\040\122\063\061\023\060  
\021\006\003\125\004\012\023\012\107\154\157\142\141\154\123\151  
\147\156\061\023\060\021\006\003\125\004\003\023\012\107\154\157  
\142\141\154\123\151\147\156\060\036\027\015\060\071\060\063\061  
\070\061\060\060\060\060\060\132\027\015\062\071\060\063\061\070  
\061\060\060\060\060\060\132\060\114\061\040\060\036\006\003\125  
\004\013\023\027\107\154\157\142\141\154\123\151\147\156\040\122  
\157\157\164\040\103\101\040\055\040\122\063\061\023\060\021\006  
\003\125\004\012\023\012\107\154\157\142\141\154\123\151\147\156  
\061\023\060\021\006\003\125\004\003\023\012\107\154\157\142\141  
\154\123\151\147\156\060\202\001\042\060\015\006\011\052\206\110  
\206\367\015\001\001\001\005\000\003\202\001\017\000\060\202\001  
\012\002\202\001\001\000\314\045\166\220\171\006\170\042\026\365  
\300\203\266\204\312\050\236\375\005\166\021\305\255\210\162\374  
\106\002\103\307\262\212\235\004\137\044\313\056\113\341\140\202  
\106\341\122\253\014\201\107\160\154\335\144\321\353\365\054\243  
\017\202\075\014\053\256\227\327\266\024\206\020\171\273\073\023  
\200\167\214\010\341\111\322\152\142\057\037\136\372\226\150\337  
\211\047\225\070\237\006\327\076\311\313\046\131\015\163\336\260  
\310\351\046\016\203\025\306\357\133\213\322\004\140\312\111\246  
\050\366\151\073\366\313\310\050\221\345\235\212\141\127\067\254  
\164\024\334\164\340\072\356\162\057\056\234\373\320\273\277\365  
\075\000\341\006\063\350\202\053\256\123\246\072\026\163\214\335  
\101\016\040\072\300\264\247\241\351\262\117\220\056\062\140\351  
\127\313\271\004\222\150\150\345\070\046\140\165\262\237\167\377  
\221\024\357\256\040\111\374\255\100\025\110\321\002\061\141\031  
\136\270\227\357\255\167\267\144\232\172\277\137\301\023\357\233  
\142\373\015\154\340\124\151\026\251\003\332\156\351\203\223\161  
\166\306\151\205\202\027\002\003\001\000\001\243\102\060\100\060  
\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060  
\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377  
\060\035\006\003\125\035\016\004\026\004\024\217\360\113\177\250  
\056\105\044\256\115\120\372\143\232\213\336\342\335\033\274\060  
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\003\202  
\001\001\000\113\100\333\300\120\252\376\310\014\357\367\226\124  
\105\111\273\226\000\011\101\254\263\023\206\206\050\007\063\312  
\153\346\164\271\272\000\055\256\244\012\323\365\361\361\017\212  
\277\163\147\112\203\307\104\173\170\340\257\156\154\157\003\051  
\216\063\071\105\303\216\344\271\127\154\252\374\022\226\354\123  
\306\055\344\044\154\271\224\143\373\334\123\150\147\126\076\203  
\270\317\065\041\303\311\150\376\316\332\302\123\252\314\220\212  
\351\360\135\106\214\225\335\172\130\050\032\057\035\336\315\000  
\067\101\217\355\104\155\327\123\050\227\176\363\147\004\036\025  
\327\212\226\264\323\336\114\047\244\114\033\163\163\166\364\027  
\231\302\037\172\016\343\055\010\255\012\034\054\377\074\253\125

\016\017\221\176\066\353\303\127\111\276\341\056\055\174\140\213  
\303\101\121\023\043\235\316\367\062\153\224\001\250\231\347\054  
\063\037\072\073\045\322\206\100\316\073\054\206\170\311\141\057  
\024\272\356\333\125\157\337\204\356\005\011\115\275\050\330\162  
\316\323\142\120\145\036\353\222\227\203\061\331\263\265\312\107  
\130\077\137

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "GlobalSign Root CA - R3"

# Issuer: CN=GlobalSign,O=GlobalSign,OU=GlobalSign Root CA - R3

# Serial Number:04:00:00:00:00:01:21:58:53:08:a2

# Subject: CN=GlobalSign,O=GlobalSign,OU=GlobalSign Root CA - R3

# Not Valid Before: Wed Mar 18 10:00:00 2009

# Not Valid After : Sun Mar 18 10:00:00 2029

# Fingerprint (SHA-256):

CB:B5:22:D7:B7:F1:27:AD:6A:01:13:86:5B:DF:1C:D4:10:2E:7D:07:59:AF:63:5A:7C:F4:72:0D:C9:63:C5:3B

# Fingerprint (SHA1): D6:9B:56:11:48:F0:1C:77:C5:45:78:C1:09:26:DF:5B:85:69:76:AD

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "GlobalSign Root CA - R3"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\326\233\126\021\110\360\034\167\305\105\170\301\011\046\337\133  
\205\151\166\255

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\305\337\270\111\312\005\023\125\356\055\272\032\303\076\260\050

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\114\061\040\060\036\006\003\125\004\013\023\027\107\154\157  
\142\141\154\123\151\147\156\040\122\157\157\164\040\103\101\040  
\055\040\122\063\061\023\060\021\006\003\125\004\012\023\012\107  
\154\157\142\141\154\123\151\147\156\061\023\060\021\006\003\125  
\004\003\023\012\107\154\157\142\141\154\123\151\147\156

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\013\004\000\000\000\000\001\041\130\123\010\242

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

```
Certificate "Autoridad de Certificacion Firmaprofesional CIF A62634068"
#
Issuer: CN=Autoridad de Certificacion Firmaprofesional CIF A62634068,C=ES
Serial Number:53:ec:3b:ee:fb:b2:48:5f
Subject: CN=Autoridad de Certificacion Firmaprofesional CIF A62634068,C=ES
Not Valid Before: Wed May 20 08:38:15 2009
Not Valid After : Tue Dec 31 08:38:15 2030
Fingerprint (SHA-256):
04:04:80:28:BF:1F:28:64:D4:8F:9A:D4:D8:32:94:36:6A:82:88:56:55:3F:3B:14:30:3F:90:14:7F:5D:40:EF
Fingerprint (SHA1): AE:C5:FB:3F:C8:E1:BF:C4:E5:4F:03:07:5A:9A:E8:00:B7:F7:B6:FA
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Autoridad de Certificacion Firmaprofesional CIF A62634068"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\121\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\102\060\100\006\003\125\004\003\014\071\101\165\164\157\162\151
\144\141\144\040\144\145\040\103\145\162\164\151\146\151\143\141
\143\151\157\156\040\106\151\162\155\141\160\162\157\146\145\163
\151\157\156\141\154\040\103\111\106\040\101\066\062\066\063\064
\060\066\070
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\121\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\102\060\100\006\003\125\004\003\014\071\101\165\164\157\162\151
\144\141\144\040\144\145\040\103\145\162\164\151\146\151\143\141
\143\151\157\156\040\106\151\162\155\141\160\162\157\146\145\163
\151\157\156\141\154\040\103\111\106\040\101\066\062\066\063\064
\060\066\070
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\123\354\073\356\373\262\110\137
END
CKA_VALUE MULTILINE_OCTAL
\060\202\006\024\060\202\003\374\240\003\002\001\002\002\010\123
\354\073\356\373\262\110\137\060\015\006\011\052\206\110\206\367
\015\001\001\005\005\000\060\121\061\013\060\011\006\003\125\004
\006\023\002\105\123\061\102\060\100\006\003\125\004\003\014\071
\101\165\164\157\162\151\144\141\144\040\144\145\040\103\145\162
\164\151\146\151\143\141\143\151\157\156\040\106\151\162\155\141
\160\162\157\146\145\163\151\157\156\141\154\040\103\111\106\040
\101\066\062\066\063\064\060\066\070\060\036\027\015\060\071\060
\065\062\060\060\070\063\070\061\065\132\027\015\063\060\061\062
\063\061\060\070\063\070\061\065\132\060\121\061\013\060\011\006
\003\125\004\006\023\002\105\123\061\102\060\100\006\003\125\004
```

\003\014\071\101\165\164\157\162\151\144\141\144\040\144\145\040  
\103\145\162\164\151\146\151\143\141\143\151\157\156\040\106\151  
\162\155\141\160\162\157\146\145\163\151\157\156\141\154\040\103  
\111\106\040\101\066\062\066\063\064\060\066\070\060\202\002\042  
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003  
\202\002\017\000\060\202\002\012\002\202\002\001\000\312\226\153  
\216\352\370\373\361\242\065\340\177\114\332\340\303\122\327\175  
\266\020\310\002\136\263\103\052\304\117\152\262\312\034\135\050  
\232\170\021\032\151\131\127\257\265\040\102\344\213\017\346\337  
\133\246\003\222\057\365\021\344\142\327\062\161\070\331\004\014  
\161\253\075\121\176\017\007\337\143\005\134\351\277\224\157\301  
\051\202\300\264\332\121\260\301\074\273\255\067\112\134\312\361  
\113\066\016\044\253\277\303\204\167\375\250\120\364\261\347\306  
\057\322\055\131\215\172\012\116\226\151\122\002\252\066\230\354  
\374\372\024\203\014\067\037\311\222\067\177\327\201\055\345\304  
\271\340\076\064\376\147\364\076\146\321\323\364\100\317\136\142  
\064\017\160\006\076\040\030\132\316\367\162\033\045\154\223\164  
\024\223\243\163\261\016\252\207\020\043\131\137\040\005\031\107  
\355\150\216\222\022\312\135\374\326\053\262\222\074\040\317\341  
\137\257\040\276\240\166\177\166\345\354\032\206\141\063\076\347  
\173\264\077\240\017\216\242\271\152\157\271\207\046\157\101\154  
\210\246\120\375\152\143\013\365\223\026\033\031\217\262\355\233  
\233\311\220\365\001\014\337\031\075\017\076\070\043\311\057\217  
\014\321\002\376\033\125\326\116\320\215\074\257\117\244\363\376  
\257\052\323\005\235\171\010\241\313\127\061\264\234\310\220\262  
\147\364\030\026\223\072\374\107\330\321\170\226\061\037\272\053  
\014\137\135\231\255\143\211\132\044\040\166\330\337\375\253\116  
\246\042\252\235\136\346\047\212\175\150\051\243\347\212\270\332  
\021\273\027\055\231\235\023\044\106\367\305\342\330\237\216\177  
\307\217\164\155\132\262\350\162\365\254\356\044\020\255\057\024  
\332\377\055\232\106\161\107\276\102\337\273\001\333\364\177\323  
\050\217\061\131\133\323\311\002\246\264\122\312\156\227\373\103  
\305\010\046\157\212\364\273\375\237\050\252\015\325\105\363\023  
\072\035\330\300\170\217\101\147\074\036\224\144\256\173\013\305  
\350\331\001\210\071\032\227\206\144\101\325\073\207\014\156\372  
\017\306\275\110\024\277\071\115\324\236\101\266\217\226\035\143  
\226\223\331\225\006\170\061\150\236\067\006\073\200\211\105\141  
\071\043\307\033\104\243\025\345\034\370\222\060\273\002\003\001  
\000\001\243\201\357\060\201\354\060\022\006\003\125\035\023\001  
\001\377\004\010\060\006\001\001\377\002\001\001\060\016\006\003  
\125\035\017\001\001\377\004\004\003\002\001\006\060\035\006\003  
\125\035\016\004\026\004\024\145\315\353\253\065\036\000\076\176  
\325\164\300\034\264\163\107\016\032\144\057\060\201\246\006\003  
\125\035\040\004\201\236\060\201\233\060\201\230\006\004\125\035  
\040\000\060\201\217\060\057\006\010\053\006\001\005\005\007\002  
\001\026\043\150\164\164\160\072\057\057\167\167\167\056\146\151  
\162\155\141\160\162\157\146\145\163\151\157\156\141\154\056\143  
\157\155\057\143\160\163\060\134\006\010\053\006\001\005\005\007

\002\002\060\120\036\116\000\120\000\141\000\163\000\145\000\157  
\000\040\000\144\000\145\000\040\000\154\000\141\000\040\000\102  
\000\157\000\156\000\141\000\156\000\157\000\166\000\141\000\040  
\000\064\000\067\000\040\000\102\000\141\000\162\000\143\000\145  
\000\154\000\157\000\156\000\141\000\040\000\060\000\070\000\060  
\000\061\000\067\060\015\006\011\052\206\110\206\367\015\001\001  
\005\005\000\003\202\002\001\000\027\175\240\371\264\335\305\305  
\353\255\113\044\265\241\002\253\335\245\210\112\262\017\125\113  
\053\127\214\073\345\061\335\376\304\062\361\347\133\144\226\066  
\062\030\354\245\062\167\327\343\104\266\300\021\052\200\271\075  
\152\156\174\233\323\255\374\303\326\243\346\144\051\174\321\341  
\070\036\202\053\377\047\145\257\373\026\025\304\056\161\204\345  
\265\377\372\244\107\275\144\062\273\366\045\204\242\047\102\365  
\040\260\302\023\020\021\315\020\025\272\102\220\052\322\104\341  
\226\046\353\061\110\022\375\052\332\311\006\317\164\036\251\113  
\325\207\050\371\171\064\222\076\056\104\350\366\217\117\217\065  
\077\045\263\071\334\143\052\220\153\040\137\304\122\022\116\227  
\054\052\254\235\227\336\110\362\243\146\333\302\322\203\225\246  
\146\247\236\045\017\351\013\063\221\145\012\132\303\331\124\022  
\335\257\303\116\016\037\046\136\015\334\263\215\354\325\201\160  
\336\322\117\044\005\363\154\116\365\114\111\146\215\321\377\322  
\013\045\101\110\376\121\204\306\102\257\200\004\317\320\176\144  
\111\344\362\337\242\354\261\114\300\052\035\347\264\261\145\242  
\304\274\361\230\364\252\160\007\143\264\270\332\073\114\372\100  
\042\060\133\021\246\360\005\016\306\002\003\110\253\206\233\205  
\335\333\335\352\242\166\200\163\175\365\234\004\304\105\215\347  
\271\034\213\236\352\327\165\321\162\261\336\165\104\347\102\175  
\342\127\153\175\334\231\274\075\203\050\352\200\223\215\305\114  
\145\301\160\201\270\070\374\103\061\262\366\003\064\107\262\254  
\373\042\006\313\036\335\027\107\034\137\146\271\323\032\242\332  
\021\261\244\274\043\311\344\276\207\377\271\224\266\370\135\040  
\112\324\137\347\275\150\173\145\362\025\036\322\072\251\055\351  
\330\153\044\254\227\130\104\107\255\131\030\361\041\145\160\336  
\316\064\140\250\100\361\363\074\244\303\050\043\214\376\047\063  
\103\100\240\027\074\353\352\073\260\162\246\243\271\112\113\136  
\026\110\364\262\274\310\214\222\305\235\237\254\162\066\274\064  
\200\064\153\251\213\222\300\270\027\355\354\166\123\365\044\001  
\214\263\042\350\113\174\125\306\235\372\243\024\273\145\205\156  
\156\117\022\176\012\074\235\225

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Autoridad de Certificacion Firmaprofesional CIF A62634068"  
# Issuer: CN=Autoridad de Certificacion Firmaprofesional CIF A62634068,C=ES  
# Serial Number:53:ec:3b:ee:fb:b2:48:5f  
# Subject: CN=Autoridad de Certificacion Firmaprofesional CIF A62634068,C=ES



```

Not Valid Before: Wed May 20 08:38:15 2009
Not Valid After : Tue Dec 31 08:38:15 2030
Fingerprint (SHA-256):
04:04:80:28:BF:1F:28:64:D4:8F:9A:D4:D8:32:94:36:6A:82:88:56:55:3F:3B:14:30:3F:90:14:7F:5D:40:EF
Fingerprint (SHA1): AE:C5:FB:3F:C8:E1:BF:C4:E5:4F:03:07:5A:9A:E8:00:B7:F7:B6:FA
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Autoridad de Certificacion Firmaprofesional CIF A62634068"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\256\305\373\077\310\341\277\304\345\117\003\007\132\232\350\000
\267\367\266\372
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\163\072\164\172\354\273\243\226\246\302\344\342\310\233\300\303
END
CKA_ISSUER MULTILINE_OCTAL
\060\121\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\102\060\100\006\003\125\004\003\014\071\101\165\164\157\162\151
\144\141\144\040\144\145\040\103\145\162\164\151\146\151\143\141
\143\151\157\156\040\106\151\162\155\141\160\162\157\146\145\163
\151\157\156\141\154\040\103\111\106\040\101\066\062\066\063\064
\060\066\070
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\123\354\073\356\373\262\110\137
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "Izenpe.com"
#
Issuer: CN=Izenpe.com,O=IZENPE S.A.,C=ES
Serial Number:00:b0:b7:5a:16:48:5f:bf:e1:cb:f5:8b:d7:19:e6:7d
Subject: CN=Izenpe.com,O=IZENPE S.A.,C=ES
Not Valid Before: Thu Dec 13 13:08:28 2007
Not Valid After : Sun Dec 13 08:27:25 2037
Fingerprint (SHA-256):
25:30:CC:8E:98:32:15:02:BA:D9:6F:9B:1F:BA:1B:09:9E:2D:29:9E:0F:45:48:BB:91:4F:36:3B:C0:D4:53:1F
Fingerprint (SHA1): 2F:78:3D:25:52:18:A7:4A:65:39:71:B5:2C:A2:9C:45:15:6F:E9:19
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE

```

```
CKA_LABEL UTF8 "Izenpe.com"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\070\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\024\060\022\006\003\125\004\012\014\013\111\132\105\116\120\105
\040\123\056\101\056\061\023\060\021\006\003\125\004\003\014\012
\111\172\145\156\160\145\056\143\157\155
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\070\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\024\060\022\006\003\125\004\012\014\013\111\132\105\116\120\105
\040\123\056\101\056\061\023\060\021\006\003\125\004\003\014\012
\111\172\145\156\160\145\056\143\157\155
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\000\260\267\132\026\110\137\277\341\313\365\213\327\031
\346\175
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\361\060\202\003\331\240\003\002\001\002\002\020\000
\260\267\132\026\110\137\277\341\313\365\213\327\031\346\175\060
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\070
\061\013\060\011\006\003\125\004\006\023\002\105\123\061\024\060
\022\006\003\125\004\012\014\013\111\132\105\116\120\105\040\123
\056\101\056\061\023\060\021\006\003\125\004\003\014\012\111\172
\145\156\160\145\056\143\157\155\060\036\027\015\060\067\061\062
\061\063\061\063\060\070\062\070\132\027\015\063\067\061\062\061
\063\060\070\062\067\062\065\132\060\070\061\013\060\011\006\003
\125\004\006\023\002\105\123\061\024\060\022\006\003\125\004\012
\014\013\111\132\105\116\120\105\040\123\056\101\056\061\023\060
\021\006\003\125\004\003\014\012\111\172\145\156\160\145\056\143
\157\155\060\202\002\042\060\015\006\011\052\206\110\206\367\015
\001\001\001\005\000\003\202\002\017\000\060\202\002\012\002\202
\002\001\000\311\323\172\312\017\036\254\247\206\350\026\145\152
\261\302\033\105\062\161\225\331\376\020\133\314\257\347\245\171
\001\217\211\303\312\362\125\161\367\167\276\167\224\363\162\244
\054\104\330\236\222\233\024\072\241\347\044\220\012\012\126\216
\305\330\046\224\341\331\110\341\055\076\332\012\162\335\243\231
\025\332\201\242\207\364\173\156\046\167\211\130\255\326\353\014
\262\101\172\163\156\155\333\172\170\101\351\010\210\022\176\207
\056\146\021\143\154\124\373\074\235\162\300\274\056\377\302\267
\335\015\166\343\072\327\367\264\150\276\242\365\343\201\156\301
\106\157\135\215\340\115\306\124\125\211\032\063\061\012\261\127
\271\243\212\230\303\354\073\064\305\225\101\151\176\165\302\074
\040\305\141\272\121\107\240\040\220\223\241\220\113\363\116\174
\205\105\124\232\321\005\046\101\260\265\115\035\063\276\304\003
\310\045\174\301\160\333\073\364\011\055\124\047\110\254\057\341
```

\304\254\076\310\313\222\114\123\071\067\043\354\323\001\371\340  
\011\104\115\115\144\300\341\015\132\207\042\274\255\033\243\376  
\046\265\025\363\247\374\204\031\351\354\241\210\264\104\151\204  
\203\363\211\321\164\006\251\314\013\326\302\336\047\205\120\046  
\312\027\270\311\172\207\126\054\032\001\036\154\276\023\255\020  
\254\265\044\365\070\221\241\326\113\332\361\273\322\336\107\265  
\361\274\201\366\131\153\317\031\123\351\215\025\313\112\313\251  
\157\104\345\033\101\317\341\206\247\312\320\152\237\274\114\215  
\006\063\132\242\205\345\220\065\240\142\134\026\116\360\343\242  
\372\003\032\264\054\161\263\130\054\336\173\013\333\032\017\353  
\336\041\037\006\167\006\003\260\311\357\231\374\300\271\117\013  
\206\050\376\322\271\352\343\332\245\303\107\151\022\340\333\360  
\366\031\213\355\173\160\327\002\326\355\207\030\050\054\004\044  
\114\167\344\110\212\032\306\073\232\324\017\312\372\165\322\001  
\100\132\215\171\277\213\317\113\317\252\026\301\225\344\255\114  
\212\076\027\221\324\261\142\345\202\345\200\004\244\003\176\215  
\277\332\177\242\017\227\117\014\323\015\373\327\321\345\162\176  
\034\310\167\377\133\232\017\267\256\005\106\345\361\250\026\354  
\107\244\027\002\003\001\000\001\243\201\366\060\201\363\060\201  
\260\006\003\125\035\021\004\201\250\060\201\245\201\017\151\156  
\146\157\100\151\172\145\156\160\145\056\143\157\155\244\201\221  
\060\201\216\061\107\060\105\006\003\125\004\012\014\076\111\132  
\105\116\120\105\040\123\056\101\056\040\055\040\103\111\106\040  
\101\060\061\063\063\067\062\066\060\055\122\115\145\162\143\056  
\126\151\164\157\162\151\141\055\107\141\163\164\145\151\172\040  
\124\061\060\065\065\040\106\066\062\040\123\070\061\103\060\101  
\006\003\125\004\011\014\072\101\166\144\141\040\144\145\154\040  
\115\145\144\151\164\145\162\162\141\156\145\157\040\105\164\157  
\162\142\151\144\145\141\040\061\064\040\055\040\060\061\060\061  
\060\040\126\151\164\157\162\151\141\055\107\141\163\164\145\151  
\172\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001  
\001\377\060\016\006\003\125\035\017\001\001\377\004\004\003\002  
\001\006\060\035\006\003\125\035\016\004\026\004\024\035\034\145  
\016\250\362\045\173\264\221\317\344\261\261\346\275\125\164\154  
\005\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000  
\003\202\002\001\000\170\246\014\026\112\237\114\210\072\300\313  
\016\245\026\175\237\271\110\137\030\217\015\142\066\366\315\031  
\153\254\253\325\366\221\175\256\161\363\077\263\016\170\205\233  
\225\244\047\041\107\102\112\174\110\072\365\105\174\263\014\216  
\121\170\254\225\023\336\306\375\175\270\032\220\114\253\222\003  
\307\355\102\001\316\017\330\261\372\242\222\341\140\155\256\172  
\153\011\252\306\051\356\150\111\147\060\200\044\172\061\026\071  
\133\176\361\034\056\335\154\011\255\362\061\301\202\116\271\273  
\371\276\277\052\205\077\300\100\243\072\131\374\131\113\074\050  
\044\333\264\025\165\256\015\210\272\056\163\300\275\130\207\345  
\102\362\353\136\356\036\060\042\231\313\067\321\304\041\154\201  
\354\276\155\046\346\034\344\102\040\236\107\260\254\203\131\160  
\054\065\326\257\066\064\264\315\073\370\062\250\357\343\170\211

```
\373\215\105\054\332\234\270\176\100\034\141\347\076\242\222\054
\113\362\315\372\230\266\051\377\363\362\173\251\037\056\240\223
\127\053\336\205\003\371\151\067\313\236\170\152\005\264\305\061
\170\211\354\172\247\205\341\271\173\074\336\276\036\171\204\316
\237\160\016\131\302\065\056\220\052\061\331\344\105\172\101\244
\056\023\233\064\016\146\173\111\253\144\227\320\106\303\171\235
\162\120\143\246\230\133\006\275\110\155\330\071\203\160\350\065
\360\005\321\252\274\343\333\310\002\352\174\375\202\332\302\133
\122\065\256\230\072\255\272\065\223\043\247\037\110\335\065\106
\230\262\020\150\344\245\061\302\012\130\056\031\201\020\311\120
\165\374\352\132\026\316\021\327\356\357\120\210\055\141\377\077
\102\163\005\224\103\325\216\074\116\001\072\031\245\037\106\116
\167\320\135\345\201\042\041\207\376\224\175\204\330\223\255\326
\150\103\110\262\333\353\163\044\347\221\177\124\244\266\200\076
\235\243\074\114\162\302\127\304\240\324\314\070\047\316\325\006
\236\242\110\331\351\237\316\202\160\066\223\232\073\337\226\041
\343\131\267\014\332\221\067\360\375\131\132\263\231\310\151\154
\103\046\001\065\143\140\125\211\003\072\165\330\272\112\331\124
\377\356\336\200\330\055\321\070\325\136\055\013\230\175\076\154
\333\374\046\210\307
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Trust for "Izenpe.com"
```

```
Issuer: CN=Izenpe.com,O=IZENPE S.A.,C=ES
```

```
Serial Number:00:b0:b7:5a:16:48:5f:bf:e1:cb:f5:8b:d7:19:e6:7d
```

```
Subject: CN=Izenpe.com,O=IZENPE S.A.,C=ES
```

```
Not Valid Before: Thu Dec 13 13:08:28 2007
```

```
Not Valid After : Sun Dec 13 08:27:25 2037
```

```
Fingerprint (SHA-256):
```

```
25:30:CC:8E:98:32:15:02:BA:D9:6F:9B:1F:BA:1B:09:9E:2D:29:9E:0F:45:48:BB:91:4F:36:3B:C0:D4:53:1F
```

```
Fingerprint (SHA1): 2F:78:3D:25:52:18:A7:4A:65:39:71:B5:2C:A2:9C:45:15:6F:E9:19
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "Izenpe.com"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\057\170\075\045\122\030\247\112\145\071\161\265\054\242\234\105
\025\157\351\031
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\246\260\315\205\200\332\134\120\064\243\071\220\057\125\147\163
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\070\061\013\060\011\006\003\125\004\006\023\002\105\123\061
```

```
\024\060\022\006\003\125\004\012\014\013\111\132\105\116\120\105
\040\123\056\101\056\061\023\060\021\006\003\125\004\003\014\012
\111\172\145\156\160\145\056\143\157\155
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\020\000\260\267\132\026\110\137\277\341\313\365\213\327\031
\346\175
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "Chambers of Commerce Root - 2008"

#

# Issuer: CN=Chambers of Commerce Root - 2008,O=AC Camerfirma S.A.,serialNumber=A82743287,L=Madrid  
(see current address at [www.camerfirma.com/address](http://www.camerfirma.com/address)),C=EU

# Serial Number:00:a3:da:42:7e:a4:b1:ae:da

# Subject: CN=Chambers of Commerce Root - 2008,O=AC Camerfirma S.A.,serialNumber=A82743287,L=Madrid  
(see current address at [www.camerfirma.com/address](http://www.camerfirma.com/address)),C=EU

# Not Valid Before: Fri Aug 01 12:29:50 2008

# Not Valid After : Sat Jul 31 12:29:50 2038

# Fingerprint (SHA-256):

06:3E:4A:FA:C4:91:DF:D3:32:F3:08:9B:85:42:E9:46:17:D8:93:D7:FE:94:4E:10:A7:93:7E:E2:9D:96:93:C0

# Fingerprint (SHA1): 78:6A:74:AC:76:AB:14:7F:9C:6A:30:50:BA:9E:A8:7E:FE:9A:CE:3C

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Chambers of Commerce Root - 2008"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

```
\060\201\256\061\013\060\011\006\003\125\004\006\023\002\105\125
\061\103\060\101\006\003\125\004\007\023\072\115\141\144\162\151
\144\040\050\163\145\145\040\143\165\162\162\145\156\164\040\141
\144\144\162\145\163\163\040\141\164\040\167\167\167\056\143\141
\155\145\162\146\151\162\155\141\056\143\157\155\057\141\144\144
\162\145\163\163\051\061\022\060\020\006\003\125\004\005\023\011
\101\070\062\067\064\063\062\070\067\061\033\060\031\006\003\125
\004\012\023\022\101\103\040\103\141\155\145\162\146\151\162\155
\141\040\123\056\101\056\061\051\060\047\006\003\125\004\003\023
\040\103\150\141\155\142\145\162\163\040\157\146\040\103\157\155
\155\145\162\143\145\040\122\157\157\164\040\055\040\062\060\060
\070
```

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\256\061\013\060\011\006\003\125\004\006\023\002\105\125  
\061\103\060\101\006\003\125\004\007\023\072\115\141\144\162\151  
\144\040\050\163\145\145\040\143\165\162\162\145\156\164\040\141  
\144\144\162\145\163\163\040\141\164\040\167\167\167\056\143\141  
\155\145\162\146\151\162\155\141\056\143\157\155\057\141\144\144  
\162\145\163\163\051\061\022\060\020\006\003\125\004\005\023\011  
\101\070\062\067\064\063\062\070\067\061\033\060\031\006\003\125  
\004\012\023\022\101\103\040\103\141\155\145\162\146\151\162\155  
\141\040\123\056\101\056\061\051\060\047\006\003\125\004\003\023  
\040\103\150\141\155\142\145\162\163\040\157\146\040\103\157\155  
\155\145\162\143\145\040\122\157\157\164\040\055\040\062\060\060  
\070

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\011\000\243\332\102\176\244\261\256\332

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\007\117\060\202\005\067\240\003\002\001\002\002\011\000  
\243\332\102\176\244\261\256\332\060\015\006\011\052\206\110\206  
\367\015\001\001\005\005\000\060\201\256\061\013\060\011\006\003  
\125\004\006\023\002\105\125\061\103\060\101\006\003\125\004\007  
\023\072\115\141\144\162\151\144\040\050\163\145\145\040\143\165  
\162\162\145\156\164\040\141\144\144\162\145\163\163\040\141\164  
\040\167\167\167\056\143\141\155\145\162\146\151\162\155\141\056  
\143\157\155\057\141\144\144\162\145\163\163\051\061\022\060\020  
\006\003\125\004\005\023\011\101\070\062\067\064\063\062\070\067  
\061\033\060\031\006\003\125\004\012\023\022\101\103\040\103\141  
\155\145\162\146\151\162\155\141\040\123\056\101\056\061\051\060  
\047\006\003\125\004\003\023\040\103\150\141\155\142\145\162\163  
\040\157\146\040\103\157\155\155\145\162\143\145\040\122\157\157  
\164\040\055\040\062\060\060\070\060\036\027\015\060\070\060\070  
\060\061\061\062\062\071\065\060\132\027\015\063\070\060\067\063  
\061\061\062\062\071\065\060\132\060\201\256\061\013\060\011\006  
\003\125\004\006\023\002\105\125\061\103\060\101\006\003\125\004  
\007\023\072\115\141\144\162\151\144\040\050\163\145\145\040\143  
\165\162\162\145\156\164\040\141\144\144\162\145\163\163\040\141  
\164\040\167\167\167\056\143\141\155\145\162\146\151\162\155\141  
\056\143\157\155\057\141\144\144\162\145\163\163\051\061\022\060  
\020\006\003\125\004\005\023\011\101\070\062\067\064\063\062\070  
\067\061\033\060\031\006\003\125\004\012\023\022\101\103\040\103  
\141\155\145\162\146\151\162\155\141\040\123\056\101\056\061\051  
\060\047\006\003\125\004\003\023\040\103\150\141\155\142\145\162  
\163\040\157\146\040\103\157\155\155\145\162\143\145\040\122\157  
\157\164\040\055\040\062\060\060\070\060\202\002\042\060\015\006  
\011\052\206\110\206\367\015\001\001\001\005\000\003\202\002\017  
\000\060\202\002\012\002\202\002\001\000\257\000\313\160\067\053  
\200\132\112\072\154\170\224\175\243\177\032\037\366\065\325\275  
\333\313\015\104\162\076\046\262\220\122\272\143\073\050\130\157

\245\263\155\224\246\363\335\144\014\125\366\366\347\362\042\042  
\200\136\341\142\306\266\051\341\201\154\362\277\345\175\062\152  
\124\240\062\031\131\376\037\213\327\075\140\206\205\044\157\343  
\021\263\167\076\040\226\065\041\153\263\010\331\160\056\144\367  
\204\222\123\326\016\260\220\212\212\343\207\215\006\323\275\220  
\016\342\231\241\033\206\016\332\232\012\273\013\141\120\006\122  
\361\236\177\166\354\313\017\320\036\015\317\231\060\075\034\304  
\105\020\130\254\326\323\350\327\345\352\305\001\007\167\326\121  
\346\003\177\212\110\245\115\150\165\271\351\274\236\116\031\161  
\365\062\113\234\155\140\031\013\373\314\235\165\334\277\046\315  
\217\223\170\071\171\163\136\045\016\312\134\353\167\022\007\313  
\144\101\107\162\223\253\120\303\353\011\166\144\064\322\071\267  
\166\021\011\015\166\105\304\251\256\075\152\257\265\175\145\057  
\224\130\020\354\134\174\257\176\342\266\030\331\320\233\116\132  
\111\337\251\146\013\314\074\306\170\174\247\234\035\343\316\216  
\123\276\005\336\140\017\153\345\032\333\077\343\341\041\311\051  
\301\361\353\007\234\122\033\001\104\121\074\173\045\327\304\345  
\122\124\135\045\007\312\026\040\270\255\344\101\356\172\010\376  
\231\157\203\246\221\002\260\154\066\125\152\347\175\365\226\346  
\312\201\326\227\361\224\203\351\355\260\261\153\022\151\036\254  
\373\135\251\305\230\351\264\133\130\172\276\075\242\104\072\143  
\131\324\013\045\336\033\117\275\345\001\236\315\322\051\325\237  
\027\031\012\157\277\014\220\323\011\137\331\343\212\065\314\171  
\132\115\031\067\222\267\304\301\255\257\364\171\044\232\262\001  
\013\261\257\134\226\363\200\062\373\134\075\230\361\240\077\112  
\336\276\257\224\056\331\125\232\027\156\140\235\143\154\270\143  
\311\256\201\134\030\065\340\220\273\276\074\117\067\042\271\176  
\353\317\236\167\041\246\075\070\201\373\110\332\061\075\053\343  
\211\365\320\265\275\176\340\120\304\022\211\263\043\232\020\061  
\205\333\256\157\357\070\063\030\166\021\002\003\001\000\001\243  
\202\001\154\060\202\001\150\060\022\006\003\125\035\023\001\001  
\377\004\010\060\006\001\001\377\002\001\014\060\035\006\003\125  
\035\016\004\026\004\024\371\044\254\017\262\265\370\171\300\372  
\140\210\033\304\331\115\002\236\027\031\060\201\343\006\003\125  
\035\043\004\201\333\060\201\330\200\024\371\044\254\017\262\265  
\370\171\300\372\140\210\033\304\331\115\002\236\027\031\241\201  
\264\244\201\261\060\201\256\061\013\060\011\006\003\125\004\006  
\023\002\105\125\061\103\060\101\006\003\125\004\007\023\072\115  
\141\144\162\151\144\040\050\163\145\145\040\143\165\162\162\145  
\156\164\040\141\144\144\162\145\163\163\040\141\164\040\167\167  
\167\056\143\141\155\145\162\146\151\162\155\141\056\143\157\155  
\057\141\144\144\162\145\163\163\051\061\022\060\020\006\003\125  
\004\005\023\011\101\070\062\067\064\063\062\070\067\061\033\060  
\031\006\003\125\004\012\023\022\101\103\040\103\141\155\145\162  
\146\151\162\155\141\040\123\056\101\056\061\051\060\047\006\003  
\125\004\003\023\040\103\150\141\155\142\145\162\163\040\157\146  
\040\103\157\155\155\145\162\143\145\040\122\157\157\164\040\055  
\040\062\060\060\070\202\011\000\243\332\102\176\244\261\256\332

\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006  
\060\075\006\003\125\035\040\004\066\060\064\060\062\006\004\125  
\035\040\000\060\052\060\050\006\010\053\006\001\005\005\007\002  
\001\026\034\150\164\164\160\072\057\057\160\157\154\151\143\171  
\056\143\141\155\145\162\146\151\162\155\141\056\143\157\155\060  
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003\202  
\002\001\000\220\022\257\042\065\302\243\071\360\056\336\351\265  
\351\170\174\110\276\077\175\105\222\136\351\332\261\031\374\026  
\074\237\264\133\146\236\152\347\303\271\135\210\350\017\255\317  
\043\017\336\045\072\136\314\117\245\301\265\055\254\044\322\130  
\007\336\242\317\151\204\140\063\350\020\015\023\251\043\320\205  
\345\216\173\246\236\075\162\023\162\063\365\252\175\306\143\037  
\010\364\376\001\177\044\317\053\054\124\011\336\342\053\155\222  
\306\071\117\026\352\074\176\172\106\324\105\152\106\250\353\165  
\202\126\247\253\240\174\150\023\063\366\235\060\360\157\047\071  
\044\043\052\220\375\220\051\065\362\223\337\064\245\306\367\370  
\357\214\017\142\112\174\256\323\365\124\370\215\266\232\126\207  
\026\202\072\063\253\132\042\010\367\202\272\352\056\340\107\232  
\264\265\105\243\005\073\331\334\056\105\100\073\352\334\177\350  
\073\353\321\354\046\330\065\244\060\305\072\254\127\236\263\166  
\245\040\173\371\036\112\005\142\001\246\050\165\140\227\222\015  
\156\076\115\067\103\015\222\025\234\030\042\315\121\231\240\051  
\032\074\137\212\062\063\133\060\307\211\057\107\230\017\243\003  
\306\366\361\254\337\062\360\331\201\032\344\234\275\366\200\024  
\360\321\054\271\205\365\330\243\261\310\245\041\345\034\023\227  
\356\016\275\337\051\251\357\064\123\133\323\344\152\023\204\006  
\266\062\002\304\122\256\042\322\334\262\041\102\032\332\100\360  
\051\311\354\012\014\134\342\320\272\314\110\323\067\012\314\022  
\012\212\171\260\075\003\177\151\113\364\064\040\175\263\064\352  
\216\113\144\365\076\375\263\043\147\025\015\004\270\360\055\301  
\011\121\074\262\154\025\360\245\043\327\203\164\344\345\056\311  
\376\230\047\102\306\253\306\236\260\320\133\070\245\233\120\336  
\176\030\230\265\105\073\366\171\264\350\367\032\173\006\203\373  
\320\213\332\273\307\275\030\253\010\157\074\200\153\100\077\031  
\031\272\145\212\346\276\325\134\323\066\327\357\100\122\044\140  
\070\147\004\061\354\217\363\202\306\336\271\125\363\073\061\221  
\132\334\265\010\025\255\166\045\012\015\173\056\207\342\014\246  
\006\274\046\020\155\067\235\354\335\170\214\174\200\305\360\331  
\167\110\320

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Chambers of Commerce Root - 2008"

# Issuer: CN=Chambers of Commerce Root - 2008,O=AC Camerfirma S.A.,serialNumber=A82743287,L=Madrid  
(see current address at [www.camerfirma.com/address](http://www.camerfirma.com/address)),C=EU

# Serial Number:00:a3:da:42:7e:a4:b1:ae:da



```

Subject: CN=Chambers of Commerce Root - 2008,O=AC Camerfirma S.A.,serialNumber=A82743287,L=Madrid
(see current address at www.camerfirma.com/address),C=EU
Not Valid Before: Fri Aug 01 12:29:50 2008
Not Valid After : Sat Jul 31 12:29:50 2038
Fingerprint (SHA-256):
06:3E:4A:FA:C4:91:DF:D3:32:F3:08:9B:85:42:E9:46:17:D8:93:D7:FE:94:4E:10:A7:93:7E:E2:9D:96:93:C0
Fingerprint (SHA1): 78:6A:74:AC:76:AB:14:7F:9C:6A:30:50:BA:9E:A8:7E:FE:9A:CE:3C
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Chambers of Commerce Root - 2008"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\170\152\164\254\166\253\024\177\234\152\060\120\272\236\250\176
\376\232\316\074
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\136\200\236\204\132\016\145\013\027\002\363\125\030\052\076\327
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\256\061\013\060\011\006\003\125\004\006\023\002\105\125
\061\103\060\101\006\003\125\004\007\023\072\115\141\144\162\151
\144\040\050\163\145\145\040\143\165\162\162\145\156\164\040\141
\144\144\162\145\163\163\040\141\164\040\167\167\167\056\143\141
\155\145\162\146\151\162\155\141\056\143\157\155\057\141\144\144
\162\145\163\163\051\061\022\060\020\006\003\125\004\005\023\011
\101\070\062\067\064\063\062\070\067\061\033\060\031\006\003\125
\004\012\023\022\101\103\040\103\141\155\145\162\146\151\162\155
\141\040\123\056\101\056\061\051\060\047\006\003\125\004\003\023
\040\103\150\141\155\142\145\162\163\040\157\146\040\103\157\155
\155\145\162\143\145\040\122\157\157\164\040\055\040\062\060\060
\070
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\011\000\243\332\102\176\244\261\256\332
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "Global Chambersign Root - 2008"
#
Issuer: CN=Global Chambersign Root - 2008,O=AC Camerfirma S.A.,serialNumber=A82743287,L=Madrid (see
current address at www.camerfirma.com/address),C=EU
Serial Number:00:c9:cd:d3:e9:d5:7d:23:ce
Subject: CN=Global Chambersign Root - 2008,O=AC Camerfirma S.A.,serialNumber=A82743287,L=Madrid

```

(see current address at www.camerfirma.com/address),C=EU

# Not Valid Before: Fri Aug 01 12:31:40 2008

# Not Valid After : Sat Jul 31 12:31:40 2038

# Fingerprint (SHA-256):

13:63:35:43:93:34:A7:69:80:16:A0:D3:24:DE:72:28:4E:07:9D:7B:52:20:BB:8F:BD:74:78:16:EE:BE:BA:CA

# Fingerprint (SHA1): 4A:BD:EE:EC:95:0D:35:9C:89:AE:C7:52:A1:2C:5B:29:F6:D6:AA:0C

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Global Chambersign Root - 2008"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\201\254\061\013\060\011\006\003\125\004\006\023\002\105\125  
\061\103\060\101\006\003\125\004\007\023\072\115\141\144\162\151  
\144\040\050\163\145\145\040\143\165\162\162\145\156\164\040\141  
\144\144\162\145\163\163\040\141\164\040\167\167\167\056\143\141  
\155\145\162\146\151\162\155\141\056\143\157\155\057\141\144\144  
\162\145\163\163\051\061\022\060\020\006\003\125\004\005\023\011  
\101\070\062\067\064\063\062\070\067\061\033\060\031\006\003\125  
\004\012\023\022\101\103\040\103\141\155\145\162\146\151\162\155  
\141\040\123\056\101\056\061\047\060\045\006\003\125\004\003\023  
\036\107\154\157\142\141\154\040\103\150\141\155\142\145\162\163  
\151\147\156\040\122\157\157\164\040\055\040\062\060\060\070

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\254\061\013\060\011\006\003\125\004\006\023\002\105\125  
\061\103\060\101\006\003\125\004\007\023\072\115\141\144\162\151  
\144\040\050\163\145\145\040\143\165\162\162\145\156\164\040\141  
\144\144\162\145\163\163\040\141\164\040\167\167\167\056\143\141  
\155\145\162\146\151\162\155\141\056\143\157\155\057\141\144\144  
\162\145\163\163\051\061\022\060\020\006\003\125\004\005\023\011  
\101\070\062\067\064\063\062\070\067\061\033\060\031\006\003\125  
\004\012\023\022\101\103\040\103\141\155\145\162\146\151\162\155  
\141\040\123\056\101\056\061\047\060\045\006\003\125\004\003\023  
\036\107\154\157\142\141\154\040\103\150\141\155\142\145\162\163  
\151\147\156\040\122\157\157\164\040\055\040\062\060\060\070

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\011\000\311\315\323\351\325\175\043\316

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\007\111\060\202\005\061\240\003\002\001\002\002\011\000  
\311\315\323\351\325\175\043\316\060\015\006\011\052\206\110\206  
\367\015\001\001\005\005\000\060\201\254\061\013\060\011\006\003  
\125\004\006\023\002\105\125\061\103\060\101\006\003\125\004\007  
\023\072\115\141\144\162\151\144\040\050\163\145\145\040\143\165

\162\162\145\156\164\040\141\144\144\162\145\163\163\040\141\164  
\040\167\167\167\056\143\141\155\145\162\146\151\162\155\141\056  
\143\157\155\057\141\144\144\162\145\163\163\051\061\022\060\020  
\006\003\125\004\005\023\011\101\070\062\067\064\063\062\070\067  
\061\033\060\031\006\003\125\004\012\023\022\101\103\040\103\141  
\155\145\162\146\151\162\155\141\040\123\056\101\056\061\047\060  
\045\006\003\125\004\003\023\036\107\154\157\142\141\154\040\103  
\150\141\155\142\145\162\163\151\147\156\040\122\157\157\164\040  
\055\040\062\060\060\070\060\036\027\015\060\070\060\070\060\061  
\061\062\063\061\064\060\132\027\015\063\070\060\067\063\061\061  
\062\063\061\064\060\132\060\201\254\061\013\060\011\006\003\125  
\004\006\023\002\105\125\061\103\060\101\006\003\125\004\007\023  
\072\115\141\144\162\151\144\040\050\163\145\145\040\143\165\162  
\162\145\156\164\040\141\144\144\162\145\163\163\040\141\164\040  
\167\167\167\056\143\141\155\145\162\146\151\162\155\141\056\143  
\157\155\057\141\144\144\162\145\163\163\051\061\022\060\020\006  
\003\125\004\005\023\011\101\070\062\067\064\063\062\070\067\061  
\033\060\031\006\003\125\004\012\023\022\101\103\040\103\141\155  
\145\162\146\151\162\155\141\040\123\056\101\056\061\047\060\045  
\006\003\125\004\003\023\036\107\154\157\142\141\154\040\103\150  
\141\155\142\145\162\163\151\147\156\040\122\157\157\164\040\055  
\040\062\060\060\070\060\202\002\042\060\015\006\011\052\206\110  
\206\367\015\001\001\001\005\000\003\202\002\017\000\060\202\002  
\012\002\202\002\001\000\300\337\126\323\344\072\233\166\105\264  
\023\333\377\301\266\031\213\067\101\030\225\122\107\353\027\235  
\051\210\216\065\154\006\062\056\107\142\363\111\004\277\175\104  
\066\261\161\314\275\132\011\163\325\331\205\104\377\221\127\045  
\337\136\066\216\160\321\134\161\103\035\331\332\357\134\322\373  
\033\275\072\265\313\255\243\314\104\247\015\256\041\025\077\271  
\172\133\222\165\330\244\022\070\211\031\212\267\200\322\342\062  
\157\126\234\221\326\210\020\013\263\164\144\222\164\140\363\366  
\317\030\117\140\262\043\320\307\073\316\141\113\231\217\302\014  
\320\100\262\230\334\015\250\116\243\271\012\256\140\240\255\105  
\122\143\272\146\275\150\340\371\276\032\250\201\273\036\101\170  
\165\323\301\376\000\125\260\207\124\350\047\220\065\035\114\063  
\255\227\374\227\056\230\204\277\054\311\243\277\321\230\021\024  
\355\143\370\312\230\210\130\027\231\355\105\003\227\176\074\206  
\036\210\214\276\362\221\204\217\145\064\330\000\114\175\267\061  
\027\132\051\172\012\030\044\060\243\067\265\172\251\001\175\046  
\326\371\016\216\131\361\375\033\063\265\051\073\027\073\101\266  
\041\335\324\300\075\245\237\237\037\103\120\311\273\274\154\172  
\227\230\356\315\214\037\373\234\121\256\213\160\275\047\237\161  
\300\153\254\175\220\146\350\327\135\072\015\260\325\302\215\325  
\310\235\235\301\155\320\320\277\121\344\343\370\303\070\066\256  
\326\247\165\346\257\204\103\135\223\222\014\152\007\336\073\035  
\230\042\326\254\301\065\333\243\240\045\377\162\265\166\035\336  
\155\351\054\146\054\122\204\320\105\222\316\034\345\345\063\035  
\334\007\123\124\243\252\202\073\232\067\057\334\335\240\144\351

\346\335\275\256\374\144\205\035\074\247\311\006\336\204\377\153  
\350\153\032\074\305\242\263\102\373\213\011\076\137\010\122\307  
\142\304\324\005\161\277\304\144\344\370\241\203\350\076\022\233  
\250\036\324\066\115\057\161\366\215\050\366\203\251\023\322\141  
\301\221\273\110\300\064\217\101\214\113\114\333\151\022\377\120  
\224\234\040\203\131\163\355\174\241\362\361\375\335\367\111\323  
\103\130\240\126\143\312\075\075\345\065\126\131\351\016\312\040  
\314\053\113\223\051\017\002\003\001\000\001\243\202\001\152\060  
\202\001\146\060\022\006\003\125\035\023\001\001\377\004\010\060  
\006\001\001\377\002\001\014\060\035\006\003\125\035\016\004\026  
\004\024\271\011\312\234\036\333\323\154\072\153\256\355\124\361  
\133\223\006\065\056\136\060\201\341\006\003\125\035\043\004\201  
\331\060\201\326\200\024\271\011\312\234\036\333\323\154\072\153  
\256\355\124\361\133\223\006\065\056\136\241\201\262\244\201\257  
\060\201\254\061\013\060\011\006\003\125\004\006\023\002\105\125  
\061\103\060\101\006\003\125\004\007\023\072\115\141\144\162\151  
\144\040\050\163\145\145\040\143\165\162\162\145\156\164\040\141  
\144\144\162\145\163\163\040\141\164\040\167\167\167\056\143\141  
\155\145\162\146\151\162\155\141\056\143\157\155\057\141\144\144  
\162\145\163\163\051\061\022\060\020\006\003\125\004\005\023\011  
\101\070\062\067\064\063\062\070\067\061\033\060\031\006\003\125  
\004\012\023\022\101\103\040\103\141\155\145\162\146\151\162\155  
\141\040\123\056\101\056\061\047\060\045\006\003\125\004\003\023  
\036\107\154\157\142\141\154\040\103\150\141\155\142\145\162\163  
\151\147\156\040\122\157\157\164\040\055\040\062\060\060\070\202  
\011\000\311\315\323\351\325\175\043\316\060\016\006\003\125\035  
\017\001\001\377\004\004\003\002\001\006\060\075\006\003\125\035  
\040\004\066\060\064\060\062\006\004\125\035\040\000\060\052\060  
\050\006\010\053\006\001\005\005\007\002\001\026\034\150\164\164  
\160\072\057\057\160\157\154\151\143\171\056\143\141\155\145\162  
\146\151\162\155\141\056\143\157\155\060\015\006\011\052\206\110  
\206\367\015\001\001\005\005\000\003\202\002\001\000\200\210\177  
\160\336\222\050\331\005\224\106\377\220\127\251\361\057\337\032  
\015\153\372\174\016\034\111\044\171\047\330\106\252\157\051\131  
\122\210\160\022\352\335\075\365\233\123\124\157\341\140\242\250  
\011\271\354\353\131\174\306\065\361\334\030\351\361\147\345\257  
\272\105\340\011\336\312\104\017\302\027\016\167\221\105\172\063  
\137\137\226\054\150\213\301\107\217\230\233\075\300\354\313\365  
\325\202\222\204\065\321\276\066\070\126\162\061\133\107\055\252  
\027\244\143\121\353\012\001\255\177\354\165\236\313\241\037\361  
\177\022\261\271\344\144\177\147\326\043\052\364\270\071\135\230  
\350\041\247\341\275\075\102\032\164\232\160\257\150\154\120\135  
\111\317\377\373\016\135\346\054\107\327\201\072\131\000\265\163  
\153\143\040\366\061\105\010\071\016\364\160\176\100\160\132\077  
\320\153\102\251\164\075\050\057\002\155\165\162\225\011\215\110  
\143\306\306\043\127\222\223\136\065\301\215\371\012\367\054\235  
\142\034\366\255\174\335\246\061\036\266\261\307\176\205\046\372  
\244\152\265\332\143\060\321\357\223\067\262\146\057\175\005\367

```
\347\267\113\230\224\065\300\331\072\051\301\235\262\120\063\035
\112\251\132\246\311\003\357\355\364\347\250\156\212\264\127\204
\353\244\077\320\356\252\252\207\133\143\350\223\342\153\250\324
\270\162\170\153\033\355\071\344\135\313\233\252\207\325\117\116
\000\376\331\152\237\074\061\017\050\002\001\175\230\350\247\260
\242\144\236\171\370\110\362\025\251\314\346\310\104\353\077\170
\231\362\173\161\076\074\361\230\247\305\030\022\077\346\273\050
\063\102\351\105\012\174\155\362\206\171\057\305\202\031\175\011
\211\174\262\124\166\210\256\336\301\363\314\341\156\333\061\326
\223\256\231\240\357\045\152\163\230\211\133\072\056\023\210\036
\277\300\222\224\064\033\343\047\267\213\036\157\102\377\347\351
\067\233\120\035\055\242\371\002\356\313\130\130\072\161\274\150
\343\252\301\257\034\050\037\242\334\043\145\077\201\352\256\231
\323\330\060\317\023\015\117\025\311\204\274\247\110\055\370\060
\043\167\330\106\113\171\155\366\214\355\072\177\140\021\170\364
\351\233\256\325\124\300\164\200\321\013\102\237\301
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Trust for "Global Chambersign Root - 2008"
```

```
Issuer: CN=Global Chambersign Root - 2008,O=AC Camerfirma S.A.,serialNumber=A82743287,L=Madrid (see
current address at www.camerfirma.com/address),C=EU
```

```
Serial Number:00:c9:cd:d3:e9:d5:7d:23:ce
```

```
Subject: CN=Global Chambersign Root - 2008,O=AC Camerfirma S.A.,serialNumber=A82743287,L=Madrid
(see current address at www.camerfirma.com/address),C=EU
```

```
Not Valid Before: Fri Aug 01 12:31:40 2008
```

```
Not Valid After : Sat Jul 31 12:31:40 2038
```

```
Fingerprint (SHA-256):
```

```
13:63:35:43:93:34:A7:69:80:16:A0:D3:24:DE:72:28:4E:07:9D:7B:52:20:BB:8F:BD:74:78:16:EE:BE:BA:CA
```

```
Fingerprint (SHA1): 4A:BD:EE:EC:95:0D:35:9C:89:AE:C7:52:A1:2C:5B:29:F6:D6:AA:0C
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "Global Chambersign Root - 2008"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\112\275\356\354\225\015\065\234\211\256\307\122\241\054\133\051
\366\326\252\014
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\236\200\377\170\001\014\056\301\066\275\376\226\220\156\010\363
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\201\254\061\013\060\011\006\003\125\004\006\023\002\105\125
\061\103\060\101\006\003\125\004\007\023\072\115\141\144\162\151
\144\040\050\163\145\145\040\143\165\162\162\145\156\164\040\141
```

```
\144\144\162\145\163\163\040\141\164\040\167\167\167\056\143\141
\155\145\162\146\151\162\155\141\056\143\157\155\057\141\144\144
\162\145\163\163\051\061\022\060\020\006\003\125\004\005\023\011
\101\070\062\067\064\063\062\070\067\061\033\060\031\006\003\125
\004\012\023\022\101\103\040\103\141\155\145\162\146\151\162\155
\141\040\123\056\101\056\061\047\060\045\006\003\125\004\003\023
\036\107\154\157\142\141\154\040\103\150\141\155\142\145\162\163
\151\147\156\040\122\157\157\164\040\055\040\062\060\060\070
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\011\000\311\315\323\351\325\175\043\316
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "Go Daddy Root Certificate Authority - G2"

#

# Issuer: CN=Go Daddy Root Certificate Authority - G2,O="GoDaddy.com, Inc.",L=Scottsdale,ST=Arizona,C=US

# Serial Number: 0 (0x0)

# Subject: CN=Go Daddy Root Certificate Authority - G2,O="GoDaddy.com, Inc.",L=Scottsdale,ST=Arizona,C=US

# Not Valid Before: Tue Sep 01 00:00:00 2009

# Not Valid After : Thu Dec 31 23:59:59 2037

# Fingerprint (SHA-256):

```
45:14:0B:32:47:EB:9C:C8:C5:B4:F0:D7:B5:30:91:F7:32:92:08:9E:6E:5A:63:E2:74:9D:D3:AC:A9:19:8E:DA
```

# Fingerprint (SHA1): 47:BE:AB:C9:22:EA:E8:0E:78:78:34:62:A7:9F:45:C2:54:FD:E6:8B

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Go Daddy Root Certificate Authority - G2"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

```
\060\201\203\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\020\060\016\006\003\125\004\010\023\007\101\162\151\172\157
\156\141\061\023\060\021\006\003\125\004\007\023\012\123\143\157
\164\164\163\144\141\154\145\061\032\060\030\006\003\125\004\012
\023\021\107\157\104\141\144\144\171\056\143\157\155\054\040\111
\156\143\056\061\061\060\057\006\003\125\004\003\023\050\107\157
\040\104\141\144\144\171\040\122\157\157\164\040\103\145\162\164
\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151\164
\171\040\055\040\107\062
```

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\203\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\020\060\016\006\003\125\004\010\023\007\101\162\151\172\157  
\156\141\061\023\060\021\006\003\125\004\007\023\012\123\143\157  
\164\164\163\144\141\154\145\061\032\060\030\006\003\125\004\012  
\023\021\107\157\104\141\144\144\171\056\143\157\155\054\040\111  
\156\143\056\061\061\060\057\006\003\125\004\003\023\050\107\157  
\040\104\141\144\144\171\040\122\157\157\164\040\103\145\162\164  
\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151\164  
\171\040\055\040\107\062

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\000

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\305\060\202\002\255\240\003\002\001\002\002\001\000  
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060  
\201\203\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\020\060\016\006\003\125\004\010\023\007\101\162\151\172\157\156  
\141\061\023\060\021\006\003\125\004\007\023\012\123\143\157\164  
\164\163\144\141\154\145\061\032\060\030\006\003\125\004\012\023  
\021\107\157\104\141\144\144\171\056\143\157\155\054\040\111\156  
\143\056\061\061\060\057\006\003\125\004\003\023\050\107\157\040  
\104\141\144\144\171\040\122\157\157\164\040\103\145\162\164\151  
\146\151\143\141\164\145\040\101\165\164\150\157\162\151\164\171  
\040\055\040\107\062\060\036\027\015\060\071\060\071\060\061\060  
\060\060\060\060\060\132\027\015\063\067\061\062\063\061\062\063  
\065\071\065\071\132\060\201\203\061\013\060\011\006\003\125\004  
\006\023\002\125\123\061\020\060\016\006\003\125\004\010\023\007  
\101\162\151\172\157\156\141\061\023\060\021\006\003\125\004\007  
\023\012\123\143\157\164\164\163\144\141\154\145\061\032\060\030  
\006\003\125\004\012\023\021\107\157\104\141\144\144\171\056\143  
\157\155\054\040\111\156\143\056\061\061\060\057\006\003\125\004  
\003\023\050\107\157\040\104\141\144\144\171\040\122\157\157\164  
\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164  
\150\157\162\151\164\171\040\055\040\107\062\060\202\001\042\060  
\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202  
\001\017\000\060\202\001\012\002\202\001\001\000\277\161\142\010  
\361\372\131\064\367\033\311\030\243\367\200\111\130\351\042\203  
\023\246\305\040\103\001\073\204\361\346\205\111\237\047\352\366  
\204\033\116\240\264\333\160\230\307\062\001\261\005\076\007\116  
\356\364\372\117\057\131\060\042\347\253\031\126\153\342\200\007  
\374\363\026\165\200\071\121\173\345\371\065\266\164\116\251\215  
\202\023\344\266\077\251\003\203\372\242\276\212\025\152\177\336  
\013\303\266\031\024\005\312\352\303\250\004\224\073\106\174\062  
\015\363\000\146\042\310\215\151\155\066\214\021\030\267\323\262  
\034\140\264\070\372\002\214\316\323\335\106\007\336\012\076\353  
\135\174\310\174\373\260\053\123\244\222\142\151\121\045\005\141  
\032\104\201\214\054\251\103\226\043\337\254\072\201\232\016\051

\305\034\251\351\135\036\266\236\236\060\012\071\316\361\210\200  
\373\113\135\314\062\354\205\142\103\045\064\002\126\047\001\221  
\264\073\160\052\077\156\261\350\234\210\001\175\237\324\371\333  
\123\155\140\235\277\054\347\130\253\270\137\106\374\316\304\033  
\003\074\011\353\111\061\134\151\106\263\340\107\002\003\001\000  
\001\243\102\060\100\060\017\006\003\125\035\023\001\001\377\004  
\005\060\003\001\001\377\060\016\006\003\125\035\017\001\001\377  
\004\004\003\002\001\006\060\035\006\003\125\035\016\004\026\004  
\024\072\232\205\007\020\147\050\266\357\366\275\005\101\156\040  
\301\224\332\017\336\060\015\006\011\052\206\110\206\367\015\001  
\001\013\005\000\003\202\001\001\000\231\333\135\171\325\371\227  
\131\147\003\141\361\176\073\006\061\165\055\241\040\216\117\145  
\207\264\367\246\234\274\330\351\057\320\333\132\356\317\164\214  
\163\264\070\102\332\005\173\370\002\165\270\375\245\261\327\256  
\366\327\336\023\313\123\020\176\212\106\321\227\372\267\056\053  
\021\253\220\260\047\200\371\350\237\132\351\067\237\253\344\337  
\154\263\205\027\235\075\331\044\117\171\221\065\326\137\004\353  
\200\203\253\232\002\055\265\020\364\330\220\307\004\163\100\355  
\162\045\240\251\237\354\236\253\150\022\231\127\306\217\022\072  
\011\244\275\104\375\006\025\067\301\233\344\062\243\355\070\350  
\330\144\363\054\176\024\374\002\352\237\315\377\007\150\027\333  
\042\220\070\055\172\215\321\124\361\151\343\137\063\312\172\075  
\173\012\343\312\177\137\071\345\342\165\272\305\166\030\063\316  
\054\360\057\114\255\367\261\347\316\117\250\304\233\112\124\006  
\305\177\175\325\010\017\342\034\376\176\027\270\254\136\366\324  
\026\262\103\011\014\115\366\247\153\264\231\204\145\312\172\210  
\342\342\104\276\134\367\352\034\365

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Go Daddy Root Certificate Authority - G2"

# Issuer: CN=Go Daddy Root Certificate Authority - G2,O="GoDaddy.com, Inc.",L=Scottsdale,ST=Arizona,C=US

# Serial Number: 0 (0x0)

# Subject: CN=Go Daddy Root Certificate Authority - G2,O="GoDaddy.com, Inc.",L=Scottsdale,ST=Arizona,C=US

# Not Valid Before: Tue Sep 01 00:00:00 2009

# Not Valid After : Thu Dec 31 23:59:59 2037

# Fingerprint (SHA-256):

45:14:0B:32:47:EB:9C:C8:C5:B4:F0:D7:B5:30:91:F7:32:92:08:9E:6E:5A:63:E2:74:9D:D3:AC:A9:19:8E:DA

# Fingerprint (SHA1): 47:BE:AB:C9:22:EA:E8:0E:78:78:34:62:A7:9F:45:C2:54:FD:E6:8B

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Go Daddy Root Certificate Authority - G2"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL



\107\276\253\311\042\352\350\016\170\170\064\142\247\237\105\302

\124\375\346\213

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\200\072\274\042\301\346\373\215\233\073\047\112\062\033\232\001

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\203\061\013\060\011\006\003\125\004\006\023\002\125\123

\061\020\060\016\006\003\125\004\010\023\007\101\162\151\172\157

\156\141\061\023\060\021\006\003\125\004\007\023\012\123\143\157

\164\164\163\144\141\154\145\061\032\060\030\006\003\125\004\012

\023\021\107\157\104\141\144\144\171\056\143\157\155\054\040\111

\156\143\056\061\061\060\057\006\003\125\004\003\023\050\107\157

\040\104\141\144\144\171\040\122\157\157\164\040\103\145\162\164

\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151\164

\171\040\055\040\107\062

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\000

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "Starfield Root Certificate Authority - G2"

#

# Issuer: CN=Starfield Root Certificate Authority - G2,O="Starfield Technologies,  
Inc.",L=Scottsdale,ST=Arizona,C=US

# Serial Number: 0 (0x0)

# Subject: CN=Starfield Root Certificate Authority - G2,O="Starfield Technologies,  
Inc.",L=Scottsdale,ST=Arizona,C=US

# Not Valid Before: Tue Sep 01 00:00:00 2009

# Not Valid After : Thu Dec 31 23:59:59 2037

# Fingerprint (SHA-256):

2C:E1:CB:0B:F9:D2:F9:E1:02:99:3F:BE:21:51:52:C3:B2:DD:0C:AB:DE:1C:68:E5:31:9B:83:91:54:DB:B7:F5

# Fingerprint (SHA1): B5:1C:06:7C:EE:2B:0C:3D:F8:55:AB:2D:92:F4:FE:39:D4:E7:0F:0E

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Starfield Root Certificate Authority - G2"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\201\217\061\013\060\011\006\003\125\004\006\023\002\125\123

\061\020\060\016\006\003\125\004\010\023\007\101\162\151\172\157

\156\141\061\023\060\021\006\003\125\004\007\023\012\123\143\157

\164\164\163\144\141\154\145\061\045\060\043\006\003\125\004\012  
\023\034\123\164\141\162\146\151\145\154\144\040\124\145\143\150  
\156\157\154\157\147\151\145\163\054\040\111\156\143\056\061\062  
\060\060\006\003\125\004\003\023\051\123\164\141\162\146\151\145  
\154\144\040\122\157\157\164\040\103\145\162\164\151\146\151\143  
\141\164\145\040\101\165\164\150\157\162\151\164\171\040\055\040  
\107\062

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\217\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\020\060\016\006\003\125\004\010\023\007\101\162\151\172\157  
\156\141\061\023\060\021\006\003\125\004\007\023\012\123\143\157  
\164\164\163\144\141\154\145\061\045\060\043\006\003\125\004\012  
\023\034\123\164\141\162\146\151\145\154\144\040\124\145\143\150  
\156\157\154\157\147\151\145\163\054\040\111\156\143\056\061\062  
\060\060\006\003\125\004\003\023\051\123\164\141\162\146\151\145  
\154\144\040\122\157\157\164\040\103\145\162\164\151\146\151\143  
\141\164\145\040\101\165\164\150\157\162\151\164\171\040\055\040  
\107\062

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\000

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\335\060\202\002\305\240\003\002\001\002\002\001\000  
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060  
\201\217\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\020\060\016\006\003\125\004\010\023\007\101\162\151\172\157\156  
\141\061\023\060\021\006\003\125\004\007\023\012\123\143\157\164  
\164\163\144\141\154\145\061\045\060\043\006\003\125\004\012\023  
\034\123\164\141\162\146\151\145\154\144\040\124\145\143\150\156  
\157\154\157\147\151\145\163\054\040\111\156\143\056\061\062\060  
\060\006\003\125\004\003\023\051\123\164\141\162\146\151\145\154  
\144\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141  
\164\145\040\101\165\164\150\157\162\151\164\171\040\055\040\107  
\062\060\036\027\015\060\071\060\071\060\061\060\060\060\060\060  
\060\132\027\015\063\067\061\062\063\061\062\063\065\071\065\071  
\132\060\201\217\061\013\060\011\006\003\125\004\006\023\002\125  
\123\061\020\060\016\006\003\125\004\010\023\007\101\162\151\172  
\157\156\141\061\023\060\021\006\003\125\004\007\023\012\123\143  
\157\164\164\163\144\141\154\145\061\045\060\043\006\003\125\004  
\012\023\034\123\164\141\162\146\151\145\154\144\040\124\145\143  
\150\156\157\154\157\147\151\145\163\054\040\111\156\143\056\061  
\062\060\060\006\003\125\004\003\023\051\123\164\141\162\146\151  
\145\154\144\040\122\157\157\164\040\103\145\162\164\151\146\151  
\143\141\164\145\040\101\165\164\150\157\162\151\164\171\040\055  
\040\107\062\060\202\001\042\060\015\006\011\052\206\110\206\367

\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002  
\202\001\001\000\275\355\301\003\374\366\217\374\002\261\157\133  
\237\110\331\235\171\342\242\267\003\141\126\030\303\107\266\327  
\312\075\065\056\211\103\367\241\151\233\336\212\032\375\023\040  
\234\264\111\167\062\051\126\375\271\354\214\335\042\372\162\334  
\047\141\227\356\366\132\204\354\156\031\271\211\054\334\204\133  
\325\164\373\153\137\305\211\245\020\122\211\106\125\364\270\165  
\034\346\177\344\124\256\113\370\125\162\127\002\031\370\027\161  
\131\353\036\050\007\164\305\235\110\276\154\264\364\244\260\363  
\144\067\171\222\300\354\106\136\177\341\155\123\114\142\257\315  
\037\013\143\273\072\235\373\374\171\000\230\141\164\317\046\202  
\100\143\363\262\162\152\031\015\231\312\324\016\165\314\067\373  
\213\211\301\131\361\142\177\137\263\137\145\060\370\247\267\115  
\166\132\036\166\136\064\300\350\226\126\231\212\263\360\177\244  
\315\275\334\062\061\174\221\317\340\137\021\370\153\252\111\134  
\321\231\224\321\242\343\143\133\011\166\265\126\142\341\113\164  
\035\226\324\046\324\010\004\131\320\230\016\016\346\336\374\303  
\354\037\220\361\002\003\001\000\001\243\102\060\100\060\017\006  
\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060\016  
\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060\035  
\006\003\125\035\016\004\026\004\024\174\014\062\037\247\331\060  
\177\304\175\150\243\142\250\241\316\253\007\133\047\060\015\006  
\011\052\206\110\206\367\015\001\001\013\005\000\003\202\001\001  
\000\021\131\372\045\117\003\157\224\231\073\232\037\202\205\071  
\324\166\005\224\136\341\050\223\155\142\135\011\302\240\250\324  
\260\165\070\361\064\152\235\344\237\212\206\046\121\346\054\321  
\306\055\156\225\040\112\222\001\354\270\212\147\173\061\342\147  
\056\214\225\003\046\056\103\235\112\061\366\016\265\014\273\267  
\342\067\177\042\272\000\243\016\173\122\373\153\273\073\304\323  
\171\121\116\315\220\364\147\007\031\310\074\106\172\015\001\175  
\305\130\347\155\346\205\060\027\232\044\304\020\340\004\367\340  
\362\177\324\252\012\377\102\035\067\355\224\345\144\131\022\040  
\167\070\323\062\076\070\201\165\226\163\372\150\217\261\313\316  
\037\305\354\372\234\176\317\176\261\361\007\055\266\374\277\312  
\244\277\320\227\005\112\274\352\030\050\002\220\275\124\170\011  
\041\161\323\321\175\035\331\026\260\251\141\075\320\012\000\042  
\374\307\173\313\011\144\105\013\073\100\201\367\175\174\062\365  
\230\312\130\216\175\052\356\220\131\163\144\371\066\164\136\045  
\241\365\146\005\056\177\071\025\251\052\373\120\213\216\205\151  
\364

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Starfield Root Certificate Authority - G2"  
# Issuer: CN=Starfield Root Certificate Authority - G2,O="Starfield Technologies,  
Inc.",L=Scottsdale,ST=Arizona,C=US

```

Serial Number: 0 (0x0)
Subject: CN=Starfield Root Certificate Authority - G2,O="Starfield Technologies,
Inc.",L=Scottsdale,ST=Arizona,C=US
Not Valid Before: Tue Sep 01 00:00:00 2009
Not Valid After : Thu Dec 31 23:59:59 2037
Fingerprint (SHA-256):
2C:E1:CB:0B:F9:D2:F9:E1:02:99:3F:BE:21:51:52:C3:B2:DD:0C:AB:DE:1C:68:E5:31:9B:83:91:54:DB:B7:F5
Fingerprint (SHA1): B5:1C:06:7C:EE:2B:0C:3D:F8:55:AB:2D:92:F4:FE:39:D4:E7:0F:0E
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Starfield Root Certificate Authority - G2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\265\034\006\174\356\053\014\075\370\125\253\055\222\364\376\071
\324\347\017\016
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\326\071\201\306\122\176\226\151\374\374\312\146\355\005\362\226
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\217\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\020\060\016\006\003\125\004\010\023\007\101\162\151\172\157
\156\141\061\023\060\021\006\003\125\004\007\023\012\123\143\157
\164\164\163\144\141\154\145\061\045\060\043\006\003\125\004\012
\023\034\123\164\141\162\146\151\145\154\144\040\124\145\143\150
\156\157\154\157\147\151\145\163\054\040\111\156\143\056\061\062
\060\060\006\003\125\004\003\023\051\123\164\141\162\146\151\145
\154\144\040\122\157\157\164\040\103\145\162\164\151\146\151\143
\141\164\145\040\101\165\164\150\157\162\151\164\171\040\055\040
\107\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\000
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "Starfield Services Root Certificate Authority - G2"
#
Issuer: CN=Starfield Services Root Certificate Authority - G2,O="Starfield Technologies,
Inc.",L=Scottsdale,ST=Arizona,C=US
Serial Number: 0 (0x0)
Subject: CN=Starfield Services Root Certificate Authority - G2,O="Starfield Technologies,
Inc.",L=Scottsdale,ST=Arizona,C=US

```

```
Not Valid Before: Tue Sep 01 00:00:00 2009
Not Valid After : Thu Dec 31 23:59:59 2037
Fingerprint (SHA-256):
56:8D:69:05:A2:C8:87:08:A4:B3:02:51:90:ED:CF:ED:B1:97:4A:60:6A:13:C6:E5:29:0F:CB:2A:E6:3E:DA:B5
Fingerprint (SHA1): 92:5A:8F:8D:2C:6D:04:E0:66:5F:59:6A:FF:22:D8:63:E8:25:6F:3F
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Starfield Services Root Certificate Authority - G2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\230\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\020\060\016\006\003\125\004\010\023\007\101\162\151\172\157
\156\141\061\023\060\021\006\003\125\004\007\023\012\123\143\157
\164\164\163\144\141\154\145\061\045\060\043\006\003\125\004\012
\023\034\123\164\141\162\146\151\145\154\144\040\124\145\143\150
\156\157\154\157\147\151\145\163\054\040\111\156\143\056\061\073
\060\071\006\003\125\004\003\023\062\123\164\141\162\146\151\145
\154\144\040\123\145\162\166\151\143\145\163\040\122\157\157\164
\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164
\150\157\162\151\164\171\040\055\040\107\062
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\230\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\020\060\016\006\003\125\004\010\023\007\101\162\151\172\157
\156\141\061\023\060\021\006\003\125\004\007\023\012\123\143\157
\164\164\163\144\141\154\145\061\045\060\043\006\003\125\004\012
\023\034\123\164\141\162\146\151\145\154\144\040\124\145\143\150
\156\157\154\157\147\151\145\163\054\040\111\156\143\056\061\073
\060\071\006\003\125\004\003\023\062\123\164\141\162\146\151\145
\154\144\040\123\145\162\166\151\143\145\163\040\122\157\157\164
\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164
\150\157\162\151\164\171\040\055\040\107\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\000
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\357\060\202\002\327\240\003\002\001\002\002\001\000
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060
\201\230\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\020\060\016\006\003\125\004\010\023\007\101\162\151\172\157\156
\141\061\023\060\021\006\003\125\004\007\023\012\123\143\157\164
\164\163\144\141\154\145\061\045\060\043\006\003\125\004\012\023
\034\123\164\141\162\146\151\145\154\144\040\124\145\143\150\156
\157\154\157\147\151\145\163\054\040\111\156\143\056\061\073\060
```

\071\006\003\125\004\003\023\062\123\164\141\162\146\151\145\154  
\144\040\123\145\162\166\151\143\145\163\040\122\157\157\164\040  
\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164\150  
\157\162\151\164\171\040\055\040\107\062\060\036\027\015\060\071  
\060\071\060\061\060\060\060\060\060\060\132\027\015\063\067\061  
\062\063\061\062\063\065\071\065\071\132\060\201\230\061\013\060  
\011\006\003\125\004\006\023\002\125\123\061\020\060\016\006\003  
\125\004\010\023\007\101\162\151\172\157\156\141\061\023\060\021  
\006\003\125\004\007\023\012\123\143\157\164\164\163\144\141\154  
\145\061\045\060\043\006\003\125\004\012\023\034\123\164\141\162  
\146\151\145\154\144\040\124\145\143\150\156\157\154\157\147\151  
\145\163\054\040\111\156\143\056\061\073\060\071\006\003\125\004  
\003\023\062\123\164\141\162\146\151\145\154\144\040\123\145\162  
\166\151\143\145\163\040\122\157\157\164\040\103\145\162\164\151  
\146\151\143\141\164\145\040\101\165\164\150\157\162\151\164\171  
\040\055\040\107\062\060\202\001\042\060\015\006\011\052\206\110  
\206\367\015\001\001\001\005\000\003\202\001\017\000\060\202\001  
\012\002\202\001\001\000\325\014\072\304\052\371\116\342\365\276  
\031\227\137\216\210\123\261\037\077\313\317\237\040\023\155\051  
\072\310\017\175\074\367\153\166\070\143\331\066\140\250\233\136  
\134\000\200\262\057\131\177\366\207\371\045\103\206\347\151\033  
\122\232\220\341\161\343\330\055\015\116\157\366\310\111\331\266  
\363\032\126\256\053\266\164\024\353\317\373\046\343\032\272\035  
\226\056\152\073\130\224\211\107\126\377\045\240\223\160\123\203  
\332\204\164\024\303\147\236\004\150\072\337\216\100\132\035\112  
\116\317\103\221\073\347\126\326\000\160\313\122\356\173\175\256  
\072\347\274\061\371\105\366\302\140\317\023\131\002\053\200\314  
\064\107\337\271\336\220\145\155\002\317\054\221\246\246\347\336  
\205\030\111\174\146\116\243\072\155\251\265\356\064\056\272\015  
\003\270\063\337\107\353\261\153\215\045\331\233\316\201\321\105  
\106\062\226\160\207\336\002\016\111\103\205\266\154\163\273\144  
\352\141\101\254\311\324\124\337\207\057\307\042\262\046\314\237  
\131\124\150\237\374\276\052\057\304\125\034\165\100\140\027\205  
\002\125\071\213\177\005\002\003\001\000\001\243\102\060\100\060  
\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377  
\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006  
\060\035\006\003\125\035\016\004\026\004\024\234\137\000\337\252  
\001\327\060\053\070\210\242\270\155\112\234\362\021\221\203\060  
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\003\202  
\001\001\000\113\066\246\204\167\151\335\073\031\237\147\043\010  
\157\016\141\311\375\204\334\137\330\066\201\315\330\033\101\055  
\237\140\335\307\032\150\331\321\156\206\341\210\043\317\023\336  
\103\317\342\064\263\004\235\037\051\325\277\370\136\310\325\301  
\275\356\222\157\062\164\362\221\202\057\275\202\102\172\255\052  
\267\040\175\115\274\172\125\022\302\025\352\275\367\152\225\056  
\154\164\237\317\034\264\362\305\001\243\205\320\162\076\255\163  
\253\013\233\165\014\155\105\267\216\224\254\226\067\265\240\320  
\217\025\107\016\343\350\203\335\217\375\357\101\001\167\314\047

```
\251\142\205\063\362\067\010\357\161\317\167\006\336\310\031\035
\210\100\317\175\106\035\377\036\307\341\316\377\043\333\306\372
\215\125\116\251\002\347\107\021\106\076\364\375\275\173\051\046
\273\251\141\142\067\050\266\055\052\366\020\206\144\311\160\247
\322\255\267\051\160\171\352\074\332\143\045\237\375\150\267\060
\354\160\373\165\212\267\155\140\147\262\036\310\271\351\330\250
\157\002\213\147\015\115\046\127\161\332\040\374\301\112\120\215
\261\050\272
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Trust for "Starfield Services Root Certificate Authority - G2"
```

```
Issuer: CN=Starfield Services Root Certificate Authority - G2,O="Starfield Technologies,
Inc.",L=Scottsdale,ST=Arizona,C=US
```

```
Serial Number: 0 (0x0)
```

```
Subject: CN=Starfield Services Root Certificate Authority - G2,O="Starfield Technologies,
Inc.",L=Scottsdale,ST=Arizona,C=US
```

```
Not Valid Before: Tue Sep 01 00:00:00 2009
```

```
Not Valid After : Thu Dec 31 23:59:59 2037
```

```
Fingerprint (SHA-256):
```

```
56:8D:69:05:A2:C8:87:08:A4:B3:02:51:90:ED:CF:ED:B1:97:4A:60:6A:13:C6:E5:29:0F:CB:2A:E6:3E:DA:B5
```

```
Fingerprint (SHA1): 92:5A:8F:8D:2C:6D:04:E0:66:5F:59:6A:FF:22:D8:63:E8:25:6F:3F
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "Starfield Services Root Certificate Authority - G2"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\222\132\217\215\054\155\004\340\146\137\131\152\377\042\330\143
\350\045\157\077
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\027\065\164\257\173\141\034\353\364\371\074\342\356\100\371\242
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\201\230\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\020\060\016\006\003\125\004\010\023\007\101\162\151\172\157
\156\141\061\023\060\021\006\003\125\004\007\023\012\123\143\157
\164\164\163\144\141\154\145\061\045\060\043\006\003\125\004\012
\023\034\123\164\141\162\146\151\145\154\144\040\124\145\143\150
\156\157\154\157\147\151\145\163\054\040\111\156\143\056\061\073
\060\071\006\003\125\004\003\023\062\123\164\141\162\146\151\145
\154\144\040\123\145\162\166\151\143\145\163\040\122\157\157\164
\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164
\150\157\162\151\164\171\040\055\040\107\062
```

END

```

CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\000
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "AffirmTrust Commercial"
#
Issuer: CN=AffirmTrust Commercial,O=AffirmTrust,C=US
Serial Number:77:77:06:27:26:a9:b1:7c
Subject: CN=AffirmTrust Commercial,O=AffirmTrust,C=US
Not Valid Before: Fri Jan 29 14:06:06 2010
Not Valid After : Tue Dec 31 14:06:06 2030
Fingerprint (SHA-256):
03:76:AB:1D:54:C5:F9:80:3C:E4:B2:E2:01:A0:EE:7E:EF:7B:57:B6:36:E8:A9:3C:9B:8D:48:60:C9:6F:5F:A7
Fingerprint (SHA1): F9:B5:B6:32:45:5F:9C:BE:EC:57:5F:80:DC:E9:6E:2C:C7:B2:78:B7
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "AffirmTrust Commercial"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\104\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\024\060\022\006\003\125\004\012\014\013\101\146\146\151\162\155
\124\162\165\163\164\061\037\060\035\006\003\125\004\003\014\026
\101\146\146\151\162\155\124\162\165\163\164\040\103\157\155\155
\145\162\143\151\141\154
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\104\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\024\060\022\006\003\125\004\012\014\013\101\146\146\151\162\155
\124\162\165\163\164\061\037\060\035\006\003\125\004\003\014\026
\101\146\146\151\162\155\124\162\165\163\164\040\103\157\155\155
\145\162\143\151\141\154
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\167\167\006\047\046\251\261\174
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\114\060\202\002\064\240\003\002\001\002\002\010\167
\167\006\047\046\251\261\174\060\015\006\011\052\206\110\206\367
\015\001\001\013\005\000\060\104\061\013\060\011\006\003\125\004
\006\023\002\125\123\061\024\060\022\006\003\125\004\012\014\013

```



\101\146\146\151\162\155\124\162\165\163\164\061\037\060\035\006  
\003\125\004\003\014\026\101\146\146\151\162\155\124\162\165\163  
\164\040\103\157\155\155\145\162\143\151\141\154\060\036\027\015  
\061\060\060\061\062\071\061\064\060\066\060\066\132\027\015\063  
\060\061\062\063\061\061\064\060\066\060\066\132\060\104\061\013  
\060\011\006\003\125\004\006\023\002\125\123\061\024\060\022\006  
\003\125\004\012\014\013\101\146\146\151\162\155\124\162\165\163  
\164\061\037\060\035\006\003\125\004\003\014\026\101\146\146\151  
\162\155\124\162\165\163\164\040\103\157\155\155\145\162\143\151  
\141\154\060\202\001\042\060\015\006\011\052\206\110\206\367\015  
\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002\202  
\001\001\000\366\033\117\147\007\053\241\025\365\006\042\313\037  
\001\262\343\163\105\006\104\111\054\273\111\045\024\326\316\303  
\267\253\054\117\306\101\062\224\127\372\022\247\133\016\342\217  
\037\036\206\031\247\252\265\055\271\137\015\212\302\257\205\065  
\171\062\055\273\034\142\067\362\261\133\112\075\312\315\161\137  
\351\102\276\224\350\310\336\371\042\110\144\306\345\253\306\053  
\155\255\005\360\372\325\013\317\232\345\360\120\244\213\073\107  
\245\043\133\172\172\370\063\077\270\357\231\227\343\040\301\326  
\050\211\317\224\373\271\105\355\343\100\027\021\324\164\360\013  
\061\342\053\046\152\233\114\127\256\254\040\076\272\105\172\005  
\363\275\233\151\025\256\175\116\040\143\304\065\166\072\007\002  
\311\067\375\307\107\356\350\361\166\035\163\025\362\227\244\265  
\310\172\171\331\102\252\053\177\134\376\316\046\117\243\146\201  
\065\257\104\272\124\036\034\060\062\145\235\346\074\223\136\120  
\116\172\343\072\324\156\314\032\373\371\322\067\256\044\052\253  
\127\003\042\050\015\111\165\177\267\050\332\165\277\216\343\334  
\016\171\061\002\003\001\000\001\243\102\060\100\060\035\006\003  
\125\035\016\004\026\004\024\235\223\306\123\213\136\312\257\077  
\237\036\017\345\231\225\274\044\366\224\217\060\017\006\003\125  
\035\023\001\001\377\004\005\060\003\001\001\377\060\016\006\003  
\125\035\017\001\001\377\004\004\003\002\001\006\060\015\006\011  
\052\206\110\206\367\015\001\001\013\005\000\003\202\001\001\000  
\130\254\364\004\016\315\300\015\377\012\375\324\272\026\137\051  
\275\173\150\231\130\111\322\264\035\067\115\177\047\175\106\006  
\135\103\306\206\056\076\163\262\046\175\117\223\251\266\304\052  
\232\253\041\227\024\261\336\214\323\253\211\025\330\153\044\324  
\361\026\256\330\244\134\324\177\121\216\355\030\001\261\223\143  
\275\274\370\141\200\232\236\261\316\102\160\342\251\175\006\045  
\175\047\241\376\157\354\263\036\044\332\343\113\125\032\000\073  
\065\264\073\331\327\135\060\375\201\023\211\362\302\006\053\355  
\147\304\216\311\103\262\134\153\025\211\002\274\142\374\116\362  
\265\063\252\262\157\323\012\242\120\343\366\073\350\056\104\302  
\333\146\070\251\063\126\110\361\155\033\063\215\015\214\077\140  
\067\235\323\312\155\176\064\176\015\237\162\166\213\033\237\162  
\375\122\065\101\105\002\226\057\034\262\232\163\111\041\261\111  
\107\105\107\264\357\152\064\021\311\115\232\314\131\267\326\002  
\236\132\116\145\265\224\256\033\337\051\260\026\361\277\000\236

\007\072\027\144\265\004\265\043\041\231\012\225\073\227\174\357

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "AffirmTrust Commercial"

# Issuer: CN=AffirmTrust Commercial,O=AffirmTrust,C=US

# Serial Number:77:77:06:27:26:a9:b1:7c

# Subject: CN=AffirmTrust Commercial,O=AffirmTrust,C=US

# Not Valid Before: Fri Jan 29 14:06:06 2010

# Not Valid After : Tue Dec 31 14:06:06 2030

# Fingerprint (SHA-256):

03:76:AB:1D:54:C5:F9:80:3C:E4:B2:E2:01:A0:EE:7E:EF:7B:57:B6:36:E8:A9:3C:9B:8D:48:60:C9:6F:5F:A7

# Fingerprint (SHA1): F9:B5:B6:32:45:5F:9C:BE:EC:57:5F:80:DC:E9:6E:2C:C7:B2:78:B7

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "AffirmTrust Commercial"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\371\265\266\062\105\137\234\276\354\127\137\200\334\351\156\054

\307\262\170\267

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\202\222\272\133\357\315\212\157\246\075\125\371\204\366\326\267

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\104\061\013\060\011\006\003\125\004\006\023\002\125\123\061

\024\060\022\006\003\125\004\012\014\013\101\146\146\151\162\155

\124\162\165\163\164\061\037\060\035\006\003\125\004\003\014\026

\101\146\146\151\162\155\124\162\165\163\164\040\103\157\155\155

\145\162\143\151\141\154

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\010\167\167\006\047\046\251\261\174

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "AffirmTrust Networking"

#

# Issuer: CN=AffirmTrust Networking,O=AffirmTrust,C=US

# Serial Number:7c:4f:04:39:1c:d4:99:2d

# Subject: CN=AffirmTrust Networking,O=AffirmTrust,C=US

```
Not Valid Before: Fri Jan 29 14:08:24 2010
Not Valid After : Tue Dec 31 14:08:24 2030
Fingerprint (SHA-256):
0A:81:EC:5A:92:97:77:F1:45:90:4A:F3:8D:5D:50:9F:66:B5:E2:C5:8F:CD:B5:31:05:8B:0E:17:F3:F0:B4:1B
Fingerprint (SHA1): 29:36:21:02:8B:20:ED:02:F5:66:C5:32:D1:D6:ED:90:9F:45:00:2F
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "AffirmTrust Networking"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\104\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\024\060\022\006\003\125\004\012\014\013\101\146\146\151\162\155
\124\162\165\163\164\061\037\060\035\006\003\125\004\003\014\026
\101\146\146\151\162\155\124\162\165\163\164\040\116\145\164\167
\157\162\153\151\156\147
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\104\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\024\060\022\006\003\125\004\012\014\013\101\146\146\151\162\155
\124\162\165\163\164\061\037\060\035\006\003\125\004\003\014\026
\101\146\146\151\162\155\124\162\165\163\164\040\116\145\164\167
\157\162\153\151\156\147
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\174\117\004\071\034\324\231\055
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\114\060\202\002\064\240\003\002\001\002\002\010\174
\117\004\071\034\324\231\055\060\015\006\011\052\206\110\206\367
\015\001\001\005\005\000\060\104\061\013\060\011\006\003\125\004
\006\023\002\125\123\061\024\060\022\006\003\125\004\012\014\013
\101\146\146\151\162\155\124\162\165\163\164\061\037\060\035\006
\003\125\004\003\014\026\101\146\146\151\162\155\124\162\165\163
\164\040\116\145\164\167\157\162\153\151\156\147\060\036\027\015
\061\060\060\061\062\071\061\064\060\070\062\064\132\027\015\063
\060\061\062\063\061\061\064\060\070\062\064\132\060\104\061\013
\060\011\006\003\125\004\006\023\002\125\123\061\024\060\022\006
\003\125\004\012\014\013\101\146\146\151\162\155\124\162\165\163
\164\061\037\060\035\006\003\125\004\003\014\026\101\146\146\151
\162\155\124\162\165\163\164\040\116\145\164\167\157\162\153\151
\156\147\060\202\001\042\060\015\006\011\052\206\110\206\367\015
\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002\202
\001\001\000\264\204\314\063\027\056\153\224\154\153\141\122\240
\353\243\317\171\224\114\345\224\200\231\313\125\144\104\145\217
\147\144\342\006\343\134\067\111\366\057\233\204\204\036\055\362
```

\140\235\060\116\314\204\205\342\054\317\036\236\376\066\253\063  
\167\065\104\330\065\226\032\075\066\350\172\016\330\325\107\241  
\152\151\213\331\374\273\072\256\171\132\325\364\326\161\273\232  
\220\043\153\232\267\210\164\207\014\036\137\271\236\055\372\253  
\123\053\334\273\166\076\223\114\010\010\214\036\242\043\034\324  
\152\255\042\272\231\001\056\155\145\313\276\044\146\125\044\113  
\100\104\261\033\327\341\302\205\300\336\020\077\075\355\270\374  
\361\361\043\123\334\277\145\227\157\331\371\100\161\215\175\275  
\225\324\316\276\240\136\047\043\336\375\246\320\046\016\000\051  
\353\074\106\360\075\140\277\077\120\322\334\046\101\121\236\024  
\067\102\004\243\160\127\250\033\207\355\055\372\173\356\214\012  
\343\251\146\211\031\313\101\371\335\104\066\141\317\342\167\106  
\310\175\366\364\222\201\066\375\333\064\361\162\176\363\014\026  
\275\264\025\002\003\001\000\001\243\102\060\100\060\035\006\003  
\125\035\016\004\026\004\024\007\037\322\347\234\332\302\156\242  
\100\264\260\172\120\020\120\164\304\310\275\060\017\006\003\125  
\035\023\001\001\377\004\005\060\003\001\001\377\060\016\006\003  
\125\035\017\001\001\377\004\004\003\002\001\006\060\015\006\011  
\052\206\110\206\367\015\001\001\005\005\000\003\202\001\001\000  
\211\127\262\026\172\250\302\375\326\331\233\233\064\302\234\264  
\062\024\115\247\244\337\354\276\247\276\370\103\333\221\067\316  
\264\062\056\120\125\032\065\116\166\103\161\040\357\223\167\116  
\025\160\056\207\303\301\035\155\334\313\265\047\324\054\126\321  
\122\123\072\104\322\163\310\304\033\005\145\132\142\222\234\356  
\101\215\061\333\347\064\352\131\041\325\001\172\327\144\270\144  
\071\315\311\355\257\355\113\003\110\247\240\231\001\200\334\145  
\243\066\256\145\131\110\117\202\113\310\145\361\127\035\345\131  
\056\012\077\154\330\321\365\345\011\264\154\124\000\012\340\025  
\115\207\165\155\267\130\226\132\335\155\322\000\240\364\233\110  
\276\303\067\244\272\066\340\174\207\205\227\032\025\242\336\056  
\242\133\275\257\030\371\220\120\315\160\131\370\047\147\107\313  
\307\240\007\072\175\321\054\135\154\031\072\146\265\175\375\221  
\157\202\261\276\010\223\333\024\107\361\242\067\307\105\236\074  
\307\167\257\144\250\223\337\366\151\203\202\140\362\111\102\064  
\355\132\000\124\205\034\026\066\222\014\134\372\246\255\277\333  
END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "AffirmTrust Networking"

# Issuer: CN=AffirmTrust Networking,O=AffirmTrust,C=US

# Serial Number:7c:4f:04:39:1c:d4:99:2d

# Subject: CN=AffirmTrust Networking,O=AffirmTrust,C=US

# Not Valid Before: Fri Jan 29 14:08:24 2010

# Not Valid After : Tue Dec 31 14:08:24 2030

# Fingerprint (SHA-256):

0A:81:EC:5A:92:97:77:F1:45:90:4A:F3:8D:5D:50:9F:66:B5:E2:C5:8F:CD:B5:31:05:8B:0E:17:F3:F0:B4:1B

```

Fingerprint (SHA1): 29:36:21:02:8B:20:ED:02:F5:66:C5:32:D1:D6:ED:90:9F:45:00:2F
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "AffirmTrust Networking"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\051\066\041\002\213\040\355\002\365\146\305\062\321\326\355\220
\237\105\000\057
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\102\145\312\276\001\232\232\114\251\214\101\111\315\300\325\177
END
CKA_ISSUER MULTILINE_OCTAL
\060\104\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\024\060\022\006\003\125\004\012\014\013\101\146\146\151\162\155
\124\162\165\163\164\061\037\060\035\006\003\125\004\003\014\026
\101\146\146\151\162\155\124\162\165\163\164\040\116\145\164\167
\157\162\153\151\156\147
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\174\117\004\071\034\324\231\055
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

```

```

#
Certificate "AffirmTrust Premium"
#
Issuer: CN=AffirmTrust Premium,O=AffirmTrust,C=US
Serial Number:6d:8c:14:46:b1:a6:0a:ee
Subject: CN=AffirmTrust Premium,O=AffirmTrust,C=US
Not Valid Before: Fri Jan 29 14:10:36 2010
Not Valid After : Mon Dec 31 14:10:36 2040
Fingerprint (SHA-256):
70:A7:3F:7F:37:6B:60:07:42:48:90:45:34:B1:14:82:D5:BF:0E:69:8E:CC:49:8D:F5:25:77:EB:F2:E9:3B:9A
Fingerprint (SHA1): D8:A6:33:2C:E0:03:6F:B1:85:F6:63:4F:7D:6A:06:65:26:32:28:27
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "AffirmTrust Premium"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\101\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\024\060\022\006\003\125\004\012\014\013\101\146\146\151\162\155

```

\124\162\165\163\164\061\034\060\032\006\003\125\004\003\014\023  
\101\146\146\151\162\155\124\162\165\163\164\040\120\162\145\155  
\151\165\155

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\101\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\024\060\022\006\003\125\004\012\014\013\101\146\146\151\162\155  
\124\162\165\163\164\061\034\060\032\006\003\125\004\003\014\023  
\101\146\146\151\162\155\124\162\165\163\164\040\120\162\145\155  
\151\165\155

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\010\155\214\024\106\261\246\012\356

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\106\060\202\003\056\240\003\002\001\002\002\010\155  
\214\024\106\261\246\012\356\060\015\006\011\052\206\110\206\367  
\015\001\001\014\005\000\060\101\061\013\060\011\006\003\125\004  
\006\023\002\125\123\061\024\060\022\006\003\125\004\012\014\013  
\101\146\146\151\162\155\124\162\165\163\164\061\034\060\032\006  
\003\125\004\003\014\023\101\146\146\151\162\155\124\162\165\163  
\164\040\120\162\145\155\151\165\155\060\036\027\015\061\060\060  
\061\062\071\061\064\061\060\063\066\132\027\015\064\060\061\062  
\063\061\061\064\061\060\063\066\132\060\101\061\013\060\011\006  
\003\125\004\006\023\002\125\123\061\024\060\022\006\003\125\004  
\012\014\013\101\146\146\151\162\155\124\162\165\163\164\061\034  
\060\032\006\003\125\004\003\014\023\101\146\146\151\162\155\124  
\162\165\163\164\040\120\162\145\155\151\165\155\060\202\002\042  
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003  
\202\002\017\000\060\202\002\012\002\202\002\001\000\304\022\337  
\251\137\376\101\335\335\365\237\212\343\366\254\341\074\170\232  
\274\330\360\177\172\240\063\052\334\215\040\133\256\055\157\347  
\223\331\066\160\152\150\317\216\121\243\205\133\147\004\240\020  
\044\157\135\050\202\301\227\127\330\110\051\023\266\341\276\221  
\115\337\205\014\123\030\232\036\044\242\117\217\360\242\205\013  
\313\364\051\177\322\244\130\356\046\115\311\252\250\173\232\331  
\372\070\336\104\127\025\345\370\214\310\331\110\342\015\026\047  
\035\036\310\203\205\045\267\272\252\125\101\314\003\042\113\055  
\221\215\213\346\211\257\146\307\351\377\053\351\074\254\332\322  
\263\303\341\150\234\211\370\172\000\126\336\364\125\225\154\373  
\272\144\335\142\213\337\013\167\062\353\142\314\046\232\233\273  
\252\142\203\114\264\006\172\060\310\051\277\355\006\115\227\271  
\034\304\061\053\325\137\274\123\022\027\234\231\127\051\146\167  
\141\041\061\007\056\045\111\235\030\362\356\363\053\161\214\265  
\272\071\007\111\167\374\357\056\222\220\005\215\055\057\167\173  
\357\103\277\065\273\232\330\371\163\247\054\362\320\127\356\050  
\116\046\137\217\220\150\011\057\270\370\334\006\351\056\232\076

\121\247\321\042\304\012\247\070\110\154\263\371\377\175\253\206  
\127\343\272\326\205\170\167\272\103\352\110\177\366\330\276\043  
\155\036\277\321\066\154\130\134\361\356\244\031\124\032\365\003  
\322\166\346\341\214\275\074\263\323\110\113\342\310\370\177\222  
\250\166\106\234\102\145\076\244\036\301\007\003\132\106\055\270  
\227\363\267\325\262\125\041\357\272\334\114\000\227\373\024\225  
\047\063\277\350\103\107\106\322\010\231\026\140\073\232\176\322  
\346\355\070\352\354\001\036\074\110\126\111\011\307\114\067\000  
\236\210\016\300\163\341\157\146\351\162\107\060\076\020\345\013  
\003\311\232\102\000\154\305\224\176\141\304\212\337\177\202\032  
\013\131\304\131\062\167\263\274\140\151\126\071\375\264\006\173  
\054\326\144\066\331\275\110\355\204\037\176\245\042\217\052\270  
\102\364\202\267\324\123\220\170\116\055\032\375\201\157\104\327  
\073\001\164\226\102\340\000\342\056\153\352\305\356\162\254\273  
\277\376\352\252\250\370\334\366\262\171\212\266\147\002\003\001  
\000\001\243\102\060\100\060\035\006\003\125\035\016\004\026\004  
\024\235\300\147\246\014\042\331\046\365\105\253\246\145\122\021  
\047\330\105\254\143\060\017\006\003\125\035\023\001\001\377\004  
\005\060\003\001\001\377\060\016\006\003\125\035\017\001\001\377  
\004\004\003\002\001\006\060\015\006\011\052\206\110\206\367\015  
\001\001\014\005\000\003\202\002\001\000\263\127\115\020\142\116  
\072\344\254\352\270\034\257\062\043\310\263\111\132\121\234\166  
\050\215\171\252\127\106\027\325\365\122\366\267\104\350\010\104  
\277\030\204\322\013\200\315\305\022\375\000\125\005\141\207\101  
\334\265\044\236\074\304\330\310\373\160\236\057\170\226\203\040  
\066\336\174\017\151\023\210\245\165\066\230\010\246\306\337\254  
\316\343\130\326\267\076\336\272\363\353\064\100\330\242\201\365  
\170\077\057\325\245\374\331\242\324\136\004\016\027\255\376\101  
\360\345\262\162\372\104\202\063\102\350\055\130\367\126\214\142  
\077\272\102\260\234\014\134\176\056\145\046\134\123\117\000\262  
\170\176\241\015\231\055\215\270\035\216\242\304\260\375\140\320  
\060\244\216\310\004\142\251\304\355\065\336\172\227\355\016\070  
\136\222\057\223\160\245\251\234\157\247\175\023\035\176\306\010  
\110\261\136\147\353\121\010\045\351\346\045\153\122\051\221\234  
\322\071\163\010\127\336\231\006\264\133\235\020\006\341\302\000  
\250\270\034\112\002\012\024\320\301\101\312\373\214\065\041\175  
\202\070\362\251\124\221\031\065\223\224\155\152\072\305\262\320  
\273\211\206\223\350\233\311\017\072\247\172\270\241\360\170\106  
\372\374\067\057\345\212\204\363\337\376\004\331\241\150\240\057  
\044\342\011\225\006\325\225\312\341\044\226\353\174\366\223\005  
\273\355\163\351\055\321\165\071\327\347\044\333\330\116\137\103  
\217\236\320\024\071\277\125\160\110\231\127\061\264\234\356\112  
\230\003\226\060\037\140\006\356\033\043\376\201\140\043\032\107  
\142\205\245\314\031\064\200\157\263\254\032\343\237\360\173\110  
\255\325\001\331\147\266\251\162\223\352\055\146\265\262\270\344  
\075\074\262\357\114\214\352\353\007\277\253\065\232\125\206\274  
\030\246\265\250\136\264\203\154\153\151\100\323\237\334\361\303  
\151\153\271\341\155\011\364\361\252\120\166\012\172\175\172\027

```
\241\125\226\102\231\061\011\335\140\021\215\005\060\176\346\216
\106\321\235\024\332\307\027\344\005\226\214\304\044\265\033\317
\024\007\262\100\370\243\236\101\206\274\004\320\153\226\310\052
\200\064\375\277\357\006\243\335\130\305\205\075\076\217\376\236
\051\340\266\270\011\150\031\034\030\103
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

# Trust for "AffirmTrust Premium"

# Issuer: CN=AffirmTrust Premium,O=AffirmTrust,C=US

# Serial Number:6d:8c:14:46:b1:a6:0a:ee

# Subject: CN=AffirmTrust Premium,O=AffirmTrust,C=US

# Not Valid Before: Fri Jan 29 14:10:36 2010

# Not Valid After : Mon Dec 31 14:10:36 2040

# Fingerprint (SHA-256):

70:A7:3F:7F:37:6B:60:07:42:48:90:45:34:B1:14:82:D5:BF:0E:69:8E:CC:49:8D:F5:25:77:EB:F2:E9:3B:9A

# Fingerprint (SHA1): D8:A6:33:2C:E0:03:6F:B1:85:F6:63:4F:7D:6A:06:65:26:32:28:27

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "AffirmTrust Premium"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\330\246\063\054\340\003\157\261\205\366\143\117\175\152\006\145
\046\062\050\047
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\304\135\016\110\266\254\050\060\116\012\274\371\070\026\207\127
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\101\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\024\060\022\006\003\125\004\012\014\013\101\146\146\151\162\155
\124\162\165\163\164\061\034\060\032\006\003\125\004\003\014\023
\101\146\146\151\162\155\124\162\165\163\164\040\120\162\145\155
\151\165\155
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\010\155\214\024\106\261\246\012\356
```

END

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

```
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

```
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

```
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

#

# Certificate "AffirmTrust Premium ECC"



```

#
Issuer: CN=AffirmTrust Premium ECC,O=AffirmTrust,C=US
Serial Number:74:97:25:8a:c7:3f:7a:54
Subject: CN=AffirmTrust Premium ECC,O=AffirmTrust,C=US
Not Valid Before: Fri Jan 29 14:20:24 2010
Not Valid After : Mon Dec 31 14:20:24 2040
Fingerprint (SHA-256):
BD:71:FD:F6:DA:97:E4:CF:62:D1:64:7A:DD:25:81:B0:7D:79:AD:F8:39:7E:B4:EC:BA:9C:5E:84:88:82:14:23
Fingerprint (SHA1): B8:23:6B:00:2F:1D:16:86:53:01:55:6C:11:A4:37:CA:EB:FF:C3:BB
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "AffirmTrust Premium ECC"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\105\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\024\060\022\006\003\125\004\012\014\013\101\146\146\151\162\155
\124\162\165\163\164\061\040\060\036\006\003\125\004\003\014\027
\101\146\146\151\162\155\124\162\165\163\164\040\120\162\145\155
\151\165\155\040\105\103\103
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\105\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\024\060\022\006\003\125\004\012\014\013\101\146\146\151\162\155
\124\162\165\163\164\061\040\060\036\006\003\125\004\003\014\027
\101\146\146\151\162\155\124\162\165\163\164\040\120\162\145\155
\151\165\155\040\105\103\103
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\164\227\045\212\307\077\172\124
END
CKA_VALUE MULTILINE_OCTAL
\060\202\001\376\060\202\001\205\240\003\002\001\002\002\010\164
\227\045\212\307\077\172\124\060\012\006\010\052\206\110\316\075
\004\003\003\060\105\061\013\060\011\006\003\125\004\006\023\002
\125\123\061\024\060\022\006\003\125\004\012\014\013\101\146\146
\151\162\155\124\162\165\163\164\061\040\060\036\006\003\125\004
\003\014\027\101\146\146\151\162\155\124\162\165\163\164\040\120
\162\145\155\151\165\155\040\105\103\103\060\036\027\015\061\060
\060\061\062\071\061\064\062\060\062\064\132\027\015\064\060\061
\062\063\061\061\064\062\060\062\064\132\060\105\061\013\060\011
\006\003\125\004\006\023\002\125\123\061\024\060\022\006\003\125
\004\012\014\013\101\146\146\151\162\155\124\162\165\163\164\061
\040\060\036\006\003\125\004\003\014\027\101\146\146\151\162\155
\124\162\165\163\164\040\120\162\145\155\151\165\155\040\105\103
\103\060\166\060\020\006\007\052\206\110\316\075\002\001\006\005

```

\053\201\004\000\042\003\142\000\004\015\060\136\033\025\235\003  
\320\241\171\065\267\072\074\222\172\312\025\034\315\142\363\234  
\046\134\007\075\345\124\372\243\326\314\022\352\364\024\137\350  
\216\031\253\057\056\110\346\254\030\103\170\254\320\067\303\275  
\262\315\054\346\107\342\032\346\143\270\075\056\057\170\304\117  
\333\364\017\244\150\114\125\162\153\225\035\116\030\102\225\170  
\314\067\074\221\342\233\145\053\051\243\102\060\100\060\035\006  
\003\125\035\016\004\026\004\024\232\257\051\172\300\021\065\065  
\046\121\060\000\303\152\376\100\325\256\326\074\060\017\006\003  
\125\035\023\001\001\377\004\005\060\003\001\001\377\060\016\006  
\003\125\035\017\001\001\377\004\004\003\002\001\006\060\012\006  
\010\052\206\110\316\075\004\003\003\003\147\000\060\144\002\060  
\027\011\363\207\210\120\132\257\310\300\102\277\107\137\365\154  
\152\206\340\304\047\164\344\070\123\327\005\177\033\064\343\306  
\057\263\312\011\074\067\235\327\347\270\106\361\375\241\342\161  
\002\060\102\131\207\103\324\121\337\272\323\011\062\132\316\210  
\176\127\075\234\137\102\153\365\007\055\265\360\202\223\371\131  
\157\256\144\372\130\345\213\036\343\143\276\265\201\315\157\002  
\214\171

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "AffirmTrust Premium ECC"

# Issuer: CN=AffirmTrust Premium ECC,O=AffirmTrust,C=US

# Serial Number:74:97:25:8a:c7:3f:7a:54

# Subject: CN=AffirmTrust Premium ECC,O=AffirmTrust,C=US

# Not Valid Before: Fri Jan 29 14:20:24 2010

# Not Valid After : Mon Dec 31 14:20:24 2040

# Fingerprint (SHA-256):

BD:71:FD:F6:DA:97:E4:CF:62:D1:64:7A:DD:25:81:B0:7D:79:AD:F8:39:7E:B4:EC:BA:9C:5E:84:88:82:14:23

# Fingerprint (SHA1): B8:23:6B:00:2F:1D:16:86:53:01:55:6C:11:A4:37:CA:EB:FF:C3:BB

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "AffirmTrust Premium ECC"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\270\043\153\000\057\035\026\206\123\001\125\154\021\244\067\312  
\353\377\303\273

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\144\260\011\125\317\261\325\231\342\276\023\253\246\135\352\115

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\105\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\024\060\022\006\003\125\004\012\014\013\101\146\146\151\162\155

```
\124\162\165\163\164\061\040\060\036\006\003\125\004\003\014\027
\101\146\146\151\162\155\124\162\165\163\164\040\120\162\145\155
\151\165\155\040\105\103\103
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\010\164\227\045\212\307\077\172\124
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "Certum Trusted Network CA"

#

# Issuer: CN=Certum Trusted Network CA,OU=Certum Certification Authority,O=Unizeto Technologies  
S.A.,C=PL

# Serial Number: 279744 (0x444c0)

# Subject: CN=Certum Trusted Network CA,OU=Certum Certification Authority,O=Unizeto Technologies  
S.A.,C=PL

# Not Valid Before: Wed Oct 22 12:07:37 2008

# Not Valid After : Mon Dec 31 12:07:37 2029

# Fingerprint (SHA-256):

5C:58:46:8D:55:F5:8E:49:7E:74:39:82:D2:B5:00:10:B6:D1:65:37:4A:CF:83:A7:D4:A3:2D:B7:68:C4:40:8E

# Fingerprint (SHA1): 07:E0:32:E0:20:B7:2C:3F:19:2F:06:28:A2:59:3A:19:A7:0F:06:9E

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Certum Trusted Network CA"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

```
\060\176\061\013\060\011\006\003\125\004\006\023\002\120\114\061
\042\060\040\006\003\125\004\012\023\031\125\156\151\172\145\164
\157\040\124\145\143\150\156\157\154\157\147\151\145\163\040\123
\056\101\056\061\047\060\045\006\003\125\004\013\023\036\103\145
\162\164\165\155\040\103\145\162\164\151\146\151\143\141\164\151
\157\156\040\101\165\164\150\157\162\151\164\171\061\042\060\040
\006\003\125\004\003\023\031\103\145\162\164\165\155\040\124\162
\165\163\164\145\144\040\116\145\164\167\157\162\153\040\103\101
```

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\176\061\013\060\011\006\003\125\004\006\023\002\120\114\061
\042\060\040\006\003\125\004\012\023\031\125\156\151\172\145\164
\157\040\124\145\143\150\156\157\154\157\147\151\145\163\040\123
\056\101\056\061\047\060\045\006\003\125\004\013\023\036\103\145
\162\164\165\155\040\103\145\162\164\151\146\151\143\141\164\151
```

\157\156\040\101\165\164\150\157\162\151\164\171\061\042\060\040  
\006\003\125\004\003\023\031\103\145\162\164\165\155\040\124\162  
\165\163\164\145\144\040\116\145\164\167\157\162\153\040\103\101  
END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\003\004\104\300

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\273\060\202\002\243\240\003\002\001\002\002\003\004  
\104\300\060\015\006\011\052\206\110\206\367\015\001\001\005\005  
\000\060\176\061\013\060\011\006\003\125\004\006\023\002\120\114  
\061\042\060\040\006\003\125\004\012\023\031\125\156\151\172\145  
\164\157\040\124\145\143\150\156\157\154\157\147\151\145\163\040  
\123\056\101\056\061\047\060\045\006\003\125\004\013\023\036\103  
\145\162\164\165\155\040\103\145\162\164\151\146\151\143\141\164  
\151\157\156\040\101\165\164\150\157\162\151\164\171\061\042\060  
\040\006\003\125\004\003\023\031\103\145\162\164\165\155\040\124  
\162\165\163\164\145\144\040\116\145\164\167\157\162\153\040\103  
\101\060\036\027\015\060\070\061\060\062\062\061\062\060\067\063  
\067\132\027\015\062\071\061\062\063\061\061\062\060\067\063\067  
\132\060\176\061\013\060\011\006\003\125\004\006\023\002\120\114  
\061\042\060\040\006\003\125\004\012\023\031\125\156\151\172\145  
\164\157\040\124\145\143\150\156\157\154\157\147\151\145\163\040  
\123\056\101\056\061\047\060\045\006\003\125\004\013\023\036\103  
\145\162\164\165\155\040\103\145\162\164\151\146\151\143\141\164  
\151\157\156\040\101\165\164\150\157\162\151\164\171\061\042\060  
\040\006\003\125\004\003\023\031\103\145\162\164\165\155\040\124  
\162\165\163\164\145\144\040\116\145\164\167\157\162\153\040\103  
\101\060\202\001\042\060\015\006\011\052\206\110\206\367\015\001  
\001\001\005\000\003\202\001\017\000\060\202\001\012\002\202\001  
\001\000\343\373\175\243\162\272\302\360\311\024\207\365\153\001  
\116\341\156\100\007\272\155\047\135\177\367\133\055\263\132\307  
\121\137\253\244\062\246\141\207\266\156\017\206\322\060\002\227  
\370\327\151\127\241\030\071\135\152\144\171\306\001\131\254\074  
\061\112\070\174\322\004\322\113\050\350\040\137\073\007\242\314  
\115\163\333\363\256\117\307\126\325\132\247\226\211\372\363\253  
\150\324\043\206\131\047\317\011\047\274\254\156\162\203\034\060  
\162\337\340\242\351\322\341\164\165\031\275\052\236\173\025\124  
\004\033\327\103\071\255\125\050\305\342\032\273\364\300\344\256  
\070\111\063\314\166\205\237\071\105\322\244\236\362\022\214\121  
\370\174\344\055\177\365\254\137\353\026\237\261\055\321\272\314  
\221\102\167\114\045\311\220\070\157\333\360\314\373\216\036\227  
\131\076\325\140\116\346\005\050\355\111\171\023\113\272\110\333  
\057\371\162\323\071\312\376\037\330\064\162\365\264\100\317\061  
\001\303\354\336\021\055\027\135\037\270\120\321\136\031\247\151  
\336\007\063\050\312\120\225\371\247\124\313\124\206\120\105\251  
\371\111\002\003\001\000\001\243\102\060\100\060\017\006\003\125  
\035\023\001\001\377\004\005\060\003\001\001\377\060\035\006\003

```
\125\035\016\004\026\004\024\010\166\315\313\007\377\044\366\305
\315\355\273\220\274\342\204\067\106\165\367\060\016\006\003\125
\035\017\001\001\377\004\004\003\002\001\006\060\015\006\011\052
\206\110\206\367\015\001\001\005\005\000\003\202\001\001\000\246
\250\255\042\316\001\075\246\243\377\142\320\110\235\213\136\162
\260\170\104\343\334\034\257\011\375\043\110\372\275\052\304\271
\125\004\265\020\243\215\047\336\013\202\143\320\356\336\014\067
\171\101\133\042\262\260\232\101\134\246\160\340\324\320\167\313
\043\323\000\340\154\126\057\341\151\015\015\331\252\277\041\201
\120\331\006\245\250\377\225\067\320\252\376\342\263\365\231\055
\105\204\212\345\102\011\327\164\002\057\367\211\330\231\351\274
\047\324\107\215\272\015\106\034\167\317\024\244\034\271\244\061
\304\234\050\164\003\064\377\063\031\046\245\351\015\164\267\076
\227\306\166\350\047\226\243\146\335\341\256\362\101\133\312\230
\126\203\163\160\344\206\032\322\061\101\272\057\276\055\023\132
\166\157\116\350\116\201\016\077\133\003\042\240\022\276\146\130
\021\112\313\003\304\264\052\052\055\226\027\340\071\124\274\110
\323\166\047\235\232\055\006\246\311\354\071\322\253\333\237\232
\013\047\002\065\051\261\100\225\347\371\350\234\125\210\031\106
\326\267\064\365\176\316\071\232\331\070\361\121\367\117\054
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

# Trust for "Certum Trusted Network CA"

# Issuer: CN=Certum Trusted Network CA,OU=Certum Certification Authority,O=Unizeto Technologies S.A.,C=PL

# Serial Number: 279744 (0x444c0)

# Subject: CN=Certum Trusted Network CA,OU=Certum Certification Authority,O=Unizeto Technologies S.A.,C=PL

# Not Valid Before: Wed Oct 22 12:07:37 2008

# Not Valid After : Mon Dec 31 12:07:37 2029

# Fingerprint (SHA-256):

5C:58:46:8D:55:F5:8E:49:7E:74:39:82:D2:B5:00:10:B6:D1:65:37:4A:CF:83:A7:D4:A3:2D:B7:68:C4:40:8E

# Fingerprint (SHA1): 07:E0:32:E0:20:B7:2C:3F:19:2F:06:28:A2:59:3A:19:A7:0F:06:9E

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "Certum Trusted Network CA"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\007\340\062\340\040\267\054\077\031\057\006\050\242\131\072\031
\247\017\006\236
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\325\351\201\100\305\030\151\374\106\054\211\165\142\017\252\170
```

END

```
CKA_ISSUER MULTILINE_OCTAL
\060\176\061\013\060\011\006\003\125\004\006\023\002\120\114\061
\042\060\040\006\003\125\004\012\023\031\125\156\151\172\145\164
\157\040\124\145\143\150\156\157\154\157\147\151\145\163\040\123
\056\101\056\061\047\060\045\006\003\125\004\013\023\036\103\145
\162\164\165\155\040\103\145\162\164\151\146\151\143\141\164\151
\157\156\040\101\165\164\150\157\162\151\164\171\061\042\060\040
\006\003\125\004\003\023\031\103\145\162\164\165\155\040\124\162
\165\163\164\145\144\040\116\145\164\167\157\162\153\040\103\101
END
```

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\003\004\104\300
END
```

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
#
Certificate "TWCA Root Certification Authority"
#
Issuer: CN=TWCA Root Certification Authority,OU=Root CA,O=TAIWAN-CA,C=TW
Serial Number: 1 (0x1)
Subject: CN=TWCA Root Certification Authority,OU=Root CA,O=TAIWAN-CA,C=TW
Not Valid Before: Thu Aug 28 07:24:33 2008
Not Valid After : Tue Dec 31 15:59:59 2030
Fingerprint (SHA-256):
BF:D8:8F:E1:10:1C:41:AE:3E:80:1B:F8:BE:56:35:0E:E9:BA:D1:A6:B9:BD:51:5E:DC:5C:6D:5B:87:11:AC:44
Fingerprint (SHA1): CF:9E:87:6D:D3:EB:FC:42:26:97:A3:B5:A3:7A:A0:76:A9:06:23:48
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "TWCA Root Certification Authority"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\137\061\013\060\011\006\003\125\004\006\023\002\124\127\061
\022\060\020\006\003\125\004\012\014\011\124\101\111\127\101\116
\055\103\101\061\020\060\016\006\003\125\004\013\014\007\122\157
\157\164\040\103\101\061\052\060\050\006\003\125\004\003\014\041
\124\127\103\101\040\122\157\157\164\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164
\171
END
```

```
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\137\061\013\060\011\006\003\125\004\006\023\002\124\127\061
\022\060\020\006\003\125\004\012\014\011\124\101\111\127\101\116
```

\055\103\101\061\020\060\016\006\003\125\004\013\014\007\122\157  
\157\164\040\103\101\061\052\060\050\006\003\125\004\003\014\041  
\124\127\103\101\040\122\157\157\164\040\103\145\162\164\151\146  
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164  
\171

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\001

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\173\060\202\002\143\240\003\002\001\002\002\001\001  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060  
\137\061\013\060\011\006\003\125\004\006\023\002\124\127\061\022  
\060\020\006\003\125\004\012\014\011\124\101\111\127\101\116\055  
\103\101\061\020\060\016\006\003\125\004\013\014\007\122\157\157  
\164\040\103\101\061\052\060\050\006\003\125\004\003\014\041\124  
\127\103\101\040\122\157\157\164\040\103\145\162\164\151\146\151  
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171  
\060\036\027\015\060\070\060\070\062\070\060\067\062\064\063\063  
\132\027\015\063\060\061\062\063\061\061\065\065\071\065\071\132  
\060\137\061\013\060\011\006\003\125\004\006\023\002\124\127\061  
\022\060\020\006\003\125\004\012\014\011\124\101\111\127\101\116  
\055\103\101\061\020\060\016\006\003\125\004\013\014\007\122\157  
\157\164\040\103\101\061\052\060\050\006\003\125\004\003\014\041  
\124\127\103\101\040\122\157\157\164\040\103\145\162\164\151\146  
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164  
\171\060\202\001\042\060\015\006\011\052\206\110\206\367\015\001  
\001\001\005\000\003\202\001\017\000\060\202\001\012\002\202\001  
\001\000\260\176\162\270\244\003\224\346\247\336\011\070\221\112  
\021\100\207\247\174\131\144\024\173\265\021\020\335\376\277\325  
\300\273\126\342\205\045\364\065\162\017\370\123\320\101\341\104  
\001\302\264\034\303\061\102\026\107\205\063\042\166\262\012\157  
\017\345\045\120\117\205\206\276\277\230\056\020\147\036\276\021  
\005\206\005\220\304\131\320\174\170\020\260\200\134\267\341\307  
\053\165\313\174\237\256\265\321\235\043\067\143\247\334\102\242  
\055\222\004\033\120\301\173\270\076\033\311\126\004\213\057\122  
\233\255\251\126\351\301\377\255\251\130\207\060\266\201\367\227  
\105\374\031\127\073\053\157\344\107\364\231\105\376\035\361\370  
\227\243\210\035\067\034\134\217\340\166\045\232\120\370\240\124  
\377\104\220\166\043\322\062\306\303\253\006\277\374\373\277\363  
\255\175\222\142\002\133\051\323\065\243\223\232\103\144\140\135  
\262\372\062\377\073\004\257\115\100\152\371\307\343\357\043\375  
\153\313\345\017\213\070\015\356\012\374\376\017\230\237\060\061  
\335\154\122\145\371\213\201\276\042\341\034\130\003\272\221\033  
\211\007\002\003\001\000\001\243\102\060\100\060\016\006\003\125  
\035\017\001\001\377\004\004\003\002\001\006\060\017\006\003\125  
\035\023\001\001\377\004\005\060\003\001\001\377\060\035\006\003  
\125\035\016\004\026\004\024\152\070\133\046\215\336\213\132\362

```
\117\172\124\203\031\030\343\010\065\246\272\060\015\006\011\052
\206\110\206\367\015\001\001\005\005\000\003\202\001\001\000\074
\325\167\075\332\337\211\272\207\014\010\124\152\040\120\222\276
\260\101\075\271\046\144\203\012\057\350\100\300\227\050\047\202
\060\112\311\223\377\152\347\246\000\177\211\102\232\326\021\345
\123\316\057\314\362\332\005\304\376\342\120\304\072\206\175\314
\332\176\020\011\073\222\065\052\123\262\376\353\053\005\331\154
\135\346\320\357\323\152\146\236\025\050\205\172\350\202\000\254
\036\247\011\151\126\102\323\150\121\030\276\124\232\277\104\101
\272\111\276\040\272\151\134\356\270\167\315\316\154\037\255\203
\226\030\175\016\265\024\071\204\361\050\351\055\243\236\173\036
\172\162\132\203\263\171\157\357\264\374\320\012\245\130\117\106
\337\373\155\171\131\362\204\042\122\256\017\314\373\174\073\347
\152\312\107\141\303\172\370\323\222\004\037\270\040\204\341\066
\124\026\307\100\336\073\212\163\334\337\306\011\114\337\354\332
\377\324\123\102\241\311\362\142\035\042\203\074\227\305\371\031
\142\047\254\145\042\327\323\074\306\345\216\262\123\314\111\316
\274\060\376\173\016\063\220\373\355\322\024\221\037\007\257
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE
```

```
Trust for "TWCA Root Certification Authority"
```

```
Issuer: CN=TWCA Root Certification Authority,OU=Root CA,O=TAIWAN-CA,C=TW
```

```
Serial Number: 1 (0x1)
```

```
Subject: CN=TWCA Root Certification Authority,OU=Root CA,O=TAIWAN-CA,C=TW
```

```
Not Valid Before: Thu Aug 28 07:24:33 2008
```

```
Not Valid After : Tue Dec 31 15:59:59 2030
```

```
Fingerprint (SHA-256):
```

```
BF:D8:8F:E1:10:1C:41:AE:3E:80:1B:F8:BE:56:35:0E:E9:BA:D1:A6:B9:BD:51:5E:DC:5C:6D:5B:87:11:AC:44
```

```
Fingerprint (SHA1): CF:9E:87:6D:D3:EB:FC:42:26:97:A3:B5:A3:7A:A0:76:A9:06:23:48
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "TWCA Root Certification Authority"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\317\236\207\155\323\353\374\102\046\227\243\265\243\172\240\166
\251\006\043\110
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\252\010\217\366\371\173\267\362\261\247\036\233\352\352\275\171
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\137\061\013\060\011\006\003\125\004\006\023\002\124\127\061
\022\060\020\006\003\125\004\012\014\011\124\101\111\127\101\116
\055\103\101\061\020\060\016\006\003\125\004\013\014\007\122\157
```



\157\164\040\103\101\061\052\060\050\006\003\125\004\003\014\041  
\124\127\103\101\040\122\157\157\164\040\103\145\162\164\151\146  
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164  
\171

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\001

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "Explicitly Distrust DigiNotar Root CA"

#

# Issuer: E=info@diginotar.nl,CN=DigiNotar Root CA,O=DigiNotar,C=NL

# Serial Number:0f:ff:ff:ff:ff:ff:ff:ff:ff:ff:ff:ff:ff:ff:ff

# Subject: E=info@diginotar.nl,CN=DigiNotar Root CA,O=DigiNotar,C=NL

# Not Valid Before: Fri Jul 27 17:19:37 2007

# Not Valid After : Mon Mar 31 18:19:22 2025

# Fingerprint (MD5): 0A:A4:D5:CC:BA:B4:FB:A3:59:E3:E6:01:DD:53:D9:4E

# Fingerprint (SHA1): C1:77:CB:4B:E0:B4:26:8E:F5:C7:CF:45:99:22:B9:B0:CE:BA:21:2F

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Explicitly Distrust DigiNotar Root CA"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\137\061\013\060\011\006\003\125\004\006\023\002\116\114\061  
\022\060\020\006\003\125\004\012\023\011\104\151\147\151\116\157  
\164\141\162\061\032\060\030\006\003\125\004\003\023\021\104\151  
\147\151\116\157\164\141\162\040\122\157\157\164\040\103\101\061  
\040\060\036\006\011\052\206\110\206\367\015\001\011\001\026\021  
\151\156\146\157\100\144\151\147\151\156\157\164\141\162\056\156  
\154

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\137\061\013\060\011\006\003\125\004\006\023\002\116\114\061  
\022\060\020\006\003\125\004\012\023\011\104\151\147\151\116\157  
\164\141\162\061\032\060\030\006\003\125\004\003\023\021\104\151  
\147\151\116\157\164\141\162\040\122\157\157\164\040\103\101\061  
\040\060\036\006\011\052\206\110\206\367\015\001\011\001\026\021  
\151\156\146\157\100\144\151\147\151\156\157\164\141\162\056\156  
\154

END



\036\007\147\217\221\113\251\212\274\322\146\252\223\001\210\262  
\221\372\061\134\325\246\301\122\010\011\315\012\143\242\323\042  
\246\350\241\331\071\006\227\365\156\215\002\220\214\024\173\077  
\200\315\033\234\272\304\130\162\043\257\266\126\237\306\172\102  
\063\051\007\077\202\311\346\037\005\015\315\114\050\066\213\323  
\310\076\034\306\210\357\136\356\211\144\351\035\353\332\211\176  
\062\246\151\321\335\314\210\237\321\320\311\146\041\334\006\147  
\305\224\172\232\155\142\114\175\314\340\144\200\262\236\107\216  
\243\002\003\001\000\001\243\102\060\100\060\017\006\003\125\035  
\023\001\001\377\004\005\060\003\001\001\377\060\016\006\003\125  
\035\017\001\001\377\004\004\003\002\001\006\060\035\006\003\125  
\035\016\004\026\004\024\210\150\277\340\216\065\304\073\070\153  
\142\367\050\073\204\201\310\014\327\115\060\015\006\011\052\206  
\110\206\367\015\001\001\005\005\000\003\202\002\001\000\073\002  
\215\313\074\060\350\156\240\255\362\163\263\137\236\045\023\004  
\005\323\366\343\213\273\013\171\316\123\336\344\226\305\321\257  
\163\274\325\303\320\100\125\174\100\177\315\033\137\011\325\362  
\174\237\150\035\273\135\316\172\071\302\214\326\230\173\305\203  
\125\250\325\175\100\312\340\036\367\211\136\143\135\241\023\302  
\135\212\266\212\174\000\363\043\303\355\205\137\161\166\360\150  
\143\252\105\041\071\110\141\170\066\334\361\103\223\324\045\307  
\362\200\145\341\123\002\165\121\374\172\072\357\067\253\204\050  
\127\014\330\324\324\231\126\154\343\242\376\131\204\264\061\350  
\063\370\144\224\224\121\227\253\071\305\113\355\332\335\200\013  
\157\174\051\015\304\216\212\162\015\347\123\024\262\140\101\075  
\204\221\061\150\075\047\104\333\345\336\364\372\143\105\310\114  
\076\230\365\077\101\272\116\313\067\015\272\146\230\361\335\313  
\237\134\367\124\066\202\153\054\274\023\141\227\102\370\170\273  
\314\310\242\237\312\360\150\275\153\035\262\337\215\157\007\235  
\332\216\147\307\107\036\312\271\277\052\102\221\267\143\123\146  
\361\102\243\341\364\132\115\130\153\265\344\244\063\255\134\160  
\035\334\340\362\353\163\024\221\232\003\301\352\000\145\274\007  
\374\317\022\021\042\054\256\240\275\072\340\242\052\330\131\351  
\051\323\030\065\244\254\021\137\031\265\265\033\377\042\112\134  
\306\172\344\027\357\040\251\247\364\077\255\212\247\232\004\045  
\235\016\312\067\346\120\375\214\102\051\004\232\354\271\317\113  
\162\275\342\010\066\257\043\057\142\345\312\001\323\160\333\174  
\202\043\054\026\061\014\306\066\007\220\172\261\037\147\130\304  
\073\130\131\211\260\214\214\120\263\330\206\313\150\243\304\012  
\347\151\113\040\316\301\036\126\113\225\251\043\150\330\060\330  
\303\353\260\125\121\315\345\375\053\270\365\273\021\237\123\124  
\366\064\031\214\171\011\066\312\141\027\045\027\013\202\230\163  
\014\167\164\303\325\015\307\250\022\114\307\247\124\161\107\056  
\054\032\175\311\343\053\073\110\336\047\204\247\143\066\263\175  
\217\240\144\071\044\015\075\173\207\257\146\134\164\033\113\163  
\262\345\214\360\206\231\270\345\305\337\204\301\267\353

END

```

Trust for Certificate "Explicitly Distrust DigiNotar Root CA"
Issuer: E=info@diginotar.nl,CN=DigiNotar Root CA,O=DigiNotar,C=NL
Serial Number:0f:ff:ff:ff:ff:ff:ff:ff:ff:ff:ff:ff:ff:ff:ff:ff
Subject: E=info@diginotar.nl,CN=DigiNotar Root CA,O=DigiNotar,C=NL
Not Valid Before: Fri Jul 27 17:19:37 2007
Not Valid After : Mon Mar 31 18:19:22 2025
Fingerprint (MD5): 0A:A4:D5:CC:BA:B4:FB:A3:59:E3:E6:01:DD:53:D9:4E
Fingerprint (SHA1): C1:77:CB:4B:E0:B4:26:8E:F5:C7:CF:45:99:22:B9:B0:CE:BA:21:2F
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Explicitly Distrust DigiNotar Root CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\301\167\313\113\340\264\046\216\365\307\317\105\231\042\271\260
\316\272\041\057
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\012\244\325\314\272\264\373\243\131\343\346\001\335\123\331\116
END
CKA_ISSUER MULTILINE_OCTAL
\060\137\061\013\060\011\006\003\125\004\006\023\002\116\114\061
\022\060\020\006\003\125\004\012\023\011\104\151\147\151\116\157
\164\141\162\061\032\060\030\006\003\125\004\003\023\021\104\151
\147\151\116\157\164\141\162\040\122\157\157\164\040\103\101\061
\040\060\036\006\011\052\206\110\206\367\015\001\011\001\026\021
\151\156\146\157\100\144\151\147\151\156\157\164\141\162\056\156
\154
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\017\377\377\377\377\377\377\377\377\377\377\377\377\377
\377\377
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_NOT_TRUSTED
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_NOT_TRUSTED
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_NOT_TRUSTED
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "Security Communication RootCA2"
#
Issuer: OU=Security Communication RootCA2,O="SECOM Trust Systems CO.,LTD.",C=JP
Serial Number: 0 (0x0)
Subject: OU=Security Communication RootCA2,O="SECOM Trust Systems CO.,LTD.",C=JP
Not Valid Before: Fri May 29 05:00:39 2009
Not Valid After : Tue May 29 05:00:39 2029
Fingerprint (SHA-256):
51:3B:2C:EC:B8:10:D4:CD:E5:DD:85:39:1A:DF:C6:C2:DD:60:D8:7B:B7:36:D2:B5:21:48:4A:A4:7A:0E:BE:F6

```

# Fingerprint (SHA1): 5F:3B:8C:F2:F8:10:B3:7D:78:B4:CE:EC:19:19:C3:73:34:B9:C7:74

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Security Communication RootCA2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\135\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\045\060\043\006\003\125\004\012\023\034\123\105\103\117\115\040
\124\162\165\163\164\040\123\171\163\164\145\155\163\040\103\117
\056\054\114\124\104\056\061\047\060\045\006\003\125\004\013\023
\036\123\145\143\165\162\151\164\171\040\103\157\155\155\165\156
\151\143\141\164\151\157\156\040\122\157\157\164\103\101\062
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\135\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\045\060\043\006\003\125\004\012\023\034\123\105\103\117\115\040
\124\162\165\163\164\040\123\171\163\164\145\155\163\040\103\117
\056\054\114\124\104\056\061\047\060\045\006\003\125\004\013\023
\036\123\145\143\165\162\151\164\171\040\103\157\155\155\165\156
\151\143\141\164\151\157\156\040\122\157\157\164\103\101\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\000
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\167\060\202\002\137\240\003\002\001\002\002\001\000
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060
\135\061\013\060\011\006\003\125\004\006\023\002\112\120\061\045
\060\043\006\003\125\004\012\023\034\123\105\103\117\115\040\124
\162\165\163\164\040\123\171\163\164\145\155\163\040\103\117\056
\054\114\124\104\056\061\047\060\045\006\003\125\004\013\023\036
\123\145\143\165\162\151\164\171\040\103\157\155\155\165\156\151
\143\141\164\151\157\156\040\122\157\157\164\103\101\062\060\036
\027\015\060\071\060\065\062\071\060\065\060\060\063\071\132\027
\015\062\071\060\065\062\071\060\065\060\060\063\071\132\060\135
\061\013\060\011\006\003\125\004\006\023\002\112\120\061\045\060
\043\006\003\125\004\012\023\034\123\105\103\117\115\040\124\162
\165\163\164\040\123\171\163\164\145\155\163\040\103\117\056\054
\114\124\104\056\061\047\060\045\006\003\125\004\013\023\036\123
\145\143\165\162\151\164\171\040\103\157\155\155\165\156\151\143
\141\164\151\157\156\040\122\157\157\164\103\101\062\060\202\001
\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000
\003\202\001\017\000\060\202\001\012\002\202\001\001\000\320\025
\071\122\261\122\263\272\305\131\202\304\135\122\256\072\103\145
\200\113\307\362\226\274\333\066\227\326\246\144\214\250\136\360
```

\343\012\034\367\337\227\075\113\256\366\135\354\041\265\101\253  
\315\271\176\166\237\276\371\076\066\064\240\073\301\366\061\021  
\105\164\223\075\127\200\305\371\211\231\312\345\253\152\324\265  
\332\101\220\020\301\326\326\102\211\302\277\364\070\022\225\114  
\124\005\367\066\344\105\203\173\024\145\326\334\014\115\321\336  
\176\014\253\073\304\025\276\072\126\246\132\157\166\151\122\251  
\172\271\310\353\152\232\135\122\320\055\012\153\065\026\011\020  
\204\320\152\312\072\006\000\067\107\344\176\127\117\077\213\353  
\147\270\210\252\305\276\123\125\262\221\304\175\271\260\205\031  
\006\170\056\333\141\032\372\205\365\112\221\241\347\026\325\216  
\242\071\337\224\270\160\037\050\077\213\374\100\136\143\203\074  
\203\052\032\231\153\317\336\131\152\073\374\157\026\327\037\375  
\112\020\353\116\202\026\072\254\047\014\123\361\255\325\044\260  
\153\003\120\301\055\074\026\335\104\064\047\032\165\373\002\003  
\001\000\001\243\102\060\100\060\035\006\003\125\035\016\004\026  
\004\024\012\205\251\167\145\005\230\174\100\201\370\017\227\054  
\070\361\012\354\074\317\060\016\006\003\125\035\017\001\001\377  
\004\004\003\002\001\006\060\017\006\003\125\035\023\001\001\377  
\004\005\060\003\001\001\377\060\015\006\011\052\206\110\206\367  
\015\001\001\013\005\000\003\202\001\001\000\114\072\243\104\254  
\271\105\261\307\223\176\310\013\012\102\337\144\352\034\356\131  
\154\010\272\211\137\152\312\112\225\236\172\217\007\305\332\105  
\162\202\161\016\072\322\314\157\247\264\241\043\273\366\044\237  
\313\027\376\214\246\316\302\322\333\314\215\374\161\374\003\051  
\301\154\135\063\137\144\266\145\073\211\157\030\166\170\365\334  
\242\110\037\031\077\216\223\353\361\372\027\356\315\116\343\004  
\022\125\326\345\344\335\373\076\005\174\342\035\136\306\247\274  
\227\117\150\072\365\351\056\012\103\266\257\127\134\142\150\174  
\267\375\243\212\204\240\254\142\276\053\011\207\064\360\152\001  
\273\233\051\126\074\376\000\067\317\043\154\361\116\252\266\164  
\106\022\154\221\356\064\325\354\232\221\347\104\276\220\061\162  
\325\111\002\366\002\345\364\037\353\174\331\226\125\251\377\354  
\212\371\231\107\377\065\132\002\252\004\313\212\133\207\161\051  
\221\275\244\264\172\015\275\232\365\127\043\000\007\041\027\077  
\112\071\321\005\111\013\247\266\067\201\245\135\214\252\063\136  
\201\050\174\247\175\047\353\000\256\215\067

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Security Communication RootCA2"  
# Issuer: OU=Security Communication RootCA2,O="SECOM Trust Systems CO.,LTD.",C=JP  
# Serial Number: 0 (0x0)  
# Subject: OU=Security Communication RootCA2,O="SECOM Trust Systems CO.,LTD.",C=JP  
# Not Valid Before: Fri May 29 05:00:39 2009  
# Not Valid After : Tue May 29 05:00:39 2029  
# Fingerprint (SHA-256):

```
51:3B:2C:EC:B8:10:D4:CD:E5:DD:85:39:1A:DF:C6:C2:DD:60:D8:7B:B7:36:D2:B5:21:48:4A:A4:7A:0E:BE:F6
Fingerprint (SHA1): 5F:3B:8C:F2:F8:10:B3:7D:78:B4:CE:EC:19:19:C3:73:34:B9:C7:74
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Security Communication RootCA2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\137\073\214\362\370\020\263\175\170\264\316\354\031\031\303\163
\064\271\307\164
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\154\071\175\244\016\125\131\262\077\326\101\261\022\120\336\103
END
CKA_ISSUER MULTILINE_OCTAL
\060\135\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\045\060\043\006\003\125\004\012\023\034\123\105\103\117\115\040
\124\162\165\163\164\040\123\171\163\164\145\155\163\040\103\117
\056\054\114\124\104\056\061\047\060\045\006\003\125\004\013\023
\036\123\145\143\165\162\151\164\171\040\103\157\155\155\165\156
\151\143\141\164\151\157\156\040\122\157\157\164\103\101\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\000
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "EC-ACC"
#
Issuer: CN=EC-ACC,OU=Jerarquia Entitats de Certificacio Catalanes,OU=Vegeu https://www.catcert.net/verarrel
(c)03,OU=Serveis Publics de Certificacio,O=Agencia Catalana de Certificacio (NIF Q-0801176-I),C=ES
Serial Number:ee:2b:3d:eb:d4:21:de:14:a8:62:ac:04:f3:dd:c4:01
Subject: CN=EC-ACC,OU=Jerarquia Entitats de Certificacio Catalanes,OU=Vegeu
https://www.catcert.net/verarrel (c)03,OU=Serveis Publics de Certificacio,O=Agencia Catalana de Certificacio (NIF
Q-0801176-I),C=ES
Not Valid Before: Tue Jan 07 23:00:00 2003
Not Valid After : Tue Jan 07 22:59:59 2031
Fingerprint (SHA-256):
88:49:7F:01:60:2F:31:54:24:6A:E2:8C:4D:5A:EF:10:F1:D8:7E:BB:76:62:6F:4A:E0:B7:F9:5B:A7:96:87:99
Fingerprint (SHA1): 28:90:3A:63:5B:52:80:FA:E6:77:4C:0B:6D:A7:D6:BA:A6:4A:F2:E8
For Server Distrust After: Sat Dec 28 00:00:00 2019
For Email Distrust After: Wed Aug 31 00:00:00 2022
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "EC-ACC"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\363\061\013\060\011\006\003\125\004\006\023\002\105\123
\061\073\060\071\006\003\125\004\012\023\062\101\147\145\156\143
\151\141\040\103\141\164\141\154\141\156\141\040\144\145\040\103
\145\162\164\151\146\151\143\141\143\151\157\040\050\116\111\106
\040\121\055\060\070\060\061\061\067\066\055\111\051\061\050\060
\046\006\003\125\004\013\023\037\123\145\162\166\145\151\163\040
\120\165\142\154\151\143\163\040\144\145\040\103\145\162\164\151
\146\151\143\141\143\151\157\061\065\060\063\006\003\125\004\013
\023\054\126\145\147\145\165\040\150\164\164\160\163\072\057\057
\167\167\167\056\143\141\164\143\145\162\164\056\156\145\164\057
\166\145\162\141\162\162\145\154\040\050\143\051\060\063\061\065
\060\063\006\003\125\004\013\023\054\112\145\162\141\162\161\165
\151\141\040\105\156\164\151\164\141\164\163\040\144\145\040\103
\145\162\164\151\146\151\143\141\143\151\157\040\103\141\164\141
\154\141\156\145\163\061\017\060\015\006\003\125\004\003\023\006
\105\103\055\101\103\103
```

END

CKA\_ID UTF8 "0"

```
CKA_ISSUER MULTILINE_OCTAL
\060\201\363\061\013\060\011\006\003\125\004\006\023\002\105\123
\061\073\060\071\006\003\125\004\012\023\062\101\147\145\156\143
\151\141\040\103\141\164\141\154\141\156\141\040\144\145\040\103
\145\162\164\151\146\151\143\141\143\151\157\040\050\116\111\106
\040\121\055\060\070\060\061\061\067\066\055\111\051\061\050\060
\046\006\003\125\004\013\023\037\123\145\162\166\145\151\163\040
\120\165\142\154\151\143\163\040\144\145\040\103\145\162\164\151
\146\151\143\141\143\151\157\061\065\060\063\006\003\125\004\013
\023\054\126\145\147\145\165\040\150\164\164\160\163\072\057\057
\167\167\167\056\143\141\164\143\145\162\164\056\156\145\164\057
\166\145\162\141\162\162\145\154\040\050\143\051\060\063\061\065
\060\063\006\003\125\004\013\023\054\112\145\162\141\162\161\165
\151\141\040\105\156\164\151\164\141\164\163\040\144\145\040\103
\145\162\164\151\146\151\143\141\143\151\157\040\103\141\164\141
\154\141\156\145\163\061\017\060\015\006\003\125\004\003\023\006
\105\103\055\101\103\103
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\356\053\075\353\324\041\336\024\250\142\254\004\363\335
\304\001
```

END

```
CKA_VALUE MULTILINE_OCTAL
\060\202\005\126\060\202\004\076\240\003\002\001\002\002\020\356
\053\075\353\324\041\336\024\250\142\254\004\363\335\304\001\060
```



\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\201  
\363\061\013\060\011\006\003\125\004\006\023\002\105\123\061\073  
\060\071\006\003\125\004\012\023\062\101\147\145\156\143\151\141  
\040\103\141\164\141\154\141\156\141\040\144\145\040\103\145\162  
\164\151\146\151\143\141\143\151\157\040\050\116\111\106\040\121  
\055\060\070\060\061\061\067\066\055\111\051\061\050\060\046\006  
\003\125\004\013\023\037\123\145\162\166\145\151\163\040\120\165  
\142\154\151\143\163\040\144\145\040\103\145\162\164\151\146\151  
\143\141\143\151\157\061\065\060\063\006\003\125\004\013\023\054  
\126\145\147\145\165\040\150\164\164\160\163\072\057\057\167\167  
\167\056\143\141\164\143\145\162\164\056\156\145\164\057\166\145  
\162\141\162\162\145\154\040\050\143\051\060\063\061\065\060\063  
\006\003\125\004\013\023\054\112\145\162\141\162\161\165\151\141  
\040\105\156\164\151\164\141\164\163\040\144\145\040\103\145\162  
\164\151\146\151\143\141\143\151\157\040\103\141\164\141\154\141  
\156\145\163\061\017\060\015\006\003\125\004\003\023\006\105\103  
\055\101\103\103\060\036\027\015\060\063\060\061\060\067\062\063  
\060\060\060\060\132\027\015\063\061\060\061\060\067\062\062\065  
\071\065\071\132\060\201\363\061\013\060\011\006\003\125\004\006  
\023\002\105\123\061\073\060\071\006\003\125\004\012\023\062\101  
\147\145\156\143\151\141\040\103\141\164\141\154\141\156\141\040  
\144\145\040\103\145\162\164\151\146\151\143\141\143\151\157\040  
\050\116\111\106\040\121\055\060\070\060\061\061\067\066\055\111  
\051\061\050\060\046\006\003\125\004\013\023\037\123\145\162\166  
\145\151\163\040\120\165\142\154\151\143\163\040\144\145\040\103  
\145\162\164\151\146\151\143\141\143\151\157\061\065\060\063\006  
\003\125\004\013\023\054\126\145\147\145\165\040\150\164\164\160  
\163\072\057\057\167\167\167\056\143\141\164\143\145\162\164\056  
\156\145\164\057\166\145\162\141\162\162\145\154\040\050\143\051  
\060\063\061\065\060\063\006\003\125\004\013\023\054\112\145\162  
\141\162\161\165\151\141\040\105\156\164\151\164\141\164\163\040  
\144\145\040\103\145\162\164\151\146\151\143\141\143\151\157\040  
\103\141\164\141\154\141\156\145\163\061\017\060\015\006\003\125  
\004\003\023\006\105\103\055\101\103\103\060\202\001\042\060\015  
\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001  
\017\000\060\202\001\012\002\202\001\001\000\263\042\307\117\342  
\227\102\225\210\107\203\100\366\035\027\363\203\163\044\036\121  
\363\230\212\303\222\270\377\100\220\005\160\207\140\311\000\251  
\265\224\145\031\042\025\027\302\103\154\146\104\232\015\004\076  
\071\157\245\113\172\252\143\267\212\104\235\331\143\221\204\146  
\340\050\017\272\102\343\156\216\367\024\047\223\151\356\221\016  
\243\137\016\261\353\146\242\162\117\022\023\206\145\172\076\333  
\117\007\364\247\011\140\332\072\102\231\307\262\177\263\026\225  
\034\307\371\064\265\224\205\325\231\136\240\110\240\176\347\027  
\145\270\242\165\270\036\363\345\102\175\257\355\363\212\110\144  
\135\202\024\223\330\300\344\377\263\120\162\362\166\366\263\135  
\102\120\171\320\224\076\153\014\000\276\330\153\016\116\052\354  
\076\322\314\202\242\030\145\063\023\167\236\232\135\032\023\330

\303\333\075\310\227\172\356\160\355\247\346\174\333\161\317\055  
\224\142\337\155\326\365\070\276\077\245\205\012\031\270\250\330  
\011\165\102\160\304\352\357\313\016\310\064\250\022\042\230\014  
\270\023\224\266\113\354\360\320\220\347\047\002\003\001\000\001  
\243\201\343\060\201\340\060\035\006\003\125\035\021\004\026\060  
\024\201\022\145\143\137\141\143\143\100\143\141\164\143\145\162  
\164\056\156\145\164\060\017\006\003\125\035\023\001\001\377\004  
\005\060\003\001\001\377\060\016\006\003\125\035\017\001\001\377  
\004\004\003\002\001\006\060\035\006\003\125\035\016\004\026\004  
\024\240\303\213\104\252\067\245\105\277\227\200\132\321\361\170  
\242\233\351\135\215\060\177\006\003\125\035\040\004\170\060\166  
\060\164\006\013\053\006\001\004\001\365\170\001\003\001\012\060  
\145\060\054\006\010\053\006\001\005\005\007\002\001\026\040\150  
\164\164\160\163\072\057\057\167\167\167\056\143\141\164\143\145  
\162\164\056\156\145\164\057\166\145\162\141\162\162\145\154\060  
\065\006\010\053\006\001\005\005\007\002\002\060\051\032\047\126  
\145\147\145\165\040\150\164\164\160\163\072\057\057\167\167\167  
\056\143\141\164\143\145\162\164\056\156\145\164\057\166\145\162  
\141\162\162\145\154\040\060\015\006\011\052\206\110\206\367\015  
\001\001\005\005\000\003\202\001\001\000\240\110\133\202\001\366  
\115\110\270\071\125\065\234\200\172\123\231\325\132\377\261\161  
\073\314\071\011\224\136\326\332\357\276\001\133\135\323\036\330  
\375\175\117\315\240\101\340\064\223\277\313\342\206\234\067\222  
\220\126\034\334\353\051\005\345\304\236\307\065\337\212\014\315  
\305\041\103\351\252\210\345\065\300\031\102\143\132\002\136\244  
\110\030\072\205\157\334\235\274\077\235\234\301\207\270\172\141  
\010\351\167\013\177\160\253\172\335\331\227\054\144\036\205\277  
\274\164\226\241\303\172\022\354\014\032\156\203\014\074\350\162  
\106\237\373\110\325\136\227\346\261\241\370\344\357\106\045\224  
\234\211\333\151\070\276\354\134\016\126\307\145\121\345\120\210  
\210\277\102\325\053\075\345\371\272\236\056\263\312\364\163\222  
\002\013\276\114\146\353\040\376\271\313\265\231\177\346\266\023  
\372\312\113\115\331\356\123\106\006\073\306\116\255\223\132\201  
\176\154\052\113\152\005\105\214\362\041\244\061\220\207\154\145  
\234\235\245\140\225\072\122\177\365\321\253\010\156\363\356\133  
\371\210\075\176\270\157\156\003\344\102

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER MULTILINE\_OCTAL  
\061\071\061\062\062\070\060\060\060\060\060\060\132

END

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER MULTILINE\_OCTAL  
\062\062\060\070\063\061\060\060\060\060\060\060\132

END

# Trust for "EC-ACC"

# Issuer: CN=EC-ACC,OU=Jerarquia Entitats de Certificacio Catalanes,OU=Vegeu <https://www.catcert.net/verarrel>  
(c)03,OU=Serveis Publics de Certificacio,O=Agencia Catalana de Certificacio (NIF Q-0801176-I),C=ES

```
Serial Number:ee:2b:3d:eb:d4:21:de:14:a8:62:ac:04:f3:dd:c4:01
Subject: CN=EC-ACC,OU=Jerarquia Entitats de Certificacio Catalanes,OU=Vegeu
https://www.catcert.net/verarrel (c)03,OU=Serveis Publics de Certificacio,O=Agencia Catalana de Certificacio (NIF
Q-0801176-I),C=ES
Not Valid Before: Tue Jan 07 23:00:00 2003
Not Valid After : Tue Jan 07 22:59:59 2031
Fingerprint (SHA-256):
88:49:7F:01:60:2F:31:54:24:6A:E2:8C:4D:5A:EF:10:F1:D8:7E:BB:76:62:6F:4A:E0:B7:F9:5B:A7:96:87:99
Fingerprint (SHA1): 28:90:3A:63:5B:52:80:FA:E6:77:4C:0B:6D:A7:D6:BA:A6:4A:F2:E8
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "EC-ACC"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\050\220\072\143\133\122\200\372\346\167\114\013\155\247\326\272
\246\112\362\350
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\353\365\235\051\015\141\371\102\037\174\302\272\155\343\025\011
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\363\061\013\060\011\006\003\125\004\006\023\002\105\123
\061\073\060\071\006\003\125\004\012\023\062\101\147\145\156\143
\151\141\040\103\141\164\141\154\141\156\141\040\144\145\040\103
\145\162\164\151\146\151\143\141\143\151\157\040\050\116\111\106
\040\121\055\060\070\060\061\061\067\066\055\111\051\061\050\060
\046\006\003\125\004\013\023\037\123\145\162\166\145\151\163\040
\120\165\142\154\151\143\163\040\144\145\040\103\145\162\164\151
\146\151\143\141\143\151\157\061\065\060\063\006\003\125\004\013
\023\054\126\145\147\145\165\040\150\164\164\160\163\072\057\057
\167\167\167\056\143\141\164\143\145\162\164\056\156\145\164\057
\166\145\162\141\162\162\145\154\040\050\143\051\060\063\061\065
\060\063\006\003\125\004\013\023\054\112\145\162\141\162\161\165
\151\141\040\105\156\164\151\164\141\164\163\040\144\145\040\103
\145\162\164\151\146\151\143\141\143\151\157\040\103\141\164\141
\154\141\156\145\163\061\017\060\015\006\003\125\004\003\023\006
\105\103\055\101\103\103
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\356\053\075\353\324\041\336\024\250\142\254\004\363\335
\304\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```

#
Certificate "Hellenic Academic and Research Institutions RootCA 2011"
#
Issuer: CN=Hellenic Academic and Research Institutions RootCA 2011,O=Hellenic Academic and Research
Institutions Cert. Authority,C=GR
Serial Number: 0 (0x0)
Subject: CN=Hellenic Academic and Research Institutions RootCA 2011,O=Hellenic Academic and Research
Institutions Cert. Authority,C=GR
Not Valid Before: Tue Dec 06 13:49:52 2011
Not Valid After : Mon Dec 01 13:49:52 2031
Fingerprint (SHA-256):
BC:10:4F:15:A4:8B:E7:09:DC:A5:42:A7:E1:D4:B9:DF:6F:05:45:27:E8:02:EA:A9:2D:59:54:44:25:8A:FE:71
Fingerprint (SHA1): FE:45:65:9B:79:03:5B:98:A1:61:B5:51:2E:AC:DA:58:09:48:22:4D
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Hellenic Academic and Research Institutions RootCA 2011"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\225\061\013\060\011\006\003\125\004\006\023\002\107\122
\061\104\060\102\006\003\125\004\012\023\073\110\145\154\154\145
\156\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144
\040\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164
\165\164\151\157\156\163\040\103\145\162\164\056\040\101\165\164
\150\157\162\151\164\171\061\100\060\076\006\003\125\004\003\023
\067\110\145\154\154\145\156\151\143\040\101\143\141\144\145\155
\151\143\040\141\156\144\040\122\145\163\145\141\162\143\150\040
\111\156\163\164\151\164\165\164\151\157\156\163\040\122\157\157
\164\103\101\040\062\060\061\061
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\225\061\013\060\011\006\003\125\004\006\023\002\107\122
\061\104\060\102\006\003\125\004\012\023\073\110\145\154\154\145
\156\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144
\040\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164
\165\164\151\157\156\163\040\103\145\162\164\056\040\101\165\164
\150\157\162\151\164\171\061\100\060\076\006\003\125\004\003\023
\067\110\145\154\154\145\156\151\143\040\101\143\141\144\145\155
\151\143\040\141\156\144\040\122\145\163\145\141\162\143\150\040
\111\156\163\164\151\164\165\164\151\157\156\163\040\122\157\157
\164\103\101\040\062\060\061\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\000
END
CKA_VALUE MULTILINE_OCTAL

```

\060\202\004\061\060\202\003\031\240\003\002\001\002\002\001\000  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060  
\201\225\061\013\060\011\006\003\125\004\006\023\002\107\122\061  
\104\060\102\006\003\125\004\012\023\073\110\145\154\154\145\156  
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040  
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165  
\164\151\157\156\163\040\103\145\162\164\056\040\101\165\164\150  
\157\162\151\164\171\061\100\060\076\006\003\125\004\003\023\067  
\110\145\154\154\145\156\151\143\040\101\143\141\144\145\155\151  
\143\040\141\156\144\040\122\145\163\145\141\162\143\150\040\111  
\156\163\164\151\164\165\164\151\157\156\163\040\122\157\157\164  
\103\101\040\062\060\061\061\060\036\027\015\061\061\061\062\060  
\066\061\063\064\071\065\062\132\027\015\063\061\061\062\060\061  
\061\063\064\071\065\062\132\060\201\225\061\013\060\011\006\003  
\125\004\006\023\002\107\122\061\104\060\102\006\003\125\004\012  
\023\073\110\145\154\154\145\156\151\143\040\101\143\141\144\145  
\155\151\143\040\141\156\144\040\122\145\163\145\141\162\143\150  
\040\111\156\163\164\151\164\165\164\151\157\156\163\040\103\145  
\162\164\056\040\101\165\164\150\157\162\151\164\171\061\100\060  
\076\006\003\125\004\003\023\067\110\145\154\154\145\156\151\143  
\040\101\143\141\144\145\155\151\143\040\141\156\144\040\122\145  
\163\145\141\162\143\150\040\111\156\163\164\151\164\165\164\151  
\157\156\163\040\122\157\157\164\103\101\040\062\060\061\061\060  
\202\001\042\060\015\006\011\052\206\110\206\367\015\001\001\001  
\005\000\003\202\001\017\000\060\202\001\012\002\202\001\001\000  
\251\123\000\343\056\246\366\216\372\140\330\055\225\076\370\054  
\052\124\116\315\271\204\141\224\130\117\217\075\213\344\103\363  
\165\211\215\121\344\303\067\322\212\210\115\171\036\267\022\335  
\103\170\112\212\222\346\327\110\325\017\244\072\051\104\065\270  
\007\366\150\035\125\315\070\121\360\214\044\061\205\257\203\311  
\175\351\167\257\355\032\173\235\027\371\263\235\070\120\017\246  
\132\171\221\200\257\067\256\246\323\061\373\265\046\011\235\074  
\132\357\121\305\053\337\226\135\353\062\036\002\332\160\111\354  
\156\014\310\232\067\215\367\361\066\140\113\046\054\202\236\320  
\170\363\015\017\143\244\121\060\341\371\053\047\022\007\330\352  
\275\030\142\230\260\131\067\175\276\356\363\040\121\102\132\203  
\357\223\272\151\025\361\142\235\237\231\071\202\241\267\164\056  
\213\324\305\013\173\057\360\310\012\332\075\171\012\232\223\034  
\245\050\162\163\221\103\232\247\321\115\205\204\271\251\164\217  
\024\100\307\334\336\254\101\144\154\264\031\233\002\143\155\044  
\144\217\104\262\045\352\316\135\164\014\143\062\134\215\207\345  
\002\003\001\000\001\243\201\211\060\201\206\060\017\006\003\125  
\035\023\001\001\377\004\005\060\003\001\001\377\060\013\006\003  
\125\035\017\004\004\003\002\001\006\060\035\006\003\125\035\016  
\004\026\004\024\246\221\102\375\023\141\112\043\236\010\244\051  
\345\330\023\004\043\356\101\045\060\107\006\003\125\035\036\004  
\100\060\076\240\074\060\005\202\003\056\147\162\060\005\202\003  
\056\145\165\060\006\202\004\056\145\144\165\060\006\202\004\056

```
\157\162\147\060\005\201\003\056\147\162\060\005\201\003\056\145
\165\060\006\201\004\056\145\144\165\060\006\201\004\056\157\162
\147\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000
\003\202\001\001\000\037\357\171\101\341\173\156\077\262\214\206
\067\102\112\116\034\067\036\215\146\272\044\201\311\117\022\017
\041\300\003\227\206\045\155\135\323\042\051\250\154\242\015\251
\353\075\006\133\231\072\307\314\303\232\064\177\253\016\310\116
\034\341\372\344\334\315\015\276\277\044\376\154\347\153\302\015
\310\006\236\116\215\141\050\246\152\375\345\366\142\352\030\074
\116\240\123\235\262\072\234\353\245\234\221\026\266\115\202\340
\014\005\110\251\154\365\314\370\313\235\111\264\360\002\245\375
\160\003\355\212\041\245\256\023\206\111\303\063\163\276\207\073
\164\213\027\105\046\114\026\221\203\376\147\175\315\115\143\147
\372\363\003\022\226\170\006\215\261\147\355\216\077\276\237\117
\002\365\263\011\057\363\114\207\337\052\313\225\174\001\314\254
\066\172\277\242\163\172\367\217\301\265\232\241\024\262\217\063
\237\015\357\042\334\146\173\204\275\105\027\006\075\074\312\271
\167\064\217\312\352\317\077\061\076\343\210\343\200\111\045\310
\227\265\235\232\231\115\260\074\370\112\000\233\144\335\237\071
\113\321\047\327\270
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Trust for "Hellenic Academic and Research Institutions RootCA 2011"
```

```
Issuer: CN=Hellenic Academic and Research Institutions RootCA 2011,O=Hellenic Academic and Research
Institutions Cert. Authority,C=GR
```

```
Serial Number: 0 (0x0)
```

```
Subject: CN=Hellenic Academic and Research Institutions RootCA 2011,O=Hellenic Academic and Research
Institutions Cert. Authority,C=GR
```

```
Not Valid Before: Tue Dec 06 13:49:52 2011
```

```
Not Valid After : Mon Dec 01 13:49:52 2031
```

```
Fingerprint (SHA-256):
```

```
BC:10:4F:15:A4:8B:E7:09:DC:A5:42:A7:E1:D4:B9:DF:6F:05:45:27:E8:02:EA:A9:2D:59:54:44:25:8A:FE:71
```

```
Fingerprint (SHA1): FE:45:65:9B:79:03:5B:98:A1:61:B5:51:2E:AC:DA:58:09:48:22:4D
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "Hellenic Academic and Research Institutions RootCA 2011"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\376\105\145\233\171\003\133\230\241\141\265\121\056\254\332\130
```

```
\011\110\042\115
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\163\237\114\113\163\133\171\351\372\272\034\357\156\313\325\311
```

END

```

CKA_ISSUER MULTILINE_OCTAL
\060\201\225\061\013\060\011\006\003\125\004\006\023\002\107\122
\061\104\060\102\006\003\125\004\012\023\073\110\145\154\154\145
\156\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144
\040\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164
\165\164\151\157\156\163\040\103\145\162\164\056\040\101\165\164
\150\157\162\151\164\171\061\100\060\076\006\003\125\004\003\023
\067\110\145\154\154\145\156\151\143\040\101\143\141\144\145\155
\151\143\040\141\156\144\040\122\145\163\145\141\162\143\150\040
\111\156\163\164\151\164\165\164\151\157\156\163\040\122\157\157
\164\103\101\040\062\060\061\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\000
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "Actalis Authentication Root CA"
#
Issuer: CN=Actalis Authentication Root CA,O=Actalis S.p.A./03358520967,L=Milan,C=IT
Serial Number:57:0a:11:97:42:c4:e3:cc
Subject: CN=Actalis Authentication Root CA,O=Actalis S.p.A./03358520967,L=Milan,C=IT
Not Valid Before: Thu Sep 22 11:22:02 2011
Not Valid After : Sun Sep 22 11:22:02 2030
Fingerprint (SHA-256):
55:92:60:84:EC:96:3A:64:B9:6E:2A:BE:01:CE:0B:A8:6A:64:FB:FE:BC:C7:AA:B5:AF:C1:55:B3:7F:D7:60:66
Fingerprint (SHA1): F3:73:B3:87:06:5A:28:84:8A:F2:F3:4A:CE:19:2B:DD:C7:8E:9C:AC
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Actalis Authentication Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\153\061\013\060\011\006\003\125\004\006\023\002\111\124\061
\016\060\014\006\003\125\004\007\014\005\115\151\154\141\156\061
\043\060\041\006\003\125\004\012\014\032\101\143\164\141\154\151
\163\040\123\056\160\056\101\056\057\060\063\063\065\070\065\062
\060\071\066\067\061\047\060\045\006\003\125\004\003\014\036\101
\143\164\141\154\151\163\040\101\165\164\150\145\156\164\151\143
\141\164\151\157\156\040\122\157\157\164\040\103\101
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL

```

\060\153\061\013\060\011\006\003\125\004\006\023\002\111\124\061  
\016\060\014\006\003\125\004\007\014\005\115\151\154\141\156\061  
\043\060\041\006\003\125\004\012\014\032\101\143\164\141\154\151  
\163\040\123\056\160\056\101\056\057\060\063\063\065\070\065\062  
\060\071\066\067\061\047\060\045\006\003\125\004\003\014\036\101  
\143\164\141\154\151\163\040\101\165\164\150\145\156\164\151\143  
\141\164\151\157\156\040\122\157\157\164\040\103\101

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\010\127\012\021\227\102\304\343\314

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\273\060\202\003\243\240\003\002\001\002\002\010\127  
\012\021\227\102\304\343\314\060\015\006\011\052\206\110\206\367  
\015\001\001\013\005\000\060\153\061\013\060\011\006\003\125\004  
\006\023\002\111\124\061\016\060\014\006\003\125\004\007\014\005  
\115\151\154\141\156\061\043\060\041\006\003\125\004\012\014\032  
\101\143\164\141\154\151\163\040\123\056\160\056\101\056\057\060  
\063\063\065\070\065\062\060\071\066\067\061\047\060\045\006\003  
\125\004\003\014\036\101\143\164\141\154\151\163\040\101\165\164  
\150\145\156\164\151\143\141\164\151\157\156\040\122\157\157\164  
\040\103\101\060\036\027\015\061\061\060\071\062\062\061\061\062  
\062\060\062\132\027\015\063\060\060\071\062\062\061\061\062\062  
\060\062\132\060\153\061\013\060\011\006\003\125\004\006\023\002  
\111\124\061\016\060\014\006\003\125\004\007\014\005\115\151\154  
\141\156\061\043\060\041\006\003\125\004\012\014\032\101\143\164  
\141\154\151\163\040\123\056\160\056\101\056\057\060\063\063\065  
\070\065\062\060\071\066\067\061\047\060\045\006\003\125\004\003  
\014\036\101\143\164\141\154\151\163\040\101\165\164\150\145\156  
\164\151\143\141\164\151\157\156\040\122\157\157\164\040\103\101  
\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001  
\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001  
\000\247\306\304\245\051\244\054\357\345\030\305\260\120\243\157  
\121\073\237\012\132\311\302\110\070\012\302\034\240\030\177\221  
\265\207\271\100\077\335\035\150\037\010\203\325\055\036\210\240  
\370\217\126\217\155\231\002\222\220\026\325\137\010\154\211\327  
\341\254\274\040\302\261\340\203\121\212\151\115\000\226\132\157  
\057\300\104\176\243\016\344\221\315\130\356\334\373\307\036\105  
\107\335\047\271\010\001\237\246\041\035\365\101\055\057\114\375  
\050\255\340\212\255\042\264\126\145\216\206\124\217\223\103\051  
\336\071\106\170\243\060\043\272\315\360\175\023\127\300\135\322  
\203\153\110\114\304\253\237\200\132\133\072\275\311\247\042\077  
\200\047\063\133\016\267\212\014\135\007\067\010\313\154\322\172  
\107\042\104\065\305\314\314\056\216\335\052\355\267\175\146\015  
\137\141\121\042\125\033\343\106\343\343\075\320\065\142\232\333  
\257\024\310\133\241\314\211\033\341\060\046\374\240\233\037\201  
\247\107\037\004\353\243\071\222\006\237\231\323\277\323\352\117  
\120\234\031\376\226\207\036\074\145\366\243\030\044\203\206\020



\347\124\076\250\072\166\044\117\201\041\305\343\017\002\370\223  
\224\107\040\273\376\324\016\323\150\271\335\304\172\204\202\343  
\123\124\171\335\333\234\322\362\007\233\056\266\274\076\355\205  
\155\357\045\021\362\227\032\102\141\367\112\227\350\213\261\020  
\007\372\145\201\262\242\071\317\367\074\377\030\373\306\361\132  
\213\131\342\002\254\173\222\320\116\024\117\131\105\366\014\136  
\050\137\260\350\077\105\317\317\257\233\157\373\204\323\167\132  
\225\157\254\224\204\236\356\274\300\112\217\112\223\370\104\041  
\342\061\105\141\120\116\020\330\343\065\174\114\031\264\336\005  
\277\243\006\237\310\265\315\344\037\327\027\006\015\172\225\164  
\125\015\150\032\374\020\033\142\144\235\155\340\225\240\303\224  
\007\127\015\024\346\275\005\373\270\237\346\337\213\342\306\347  
\176\226\366\123\305\200\064\120\050\130\360\022\120\161\027\060  
\272\346\170\143\274\364\262\255\233\053\262\376\341\071\214\136  
\272\013\040\224\336\173\203\270\377\343\126\215\267\021\351\073  
\214\362\261\301\135\235\244\013\114\053\331\262\030\365\265\237  
\113\002\003\001\000\001\243\143\060\141\060\035\006\003\125\035  
\016\004\026\004\024\122\330\210\072\310\237\170\146\355\211\363  
\173\070\160\224\311\002\002\066\320\060\017\006\003\125\035\023  
\001\001\377\004\005\060\003\001\001\377\060\037\006\003\125\035  
\043\004\030\060\026\200\024\122\330\210\072\310\237\170\146\355  
\211\363\173\070\160\224\311\002\002\066\320\060\016\006\003\125  
\035\017\001\001\377\004\004\003\002\001\006\060\015\006\011\052  
\206\110\206\367\015\001\001\013\005\000\003\202\002\001\000\013  
\173\162\207\300\140\246\111\114\210\130\346\035\210\367\024\144  
\110\246\330\130\012\016\117\023\065\337\065\035\324\355\006\061  
\310\201\076\152\325\335\073\032\062\356\220\075\021\322\056\364  
\216\303\143\056\043\146\260\147\276\157\266\300\023\071\140\252  
\242\064\045\223\165\122\336\247\235\255\016\207\211\122\161\152  
\026\074\031\035\203\370\232\051\145\276\364\077\232\331\360\363  
\132\207\041\161\200\115\313\340\070\233\077\273\372\340\060\115  
\317\206\323\145\020\031\030\321\227\002\261\053\162\102\150\254  
\240\275\116\132\332\030\277\153\230\201\320\375\232\276\136\025  
\110\315\021\025\271\300\051\134\264\350\210\367\076\066\256\267  
\142\375\036\142\336\160\170\020\034\110\133\332\274\244\070\272  
\147\355\125\076\136\127\337\324\003\100\114\201\244\322\117\143  
\247\011\102\011\024\374\000\251\302\200\163\117\056\300\100\331  
\021\173\110\352\172\002\300\323\353\050\001\046\130\164\301\300  
\163\042\155\223\225\375\071\175\273\052\343\366\202\343\054\227  
\137\116\037\221\224\372\376\054\243\330\166\032\270\115\262\070  
\117\233\372\035\110\140\171\046\342\363\375\251\320\232\350\160  
\217\111\172\326\345\275\012\016\333\055\363\215\277\353\343\244  
\175\313\307\225\161\350\332\243\174\305\302\370\164\222\004\033  
\206\254\244\042\123\100\266\254\376\114\166\317\373\224\062\300  
\065\237\166\077\156\345\220\156\240\246\046\242\270\054\276\321  
\053\205\375\247\150\310\272\001\053\261\154\164\035\270\163\225  
\347\356\267\307\045\360\000\114\000\262\176\266\013\213\034\363  
\300\120\236\045\271\340\010\336\066\146\377\067\245\321\273\124

```
\144\054\311\047\265\113\222\176\145\377\323\055\341\271\116\274
\177\244\101\041\220\101\167\246\071\037\352\236\343\237\320\146
\157\005\354\252\166\176\277\153\026\240\353\265\307\374\222\124
\057\053\021\047\045\067\170\114\121\152\260\363\314\130\135\024
\361\152\110\025\377\302\007\266\261\215\017\216\134\120\106\263
\075\277\001\230\117\262\131\124\107\076\064\173\170\155\126\223
\056\163\352\146\050\170\315\035\024\277\240\217\057\056\270\056
\216\362\024\212\314\351\265\174\373\154\235\014\245\341\226
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Trust for "Actalis Authentication Root CA"
```

```
Issuer: CN=Actalis Authentication Root CA,O=Actalis S.p.A./03358520967,L=Milan,C=IT
```

```
Serial Number:57:0a:11:97:42:c4:e3:cc
```

```
Subject: CN=Actalis Authentication Root CA,O=Actalis S.p.A./03358520967,L=Milan,C=IT
```

```
Not Valid Before: Thu Sep 22 11:22:02 2011
```

```
Not Valid After : Sun Sep 22 11:22:02 2030
```

```
Fingerprint (SHA-256):
```

```
55:92:60:84:EC:96:3A:64:B9:6E:2A:BE:01:CE:0B:A8:6A:64:FB:FE:BC:C7:AA:B5:AF:C1:55:B3:7F:D7:60:66
```

```
Fingerprint (SHA1): F3:73:B3:87:06:5A:28:84:8A:F2:F3:4A:CE:19:2B:DD:C7:8E:9C:AC
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "Actalis Authentication Root CA"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\363\163\263\207\006\132\050\204\212\362\363\112\316\031\053\335
\307\216\234\254
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\151\301\015\117\007\243\033\303\376\126\075\004\274\021\366\246
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\153\061\013\060\011\006\003\125\004\006\023\002\111\124\061
\016\060\014\006\003\125\004\007\014\005\115\151\154\141\156\061
\043\060\041\006\003\125\004\012\014\032\101\143\164\141\154\151
\163\040\123\056\160\056\101\056\057\060\063\063\065\070\065\062
\060\071\066\067\061\047\060\045\006\003\125\004\003\014\036\101
\143\164\141\154\151\163\040\101\165\164\150\145\156\164\151\143
\141\164\151\157\156\040\122\157\157\164\040\103\101
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\010\127\012\021\227\102\304\343\314
```

END

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

```
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "Buypass Class 2 Root CA"

#

# Issuer: CN=Buypass Class 2 Root CA,O=Buypass AS-983163327,C=NO

# Serial Number: 2 (0x2)

# Subject: CN=Buypass Class 2 Root CA,O=Buypass AS-983163327,C=NO

# Not Valid Before: Tue Oct 26 08:38:03 2010

# Not Valid After : Fri Oct 26 08:38:03 2040

# Fingerprint (SHA-256):

9A:11:40:25:19:7C:5B:B9:5D:94:E6:3D:55:CD:43:79:08:47:B6:46:B2:3C:DF:11:AD:A4:A0:0E:FF:15:FB:48

# Fingerprint (SHA1): 49:0A:75:74:DE:87:0A:47:FE:58:EE:F6:C7:6B:EB:C6:0B:12:40:99

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Buypass Class 2 Root CA"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\116\061\013\060\011\006\003\125\004\006\023\002\116\117\061  
\035\060\033\006\003\125\004\012\014\024\102\165\171\160\141\163  
\163\040\101\123\055\071\070\063\061\066\063\063\062\067\061\040  
\060\036\006\003\125\004\003\014\027\102\165\171\160\141\163\163  
\040\103\154\141\163\163\040\062\040\122\157\157\164\040\103\101

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\116\061\013\060\011\006\003\125\004\006\023\002\116\117\061  
\035\060\033\006\003\125\004\012\014\024\102\165\171\160\141\163  
\163\040\101\123\055\071\070\063\061\066\063\063\062\067\061\040  
\060\036\006\003\125\004\003\014\027\102\165\171\160\141\163\163  
\040\103\154\141\163\163\040\062\040\122\157\157\164\040\103\101

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\002

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\131\060\202\003\101\240\003\002\001\002\002\001\002  
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060  
\116\061\013\060\011\006\003\125\004\006\023\002\116\117\061\035  
\060\033\006\003\125\004\012\014\024\102\165\171\160\141\163\163  
\040\101\123\055\071\070\063\061\066\063\063\062\067\061\040\060  
\036\006\003\125\004\003\014\027\102\165\171\160\141\163\163\040  
\103\154\141\163\163\040\062\040\122\157\157\164\040\103\101\060  
\036\027\015\061\060\061\060\062\066\060\070\063\070\060\063\132  
\027\015\064\060\061\060\062\066\060\070\063\070\060\063\132\060

\116\061\013\060\011\006\003\125\004\006\023\002\116\117\061\035  
\060\033\006\003\125\004\012\014\024\102\165\171\160\141\163\163  
\040\101\123\055\071\070\063\061\066\063\063\062\067\061\040\060  
\036\006\003\125\004\003\014\027\102\165\171\160\141\163\163\040  
\103\154\141\163\163\040\062\040\122\157\157\164\040\103\101\060  
\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001\001  
\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001\000  
\327\307\136\367\301\007\324\167\373\103\041\364\364\365\151\344  
\356\062\001\333\243\206\037\344\131\015\272\347\165\203\122\353  
\352\034\141\025\110\273\035\007\312\214\256\260\334\226\235\352  
\303\140\222\206\202\050\163\234\126\006\377\113\144\360\014\052  
\067\111\265\345\317\014\174\356\361\112\273\163\060\145\363\325  
\057\203\266\176\343\347\365\236\253\140\371\323\361\235\222\164  
\212\344\034\226\254\133\200\351\265\364\061\207\243\121\374\307  
\176\241\157\216\123\167\324\227\301\125\063\222\076\030\057\165  
\324\255\206\111\313\225\257\124\006\154\330\006\023\215\133\377  
\341\046\031\131\300\044\272\201\161\171\220\104\120\150\044\224  
\137\270\263\021\361\051\101\141\243\101\313\043\066\325\301\361  
\062\120\020\116\177\364\206\223\354\204\323\216\274\113\277\134  
\001\116\007\075\334\024\212\224\012\244\352\163\373\013\121\350  
\023\007\030\372\016\361\053\321\124\025\175\074\341\367\264\031  
\102\147\142\136\167\340\242\125\354\266\331\151\027\325\072\257  
\104\355\112\305\236\344\172\047\174\345\165\327\252\313\045\347  
\337\153\012\333\017\115\223\116\250\240\315\173\056\362\131\001  
\152\267\015\270\007\201\176\213\070\033\070\346\012\127\231\075  
\356\041\350\243\365\014\026\335\213\354\064\216\234\052\034\000  
\025\027\215\150\203\322\160\237\030\010\315\021\150\325\311\153  
\122\315\304\106\217\334\265\363\330\127\163\036\351\224\071\004  
\277\323\336\070\336\264\123\354\151\034\242\176\304\217\344\033  
\160\255\362\242\371\373\367\026\144\146\151\237\111\121\242\342  
\025\030\147\006\112\177\325\154\265\115\263\063\340\141\353\135  
\276\351\230\017\062\327\035\113\074\056\132\001\122\221\011\362  
\337\352\215\330\006\100\143\252\021\344\376\303\067\236\024\122  
\077\364\342\314\362\141\223\321\375\147\153\327\122\256\277\150  
\253\100\103\240\127\065\123\170\360\123\370\141\102\007\144\306  
\327\157\233\114\070\015\143\254\142\257\066\213\242\163\012\015  
\365\041\275\164\252\115\352\162\003\111\333\307\137\035\142\143  
\307\375\335\221\354\063\356\365\155\264\156\060\150\336\310\326  
\046\260\165\136\173\264\007\040\230\241\166\062\270\115\154\117  
\002\003\001\000\001\243\102\060\100\060\017\006\003\125\035\023  
\001\001\377\004\005\060\003\001\001\377\060\035\006\003\125\035  
\016\004\026\004\024\311\200\167\340\142\222\202\365\106\234\363  
\272\367\114\303\336\270\243\255\071\060\016\006\003\125\035\017  
\001\001\377\004\004\003\002\001\006\060\015\006\011\052\206\110  
\206\367\015\001\001\013\005\000\003\202\002\001\000\123\137\041  
\365\272\260\072\122\071\054\222\260\154\000\311\357\316\040\357  
\006\362\226\236\351\244\164\177\172\026\374\267\365\266\373\025  
\033\077\253\246\300\162\135\020\261\161\356\274\117\343\255\254

```
\003\155\056\161\056\257\304\343\255\243\275\014\021\247\264\377
\112\262\173\020\020\037\247\127\101\262\300\256\364\054\131\326
\107\020\210\363\041\121\051\060\312\140\206\257\106\253\035\355
\072\133\260\224\336\104\343\101\010\242\301\354\035\326\375\117
\266\326\107\320\024\013\312\346\312\265\173\167\176\101\037\136
\203\307\266\214\071\226\260\077\226\201\101\157\140\220\342\350
\371\373\042\161\331\175\263\075\106\277\264\204\257\220\034\017
\217\022\152\257\357\356\036\172\256\002\112\212\027\053\166\376
\254\124\211\044\054\117\077\266\262\247\116\214\250\221\227\373
\051\306\173\134\055\271\313\146\266\267\250\133\022\121\205\265
\011\176\142\170\160\376\251\152\140\266\035\016\171\014\375\312
\352\044\200\162\303\227\077\362\167\253\103\042\012\307\353\266
\014\204\202\054\200\153\101\212\010\300\353\245\153\337\231\022
\313\212\325\136\200\014\221\340\046\010\066\110\305\372\070\021
\065\377\045\203\055\362\172\277\332\375\216\376\245\313\105\054
\037\304\210\123\256\167\016\331\232\166\305\216\054\035\243\272
\325\354\062\256\300\252\254\367\321\172\115\353\324\007\342\110
\367\042\216\260\244\237\152\316\216\262\262\140\364\243\042\320
\043\353\224\132\172\151\335\017\277\100\127\254\153\131\120\331
\243\231\341\156\376\215\001\171\047\043\025\336\222\235\173\011
\115\132\347\113\110\060\132\030\346\012\155\346\217\340\322\273
\346\337\174\156\041\202\301\150\071\115\264\230\130\146\142\314
\112\220\136\303\372\047\004\261\171\025\164\231\314\276\255\040
\336\046\140\034\353\126\121\246\243\352\344\243\077\247\377\141
\334\361\132\115\154\062\043\103\356\254\250\356\356\112\022\011
\074\135\161\302\276\171\372\302\207\150\035\013\375\134\151\314
\006\320\232\175\124\231\052\311\071\032\031\257\113\052\103\363
\143\135\132\130\342\057\343\035\344\251\326\320\012\320\236\277
\327\201\011\361\311\307\046\015\254\230\026\126\240
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Trust for "Buypass Class 2 Root CA"
```

```
Issuer: CN=Buypass Class 2 Root CA,O=Buypass AS-983163327,C=NO
```

```
Serial Number: 2 (0x2)
```

```
Subject: CN=Buypass Class 2 Root CA,O=Buypass AS-983163327,C=NO
```

```
Not Valid Before: Tue Oct 26 08:38:03 2010
```

```
Not Valid After : Fri Oct 26 08:38:03 2040
```

```
Fingerprint (SHA-256):
```

```
9A:11:40:25:19:7C:5B:B9:5D:94:E6:3D:55:CD:43:79:08:47:B6:46:B2:3C:DF:11:AD:A4:A0:0E:FF:15:FB:48
```

```
Fingerprint (SHA1): 49:0A:75:74:DE:87:0A:47:FE:58:EE:F6:C7:6B:EB:C6:0B:12:40:99
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "Buypass Class 2 Root CA"
```

```

CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\111\012\165\164\336\207\012\107\376\130\356\366\307\153\353\306
\013\022\100\231
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\106\247\322\376\105\373\144\132\250\131\220\233\170\104\233\051
END
CKA_ISSUER MULTILINE_OCTAL
\060\116\061\013\060\011\006\003\125\004\006\023\002\116\117\061
\035\060\033\006\003\125\004\012\014\024\102\165\171\160\141\163
\163\040\101\123\055\071\070\063\061\066\063\063\062\067\061\040
\060\036\006\003\125\004\003\014\027\102\165\171\160\141\163\163
\040\103\154\141\163\163\040\062\040\122\157\157\164\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\002
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "Buypass Class 3 Root CA"
#
Issuer: CN=Buypass Class 3 Root CA,O=Buypass AS-983163327,C=NO
Serial Number: 2 (0x2)
Subject: CN=Buypass Class 3 Root CA,O=Buypass AS-983163327,C=NO
Not Valid Before: Tue Oct 26 08:28:58 2010
Not Valid After : Fri Oct 26 08:28:58 2040
Fingerprint (SHA-256):
ED:F7:EB:BC:A2:7A:2A:38:4D:38:7B:7D:40:10:C6:66:E2:ED:B4:84:3E:4C:29:B4:AE:1D:5B:93:32:E6:B2:4D
Fingerprint (SHA1): DA:FA:F7:FA:66:84:EC:06:8F:14:50:BD:C7:C2:81:A5:BC:A9:64:57
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Buypass Class 3 Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\116\061\013\060\011\006\003\125\004\006\023\002\116\117\061
\035\060\033\006\003\125\004\012\014\024\102\165\171\160\141\163
\163\040\101\123\055\071\070\063\061\066\063\063\062\067\061\040
\060\036\006\003\125\004\003\014\027\102\165\171\160\141\163\163
\040\103\154\141\163\163\040\063\040\122\157\157\164\040\103\101
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL

```

\060\116\061\013\060\011\006\003\125\004\006\023\002\116\117\061  
\035\060\033\006\003\125\004\012\014\024\102\165\171\160\141\163  
\163\040\101\123\055\071\070\063\061\066\063\063\062\067\061\040  
\060\036\006\003\125\004\003\014\027\102\165\171\160\141\163\163  
\040\103\154\141\163\163\040\063\040\122\157\157\164\040\103\101  
END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\002

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\131\060\202\003\101\240\003\002\001\002\002\001\002  
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060  
\116\061\013\060\011\006\003\125\004\006\023\002\116\117\061\035  
\060\033\006\003\125\004\012\014\024\102\165\171\160\141\163\163  
\040\101\123\055\071\070\063\061\066\063\063\062\067\061\040\060  
\036\006\003\125\004\003\014\027\102\165\171\160\141\163\163\040  
\103\154\141\163\163\040\063\040\122\157\157\164\040\103\101\060  
\036\027\015\061\060\061\060\062\066\060\070\062\070\065\070\132  
\027\015\064\060\061\060\062\066\060\070\062\070\065\070\132\060  
\116\061\013\060\011\006\003\125\004\006\023\002\116\117\061\035  
\060\033\006\003\125\004\012\014\024\102\165\171\160\141\163\163  
\040\101\123\055\071\070\063\061\066\063\063\062\067\061\040\060  
\036\006\003\125\004\003\014\027\102\165\171\160\141\163\163\040  
\103\154\141\163\163\040\063\040\122\157\157\164\040\103\101\060  
\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001\001  
\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001\000  
\245\332\012\225\026\120\343\225\362\136\235\166\061\006\062\172  
\233\361\020\166\270\000\232\265\122\066\315\044\107\260\237\030  
\144\274\232\366\372\325\171\330\220\142\114\042\057\336\070\075  
\326\340\250\351\034\054\333\170\021\351\216\150\121\025\162\307  
\363\063\207\344\240\135\013\134\340\127\007\052\060\365\315\304  
\067\167\050\115\030\221\346\277\325\122\375\161\055\160\076\347  
\306\304\212\343\360\050\013\364\166\230\241\213\207\125\262\072  
\023\374\267\076\047\067\216\042\343\250\117\052\357\140\273\075  
\267\071\303\016\001\107\231\135\022\117\333\103\372\127\241\355  
\371\235\276\021\107\046\133\023\230\253\135\026\212\260\067\034  
\127\235\105\377\210\226\066\277\273\312\007\173\157\207\143\327  
\320\062\152\326\135\154\014\361\263\156\071\342\153\061\056\071  
\000\047\024\336\070\300\354\031\146\206\022\350\235\162\026\023  
\144\122\307\251\067\034\375\202\060\355\204\030\035\364\256\134  
\377\160\023\000\353\261\365\063\172\113\326\125\370\005\215\113  
\151\260\365\263\050\066\134\024\304\121\163\115\153\013\361\064  
\007\333\027\071\327\334\050\173\153\365\237\363\056\301\117\027  
\052\020\363\314\312\350\353\375\153\253\056\232\237\055\202\156  
\004\324\122\001\223\055\075\206\374\176\374\337\357\102\035\246  
\153\357\271\040\306\367\275\240\247\225\375\247\346\211\044\330  
\314\214\064\154\342\043\057\331\022\032\041\271\125\221\157\013  
\221\171\031\014\255\100\210\013\160\342\172\322\016\330\150\110

\273\202\023\071\020\130\351\330\052\007\306\022\333\130\333\322  
\073\125\020\107\005\025\147\142\176\030\143\246\106\077\011\016  
\124\062\136\277\015\142\172\047\357\200\350\333\331\113\006\132  
\067\132\045\320\010\022\167\324\157\011\120\227\075\310\035\303  
\337\214\105\060\126\306\323\144\253\146\363\300\136\226\234\303  
\304\357\303\174\153\213\072\171\177\263\111\317\075\342\211\237  
\240\060\113\205\271\234\224\044\171\217\175\153\251\105\150\017  
\053\320\361\332\034\313\151\270\312\111\142\155\310\320\143\142  
\335\140\017\130\252\217\241\274\005\245\146\242\317\033\166\262  
\204\144\261\114\071\122\300\060\272\360\214\113\002\260\266\267  
\002\003\001\000\001\243\102\060\100\060\017\006\003\125\035\023  
\001\001\377\004\005\060\003\001\001\377\060\035\006\003\125\035  
\016\004\026\004\024\107\270\315\377\345\157\356\370\262\354\057  
\116\016\371\045\260\216\074\153\303\060\016\006\003\125\035\017  
\001\001\377\004\004\003\002\001\006\060\015\006\011\052\206\110  
\206\367\015\001\001\013\005\000\003\202\002\001\000\000\040\043  
\101\065\004\220\302\100\142\140\357\342\065\114\327\077\254\342  
\064\220\270\241\157\166\372\026\026\244\110\067\054\351\220\302  
\362\074\370\012\237\330\201\345\273\133\332\045\054\244\247\125  
\161\044\062\366\310\013\362\274\152\370\223\254\262\007\302\137  
\237\333\314\310\212\252\276\152\157\341\111\020\314\061\327\200  
\273\273\310\330\242\016\144\127\352\242\365\302\251\061\025\322  
\040\152\354\374\042\001\050\317\206\270\200\036\251\314\021\245  
\074\362\026\263\107\235\374\322\200\041\304\313\320\107\160\101  
\241\312\203\031\010\054\155\362\135\167\234\212\024\023\324\066  
\034\222\360\345\006\067\334\246\346\220\233\070\217\134\153\033  
\106\206\103\102\137\076\001\007\123\124\135\145\175\367\212\163  
\241\232\124\132\037\051\103\024\047\302\205\017\265\210\173\032  
\073\224\267\035\140\247\265\234\347\051\151\127\132\233\223\172  
\103\060\033\003\327\142\310\100\246\252\374\144\344\112\327\221  
\123\001\250\040\210\156\234\137\104\271\313\140\201\064\354\157  
\323\175\332\110\137\353\264\220\274\055\251\034\013\254\034\325  
\242\150\040\200\004\326\374\261\217\057\273\112\061\015\112\206  
\034\353\342\066\051\046\365\332\330\304\362\165\141\317\176\256  
\166\143\112\172\100\145\223\207\370\036\200\214\206\345\206\326  
\217\016\374\123\054\140\350\026\141\032\242\076\103\173\315\071  
\140\124\152\365\362\211\046\001\150\203\110\242\063\350\311\004  
\221\262\021\064\021\076\352\320\103\031\037\003\223\220\014\377  
\121\075\127\364\101\156\341\313\240\276\353\311\143\315\155\314  
\344\370\066\252\150\235\355\275\135\227\160\104\015\266\016\065  
\334\341\014\135\273\240\121\224\313\176\026\353\021\057\243\222  
\105\310\114\161\331\274\311\231\122\127\106\057\120\317\275\065  
\151\364\075\025\316\006\245\054\017\076\366\201\272\224\273\303  
\273\277\145\170\322\206\171\377\111\073\032\203\014\360\336\170  
\354\310\362\115\114\032\336\202\051\370\301\132\332\355\356\346  
\047\136\350\105\320\235\034\121\250\150\253\104\343\320\213\152  
\343\370\073\273\334\115\327\144\362\121\276\346\252\253\132\351  
\061\356\006\274\163\277\023\142\012\237\307\271\227



```

END
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "Buypass Class 3 Root CA"
Issuer: CN=Buypass Class 3 Root CA,O=Buypass AS-983163327,C=NO
Serial Number: 2 (0x2)
Subject: CN=Buypass Class 3 Root CA,O=Buypass AS-983163327,C=NO
Not Valid Before: Tue Oct 26 08:28:58 2010
Not Valid After : Fri Oct 26 08:28:58 2040
Fingerprint (SHA-256):
ED:F7:EB:BC:A2:7A:2A:38:4D:38:7B:7D:40:10:C6:66:E2:ED:B4:84:3E:4C:29:B4:AE:1D:5B:93:32:E6:B2:4D
Fingerprint (SHA1): DA:FA:F7:FA:66:84:EC:06:8F:14:50:BD:C7:C2:81:A5:BC:A9:64:57
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Buypass Class 3 Root CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\332\372\367\372\146\204\354\006\217\024\120\275\307\302\201\245
\274\251\144\127
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\075\073\030\236\054\144\132\350\325\210\316\016\371\067\302\354
END
CKA_ISSUER MULTILINE_OCTAL
\060\116\061\013\060\011\006\003\125\004\006\023\002\116\117\061
\035\060\033\006\003\125\004\012\014\024\102\165\171\160\141\163
\163\040\101\123\055\071\070\063\061\066\063\063\062\067\061\040
\060\036\006\003\125\004\003\014\027\102\165\171\160\141\163\163
\040\103\154\141\163\163\040\063\040\122\157\157\164\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\002
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "T-TeleSec GlobalRoot Class 3"
#
Issuer: CN=T-TeleSec GlobalRoot Class 3,OU=T-Systems Trust Center,O=T-Systems Enterprise Services
GmbH,C=DE
Serial Number: 1 (0x1)
Subject: CN=T-TeleSec GlobalRoot Class 3,OU=T-Systems Trust Center,O=T-Systems Enterprise Services

```

GmbH,C=DE

# Not Valid Before: Wed Oct 01 10:29:56 2008

# Not Valid After : Sat Oct 01 23:59:59 2033

# Fingerprint (SHA-256):

FD:73:DA:D3:1C:64:4F:F1:B4:3B:EF:0C:CD:DA:96:71:0B:9C:D9:87:5E:CA:7E:31:70:7A:F3:E9:6D:52:2B:BD

# Fingerprint (SHA1): 55:A6:72:3E:CB:F2:EC:CD:C3:23:74:70:19:9D:2A:BE:11:E3:81:D1

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "T-TeleSec GlobalRoot Class 3"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\201\202\061\013\060\011\006\003\125\004\006\023\002\104\105  
\061\053\060\051\006\003\125\004\012\014\042\124\055\123\171\163  
\164\145\155\163\040\105\156\164\145\162\160\162\151\163\145\040  
\123\145\162\166\151\143\145\163\040\107\155\142\110\061\037\060  
\035\006\003\125\004\013\014\026\124\055\123\171\163\164\145\155  
\163\040\124\162\165\163\164\040\103\145\156\164\145\162\061\045  
\060\043\006\003\125\004\003\014\034\124\055\124\145\154\145\123  
\145\143\040\107\154\157\142\141\154\122\157\157\164\040\103\154  
\141\163\163\040\063

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\202\061\013\060\011\006\003\125\004\006\023\002\104\105  
\061\053\060\051\006\003\125\004\012\014\042\124\055\123\171\163  
\164\145\155\163\040\105\156\164\145\162\160\162\151\163\145\040  
\123\145\162\166\151\143\145\163\040\107\155\142\110\061\037\060  
\035\006\003\125\004\013\014\026\124\055\123\171\163\164\145\155  
\163\040\124\162\165\163\164\040\103\145\156\164\145\162\061\045  
\060\043\006\003\125\004\003\014\034\124\055\124\145\154\145\123  
\145\143\040\107\154\157\142\141\154\122\157\157\164\040\103\154  
\141\163\163\040\063

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\001

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\303\060\202\002\253\240\003\002\001\002\002\001\001  
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060  
\201\202\061\013\060\011\006\003\125\004\006\023\002\104\105\061  
\053\060\051\006\003\125\004\012\014\042\124\055\123\171\163\164  
\145\155\163\040\105\156\164\145\162\160\162\151\163\145\040\123  
\145\162\166\151\143\145\163\040\107\155\142\110\061\037\060\035  
\006\003\125\004\013\014\026\124\055\123\171\163\164\145\155\163  
\040\124\162\165\163\164\040\103\145\156\164\145\162\061\045\060  
\043\006\003\125\004\003\014\034\124\055\124\145\154\145\123\145

\143\040\107\154\157\142\141\154\122\157\157\164\040\103\154\141  
\163\163\040\063\060\036\027\015\060\070\061\060\060\061\061\060  
\062\071\065\066\132\027\015\063\063\061\060\060\061\062\063\065  
\071\065\071\132\060\201\202\061\013\060\011\006\003\125\004\006  
\023\002\104\105\061\053\060\051\006\003\125\004\012\014\042\124  
\055\123\171\163\164\145\155\163\040\105\156\164\145\162\160\162  
\151\163\145\040\123\145\162\166\151\143\145\163\040\107\155\142  
\110\061\037\060\035\006\003\125\004\013\014\026\124\055\123\171  
\163\164\145\155\163\040\124\162\165\163\164\040\103\145\156\164  
\145\162\061\045\060\043\006\003\125\004\003\014\034\124\055\124  
\145\154\145\123\145\143\040\107\154\157\142\141\154\122\157\157  
\164\040\103\154\141\163\163\040\063\060\202\001\042\060\015\006  
\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017  
\000\060\202\001\012\002\202\001\001\000\275\165\223\360\142\042  
\157\044\256\340\172\166\254\175\275\331\044\325\270\267\374\315  
\360\102\340\353\170\210\126\136\233\232\124\035\115\014\212\366  
\323\317\160\364\122\265\330\223\004\343\106\206\161\101\112\053  
\360\052\054\125\003\326\110\303\340\071\070\355\362\134\074\077  
\104\274\223\075\141\253\116\315\015\276\360\040\047\130\016\104  
\177\004\032\207\245\327\226\024\066\220\320\111\173\241\165\373  
\032\153\163\261\370\316\251\011\054\362\123\325\303\024\104\270  
\206\245\366\213\053\071\332\243\063\124\331\372\162\032\367\042  
\025\034\210\221\153\177\146\345\303\152\200\260\044\363\337\206  
\105\210\375\031\177\165\207\037\037\261\033\012\163\044\133\271  
\145\340\054\124\310\140\323\146\027\077\341\314\124\063\163\221  
\002\072\246\177\173\166\071\242\037\226\266\070\256\265\310\223  
\164\035\236\271\264\345\140\235\057\126\321\340\353\136\133\114  
\022\160\014\154\104\040\253\021\330\364\031\366\322\234\122\067  
\347\372\266\302\061\073\112\324\024\231\255\307\032\365\135\137  
\372\007\270\174\015\037\326\203\036\263\002\003\001\000\001\243  
\102\060\100\060\017\006\003\125\035\023\001\001\377\004\005\060  
\003\001\001\377\060\016\006\003\125\035\017\001\001\377\004\004  
\003\002\001\006\060\035\006\003\125\035\016\004\026\004\024\265  
\003\367\166\073\141\202\152\022\252\030\123\353\003\041\224\277  
\376\316\312\060\015\006\011\052\206\110\206\367\015\001\001\013  
\005\000\003\202\001\001\000\126\075\357\224\325\275\332\163\262  
\130\276\256\220\255\230\047\227\376\001\261\260\122\000\270\115  
\344\033\041\164\033\176\300\356\136\151\052\045\257\134\326\035  
\332\322\171\311\363\227\051\340\206\207\336\004\131\017\361\131  
\324\144\205\113\231\257\045\004\036\311\106\251\227\336\202\262  
\033\160\237\234\366\257\161\061\335\173\005\245\054\323\271\312  
\107\366\312\362\366\347\255\271\110\077\274\026\267\301\155\364  
\352\011\257\354\363\265\347\005\236\246\036\212\123\121\326\223  
\201\314\164\223\366\271\332\246\045\005\164\171\132\176\100\076  
\202\113\046\021\060\156\341\077\101\307\107\000\065\325\365\323  
\367\124\076\201\075\332\111\152\232\263\357\020\075\346\353\157  
\321\310\042\107\313\314\317\001\061\222\331\030\343\042\276\011  
\036\032\076\132\262\344\153\014\124\172\175\103\116\270\211\245

```
\173\327\242\075\226\206\314\362\046\064\055\152\222\235\232\032
\320\060\342\135\116\004\260\137\213\040\176\167\301\075\225\202
\321\106\232\073\074\170\270\157\241\320\015\144\242\170\036\051
\116\223\303\244\124\024\133
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Trust for "T-TeleSec GlobalRoot Class 3"
```

```
Issuer: CN=T-TeleSec GlobalRoot Class 3,OU=T-Systems Trust Center,O=T-Systems Enterprise Services
GmbH,C=DE
```

```
Serial Number: 1 (0x1)
```

```
Subject: CN=T-TeleSec GlobalRoot Class 3,OU=T-Systems Trust Center,O=T-Systems Enterprise Services
GmbH,C=DE
```

```
Not Valid Before: Wed Oct 01 10:29:56 2008
```

```
Not Valid After : Sat Oct 01 23:59:59 2033
```

```
Fingerprint (SHA-256):
```

```
FD:73:DA:D3:1C:64:4F:F1:B4:3B:EF:0C:CD:DA:96:71:0B:9C:D9:87:5E:CA:7E:31:70:7A:F3:E9:6D:52:2B:BD
```

```
Fingerprint (SHA1): 55:A6:72:3E:CB:F2:EC:CD:C3:23:74:70:19:9D:2A:BE:11:E3:81:D1
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "T-TeleSec GlobalRoot Class 3"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\125\246\162\076\313\362\354\315\303\043\164\160\031\235\052\276
\021\343\201\321
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\312\373\100\250\116\071\222\212\035\376\216\057\304\047\352\357
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\201\202\061\013\060\011\006\003\125\004\006\023\002\104\105
\061\053\060\051\006\003\125\004\012\014\042\124\055\123\171\163
\164\145\155\163\040\105\156\164\145\162\160\162\151\163\145\040
\123\145\162\166\151\143\145\163\040\107\155\142\110\061\037\060
\035\006\003\125\004\013\014\026\124\055\123\171\163\164\145\155
\163\040\124\162\165\163\164\040\103\145\156\164\145\162\061\045
\060\043\006\003\125\004\003\014\034\124\055\124\145\154\145\123
\145\143\040\107\154\157\142\141\154\122\157\157\164\040\103\154
\141\163\163\040\063
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\001\001
```

END

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

```
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

```

Certificate "D-TRUST Root Class 3 CA 2 2009"

Issuer: CN=D-TRUST Root Class 3 CA 2 2009,O=D-Trust GmbH,C=DE
Serial Number: 623603 (0x983f3)
Subject: CN=D-TRUST Root Class 3 CA 2 2009,O=D-Trust GmbH,C=DE
Not Valid Before: Thu Nov 05 08:35:58 2009
Not Valid After : Mon Nov 05 08:35:58 2029
Fingerprint (SHA-256):
49:E7:A4:42:AC:F0:EA:62:87:05:00:54:B5:25:64:B6:50:E4:F4:9E:42:E3:48:D6:AA:38:E0:39:E9:57:B1:C1
Fingerprint (SHA1): 58:E8:AB:B0:36:15:33:FB:80:F7:9B:1B:6D:29:D3:FF:8D:5F:00:F0
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "D-TRUST Root Class 3 CA 2 2009"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\115\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165\163
\164\040\107\155\142\110\061\047\060\045\006\003\125\004\003\014
\036\104\055\124\122\125\123\124\040\122\157\157\164\040\103\154
\141\163\163\040\063\040\103\101\040\062\040\062\060\060\071
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\115\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165\163
\164\040\107\155\142\110\061\047\060\045\006\003\125\004\003\014
\036\104\055\124\122\125\123\124\040\122\157\157\164\040\103\154
\141\163\163\040\063\040\103\101\040\062\040\062\060\060\071
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\003\011\203\363
END
CKA_VALUE MULTILINE_OCTAL
\060\202\004\063\060\202\003\033\240\003\002\001\002\002\003\011
\203\363\060\015\006\011\052\206\110\206\367\015\001\001\013\005
\000\060\115\061\013\060\011\006\003\125\004\006\023\002\104\105
\061\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165
\163\164\040\107\155\142\110\061\047\060\045\006\003\125\004\003
\014\036\104\055\124\122\125\123\124\040\122\157\157\164\040\103
\154\141\163\163\040\063\040\103\101\040\062\040\062\060\060\071
\060\036\027\015\060\071\061\061\060\065\060\070\063\065\065\070
\132\027\015\062\071\061\061\060\065\060\070\063\065\065\070\132
```

\060\115\061\013\060\011\006\003\125\004\006\023\002\104\105\061  
\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165\163  
\164\040\107\155\142\110\061\047\060\045\006\003\125\004\003\014  
\036\104\055\124\122\125\123\124\040\122\157\157\164\040\103\154  
\141\163\163\040\063\040\103\101\040\062\040\062\060\060\071\060  
\202\001\042\060\015\006\011\052\206\110\206\367\015\001\001\001  
\005\000\003\202\001\017\000\060\202\001\012\002\202\001\001\000  
\323\262\112\317\172\107\357\165\233\043\372\072\057\326\120\105  
\211\065\072\306\153\333\376\333\000\150\250\340\003\021\035\067  
\120\010\237\115\112\150\224\065\263\123\321\224\143\247\040\126  
\257\336\121\170\354\052\075\363\110\110\120\076\012\337\106\125  
\213\047\155\303\020\115\015\221\122\103\330\207\340\135\116\066  
\265\041\312\137\071\100\004\137\133\176\314\243\306\053\251\100  
\036\331\066\204\326\110\363\222\036\064\106\040\044\301\244\121  
\216\112\032\357\120\077\151\135\031\177\105\303\307\001\217\121  
\311\043\350\162\256\264\274\126\011\177\022\313\034\261\257\051  
\220\012\311\125\314\017\323\264\032\355\107\065\132\112\355\234  
\163\004\041\320\252\275\014\023\265\000\312\046\154\304\153\014  
\224\132\225\224\332\120\232\361\377\245\053\146\061\244\311\070  
\240\337\035\037\270\011\056\363\247\350\147\122\253\225\037\340  
\106\076\330\244\303\312\132\305\061\200\350\110\232\237\224\151  
\376\031\335\330\163\174\201\312\226\336\216\355\263\062\005\145  
\204\064\346\346\375\127\020\265\137\166\277\057\260\020\015\305  
\002\003\001\000\001\243\202\001\032\060\202\001\026\060\017\006  
\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060\035  
\006\003\125\035\016\004\026\004\024\375\332\024\304\237\060\336  
\041\275\036\102\071\374\253\143\043\111\340\361\204\060\016\006  
\003\125\035\017\001\001\377\004\004\003\002\001\006\060\201\323  
\006\003\125\035\037\004\201\313\060\201\310\060\201\200\240\176  
\240\174\206\172\154\144\141\160\072\057\057\144\151\162\145\143  
\164\157\162\171\056\144\055\164\162\165\163\164\056\156\145\164  
\057\103\116\075\104\055\124\122\125\123\124\045\062\060\122\157  
\157\164\045\062\060\103\154\141\163\163\045\062\060\063\045\062  
\060\103\101\045\062\060\062\045\062\060\062\060\060\071\054\117  
\075\104\055\124\162\165\163\164\045\062\060\107\155\142\110\054  
\103\075\104\105\077\143\145\162\164\151\146\151\143\141\164\145  
\162\145\166\157\143\141\164\151\157\156\154\151\163\164\060\103  
\240\101\240\077\206\075\150\164\164\160\072\057\057\167\167\167  
\056\144\055\164\162\165\163\164\056\156\145\164\057\143\162\154  
\057\144\055\164\162\165\163\164\137\162\157\157\164\137\143\154  
\141\163\163\137\063\137\143\141\137\062\137\062\060\060\071\056  
\143\162\154\060\015\006\011\052\206\110\206\367\015\001\001\013  
\005\000\003\202\001\001\000\177\227\333\060\310\337\244\234\175  
\041\172\200\160\316\024\022\151\210\024\225\140\104\001\254\262  
\351\060\117\233\120\302\146\330\176\215\060\265\160\061\351\342  
\151\307\363\160\333\040\025\206\320\015\360\276\254\001\165\204  
\316\176\237\115\277\267\140\073\234\363\312\035\342\136\150\330  
\243\235\227\345\100\140\322\066\041\376\320\264\270\027\332\164

```
\243\177\324\337\260\230\002\254\157\153\153\054\045\044\162\241
\145\356\045\132\345\346\062\347\362\337\253\111\372\363\220\151
\043\333\004\331\347\134\130\374\145\324\227\276\314\374\056\012
\314\045\052\065\004\370\140\221\025\165\075\101\377\043\037\031
\310\154\353\202\123\004\246\344\114\042\115\215\214\272\316\133
\163\354\144\124\120\155\321\234\125\373\151\303\066\303\214\274
\074\205\246\153\012\046\015\340\223\230\140\256\176\306\044\227
\212\141\137\221\216\146\222\011\207\066\315\213\233\055\076\366
\121\324\120\324\131\050\275\203\362\314\050\173\123\206\155\330
\046\210\160\327\352\221\315\076\271\312\300\220\156\132\306\136
\164\145\327\134\376\243\342
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Trust for "D-TRUST Root Class 3 CA 2 2009"
```

```
Issuer: CN=D-TRUST Root Class 3 CA 2 2009,O=D-Trust GmbH,C=DE
```

```
Serial Number: 623603 (0x983f3)
```

```
Subject: CN=D-TRUST Root Class 3 CA 2 2009,O=D-Trust GmbH,C=DE
```

```
Not Valid Before: Thu Nov 05 08:35:58 2009
```

```
Not Valid After : Mon Nov 05 08:35:58 2029
```

```
Fingerprint (SHA-256):
```

```
49:E7:A4:42:AC:F0:EA:62:87:05:00:54:B5:25:64:B6:50:E4:F4:9E:42:E3:48:D6:AA:38:E0:39:E9:57:B1:C1
```

```
Fingerprint (SHA1): 58:E8:AB:B0:36:15:33:FB:80:F7:9B:1B:6D:29:D3:FF:8D:5F:00:F0
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "D-TRUST Root Class 3 CA 2 2009"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\130\350\253\260\066\025\063\373\200\367\233\033\155\051\323\377
\215\137\000\360
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\315\340\045\151\215\107\254\234\211\065\220\367\375\121\075\057
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\115\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165\163
\164\040\107\155\142\110\061\047\060\045\006\003\125\004\003\014
\036\104\055\124\122\125\123\124\040\122\157\157\164\040\103\154
\141\163\163\040\063\040\103\101\040\062\040\062\060\060\071
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\003\011\203\363
```

END

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "D-TRUST Root Class 3 CA 2 EV 2009"

#

# Issuer: CN=D-TRUST Root Class 3 CA 2 EV 2009,O=D-Trust GmbH,C=DE

# Serial Number: 623604 (0x983f4)

# Subject: CN=D-TRUST Root Class 3 CA 2 EV 2009,O=D-Trust GmbH,C=DE

# Not Valid Before: Thu Nov 05 08:50:46 2009

# Not Valid After : Mon Nov 05 08:50:46 2029

# Fingerprint (SHA-256):

EE:C5:49:6B:98:8C:E9:86:25:B9:34:09:2E:EC:29:08:BE:D0:B0:F3:16:C2:D4:73:0C:84:EA:F1:F3:D3:48:81

# Fingerprint (SHA1): 96:C9:1B:0B:95:B4:10:98:42:FA:D0:D8:22:79:FE:60:FA:B9:16:83

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "D-TRUST Root Class 3 CA 2 EV 2009"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\120\061\013\060\011\006\003\125\004\006\023\002\104\105\061  
\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165\163  
\164\040\107\155\142\110\061\052\060\050\006\003\125\004\003\014  
\041\104\055\124\122\125\123\124\040\122\157\157\164\040\103\154  
\141\163\163\040\063\040\103\101\040\062\040\105\126\040\062\060  
\060\071

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\120\061\013\060\011\006\003\125\004\006\023\002\104\105\061  
\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165\163  
\164\040\107\155\142\110\061\052\060\050\006\003\125\004\003\014  
\041\104\055\124\122\125\123\124\040\122\157\157\164\040\103\154  
\141\163\163\040\063\040\103\101\040\062\040\105\126\040\062\060  
\060\071

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\003\011\203\364

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\103\060\202\003\053\240\003\002\001\002\002\003\011  
\203\364\060\015\006\011\052\206\110\206\367\015\001\001\013\005  
\000\060\120\061\013\060\011\006\003\125\004\006\023\002\104\105  
\061\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165  
\163\164\040\107\155\142\110\061\052\060\050\006\003\125\004\003  
\014\041\104\055\124\122\125\123\124\040\122\157\157\164\040\103



\154\141\163\163\040\063\040\103\101\040\062\040\105\126\040\062  
\060\060\071\060\036\027\015\060\071\061\061\060\065\060\070\065  
\060\064\066\132\027\015\062\071\061\061\060\065\060\070\065\060  
\064\066\132\060\120\061\013\060\011\006\003\125\004\006\023\002  
\104\105\061\025\060\023\006\003\125\004\012\014\014\104\055\124  
\162\165\163\164\040\107\155\142\110\061\052\060\050\006\003\125  
\004\003\014\041\104\055\124\122\125\123\124\040\122\157\157\164  
\040\103\154\141\163\163\040\063\040\103\101\040\062\040\105\126  
\040\062\060\060\071\060\202\001\042\060\015\006\011\052\206\110  
\206\367\015\001\001\001\005\000\003\202\001\017\000\060\202\001  
\012\002\202\001\001\000\231\361\204\064\160\272\057\267\060\240  
\216\275\174\004\317\276\142\274\231\375\202\227\322\172\012\147  
\226\070\011\366\020\116\225\042\163\231\215\332\025\055\347\005  
\374\031\163\042\267\216\230\000\274\074\075\254\241\154\373\326  
\171\045\113\255\360\314\144\332\210\076\051\270\017\011\323\064  
\335\063\365\142\321\341\315\031\351\356\030\117\114\130\256\342  
\036\326\014\133\025\132\330\072\270\304\030\144\036\343\063\262  
\265\211\167\116\014\277\331\224\153\023\227\157\022\243\376\231  
\251\004\314\025\354\140\150\066\355\010\173\267\365\277\223\355  
\146\061\203\214\306\161\064\207\116\027\352\257\213\221\215\034  
\126\101\256\042\067\136\067\362\035\331\321\055\015\057\151\121  
\247\276\146\246\212\072\052\275\307\032\261\341\024\360\276\072  
\035\271\317\133\261\152\376\264\261\106\040\242\373\036\073\160  
\357\223\230\175\214\163\226\362\305\357\205\160\255\051\046\374  
\036\004\076\034\240\330\017\313\122\203\142\174\356\213\123\225  
\220\251\127\242\352\141\005\330\371\115\304\047\372\156\255\355  
\371\327\121\367\153\245\002\003\001\000\001\243\202\001\044\060  
\202\001\040\060\017\006\003\125\035\023\001\001\377\004\005\060  
\003\001\001\377\060\035\006\003\125\035\016\004\026\004\024\323  
\224\212\114\142\023\052\031\056\314\257\162\212\175\066\327\232  
\034\334\147\060\016\006\003\125\035\017\001\001\377\004\004\003  
\002\001\006\060\201\335\006\003\125\035\037\004\201\325\060\201  
\322\060\201\207\240\201\204\240\201\201\206\177\154\144\141\160  
\072\057\057\144\151\162\145\143\164\157\162\171\056\144\055\164  
\162\165\163\164\056\156\145\164\057\103\116\075\104\055\124\122  
\125\123\124\045\062\060\122\157\157\164\045\062\060\103\154\141  
\163\163\045\062\060\063\045\062\060\103\101\045\062\060\062\045  
\062\060\105\126\045\062\060\062\060\060\071\054\117\075\104\055  
\124\162\165\163\164\045\062\060\107\155\142\110\054\103\075\104  
\105\077\143\145\162\164\151\146\151\143\141\164\145\162\145\166  
\157\143\141\164\151\157\156\154\151\163\164\060\106\240\104\240  
\102\206\100\150\164\164\160\072\057\057\167\167\167\056\144\055  
\164\162\165\163\164\056\156\145\164\057\143\162\154\057\144\055  
\164\162\165\163\164\137\162\157\157\164\137\143\154\141\163\163  
\137\063\137\143\141\137\062\137\145\166\137\062\060\060\071\056  
\143\162\154\060\015\006\011\052\206\110\206\367\015\001\001\013  
\005\000\003\202\001\001\000\064\355\173\132\074\244\224\210\357  
\032\021\165\007\057\263\376\074\372\036\121\046\353\207\366\051

```
\336\340\361\324\306\044\011\351\301\317\125\033\264\060\331\316
\032\376\006\121\246\025\244\055\357\262\113\277\040\050\045\111
\321\246\066\167\064\350\144\337\122\261\021\307\163\172\315\071
\236\302\255\214\161\041\362\132\153\257\337\074\116\125\257\262
\204\145\024\211\271\167\313\052\061\276\317\243\155\317\157\110
\224\062\106\157\347\161\214\240\246\204\031\067\007\362\003\105
\011\053\206\165\174\337\137\151\127\000\333\156\330\246\162\042
\113\120\324\165\230\126\337\267\030\377\103\103\120\256\172\104
\173\360\171\121\327\103\075\247\323\201\323\360\311\117\271\332
\306\227\206\320\202\303\344\102\155\376\260\342\144\116\016\046
\347\100\064\046\265\010\211\327\010\143\143\070\047\165\036\063
\352\156\250\335\237\231\117\164\115\201\211\200\113\335\232\227
\051\134\057\276\201\101\271\214\377\352\175\140\006\236\315\327
\075\323\056\243\025\274\250\346\046\345\157\303\334\270\003\041
\352\237\026\361\054\124\265
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Trust for "D-TRUST Root Class 3 CA 2 EV 2009"
```

```
Issuer: CN=D-TRUST Root Class 3 CA 2 EV 2009,O=D-Trust GmbH,C=DE
```

```
Serial Number: 623604 (0x983f4)
```

```
Subject: CN=D-TRUST Root Class 3 CA 2 EV 2009,O=D-Trust GmbH,C=DE
```

```
Not Valid Before: Thu Nov 05 08:50:46 2009
```

```
Not Valid After : Mon Nov 05 08:50:46 2029
```

```
Fingerprint (SHA-256):
```

```
EE:C5:49:6B:98:8C:E9:86:25:B9:34:09:2E:EC:29:08:BE:D0:B0:F3:16:C2:D4:73:0C:84:EA:F1:F3:D3:48:81
```

```
Fingerprint (SHA1): 96:C9:1B:0B:95:B4:10:98:42:FA:D0:D8:22:79:FE:60:FA:B9:16:83
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "D-TRUST Root Class 3 CA 2 EV 2009"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\226\311\033\013\225\264\020\230\102\372\320\330\042\171\376\140
```

```
\372\271\026\203
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\252\306\103\054\136\055\315\304\064\300\120\117\021\002\117\266
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\120\061\013\060\011\006\003\125\004\006\023\002\104\105\061
```

```
\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165\163
```

```
\164\040\107\155\142\110\061\052\060\050\006\003\125\004\003\014
```

```
\041\104\055\124\122\125\123\124\040\122\157\157\164\040\103\154
```

```
\141\163\163\040\063\040\103\101\040\062\040\105\126\040\062\060
```

```
\060\071
```

```

END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\003\011\203\364
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "CA Disig Root R2"
#
Issuer: CN=CA Disig Root R2,O=Disig a.s.,L=Bratislava,C=SK
Serial Number:00:92:b8:88:db:b0:8a:c1:63
Subject: CN=CA Disig Root R2,O=Disig a.s.,L=Bratislava,C=SK
Not Valid Before: Thu Jul 19 09:15:30 2012
Not Valid After : Sat Jul 19 09:15:30 2042
Fingerprint (SHA-256):
E2:3D:4A:03:6D:7B:70:E9:F5:95:B1:42:20:79:D2:B9:1E:DF:BB:1F:B6:51:A0:63:3E:AA:8A:9D:C5:F8:07:03
Fingerprint (SHA1): B5:61:EB:EA:A4:DE:E4:25:4B:69:1A:98:A5:57:47:C2:34:C7:D9:71
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "CA Disig Root R2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\122\061\013\060\011\006\003\125\004\006\023\002\123\113\061
\023\060\021\006\003\125\004\007\023\012\102\162\141\164\151\163
\154\141\166\141\061\023\060\021\006\003\125\004\012\023\012\104
\151\163\151\147\040\141\056\163\056\061\031\060\027\006\003\125
\004\003\023\020\103\101\040\104\151\163\151\147\040\122\157\157
\164\040\122\062
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\122\061\013\060\011\006\003\125\004\006\023\002\123\113\061
\023\060\021\006\003\125\004\007\023\012\102\162\141\164\151\163
\154\141\166\141\061\023\060\021\006\003\125\004\012\023\012\104
\151\163\151\147\040\141\056\163\056\061\031\060\027\006\003\125
\004\003\023\020\103\101\040\104\151\163\151\147\040\122\157\157
\164\040\122\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\011\000\222\270\210\333\260\212\301\143
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\151\060\202\003\121\240\003\002\001\002\002\011\000

```

\222\270\210\333\260\212\301\143\060\015\006\011\052\206\110\206  
\367\015\001\001\013\005\000\060\122\061\013\060\011\006\003\125  
\004\006\023\002\123\113\061\023\060\021\006\003\125\004\007\023  
\012\102\162\141\164\151\163\154\141\166\141\061\023\060\021\006  
\003\125\004\012\023\012\104\151\163\151\147\040\141\056\163\056  
\061\031\060\027\006\003\125\004\003\023\020\103\101\040\104\151  
\163\151\147\040\122\157\157\164\040\122\062\060\036\027\015\061  
\062\060\067\061\071\060\071\061\065\063\060\132\027\015\064\062  
\060\067\061\071\060\071\061\065\063\060\132\060\122\061\013\060  
\011\006\003\125\004\006\023\002\123\113\061\023\060\021\006\003  
\125\004\007\023\012\102\162\141\164\151\163\154\141\166\141\061  
\023\060\021\006\003\125\004\012\023\012\104\151\163\151\147\040  
\141\056\163\056\061\031\060\027\006\003\125\004\003\023\020\103  
\101\040\104\151\163\151\147\040\122\157\157\164\040\122\062\060  
\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001\001  
\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001\000  
\242\243\304\000\011\326\205\135\055\155\024\366\302\303\163\236  
\065\302\161\125\176\201\373\253\106\120\340\301\174\111\170\346  
\253\171\130\074\332\377\174\034\237\330\227\002\170\076\153\101  
\004\351\101\275\276\003\054\105\366\057\144\324\253\135\243\107  
\075\144\233\351\150\232\306\314\033\077\272\276\262\213\064\002  
\056\230\125\031\374\214\157\252\137\332\114\316\115\003\041\243  
\330\322\064\223\126\226\313\114\014\000\026\074\137\032\315\310  
\307\154\246\255\323\061\247\274\350\345\341\146\326\322\373\003  
\264\101\145\311\020\256\016\005\143\306\200\152\151\060\375\322  
\356\220\357\015\047\337\237\225\163\364\341\045\332\154\026\336  
\101\070\064\352\213\374\321\350\004\024\141\055\101\176\254\307  
\167\116\313\121\124\373\136\222\030\033\004\132\150\306\311\304  
\372\267\023\240\230\267\021\053\267\326\127\314\174\236\027\321  
\313\045\376\206\116\044\056\126\014\170\115\236\001\022\246\053  
\247\001\145\156\174\142\035\204\204\337\352\300\153\265\245\052  
\225\203\303\123\021\014\163\035\013\262\106\220\321\102\072\316  
\100\156\225\255\377\306\224\255\156\227\204\216\175\157\236\212  
\200\015\111\155\163\342\173\222\036\303\363\301\363\353\056\005  
\157\331\033\317\067\166\004\310\264\132\344\027\247\313\335\166  
\037\320\031\166\350\054\005\263\326\234\064\330\226\334\141\207  
\221\005\344\104\010\063\301\332\271\010\145\324\256\262\066\015  
\353\272\070\272\014\345\233\236\353\215\146\335\231\317\326\211  
\101\366\004\222\212\051\051\155\153\072\034\347\165\175\002\161  
\016\363\300\347\275\313\031\335\235\140\262\302\146\140\266\261  
\004\356\311\346\206\271\232\146\100\250\347\021\355\201\105\003  
\213\366\147\131\350\301\006\021\275\335\317\200\002\117\145\100  
\170\134\107\120\310\233\346\037\201\173\344\104\250\133\205\232  
\342\336\132\325\307\371\072\104\146\113\344\062\124\174\344\154  
\234\263\016\075\027\242\262\064\022\326\176\262\250\111\273\321  
\172\050\100\276\242\026\037\337\344\067\037\021\163\373\220\012  
\145\103\242\015\174\370\006\001\125\063\175\260\015\270\364\365  
\256\245\102\127\174\066\021\214\173\136\304\003\235\214\171\235

\002\003\001\000\001\243\102\060\100\060\017\006\003\125\035\023  
\001\001\377\004\005\060\003\001\001\377\060\016\006\003\125\035  
\017\001\001\377\004\004\003\002\001\006\060\035\006\003\125\035  
\016\004\026\004\024\265\231\370\257\260\224\365\343\040\326\012  
\255\316\116\126\244\056\156\102\355\060\015\006\011\052\206\110  
\206\367\015\001\001\013\005\000\003\202\002\001\000\046\006\136  
\160\347\145\063\310\202\156\331\234\027\072\033\172\146\262\001  
\366\170\073\151\136\057\352\377\116\371\050\303\230\052\141\114  
\264\044\022\212\175\155\021\024\367\234\265\312\346\274\236\047  
\216\114\031\310\251\275\172\300\327\066\016\155\205\162\156\250  
\306\242\155\366\372\163\143\177\274\156\171\010\034\235\212\237  
\032\212\123\246\330\273\331\065\125\261\021\305\251\003\263\126  
\073\271\204\223\042\136\176\301\366\022\122\213\352\054\147\274  
\376\066\114\365\270\317\321\263\111\222\073\323\051\016\231\033  
\226\367\141\270\073\304\053\266\170\154\264\043\157\360\375\323  
\262\136\165\037\231\225\250\254\366\332\341\305\061\173\373\321  
\106\263\322\274\147\264\142\124\272\011\367\143\260\223\242\232  
\371\351\122\056\213\140\022\253\374\365\140\126\357\020\134\213  
\304\032\102\334\203\133\144\016\313\265\274\326\117\301\174\074  
\156\215\023\155\373\173\353\060\320\334\115\257\305\325\266\245  
\114\133\161\311\350\061\276\350\070\006\110\241\032\342\352\322  
\336\022\071\130\032\377\200\016\202\165\346\267\311\007\154\016  
\357\377\070\361\230\161\304\267\177\016\025\320\045\151\275\042  
\235\053\355\005\366\106\107\254\355\300\360\324\073\342\354\356  
\226\133\220\023\116\036\126\072\353\260\357\226\273\226\043\021  
\272\362\103\206\164\144\225\310\050\165\337\035\065\272\322\067  
\203\070\123\070\066\073\317\154\351\371\153\016\320\373\004\350  
\117\167\327\145\001\170\206\014\172\076\041\142\361\177\143\161  
\014\311\237\104\333\250\047\242\165\276\156\201\076\327\300\353  
\033\230\017\160\134\064\262\212\314\300\205\030\353\156\172\263  
\367\132\241\007\277\251\102\222\363\140\042\227\344\024\241\007  
\233\116\166\300\216\175\375\244\045\307\107\355\377\037\163\254  
\314\303\245\351\157\012\216\233\145\302\120\205\265\243\240\123  
\022\314\125\207\141\363\201\256\020\106\141\275\104\041\270\302  
\075\164\317\176\044\065\372\034\007\016\233\075\042\312\357\061  
\057\214\254\022\275\357\100\050\374\051\147\237\262\023\117\146  
\044\304\123\031\351\036\051\025\357\346\155\260\177\055\147\375  
\363\154\033\165\106\243\345\112\027\351\244\327\013

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "CA Disig Root R2"  
# Issuer: CN=CA Disig Root R2,O=Disig a.s.,L=Bratislava,C=SK  
# Serial Number:00:92:b8:88:db:b0:8a:c1:63  
# Subject: CN=CA Disig Root R2,O=Disig a.s.,L=Bratislava,C=SK  
# Not Valid Before: Thu Jul 19 09:15:30 2012

```

Not Valid After : Sat Jul 19 09:15:30 2042
Fingerprint (SHA-256):
E2:3D:4A:03:6D:7B:70:E9:F5:95:B1:42:20:79:D2:B9:1E:DF:BB:1F:B6:51:A0:63:3E:AA:8A:9D:C5:F8:07:03
Fingerprint (SHA1): B5:61:EB:EA:A4:DE:E4:25:4B:69:1A:98:A5:57:47:C2:34:C7:D9:71
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "CA Disig Root R2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\265\141\353\352\244\336\344\045\113\151\032\230\245\127\107\302
\064\307\331\161
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\046\001\373\330\047\247\027\232\105\124\070\032\103\001\073\003
END
CKA_ISSUER MULTILINE_OCTAL
\060\122\061\013\060\011\006\003\125\004\006\023\002\123\113\061
\023\060\021\006\003\125\004\007\023\012\102\162\141\164\151\163
\154\141\166\141\061\023\060\021\006\003\125\004\012\023\012\104
\151\163\151\147\040\141\056\163\056\061\031\060\027\006\003\125
\004\003\023\020\103\101\040\104\151\163\151\147\040\122\157\157
\164\040\122\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\011\000\222\270\210\333\260\212\301\143
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "ACCVRAIZ1"
#
Issuer: C=ES,O=ACCV,OU=PKIACCV,CN=ACCVRAIZ1
Serial Number:5e:c3:b7:a6:43:7f:a4:e0
Subject: C=ES,O=ACCV,OU=PKIACCV,CN=ACCVRAIZ1
Not Valid Before: Thu May 05 09:37:37 2011
Not Valid After : Tue Dec 31 09:37:37 2030
Fingerprint (SHA-256):
9A:6E:C0:12:E1:A7:DA:9D:BE:34:19:4D:47:8A:D7:C0:DB:18:22:FB:07:1D:F1:29:81:49:6E:D1:04:38:41:13
Fingerprint (SHA1): 93:05:7A:88:15:C6:4F:CE:88:2F:FA:91:16:52:28:78:BC:53:64:17
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ACCVRAIZ1"

```

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\102\061\022\060\020\006\003\125\004\003\014\011\101\103\103  
\126\122\101\111\132\061\061\020\060\016\006\003\125\004\013\014  
\007\120\113\111\101\103\103\126\061\015\060\013\006\003\125\004  
\012\014\004\101\103\103\126\061\013\060\011\006\003\125\004\006  
\023\002\105\123

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\102\061\022\060\020\006\003\125\004\003\014\011\101\103\103  
\126\122\101\111\132\061\061\020\060\016\006\003\125\004\013\014  
\007\120\113\111\101\103\103\126\061\015\060\013\006\003\125\004  
\012\014\004\101\103\103\126\061\013\060\011\006\003\125\004\006  
\023\002\105\123

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\010\136\303\267\246\103\177\244\340

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\007\323\060\202\005\273\240\003\002\001\002\002\010\136  
\303\267\246\103\177\244\340\060\015\006\011\052\206\110\206\367  
\015\001\001\005\005\000\060\102\061\022\060\020\006\003\125\004  
\003\014\011\101\103\103\126\122\101\111\132\061\061\020\060\016  
\006\003\125\004\013\014\007\120\113\111\101\103\103\126\061\015  
\060\013\006\003\125\004\012\014\004\101\103\103\126\061\013\060  
\011\006\003\125\004\006\023\002\105\123\060\036\027\015\061\061  
\060\065\060\065\060\071\063\067\063\067\132\027\015\063\060\061  
\062\063\061\060\071\063\067\063\067\132\060\102\061\022\060\020  
\006\003\125\004\003\014\011\101\103\103\126\122\101\111\132\061  
\061\020\060\016\006\003\125\004\013\014\007\120\113\111\101\103  
\103\126\061\015\060\013\006\003\125\004\012\014\004\101\103\103  
\126\061\013\060\011\006\003\125\004\006\023\002\105\123\060\202  
\002\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005  
\000\003\202\002\017\000\060\202\002\012\002\202\002\001\000\233  
\251\253\277\141\112\227\257\057\227\146\232\164\137\320\331\226  
\375\317\342\344\146\357\037\037\107\063\302\104\243\337\232\336  
\037\265\124\335\025\174\151\065\021\157\273\310\014\216\152\030  
\036\330\217\331\026\274\020\110\066\134\360\143\263\220\132\134  
\044\067\327\243\326\313\011\161\271\361\001\162\204\260\175\333  
\115\200\315\374\323\157\311\370\332\266\016\202\322\105\205\250  
\033\150\250\075\350\364\104\154\275\241\302\313\003\276\214\076  
\023\000\204\337\112\110\300\343\042\012\350\351\067\247\030\114  
\261\011\015\043\126\177\004\115\331\027\204\030\245\310\332\100  
\224\163\353\316\016\127\074\003\201\072\235\012\241\127\103\151  
\254\127\155\171\220\170\345\265\264\073\330\274\114\215\050\241  
\247\243\247\272\002\116\045\321\052\256\355\256\003\042\270\153  
\040\017\060\050\124\225\177\340\356\316\012\146\235\321\100\055

\156\042\257\235\032\301\005\031\322\157\300\362\237\370\173\263  
\002\102\373\120\251\035\055\223\017\043\253\306\301\017\222\377  
\320\242\025\365\123\011\161\034\377\105\023\204\346\046\136\370  
\340\210\034\012\374\026\266\250\163\006\270\360\143\204\002\240  
\306\132\354\347\164\337\160\256\243\203\045\352\326\307\227\207  
\223\247\306\212\212\063\227\140\067\020\076\227\076\156\051\025  
\326\241\017\321\210\054\022\237\157\252\244\306\102\353\101\242  
\343\225\103\323\001\205\155\216\273\073\363\043\066\307\376\073  
\340\241\045\007\110\253\311\211\164\377\010\217\200\277\300\226  
\145\363\356\354\113\150\275\235\210\303\061\263\100\361\350\317  
\366\070\273\234\344\321\177\324\345\130\233\174\372\324\363\016  
\233\165\221\344\272\122\056\031\176\321\365\315\132\031\374\272  
\006\366\373\122\250\113\231\004\335\370\371\264\213\120\243\116  
\142\211\360\207\044\372\203\102\301\207\372\325\055\051\052\132  
\161\172\144\152\327\047\140\143\015\333\316\111\365\215\037\220  
\211\062\027\370\163\103\270\322\132\223\206\141\326\341\165\012  
\352\171\146\166\210\117\161\353\004\045\326\012\132\172\223\345  
\271\113\027\100\017\261\266\271\365\336\117\334\340\263\254\073  
\021\160\140\204\112\103\156\231\040\300\051\161\012\300\145\002  
\003\001\000\001\243\202\002\313\060\202\002\307\060\175\006\010  
\053\006\001\005\005\007\001\001\004\161\060\157\060\114\006\010  
\053\006\001\005\005\007\060\002\206\100\150\164\164\160\072\057  
\057\167\167\167\056\141\143\143\166\056\145\163\057\146\151\154  
\145\141\144\155\151\156\057\101\162\143\150\151\166\157\163\057  
\143\145\162\164\151\146\151\143\141\144\157\163\057\162\141\151  
\172\141\143\143\166\061\056\143\162\164\060\037\006\010\053\006  
\001\005\005\007\060\001\206\023\150\164\164\160\072\057\057\157  
\143\163\160\056\141\143\143\166\056\145\163\060\035\006\003\125  
\035\016\004\026\004\024\322\207\264\343\337\067\047\223\125\366  
\126\352\201\345\066\314\214\036\077\275\060\017\006\003\125\035  
\023\001\001\377\004\005\060\003\001\001\377\060\037\006\003\125  
\035\043\004\030\060\026\200\024\322\207\264\343\337\067\047\223  
\125\366\126\352\201\345\066\314\214\036\077\275\060\202\001\163  
\006\003\125\035\040\004\202\001\152\060\202\001\146\060\202\001  
\142\006\004\125\035\040\000\060\202\001\130\060\202\001\042\006  
\010\053\006\001\005\005\007\002\002\060\202\001\024\036\202\001  
\020\000\101\000\165\000\164\000\157\000\162\000\151\000\144\000  
\141\000\144\000\040\000\144\000\145\000\040\000\103\000\145\000  
\162\000\164\000\151\000\146\000\151\000\143\000\141\000\143\000  
\151\000\363\000\156\000\040\000\122\000\141\000\355\000\172\000  
\040\000\144\000\145\000\040\000\154\000\141\000\040\000\101\000  
\103\000\103\000\126\000\040\000\050\000\101\000\147\000\145\000  
\156\000\143\000\151\000\141\000\040\000\144\000\145\000\040\000  
\124\000\145\000\143\000\156\000\157\000\154\000\157\000\147\000  
\355\000\141\000\040\000\171\000\040\000\103\000\145\000\162\000  
\164\000\151\000\146\000\151\000\143\000\141\000\143\000\151\000  
\363\000\156\000\040\000\105\000\154\000\145\000\143\000\164\000  
\162\000\363\000\156\000\151\000\143\000\141\000\054\000\040\000



\103\000\111\000\106\000\040\000\121\000\064\000\066\000\060\000  
\061\000\061\000\065\000\066\000\105\000\051\000\056\000\040\000  
\103\000\120\000\123\000\040\000\145\000\156\000\040\000\150\000  
\164\000\164\000\160\000\072\000\057\000\057\000\167\000\167\000  
\167\000\056\000\141\000\143\000\143\000\166\000\056\000\145\000  
\163\060\060\006\010\053\006\001\005\005\007\002\001\026\044\150  
\164\164\160\072\057\057\167\167\167\056\141\143\143\166\056\145  
\163\057\154\145\147\151\163\154\141\143\151\157\156\137\143\056  
\150\164\155\060\125\006\003\125\035\037\004\116\060\114\060\112  
\240\110\240\106\206\104\150\164\164\160\072\057\057\167\167\167  
\056\141\143\143\166\056\145\163\057\146\151\154\145\141\144\155  
\151\156\057\101\162\143\150\151\166\157\163\057\143\145\162\164  
\151\146\151\143\141\144\157\163\057\162\141\151\172\141\143\143  
\166\061\137\144\145\162\056\143\162\154\060\016\006\003\125\035  
\017\001\001\377\004\004\003\002\001\006\060\027\006\003\125\035  
\021\004\020\060\016\201\014\141\143\143\166\100\141\143\143\166  
\056\145\163\060\015\006\011\052\206\110\206\367\015\001\001\005  
\005\000\003\202\002\001\000\227\061\002\237\347\375\103\147\110  
\104\024\344\051\207\355\114\050\146\320\217\065\332\115\141\267  
\112\227\115\265\333\220\340\005\056\016\306\171\320\362\227\151  
\017\275\004\107\331\276\333\265\051\332\233\331\256\251\231\325  
\323\074\060\223\365\215\241\250\374\006\215\104\364\312\026\225  
\174\063\334\142\213\250\067\370\047\330\011\055\033\357\310\024  
\047\040\251\144\104\377\056\326\165\252\154\115\140\100\031\111  
\103\124\143\332\342\314\272\146\345\117\104\172\133\331\152\201  
\053\100\325\177\371\001\047\130\054\310\355\110\221\174\077\246  
\000\317\304\051\163\021\066\336\206\031\076\235\356\031\212\033  
\325\260\355\216\075\234\052\300\015\330\075\146\343\074\015\275  
\325\224\134\342\342\247\065\033\004\000\366\077\132\215\352\103  
\275\137\211\035\251\301\260\314\231\342\115\000\012\332\311\047  
\133\347\023\220\134\344\365\063\242\125\155\334\340\011\115\057  
\261\046\133\047\165\000\011\304\142\167\051\010\137\236\131\254  
\266\176\255\237\124\060\042\003\301\036\161\144\376\371\070\012  
\226\030\335\002\024\254\043\313\006\034\036\244\175\215\015\336  
\047\101\350\255\332\025\267\260\043\335\053\250\323\332\045\207  
\355\350\125\104\115\210\364\066\176\204\232\170\254\367\016\126  
\111\016\326\063\045\326\204\120\102\154\040\022\035\052\325\276  
\274\362\160\201\244\160\140\276\005\265\233\236\004\104\276\141  
\043\254\351\245\044\214\021\200\224\132\242\242\271\111\322\301  
\334\321\247\355\061\021\054\236\031\246\356\341\125\341\300\352  
\317\015\204\344\027\267\242\174\245\336\125\045\006\356\314\300  
\207\134\100\332\314\225\077\125\340\065\307\270\204\276\264\135  
\315\172\203\001\162\356\207\346\137\035\256\265\205\306\046\337  
\346\301\232\351\036\002\107\237\052\250\155\251\133\317\354\105  
\167\177\230\047\232\062\135\052\343\204\356\305\230\146\057\226  
\040\035\335\330\303\047\327\260\371\376\331\175\315\320\237\217  
\013\024\130\121\237\057\213\303\070\055\336\350\217\326\215\207  
\244\365\126\103\026\231\054\364\244\126\264\064\270\141\067\311

\302\130\200\033\240\227\241\374\131\215\351\021\366\321\017\113  
\125\064\106\052\213\206\073

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "ACCVRAIZ1"

# Issuer: C=ES,O=ACCV,OU=PKIACCV,CN=ACCVRAIZ1

# Serial Number:5e:c3:b7:a6:43:7f:a4:e0

# Subject: C=ES,O=ACCV,OU=PKIACCV,CN=ACCVRAIZ1

# Not Valid Before: Thu May 05 09:37:37 2011

# Not Valid After : Tue Dec 31 09:37:37 2030

# Fingerprint (SHA-256):

9A:6E:C0:12:E1:A7:DA:9D:BE:34:19:4D:47:8A:D7:C0:DB:18:22:FB:07:1D:F1:29:81:49:6E:D1:04:38:41:13

# Fingerprint (SHA1): 93:05:7A:88:15:C6:4F:CE:88:2F:FA:91:16:52:28:78:BC:53:64:17

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "ACCVRAIZ1"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\223\005\172\210\025\306\117\316\210\057\372\221\026\122\050\170  
\274\123\144\027

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\320\240\132\356\005\266\011\224\041\241\175\361\262\051\202\002  
END

CKA\_ISSUER MULTILINE\_OCTAL

\060\102\061\022\060\020\006\003\125\004\003\014\011\101\103\103  
\126\122\101\111\132\061\061\020\060\016\006\003\125\004\013\014  
\007\120\113\111\101\103\103\126\061\015\060\013\006\003\125\004  
\012\014\004\101\103\103\126\061\013\060\011\006\003\125\004\006  
\023\002\105\123

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\010\136\303\267\246\103\177\244\340

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "TWCA Global Root CA"

#

# Issuer: CN=TWCA Global Root CA,OU=Root CA,O=TAIWAN-CA,C=TW

# Serial Number: 3262 (0xcbe)

```
Subject: CN=TWCA Global Root CA,OU=Root CA,O=TAIWAN-CA,C=TW
Not Valid Before: Wed Jun 27 06:28:33 2012
Not Valid After : Tue Dec 31 15:59:59 2030
Fingerprint (SHA-256):
59:76:90:07:F7:68:5D:0F:CD:50:87:2F:9F:95:D5:75:5A:5B:2B:45:7D:81:F3:69:2B:61:0A:98:67:2F:0E:1B
Fingerprint (SHA1): 9C:BB:48:53:F6:A4:F6:D3:52:A4:E8:32:52:55:60:13:F5:AD:AF:65
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "TWCA Global Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\121\061\013\060\011\006\003\125\004\006\023\002\124\127\061
\022\060\020\006\003\125\004\012\023\011\124\101\111\127\101\116
\055\103\101\061\020\060\016\006\003\125\004\013\023\007\122\157
\157\164\040\103\101\061\034\060\032\006\003\125\004\003\023\023
\124\127\103\101\040\107\154\157\142\141\154\040\122\157\157\164
\040\103\101
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\121\061\013\060\011\006\003\125\004\006\023\002\124\127\061
\022\060\020\006\003\125\004\012\023\011\124\101\111\127\101\116
\055\103\101\061\020\060\016\006\003\125\004\013\023\007\122\157
\157\164\040\103\101\061\034\060\032\006\003\125\004\003\023\023
\124\127\103\101\040\107\154\157\142\141\154\040\122\157\157\164
\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\002\014\276
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\101\060\202\003\051\240\003\002\001\002\002\002\014
\276\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000
\060\121\061\013\060\011\006\003\125\004\006\023\002\124\127\061
\022\060\020\006\003\125\004\012\023\011\124\101\111\127\101\116
\055\103\101\061\020\060\016\006\003\125\004\013\023\007\122\157
\157\164\040\103\101\061\034\060\032\006\003\125\004\003\023\023
\124\127\103\101\040\107\154\157\142\141\154\040\122\157\157\164
\040\103\101\060\036\027\015\061\062\060\066\062\067\060\066\062
\070\063\063\132\027\015\063\060\061\062\063\061\061\065\065\071
\065\071\132\060\121\061\013\060\011\006\003\125\004\006\023\002
\124\127\061\022\060\020\006\003\125\004\012\023\011\124\101\111
\127\101\116\055\103\101\061\020\060\016\006\003\125\004\013\023
\007\122\157\157\164\040\103\101\061\034\060\032\006\003\125\004
\003\023\023\124\127\103\101\040\107\154\157\142\141\154\040\122
\157\157\164\040\103\101\060\202\002\042\060\015\006\011\052\206
```

\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060\202  
\002\012\002\202\002\001\000\260\005\333\310\353\214\304\156\212  
\041\357\216\115\234\161\012\037\122\160\355\155\202\234\227\305  
\327\114\116\105\111\313\100\102\265\022\064\154\031\302\164\244  
\061\137\205\002\227\354\103\063\012\123\322\234\214\216\267\270  
\171\333\053\325\152\362\216\146\304\356\053\001\007\222\324\263  
\320\002\337\120\366\125\257\146\016\313\340\107\140\057\053\062  
\071\065\122\072\050\203\370\173\026\306\030\270\142\326\107\045  
\221\316\360\031\022\115\255\143\365\323\077\165\137\051\360\241  
\060\034\052\240\230\246\025\275\356\375\031\066\360\342\221\103  
\217\372\312\326\020\047\111\114\357\335\301\361\205\160\233\312  
\352\250\132\103\374\155\206\157\163\351\067\105\251\360\066\307  
\314\210\165\036\273\154\006\377\233\153\076\027\354\141\252\161  
\174\306\035\242\367\111\351\025\265\074\326\241\141\365\021\367  
\005\157\035\375\021\276\320\060\007\302\051\260\011\116\046\334  
\343\242\250\221\152\037\302\221\105\210\134\345\230\270\161\245  
\025\031\311\174\165\021\314\160\164\117\055\233\035\221\104\375  
\126\050\240\376\273\206\152\310\372\134\013\130\334\306\113\166  
\310\253\042\331\163\017\245\364\132\002\211\077\117\236\042\202  
\356\242\164\123\052\075\123\047\151\035\154\216\062\054\144\000  
\046\143\141\066\116\243\106\267\077\175\263\055\254\155\220\242  
\225\242\316\317\332\202\347\007\064\031\226\351\270\041\252\051  
\176\246\070\276\216\051\112\041\146\171\037\263\303\265\011\147  
\336\326\324\007\106\363\052\332\346\042\067\140\313\201\266\017  
\240\017\351\310\225\177\277\125\221\005\172\317\075\025\300\157  
\336\011\224\001\203\327\064\033\314\100\245\360\270\233\147\325  
\230\221\073\247\204\170\225\046\244\132\010\370\053\164\264\000  
\004\074\337\270\024\216\350\337\251\215\154\147\222\063\035\300  
\267\322\354\222\310\276\011\277\054\051\005\157\002\153\236\357  
\274\277\052\274\133\300\120\217\101\160\161\207\262\115\267\004  
\251\204\243\062\257\256\356\153\027\213\262\261\376\154\341\220  
\214\210\250\227\110\316\310\115\313\363\006\317\137\152\012\102  
\261\036\036\167\057\216\240\346\222\016\006\374\005\042\322\046  
\341\061\121\175\062\334\017\002\003\001\000\001\243\043\060\041  
\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006  
\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001  
\377\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000  
\003\202\002\001\000\137\064\201\166\357\226\035\325\345\265\331  
\002\143\204\026\301\256\240\160\121\247\367\114\107\065\310\013  
\327\050\075\211\161\331\252\063\101\352\024\033\154\041\000\300  
\154\102\031\176\237\151\133\040\102\337\242\322\332\304\174\227  
\113\215\260\350\254\310\356\245\151\004\231\012\222\246\253\047  
\056\032\115\201\277\204\324\160\036\255\107\376\375\112\235\063  
\340\362\271\304\105\010\041\012\332\151\151\163\162\015\276\064  
\376\224\213\255\303\036\065\327\242\203\357\345\070\307\245\205  
\037\253\317\064\354\077\050\376\014\361\127\206\116\311\125\367  
\034\324\330\245\175\006\172\157\325\337\020\337\201\116\041\145  
\261\266\341\027\171\225\105\006\316\137\314\334\106\211\143\150

```
\104\215\223\364\144\160\240\075\235\050\005\303\071\160\270\142
\173\040\375\344\333\351\010\241\270\236\075\011\307\117\373\054
\370\223\166\101\336\122\340\341\127\322\235\003\274\167\236\376
\236\051\136\367\301\121\140\037\336\332\013\262\055\165\267\103
\110\223\347\366\171\306\204\135\200\131\140\224\374\170\230\217
\074\223\121\355\100\220\007\337\144\143\044\313\116\161\005\241
\327\224\032\210\062\361\042\164\042\256\245\246\330\022\151\114
\140\243\002\356\053\354\324\143\222\013\136\276\057\166\153\243
\266\046\274\217\003\330\012\362\114\144\106\275\071\142\345\226
\353\064\143\021\050\314\225\361\255\357\357\334\200\130\110\351
\113\270\352\145\254\351\374\200\265\265\310\105\371\254\301\237
\331\271\352\142\210\216\304\361\113\203\022\255\346\213\204\326
\236\302\353\203\030\237\152\273\033\044\140\063\160\314\354\367
\062\363\134\331\171\175\357\236\244\376\311\043\303\044\356\025
\222\261\075\221\117\046\206\275\146\163\044\023\352\244\256\143
\301\255\175\204\003\074\020\170\206\033\171\343\304\363\362\004
\225\040\256\043\202\304\263\072\000\142\277\346\066\044\341\127
\272\307\036\220\165\325\137\077\225\141\053\301\073\315\345\263
\150\141\320\106\046\251\041\122\151\055\353\056\307\353\167\316
\246\072\265\003\063\117\166\321\347\134\124\001\135\313\170\364
\311\014\277\317\022\216\027\055\043\150\224\347\253\376\251\262
\053\006\320\004\315
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "TWCA Global Root CA"

# Issuer: CN=TWCA Global Root CA,OU=Root CA,O=TAIWAN-CA,C=TW

# Serial Number: 3262 (0xcbe)

# Subject: CN=TWCA Global Root CA,OU=Root CA,O=TAIWAN-CA,C=TW

# Not Valid Before: Wed Jun 27 06:28:33 2012

# Not Valid After : Tue Dec 31 15:59:59 2030

# Fingerprint (SHA-256):

59:76:90:07:F7:68:5D:0F:CD:50:87:2F:9F:95:D5:75:5A:5B:2B:45:7D:81:F3:69:2B:61:0A:98:67:2F:0E:1B

# Fingerprint (SHA1): 9C:BB:48:53:F6:A4:F6:D3:52:A4:E8:32:52:55:60:13:F5:AD:AF:65

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "TWCA Global Root CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\234\273\110\123\366\244\366\323\122\244\350\062\122\125\140\023
\365\255\257\145
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\371\003\176\317\346\236\074\163\172\052\220\007\151\377\053\226
```

END

```

CKA_ISSUER MULTILINE_OCTAL
\060\121\061\013\060\011\006\003\125\004\006\023\002\124\127\061
\022\060\020\006\003\125\004\012\023\011\124\101\111\127\101\116
\055\103\101\061\020\060\016\006\003\125\004\013\023\007\122\157
\157\164\040\103\101\061\034\060\032\006\003\125\004\003\023\023
\124\127\103\101\040\107\154\157\142\141\154\040\122\157\157\164
\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\002\014\276
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "TeliaSonera Root CA v1"
#
Issuer: CN=TeliaSonera Root CA v1,O=TeliaSonera
Serial Number:00:95:be:16:a0:f7:2e:46:f1:7b:39:82:72:fa:8b:cd:96
Subject: CN=TeliaSonera Root CA v1,O=TeliaSonera
Not Valid Before: Thu Oct 18 12:00:50 2007
Not Valid After : Mon Oct 18 12:00:50 2032
Fingerprint (SHA-256):
DD:69:36:FE:21:F8:F0:77:C1:23:A1:A5:21:C1:22:24:F7:22:55:B7:3E:03:A7:26:06:93:E8:A2:4B:0F:A3:89
Fingerprint (SHA1): 43:13:BB:96:F1:D5:86:9B:C1:4E:6A:92:F6:CF:F6:34:69:87:82:37
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "TeliaSonera Root CA v1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\067\061\024\060\022\006\003\125\004\012\014\013\124\145\154
\151\141\123\157\156\145\162\141\061\037\060\035\006\003\125\004
\003\014\026\124\145\154\151\141\123\157\156\145\162\141\040\122
\157\157\164\040\103\101\040\166\061
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\067\061\024\060\022\006\003\125\004\012\014\013\124\145\154
\151\141\123\157\156\145\162\141\061\037\060\035\006\003\125\004
\003\014\026\124\145\154\151\141\123\157\156\145\162\141\040\122
\157\157\164\040\103\101\040\166\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\021\000\225\276\026\240\367\056\106\361\173\071\202\162\372

```

\213\315\226

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\070\060\202\003\040\240\003\002\001\002\002\021\000  
\225\276\026\240\367\056\106\361\173\071\202\162\372\213\315\226  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060  
\067\061\024\060\022\006\003\125\004\012\014\013\124\145\154\151  
\141\123\157\156\145\162\141\061\037\060\035\006\003\125\004\003  
\014\026\124\145\154\151\141\123\157\156\145\162\141\040\122\157  
\157\164\040\103\101\040\166\061\060\036\027\015\060\067\061\060  
\061\070\061\062\060\060\065\060\132\027\015\063\062\061\060\061  
\070\061\062\060\060\065\060\132\060\067\061\024\060\022\006\003  
\125\004\012\014\013\124\145\154\151\141\123\157\156\145\162\141  
\061\037\060\035\006\003\125\004\003\014\026\124\145\154\151\141  
\123\157\156\145\162\141\040\122\157\157\164\040\103\101\040\166  
\061\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001  
\001\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002  
\001\000\302\276\353\047\360\041\243\363\151\046\125\176\235\305  
\125\026\221\134\375\357\041\277\123\200\172\055\322\221\214\143  
\061\360\354\044\360\303\245\322\162\174\020\155\364\067\267\345  
\346\174\171\352\214\265\202\213\256\110\266\254\000\334\145\165  
\354\052\115\137\301\207\365\040\145\053\201\250\107\076\211\043  
\225\060\026\220\177\350\127\007\110\347\031\256\277\105\147\261  
\067\033\006\052\376\336\371\254\175\203\373\136\272\344\217\227  
\147\276\113\216\215\144\007\127\070\125\151\064\066\075\023\110  
\357\117\342\323\146\036\244\317\032\267\136\066\063\324\264\006  
\275\030\001\375\167\204\120\000\105\365\214\135\350\043\274\176  
\376\065\341\355\120\173\251\060\215\031\323\011\216\150\147\135  
\277\074\227\030\123\273\051\142\305\312\136\162\301\307\226\324  
\333\055\240\264\037\151\003\354\352\342\120\361\014\074\360\254  
\363\123\055\360\034\365\355\154\071\071\163\200\026\310\122\260  
\043\315\340\076\334\335\074\107\240\273\065\212\342\230\150\213  
\276\345\277\162\356\322\372\245\355\022\355\374\230\030\251\046  
\166\334\050\113\020\040\034\323\177\026\167\055\355\157\200\367  
\111\273\123\005\273\135\150\307\324\310\165\026\077\211\132\213  
\367\027\107\324\114\361\322\211\171\076\115\075\230\250\141\336  
\072\036\322\370\136\003\340\301\311\034\214\323\215\115\323\225  
\066\263\067\137\143\143\233\063\024\360\055\046\153\123\174\211  
\214\062\302\156\354\075\041\000\071\311\241\150\342\120\203\056  
\260\072\053\363\066\240\254\057\344\157\141\302\121\011\071\076  
\213\123\271\273\147\332\334\123\271\166\131\066\235\103\345\040  
\340\075\062\140\205\042\121\267\307\063\273\335\025\057\244\170  
\246\007\173\201\106\066\004\206\335\171\065\307\225\054\073\260  
\243\027\065\345\163\037\264\134\131\357\332\352\020\145\173\172  
\320\177\237\263\264\052\067\073\160\213\233\133\271\053\267\354  
\262\121\022\227\123\051\132\324\360\022\020\334\117\002\273\022  
\222\057\142\324\077\151\103\174\015\326\374\130\165\001\210\235  
\130\026\113\336\272\220\377\107\001\211\006\152\366\137\262\220

\152\263\002\246\002\210\277\263\107\176\052\331\325\372\150\170  
\065\115\002\003\001\000\001\243\077\060\075\060\017\006\003\125  
\035\023\001\001\377\004\005\060\003\001\001\377\060\013\006\003  
\125\035\017\004\004\003\002\001\006\060\035\006\003\125\035\016  
\004\026\004\024\360\217\131\070\000\263\365\217\232\226\014\325  
\353\372\173\252\027\350\023\022\060\015\006\011\052\206\110\206  
\367\015\001\001\005\005\000\003\202\002\001\000\276\344\134\142  
\116\044\364\014\010\377\360\323\014\150\344\223\111\042\077\104  
\047\157\273\155\336\203\146\316\250\314\015\374\365\232\006\345  
\167\024\221\353\235\101\173\231\052\204\345\377\374\041\301\135  
\360\344\037\127\267\165\251\241\137\002\046\377\327\307\367\116  
\336\117\370\367\034\106\300\172\117\100\054\042\065\360\031\261  
\320\153\147\054\260\250\340\300\100\067\065\366\204\134\134\343  
\257\102\170\376\247\311\015\120\352\015\204\166\366\121\357\203  
\123\306\172\377\016\126\111\056\217\172\326\014\346\047\124\343  
\115\012\140\162\142\315\221\007\326\245\277\310\231\153\355\304  
\031\346\253\114\021\070\305\157\061\342\156\111\310\077\166\200  
\046\003\046\051\340\066\366\366\040\123\343\027\160\064\027\235  
\143\150\036\153\354\303\115\206\270\023\060\057\135\106\015\107  
\103\325\033\252\131\016\271\134\215\006\110\255\164\207\137\307  
\374\061\124\101\023\342\307\041\016\236\340\036\015\341\300\173  
\103\205\220\305\212\130\306\145\012\170\127\362\306\043\017\001  
\331\040\113\336\017\373\222\205\165\052\134\163\215\155\173\045  
\221\312\356\105\256\006\113\000\314\323\261\131\120\332\072\210  
\073\051\103\106\136\227\053\124\316\123\157\215\112\347\226\372  
\277\161\016\102\213\174\375\050\240\320\110\312\332\304\201\114  
\273\242\163\223\046\310\353\014\326\046\210\266\300\044\317\273  
\275\133\353\165\175\351\010\216\206\063\054\171\167\011\151\245  
\211\374\263\160\220\207\166\217\323\042\273\102\316\275\163\013  
\040\046\052\320\233\075\160\036\044\154\315\207\166\251\027\226  
\267\317\015\222\373\216\030\251\230\111\321\236\376\140\104\162  
\041\271\031\355\302\365\061\361\071\110\210\220\044\165\124\026  
\255\316\364\370\151\024\144\071\373\243\270\272\160\100\307\047  
\034\277\304\126\123\372\143\145\320\363\034\016\026\365\153\206  
\130\115\030\324\344\015\216\245\235\133\221\334\166\044\120\077  
\306\052\373\331\267\234\265\326\346\320\331\350\031\213\025\161  
\110\255\267\352\330\131\210\324\220\277\026\263\331\351\254\131  
\141\124\310\034\272\312\301\312\341\271\040\114\217\072\223\211  
\245\240\314\277\323\366\165\244\165\226\155\126

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "TeliaSonera Root CA v1"  
# Issuer: CN=TeliaSonera Root CA v1,O=TeliaSonera  
# Serial Number:00:95:be:16:a0:f7:2e:46:f1:7b:39:82:72:fa:8b:cd:96  
# Subject: CN=TeliaSonera Root CA v1,O=TeliaSonera



```

Not Valid Before: Thu Oct 18 12:00:50 2007
Not Valid After : Mon Oct 18 12:00:50 2032
Fingerprint (SHA-256):
DD:69:36:FE:21:F8:F0:77:C1:23:A1:A5:21:C1:22:24:F7:22:55:B7:3E:03:A7:26:06:93:E8:A2:4B:0F:A3:89
Fingerprint (SHA1): 43:13:BB:96:F1:D5:86:9B:C1:4E:6A:92:F6:CF:F6:34:69:87:82:37
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "TeliaSonera Root CA v1"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\103\023\273\226\361\325\206\233\301\116\152\222\366\317\366\064
\151\207\202\067
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\067\101\111\033\030\126\232\046\365\255\302\146\373\100\245\114
END
CKA_ISSUER MULTILINE_OCTAL
\060\067\061\024\060\022\006\003\125\004\012\014\013\124\145\154
\151\141\123\157\156\145\162\141\061\037\060\035\006\003\125\004
\003\014\026\124\145\154\151\141\123\157\156\145\162\141\040\122
\157\157\164\040\103\101\040\166\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\021\000\225\276\026\240\367\056\106\361\173\071\202\162\372
\213\315\226
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "E-Tugra Certification Authority"
#
Issuer: CN=E-Tugra Certification Authority,OU=E-Tugra Sertifikasyon Merkezi,O=E-Tu..ra EBG Bili..im
Teknolojileri ve Hizmetleri A...,L=Ankara,C=TR
Serial Number:6a:68:3e:9c:51:9b:cb:53
Subject: CN=E-Tugra Certification Authority,OU=E-Tugra Sertifikasyon Merkezi,O=E-Tu..ra EBG Bili..im
Teknolojileri ve Hizmetleri A...,L=Ankara,C=TR
Not Valid Before: Tue Mar 05 12:09:48 2013
Not Valid After : Fri Mar 03 12:09:48 2023
Fingerprint (SHA-256):
B0:BF:D5:2B:B0:D7:D9:BD:92:BF:5D:4D:C1:3D:A2:55:C0:2C:54:2F:37:83:65:EA:89:39:11:F5:5E:55:F2:3C
Fingerprint (SHA1): 51:C6:E7:08:49:06:6E:F3:92:D4:5C:A0:0D:6D:A3:62:8F:C3:52:39
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE

```

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "E-Tugra Certification Authority"  
CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509  
CKA\_SUBJECT MULTILINE\_OCTAL  
\060\201\262\061\013\060\011\006\003\125\004\006\023\002\124\122  
\061\017\060\015\006\003\125\004\007\014\006\101\156\153\141\162  
\141\061\100\060\076\006\003\125\004\012\014\067\105\055\124\165  
\304\237\162\141\040\105\102\107\040\102\151\154\151\305\237\151  
\155\040\124\145\153\156\157\154\157\152\151\154\145\162\151\040  
\166\145\040\110\151\172\155\145\164\154\145\162\151\040\101\056  
\305\236\056\061\046\060\044\006\003\125\004\013\014\035\105\055  
\124\165\147\162\141\040\123\145\162\164\151\146\151\153\141\163  
\171\157\156\040\115\145\162\153\145\172\151\061\050\060\046\006  
\003\125\004\003\014\037\105\055\124\165\147\162\141\040\103\145  
\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150  
\157\162\151\164\171

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL  
\060\201\262\061\013\060\011\006\003\125\004\006\023\002\124\122  
\061\017\060\015\006\003\125\004\007\014\006\101\156\153\141\162  
\141\061\100\060\076\006\003\125\004\012\014\067\105\055\124\165  
\304\237\162\141\040\105\102\107\040\102\151\154\151\305\237\151  
\155\040\124\145\153\156\157\154\157\152\151\154\145\162\151\040  
\166\145\040\110\151\172\155\145\164\154\145\162\151\040\101\056  
\305\236\056\061\046\060\044\006\003\125\004\013\014\035\105\055  
\124\165\147\162\141\040\123\145\162\164\151\146\151\153\141\163  
\171\157\156\040\115\145\162\153\145\172\151\061\050\060\046\006  
\003\125\004\003\014\037\105\055\124\165\147\162\141\040\103\145  
\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150  
\157\162\151\164\171

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\010\152\150\076\234\121\233\313\123

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\006\113\060\202\004\063\240\003\002\001\002\002\010\152  
\150\076\234\121\233\313\123\060\015\006\011\052\206\110\206\367  
\015\001\001\013\005\000\060\201\262\061\013\060\011\006\003\125  
\004\006\023\002\124\122\061\017\060\015\006\003\125\004\007\014  
\006\101\156\153\141\162\141\061\100\060\076\006\003\125\004\012  
\014\067\105\055\124\165\304\237\162\141\040\105\102\107\040\102  
\151\154\151\305\237\151\155\040\124\145\153\156\157\154\157\152  
\151\154\145\162\151\040\166\145\040\110\151\172\155\145\164\154  
\145\162\151\040\101\056\305\236\056\061\046\060\044\006\003\125  
\004\013\014\035\105\055\124\165\147\162\141\040\123\145\162\164  
\151\146\151\153\141\163\171\157\156\040\115\145\162\153\145\172  
\151\061\050\060\046\006\003\125\004\003\014\037\105\055\124\165

\147\162\141\040\103\145\162\164\151\146\151\143\141\164\151\157  
\156\040\101\165\164\150\157\162\151\164\171\060\036\027\015\061  
\063\060\063\060\065\061\062\060\071\064\070\132\027\015\062\063  
\060\063\060\063\061\062\060\071\064\070\132\060\201\262\061\013  
\060\011\006\003\125\004\006\023\002\124\122\061\017\060\015\006  
\003\125\004\007\014\006\101\156\153\141\162\141\061\100\060\076  
\006\003\125\004\012\014\067\105\055\124\165\304\237\162\141\040  
\105\102\107\040\102\151\154\151\305\237\151\155\040\124\145\153  
\156\157\154\157\152\151\154\145\162\151\040\166\145\040\110\151  
\172\155\145\164\154\145\162\151\040\101\056\305\236\056\061\046  
\060\044\006\003\125\004\013\014\035\105\055\124\165\147\162\141  
\040\123\145\162\164\151\146\151\153\141\163\171\157\156\040\115  
\145\162\153\145\172\151\061\050\060\046\006\003\125\004\003\014  
\037\105\055\124\165\147\162\141\040\103\145\162\164\151\146\151  
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171  
\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001  
\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001  
\000\342\365\077\223\005\121\036\205\142\124\136\172\013\365\030  
\007\203\256\176\257\174\367\324\212\153\245\143\103\071\271\113  
\367\303\306\144\211\075\224\056\124\200\122\071\071\007\113\113  
\335\205\007\166\207\314\277\057\225\114\314\175\247\075\274\107  
\017\230\160\370\214\205\036\164\216\222\155\033\100\321\231\015  
\273\165\156\310\251\153\232\300\204\061\257\312\103\313\353\053  
\064\350\217\227\153\001\233\325\016\112\010\252\133\222\164\205  
\103\323\200\256\241\210\133\256\263\352\136\313\026\232\167\104  
\310\241\366\124\150\316\336\217\227\053\272\133\100\002\014\144  
\027\300\265\223\315\341\361\023\146\316\014\171\357\321\221\050  
\253\137\240\022\122\060\163\031\216\217\341\214\007\242\303\273  
\112\360\352\037\025\250\356\045\314\244\106\370\033\042\357\263  
\016\103\272\054\044\270\305\054\134\324\034\370\135\144\275\303  
\223\136\050\247\077\047\361\216\036\323\052\120\005\243\125\331  
\313\347\071\123\300\230\236\214\124\142\213\046\260\367\175\215  
\174\344\306\236\146\102\125\202\107\347\262\130\215\146\367\007  
\174\056\066\346\120\034\077\333\103\044\305\277\206\107\171\263  
\171\034\367\132\364\023\354\154\370\077\342\131\037\225\356\102  
\076\271\255\250\062\205\111\227\106\376\113\061\217\132\313\255  
\164\107\037\351\221\267\337\050\004\042\240\324\017\135\342\171  
\117\352\154\205\206\275\250\246\316\344\372\303\341\263\256\336  
\074\121\356\313\023\174\001\177\204\016\135\121\224\236\023\014  
\266\056\245\114\371\071\160\066\157\226\312\056\014\104\125\305  
\312\372\135\002\243\337\326\144\214\132\263\001\012\251\265\012  
\107\027\377\357\221\100\052\216\241\106\072\061\230\345\021\374  
\314\273\111\126\212\374\271\320\141\232\157\145\154\346\303\313  
\076\165\111\376\217\247\342\211\305\147\327\235\106\023\116\061  
\166\073\044\263\236\021\145\206\253\177\357\035\324\370\274\347  
\254\132\134\267\132\107\134\125\316\125\264\042\161\133\133\013  
\360\317\334\240\141\144\352\251\327\150\012\143\247\340\015\077  
\240\257\323\252\322\176\357\121\240\346\121\053\125\222\025\027

\123\313\267\146\016\146\114\370\371\165\114\220\347\022\160\307  
\105\002\003\001\000\001\243\143\060\141\060\035\006\003\125\035  
\016\004\026\004\024\056\343\333\262\111\320\234\124\171\134\372  
\047\052\376\314\116\322\350\116\124\060\017\006\003\125\035\023  
\001\001\377\004\005\060\003\001\001\377\060\037\006\003\125\035  
\043\004\030\060\026\200\024\056\343\333\262\111\320\234\124\171  
\134\372\047\052\376\314\116\322\350\116\124\060\016\006\003\125  
\035\017\001\001\377\004\004\003\002\001\006\060\015\006\011\052  
\206\110\206\367\015\001\001\013\005\000\003\202\002\001\000\005  
\067\072\364\115\267\105\342\105\165\044\217\266\167\122\350\034  
\330\020\223\145\363\362\131\006\244\076\036\051\354\135\321\320  
\253\174\340\012\220\110\170\355\116\230\003\231\376\050\140\221  
\035\060\035\270\143\174\250\346\065\265\372\323\141\166\346\326  
\007\113\312\151\232\262\204\172\167\223\105\027\025\237\044\320  
\230\023\022\377\273\240\056\375\116\114\207\370\316\134\252\230  
\033\005\340\000\106\112\202\200\245\063\213\050\334\355\070\323  
\337\345\076\351\376\373\131\335\141\204\117\322\124\226\023\141  
\023\076\217\200\151\276\223\107\265\065\103\322\132\273\075\134  
\357\263\102\107\315\073\125\023\006\260\011\333\375\143\366\072  
\210\012\231\157\176\341\316\033\123\152\104\146\043\121\010\173  
\274\133\122\242\375\006\067\070\100\141\217\112\226\270\220\067  
\370\146\307\170\220\000\025\056\213\255\121\065\123\007\250\153  
\150\256\371\116\074\007\046\315\010\005\160\314\071\077\166\275  
\245\323\147\046\001\206\246\123\322\140\073\174\103\177\125\212  
\274\225\032\301\050\071\114\037\103\322\221\364\162\131\212\271  
\126\374\077\264\235\332\160\234\166\132\214\103\120\356\216\060  
\162\115\337\377\111\367\306\251\147\331\155\254\002\021\342\072  
\026\045\247\130\010\313\157\123\101\234\110\070\107\150\063\321  
\327\307\217\324\164\041\324\303\005\220\172\377\316\226\210\261  
\025\051\135\043\253\320\140\241\022\117\336\364\027\315\062\345  
\311\277\310\103\255\375\056\216\361\257\342\364\230\372\022\037  
\040\330\300\247\014\205\305\220\364\073\055\226\046\261\054\276  
\114\253\353\261\322\212\311\333\170\023\017\036\011\235\155\217  
\000\237\002\332\301\372\037\172\172\011\304\112\346\210\052\227  
\237\211\213\375\067\137\137\072\316\070\131\206\113\257\161\013  
\264\330\362\160\117\237\062\023\343\260\247\127\345\332\332\103  
\313\204\064\362\050\304\352\155\364\052\357\301\153\166\332\373  
\176\273\205\074\322\123\302\115\276\161\341\105\321\375\043\147  
\015\023\165\373\317\145\147\042\235\256\260\011\321\011\377\035  
\064\277\376\043\227\067\322\071\372\075\015\006\013\264\333\073  
\243\253\157\134\035\266\176\350\263\202\064\355\006\134\044

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "E-Tugra Certification Authority"

# Issuer: CN=E-Tugra Certification Authority,OU=E-Tugra Sertifikasyon Merkezi,O=E-Tu..ra EBG Bili..im

```
Teknolojileri ve Hizmetleri A...,L=Ankara,C=TR
Serial Number:6a:68:3e:9c:51:9b:cb:53
Subject: CN=E-Tugra Certification Authority,OU=E-Tugra Sertifikasyon Merkezi,O=E-Tu..ra EBG Bili..im
Teknolojileri ve Hizmetleri A...,L=Ankara,C=TR
Not Valid Before: Tue Mar 05 12:09:48 2013
Not Valid After : Fri Mar 03 12:09:48 2023
Fingerprint (SHA-256):
B0:BF:D5:2B:B0:D7:D9:BD:92:BF:5D:4D:C1:3D:A2:55:C0:2C:54:2F:37:83:65:EA:89:39:11:F5:5E:55:F2:3C
Fingerprint (SHA1): 51:C6:E7:08:49:06:6E:F3:92:D4:5C:A0:0D:6D:A3:62:8F:C3:52:39
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "E-Tugra Certification Authority"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\121\306\347\010\111\006\156\363\222\324\134\240\015\155\243\142
\217\303\122\071
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\270\241\003\143\260\275\041\161\160\212\157\023\072\273\171\111
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\262\061\013\060\011\006\003\125\004\006\023\002\124\122
\061\017\060\015\006\003\125\004\007\014\006\101\156\153\141\162
\141\061\100\060\076\006\003\125\004\012\014\067\105\055\124\165
\304\237\162\141\040\105\102\107\040\102\151\154\151\305\237\151
\155\040\124\145\153\156\157\154\157\152\151\154\145\162\151\040
\166\145\040\110\151\172\155\145\164\154\145\162\151\040\101\056
\305\236\056\061\046\060\044\006\003\125\004\013\014\035\105\055
\124\165\147\162\141\040\123\145\162\164\151\146\151\153\141\163
\171\157\156\040\115\145\162\153\145\172\151\061\050\060\046\006
\003\125\004\003\014\037\105\055\124\165\147\162\141\040\103\145
\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150
\157\162\151\164\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\152\150\076\234\121\233\313\123
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "T-TeleSec GlobalRoot Class 2"
#
Issuer: CN=T-TeleSec GlobalRoot Class 2,OU=T-Systems Trust Center,O=T-Systems Enterprise Services
GmbH,C=DE
```

```
Serial Number: 1 (0x1)
Subject: CN=T-TeleSec GlobalRoot Class 2,OU=T-Systems Trust Center,O=T-Systems Enterprise Services
GmbH,C=DE
Not Valid Before: Wed Oct 01 10:40:14 2008
Not Valid After : Sat Oct 01 23:59:59 2033
Fingerprint (SHA-256):
91:E2:F5:78:8D:58:10:EB:A7:BA:58:73:7D:E1:54:8A:8E:CA:CD:01:45:98:BC:0B:14:3E:04:1B:17:05:25:52
Fingerprint (SHA1): 59:0D:2D:7D:88:4F:40:2E:61:7E:A5:62:32:17:65:CF:17:D8:94:E9
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "T-TeleSec GlobalRoot Class 2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\202\061\013\060\011\006\003\125\004\006\023\002\104\105
\061\053\060\051\006\003\125\004\012\014\042\124\055\123\171\163
\164\145\155\163\040\105\156\164\145\162\160\162\151\163\145\040
\123\145\162\166\151\143\145\163\040\107\155\142\110\061\037\060
\035\006\003\125\004\013\014\026\124\055\123\171\163\164\145\155
\163\040\124\162\165\163\164\040\103\145\156\164\145\162\061\045
\060\043\006\003\125\004\003\014\034\124\055\124\145\154\145\123
\145\143\040\107\154\157\142\141\154\122\157\157\164\040\103\154
\141\163\163\040\062
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\202\061\013\060\011\006\003\125\004\006\023\002\104\105
\061\053\060\051\006\003\125\004\012\014\042\124\055\123\171\163
\164\145\155\163\040\105\156\164\145\162\160\162\151\163\145\040
\123\145\162\166\151\143\145\163\040\107\155\142\110\061\037\060
\035\006\003\125\004\013\014\026\124\055\123\171\163\164\145\155
\163\040\124\162\165\163\164\040\103\145\156\164\145\162\061\045
\060\043\006\003\125\004\003\014\034\124\055\124\145\154\145\123
\145\143\040\107\154\157\142\141\154\122\157\157\164\040\103\154
\141\163\163\040\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\001
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\303\060\202\002\253\240\003\002\001\002\002\001\001
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060
\201\202\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\053\060\051\006\003\125\004\012\014\042\124\055\123\171\163\164
\145\155\163\040\105\156\164\145\162\160\162\151\163\145\040\123
\145\162\166\151\143\145\163\040\107\155\142\110\061\037\060\035
\006\003\125\004\013\014\026\124\055\123\171\163\164\145\155\163
```

\040\124\162\165\163\164\040\103\145\156\164\145\162\061\045\060  
\043\006\003\125\004\003\014\034\124\055\124\145\154\145\123\145  
\143\040\107\154\157\142\141\154\122\157\157\164\040\103\154\141  
\163\163\040\062\060\036\027\015\060\070\061\060\060\061\061\060  
\064\060\061\064\132\027\015\063\063\061\060\060\061\062\063\065  
\071\065\071\132\060\201\202\061\013\060\011\006\003\125\004\006  
\023\002\104\105\061\053\060\051\006\003\125\004\012\014\042\124  
\055\123\171\163\164\145\155\163\040\105\156\164\145\162\160\162  
\151\163\145\040\123\145\162\166\151\143\145\163\040\107\155\142  
\110\061\037\060\035\006\003\125\004\013\014\026\124\055\123\171  
\163\164\145\155\163\040\124\162\165\163\164\040\103\145\156\164  
\145\162\061\045\060\043\006\003\125\004\003\014\034\124\055\124  
\145\154\145\123\145\143\040\107\154\157\142\141\154\122\157\157  
\164\040\103\154\141\163\163\040\062\060\202\001\042\060\015\006  
\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017  
\000\060\202\001\012\002\202\001\001\000\252\137\332\033\137\350  
\163\221\345\332\134\364\242\346\107\345\363\150\125\140\005\035  
\002\244\263\233\131\363\036\212\257\064\255\374\015\302\331\110  
\031\356\151\217\311\040\374\041\252\007\031\355\260\134\254\145  
\307\137\355\002\174\173\174\055\033\326\272\271\200\302\030\202  
\026\204\372\146\260\010\306\124\043\201\344\315\271\111\077\366  
\117\156\067\110\050\070\017\305\276\347\150\160\375\071\227\115  
\322\307\230\221\120\252\304\104\263\043\175\071\107\351\122\142  
\326\022\223\136\267\061\226\102\005\373\166\247\036\243\365\302  
\374\351\172\305\154\251\161\117\352\313\170\274\140\257\307\336  
\364\331\313\276\176\063\245\156\224\203\360\064\372\041\253\352  
\216\162\240\077\244\336\060\133\357\206\115\152\225\133\103\104  
\250\020\025\034\345\001\127\305\230\361\346\006\050\221\252\040  
\305\267\123\046\121\103\262\013\021\225\130\341\300\017\166\331  
\300\215\174\201\363\162\160\236\157\376\032\216\331\137\065\306  
\262\157\064\174\276\110\117\342\132\071\327\330\235\170\236\237  
\206\076\003\136\031\213\104\242\325\307\002\003\001\000\001\243  
\102\060\100\060\017\006\003\125\035\023\001\001\377\004\005\060  
\003\001\001\377\060\016\006\003\125\035\017\001\001\377\004\004  
\003\002\001\006\060\035\006\003\125\035\016\004\026\004\024\277  
\131\040\066\000\171\240\240\042\153\214\325\362\141\322\270\054  
\313\202\112\060\015\006\011\052\206\110\206\367\015\001\001\013  
\005\000\003\202\001\001\000\061\003\242\141\013\037\164\350\162  
\066\306\155\371\115\236\372\042\250\341\201\126\317\315\273\237  
\352\253\221\031\070\257\252\174\025\115\363\266\243\215\245\364  
\216\366\104\251\247\350\041\225\255\076\000\142\026\210\360\002  
\272\374\141\043\346\063\233\060\172\153\066\142\173\255\004\043  
\204\130\145\342\333\053\212\347\045\123\067\142\123\137\274\332  
\001\142\051\242\246\047\161\346\072\042\176\301\157\035\225\160  
\040\112\007\064\337\352\377\025\200\345\272\327\172\330\133\165  
\174\005\172\051\107\176\100\250\061\023\167\315\100\073\264\121  
\107\172\056\021\343\107\021\336\235\146\320\213\325\124\146\372  
\203\125\352\174\302\051\211\033\351\157\263\316\342\005\204\311

```
\057\076\170\205\142\156\311\137\301\170\143\164\130\300\110\030
\014\231\071\353\244\314\032\265\171\132\215\025\234\330\024\015
\366\172\007\127\307\042\203\005\055\074\233\045\046\075\030\263
\251\103\174\310\310\253\144\217\016\243\277\234\033\235\060\333
\332\320\031\056\252\074\361\373\063\200\166\344\315\255\031\117
\005\047\216\023\241\156\302
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "T-TeleSec GlobalRoot Class 2"

# Issuer: CN=T-TeleSec GlobalRoot Class 2,OU=T-Systems Trust Center,O=T-Systems Enterprise Services  
GmbH,C=DE

# Serial Number: 1 (0x1)

# Subject: CN=T-TeleSec GlobalRoot Class 2,OU=T-Systems Trust Center,O=T-Systems Enterprise Services  
GmbH,C=DE

# Not Valid Before: Wed Oct 01 10:40:14 2008

# Not Valid After : Sat Oct 01 23:59:59 2033

# Fingerprint (SHA-256):

91:E2:F5:78:8D:58:10:EB:A7:BA:58:73:7D:E1:54:8A:8E:CA:CD:01:45:98:BC:0B:14:3E:04:1B:17:05:25:52

# Fingerprint (SHA1): 59:0D:2D:7D:88:4F:40:2E:61:7E:A5:62:32:17:65:CF:17:D8:94:E9

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "T-TeleSec GlobalRoot Class 2"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\131\015\055\175\210\117\100\056\141\176\245\142\062\027\145\317
\027\330\224\351
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\053\233\236\344\173\154\037\000\162\032\314\301\167\171\337\152
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\201\202\061\013\060\011\006\003\125\004\006\023\002\104\105
\061\053\060\051\006\003\125\004\012\014\042\124\055\123\171\163
\164\145\155\163\040\105\156\164\145\162\160\162\151\163\145\040
\123\145\162\166\151\143\145\163\040\107\155\142\110\061\037\060
\035\006\003\125\004\013\014\026\124\055\123\171\163\164\145\155
\163\040\124\162\165\163\164\040\103\145\156\164\145\162\061\045
\060\043\006\003\125\004\003\014\034\124\055\124\145\154\145\123
\145\143\040\107\154\157\142\141\154\122\157\157\164\040\103\154
\141\163\163\040\062
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\001\001
```

END



CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "Atos TrustedRoot 2011"

#

# Issuer: C=DE,O=Atos,CN=Atos TrustedRoot 2011

# Serial Number:5c:33:cb:62:2c:5f:b3:32

# Subject: C=DE,O=Atos,CN=Atos TrustedRoot 2011

# Not Valid Before: Thu Jul 07 14:58:30 2011

# Not Valid After : Tue Dec 31 23:59:59 2030

# Fingerprint (SHA-256):

F3:56:BE:A2:44:B7:A9:1E:B3:5D:53:CA:9A:D7:86:4A:CE:01:8E:2D:35:D5:F8:F9:6D:DF:68:A6:F4:1A:A4:74

# Fingerprint (SHA1): 2B:B1:F5:3E:55:0C:1D:C5:F1:D4:E6:B7:6A:46:4B:55:06:02:AC:21

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Atos TrustedRoot 2011"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\074\061\036\060\034\006\003\125\004\003\014\025\101\164\157  
\163\040\124\162\165\163\164\145\144\122\157\157\164\040\062\060  
\061\061\061\015\060\013\006\003\125\004\012\014\004\101\164\157  
\163\061\013\060\011\006\003\125\004\006\023\002\104\105

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\074\061\036\060\034\006\003\125\004\003\014\025\101\164\157  
\163\040\124\162\165\163\164\145\144\122\157\157\164\040\062\060  
\061\061\061\015\060\013\006\003\125\004\012\014\004\101\164\157  
\163\061\013\060\011\006\003\125\004\006\023\002\104\105

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\010\134\063\313\142\054\137\263\062

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\167\060\202\002\137\240\003\002\001\002\002\010\134  
\063\313\142\054\137\263\062\060\015\006\011\052\206\110\206\367  
\015\001\001\013\005\000\060\074\061\036\060\034\006\003\125\004  
\003\014\025\101\164\157\163\040\124\162\165\163\164\145\144\122  
\157\157\164\040\062\060\061\061\061\015\060\013\006\003\125\004  
\012\014\004\101\164\157\163\061\013\060\011\006\003\125\004\006  
\023\002\104\105\060\036\027\015\061\061\060\067\060\067\061\064  
\065\070\063\060\132\027\015\063\060\061\062\063\061\062\063\065  
\071\065\071\132\060\074\061\036\060\034\006\003\125\004\003\014

\025\101\164\157\163\040\124\162\165\163\164\145\144\122\157\157  
\164\040\062\060\061\061\061\015\060\013\006\003\125\004\012\014  
\004\101\164\157\163\061\013\060\011\006\003\125\004\006\023\002  
\104\105\060\202\001\042\060\015\006\011\052\206\110\206\367\015  
\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002\202  
\001\001\000\225\205\073\227\157\052\073\056\073\317\246\363\051  
\065\276\317\030\254\076\252\331\370\115\240\076\032\107\271\274  
\232\337\362\376\314\076\107\350\172\226\302\044\216\065\364\251  
\014\374\202\375\155\301\162\142\047\275\352\153\353\347\212\314  
\124\076\220\120\317\200\324\225\373\350\265\202\324\024\305\266  
\251\125\045\127\333\261\120\366\260\140\144\131\172\151\317\003  
\267\157\015\276\312\076\157\164\162\352\252\060\052\163\142\276  
\111\221\141\310\021\376\016\003\052\367\152\040\334\002\025\015  
\136\025\152\374\343\202\301\265\305\235\144\011\154\243\131\230  
\007\047\307\033\226\053\141\164\161\154\103\361\367\065\211\020  
\340\236\354\125\241\067\042\242\207\004\005\054\107\175\264\034  
\271\142\051\146\050\312\267\341\223\365\244\224\003\231\271\160  
\205\265\346\110\352\215\120\374\331\336\314\157\007\016\335\013  
\162\235\200\060\026\007\225\077\050\016\375\305\165\117\123\326  
\164\232\264\044\056\216\002\221\317\166\305\233\036\125\164\234  
\170\041\261\360\055\361\013\237\302\325\226\030\037\360\124\042  
\172\214\007\002\003\001\000\001\243\175\060\173\060\035\006\003  
\125\035\016\004\026\004\024\247\245\006\261\054\246\011\140\356  
\321\227\351\160\256\274\073\031\154\333\041\060\017\006\003\125  
\035\023\001\001\377\004\005\060\003\001\001\377\060\037\006\003  
\125\035\043\004\030\060\026\200\024\247\245\006\261\054\246\011  
\140\356\321\227\351\160\256\274\073\031\154\333\041\060\030\006  
\003\125\035\040\004\021\060\017\060\015\006\013\053\006\001\004  
\001\260\055\003\004\001\001\060\016\006\003\125\035\017\001\001  
\377\004\004\003\002\001\206\060\015\006\011\052\206\110\206\367  
\015\001\001\013\005\000\003\202\001\001\000\046\167\064\333\224  
\110\206\052\101\235\054\076\006\220\140\304\214\254\013\124\270  
\037\271\173\323\007\071\344\372\076\173\262\075\116\355\237\043  
\275\227\363\153\134\357\356\375\100\246\337\241\223\241\012\206  
\254\357\040\320\171\001\275\170\367\031\330\044\061\064\004\001  
\246\272\025\232\303\047\334\330\117\017\314\030\143\377\231\017  
\016\221\153\165\026\341\041\374\330\046\307\107\267\246\317\130  
\162\161\176\272\341\115\225\107\073\311\257\155\241\264\301\354  
\211\366\264\017\070\265\342\144\334\045\317\246\333\353\232\134  
\231\241\305\010\336\375\346\332\325\326\132\105\014\304\267\302  
\265\024\357\264\021\377\016\025\265\365\365\333\306\275\353\132  
\247\360\126\042\251\074\145\124\306\025\250\275\206\236\315\203  
\226\150\172\161\201\211\341\013\341\352\021\033\150\010\314\151  
\236\354\236\101\236\104\062\046\172\342\207\012\161\075\353\344  
\132\244\322\333\305\315\306\336\140\177\271\363\117\104\222\357  
\052\267\030\076\247\031\331\013\175\261\067\101\102\260\272\140  
\035\362\376\011\021\260\360\207\173\247\235

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Atos TrustedRoot 2011"

# Issuer: C=DE,O=Atos,CN=Atos TrustedRoot 2011

# Serial Number:5c:33:cb:62:2c:5f:b3:32

# Subject: C=DE,O=Atos,CN=Atos TrustedRoot 2011

# Not Valid Before: Thu Jul 07 14:58:30 2011

# Not Valid After : Tue Dec 31 23:59:59 2030

# Fingerprint (SHA-256):

F3:56:BE:A2:44:B7:A9:1E:B3:5D:53:CA:9A:D7:86:4A:CE:01:8E:2D:35:D5:F8:F9:6D:DF:68:A6:F4:1A:A4:74

# Fingerprint (SHA1): 2B:B1:F5:3E:55:0C:1D:C5:F1:D4:E6:B7:6A:46:4B:55:06:02:AC:21

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Atos TrustedRoot 2011"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\053\261\365\076\125\014\035\305\361\324\346\267\152\106\113\125  
\006\002\254\041

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\256\271\304\062\113\254\177\135\146\314\167\224\273\052\167\126

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\074\061\036\060\034\006\003\125\004\003\014\025\101\164\157  
\163\040\124\162\165\163\164\145\144\122\157\157\164\040\062\060  
\061\061\061\015\060\013\006\003\125\004\012\014\004\101\164\157  
\163\061\013\060\011\006\003\125\004\006\023\002\104\105

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\010\134\063\313\142\054\137\263\062

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "QuoVadis Root CA 1 G3"

#

# Issuer: CN=QuoVadis Root CA 1 G3,O=QuoVadis Limited,C=BM

# Serial Number:78:58:5f:2e:ad:2c:19:4b:e3:37:07:35:34:13:28:b5:96:d4:65:93

# Subject: CN=QuoVadis Root CA 1 G3,O=QuoVadis Limited,C=BM

# Not Valid Before: Thu Jan 12 17:27:44 2012

# Not Valid After : Sun Jan 12 17:27:44 2042

# Fingerprint (SHA-256):

8A:86:6F:D1:B2:76:B5:7E:57:8E:92:1C:65:82:8A:2B:ED:58:E9:F2:F2:88:05:41:34:B7:F1:F4:BF:C9:CC:74

# Fingerprint (SHA1): 1B:8E:EA:57:96:29:1A:C9:39:EA:B8:0A:81:1A:73:73:C0:93:79:67

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "QuoVadis Root CA 1 G3"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\110\061\013\060\011\006\003\125\004\006\023\002\102\115\061  
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144  
\151\163\040\114\151\155\151\164\145\144\061\036\060\034\006\003  
\125\004\003\023\025\121\165\157\126\141\144\151\163\040\122\157  
\157\164\040\103\101\040\061\040\107\063

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\110\061\013\060\011\006\003\125\004\006\023\002\102\115\061  
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144  
\151\163\040\114\151\155\151\164\145\144\061\036\060\034\006\003  
\125\004\003\023\025\121\165\157\126\141\144\151\163\040\122\157  
\157\164\040\103\101\040\061\040\107\063

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\024\170\130\137\056\255\054\031\113\343\067\007\065\064\023  
\050\265\226\324\145\223

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\140\060\202\003\110\240\003\002\001\002\002\024\170  
\130\137\056\255\054\031\113\343\067\007\065\064\023\050\265\226  
\324\145\223\060\015\006\011\052\206\110\206\367\015\001\001\013  
\005\000\060\110\061\013\060\011\006\003\125\004\006\023\002\102  
\115\061\031\060\027\006\003\125\004\012\023\020\121\165\157\126  
\141\144\151\163\040\114\151\155\151\164\145\144\061\036\060\034  
\006\003\125\004\003\023\025\121\165\157\126\141\144\151\163\040  
\122\157\157\164\040\103\101\040\061\040\107\063\060\036\027\015  
\061\062\060\061\061\062\061\067\062\067\064\064\132\027\015\064  
\062\060\061\061\062\061\067\062\067\064\064\132\060\110\061\013  
\060\011\006\003\125\004\006\023\002\102\115\061\031\060\027\006  
\003\125\004\012\023\020\121\165\157\126\141\144\151\163\040\114  
\151\155\151\164\145\144\061\036\060\034\006\003\125\004\003\023  
\025\121\165\157\126\141\144\151\163\040\122\157\157\164\040\103  
\101\040\061\040\107\063\060\202\002\042\060\015\006\011\052\206  
\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060\202  
\002\012\002\202\002\001\000\240\276\120\020\216\351\362\154\100  
\264\004\234\205\271\061\312\334\055\344\021\251\004\074\033\125  
\301\347\130\060\035\044\264\303\357\205\336\214\054\341\301\075  
\337\202\346\117\255\107\207\154\354\133\111\301\112\325\273\217

\354\207\254\177\202\232\206\354\075\003\231\122\001\322\065\236  
\254\332\360\123\311\146\074\324\254\002\001\332\044\323\073\250  
\002\106\257\244\034\343\370\163\130\166\267\366\016\220\015\265  
\360\317\314\372\371\306\114\345\303\206\060\012\215\027\176\065  
\353\305\337\273\016\234\300\215\207\343\210\070\205\147\372\076  
\307\253\340\023\234\005\030\230\317\223\365\261\222\264\374\043  
\323\317\325\304\047\111\340\236\074\233\010\243\213\135\052\041  
\340\374\071\252\123\332\175\176\317\032\011\123\274\135\005\004  
\317\241\112\217\213\166\202\015\241\370\322\307\024\167\133\220  
\066\007\201\233\076\006\372\122\136\143\305\246\000\376\245\351  
\122\033\122\265\222\071\162\003\011\142\275\260\140\026\156\246  
\335\045\302\003\146\335\363\004\321\100\342\116\213\206\364\157  
\345\203\240\047\204\136\004\301\365\220\275\060\075\304\357\250  
\151\274\070\233\244\244\226\321\142\332\151\300\001\226\256\313  
\304\121\064\352\014\252\377\041\216\131\217\112\134\344\141\232  
\247\322\351\052\170\215\121\075\072\025\356\242\131\216\251\134  
\336\305\371\220\042\345\210\105\161\335\221\231\154\172\237\075  
\075\230\174\136\366\276\026\150\240\136\256\013\043\374\132\017  
\252\042\166\055\311\241\020\035\344\323\104\043\220\210\237\306  
\052\346\327\365\232\263\130\036\057\060\211\010\033\124\242\265  
\230\043\354\010\167\034\225\135\141\321\313\211\234\137\242\112  
\221\232\357\041\252\111\026\010\250\275\141\050\061\311\164\255  
\205\366\331\305\261\213\321\345\020\062\115\137\213\040\072\074  
\111\037\063\205\131\015\333\313\011\165\103\151\163\373\153\161  
\175\360\337\304\114\175\306\243\056\310\225\171\313\163\242\216  
\116\115\044\373\136\344\004\276\162\033\246\047\055\111\132\231  
\172\327\134\011\040\267\177\224\271\117\361\015\034\136\210\102  
\033\021\267\347\221\333\236\154\364\152\337\214\006\230\003\255  
\314\050\357\245\107\363\123\002\003\001\000\001\243\102\060\100  
\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001  
\377\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001  
\006\060\035\006\003\125\035\016\004\026\004\024\243\227\326\363  
\136\242\020\341\253\105\237\074\027\144\074\356\001\160\234\314  
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\003  
\202\002\001\000\030\372\133\165\374\076\172\307\137\167\307\312  
\337\317\137\303\022\304\100\135\324\062\252\270\152\327\325\025  
\025\106\230\043\245\346\220\133\030\231\114\343\255\102\243\202  
\061\066\210\315\351\373\304\004\226\110\213\001\307\215\001\317  
\133\063\006\226\106\146\164\035\117\355\301\266\271\264\015\141  
\314\143\176\327\056\167\214\226\034\052\043\150\153\205\127\166  
\160\063\023\376\341\117\246\043\167\030\372\032\214\350\275\145  
\311\317\077\364\311\027\334\353\307\274\300\004\056\055\106\057  
\151\146\303\033\217\376\354\076\323\312\224\277\166\012\045\015  
\251\173\002\034\251\320\073\137\013\300\201\072\075\144\341\277  
\247\055\116\275\115\304\330\051\306\042\030\320\305\254\162\002  
\202\077\252\072\242\072\042\227\061\335\010\143\303\165\024\271  
\140\050\055\133\150\340\026\251\146\202\043\121\365\353\123\330  
\061\233\173\351\267\235\113\353\210\026\317\371\135\070\212\111

```
\060\217\355\361\353\031\364\167\032\061\030\115\147\124\154\057
\157\145\371\333\075\354\041\354\136\364\364\213\312\140\145\124
\321\161\144\364\371\246\243\201\063\066\063\161\360\244\170\137
\116\255\203\041\336\064\111\215\350\131\254\235\362\166\132\066
\362\023\364\257\340\011\307\141\052\154\367\340\235\256\273\206
\112\050\157\056\356\264\171\315\220\063\303\263\166\372\365\360
\154\235\001\220\372\236\220\366\234\162\317\107\332\303\037\344
\065\040\123\362\124\321\337\141\203\246\002\342\045\070\336\205
\062\055\136\163\220\122\135\102\304\316\075\113\341\371\031\204
\035\325\242\120\314\101\373\101\024\303\275\326\311\132\243\143
\146\002\200\275\005\072\073\107\234\354\000\046\114\365\210\121
\277\250\043\177\030\007\260\013\355\213\046\241\144\323\141\112
\353\134\237\336\263\257\147\003\263\037\335\155\135\151\150\151
\253\136\072\354\174\151\274\307\073\205\116\236\025\271\264\025
\117\303\225\172\130\327\311\154\351\154\271\363\051\143\136\264
\054\360\055\075\355\132\145\340\251\133\100\302\110\231\201\155
\236\037\006\052\074\022\264\213\017\233\242\044\360\246\215\326
\172\340\113\266\144\226\143\225\204\302\112\315\034\056\044\207
\063\140\345\303
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Trust for "QuoVadis Root CA 1 G3"
```

```
Issuer: CN=QuoVadis Root CA 1 G3,O=QuoVadis Limited,C=BM
```

```
Serial Number:78:58:5f:2e:ad:2c:19:4b:e3:37:07:35:34:13:28:b5:96:d4:65:93
```

```
Subject: CN=QuoVadis Root CA 1 G3,O=QuoVadis Limited,C=BM
```

```
Not Valid Before: Thu Jan 12 17:27:44 2012
```

```
Not Valid After : Sun Jan 12 17:27:44 2042
```

```
Fingerprint (SHA-256):
```

```
8A:86:6F:D1:B2:76:B5:7E:57:8E:92:1C:65:82:8A:2B:ED:58:E9:F2:F2:88:05:41:34:B7:F1:F4:BF:C9:CC:74
```

```
Fingerprint (SHA1): 1B:8E:EA:57:96:29:1A:C9:39:EA:B8:0A:81:1A:73:73:C0:93:79:67
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "QuoVadis Root CA 1 G3"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\033\216\352\127\226\051\032\311\071\352\270\012\201\032\163\163
\300\223\171\147
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\244\274\133\077\376\067\232\372\144\360\342\372\005\075\013\253
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\110\061\013\060\011\006\003\125\004\006\023\002\102\115\061
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144
```

```
\151\163\040\114\151\155\151\164\145\144\061\036\060\034\006\003
\125\004\003\023\025\121\165\157\126\141\144\151\163\040\122\157
\157\164\040\103\101\040\061\040\107\063
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\024\170\130\137\056\255\054\031\113\343\067\007\065\064\023
\050\265\226\324\145\223
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "QuoVadis Root CA 2 G3"

#

# Issuer: CN=QuoVadis Root CA 2 G3,O=QuoVadis Limited,C=BM

# Serial Number:44:57:34:24:5b:81:89:9b:35:f2:ce:b8:2b:3b:5b:a7:26:f0:75:28

# Subject: CN=QuoVadis Root CA 2 G3,O=QuoVadis Limited,C=BM

# Not Valid Before: Thu Jan 12 18:59:32 2012

# Not Valid After : Sun Jan 12 18:59:32 2042

# Fingerprint (SHA-256):

8F:E4:FB:0A:F9:3A:4D:0D:67:DB:0B:EB:B2:3E:37:C7:1B:F3:25:DC:BC:DD:24:0E:A0:4D:AF:58:B4:7E:18:40

# Fingerprint (SHA1): 09:3C:61:F3:8B:8B:DC:7D:55:DF:75:38:02:05:00:E1:25:F5:C8:36

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "QuoVadis Root CA 2 G3"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

```
\060\110\061\013\060\011\006\003\125\004\006\023\002\102\115\061
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144
\151\163\040\114\151\155\151\164\145\144\061\036\060\034\006\003
\125\004\003\023\025\121\165\157\126\141\144\151\163\040\122\157
\157\164\040\103\101\040\062\040\107\063
```

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\110\061\013\060\011\006\003\125\004\006\023\002\102\115\061
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144
\151\163\040\114\151\155\151\164\145\144\061\036\060\034\006\003
\125\004\003\023\025\121\165\157\126\141\144\151\163\040\122\157
\157\164\040\103\101\040\062\040\107\063
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\024\104\127\064\044\133\201\211\233\065\362\316\270\053\073
\133\247\046\360\165\050
```

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\140\060\202\003\110\240\003\002\001\002\002\024\104  
\127\064\044\133\201\211\233\065\362\316\270\053\073\133\247\046  
\360\165\050\060\015\006\011\052\206\110\206\367\015\001\001\013  
\005\000\060\110\061\013\060\011\006\003\125\004\006\023\002\102  
\115\061\031\060\027\006\003\125\004\012\023\020\121\165\157\126  
\141\144\151\163\040\114\151\155\151\164\145\144\061\036\060\034  
\006\003\125\004\003\023\025\121\165\157\126\141\144\151\163\040  
\122\157\157\164\040\103\101\040\062\040\107\063\060\036\027\015  
\061\062\060\061\061\062\061\070\065\071\063\062\132\027\015\064  
\062\060\061\061\062\061\070\065\071\063\062\132\060\110\061\013  
\060\011\006\003\125\004\006\023\002\102\115\061\031\060\027\006  
\003\125\004\012\023\020\121\165\157\126\141\144\151\163\040\114  
\151\155\151\164\145\144\061\036\060\034\006\003\125\004\003\023  
\025\121\165\157\126\141\144\151\163\040\122\157\157\164\040\103  
\101\040\062\040\107\063\060\202\002\042\060\015\006\011\052\206  
\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060\202  
\002\012\002\202\002\001\000\241\256\045\262\001\030\334\127\210  
\077\106\353\371\257\342\353\043\161\342\232\321\141\146\041\137  
\252\257\047\121\345\156\033\026\324\055\175\120\260\123\167\275  
\170\072\140\342\144\002\233\174\206\233\326\032\216\255\377\037  
\025\177\325\225\036\022\313\346\024\204\004\301\337\066\263\026  
\237\212\343\311\333\230\064\316\330\063\027\050\106\374\247\311  
\360\322\264\325\115\011\162\111\371\362\207\343\251\332\175\241  
\175\153\262\072\045\251\155\122\104\254\370\276\156\373\334\246  
\163\221\220\141\246\003\024\040\362\347\207\243\210\255\255\240  
\214\377\246\013\045\122\045\347\026\001\325\313\270\065\201\014  
\243\073\360\341\341\374\132\135\316\200\161\155\370\111\253\076  
\073\272\270\327\200\001\373\245\353\133\263\305\136\140\052\061  
\240\257\067\350\040\072\237\250\062\054\014\314\011\035\323\236  
\216\135\274\114\230\356\305\032\150\173\354\123\246\351\024\065  
\243\337\315\200\237\014\110\373\034\364\361\277\112\270\372\325  
\214\161\112\307\037\255\376\101\232\263\203\135\362\204\126\357  
\245\127\103\316\051\255\214\253\125\277\304\373\133\001\335\043  
\041\241\130\000\216\303\320\152\023\355\023\343\022\053\200\334  
\147\346\225\262\315\036\042\156\052\370\101\324\362\312\024\007  
\215\212\125\022\306\151\365\270\206\150\057\123\136\260\322\252  
\041\301\230\346\060\343\147\125\307\233\156\254\031\250\125\246  
\105\006\320\043\072\333\353\145\135\052\021\021\360\073\117\312  
\155\364\064\304\161\344\377\000\132\366\134\256\043\140\205\163  
\361\344\020\261\045\256\325\222\273\023\301\014\340\071\332\264  
\071\127\265\253\065\252\162\041\073\203\065\347\061\337\172\041  
\156\270\062\010\175\035\062\221\025\112\142\162\317\343\167\241  
\274\325\021\033\166\001\147\010\340\101\013\303\353\025\156\370  
\244\031\331\242\253\257\342\047\122\126\053\002\212\054\024\044  
\371\277\102\002\277\046\310\306\217\340\156\070\175\123\055\345  
\355\230\263\225\143\150\177\371\065\364\337\210\305\140\065\222



\300\174\151\034\141\225\026\320\353\336\013\257\076\004\020\105  
\145\130\120\070\257\110\362\131\266\026\362\074\015\220\002\306  
\160\056\001\255\074\025\327\002\003\001\000\001\243\102\060\100  
\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001  
\377\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001  
\006\060\035\006\003\125\035\016\004\026\004\024\355\347\157\166  
\132\277\140\354\111\133\306\245\167\273\162\026\161\233\304\075  
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\003  
\202\002\001\000\221\337\200\077\103\011\176\161\302\367\353\263  
\210\217\341\121\262\274\075\165\371\050\135\310\274\231\233\173  
\135\252\345\312\341\012\367\350\262\323\237\335\147\061\176\272  
\001\252\307\152\101\073\220\324\010\134\262\140\152\220\360\310  
\316\003\142\371\213\355\373\156\052\334\006\115\074\051\017\211  
\026\212\130\114\110\017\350\204\141\352\074\162\246\167\344\102  
\256\210\243\103\130\171\176\256\312\245\123\015\251\075\160\275  
\040\031\141\244\154\070\374\103\062\341\301\107\377\370\354\361  
\021\042\062\226\234\302\366\133\151\226\173\040\014\103\101\232  
\133\366\131\031\210\336\125\210\067\121\013\170\134\012\036\243  
\102\375\307\235\210\017\300\362\170\002\044\124\223\257\211\207  
\210\311\112\200\035\352\320\156\076\141\056\066\273\065\016\047  
\226\375\146\064\073\141\162\163\361\026\134\107\006\124\111\000  
\172\130\022\260\012\357\205\375\261\270\063\165\152\223\034\022  
\346\140\136\157\035\177\311\037\043\313\204\141\237\036\202\104  
\371\137\255\142\125\044\232\122\230\355\121\347\241\176\227\072  
\346\057\037\021\332\123\200\054\205\236\253\065\020\333\042\137  
\152\305\136\227\123\362\062\002\011\060\243\130\360\015\001\325  
\162\306\261\174\151\173\303\365\066\105\314\141\156\136\114\224  
\305\136\256\350\016\136\213\277\367\315\340\355\241\016\033\063  
\356\124\030\376\017\276\357\176\204\153\103\343\160\230\333\135  
\165\262\015\131\007\205\025\043\071\326\361\337\251\046\017\326  
\110\307\263\246\042\365\063\067\132\225\107\237\173\272\030\025  
\157\377\326\024\144\203\111\322\012\147\041\333\017\065\143\140  
\050\042\343\261\225\203\315\205\246\335\057\017\347\147\122\156  
\273\057\205\174\365\112\163\347\305\076\300\275\041\022\005\077  
\374\267\003\111\002\133\310\045\346\342\124\070\365\171\207\214  
\035\123\262\116\205\173\006\070\307\054\370\370\260\162\215\045  
\345\167\122\364\003\034\110\246\120\137\210\040\060\156\362\202  
\103\253\075\227\204\347\123\373\041\301\117\017\042\232\206\270  
\131\052\366\107\075\031\210\055\350\205\341\236\354\205\010\152  
\261\154\064\311\035\354\110\053\073\170\355\146\304\216\171\151  
\203\336\177\214

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "QuoVadis Root CA 2 G3"  
# Issuer: CN=QuoVadis Root CA 2 G3,O=QuoVadis Limited,C=BM

```

Serial Number:44:57:34:24:5b:81:89:9b:35:f2:ce:b8:2b:3b:5b:a7:26:f0:75:28
Subject: CN=QuoVadis Root CA 2 G3,O=QuoVadis Limited,C=BM
Not Valid Before: Thu Jan 12 18:59:32 2012
Not Valid After : Sun Jan 12 18:59:32 2042
Fingerprint (SHA-256):
8F:E4:FB:0A:F9:3A:4D:0D:67:DB:0B:EB:B2:3E:37:C7:1B:F3:25:DC:BC:DD:24:0E:A0:4D:AF:58:B4:7E:18:40
Fingerprint (SHA1): 09:3C:61:F3:8B:8B:DC:7D:55:DF:75:38:02:05:00:E1:25:F5:C8:36
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "QuoVadis Root CA 2 G3"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\011\074\141\363\213\213\334\175\125\337\165\070\002\005\000\341
\045\365\310\066
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\257\014\206\156\277\100\055\177\013\076\022\120\272\022\075\006
END
CKA_ISSUER MULTILINE_OCTAL
\060\110\061\013\060\011\006\003\125\004\006\023\002\102\115\061
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144
\151\163\040\114\151\155\151\164\145\144\061\036\060\034\006\003
\125\004\003\023\025\121\165\157\126\141\144\151\163\040\122\157
\157\164\040\103\101\040\062\040\107\063
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\024\104\127\064\044\133\201\211\233\065\362\316\270\053\073
\133\247\046\360\165\050
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "QuoVadis Root CA 3 G3"
#
Issuer: CN=QuoVadis Root CA 3 G3,O=QuoVadis Limited,C=BM
Serial Number:2e:f5:9b:02:28:a7:db:7a:ff:d5:a3:a9:ee:bd:03:a0:cf:12:6a:1d
Subject: CN=QuoVadis Root CA 3 G3,O=QuoVadis Limited,C=BM
Not Valid Before: Thu Jan 12 20:26:32 2012
Not Valid After : Sun Jan 12 20:26:32 2042
Fingerprint (SHA-256):
88:EF:81:DE:20:2E:B0:18:45:2E:43:F8:64:72:5C:EA:5F:BD:1F:C2:D9:D2:05:73:07:09:C5:D8:B8:69:0F:46
Fingerprint (SHA1): 48:12:BD:92:3C:A8:C4:39:06:E7:30:6D:27:96:E6:A4:CF:22:2E:7D
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE

```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "QuoVadis Root CA 3 G3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\110\061\013\060\011\006\003\125\004\006\023\002\102\115\061
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144
\151\163\040\114\151\155\151\164\145\144\061\036\060\034\006\003
\125\004\003\023\025\121\165\157\126\141\144\151\163\040\122\157
\157\164\040\103\101\040\063\040\107\063
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\110\061\013\060\011\006\003\125\004\006\023\002\102\115\061
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144
\151\163\040\114\151\155\151\164\145\144\061\036\060\034\006\003
\125\004\003\023\025\121\165\157\126\141\144\151\163\040\122\157
\157\164\040\103\101\040\063\040\107\063
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\024\056\365\233\002\050\247\333\172\377\325\243\251\356\275
\003\240\317\022\152\035
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\140\060\202\003\110\240\003\002\001\002\002\024\056
\365\233\002\050\247\333\172\377\325\243\251\356\275\003\240\317
\022\152\035\060\015\006\011\052\206\110\206\367\015\001\001\013
\005\000\060\110\061\013\060\011\006\003\125\004\006\023\002\102
\115\061\031\060\027\006\003\125\004\012\023\020\121\165\157\126
\141\144\151\163\040\114\151\155\151\164\145\144\061\036\060\034
\006\003\125\004\003\023\025\121\165\157\126\141\144\151\163\040
\122\157\157\164\040\103\101\040\063\040\107\063\060\036\027\015
\061\062\060\061\061\062\062\060\062\066\063\062\132\027\015\064
\062\060\061\061\062\062\060\062\066\063\062\132\060\110\061\013
\060\011\006\003\125\004\006\023\002\102\115\061\031\060\027\006
\003\125\004\012\023\020\121\165\157\126\141\144\151\163\040\114
\151\155\151\164\145\144\061\036\060\034\006\003\125\004\003\023
\025\121\165\157\126\141\144\151\163\040\122\157\157\164\040\103
\101\040\063\040\107\063\060\202\002\042\060\015\006\011\052\206
\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060\202
\002\012\002\202\002\001\000\263\313\016\020\147\216\352\024\227
\247\062\052\012\126\066\177\150\114\307\263\157\072\043\024\221
\377\031\177\245\312\254\356\263\166\235\172\351\213\033\253\153
\061\333\372\013\123\114\257\305\245\032\171\074\212\114\377\254
\337\045\336\116\331\202\062\013\104\336\312\333\214\254\243\156
\026\203\073\246\144\113\062\211\373\026\026\070\176\353\103\342
\323\164\112\302\142\012\163\012\335\111\263\127\322\260\012\205
\235\161\074\336\243\313\300\062\363\001\071\040\103\033\065\321
```

\123\263\261\356\305\223\151\202\076\026\265\050\106\241\336\352  
\211\011\355\103\270\005\106\212\206\365\131\107\276\033\157\001  
\041\020\271\375\251\322\050\312\020\071\011\312\023\066\317\234  
\255\255\100\164\171\053\002\077\064\377\372\040\151\175\323\356  
\141\365\272\263\347\060\320\067\043\206\162\141\105\051\110\131  
\150\157\167\246\056\201\276\007\115\157\257\316\304\105\023\221  
\024\160\006\217\037\237\370\207\151\261\016\357\303\211\031\353  
\352\034\141\374\172\154\212\334\326\003\013\236\046\272\022\335  
\324\124\071\253\046\243\063\352\165\201\332\055\315\017\117\344  
\003\321\357\025\227\033\153\220\305\002\220\223\146\002\041\261  
\107\336\213\232\112\200\271\125\217\265\242\057\300\326\063\147  
\332\176\304\247\264\004\104\353\107\373\346\130\271\367\014\360  
\173\053\261\300\160\051\303\100\142\055\073\110\151\334\043\074  
\110\353\173\011\171\251\155\332\250\060\230\317\200\162\003\210  
\246\133\106\256\162\171\174\010\003\041\145\256\267\341\034\245  
\261\052\242\061\336\146\004\367\300\164\350\161\336\377\075\131  
\314\226\046\022\213\205\225\127\032\253\153\165\013\104\075\021  
\050\074\173\141\267\342\217\147\117\345\354\074\114\140\200\151  
\127\070\036\001\133\215\125\350\307\337\300\314\167\043\064\111  
\165\174\366\230\021\353\055\336\355\101\056\024\005\002\177\340  
\376\040\353\065\347\021\254\042\316\127\075\336\311\060\155\020  
\003\205\315\361\377\214\026\265\301\262\076\210\154\140\177\220  
\117\225\367\366\055\255\001\071\007\004\372\165\200\175\277\111  
\120\355\357\311\304\174\034\353\200\176\333\266\320\335\023\376  
\311\323\234\327\262\227\251\002\003\001\000\001\243\102\060\100  
\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001  
\377\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001  
\006\060\035\006\003\125\035\016\004\026\004\024\306\027\320\274  
\250\352\002\103\362\033\006\231\135\053\220\040\271\327\234\344  
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\003  
\202\002\001\000\064\141\331\126\265\022\207\125\115\335\243\065  
\061\106\273\244\007\162\274\137\141\142\350\245\373\013\067\261  
\074\266\263\372\051\235\177\002\365\244\311\250\223\267\172\161  
\050\151\217\163\341\122\220\332\325\276\072\345\267\166\152\126  
\200\041\337\135\346\351\072\236\345\076\366\242\151\307\052\012  
\260\030\107\334\040\160\175\122\243\076\131\174\301\272\311\310  
\025\100\141\312\162\326\160\254\322\267\360\034\344\206\051\360  
\316\357\150\143\320\265\040\212\025\141\232\176\206\230\264\311  
\302\166\373\314\272\060\026\314\243\141\306\164\023\345\153\357  
\243\025\352\003\376\023\213\144\344\323\301\322\350\204\373\111  
\321\020\115\171\146\353\252\375\364\215\061\036\160\024\255\334  
\336\147\023\114\201\025\141\274\267\331\221\167\161\031\201\140  
\273\360\130\245\265\234\013\367\217\042\125\047\300\113\001\155  
\073\231\015\324\035\233\143\147\057\320\356\015\312\146\274\224  
\117\246\255\355\374\356\143\254\127\077\145\045\317\262\206\217  
\320\010\377\270\166\024\156\336\345\047\354\253\170\265\123\271  
\266\077\350\040\371\322\250\276\141\106\312\207\214\204\363\371  
\361\240\150\233\042\036\201\046\233\020\004\221\161\300\006\037

```
\334\240\323\271\126\247\343\230\055\177\203\235\337\214\053\234
\062\216\062\224\360\001\074\042\052\237\103\302\056\303\230\071
\007\070\173\374\136\000\102\037\363\062\046\171\203\204\366\345
\360\301\121\022\300\013\036\004\043\014\124\245\114\057\111\305
\112\321\266\156\140\015\153\374\153\213\205\044\144\267\211\016
\253\045\107\133\074\317\176\111\275\307\351\012\306\332\367\176
\016\027\010\323\110\227\320\161\222\360\017\071\076\064\152\034
\175\330\362\042\256\273\151\364\063\264\246\110\125\321\017\016
\046\350\354\266\013\055\247\205\065\315\375\131\310\237\321\315
\076\132\051\064\271\075\204\316\261\145\324\131\221\221\126\165
\041\301\167\236\371\172\341\140\235\323\255\004\030\364\174\353
\136\223\217\123\112\042\051\370\110\053\076\115\206\254\133\177
\313\006\231\131\140\330\130\145\225\215\104\321\367\177\176\047
\177\175\256\200\365\007\114\266\076\234\161\124\231\004\113\375
\130\371\230\364
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE
```

# Trust for "QuoVadis Root CA 3 G3"

# Issuer: CN=QuoVadis Root CA 3 G3,O=QuoVadis Limited,C=BM

# Serial Number:2e:f5:9b:02:28:a7:db:7a:ff:d5:a3:a9:ee:bd:03:a0:cf:12:6a:1d

# Subject: CN=QuoVadis Root CA 3 G3,O=QuoVadis Limited,C=BM

# Not Valid Before: Thu Jan 12 20:26:32 2012

# Not Valid After : Sun Jan 12 20:26:32 2042

# Fingerprint (SHA-256):

88:EF:81:DE:20:2E:B0:18:45:2E:43:F8:64:72:5C:EA:5F:BD:1F:C2:D9:D2:05:73:07:09:C5:D8:B8:69:0F:46

# Fingerprint (SHA1): 48:12:BD:92:3C:A8:C4:39:06:E7:30:6D:27:96:E6:A4:CF:22:2E:7D

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "QuoVadis Root CA 3 G3"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\110\022\275\222\074\250\304\071\006\347\060\155\047\226\346\244
\317\042\056\175
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\337\175\271\255\124\157\150\241\337\211\127\003\227\103\260\327
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\110\061\013\060\011\006\003\125\004\006\023\002\102\115\061
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144
\151\163\040\114\151\155\151\164\145\144\061\036\060\034\006\003
\125\004\003\023\025\121\165\157\126\141\144\151\163\040\122\157
\157\164\040\103\101\040\063\040\107\063
```

END

```

CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\024\056\365\233\002\050\247\333\172\377\325\243\251\356\275
\003\240\317\022\152\035
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "DigiCert Assured ID Root G2"
#
Issuer: CN=DigiCert Assured ID Root G2,OU=www.digicert.com,O=DigiCert Inc,C=US
Serial Number:0b:93:1c:3a:d6:39:67:ea:67:23:bf:c3:af:9a:f4:4b
Subject: CN=DigiCert Assured ID Root G2,OU=www.digicert.com,O=DigiCert Inc,C=US
Not Valid Before: Thu Aug 01 12:00:00 2013
Not Valid After : Fri Jan 15 12:00:00 2038
Fingerprint (SHA-256):
7D:05:EB:B6:82:33:9F:8C:94:51:EE:09:4E:EB:FE:FA:79:53:A1:14:ED:B2:F4:49:49:45:2F:AB:7D:2F:C1:85
Fingerprint (SHA1): A1:4B:48:D9:43:EE:0A:0E:40:90:4F:3C:E0:A4:C0:91:93:51:5D:3F
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "DigiCert Assured ID Root G2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\145\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\044\060\042\006\003\125\004\003\023\033\104\151\147\151
\103\145\162\164\040\101\163\163\165\162\145\144\040\111\104\040
\122\157\157\164\040\107\062
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\145\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\044\060\042\006\003\125\004\003\023\033\104\151\147\151
\103\145\162\164\040\101\163\163\165\162\145\144\040\111\104\040
\122\157\157\164\040\107\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\013\223\034\072\326\071\147\352\147\043\277\303\257\232
\364\113

```

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\226\060\202\002\176\240\003\002\001\002\002\020\013  
\223\034\072\326\071\147\352\147\043\277\303\257\232\364\113\060  
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\145  
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\025\060  
\023\006\003\125\004\012\023\014\104\151\147\151\103\145\162\164  
\040\111\156\143\061\031\060\027\006\003\125\004\013\023\020\167  
\167\167\056\144\151\147\151\143\145\162\164\056\143\157\155\061  
\044\060\042\006\003\125\004\003\023\033\104\151\147\151\103\145  
\162\164\040\101\163\163\165\162\145\144\040\111\104\040\122\157  
\157\164\040\107\062\060\036\027\015\061\063\060\070\060\061\061  
\062\060\060\060\060\132\027\015\063\070\060\061\061\065\061\062  
\060\060\060\060\132\060\145\061\013\060\011\006\003\125\004\006  
\023\002\125\123\061\025\060\023\006\003\125\004\012\023\014\104  
\151\147\151\103\145\162\164\040\111\156\143\061\031\060\027\006  
\003\125\004\013\023\020\167\167\167\056\144\151\147\151\143\145  
\162\164\056\143\157\155\061\044\060\042\006\003\125\004\003\023  
\033\104\151\147\151\103\145\162\164\040\101\163\163\165\162\145  
\144\040\111\104\040\122\157\157\164\040\107\062\060\202\001\042  
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003  
\202\001\017\000\060\202\001\012\002\202\001\001\000\331\347\050  
\057\122\077\066\162\111\210\223\064\363\370\152\036\061\124\200  
\237\255\124\101\265\107\337\226\250\324\257\200\055\271\012\317  
\165\375\211\245\175\044\372\343\042\014\053\274\225\027\013\063  
\277\031\115\101\006\220\000\275\014\115\020\376\007\265\347\034  
\156\042\125\061\145\227\275\323\027\322\036\142\363\333\352\154  
\120\214\077\204\014\226\317\267\313\003\340\312\155\241\024\114  
\033\211\335\355\000\260\122\174\257\221\154\261\070\023\321\351  
\022\010\300\000\260\034\053\021\332\167\160\066\233\256\316\171  
\207\334\202\160\346\011\164\160\125\151\257\243\150\237\277\335  
\266\171\263\362\235\160\051\125\364\253\377\225\141\363\311\100  
\157\035\321\276\223\273\323\210\052\273\235\277\162\132\126\161  
\073\077\324\363\321\012\376\050\357\243\356\331\231\257\003\323  
\217\140\267\362\222\241\261\275\211\211\037\060\315\303\246\056  
\142\063\256\026\002\167\104\132\347\201\012\074\247\104\056\171  
\270\077\004\274\134\240\207\341\033\257\121\216\315\354\054\372  
\370\376\155\360\072\174\252\213\344\147\225\061\215\002\003\001  
\000\001\243\102\060\100\060\017\006\003\125\035\023\001\001\377  
\004\005\060\003\001\001\377\060\016\006\003\125\035\017\001\001  
\377\004\004\003\002\001\206\060\035\006\003\125\035\016\004\026  
\004\024\316\303\112\271\231\125\362\270\333\140\277\251\176\275  
\126\265\227\066\247\326\060\015\006\011\052\206\110\206\367\015  
\001\001\013\005\000\003\202\001\001\000\312\245\125\214\343\310  
\101\156\151\047\247\165\021\357\074\206\066\157\322\235\306\170  
\070\035\151\226\242\222\151\056\070\154\233\175\004\324\211\245  
\261\061\067\212\311\041\314\253\154\315\213\034\232\326\277\110  
\322\062\146\301\212\300\363\057\072\357\300\343\324\221\206\321

```
\120\343\003\333\163\167\157\112\071\123\355\336\046\307\265\175
\257\053\102\321\165\142\343\112\053\002\307\120\113\340\151\342
\226\154\016\104\146\020\104\217\255\005\353\370\171\254\246\033
\350\067\064\235\123\311\141\252\242\122\257\112\160\026\206\302
\072\310\261\023\160\066\330\317\356\364\012\064\325\133\114\375
\007\234\242\272\331\001\162\134\363\115\301\335\016\261\034\015
\304\143\276\255\364\024\373\211\354\242\101\016\114\314\310\127
\100\320\156\003\252\315\014\216\211\231\231\154\360\074\060\257
\070\337\157\274\243\276\051\040\047\253\164\377\023\042\170\336
\227\122\125\036\203\265\124\040\003\356\256\300\117\126\336\067
\314\303\177\252\004\047\273\323\167\270\142\333\027\174\234\050
\042\023\163\154\317\046\365\212\051\347
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Trust for "DigiCert Assured ID Root G2"
```

```
Issuer: CN=DigiCert Assured ID Root G2,OU=www.digicert.com,O=DigiCert Inc,C=US
```

```
Serial Number:0b:93:1c:3a:d6:39:67:ea:67:23:bf:c3:af:9a:f4:4b
```

```
Subject: CN=DigiCert Assured ID Root G2,OU=www.digicert.com,O=DigiCert Inc,C=US
```

```
Not Valid Before: Thu Aug 01 12:00:00 2013
```

```
Not Valid After : Fri Jan 15 12:00:00 2038
```

```
Fingerprint (SHA-256):
```

```
7D:05:EB:B6:82:33:9F:8C:94:51:EE:09:4E:EB:FE:FA:79:53:A1:14:ED:B2:F4:49:49:45:2F:AB:7D:2F:C1:85
```

```
Fingerprint (SHA1): A1:4B:48:D9:43:EE:0A:0E:40:90:4F:3C:E0:A4:C0:91:93:51:5D:3F
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "DigiCert Assured ID Root G2"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\241\113\110\331\103\356\012\016\100\220\117\074\340\244\300\221
```

```
\223\121\135\077
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\222\070\271\370\143\044\202\145\054\127\063\346\376\201\217\235
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\145\061\013\060\011\006\003\125\004\006\023\002\125\123\061
```

```
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
```

```
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
```

```
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
```

```
\155\061\044\060\042\006\003\125\004\003\023\033\104\151\147\151
```

```
\103\145\162\164\040\101\163\163\165\162\145\144\040\111\104\040
```

```
\122\157\157\164\040\107\062
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```



\002\020\013\223\034\072\326\071\147\352\147\043\277\303\257\232  
\364\113

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "DigiCert Assured ID Root G3"

#

# Issuer: CN=DigiCert Assured ID Root G3,OU=www.digicert.com,O=DigiCert Inc,C=US

# Serial Number:0b:a1:5a:fa:1d:df:a0:b5:49:44:af:cd:24:a0:6c:ec

# Subject: CN=DigiCert Assured ID Root G3,OU=www.digicert.com,O=DigiCert Inc,C=US

# Not Valid Before: Thu Aug 01 12:00:00 2013

# Not Valid After : Fri Jan 15 12:00:00 2038

# Fingerprint (SHA-256):

7E:37:CB:8B:4C:47:09:0C:AB:36:55:1B:A6:F4:5D:B8:40:68:0F:BA:16:6A:95:2D:B1:00:71:7F:43:05:3F:C2

# Fingerprint (SHA1): F5:17:A2:4F:9A:48:C6:C9:F8:A2:00:26:9F:DC:0F:48:2C:AB:30:89

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "DigiCert Assured ID Root G3"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\145\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145  
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023  
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157  
\155\061\044\060\042\006\003\125\004\003\023\033\104\151\147\151  
\103\145\162\164\040\101\163\163\165\162\145\144\040\111\104\040  
\122\157\157\164\040\107\063

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\145\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145  
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023  
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157  
\155\061\044\060\042\006\003\125\004\003\023\033\104\151\147\151  
\103\145\162\164\040\101\163\163\165\162\145\144\040\111\104\040  
\122\157\157\164\040\107\063

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\013\241\132\372\035\337\240\265\111\104\257\315\044\240  
\154\354

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\002\106\060\202\001\315\240\003\002\001\002\002\020\013  
\241\132\372\035\337\240\265\111\104\257\315\044\240\154\354\060  
\012\006\010\052\206\110\316\075\004\003\003\060\145\061\013\060  
\011\006\003\125\004\006\023\002\125\123\061\025\060\023\006\003  
\125\004\012\023\014\104\151\147\151\103\145\162\164\040\111\156  
\143\061\031\060\027\006\003\125\004\013\023\020\167\167\167\056  
\144\151\147\151\143\145\162\164\056\143\157\155\061\044\060\042  
\006\003\125\004\003\023\033\104\151\147\151\103\145\162\164\040  
\101\163\163\165\162\145\144\040\111\104\040\122\157\157\164\040  
\107\063\060\036\027\015\061\063\060\070\060\061\061\065\061\062\060\060  
\060\060\132\027\015\063\070\060\061\061\065\061\062\060\060\060  
\060\132\060\145\061\013\060\011\006\003\125\004\006\023\002\125  
\123\061\025\060\023\006\003\125\004\012\023\014\104\151\147\151  
\103\145\162\164\040\111\156\143\061\031\060\027\006\003\125\004  
\013\023\020\167\167\167\056\144\151\147\151\143\145\162\164\056  
\143\157\155\061\044\060\042\006\003\125\004\003\023\033\104\151  
\147\151\103\145\162\164\040\101\163\163\165\162\145\144\040\111  
\104\040\122\157\157\164\040\107\063\060\166\060\020\006\007\052  
\206\110\316\075\002\001\006\005\053\201\004\000\042\003\142\000  
\004\031\347\274\254\104\145\355\315\270\077\130\373\215\261\127  
\251\104\055\005\025\362\357\013\377\020\164\237\265\142\122\137  
\146\176\037\345\334\033\105\171\013\314\306\123\012\235\215\135  
\002\331\251\131\336\002\132\366\225\052\016\215\070\112\212\111  
\306\274\306\003\070\007\137\125\332\176\011\156\342\177\136\320  
\105\040\017\131\166\020\326\240\044\360\055\336\066\362\154\051  
\071\243\102\060\100\060\017\006\003\125\035\023\001\001\377\004  
\005\060\003\001\001\377\060\016\006\003\125\035\017\001\001\377  
\004\004\003\002\001\206\060\035\006\003\125\035\016\004\026\004  
\024\313\320\275\251\341\230\005\121\241\115\067\242\203\171\316  
\215\035\052\344\204\060\012\006\010\052\206\110\316\075\004\003  
\003\003\147\000\060\144\002\060\045\244\201\105\002\153\022\113  
\165\164\117\310\043\343\160\362\165\162\336\174\211\360\317\221  
\162\141\236\136\020\222\131\126\271\203\307\020\347\070\351\130  
\046\066\175\325\344\064\206\071\002\060\174\066\123\360\060\345  
\142\143\072\231\342\266\243\073\233\064\372\036\332\020\222\161  
\136\221\023\247\335\244\156\222\314\062\326\365\041\146\307\057  
\352\226\143\152\145\105\222\225\001\264

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "DigiCert Assured ID Root G3"

# Issuer: CN=DigiCert Assured ID Root G3,OU=www.digicert.com,O=DigiCert Inc,C=US

# Serial Number:0b:a1:5a:fa:1d:df:a0:b5:49:44:af:cd:24:a0:6c:ec

# Subject: CN=DigiCert Assured ID Root G3,OU=www.digicert.com,O=DigiCert Inc,C=US

# Not Valid Before: Thu Aug 01 12:00:00 2013

```

Not Valid After : Fri Jan 15 12:00:00 2038
Fingerprint (SHA-256):
7E:37:CB:8B:4C:47:09:0C:AB:36:55:1B:A6:F4:5D:B8:40:68:0F:BA:16:6A:95:2D:B1:00:71:7F:43:05:3F:C2
Fingerprint (SHA1): F5:17:A2:4F:9A:48:C6:C9:F8:A2:00:26:9F:DC:0F:48:2C:AB:30:89
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "DigiCert Assured ID Root G3"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\365\027\242\117\232\110\306\311\370\242\000\046\237\334\017\110
\054\253\060\211
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\174\177\145\061\014\201\337\215\272\076\231\342\134\255\156\373
END
CKA_ISSUER MULTILINE_OCTAL
\060\145\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\044\060\042\006\003\125\004\003\023\033\104\151\147\151
\103\145\162\164\040\101\163\163\165\162\145\144\040\111\104\040
\122\157\157\164\040\107\063
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\013\241\132\372\035\337\240\265\111\104\257\315\044\240
\154\354
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "DigiCert Global Root G2"
#
Issuer: CN=DigiCert Global Root G2,OU=www.digicert.com,O=DigiCert Inc,C=US
Serial Number:03:3a:f1:e6:a7:11:a9:a0:bb:28:64:b1:1d:09:fa:e5
Subject: CN=DigiCert Global Root G2,OU=www.digicert.com,O=DigiCert Inc,C=US
Not Valid Before: Thu Aug 01 12:00:00 2013
Not Valid After : Fri Jan 15 12:00:00 2038
Fingerprint (SHA-256):
CB:3C:CB:B7:60:31:E5:E0:13:8F:8D:D3:9A:23:F9:DE:47:FF:C3:5E:43:C1:14:4C:EA:27:D4:6A:5A:B1:CB:5F
Fingerprint (SHA1): DF:3C:24:F9:BF:D6:66:76:1B:26:80:73:FE:06:D1:CC:8D:4F:82:A4
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE

```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "DigiCert Global Root G2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\141\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\040\060\036\006\003\125\004\003\023\027\104\151\147\151
\103\145\162\164\040\107\154\157\142\141\154\040\122\157\157\164
\040\107\062
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\141\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\040\060\036\006\003\125\004\003\023\027\104\151\147\151
\103\145\162\164\040\107\154\157\142\141\154\040\122\157\157\164
\040\107\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\003\072\361\346\247\021\251\240\273\050\144\261\035\011
\372\345
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\216\060\202\002\166\240\003\002\001\002\002\020\003
\072\361\346\247\021\251\240\273\050\144\261\035\011\372\345\060
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\141
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\025\060
\023\006\003\125\004\012\023\014\104\151\147\151\103\145\162\164
\040\111\156\143\061\031\060\027\006\003\125\004\013\023\020\167
\167\167\056\144\151\147\151\143\145\162\164\056\143\157\155\061
\040\060\036\006\003\125\004\003\023\027\104\151\147\151\103\145
\162\164\040\107\154\157\142\141\154\040\122\157\157\164\040\107
\062\060\036\027\015\061\063\060\070\060\061\061\062\060\060\060
\060\132\027\015\063\070\060\061\061\065\061\062\060\060\060\060
\132\060\141\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103
\145\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013
\023\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143
\157\155\061\040\060\036\006\003\125\004\003\023\027\104\151\147
\151\103\145\162\164\040\107\154\157\142\141\154\040\122\157\157
\164\040\107\062\060\202\001\042\060\015\006\011\052\206\110\206
\367\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012
\002\202\001\001\000\273\067\315\064\334\173\153\311\262\150\220
\255\112\165\377\106\272\041\012\010\215\365\031\124\311\373\210
```

\333\363\256\362\072\211\221\074\172\346\253\006\032\153\317\254  
\055\350\136\011\044\104\272\142\232\176\326\243\250\176\340\124  
\165\040\005\254\120\267\234\143\032\154\060\334\332\037\031\261  
\327\036\336\375\327\340\313\224\203\067\256\354\037\103\116\335  
\173\054\322\275\056\245\057\344\251\270\255\072\324\231\244\266  
\045\351\233\153\000\140\222\140\377\117\041\111\030\367\147\220  
\253\141\006\234\217\362\272\351\264\351\222\062\153\265\363\127  
\350\135\033\315\214\035\253\225\004\225\111\363\065\055\226\343  
\111\155\335\167\343\373\111\113\264\254\125\007\251\217\225\263  
\264\043\273\114\155\105\360\366\251\262\225\060\264\375\114\125  
\214\047\112\127\024\174\202\235\315\163\222\323\026\112\006\014  
\214\120\321\217\036\011\276\027\241\346\041\312\375\203\345\020  
\274\203\245\012\304\147\050\366\163\024\024\075\106\166\303\207  
\024\211\041\064\115\257\017\105\014\246\111\241\272\273\234\305  
\261\063\203\051\205\002\003\001\000\001\243\102\060\100\060\017  
\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060  
\016\006\003\125\035\017\001\001\377\004\004\003\002\001\206\060  
\035\006\003\125\035\016\004\026\004\024\116\042\124\040\030\225  
\346\343\156\346\017\372\372\271\022\355\006\027\217\071\060\015  
\006\011\052\206\110\206\367\015\001\001\013\005\000\003\202\001  
\001\000\140\147\050\224\157\016\110\143\353\061\335\352\147\030  
\325\211\175\074\305\213\112\177\351\276\333\053\027\337\260\137  
\163\167\052\062\023\071\201\147\102\204\043\362\105\147\065\354  
\210\277\370\217\260\141\014\064\244\256\040\114\204\306\333\370  
\065\341\166\331\337\246\102\273\307\104\010\206\177\066\164\044  
\132\332\154\015\024\131\065\275\362\111\335\266\037\311\263\015  
\107\052\075\231\057\273\134\273\265\324\040\341\231\137\123\106  
\025\333\150\233\360\363\060\325\076\061\342\215\204\236\343\212  
\332\332\226\076\065\023\245\137\360\371\160\120\160\107\101\021  
\127\031\116\300\217\256\006\304\225\023\027\057\033\045\237\165  
\362\261\216\231\241\157\023\261\101\161\376\210\052\310\117\020  
\040\125\327\363\024\105\345\340\104\364\352\207\225\062\223\016  
\376\123\106\372\054\235\377\213\042\271\113\331\011\105\244\336  
\244\270\232\130\335\033\175\122\237\216\131\103\210\201\244\236  
\046\325\157\255\335\015\306\067\175\355\003\222\033\345\167\137  
\166\356\074\215\304\135\126\133\242\331\146\156\263\065\067\345  
\062\266

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "DigiCert Global Root G2"

# Issuer: CN=DigiCert Global Root G2,OU=www.digicert.com,O=DigiCert Inc,C=US

# Serial Number:03:3a:f1:e6:a7:11:a9:a0:bb:28:64:b1:1d:09:fa:e5

# Subject: CN=DigiCert Global Root G2,OU=www.digicert.com,O=DigiCert Inc,C=US

# Not Valid Before: Thu Aug 01 12:00:00 2013

# Not Valid After : Fri Jan 15 12:00:00 2038

```

Fingerprint (SHA-256):
CB:3C:CB:B7:60:31:E5:E0:13:8F:8D:D3:9A:23:F9:DE:47:FF:C3:5E:43:C1:14:4C:EA:27:D4:6A:5A:B1:CB:5F
Fingerprint (SHA1): DF:3C:24:F9:BF:D6:66:76:1B:26:80:73:FE:06:D1:CC:8D:4F:82:A4
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "DigiCert Global Root G2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\337\074\044\371\277\326\146\166\033\046\200\163\376\006\321\314
\215\117\202\244
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\344\246\212\310\124\254\122\102\106\012\375\162\110\033\052\104
END
CKA_ISSUER MULTILINE_OCTAL
\060\141\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\040\060\036\006\003\125\004\003\023\027\104\151\147\151
\103\145\162\164\040\107\154\157\142\141\154\040\122\157\157\164
\040\107\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\003\072\361\346\247\021\251\240\273\050\144\261\035\011
\372\345
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "DigiCert Global Root G3"
#
Issuer: CN=DigiCert Global Root G3,OU=www.digicert.com,O=DigiCert Inc,C=US
Serial Number:05:55:56:bc:f2:5e:a4:35:35:c3:a4:0f:d5:ab:45:72
Subject: CN=DigiCert Global Root G3,OU=www.digicert.com,O=DigiCert Inc,C=US
Not Valid Before: Thu Aug 01 12:00:00 2013
Not Valid After : Fri Jan 15 12:00:00 2038
Fingerprint (SHA-256):
31:AD:66:48:F8:10:41:38:C7:38:F3:9E:A4:32:01:33:39:3E:3A:18:CC:02:29:6E:F9:7C:2A:C9:EF:67:31:DO
Fingerprint (SHA1): 7E:04:DE:89:6A:3E:66:6D:00:E6:87:D3:3F:FA:D9:3B:E8:3D:34:9E
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE

```

```
CKA_LABEL UTF8 "DigiCert Global Root G3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\141\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\040\060\036\006\003\125\004\003\023\027\104\151\147\151
\103\145\162\164\040\107\154\157\142\141\154\040\122\157\157\164
\040\107\063
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\141\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\040\060\036\006\003\125\004\003\023\027\104\151\147\151
\103\145\162\164\040\107\154\157\142\141\154\040\122\157\157\164
\040\107\063
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\005\125\126\274\362\136\244\065\065\303\244\017\325\253
\105\162
END
CKA_VALUE MULTILINE_OCTAL
\060\202\002\077\060\202\001\305\240\003\002\001\002\002\020\005
\125\126\274\362\136\244\065\065\303\244\017\325\253\105\162\060
\012\006\010\052\206\110\316\075\004\003\003\060\141\061\013\060
\011\006\003\125\004\006\023\002\125\123\061\025\060\023\006\003
\125\004\012\023\014\104\151\147\151\103\145\162\164\040\111\156
\143\061\031\060\027\006\003\125\004\013\023\020\167\167\167\056
\144\151\147\151\143\145\162\164\056\143\157\155\061\040\060\036
\006\003\125\004\003\023\027\104\151\147\151\103\145\162\164\040
\107\154\157\142\141\154\040\122\157\157\164\040\107\063\060\036
\027\015\061\063\060\070\060\061\061\062\060\060\060\060\132\027
\015\063\070\060\061\061\065\061\062\060\060\060\060\132\060\141
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\025\060
\023\006\003\125\004\012\023\014\104\151\147\151\103\145\162\164
\040\111\156\143\061\031\060\027\006\003\125\004\013\023\020\167
\167\167\056\144\151\147\151\143\145\162\164\056\143\157\155\061
\040\060\036\006\003\125\004\003\023\027\104\151\147\151\103\145
\162\164\040\107\154\157\142\141\154\040\122\157\157\164\040\107
\063\060\166\060\020\006\007\052\206\110\316\075\002\001\006\005
\053\201\004\000\042\003\142\000\004\335\247\331\273\212\270\013
\373\013\177\041\322\360\276\276\163\363\063\135\032\274\064\352
\336\306\233\274\320\225\366\360\314\320\013\272\141\133\121\106
\176\236\055\237\356\216\143\014\027\354\007\160\365\317\204\056
```

```
\100\203\234\350\077\101\155\073\255\323\244\024\131\066\170\235
\003\103\356\020\023\154\162\336\256\210\247\241\153\265\103\316
\147\334\043\377\003\034\243\342\076\243\102\060\100\060\017\006
\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060\016
\006\003\125\035\017\001\001\377\004\004\003\002\001\206\060\035
\006\003\125\035\016\004\026\004\024\263\333\110\244\371\241\305
\330\256\066\101\314\021\143\151\142\051\274\113\306\060\012\006
\010\052\206\110\316\075\004\003\003\003\150\000\060\145\002\061
\000\255\274\362\154\077\022\112\321\055\071\303\012\011\227\163
\364\210\066\214\210\047\273\346\210\215\120\205\247\143\371\236
\062\336\146\223\017\361\314\261\011\217\335\154\253\372\153\177
\240\002\060\071\146\133\302\144\215\270\236\120\334\250\325\111
\242\355\307\334\321\111\177\027\001\270\310\206\217\116\214\210
\053\250\232\251\212\305\321\000\275\370\124\342\232\345\133\174
\263\047\027
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE
```

# Trust for "DigiCert Global Root G3"

# Issuer: CN=DigiCert Global Root G3,OU=www.digicert.com,O=DigiCert Inc,C=US

# Serial Number:05:55:56:bc:f2:5e:a4:35:35:c3:a4:0f:d5:ab:45:72

# Subject: CN=DigiCert Global Root G3,OU=www.digicert.com,O=DigiCert Inc,C=US

# Not Valid Before: Thu Aug 01 12:00:00 2013

# Not Valid After : Fri Jan 15 12:00:00 2038

# Fingerprint (SHA-256):

31:AD:66:48:F8:10:41:38:C7:38:F3:9E:A4:32:01:33:39:3E:3A:18:CC:02:29:6E:F9:7C:2A:C9:EF:67:31:D0

# Fingerprint (SHA1): 7E:04:DE:89:6A:3E:66:6D:00:E6:87:D3:3F:FA:D9:3B:E8:3D:34:9E

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "DigiCert Global Root G3"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\176\004\336\211\152\076\146\155\000\346\207\323\077\372\331\073
\350\075\064\236
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\365\135\244\120\245\373\050\176\036\017\015\314\226\127\126\312
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\141\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\040\060\036\006\003\125\004\003\023\027\104\151\147\151
\103\145\162\164\040\107\154\157\142\141\154\040\122\157\157\164
```



```

\040\107\063
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\005\125\126\274\362\136\244\065\065\303\244\017\325\253
\105\162
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "DigiCert Trusted Root G4"
#
Issuer: CN=DigiCert Trusted Root G4,OU=www.digicert.com,O=DigiCert Inc,C=US
Serial Number:05:9b:1b:57:9e:8e:21:32:e2:39:07:bd:a7:77:75:5c
Subject: CN=DigiCert Trusted Root G4,OU=www.digicert.com,O=DigiCert Inc,C=US
Not Valid Before: Thu Aug 01 12:00:00 2013
Not Valid After : Fri Jan 15 12:00:00 2038
Fingerprint (SHA-256):
55:2F:7B:DC:F1:A7:AF:9E:6C:E6:72:01:7F:4F:12:AB:F7:72:40:C7:8E:76:1A:C2:03:D1:D9:D2:0A:C8:99:88
Fingerprint (SHA1): DD:FB:16:CD:49:31:C9:73:A2:03:7D:3F:C8:3A:4D:7D:77:5D:05:E4
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "DigiCert Trusted Root G4"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\142\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\041\060\037\006\003\125\004\003\023\030\104\151\147\151
\103\145\162\164\040\124\162\165\163\164\145\144\040\122\157\157
\164\040\107\064
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\142\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\041\060\037\006\003\125\004\003\023\030\104\151\147\151
\103\145\162\164\040\124\162\165\163\164\145\144\040\122\157\157
\164\040\107\064
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL

```

\002\020\005\233\033\127\236\216\041\062\342\071\007\275\247\167  
\165\134

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\220\060\202\003\170\240\003\002\001\002\002\020\005  
\233\033\127\236\216\041\062\342\071\007\275\247\167\165\134\060  
\015\006\011\052\206\110\206\367\015\001\001\014\005\000\060\142  
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\025\060  
\023\006\003\125\004\012\023\014\104\151\147\151\103\145\162\164  
\040\111\156\143\061\031\060\027\006\003\125\004\013\023\020\167  
\167\167\056\144\151\147\151\143\145\162\164\056\143\157\155\061  
\041\060\037\006\003\125\004\003\023\030\104\151\147\151\103\145  
\162\164\040\124\162\165\163\164\145\144\040\122\157\157\164\040  
\107\064\060\036\027\015\061\063\060\070\060\061\061\062\060\060  
\060\060\132\027\015\063\070\060\061\061\065\061\062\060\060\060  
\060\132\060\142\061\013\060\011\006\003\125\004\006\023\002\125  
\123\061\025\060\023\006\003\125\004\012\023\014\104\151\147\151  
\103\145\162\164\040\111\156\143\061\031\060\027\006\003\125\004  
\013\023\020\167\167\167\056\144\151\147\151\143\145\162\164\056  
\143\157\155\061\041\060\037\006\003\125\004\003\023\030\104\151  
\147\151\103\145\162\164\040\124\162\165\163\164\145\144\040\122  
\157\157\164\040\107\064\060\202\002\042\060\015\006\011\052\206  
\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060\202  
\002\012\002\202\002\001\000\277\346\220\163\150\336\273\344\135  
\112\074\060\042\060\151\063\354\302\247\045\056\311\041\075\362  
\212\330\131\302\341\051\247\075\130\253\166\232\315\256\173\033  
\204\015\304\060\037\363\033\244\070\026\353\126\306\227\155\035  
\253\262\171\362\312\021\322\344\137\326\005\074\122\017\122\037  
\306\236\025\245\176\276\237\251\127\026\131\125\162\257\150\223  
\160\302\262\272\165\231\152\163\062\224\321\020\104\020\056\337  
\202\363\007\204\346\164\073\155\161\342\055\014\033\356\040\325  
\311\040\035\143\051\055\316\354\136\116\310\223\370\041\141\233  
\064\353\005\306\136\354\133\032\274\353\311\317\315\254\064\100  
\137\261\172\146\356\167\310\110\250\146\127\127\237\124\130\216  
\014\053\267\117\247\060\331\126\356\312\173\135\343\255\311\117  
\136\345\065\347\061\313\332\223\136\334\216\217\200\332\266\221  
\230\100\220\171\303\170\307\266\261\304\265\152\030\070\003\020  
\215\330\324\067\244\056\005\175\210\365\202\076\020\221\160\253  
\125\202\101\062\327\333\004\163\052\156\221\001\174\041\114\324  
\274\256\033\003\165\135\170\146\331\072\061\104\232\063\100\277  
\010\327\132\111\244\302\346\251\240\147\335\244\047\274\241\117  
\071\265\021\130\027\367\044\134\106\217\144\367\301\151\210\166  
\230\166\075\131\135\102\166\207\211\227\151\172\110\360\340\242  
\022\033\146\232\164\312\336\113\036\347\016\143\256\346\324\357  
\222\222\072\236\075\334\000\344\105\045\211\266\232\104\031\053  
\176\300\224\264\322\141\155\353\063\331\305\337\113\004\000\314  
\175\034\225\303\217\367\041\262\262\021\267\273\177\362\325\214  
\160\054\101\140\252\261\143\030\104\225\032\166\142\176\366\200

\260\373\350\144\246\063\321\211\007\341\275\267\346\103\244\030  
\270\246\167\001\341\017\224\014\041\035\262\124\051\045\211\154  
\345\016\122\121\107\164\276\046\254\266\101\165\336\172\254\137  
\215\077\311\274\323\101\021\022\133\345\020\120\353\061\305\312  
\162\026\042\011\337\174\114\165\077\143\354\041\137\304\040\121  
\153\157\261\253\206\213\117\302\326\105\137\235\040\374\241\036  
\305\300\217\242\261\176\012\046\231\365\344\151\057\230\035\055  
\365\331\251\262\035\345\033\002\003\001\000\001\243\102\060\100  
\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001  
\377\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001  
\206\060\035\006\003\125\035\016\004\026\004\024\354\327\343\202  
\322\161\135\144\114\337\056\147\077\347\272\230\256\034\017\117  
\060\015\006\011\052\206\110\206\367\015\001\001\014\005\000\003  
\202\002\001\000\273\141\331\175\251\154\276\027\304\221\033\303  
\241\242\000\215\343\144\150\017\126\317\167\256\160\371\375\232  
\112\231\271\311\170\134\014\014\137\344\346\024\051\126\013\066  
\111\135\104\143\340\255\234\226\030\146\033\043\015\075\171\351  
\155\153\326\124\370\322\074\301\103\100\256\035\120\365\122\374  
\220\073\273\230\231\151\153\307\301\247\250\150\244\047\334\235  
\371\047\256\060\205\271\366\147\115\072\076\217\131\071\042\123  
\104\353\310\135\003\312\355\120\172\175\142\041\012\200\310\163  
\146\321\240\005\140\137\350\245\264\247\257\250\367\155\065\234  
\174\132\212\326\242\070\231\363\170\213\364\115\322\040\013\336  
\004\356\214\233\107\201\162\015\300\024\062\357\060\131\056\256  
\340\161\362\126\344\152\227\157\222\120\155\226\215\150\172\232  
\262\066\024\172\006\362\044\271\011\021\120\327\010\261\270\211  
\172\204\043\141\102\051\345\243\315\242\040\101\327\321\234\144  
\331\352\046\241\213\024\327\114\031\262\120\101\161\075\077\115  
\160\043\206\014\112\334\201\322\314\062\224\204\015\010\011\227  
\034\117\300\356\153\040\164\060\322\340\071\064\020\205\041\025  
\001\010\350\125\062\336\161\111\331\050\027\120\115\346\276\115  
\321\165\254\320\312\373\101\270\103\245\252\323\303\005\104\117  
\054\066\233\342\372\342\105\270\043\123\154\006\157\147\125\177  
\106\265\114\077\156\050\132\171\046\322\244\250\142\227\322\036  
\342\355\112\213\274\033\375\107\112\015\337\147\146\176\262\133  
\101\320\073\344\364\073\364\004\143\351\357\302\124\000\121\240  
\212\052\311\316\170\314\325\352\207\004\030\263\316\257\111\210  
\257\363\222\231\266\263\346\141\017\322\205\000\347\120\032\344  
\033\225\235\031\241\271\234\261\233\261\000\036\357\320\017\117  
\102\154\311\012\274\356\103\372\072\161\245\310\115\046\245\065  
\375\211\135\274\205\142\035\062\322\240\053\124\355\232\127\301  
\333\372\020\317\031\267\213\112\033\217\001\266\047\225\123\350  
\266\211\155\133\274\150\324\043\350\213\121\242\126\371\360\246  
\200\240\326\036\263\274\017\017\123\165\051\252\352\023\167\344  
\336\214\201\041\255\007\020\107\021\255\207\075\007\321\165\274  
\317\363\146\176

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "DigiCert Trusted Root G4"

# Issuer: CN=DigiCert Trusted Root G4,OU=www.digicert.com,O=DigiCert Inc,C=US

# Serial Number:05:9b:1b:57:9e:8e:21:32:e2:39:07:bd:a7:77:75:5c

# Subject: CN=DigiCert Trusted Root G4,OU=www.digicert.com,O=DigiCert Inc,C=US

# Not Valid Before: Thu Aug 01 12:00:00 2013

# Not Valid After : Fri Jan 15 12:00:00 2038

# Fingerprint (SHA-256):

55:2F:7B:DC:F1:A7:AF:9E:6C:E6:72:01:7F:4F:12:AB:F7:72:40:C7:8E:76:1A:C2:03:D1:D9:D2:0A:C8:99:88

# Fingerprint (SHA1): DD:FB:16:CD:49:31:C9:73:A2:03:7D:3F:C8:3A:4D:7D:77:5D:05:E4

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "DigiCert Trusted Root G4"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\335\373\026\315\111\061\311\163\242\003\175\077\310\072\115\175

\167\135\005\344

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\170\362\374\252\140\037\057\264\353\311\067\272\123\056\165\111

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\142\061\013\060\011\006\003\125\004\006\023\002\125\123\061

\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145

\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023

\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157

\155\061\041\060\037\006\003\125\004\003\023\030\104\151\147\151

\103\145\162\164\040\124\162\165\163\164\145\144\040\122\157\157

\164\040\107\064

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\005\233\033\127\236\216\041\062\342\071\007\275\247\167

\165\134

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "COMODO RSA Certification Authority"

#

# Issuer: CN=COMODO RSA Certification Authority,O=COMODO CA Limited,L=Salford,ST=Greater Manchester,C=GB

# Serial Number:4c:aa:f9:ca:db:63:6f:e0:1f:f7:4e:d8:5b:03:86:9d

# Subject: CN=COMODO RSA Certification Authority,O=COMODO CA Limited,L=Salford,ST=Greater Manchester,C=GB

# Not Valid Before: Tue Jan 19 00:00:00 2010

# Not Valid After : Mon Jan 18 23:59:59 2038

# Fingerprint (SHA-256):

52:F0:E1:C4:E5:8E:C6:29:29:1B:60:31:7F:07:46:71:B8:5D:7E:A8:0D:5B:07:27:34:63:53:4B:32:B4:02:34

# Fingerprint (SHA1): AF:E5:D2:44:A8:D1:19:42:30:FF:47:9F:E2:F8:97:BB:CD:7A:8C:B4

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "COMODO RSA Certification Authority"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\201\205\061\013\060\011\006\003\125\004\006\023\002\107\102  
\061\033\060\031\006\003\125\004\010\023\022\107\162\145\141\164  
\145\162\040\115\141\156\143\150\145\163\164\145\162\061\020\060  
\016\006\003\125\004\007\023\007\123\141\154\146\157\162\144\061  
\032\060\030\006\003\125\004\012\023\021\103\117\115\117\104\117  
\040\103\101\040\114\151\155\151\164\145\144\061\053\060\051\006  
\003\125\004\003\023\042\103\117\115\117\104\117\040\122\123\101  
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101  
\165\164\150\157\162\151\164\171

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\205\061\013\060\011\006\003\125\004\006\023\002\107\102  
\061\033\060\031\006\003\125\004\010\023\022\107\162\145\141\164  
\145\162\040\115\141\156\143\150\145\163\164\145\162\061\020\060  
\016\006\003\125\004\007\023\007\123\141\154\146\157\162\144\061  
\032\060\030\006\003\125\004\012\023\021\103\117\115\117\104\117  
\040\103\101\040\114\151\155\151\164\145\144\061\053\060\051\006  
\003\125\004\003\023\042\103\117\115\117\104\117\040\122\123\101  
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101  
\165\164\150\157\162\151\164\171

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\114\252\371\312\333\143\157\340\037\367\116\330\133\003  
\206\235

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\330\060\202\003\300\240\003\002\001\002\002\020\114  
\252\371\312\333\143\157\340\037\367\116\330\133\003\206\235\060  
\015\006\011\052\206\110\206\367\015\001\001\014\005\000\060\201  
\205\061\013\060\011\006\003\125\004\006\023\002\107\102\061\033  
\060\031\006\003\125\004\010\023\022\107\162\145\141\164\145\162  
\040\115\141\156\143\150\145\163\164\145\162\061\020\060\016\006  
\003\125\004\007\023\007\123\141\154\146\157\162\144\061\032\060

\030\006\003\125\004\012\023\021\103\117\115\117\104\117\040\103  
\101\040\114\151\155\151\164\145\144\061\053\060\051\006\003\125  
\004\003\023\042\103\117\115\117\104\117\040\122\123\101\040\103  
\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164  
\150\157\162\151\164\171\060\036\027\015\061\060\060\061\061\071  
\060\060\060\060\060\060\132\027\015\063\070\060\061\061\070\062  
\063\065\071\065\071\132\060\201\205\061\013\060\011\006\003\125  
\004\006\023\002\107\102\061\033\060\031\006\003\125\004\010\023  
\022\107\162\145\141\164\145\162\040\115\141\156\143\150\145\163  
\164\145\162\061\020\060\016\006\003\125\004\007\023\007\123\141  
\154\146\157\162\144\061\032\060\030\006\003\125\004\012\023\021  
\103\117\115\117\104\117\040\103\101\040\114\151\155\151\164\145  
\144\061\053\060\051\006\003\125\004\003\023\042\103\117\115\117  
\104\117\040\122\123\101\040\103\145\162\164\151\146\151\143\141  
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\060\202  
\002\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005  
\000\003\202\002\017\000\060\202\002\012\002\202\002\001\000\221  
\350\124\222\322\012\126\261\254\015\044\335\305\317\104\147\164  
\231\053\067\243\175\043\160\000\161\274\123\337\304\372\052\022  
\217\113\177\020\126\275\237\160\162\267\141\177\311\113\017\027  
\247\075\343\260\004\141\356\377\021\227\307\364\206\076\012\372  
\076\134\371\223\346\064\172\331\024\153\347\234\263\205\240\202  
\172\166\257\161\220\327\354\375\015\372\234\154\372\337\260\202  
\364\024\176\371\276\304\246\057\117\177\231\177\265\374\147\103  
\162\275\014\000\326\211\353\153\054\323\355\217\230\034\024\253  
\176\345\343\156\374\330\250\344\222\044\332\103\153\142\270\125  
\375\352\301\274\154\266\213\363\016\215\232\344\233\154\151\231  
\370\170\110\060\105\325\255\341\015\074\105\140\374\062\226\121  
\047\274\147\303\312\056\266\153\352\106\307\307\040\240\261\037  
\145\336\110\010\272\244\116\251\362\203\106\067\204\353\350\314  
\201\110\103\147\116\162\052\233\134\275\114\033\050\212\134\042  
\173\264\253\230\331\356\340\121\203\303\011\106\116\155\076\231  
\372\225\027\332\174\063\127\101\074\215\121\355\013\266\134\257  
\054\143\032\337\127\310\077\274\351\135\304\233\257\105\231\342  
\243\132\044\264\272\251\126\075\317\157\252\377\111\130\276\360  
\250\377\364\270\255\351\067\373\272\270\364\013\072\371\350\103  
\102\036\211\330\204\313\023\361\331\273\341\211\140\270\214\050  
\126\254\024\035\234\012\347\161\353\317\016\335\075\251\226\241  
\110\275\074\367\257\265\015\042\114\300\021\201\354\126\073\366  
\323\242\342\133\267\262\004\042\122\225\200\223\151\350\216\114  
\145\361\221\003\055\160\164\002\352\213\147\025\051\151\122\002  
\273\327\337\120\152\125\106\277\240\243\050\141\177\160\320\303  
\242\252\054\041\252\107\316\050\234\006\105\166\277\202\030\047  
\264\325\256\264\313\120\346\153\364\114\206\161\060\351\246\337  
\026\206\340\330\377\100\335\373\320\102\210\177\243\063\072\056  
\134\036\101\021\201\143\316\030\161\153\053\354\246\212\267\061  
\134\072\152\107\340\303\171\131\326\040\032\257\362\152\230\252  
\162\274\127\112\322\113\235\273\020\374\260\114\101\345\355\035

\075\136\050\235\234\314\277\263\121\332\247\107\345\204\123\002  
\003\001\000\001\243\102\060\100\060\035\006\003\125\035\016\004  
\026\004\024\273\257\176\002\075\372\246\361\074\204\216\255\356  
\070\230\354\331\062\062\324\060\016\006\003\125\035\017\001\001  
\377\004\004\003\002\001\006\060\017\006\003\125\035\023\001\001  
\377\004\005\060\003\001\001\377\060\015\006\011\052\206\110\206  
\367\015\001\001\014\005\000\003\202\002\001\000\012\361\325\106  
\204\267\256\121\273\154\262\115\101\024\000\223\114\234\313\345  
\300\124\317\240\045\216\002\371\375\260\242\015\365\040\230\074  
\023\055\254\126\242\260\326\176\021\222\351\056\272\236\056\232  
\162\261\275\031\104\154\141\065\242\232\264\026\022\151\132\214  
\341\327\076\244\032\350\057\003\364\256\141\035\020\033\052\244  
\213\172\305\376\005\246\341\300\326\310\376\236\256\217\053\272  
\075\231\370\330\163\011\130\106\156\246\234\364\327\047\323\225  
\332\067\203\162\034\323\163\340\242\107\231\003\070\135\325\111  
\171\000\051\034\307\354\233\040\034\007\044\151\127\170\262\071  
\374\072\204\240\265\234\174\215\277\056\223\142\047\267\071\332  
\027\030\256\275\074\011\150\377\204\233\074\325\326\013\003\343  
\127\236\024\367\321\353\117\310\275\207\043\267\266\111\103\171  
\205\134\272\353\222\013\241\306\350\150\250\114\026\261\032\231  
\012\350\123\054\222\273\241\011\030\165\014\145\250\173\313\043  
\267\032\302\050\205\303\033\377\320\053\142\357\244\173\011\221  
\230\147\214\024\001\315\150\006\152\143\041\165\003\200\210\212  
\156\201\306\205\362\251\244\055\347\364\245\044\020\107\203\312  
\315\364\215\171\130\261\006\233\347\032\052\331\235\001\327\224  
\175\355\003\112\312\360\333\350\251\001\076\365\126\231\311\036  
\216\111\075\273\345\011\271\340\117\111\222\075\026\202\100\314  
\314\131\306\346\072\355\022\056\151\074\154\225\261\375\252\035  
\173\177\206\276\036\016\062\106\373\373\023\217\165\177\114\213  
\113\106\143\376\000\064\100\160\301\303\271\241\335\246\160\342  
\004\263\101\274\351\200\221\352\144\234\172\341\042\003\251\234  
\156\157\016\145\117\154\207\207\136\363\156\240\371\165\245\233  
\100\350\123\262\047\235\112\271\300\167\041\215\377\207\362\336  
\274\214\357\027\337\267\111\013\321\362\156\060\013\032\016\116  
\166\355\021\374\365\351\126\262\175\277\307\155\012\223\214\245  
\320\300\266\035\276\072\116\224\242\327\156\154\013\302\212\174  
\372\040\363\304\344\345\315\015\250\313\221\222\261\174\205\354  
\265\024\151\146\016\202\347\315\316\310\055\246\121\177\041\301  
\065\123\205\006\112\135\237\255\273\033\137\164

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "COMODO RSA Certification Authority"

# Issuer: CN=COMODO RSA Certification Authority,O=COMODO CA Limited,L=Salford,ST=Greater  
Manchester,C=GB

# Serial Number:4c:aa:f9:ca:db:63:6f:e0:1f:f7:4e:d8:5b:03:86:9d

```
Subject: CN=COMODO RSA Certification Authority,O=COMODO CA Limited,L=Salford,ST=Greater
Manchester,C=GB
Not Valid Before: Tue Jan 19 00:00:00 2010
Not Valid After : Mon Jan 18 23:59:59 2038
Fingerprint (SHA-256):
52:F0:E1:C4:E5:8E:C6:29:29:1B:60:31:7F:07:46:71:B8:5D:7E:A8:0D:5B:07:27:34:63:53:4B:32:B4:02:34
Fingerprint (SHA1): AF:E5:D2:44:A8:D1:19:42:30:FF:47:9F:E2:F8:97:BB:CD:7A:8C:B4
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "COMODO RSA Certification Authority"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\257\345\322\104\250\321\031\102\060\377\107\237\342\370\227\273
\315\172\214\264
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\033\061\260\161\100\066\314\024\066\221\255\304\076\375\354\030
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\205\061\013\060\011\006\003\125\004\006\023\002\107\102
\061\033\060\031\006\003\125\004\010\023\022\107\162\145\141\164
\145\162\040\115\141\156\143\150\145\163\164\145\162\061\020\060
\016\006\003\125\004\007\023\007\123\141\154\146\157\162\144\061
\032\060\030\006\003\125\004\012\023\021\103\117\115\117\104\117
\040\103\101\040\114\151\155\151\164\145\144\061\053\060\051\006
\003\125\004\003\023\042\103\117\115\117\104\117\040\122\123\101
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101
\165\164\150\157\162\151\164\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\114\252\371\312\333\143\157\340\037\367\116\330\133\003
\206\235
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "USERTrust RSA Certification Authority"
#
Issuer: CN=USERTrust RSA Certification Authority,O=The USERTRUST Network,L=Jersey City,ST=New
Jersey,C=US
Serial Number:01:fd:6d:30:fc:a3:ca:51:a8:1b:bc:64:0e:35:03:2d
Subject: CN=USERTrust RSA Certification Authority,O=The USERTRUST Network,L=Jersey City,ST=New
Jersey,C=US
Not Valid Before: Mon Feb 01 00:00:00 2010
```



# Not Valid After : Mon Jan 18 23:59:59 2038

# Fingerprint (SHA-256):

E7:93:C9:B0:2F:D8:AA:13:E2:1C:31:22:8A:CC:B0:81:19:64:3B:74:9C:89:89:64:B1:74:6D:46:C3:D4:CB:D2

# Fingerprint (SHA1): 2B:8F:1B:57:33:0D:BB:A2:D0:7A:6C:51:F7:0E:E9:0D:DA:B9:AD:8E

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "USERTrust RSA Certification Authority"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\201\210\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\023\060\021\006\003\125\004\010\023\012\116\145\167\040\112  
\145\162\163\145\171\061\024\060\022\006\003\125\004\007\023\013  
\112\145\162\163\145\171\040\103\151\164\171\061\036\060\034\006  
\003\125\004\012\023\025\124\150\145\040\125\123\105\122\124\122  
\125\123\124\040\116\145\164\167\157\162\153\061\056\060\054\006  
\003\125\004\003\023\045\125\123\105\122\124\162\165\163\164\040  
\122\123\101\040\103\145\162\164\151\146\151\143\141\164\151\157  
\156\040\101\165\164\150\157\162\151\164\171

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\210\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\023\060\021\006\003\125\004\010\023\012\116\145\167\040\112  
\145\162\163\145\171\061\024\060\022\006\003\125\004\007\023\013  
\112\145\162\163\145\171\040\103\151\164\171\061\036\060\034\006  
\003\125\004\012\023\025\124\150\145\040\125\123\105\122\124\122  
\125\123\124\040\116\145\164\167\157\162\153\061\056\060\054\006  
\003\125\004\003\023\045\125\123\105\122\124\162\165\163\164\040  
\122\123\101\040\103\145\162\164\151\146\151\143\141\164\151\157  
\156\040\101\165\164\150\157\162\151\164\171

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\001\375\155\060\374\243\312\121\250\033\274\144\016\065  
\003\055

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\336\060\202\003\306\240\003\002\001\002\002\020\001  
\375\155\060\374\243\312\121\250\033\274\144\016\065\003\055\060  
\015\006\011\052\206\110\206\367\015\001\001\014\005\000\060\201  
\210\061\013\060\011\006\003\125\004\006\023\002\125\123\061\023  
\060\021\006\003\125\004\010\023\012\116\145\167\040\112\145\162  
\163\145\171\061\024\060\022\006\003\125\004\007\023\013\112\145  
\162\163\145\171\040\103\151\164\171\061\036\060\034\006\003\125  
\004\012\023\025\124\150\145\040\125\123\105\122\124\122\125\123  
\124\040\116\145\164\167\157\162\153\061\056\060\054\006\003\125  
\004\003\023\045\125\123\105\122\124\162\165\163\164\040\122\123

\101\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040  
\101\165\164\150\157\162\151\164\171\060\036\027\015\061\060\060  
\062\060\061\060\060\060\060\060\060\132\027\015\063\070\060\061  
\061\070\062\063\065\071\065\071\132\060\201\210\061\013\060\011  
\006\003\125\004\006\023\002\125\123\061\023\060\021\006\003\125  
\004\010\023\012\116\145\167\040\112\145\162\163\145\171\061\024  
\060\022\006\003\125\004\007\023\013\112\145\162\163\145\171\040  
\103\151\164\171\061\036\060\034\006\003\125\004\012\023\025\124  
\150\145\040\125\123\105\122\124\122\125\123\124\040\116\145\164  
\167\157\162\153\061\056\060\054\006\003\125\004\003\023\045\125  
\123\105\122\124\162\165\163\164\040\122\123\101\040\103\145\162  
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157  
\162\151\164\171\060\202\002\042\060\015\006\011\052\206\110\206  
\367\015\001\001\001\005\000\003\202\002\017\000\060\202\002\012  
\002\202\002\001\000\200\022\145\027\066\016\303\333\010\263\320  
\254\127\015\166\355\315\047\323\114\255\120\203\141\342\252\040  
\115\011\055\144\011\334\316\211\237\314\075\251\354\366\317\301  
\334\361\323\261\326\173\067\050\021\053\107\332\071\306\274\072  
\031\264\137\246\275\175\235\243\143\102\266\166\362\251\073\053  
\221\370\342\157\320\354\026\040\220\011\076\342\350\164\311\030  
\264\221\324\142\144\333\177\243\006\361\210\030\152\220\042\074  
\274\376\023\360\207\024\173\366\344\037\216\324\344\121\306\021  
\147\106\010\121\313\206\024\124\077\274\063\376\176\154\234\377  
\026\235\030\275\121\216\065\246\247\146\310\162\147\333\041\146  
\261\324\233\170\003\300\120\072\350\314\360\334\274\236\114\376  
\257\005\226\065\037\127\132\267\377\316\371\075\267\054\266\366  
\124\335\310\347\022\072\115\256\114\212\267\134\232\264\267\040  
\075\312\177\042\064\256\176\073\150\146\001\104\347\001\116\106  
\123\233\063\140\367\224\276\123\067\220\163\103\363\062\303\123  
\357\333\252\376\164\116\151\307\153\214\140\223\336\304\307\014  
\337\341\062\256\314\223\073\121\170\225\147\213\356\075\126\376  
\014\320\151\017\033\017\363\045\046\153\063\155\367\156\107\372  
\163\103\345\176\016\245\146\261\051\174\062\204\143\125\211\304  
\015\301\223\124\060\031\023\254\323\175\067\247\353\135\072\154  
\065\134\333\101\327\022\332\251\111\013\337\330\200\212\011\223  
\142\216\265\146\317\045\210\315\204\270\261\077\244\071\017\331  
\002\236\353\022\114\225\174\363\153\005\251\136\026\203\314\270  
\147\342\350\023\235\314\133\202\323\114\263\355\133\377\336\345  
\163\254\043\073\055\000\277\065\125\164\011\111\330\111\130\032  
\177\222\066\346\121\222\016\363\046\175\034\115\027\274\311\354  
\103\046\320\277\101\137\100\251\104\104\364\231\347\127\207\236  
\120\037\127\124\250\076\375\164\143\057\261\120\145\011\346\130  
\102\056\103\032\114\264\360\045\107\131\372\004\036\223\324\046  
\106\112\120\201\262\336\276\170\267\374\147\025\341\311\127\204  
\036\017\143\326\351\142\272\326\137\125\056\352\134\306\050\010  
\004\045\071\270\016\053\251\362\114\227\034\007\077\015\122\365  
\355\357\057\202\017\002\003\001\000\001\243\102\060\100\060\035  
\006\003\125\035\016\004\026\004\024\123\171\277\132\252\053\112

\317\124\200\341\330\233\300\235\362\262\003\146\313\060\016\006  
\003\125\035\017\001\001\377\004\004\003\002\001\006\060\017\006  
\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060\015  
\006\011\052\206\110\206\367\015\001\001\014\005\000\003\202\002  
\001\000\134\324\174\015\317\367\001\175\101\231\145\014\163\305  
\122\237\313\370\317\231\006\177\033\332\103\025\237\236\002\125  
\127\226\024\361\122\074\047\207\224\050\355\037\072\001\067\242  
\166\374\123\120\300\204\233\306\153\116\272\214\041\117\242\216  
\125\142\221\363\151\025\330\274\210\343\304\252\013\375\357\250  
\351\113\125\052\006\040\155\125\170\051\031\356\137\060\134\113  
\044\021\125\377\044\232\156\136\052\053\356\013\115\237\177\367  
\001\070\224\024\225\103\007\011\373\140\251\356\034\253\022\214  
\240\232\136\247\230\152\131\155\213\077\010\373\310\321\105\257  
\030\025\144\220\022\017\163\050\056\305\342\044\116\374\130\354  
\360\364\105\376\042\263\353\057\216\322\331\105\141\005\301\227  
\157\250\166\162\217\213\214\066\257\277\015\005\316\161\215\346  
\246\157\037\154\246\161\142\305\330\320\203\162\014\361\147\021  
\211\014\234\023\114\162\064\337\274\325\161\337\252\161\335\341  
\271\154\214\074\022\135\145\332\275\127\022\266\103\153\377\345  
\336\115\146\021\121\317\231\256\354\027\266\350\161\221\214\336  
\111\376\335\065\161\242\025\047\224\034\317\141\343\046\273\157  
\243\147\045\041\135\346\335\035\013\056\150\033\073\202\257\354  
\203\147\205\324\230\121\164\261\271\231\200\211\377\177\170\031  
\134\171\112\140\056\222\100\256\114\067\052\054\311\307\142\310  
\016\135\367\066\133\312\340\045\045\001\264\335\032\007\234\167  
\000\077\320\334\325\354\075\324\372\273\077\314\205\326\157\177  
\251\055\337\271\002\367\365\227\232\265\065\332\303\147\260\207  
\112\251\050\236\043\216\377\134\047\153\341\260\117\363\007\356  
\000\056\324\131\207\313\122\101\225\352\364\107\327\356\144\101  
\125\174\215\131\002\225\335\142\235\302\271\356\132\050\164\204  
\245\233\267\220\307\014\007\337\365\211\066\164\062\326\050\301  
\260\260\013\340\234\114\303\034\326\374\343\151\265\107\106\201  
\057\242\202\253\323\143\104\160\304\215\377\055\063\272\255\217  
\173\265\160\210\256\076\031\317\100\050\330\374\310\220\273\135  
\231\042\365\122\346\130\305\037\210\061\103\356\210\035\327\306  
\216\074\103\152\035\247\030\336\175\075\026\361\142\371\312\220  
\250\375

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "USERTrust RSA Certification Authority"  
# Issuer: CN=USERTrust RSA Certification Authority,O=The USERTRUST Network,L=Jersey City,ST=New  
Jersey,C=US  
# Serial Number:01:fd:6d:30:fc:a3:ca:51:a8:1b:bc:64:0e:35:03:2d  
# Subject: CN=USERTrust RSA Certification Authority,O=The USERTRUST Network,L=Jersey City,ST=New  
Jersey,C=US

```

Not Valid Before: Mon Feb 01 00:00:00 2010
Not Valid After : Mon Jan 18 23:59:59 2038
Fingerprint (SHA-256):
E7:93:C9:B0:2F:D8:AA:13:E2:1C:31:22:8A:CC:B0:81:19:64:3B:74:9C:89:89:64:B1:74:6D:46:C3:D4:CB:D2
Fingerprint (SHA1): 2B:8F:1B:57:33:0D:BB:A2:D0:7A:6C:51:F7:0E:E9:0D:DA:B9:AD:8E
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "USERTrust RSA Certification Authority"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\053\217\033\127\063\015\273\242\320\172\154\121\367\016\351\015
\332\271\255\216
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\033\376\151\321\221\267\031\063\243\162\250\017\341\125\345\265
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\210\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\023\060\021\006\003\125\004\010\023\012\116\145\167\040\112
\145\162\163\145\171\061\024\060\022\006\003\125\004\007\023\013
\112\145\162\163\145\171\040\103\151\164\171\061\036\060\034\006
\003\125\004\012\023\025\124\150\145\040\125\123\105\122\124\122
\125\123\124\040\116\145\164\167\157\162\153\061\056\060\054\006
\003\125\004\003\023\045\125\123\105\122\124\162\165\163\164\040
\122\123\101\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\001\375\155\060\374\243\312\121\250\033\274\144\016\065
\003\055
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "USERTrust ECC Certification Authority"
#
Issuer: CN=USERTrust ECC Certification Authority,O=The USERTRUST Network,L=Jersey City,ST=New
Jersey,C=US
Serial Number:5c:8b:99:c5:5a:94:c5:d2:71:56:de:cd:89:80:cc:26
Subject: CN=USERTrust ECC Certification Authority,O=The USERTRUST Network,L=Jersey City,ST=New
Jersey,C=US
Not Valid Before: Mon Feb 01 00:00:00 2010
Not Valid After : Mon Jan 18 23:59:59 2038
Fingerprint (SHA-256):

```

```
4F:F4:60:D5:4B:9C:86:DA:BF:BC:FC:57:12:E0:40:0D:2B:ED:3F:BC:4D:4F:BD:AA:86:E0:6A:DC:D2:A9:AD:7A
Fingerprint (SHA1): D1:CB:CA:5D:B2:D5:2A:7F:69:3B:67:4D:E5:F0:5A:1D:0C:95:7D:F0
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "USERTrust ECC Certification Authority"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\210\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\023\060\021\006\003\125\004\010\023\012\116\145\167\040\112
\145\162\163\145\171\061\024\060\022\006\003\125\004\007\023\013
\112\145\162\163\145\171\040\103\151\164\171\061\036\060\034\006
\003\125\004\012\023\025\124\150\145\040\125\123\105\122\124\122
\125\123\124\040\116\145\164\167\157\162\153\061\056\060\054\006
\003\125\004\003\023\045\125\123\105\122\124\162\165\163\164\040
\105\103\103\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\210\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\023\060\021\006\003\125\004\010\023\012\116\145\167\040\112
\145\162\163\145\171\061\024\060\022\006\003\125\004\007\023\013
\112\145\162\163\145\171\040\103\151\164\171\061\036\060\034\006
\003\125\004\012\023\025\124\150\145\040\125\123\105\122\124\122
\125\123\124\040\116\145\164\167\157\162\153\061\056\060\054\006
\003\125\004\003\023\045\125\123\105\122\124\162\165\163\164\040
\105\103\103\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\134\213\231\305\132\224\305\322\161\126\336\315\211\200
\314\046
END
CKA_VALUE MULTILINE_OCTAL
\060\202\002\217\060\202\002\025\240\003\002\001\002\002\020\134
\213\231\305\132\224\305\322\161\126\336\315\211\200\314\046\060
\012\006\010\052\206\110\316\075\004\003\003\060\201\210\061\013
\060\011\006\003\125\004\006\023\002\125\123\061\023\060\021\006
\003\125\004\010\023\012\116\145\167\040\112\145\162\163\145\171
\061\024\060\022\006\003\125\004\007\023\013\112\145\162\163\145
\171\040\103\151\164\171\061\036\060\034\006\003\125\004\012\023
\025\124\150\145\040\125\123\105\122\124\122\125\123\124\040\116
\145\164\167\157\162\153\061\056\060\054\006\003\125\004\003\023
\045\125\123\105\122\124\162\165\163\164\040\105\103\103\040\103
\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164
\150\157\162\151\164\171\060\036\027\015\061\060\060\062\060\061
```

\060\060\060\060\060\060\060\060\132\027\015\063\070\060\061\061\070\062  
\063\065\071\065\071\132\060\201\210\061\013\060\011\006\003\125  
\004\006\023\002\125\123\061\023\060\021\006\003\125\004\010\023  
\012\116\145\167\040\112\145\162\163\145\171\061\024\060\022\006  
\003\125\004\007\023\013\112\145\162\163\145\171\040\103\151\164  
\171\061\036\060\034\006\003\125\004\012\023\025\124\150\145\040  
\125\123\105\122\124\122\125\123\124\040\116\145\164\167\157\162  
\153\061\056\060\054\006\003\125\004\003\023\045\125\123\105\122  
\124\162\165\163\164\040\105\103\103\040\103\145\162\164\151\146  
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164  
\171\060\166\060\020\006\007\052\206\110\316\075\002\001\006\005  
\053\201\004\000\042\003\142\000\004\032\254\124\132\251\371\150  
\043\347\172\325\044\157\123\306\132\330\113\253\306\325\266\321  
\346\163\161\256\335\234\326\014\141\375\333\240\211\003\270\005  
\024\354\127\316\356\135\077\342\041\263\316\367\324\212\171\340  
\243\203\176\055\227\320\141\304\361\231\334\045\221\143\253\177  
\060\243\264\160\342\307\241\063\234\363\277\056\134\123\261\137  
\263\175\062\177\212\064\343\171\171\243\102\060\100\060\035\006  
\003\125\035\016\004\026\004\024\072\341\011\206\324\317\031\302  
\226\166\164\111\166\334\340\065\306\143\143\232\060\016\006\003  
\125\035\017\001\001\377\004\004\003\002\001\006\060\017\006\003  
\125\035\023\001\001\377\004\005\060\003\001\001\377\060\012\006  
\010\052\206\110\316\075\004\003\003\003\150\000\060\145\002\060  
\066\147\241\026\010\334\344\227\000\101\035\116\276\341\143\001  
\317\073\252\102\021\144\240\235\224\071\002\021\171\134\173\035  
\372\144\271\356\026\102\263\277\212\302\011\304\354\344\261\115  
\002\061\000\351\052\141\107\214\122\112\113\116\030\160\366\326  
\104\326\156\365\203\272\155\130\275\044\331\126\110\352\357\304  
\242\106\201\210\152\072\106\321\251\233\115\311\141\332\321\135  
\127\152\030

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "USERTrust ECC Certification Authority"

# Issuer: CN=USERTrust ECC Certification Authority,O=The USERTRUST Network,L=Jersey City,ST=New Jersey,C=US

# Serial Number:5c:8b:99:c5:5a:94:c5:d2:71:56:de:cd:89:80:cc:26

# Subject: CN=USERTrust ECC Certification Authority,O=The USERTRUST Network,L=Jersey City,ST=New Jersey,C=US

# Not Valid Before: Mon Feb 01 00:00:00 2010

# Not Valid After : Mon Jan 18 23:59:59 2038

# Fingerprint (SHA-256):

4F:F4:60:D5:4B:9C:86:DA:BF:BC:FC:57:12:E0:40:0D:2B:ED:3F:BC:4D:4F:BD:AA:86:E0:6A:DC:D2:A9:AD:7A

# Fingerprint (SHA1): D1:CB:CA:5D:B2:D5:2A:7F:69:3B:67:4D:E5:F0:5A:1D:0C:95:7D:F0

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

```

CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "USERTrust ECC Certification Authority"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\321\313\312\135\262\325\052\177\151\073\147\115\345\360\132\035
\014\225\175\360
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\372\150\274\331\265\177\255\375\311\035\006\203\050\314\044\301
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\210\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\023\060\021\006\003\125\004\010\023\012\116\145\167\040\112
\145\162\163\145\171\061\024\060\022\006\003\125\004\007\023\013
\112\145\162\163\145\171\040\103\151\164\171\061\036\060\034\006
\003\125\004\012\023\025\124\150\145\040\125\123\105\122\124\122
\125\123\124\040\116\145\164\167\157\162\153\061\056\060\054\006
\003\125\004\003\023\045\125\123\105\122\124\162\165\163\164\040
\105\103\103\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\134\213\231\305\132\224\305\322\161\126\336\315\211\200
\314\046
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "GlobalSign ECC Root CA - R5"
#
Issuer: CN=GlobalSign,O=GlobalSign,OU=GlobalSign ECC Root CA - R5
Serial Number:60:59:49:e0:26:2e:bb:55:f9:0a:77:8a:71:f9:4a:d8:6c
Subject: CN=GlobalSign,O=GlobalSign,OU=GlobalSign ECC Root CA - R5
Not Valid Before: Tue Nov 13 00:00:00 2012
Not Valid After : Tue Jan 19 03:14:07 2038
Fingerprint (SHA-256):
17:9F:BC:14:8A:3D:D0:0F:D2:4E:A1:34:58:CC:43:BF:A7:F5:9C:81:82:D7:83:A5:13:F6:EB:EC:10:0C:89:24
Fingerprint (SHA1): 1F:24:C6:30:CD:A4:18:EF:20:69:FF:AD:4F:DD:5F:46:3A:1B:69:AA
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GlobalSign ECC Root CA - R5"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL

```

\060\120\061\044\060\042\006\003\125\004\013\023\033\107\154\157  
\142\141\154\123\151\147\156\040\105\103\103\040\122\157\157\164  
\040\103\101\040\055\040\122\065\061\023\060\021\006\003\125\004  
\012\023\012\107\154\157\142\141\154\123\151\147\156\061\023\060  
\021\006\003\125\004\003\023\012\107\154\157\142\141\154\123\151  
\147\156

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\120\061\044\060\042\006\003\125\004\013\023\033\107\154\157  
\142\141\154\123\151\147\156\040\105\103\103\040\122\157\157\164  
\040\103\101\040\055\040\122\065\061\023\060\021\006\003\125\004  
\012\023\012\107\154\157\142\141\154\123\151\147\156\061\023\060  
\021\006\003\125\004\003\023\012\107\154\157\142\141\154\123\151  
\147\156

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\021\140\131\111\340\046\056\273\125\371\012\167\212\161\371  
\112\330\154

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\002\036\060\202\001\244\240\003\002\001\002\002\021\140  
\131\111\340\046\056\273\125\371\012\167\212\161\371\112\330\154  
\060\012\006\010\052\206\110\316\075\004\003\003\060\120\061\044  
\060\042\006\003\125\004\013\023\033\107\154\157\142\141\154\123  
\151\147\156\040\105\103\103\040\122\157\157\164\040\103\101\040  
\055\040\122\065\061\023\060\021\006\003\125\004\012\023\012\107  
\154\157\142\141\154\123\151\147\156\061\023\060\021\006\003\125  
\004\003\023\012\107\154\157\142\141\154\123\151\147\156\060\036  
\027\015\061\062\061\061\061\063\060\060\060\060\060\060\132\027  
\015\063\070\060\061\061\071\060\063\061\064\060\067\132\060\120  
\061\044\060\042\006\003\125\004\013\023\033\107\154\157\142\141  
\154\123\151\147\156\040\105\103\103\040\122\157\157\164\040\103  
\101\040\055\040\122\065\061\023\060\021\006\003\125\004\012\023  
\012\107\154\157\142\141\154\123\151\147\156\061\023\060\021\006  
\003\125\004\003\023\012\107\154\157\142\141\154\123\151\147\156  
\060\166\060\020\006\007\052\206\110\316\075\002\001\006\005\053  
\201\004\000\042\003\142\000\004\107\105\016\226\373\175\135\277  
\351\071\321\041\370\237\013\266\325\173\036\222\072\110\131\034  
\360\142\061\055\300\172\050\376\032\247\134\263\266\314\227\347  
\105\324\130\372\321\167\155\103\242\300\207\145\064\012\037\172  
\335\353\074\063\241\305\235\115\244\157\101\225\070\177\311\036  
\204\353\321\236\111\222\207\224\207\014\072\205\112\146\237\235  
\131\223\115\227\141\006\206\112\243\102\060\100\060\016\006\003  
\125\035\017\001\001\377\004\004\003\002\001\006\060\017\006\003  
\125\035\023\001\001\377\004\005\060\003\001\001\377\060\035\006  
\003\125\035\016\004\026\004\024\075\346\051\110\233\352\007\312  
\041\104\112\046\336\156\336\322\203\320\237\131\060\012\006\010



```
\052\206\110\316\075\004\003\003\003\150\000\060\145\002\061\000
\345\151\022\311\156\333\306\061\272\011\101\341\227\370\373\375
\232\342\175\022\311\355\174\144\323\313\005\045\213\126\331\240
\347\136\135\116\013\203\234\133\166\051\240\011\046\041\152\142
\002\060\161\322\265\217\134\352\073\341\170\011\205\250\165\222
\073\310\134\375\110\357\015\164\042\250\010\342\156\305\111\316
\307\014\274\247\141\151\361\367\073\341\052\313\371\053\363\146
\220\067
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Trust for "GlobalSign ECC Root CA - R5"
```

```
Issuer: CN=GlobalSign,O=GlobalSign,OU=GlobalSign ECC Root CA - R5
```

```
Serial Number:60:59:49:e0:26:2e:bb:55:f9:0a:77:8a:71:f9:4a:d8:6c
```

```
Subject: CN=GlobalSign,O=GlobalSign,OU=GlobalSign ECC Root CA - R5
```

```
Not Valid Before: Tue Nov 13 00:00:00 2012
```

```
Not Valid After : Tue Jan 19 03:14:07 2038
```

```
Fingerprint (SHA-256):
```

```
17:9F:BC:14:8A:3D:D0:0F:D2:4E:A1:34:58:CC:43:BF:A7:F5:9C:81:82:D7:83:A5:13:F6:EB:EC:10:0C:89:24
```

```
Fingerprint (SHA1): 1F:24:C6:30:CD:A4:18:EF:20:69:FF:AD:4F:DD:5F:46:3A:1B:69:AA
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "GlobalSign ECC Root CA - R5"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\037\044\306\060\315\244\030\357\040\151\377\255\117\335\137\106
\072\033\151\252
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\237\255\073\034\002\036\212\272\027\164\070\201\014\242\274\010
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\120\061\044\060\042\006\003\125\004\013\023\033\107\154\157
\142\141\154\123\151\147\156\040\105\103\103\040\122\157\157\164
\040\103\101\040\055\040\122\065\061\023\060\021\006\003\125\004
\012\023\012\107\154\157\142\141\154\123\151\147\156\061\023\060
\021\006\003\125\004\003\023\012\107\154\157\142\141\154\123\151
\147\156
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\021\140\131\111\340\046\056\273\125\371\012\167\212\161\371
\112\330\154
```

END

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

```
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "Staat der Nederlanden Root CA - G3"

#

# Issuer: CN=Staat der Nederlanden Root CA - G3,O=Staat der Nederlanden,C=NL

# Serial Number: 10003001 (0x98a239)

# Subject: CN=Staat der Nederlanden Root CA - G3,O=Staat der Nederlanden,C=NL

# Not Valid Before: Thu Nov 14 11:28:42 2013

# Not Valid After : Mon Nov 13 23:00:00 2028

# Fingerprint (SHA-256):

3C:4F:B0:B9:5A:B8:B3:00:32:F4:32:B8:6F:53:5F:E1:72:C1:85:D0:FD:39:86:58:37:CF:36:18:7F:A6:F4:28

# Fingerprint (SHA1): D8:EB:6B:41:51:92:59:E0:F3:E7:85:00:C0:3D:B6:88:97:C9:EE:FC

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Staat der Nederlanden Root CA - G3"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\132\061\013\060\011\006\003\125\004\006\023\002\116\114\061  
\036\060\034\006\003\125\004\012\014\025\123\164\141\141\164\040  
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\061  
\053\060\051\006\003\125\004\003\014\042\123\164\141\141\164\040  
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\040  
\122\157\157\164\040\103\101\040\055\040\107\063

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\132\061\013\060\011\006\003\125\004\006\023\002\116\114\061  
\036\060\034\006\003\125\004\012\014\025\123\164\141\141\164\040  
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\061  
\053\060\051\006\003\125\004\003\014\042\123\164\141\141\164\040  
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\040  
\122\157\157\164\040\103\101\040\055\040\107\063

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\004\000\230\242\071

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\164\060\202\003\134\240\003\002\001\002\002\004\000  
\230\242\071\060\015\006\011\052\206\110\206\367\015\001\001\013  
\005\000\060\132\061\013\060\011\006\003\125\004\006\023\002\116  
\114\061\036\060\034\006\003\125\004\012\014\025\123\164\141\141  
\164\040\144\145\162\040\116\145\144\145\162\154\141\156\144\145  
\156\061\053\060\051\006\003\125\004\003\014\042\123\164\141\141  
\164\040\144\145\162\040\116\145\144\145\162\154\141\156\144\145

\156\040\122\157\157\164\040\103\101\040\055\040\107\063\060\036  
\027\015\061\063\061\061\061\064\061\061\062\070\064\062\132\027  
\015\062\070\061\061\061\063\062\063\060\060\060\060\132\060\132  
\061\013\060\011\006\003\125\004\006\023\002\116\114\061\036\060  
\034\006\003\125\004\012\014\025\123\164\141\141\164\040\144\145  
\162\040\116\145\144\145\162\154\141\156\144\145\156\061\053\060  
\051\006\003\125\004\003\014\042\123\164\141\141\164\040\144\145  
\162\040\116\145\144\145\162\154\141\156\144\145\156\040\122\157  
\157\164\040\103\101\040\055\040\107\063\060\202\002\042\060\015  
\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202\002  
\017\000\060\202\002\012\002\202\002\001\000\276\062\242\124\017  
\160\373\054\134\131\353\154\304\244\121\350\205\052\263\314\112  
\064\362\260\137\363\016\307\034\075\123\036\210\010\150\330\157  
\075\255\302\236\314\202\147\007\047\207\150\161\072\237\165\226  
\042\106\005\260\355\255\307\133\236\052\336\234\374\072\306\225  
\247\365\027\147\030\347\057\111\010\014\134\317\346\314\064\355  
\170\373\120\261\334\153\062\360\242\376\266\074\344\354\132\227  
\307\077\036\160\010\060\240\334\305\263\155\157\320\202\162\021  
\253\322\201\150\131\202\027\267\170\222\140\372\314\336\077\204  
\353\215\070\063\220\012\162\043\372\065\314\046\161\061\321\162  
\050\222\331\133\043\155\146\265\155\007\102\353\246\063\316\222  
\333\300\366\154\143\170\315\312\116\075\265\345\122\233\361\276  
\073\346\124\140\260\146\036\011\253\007\376\124\211\021\102\321  
\367\044\272\140\170\032\230\367\311\021\375\026\301\065\032\124  
\165\357\103\323\345\256\116\316\347\173\303\306\116\141\121\113  
\253\232\105\113\241\037\101\275\110\123\025\161\144\013\206\263  
\345\056\276\316\244\033\301\051\204\242\265\313\010\043\166\103  
\042\044\037\027\004\324\156\234\306\374\177\053\146\032\354\212  
\345\326\317\115\365\143\011\267\025\071\326\173\254\353\343\174  
\351\116\374\165\102\310\355\130\225\014\006\102\242\234\367\344  
\160\263\337\162\157\132\067\100\211\330\205\244\327\361\013\336  
\103\031\324\112\130\054\214\212\071\236\277\204\207\361\026\073  
\066\014\351\323\264\312\154\031\101\122\011\241\035\260\152\277  
\202\357\160\121\041\062\334\005\166\214\313\367\144\344\003\120  
\257\214\221\147\253\305\362\356\130\330\336\276\367\347\061\317  
\154\311\073\161\301\325\210\265\145\274\300\350\027\027\007\022  
\265\134\322\253\040\223\264\346\202\203\160\066\305\315\243\215  
\255\213\354\243\301\103\207\346\103\342\064\276\225\213\065\355  
\007\071\332\250\035\172\237\066\236\022\260\014\145\022\220\025  
\140\331\046\100\104\343\126\140\245\020\324\152\074\375\101\334  
\016\132\107\266\357\227\141\165\117\331\376\307\262\035\324\355  
\135\111\263\251\152\313\146\204\023\325\134\240\334\337\156\167  
\006\321\161\165\310\127\157\257\017\167\133\002\003\001\000\001  
\243\102\060\100\060\017\006\003\125\035\023\001\001\377\004\005  
\060\003\001\001\377\060\016\006\003\125\035\017\001\001\377\004  
\004\003\002\001\006\060\035\006\003\125\035\016\004\026\004\024  
\124\255\372\307\222\127\256\312\065\234\056\022\373\344\272\135  
\040\334\224\127\060\015\006\011\052\206\110\206\367\015\001\001

\013\005\000\003\202\002\001\000\060\231\235\005\062\310\136\016  
\073\230\001\072\212\244\347\007\367\172\370\347\232\337\120\103  
\123\227\052\075\312\074\107\230\056\341\025\173\361\222\363\141  
\332\220\045\026\145\300\237\124\135\016\003\073\133\167\002\234  
\204\266\015\230\137\064\335\073\143\302\303\050\201\302\234\051  
\056\051\342\310\303\001\362\063\352\052\252\314\011\010\367\145  
\147\306\315\337\323\266\053\247\275\314\321\016\160\137\270\043  
\321\313\221\116\012\364\310\172\345\331\143\066\301\324\337\374  
\042\227\367\140\135\352\051\057\130\262\275\130\275\215\226\117  
\020\165\277\110\173\075\121\207\241\074\164\042\302\374\007\177  
\200\334\304\254\376\152\301\160\060\260\351\216\151\342\054\151  
\201\224\011\272\335\376\115\300\203\214\224\130\300\106\040\257  
\234\037\002\370\065\125\111\057\106\324\300\360\240\226\002\017  
\063\305\161\363\236\043\175\224\267\375\072\323\011\203\006\041  
\375\140\075\256\062\300\322\356\215\246\360\347\264\202\174\012  
\314\160\311\171\200\370\376\114\367\065\204\031\212\061\373\012  
\331\327\177\233\360\242\232\153\303\005\112\355\101\140\024\060  
\321\252\021\102\156\323\043\002\004\013\306\145\335\335\122\167  
\332\201\153\262\250\372\001\070\271\226\352\052\154\147\227\211  
\224\236\274\341\124\325\344\152\170\357\112\275\053\232\075\100  
\176\306\300\165\322\156\373\150\060\354\354\213\235\371\111\065  
\232\032\054\331\263\225\071\325\036\222\367\246\271\145\057\345  
\075\155\072\110\114\010\334\344\050\022\050\276\175\065\134\352  
\340\026\176\023\033\152\327\076\327\236\374\055\165\262\301\024  
\325\043\003\333\133\157\013\076\170\057\015\336\063\215\026\267  
\110\347\203\232\201\017\173\301\103\115\125\004\027\070\112\121  
\325\131\242\211\164\323\237\276\036\113\327\306\155\267\210\044  
\157\140\221\244\202\205\133\126\101\274\320\104\253\152\023\276  
\321\054\130\267\022\063\130\262\067\143\334\023\365\224\035\077  
\100\121\365\117\365\072\355\310\305\353\302\036\035\026\225\172  
\307\176\102\161\223\156\113\025\267\060\337\252\355\127\205\110  
\254\035\152\335\071\151\344\341\171\170\276\316\005\277\241\014  
\367\200\173\041\147\047\060\131

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Staat der Nederlanden Root CA - G3"

# Issuer: CN=Staat der Nederlanden Root CA - G3,O=Staat der Nederlanden,C=NL

# Serial Number: 10003001 (0x98a239)

# Subject: CN=Staat der Nederlanden Root CA - G3,O=Staat der Nederlanden,C=NL

# Not Valid Before: Thu Nov 14 11:28:42 2013

# Not Valid After : Mon Nov 13 23:00:00 2028

# Fingerprint (SHA-256):

3C:4F:B0:B9:5A:B8:B3:00:32:F4:32:B8:6F:53:5F:E1:72:C1:85:D0:FD:39:86:58:37:CF:36:18:7F:A6:F4:28

# Fingerprint (SHA1): D8:EB:6B:41:51:92:59:E0:F3:E7:85:00:C0:3D:B6:88:97:C9:EE:FC

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

```

CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Staat der Nederlanden Root CA - G3"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\330\353\153\101\121\222\131\340\363\347\205\000\300\075\266\210
\227\311\356\374
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\013\106\147\007\333\020\057\031\214\065\120\140\321\013\364\067
END
CKA_ISSUER MULTILINE_OCTAL
\060\132\061\013\060\011\006\003\125\004\006\023\002\116\114\061
\036\060\034\006\003\125\004\012\014\025\123\164\141\141\164\040
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\061
\053\060\051\006\003\125\004\003\014\042\123\164\141\141\164\040
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\040
\122\157\157\164\040\103\101\040\055\040\107\063
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\004\000\230\242\071
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "Staat der Nederlanden EV Root CA"
#
Issuer: CN=Staat der Nederlanden EV Root CA,O=Staat der Nederlanden,C=NL
Serial Number: 10000013 (0x98968d)
Subject: CN=Staat der Nederlanden EV Root CA,O=Staat der Nederlanden,C=NL
Not Valid Before: Wed Dec 08 11:19:29 2010
Not Valid After : Thu Dec 08 11:10:28 2022
Fingerprint (SHA-256):
4D:24:91:41:4C:FE:95:67:46:EC:4C:EF:A6:CF:6F:72:E2:8A:13:29:43:2F:9D:8A:90:7A:C4:CB:5D:AD:C1:5A
Fingerprint (SHA1): 76:E2:7E:C1:4F:DB:82:C1:C0:A6:75:B5:05:BE:3D:29:B4:ED:DB:BB
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Staat der Nederlanden EV Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\130\061\013\060\011\006\003\125\004\006\023\002\116\114\061
\036\060\034\006\003\125\004\012\014\025\123\164\141\141\164\040
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\061

```

\051\060\047\006\003\125\004\003\014\040\123\164\141\141\164\040  
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\040  
\105\126\040\122\157\157\164\040\103\101

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\130\061\013\060\011\006\003\125\004\006\023\002\116\114\061  
\036\060\034\006\003\125\004\012\014\025\123\164\141\141\164\040  
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\061  
\051\060\047\006\003\125\004\003\014\040\123\164\141\141\164\040  
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\040  
\105\126\040\122\157\157\164\040\103\101

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\004\000\230\226\215

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\160\060\202\003\130\240\003\002\001\002\002\004\000  
\230\226\215\060\015\006\011\052\206\110\206\367\015\001\001\013  
\005\000\060\130\061\013\060\011\006\003\125\004\006\023\002\116  
\114\061\036\060\034\006\003\125\004\012\014\025\123\164\141\141  
\164\040\144\145\162\040\116\145\144\145\162\154\141\156\144\145  
\156\061\051\060\047\006\003\125\004\003\014\040\123\164\141\141  
\164\040\144\145\162\040\116\145\144\145\162\154\141\156\144\145  
\156\040\105\126\040\122\157\157\164\040\103\101\060\036\027\015  
\061\060\061\062\060\070\061\061\061\061\062\071\132\027\015\062  
\062\061\062\060\070\061\061\061\060\062\070\132\060\130\061\013  
\060\011\006\003\125\004\006\023\002\116\114\061\036\060\034\006  
\003\125\004\012\014\025\123\164\141\141\164\040\144\145\162\040  
\116\145\144\145\162\154\141\156\144\145\156\061\051\060\047\006  
\003\125\004\003\014\040\123\164\141\141\164\040\144\145\162\040  
\116\145\144\145\162\154\141\156\144\145\156\040\105\126\040\122  
\157\157\164\040\103\101\060\202\002\042\060\015\006\011\052\206  
\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060\202  
\002\012\002\202\002\001\000\343\307\176\211\371\044\113\072\322  
\063\203\065\054\151\354\334\011\244\343\121\250\045\053\171\270  
\010\075\340\221\272\204\205\306\205\244\312\346\311\056\123\244  
\311\044\036\375\125\146\161\135\054\305\140\150\004\267\331\302  
\122\046\070\210\244\326\073\100\246\302\315\077\315\230\223\263  
\124\024\130\226\125\325\120\376\206\255\244\143\177\134\207\366  
\216\346\047\222\147\027\222\002\003\054\334\326\146\164\355\335  
\147\377\301\141\215\143\117\017\233\155\027\060\046\357\253\322  
\037\020\240\371\305\177\026\151\201\003\107\355\036\150\215\162  
\241\115\262\046\306\272\154\137\155\326\257\321\261\023\216\251  
\255\363\136\151\165\046\030\076\101\053\041\177\356\213\135\007  
\006\235\103\304\051\012\053\374\052\076\206\313\074\203\072\371  
\311\015\332\305\231\342\274\170\101\063\166\341\277\057\135\345  
\244\230\120\014\025\335\340\372\234\177\070\150\320\262\246\172

\247\321\061\275\176\212\130\047\103\263\272\063\221\323\247\230  
\025\134\232\346\323\017\165\331\374\101\230\227\076\252\045\333  
\217\222\056\260\173\014\137\361\143\251\067\371\233\165\151\114  
\050\046\045\332\325\362\022\160\105\125\343\337\163\136\067\365  
\041\154\220\216\065\132\311\323\043\353\323\300\276\170\254\102  
\050\130\146\245\106\155\160\002\327\020\371\113\124\374\135\206  
\112\207\317\177\312\105\254\021\132\265\040\121\215\057\210\107  
\227\071\300\317\272\300\102\001\100\231\110\041\013\153\247\322  
\375\226\325\321\276\106\235\111\340\013\246\240\042\116\070\320  
\301\074\060\274\160\217\054\165\314\320\305\214\121\073\075\224  
\010\144\046\141\175\271\303\145\217\024\234\041\320\252\375\027  
\162\003\217\275\233\214\346\136\123\236\271\235\357\202\273\341  
\274\342\162\101\133\041\224\323\105\067\224\321\337\011\071\135  
\347\043\252\232\035\312\155\250\012\206\205\212\202\276\102\007  
\326\362\070\202\163\332\207\133\345\074\323\236\076\247\073\236  
\364\003\263\371\361\175\023\164\002\377\273\241\345\372\000\171  
\034\246\146\101\210\134\140\127\246\056\011\304\272\375\232\317  
\247\037\100\303\273\314\132\012\125\113\073\070\166\121\270\143  
\213\204\224\026\346\126\363\002\003\001\000\001\243\102\060\100  
\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001  
\377\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001  
\006\060\035\006\003\125\035\016\004\026\004\024\376\253\000\220  
\230\236\044\374\251\314\032\212\373\047\270\277\060\156\250\073  
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\003  
\202\002\001\000\317\167\054\156\126\276\116\263\266\204\000\224  
\253\107\311\015\322\166\307\206\237\035\007\323\266\264\273\010  
\170\257\151\322\013\111\336\063\305\254\255\302\210\002\175\006  
\267\065\002\301\140\311\277\304\350\224\336\324\323\251\023\045  
\132\376\156\242\256\175\005\334\175\363\154\360\176\246\215\356  
\331\327\316\130\027\350\251\051\256\163\110\207\347\233\312\156  
\051\241\144\137\031\023\367\256\006\020\377\121\306\233\115\125  
\045\117\223\231\020\001\123\165\361\023\316\307\246\101\101\322  
\277\210\245\177\105\374\254\270\245\265\063\014\202\304\373\007  
\366\152\345\045\204\137\006\312\301\206\071\021\333\130\315\167  
\073\054\302\114\017\136\232\343\360\253\076\141\033\120\044\302  
\300\364\361\031\360\021\051\266\245\030\002\233\327\143\114\160  
\214\107\243\003\103\134\271\135\106\240\015\157\377\131\216\276  
\335\237\162\303\133\053\337\214\133\316\345\014\106\154\222\262  
\012\243\114\124\102\030\025\022\030\275\332\374\272\164\156\377  
\301\266\240\144\330\251\137\125\256\237\134\152\166\226\330\163  
\147\207\373\115\177\134\356\151\312\163\020\373\212\251\375\236  
\275\066\070\111\111\207\364\016\024\360\351\207\270\077\247\117  
\172\132\216\171\324\223\344\273\150\122\204\254\154\351\363\230  
\160\125\162\062\371\064\253\053\111\265\315\040\142\344\072\172  
\147\143\253\226\334\155\256\227\354\374\237\166\126\210\056\146  
\317\133\266\311\244\260\327\005\272\341\047\057\223\273\046\052  
\242\223\260\033\363\216\276\035\100\243\271\066\217\076\202\032  
\032\136\210\352\120\370\131\342\203\106\051\013\343\104\134\341

```
\225\266\151\220\232\024\157\227\256\201\317\150\357\231\232\276
\265\347\341\177\370\372\023\107\026\114\314\155\010\100\347\213
\170\157\120\202\104\120\077\146\006\212\253\103\204\126\112\017
\040\055\206\016\365\322\333\322\172\212\113\315\245\350\116\361
\136\046\045\001\131\043\240\176\322\366\176\041\127\327\047\274
\025\127\114\244\106\301\340\203\036\014\114\115\037\117\006\031
\342\371\250\364\072\202\241\262\171\103\171\326\255\157\172\047
\220\003\244\352\044\207\077\331\275\331\351\362\137\120\111\034
\356\354\327\056
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Staat der Nederlanden EV Root CA"

# Issuer: CN=Staat der Nederlanden EV Root CA,O=Staat der Nederlanden,C=NL

# Serial Number: 10000013 (0x98968d)

# Subject: CN=Staat der Nederlanden EV Root CA,O=Staat der Nederlanden,C=NL

# Not Valid Before: Wed Dec 08 11:19:29 2010

# Not Valid After : Thu Dec 08 11:10:28 2022

# Fingerprint (SHA-256):

4D:24:91:41:4C:FE:95:67:46:EC:4C:EF:A6:CF:6F:72:E2:8A:13:29:43:2F:9D:8A:90:7A:C4:CB:5D:AD:C1:5A

# Fingerprint (SHA1): 76:E2:7E:C1:4F:DB:82:C1:C0:A6:75:B5:05:BE:3D:29:B4:ED:DB:BB

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Staat der Nederlanden EV Root CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\166\342\176\301\117\333\202\301\300\246\165\265\005\276\075\051
\264\355\333\273
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\374\006\257\173\350\032\361\232\264\350\322\160\037\300\365\272
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\130\061\013\060\011\006\003\125\004\006\023\002\116\114\061
\036\060\034\006\003\125\004\012\014\025\123\164\141\141\164\040
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\061
\051\060\047\006\003\125\004\003\014\040\123\164\141\141\164\040
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\040
\105\126\040\122\157\157\164\040\103\101
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\004\000\230\226\215
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST



CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "IdenTrust Commercial Root CA 1"

#

# Issuer: CN=IdenTrust Commercial Root CA 1,O=IdenTrust,C=US

# Serial Number:0a:01:42:80:00:00:01:45:23:c8:44:b5:00:00:00:02

# Subject: CN=IdenTrust Commercial Root CA 1,O=IdenTrust,C=US

# Not Valid Before: Thu Jan 16 18:12:23 2014

# Not Valid After : Mon Jan 16 18:12:23 2034

# Fingerprint (SHA-256):

5D:56:49:9B:E4:D2:E0:8B:CF:CA:D0:8A:3E:38:72:3D:50:50:3B:DE:70:69:48:E4:2F:55:60:30:19:E5:28:AE

# Fingerprint (SHA1): DF:71:7E:AA:4A:D9:4E:C9:55:84:99:60:2D:48:DE:5F:BC:F0:3A:25

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "IdenTrust Commercial Root CA 1"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\112\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\022\060\020\006\003\125\004\012\023\011\111\144\145\156\124\162  
\165\163\164\061\047\060\045\006\003\125\004\003\023\036\111\144  
\145\156\124\162\165\163\164\040\103\157\155\155\145\162\143\151  
\141\154\040\122\157\157\164\040\103\101\040\061

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\112\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\022\060\020\006\003\125\004\012\023\011\111\144\145\156\124\162  
\165\163\164\061\047\060\045\006\003\125\004\003\023\036\111\144  
\145\156\124\162\165\163\164\040\103\157\155\155\145\162\143\151  
\141\154\040\122\157\157\164\040\103\101\040\061

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\012\001\102\200\000\000\001\105\043\310\104\265\000\000  
\000\002

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\140\060\202\003\110\240\003\002\001\002\002\020\012  
\001\102\200\000\000\001\105\043\310\104\265\000\000\000\002\060  
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\112  
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\022\060  
\020\006\003\125\004\012\023\011\111\144\145\156\124\162\165\163  
\164\061\047\060\045\006\003\125\004\003\023\036\111\144\145\156  
\124\162\165\163\164\040\103\157\155\155\145\162\143\151\141\154  
\040\122\157\157\164\040\103\101\040\061\060\036\027\015\061\064

\060\061\061\066\061\070\061\062\062\063\132\027\015\063\064\060  
\061\061\066\061\070\061\062\062\063\132\060\112\061\013\060\011  
\006\003\125\004\006\023\002\125\123\061\022\060\020\006\003\125  
\004\012\023\011\111\144\145\156\124\162\165\163\164\061\047\060  
\045\006\003\125\004\003\023\036\111\144\145\156\124\162\165\163  
\164\040\103\157\155\155\145\162\143\151\141\154\040\122\157\157  
\164\040\103\101\040\061\060\202\002\042\060\015\006\011\052\206  
\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060\202  
\002\012\002\202\002\001\000\247\120\031\336\077\231\075\324\063  
\106\361\157\121\141\202\262\251\117\217\147\211\135\204\331\123  
\335\014\050\331\327\360\377\256\225\103\162\231\371\265\135\174  
\212\301\102\341\061\120\164\321\201\015\174\315\233\041\253\103  
\342\254\255\136\206\156\363\011\212\037\132\062\275\242\353\224  
\371\350\134\012\354\377\230\322\257\161\263\264\123\237\116\207  
\357\222\274\275\354\117\062\060\210\113\027\136\127\304\123\302  
\366\002\227\215\331\142\053\277\044\037\142\215\337\303\270\051  
\113\111\170\074\223\140\210\042\374\231\332\066\310\302\242\324  
\054\124\000\147\065\156\163\277\002\130\360\244\335\345\260\242  
\046\172\312\340\066\245\031\026\365\375\267\357\256\077\100\365  
\155\132\004\375\316\064\312\044\334\164\043\033\135\063\023\022  
\135\304\001\045\366\060\335\002\135\237\340\325\107\275\264\353  
\033\241\273\111\111\330\237\133\002\363\212\344\044\220\344\142  
\117\117\301\257\213\016\164\027\250\321\162\210\152\172\001\111  
\314\264\106\171\306\027\261\332\230\036\007\131\372\165\041\205  
\145\335\220\126\316\373\253\245\140\235\304\235\371\122\260\213  
\275\207\371\217\053\043\012\043\166\073\367\063\341\311\000\363  
\151\371\113\242\340\116\274\176\223\071\204\007\367\104\160\176  
\376\007\132\345\261\254\321\030\314\362\065\345\111\111\010\312  
\126\311\075\373\017\030\175\213\073\301\023\302\115\217\311\117  
\016\067\351\037\241\016\152\337\142\056\313\065\006\121\171\054  
\310\045\070\364\372\113\247\211\134\234\322\343\015\071\206\112  
\164\174\325\131\207\302\077\116\014\134\122\364\075\367\122\202  
\361\352\243\254\375\111\064\032\050\363\101\210\072\023\356\350  
\336\377\231\035\137\272\313\350\036\362\271\120\140\300\061\323  
\163\345\357\276\240\355\063\013\164\276\040\040\304\147\154\360  
\010\003\172\125\200\177\106\116\226\247\364\036\076\341\366\330  
\011\341\063\144\053\143\327\062\136\237\371\300\173\017\170\157  
\227\274\223\232\371\234\022\220\170\172\200\207\025\327\162\164  
\234\125\164\170\261\272\341\156\160\004\272\117\240\272\150\303  
\173\377\061\360\163\075\075\224\052\261\013\101\016\240\376\115  
\210\145\153\171\063\264\327\002\003\001\000\001\243\102\060\100  
\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006  
\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001  
\377\060\035\006\003\125\035\016\004\026\004\024\355\104\031\300  
\323\360\006\213\356\244\173\276\102\347\046\124\310\216\066\166  
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\003  
\202\002\001\000\015\256\220\062\366\246\113\174\104\166\031\141  
\036\047\050\315\136\124\357\045\274\343\010\220\371\051\327\256

\150\010\341\224\000\130\357\056\056\176\123\122\214\266\134\007  
\352\210\272\231\213\120\224\327\202\200\337\141\011\000\223\255  
\015\024\346\316\301\362\067\224\170\260\137\234\263\242\163\270  
\217\005\223\070\315\215\076\260\270\373\300\317\261\362\354\055  
\055\033\314\354\252\232\263\252\140\202\033\055\073\303\204\075  
\127\212\226\036\234\165\270\323\060\315\140\010\203\220\323\216  
\124\361\115\146\300\135\164\003\100\243\356\205\176\302\037\167  
\234\006\350\301\247\030\135\122\225\355\311\335\045\236\155\372  
\251\355\243\072\064\320\131\173\332\355\120\363\065\277\355\353  
\024\115\061\307\140\364\332\361\207\234\342\110\342\306\305\067  
\373\006\020\372\165\131\146\061\107\051\332\166\232\034\351\202  
\256\357\232\271\121\367\210\043\232\151\225\142\074\345\125\200  
\066\327\124\002\377\361\271\135\316\324\043\157\330\105\204\112  
\133\145\357\211\014\335\024\247\040\313\030\245\045\264\015\371  
\001\360\242\322\364\000\310\164\216\241\052\110\216\145\333\023  
\304\342\045\027\175\353\276\207\133\027\040\124\121\223\112\123  
\003\013\354\135\312\063\355\142\375\105\307\057\133\334\130\240  
\200\071\346\372\327\376\023\024\246\355\075\224\112\102\164\324  
\303\167\131\163\315\217\106\276\125\070\357\372\350\221\062\352  
\227\130\004\042\336\070\303\314\274\155\311\063\072\152\012\151  
\077\240\310\352\162\217\214\143\206\043\275\155\074\226\236\225  
\340\111\114\252\242\271\052\033\234\066\201\170\355\303\350\106  
\342\046\131\104\165\036\331\165\211\121\315\020\204\235\141\140  
\313\135\371\227\042\115\216\230\346\343\177\366\133\273\256\315  
\312\112\201\153\136\013\363\121\341\164\053\351\176\047\247\331  
\231\111\116\370\245\200\333\045\017\034\143\142\212\311\063\147  
\153\074\020\203\306\255\336\250\315\026\216\215\360\007\067\161  
\237\362\253\374\101\365\301\213\354\000\067\135\011\345\116\200  
\357\372\261\134\070\006\245\033\112\341\334\070\055\074\334\253  
\037\220\032\325\112\234\356\321\160\154\314\356\364\127\370\030  
\272\204\156\207

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "IdenTrust Commercial Root CA 1"

# Issuer: CN=IdenTrust Commercial Root CA 1,O=IdenTrust,C=US

# Serial Number:0a:01:42:80:00:00:01:45:23:c8:44:b5:00:00:00:02

# Subject: CN=IdenTrust Commercial Root CA 1,O=IdenTrust,C=US

# Not Valid Before: Thu Jan 16 18:12:23 2014

# Not Valid After : Mon Jan 16 18:12:23 2034

# Fingerprint (SHA-256):

5D:56:49:9B:E4:D2:E0:8B:CF:CA:D0:8A:3E:38:72:3D:50:50:3B:DE:70:69:48:E4:2F:55:60:30:19:E5:28:AE

# Fingerprint (SHA1): DF:71:7E:AA:4A:D9:4E:C9:55:84:99:60:2D:48:DE:5F:BC:F0:3A:25

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

```

CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "IdenTrust Commercial Root CA 1"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\337\161\176\252\112\331\116\311\125\204\231\140\055\110\336\137
\274\360\072\045
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\263\076\167\163\165\356\240\323\343\176\111\143\111\131\273\307
END
CKA_ISSUER MULTILINE_OCTAL
\060\112\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\022\060\020\006\003\125\004\012\023\011\111\144\145\156\124\162
\165\163\164\061\047\060\045\006\003\125\004\003\023\036\111\144
\145\156\124\162\165\163\164\040\103\157\155\155\145\162\143\151
\141\154\040\122\157\157\164\040\103\101\040\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\012\001\102\200\000\000\001\105\043\310\104\265\000\000
\000\002
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "IdenTrust Public Sector Root CA 1"
#
Issuer: CN=IdenTrust Public Sector Root CA 1,O=IdenTrust,C=US
Serial Number:0a:01:42:80:00:00:01:45:23:cf:46:7c:00:00:00:02
Subject: CN=IdenTrust Public Sector Root CA 1,O=IdenTrust,C=US
Not Valid Before: Thu Jan 16 17:53:32 2014
Not Valid After : Mon Jan 16 17:53:32 2034
Fingerprint (SHA-256):
30:D0:89:5A:9A:44:8A:26:20:91:63:55:22:D1:F5:20:10:B5:86:7A:CA:E1:2C:78:EF:95:8F:D4:F4:38:9F:2F
Fingerprint (SHA1): BA:29:41:60:77:98:3F:F4:F3:EF:F2:31:05:3B:2E:EA:6D:4D:45:FD
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "IdenTrust Public Sector Root CA 1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\115\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\022\060\020\006\003\125\004\012\023\011\111\144\145\156\124\162
\165\163\164\061\052\060\050\006\003\125\004\003\023\041\111\144
\145\156\124\162\165\163\164\040\120\165\142\154\151\143\040\123
\145\143\164\157\162\040\122\157\157\164\040\103\101\040\061

```

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\115\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\022\060\020\006\003\125\004\012\023\011\111\144\145\156\124\162  
\165\163\164\061\052\060\050\006\003\125\004\003\023\041\111\144  
\145\156\124\162\165\163\164\040\120\165\142\154\151\143\040\123  
\145\143\164\157\162\040\122\157\157\164\040\103\101\040\061

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\012\001\102\200\000\000\001\105\043\317\106\174\000\000  
\000\002

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\146\060\202\003\116\240\003\002\001\002\002\020\012  
\001\102\200\000\000\001\105\043\317\106\174\000\000\000\002\060  
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\115  
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\022\060  
\020\006\003\125\004\012\023\011\111\144\145\156\124\162\165\163  
\164\061\052\060\050\006\003\125\004\003\023\041\111\144\145\156  
\124\162\165\163\164\040\120\165\142\154\151\143\040\123\145\143  
\164\157\162\040\122\157\157\164\040\103\101\040\061\060\036\027  
\015\061\064\060\061\061\066\061\067\065\063\063\062\132\027\015  
\063\064\060\061\061\066\061\067\065\063\063\062\132\060\115\061  
\013\060\011\006\003\125\004\006\023\002\125\123\061\022\060\020  
\006\003\125\004\012\023\011\111\144\145\156\124\162\165\163\164  
\061\052\060\050\006\003\125\004\003\023\041\111\144\145\156\124  
\162\165\163\164\040\120\165\142\154\151\143\040\123\145\143\164  
\157\162\040\122\157\157\164\040\103\101\040\061\060\202\002\042  
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003  
\202\002\017\000\060\202\002\012\002\202\002\001\000\266\042\224  
\374\244\110\257\350\107\153\012\373\047\166\344\362\077\212\073  
\172\112\054\061\052\214\215\260\251\303\061\153\250\167\166\204  
\046\266\254\201\102\015\010\353\125\130\273\172\370\274\145\175  
\362\240\155\213\250\107\351\142\166\036\021\356\010\024\321\262  
\104\026\364\352\320\372\036\057\136\333\313\163\101\256\274\000  
\260\112\053\100\262\254\341\073\113\302\055\235\344\241\233\354  
\032\072\036\360\010\263\320\344\044\065\007\237\234\264\311\122  
\155\333\007\312\217\265\133\360\203\363\117\307\055\245\310\255  
\313\225\040\244\061\050\127\130\132\344\215\033\232\253\236\015  
\014\362\012\063\071\042\071\012\227\056\363\123\167\271\104\105  
\375\204\313\066\040\201\131\055\232\157\155\110\110\141\312\114  
\337\123\321\257\122\274\104\237\253\057\153\203\162\357\165\200  
\332\006\063\033\135\310\332\143\306\115\315\254\146\061\315\321  
\336\076\207\020\066\341\271\244\172\357\140\120\262\313\312\246  
\126\340\067\257\253\064\023\071\045\350\071\146\344\230\172\252  
\022\230\234\131\146\206\076\255\361\260\312\076\006\017\173\360  
\021\113\067\240\104\155\173\313\250\214\161\364\325\265\221\066

\314\360\025\306\053\336\121\027\261\227\114\120\075\261\225\131  
\174\005\175\055\041\325\000\277\001\147\242\136\173\246\134\362  
\367\042\361\220\015\223\333\252\104\121\146\314\175\166\003\353  
\152\250\052\070\031\227\166\015\153\212\141\371\274\366\356\166  
\375\160\053\335\051\074\370\012\036\133\102\034\213\126\057\125  
\033\034\241\056\265\307\026\346\370\252\074\222\216\151\266\001  
\301\265\206\235\211\017\013\070\224\124\350\352\334\236\075\045  
\274\123\046\355\325\253\071\252\305\100\114\124\253\262\264\331  
\331\370\327\162\333\034\274\155\275\145\137\357\210\065\052\146  
\057\356\366\263\145\360\063\215\174\230\101\151\106\017\103\034  
\151\372\233\265\320\141\152\315\312\113\331\114\220\106\253\025  
\131\241\107\124\051\056\203\050\137\034\302\242\253\162\027\000  
\006\216\105\354\213\342\063\075\177\332\031\104\344\142\162\303  
\337\042\306\362\126\324\335\137\225\162\355\155\137\367\110\003  
\133\375\305\052\240\366\163\043\204\020\033\001\347\002\003\001  
\000\001\243\102\060\100\060\016\006\003\125\035\017\001\001\377  
\004\004\003\002\001\006\060\017\006\003\125\035\023\001\001\377  
\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026  
\004\024\343\161\340\236\330\247\102\331\333\161\221\153\224\223  
\353\303\243\321\024\243\060\015\006\011\052\206\110\206\367\015  
\001\001\013\005\000\003\202\002\001\000\107\372\335\012\260\021  
\221\070\255\115\135\367\345\016\227\124\031\202\110\207\124\214  
\252\144\231\330\132\376\210\001\305\130\245\231\261\043\124\043  
\267\152\035\040\127\345\001\142\101\027\323\011\333\165\313\156  
\124\220\165\376\032\237\201\012\302\335\327\367\011\320\133\162  
\025\344\036\011\152\075\063\363\041\232\346\025\176\255\121\325  
\015\020\355\175\102\300\217\356\300\232\010\325\101\326\134\016  
\041\151\156\200\141\016\025\300\270\317\305\111\022\122\314\276  
\072\314\324\056\070\005\336\065\375\037\157\270\200\150\230\075  
\115\240\312\100\145\322\163\174\365\213\331\012\225\077\330\077  
\043\155\032\321\052\044\031\331\205\263\027\357\170\156\251\130  
\321\043\323\307\023\355\162\045\177\135\261\163\160\320\177\006  
\227\011\204\051\200\141\035\372\136\377\163\254\240\343\211\270  
\034\161\025\306\336\061\177\022\334\341\155\233\257\347\350\237  
\165\170\114\253\106\073\232\316\277\005\030\135\115\025\074\026  
\232\031\120\004\232\262\232\157\145\213\122\137\074\130\004\050  
\045\300\146\141\061\176\271\340\165\271\032\250\201\326\162\027  
\263\305\003\061\065\021\170\170\242\340\351\060\214\177\200\337  
\130\337\074\272\047\226\342\200\064\155\343\230\323\144\047\254  
\110\176\050\167\134\306\045\141\045\370\205\014\145\372\304\062  
\057\245\230\005\344\370\013\147\026\026\306\202\270\062\031\371  
\371\271\171\334\037\315\353\257\253\016\335\033\333\105\344\172  
\347\002\342\225\135\374\151\360\123\151\141\225\165\171\013\136  
\125\346\070\034\224\251\131\063\236\310\161\164\171\177\121\211  
\266\310\152\270\060\310\152\070\303\156\236\341\067\026\352\005  
\142\114\133\022\107\355\247\264\263\130\126\307\111\363\177\022  
\150\011\061\161\360\155\370\116\107\373\326\205\356\305\130\100  
\031\244\035\247\371\113\103\067\334\150\132\117\317\353\302\144

```
\164\336\264\025\331\364\124\124\032\057\034\327\227\161\124\220
\216\331\040\235\123\053\177\253\217\342\352\060\274\120\067\357
\361\107\265\175\174\054\004\354\150\235\264\111\104\020\364\162
\113\034\144\347\374\346\153\220\335\151\175\151\375\000\126\245
\267\254\266\255\267\312\076\001\357\234
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

# Trust for "IdenTrust Public Sector Root CA 1"

# Issuer: CN=IdenTrust Public Sector Root CA 1,O=IdenTrust,C=US

# Serial Number:0a:01:42:80:00:00:01:45:23:cf:46:7c:00:00:00:02

# Subject: CN=IdenTrust Public Sector Root CA 1,O=IdenTrust,C=US

# Not Valid Before: Thu Jan 16 17:53:32 2014

# Not Valid After : Mon Jan 16 17:53:32 2034

# Fingerprint (SHA-256):

30:D0:89:5A:9A:44:8A:26:20:91:63:55:22:D1:F5:20:10:B5:86:7A:CA:E1:2C:78:EF:95:8F:D4:F4:38:9F:2F

# Fingerprint (SHA1): BA:29:41:60:77:98:3F:F4:F3:EF:F2:31:05:3B:2E:EA:6D:4D:45:FD

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "IdenTrust Public Sector Root CA 1"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\272\051\101\140\167\230\077\364\363\357\362\061\005\073\056\352
```

```
\155\115\105\375
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\067\006\245\260\374\211\235\272\364\153\214\032\144\315\325\272
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\115\061\013\060\011\006\003\125\004\006\023\002\125\123\061
```

```
\022\060\020\006\003\125\004\012\023\011\111\144\145\156\124\162
```

```
\165\163\164\061\052\060\050\006\003\125\004\003\023\041\111\144
```

```
\145\156\124\162\165\163\164\040\120\165\142\154\151\143\040\123
```

```
\145\143\164\157\162\040\122\157\157\164\040\103\101\040\061
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\020\012\001\102\200\000\000\001\105\043\317\106\174\000\000
```

```
\000\002
```

END

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

```
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

```
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

```
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

#

```
Certificate "Entrust Root Certification Authority - G2"
#
Issuer: CN=Entrust Root Certification Authority - G2,OU="(c) 2009 Entrust, Inc. - for authorized use
only",OU=See www.entrust.net/legal-terms,O="Entrust, Inc.",C=US
Serial Number: 1246989352 (0x4a538c28)
Subject: CN=Entrust Root Certification Authority - G2,OU="(c) 2009 Entrust, Inc. - for authorized use
only",OU=See www.entrust.net/legal-terms,O="Entrust, Inc.",C=US
Not Valid Before: Tue Jul 07 17:25:54 2009
Not Valid After : Sat Dec 07 17:55:54 2030
Fingerprint (SHA-256):
43:DF:57:74:B0:3E:7F:EF:5F:E4:0D:93:1A:7B:ED:F1:BB:2E:6B:42:73:8C:4E:6D:38:41:10:3D:3A:A7:F3:39
Fingerprint (SHA1): 8C:F4:27:FD:79:0C:3A:D1:66:06:8D:E8:1E:57:EF:BB:93:22:72:D4
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Entrust Root Certification Authority - G2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\276\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\026\060\024\006\003\125\004\012\023\015\105\156\164\162\165
\163\164\054\040\111\156\143\056\061\050\060\046\006\003\125\004
\013\023\037\123\145\145\040\167\167\167\056\145\156\164\162\165
\163\164\056\156\145\164\057\154\145\147\141\154\055\164\145\162
\155\163\061\071\060\067\006\003\125\004\013\023\060\050\143\051
\040\062\060\060\071\040\105\156\164\162\165\163\164\054\040\111
\156\143\056\040\055\040\146\157\162\040\141\165\164\150\157\162
\151\172\145\144\040\165\163\145\040\157\156\154\171\061\062\060
\060\006\003\125\004\003\023\051\105\156\164\162\165\163\164\040
\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164\151
\157\156\040\101\165\164\150\157\162\151\164\171\040\055\040\107
\062
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\276\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\026\060\024\006\003\125\004\012\023\015\105\156\164\162\165
\163\164\054\040\111\156\143\056\061\050\060\046\006\003\125\004
\013\023\037\123\145\145\040\167\167\167\056\145\156\164\162\165
\163\164\056\156\145\164\057\154\145\147\141\154\055\164\145\162
\155\163\061\071\060\067\006\003\125\004\013\023\060\050\143\051
\040\062\060\060\071\040\105\156\164\162\165\163\164\054\040\111
\156\143\056\040\055\040\146\157\162\040\141\165\164\150\157\162
\151\172\145\144\040\165\163\145\040\157\156\154\171\061\062\060
\060\006\003\125\004\003\023\051\105\156\164\162\165\163\164\040
\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164\151
\157\156\040\101\165\164\150\157\162\151\164\171\040\055\040\107
\062
```



END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\004\112\123\214\050

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\076\060\202\003\046\240\003\002\001\002\002\004\112  
\123\214\050\060\015\006\011\052\206\110\206\367\015\001\001\013  
\005\000\060\201\276\061\013\060\011\006\003\125\004\006\023\002  
\125\123\061\026\060\024\006\003\125\004\012\023\015\105\156\164  
\162\165\163\164\054\040\111\156\143\056\061\050\060\046\006\003  
\125\004\013\023\037\123\145\145\040\167\167\167\056\145\156\164  
\162\165\163\164\056\156\145\164\057\154\145\147\141\154\055\164  
\145\162\155\163\061\071\060\067\006\003\125\004\013\023\060\050  
\143\051\040\062\060\060\071\040\105\156\164\162\165\163\164\054  
\040\111\156\143\056\040\055\040\146\157\162\040\141\165\164\150  
\157\162\151\172\145\144\040\165\163\145\040\157\156\154\171\061  
\062\060\060\006\003\125\004\003\023\051\105\156\164\162\165\163  
\164\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141  
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\040\055  
\040\107\062\060\036\027\015\060\071\060\067\060\067\061\067\065  
\065\064\132\027\015\063\060\061\062\060\067\061\067\065\065  
\065\064\132\060\201\276\061\013\060\011\006\003\125\004\006\023  
\002\125\123\061\026\060\024\006\003\125\004\012\023\015\105\156  
\164\162\165\163\164\054\040\111\156\143\056\061\050\060\046\006  
\003\125\004\013\023\037\123\145\145\040\167\167\167\056\145\156  
\164\162\165\163\164\056\156\145\164\057\154\145\147\141\154\055  
\164\145\162\155\163\061\071\060\067\006\003\125\004\013\023\060  
\050\143\051\040\062\060\060\071\040\105\156\164\162\165\163\164  
\054\040\111\156\143\056\040\055\040\146\157\162\040\141\165\164  
\150\157\162\151\172\145\144\040\165\163\145\040\157\156\154\171  
\061\062\060\060\006\003\125\004\003\023\051\105\156\164\162\165  
\163\164\040\122\157\157\164\040\103\145\162\164\151\146\151\143  
\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171\040  
\055\040\107\062\060\202\001\042\060\015\006\011\052\206\110\206  
\367\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012  
\002\202\001\001\000\272\204\266\162\333\236\014\153\342\231\351  
\060\001\247\166\352\062\270\225\101\032\311\332\141\116\130\162  
\317\376\366\202\171\277\163\141\006\012\245\047\330\263\137\323  
\105\116\034\162\326\116\062\362\162\212\017\367\203\031\320\152  
\200\200\000\105\036\260\307\347\232\277\022\127\047\034\243\150  
\057\012\207\275\152\153\016\136\145\363\034\167\325\324\205\215  
\160\041\264\263\062\347\213\242\325\206\071\002\261\270\322\107  
\316\344\311\111\304\073\247\336\373\124\175\127\276\360\350\156  
\302\171\262\072\013\125\342\120\230\026\062\023\134\057\170\126  
\301\302\224\263\362\132\344\047\232\237\044\327\306\354\320\233  
\045\202\343\314\302\304\105\305\214\227\172\006\153\052\021\237  
\251\012\156\110\073\157\333\324\021\031\102\367\217\007\277\365  
\123\137\234\076\364\027\054\346\151\254\116\062\114\142\167\352

\267\350\345\273\064\274\031\213\256\234\121\347\267\176\265\123  
\261\063\042\345\155\317\160\074\032\372\342\233\147\266\203\364  
\215\245\257\142\114\115\340\130\254\144\064\022\003\370\266\215  
\224\143\044\244\161\002\003\001\000\001\243\102\060\100\060\016  
\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060\017  
\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060  
\035\006\003\125\035\016\004\026\004\024\152\162\046\172\320\036  
\357\175\347\073\151\121\324\154\215\237\220\022\146\253\060\015  
\006\011\052\206\110\206\367\015\001\001\013\005\000\003\202\001  
\001\000\171\237\035\226\306\266\171\077\042\215\207\323\207\003  
\004\140\152\153\232\056\131\211\163\021\254\103\321\365\023\377  
\215\071\053\300\362\275\117\160\214\251\057\352\027\304\013\124  
\236\324\033\226\230\063\074\250\255\142\242\000\166\253\131\151  
\156\006\035\176\304\271\104\215\230\257\022\324\141\333\012\031  
\106\107\363\353\367\143\301\100\005\100\245\322\267\364\265\232  
\066\277\251\210\166\210\004\125\004\053\234\207\177\032\067\074  
\176\055\245\032\330\324\211\136\312\275\254\075\154\330\155\257  
\325\363\166\017\315\073\210\070\042\235\154\223\232\304\075\277  
\202\033\145\077\246\017\135\252\374\345\262\025\312\265\255\306  
\274\075\320\204\350\352\006\162\260\115\071\062\170\277\076\021  
\234\013\244\235\232\041\363\360\233\013\060\170\333\301\334\207  
\103\376\274\143\232\312\305\302\034\311\307\215\377\073\022\130  
\010\346\266\075\354\172\054\116\373\203\226\316\014\074\151\207  
\124\163\244\163\302\223\377\121\020\254\025\124\001\330\374\005  
\261\211\241\177\164\203\232\111\327\334\116\173\212\110\157\213  
\105\366

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Entrust Root Certification Authority - G2"

# Issuer: CN=Entrust Root Certification Authority - G2,OU="(c) 2009 Entrust, Inc. - for authorized use only",OU=See www.entrust.net/legal-terms,O="Entrust, Inc.",C=US

# Serial Number: 1246989352 (0x4a538c28)

# Subject: CN=Entrust Root Certification Authority - G2,OU="(c) 2009 Entrust, Inc. - for authorized use only",OU=See www.entrust.net/legal-terms,O="Entrust, Inc.",C=US

# Not Valid Before: Tue Jul 07 17:25:54 2009

# Not Valid After : Sat Dec 07 17:55:54 2030

# Fingerprint (SHA-256):

43:DF:57:74:B0:3E:7F:EF:5F:E4:0D:93:1A:7B:ED:F1:BB:2E:6B:42:73:8C:4E:6D:38:41:10:3D:3A:A7:F3:39

# Fingerprint (SHA1): 8C:F4:27:FD:79:0C:3A:D1:66:06:8D:E8:1E:57:EF:BB:93:22:72:D4

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Entrust Root Certification Authority - G2"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\214\364\047\375\171\014\072\321\146\006\215\350\036\127\357\273

\223\042\162\324

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\113\342\311\221\226\145\014\364\016\132\223\222\240\012\376\262

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\276\061\013\060\011\006\003\125\004\006\023\002\125\123

\061\026\060\024\006\003\125\004\012\023\015\105\156\164\162\165

\163\164\054\040\111\156\143\056\061\050\060\046\006\003\125\004

\013\023\037\123\145\145\040\167\167\167\056\145\156\164\162\165

\163\164\056\156\145\164\057\154\145\147\141\154\055\164\145\162

\155\163\061\071\060\067\006\003\125\004\013\023\060\050\143\051

\040\062\060\060\071\040\105\156\164\162\165\163\164\054\040\111

\156\143\056\040\055\040\146\157\162\040\141\165\164\150\157\162

\151\172\145\144\040\165\163\145\040\157\156\154\171\061\062\060

\060\006\003\125\004\003\023\051\105\156\164\162\165\163\164\040

\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164\151

\157\156\040\101\165\164\150\157\162\151\164\171\040\055\040\107

\062

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\004\112\123\214\050

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "Entrust Root Certification Authority - EC1"

#

# Issuer: CN=Entrust Root Certification Authority - EC1,OU="(c) 2012 Entrust, Inc. - for authorized use only",OU=See www.entrust.net/legal-terms,O="Entrust, Inc.",C=US

# Serial Number:00:a6:8b:79:29:00:00:00:50:d0:91:f9

# Subject: CN=Entrust Root Certification Authority - EC1,OU="(c) 2012 Entrust, Inc. - for authorized use only",OU=See www.entrust.net/legal-terms,O="Entrust, Inc.",C=US

# Not Valid Before: Tue Dec 18 15:25:36 2012

# Not Valid After : Fri Dec 18 15:55:36 2037

# Fingerprint (SHA-256):

02:ED:0E:B2:8C:14:DA:45:16:5C:56:67:91:70:0D:64:51:D7:FB:56:F0:B2:AB:1D:3B:8E:B0:70:E5:6E:DF:F5

# Fingerprint (SHA1): 20:D8:06:40:DF:9B:25:F5:12:25:3A:11:EA:F7:59:8A:EB:14:B5:47

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Entrust Root Certification Authority - EC1"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\201\277\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\026\060\024\006\003\125\004\012\023\015\105\156\164\162\165  
\163\164\054\040\111\156\143\056\061\050\060\046\006\003\125\004  
\013\023\037\123\145\145\040\167\167\167\056\145\156\164\162\165  
\163\164\056\156\145\164\057\154\145\147\141\154\055\164\145\162  
\155\163\061\071\060\067\006\003\125\004\013\023\060\050\143\051  
\040\062\060\061\062\040\105\156\164\162\165\163\164\054\040\111  
\156\143\056\040\055\040\146\157\162\040\141\165\164\150\157\162  
\151\172\145\144\040\165\163\145\040\157\156\154\171\061\063\060  
\061\006\003\125\004\003\023\052\105\156\164\162\165\163\164\040  
\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164\151  
\157\156\040\101\165\164\150\157\162\151\164\171\040\055\040\105  
\103\061

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\277\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\026\060\024\006\003\125\004\012\023\015\105\156\164\162\165  
\163\164\054\040\111\156\143\056\061\050\060\046\006\003\125\004  
\013\023\037\123\145\145\040\167\167\167\056\145\156\164\162\165  
\163\164\056\156\145\164\057\154\145\147\141\154\055\164\145\162  
\155\163\061\071\060\067\006\003\125\004\013\023\060\050\143\051  
\040\062\060\061\062\040\105\156\164\162\165\163\164\054\040\111  
\156\143\056\040\055\040\146\157\162\040\141\165\164\150\157\162  
\151\172\145\144\040\165\163\145\040\157\156\154\171\061\063\060  
\061\006\003\125\004\003\023\052\105\156\164\162\165\163\164\040  
\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164\151  
\157\156\040\101\165\164\150\157\162\151\164\171\040\055\040\105  
\103\061

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\015\000\246\213\171\051\000\000\000\000\120\320\221\371

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\002\371\060\202\002\200\240\003\002\001\002\002\015\000  
\246\213\171\051\000\000\000\000\120\320\221\371\060\012\006\010  
\052\206\110\316\075\004\003\003\060\201\277\061\013\060\011\006  
\003\125\004\006\023\002\125\123\061\026\060\024\006\003\125\004  
\012\023\015\105\156\164\162\165\163\164\054\040\111\156\143\056  
\061\050\060\046\006\003\125\004\013\023\037\123\145\145\040\167  
\167\167\056\145\156\164\162\165\163\164\056\156\145\164\057\154  
\145\147\141\154\055\164\145\162\155\163\061\071\060\067\006\003  
\125\004\013\023\060\050\143\051\040\062\060\061\062\040\105\156  
\164\162\165\163\164\054\040\111\156\143\056\040\055\040\146\157  
\162\040\141\165\164\150\157\162\151\172\145\144\040\165\163\145  
\040\157\156\154\171\061\063\060\061\006\003\125\004\003\023\052  
\105\156\164\162\165\163\164\040\122\157\157\164\040\103\145\162

\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157  
\162\151\164\171\040\055\040\105\103\061\060\036\027\015\061\062  
\061\062\061\070\061\065\062\065\063\066\132\027\015\063\067\061  
\062\061\070\061\065\065\065\063\066\132\060\201\277\061\013\060  
\011\006\003\125\004\006\023\002\125\123\061\026\060\024\006\003  
\125\004\012\023\015\105\156\164\162\165\163\164\054\040\111\156  
\143\056\061\050\060\046\006\003\125\004\013\023\037\123\145\145  
\040\167\167\167\056\145\156\164\162\165\163\164\056\156\145\164  
\057\154\145\147\141\154\055\164\145\162\155\163\061\071\060\067  
\006\003\125\004\013\023\060\050\143\051\040\062\060\061\062\040  
\105\156\164\162\165\163\164\054\040\111\156\143\056\040\055\040  
\146\157\162\040\141\165\164\150\157\162\151\172\145\144\040\165  
\163\145\040\157\156\154\171\061\063\060\061\006\003\125\004\003  
\023\052\105\156\164\162\165\163\164\040\122\157\157\164\040\103  
\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164  
\150\157\162\151\164\171\040\055\040\105\103\061\060\166\060\020  
\006\007\052\206\110\316\075\002\001\006\005\053\201\004\000\042  
\003\142\000\004\204\023\311\320\272\155\101\173\342\154\320\353  
\125\137\146\002\032\044\364\133\211\151\107\343\270\302\175\361  
\362\002\305\237\240\366\133\325\213\006\031\206\117\123\020\155  
\007\044\047\241\240\370\325\107\031\141\114\175\312\223\047\352  
\164\014\357\157\226\011\376\143\354\160\135\066\255\147\167\256  
\311\235\174\125\104\072\242\143\121\037\365\343\142\324\251\107  
\007\076\314\040\243\102\060\100\060\016\006\003\125\035\017\001  
\001\377\004\004\003\002\001\006\060\017\006\003\125\035\023\001  
\001\377\004\005\060\003\001\001\377\060\035\006\003\125\035\016  
\004\026\004\024\267\143\347\032\335\215\351\010\246\125\203\244  
\340\152\120\101\145\021\102\111\060\012\006\010\052\206\110\316  
\075\004\003\003\003\147\000\060\144\002\060\141\171\330\345\102  
\107\337\034\256\123\231\027\266\157\034\175\341\277\021\224\321  
\003\210\165\344\215\211\244\212\167\106\336\155\141\357\002\365  
\373\265\337\314\376\116\377\376\251\346\247\002\060\133\231\327  
\205\067\006\265\173\010\375\353\047\213\112\224\371\341\372\247  
\216\046\010\350\174\222\150\155\163\330\157\046\254\041\002\270  
\231\267\046\101\133\045\140\256\320\110\032\356\006

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Entrust Root Certification Authority - EC1"  
# Issuer: CN=Entrust Root Certification Authority - EC1,OU="(c) 2012 Entrust, Inc. - for authorized use only",OU=See www.entrust.net/legal-terms,O="Entrust, Inc.",C=US  
# Serial Number:00:a6:8b:79:29:00:00:00:50:d0:91:f9  
# Subject: CN=Entrust Root Certification Authority - EC1,OU="(c) 2012 Entrust, Inc. - for authorized use only",OU=See www.entrust.net/legal-terms,O="Entrust, Inc.",C=US  
# Not Valid Before: Tue Dec 18 15:25:36 2012  
# Not Valid After : Fri Dec 18 15:55:36 2037

```

Fingerprint (SHA-256):
02:ED:0E:B2:8C:14:DA:45:16:5C:56:67:91:70:0D:64:51:D7:FB:56:F0:B2:AB:1D:3B:8E:B0:70:E5:6E:DF:F5
Fingerprint (SHA1): 20:D8:06:40:DF:9B:25:F5:12:25:3A:11:EA:F7:59:8A:EB:14:B5:47
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Entrust Root Certification Authority - EC1"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\040\330\006\100\337\233\045\365\022\045\072\021\352\367\131\212
\353\024\265\107
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\266\176\035\360\130\305\111\154\044\073\075\355\230\030\355\274
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\277\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\026\060\024\006\003\125\004\012\023\015\105\156\164\162\165
\163\164\054\040\111\156\143\056\061\050\060\046\006\003\125\004
\013\023\037\123\145\145\040\167\167\167\056\145\156\164\162\165
\163\164\056\156\145\164\057\154\145\147\141\154\055\164\145\162
\155\163\061\071\060\067\006\003\125\004\013\023\060\050\143\051
\040\062\060\061\062\040\105\156\164\162\165\163\164\054\040\111
\156\143\056\040\055\040\146\157\162\040\141\165\164\150\157\162
\151\172\145\144\040\165\163\145\040\157\156\154\171\061\063\060
\061\006\003\125\004\003\023\052\105\156\164\162\165\163\164\040
\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164\151
\157\156\040\101\165\164\150\157\162\151\164\171\040\055\040\105
\103\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\015\000\246\213\171\051\000\000\000\000\120\320\221\371
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "CFCA EV ROOT"
#
Issuer: CN=CFCA EV ROOT,O=China Financial Certification Authority,C=CN
Serial Number: 407555286 (0x184accd6)
Subject: CN=CFCA EV ROOT,O=China Financial Certification Authority,C=CN
Not Valid Before: Wed Aug 08 03:07:01 2012
Not Valid After : Mon Dec 31 03:07:01 2029
Fingerprint (SHA-256):
5C:C3:D7:8E:4E:1D:5E:45:54:7A:04:E6:87:3E:64:F9:0C:F9:53:6D:1C:CC:2E:F8:00:F3:55:C4:C5:FD:70:FD

```

# Fingerprint (SHA1): E2:B8:29:4B:55:84:AB:6B:58:C2:90:46:6C:AC:3F:B8:39:8F:84:83

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "CFCA EV ROOT"  
CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509  
CKA\_SUBJECT MULTILINE\_OCTAL  
\060\126\061\013\060\011\006\003\125\004\006\023\002\103\116\061  
\060\060\056\006\003\125\004\012\014\047\103\150\151\156\141\040  
\106\151\156\141\156\143\151\141\154\040\103\145\162\164\151\146  
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164  
\171\061\025\060\023\006\003\125\004\003\014\014\103\106\103\101  
\040\105\126\040\122\117\117\124  
END

CKA\_ID UTF8 "0"  
CKA\_ISSUER MULTILINE\_OCTAL  
\060\126\061\013\060\011\006\003\125\004\006\023\002\103\116\061  
\060\060\056\006\003\125\004\012\014\047\103\150\151\156\141\040  
\106\151\156\141\156\143\151\141\154\040\103\145\162\164\151\146  
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164  
\171\061\025\060\023\006\003\125\004\003\014\014\103\106\103\101  
\040\105\126\040\122\117\117\124  
END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL  
\002\004\030\112\314\326  
END

CKA\_VALUE MULTILINE\_OCTAL  
\060\202\005\215\060\202\003\165\240\003\002\001\002\002\004\030  
\112\314\326\060\015\006\011\052\206\110\206\367\015\001\001\013  
\005\000\060\126\061\013\060\011\006\003\125\004\006\023\002\103  
\116\061\060\060\056\006\003\125\004\012\014\047\103\150\151\156  
\141\040\106\151\156\141\156\143\151\141\154\040\103\145\162\164  
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162  
\151\164\171\061\025\060\023\006\003\125\004\003\014\014\103\106  
\103\101\040\105\126\040\122\117\117\124\060\036\027\015\061\062  
\060\070\060\070\060\063\060\067\060\061\132\027\015\062\071\061  
\062\063\061\060\063\060\067\060\061\132\060\126\061\013\060\011  
\006\003\125\004\006\023\002\103\116\061\060\060\056\006\003\125  
\004\012\014\047\103\150\151\156\141\040\106\151\156\141\156\143  
\151\141\154\040\103\145\162\164\151\146\151\143\141\164\151\157  
\156\040\101\165\164\150\157\162\151\164\171\061\025\060\023\006  
\003\125\004\003\014\014\103\106\103\101\040\105\126\040\122\117  
\117\124\060\202\002\042\060\015\006\011\052\206\110\206\367\015  
\001\001\001\005\000\003\202\002\017\000\060\202\002\012\002\202  
\002\001\000\327\135\153\315\020\077\037\005\131\325\005\115\067  
\261\016\354\230\053\216\025\035\372\223\113\027\202\041\161\020  
\122\327\121\144\160\026\302\125\151\115\216\025\155\237\277\014

\033\302\340\243\147\326\014\254\317\042\256\257\167\124\052\113  
\114\212\123\122\172\303\356\056\336\263\161\045\301\351\135\075  
\356\241\057\243\367\052\074\311\043\035\152\253\035\241\247\361  
\363\354\240\325\104\317\025\317\162\057\035\143\227\350\231\371  
\375\223\244\124\200\114\122\324\122\253\056\111\337\220\315\270  
\137\276\077\336\241\312\115\040\324\045\350\204\051\123\267\261  
\210\037\377\372\332\220\237\012\251\055\101\077\261\361\030\051  
\356\026\131\054\064\111\032\250\006\327\250\210\322\003\162\172  
\062\342\352\150\115\156\054\226\145\173\312\131\372\362\342\335  
\356\060\054\373\314\106\254\304\143\353\157\177\066\053\064\163  
\022\224\177\337\314\046\236\361\162\135\120\145\131\217\151\263  
\207\136\062\157\303\030\212\265\225\217\260\172\067\336\132\105  
\073\307\066\341\357\147\321\071\323\227\133\163\142\031\110\055  
\207\034\006\373\164\230\040\111\163\360\005\322\033\261\240\243  
\267\033\160\323\210\151\271\132\326\070\364\142\334\045\213\170  
\277\370\350\176\270\134\311\225\117\137\247\055\271\040\153\317  
\153\335\365\015\364\202\267\364\262\146\056\020\050\366\227\132  
\173\226\026\217\001\031\055\154\156\177\071\130\006\144\203\001  
\203\203\303\115\222\335\062\306\207\244\067\351\026\316\252\055  
\150\257\012\201\145\072\160\301\233\255\115\155\124\312\052\055  
\113\205\033\263\200\346\160\105\015\153\136\065\360\177\073\270  
\234\344\004\160\211\022\045\223\332\012\231\042\140\152\143\140  
\116\166\006\230\116\275\203\255\035\130\212\045\205\322\307\145  
\036\055\216\306\337\266\306\341\177\212\004\041\025\051\164\360  
\076\234\220\235\014\056\361\212\076\132\252\014\011\036\307\325  
\074\243\355\227\303\036\064\372\070\371\010\016\343\300\135\053  
\203\321\126\152\311\266\250\124\123\056\170\062\147\075\202\177  
\164\320\373\341\266\005\140\271\160\333\216\013\371\023\130\157  
\161\140\020\122\020\271\301\101\011\357\162\037\147\061\170\377  
\226\005\215\002\003\001\000\001\243\143\060\141\060\037\006\003  
\125\035\043\004\030\060\026\200\024\343\376\055\375\050\320\013  
\265\272\266\242\304\277\006\252\005\214\223\373\057\060\017\006  
\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060\016  
\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060\035  
\006\003\125\035\016\004\026\004\024\343\376\055\375\050\320\013  
\265\272\266\242\304\277\006\252\005\214\223\373\057\060\015\006  
\011\052\206\110\206\367\015\001\001\013\005\000\003\202\002\001  
\000\045\306\272\153\353\207\313\336\202\071\226\075\360\104\247  
\153\204\163\003\336\235\053\117\272\040\177\274\170\262\317\227  
\260\033\234\363\327\171\056\365\110\266\322\373\027\210\346\323  
\172\077\355\123\023\320\342\057\152\171\313\000\043\050\346\036  
\067\127\065\211\204\302\166\117\064\066\255\147\303\316\101\006  
\210\305\367\356\330\032\270\326\013\177\120\377\223\252\027\113  
\214\354\355\122\140\262\244\006\352\116\353\364\153\031\375\353  
\365\032\340\045\052\232\334\307\101\066\367\310\164\005\204\071  
\225\071\326\013\073\244\047\372\010\330\134\036\370\004\140\122  
\021\050\050\003\377\357\123\146\000\245\112\064\026\146\174\375  
\011\244\256\236\147\032\157\101\013\153\006\023\233\217\206\161



```
\005\264\057\215\211\146\063\051\166\124\232\021\370\047\372\262
\077\221\340\316\015\033\363\060\032\255\277\042\135\033\323\277
\045\005\115\341\222\032\177\231\237\074\104\223\312\324\100\111
\154\200\207\327\004\072\303\062\122\065\016\126\370\245\335\175
\304\213\015\021\037\123\313\036\262\027\266\150\167\132\340\324
\313\310\007\256\365\072\056\216\067\267\320\001\113\103\051\167
\214\071\227\217\202\132\370\121\345\211\240\030\347\150\177\135
\012\056\373\243\107\016\075\246\043\172\306\001\307\217\310\136
\277\155\200\126\276\212\044\272\063\352\237\341\062\021\236\361
\322\117\200\366\033\100\257\070\236\021\120\171\163\022\022\315
\346\154\235\054\210\162\074\060\201\006\221\042\352\131\255\332
\031\056\042\302\215\271\214\207\340\146\274\163\043\137\041\144
\143\200\110\365\240\074\030\075\224\310\110\101\035\100\272\136
\376\376\126\071\241\310\317\136\236\031\144\106\020\332\027\221
\267\005\200\254\213\231\222\175\347\242\330\007\013\066\047\347
\110\171\140\212\303\327\023\134\370\162\100\337\112\313\317\231
\000\012\000\013\021\225\332\126\105\003\210\012\237\147\320\325
\171\261\250\215\100\155\015\302\172\100\372\363\137\144\107\222
\313\123\271\273\131\316\117\375\320\025\123\001\330\337\353\331
\346\166\357\320\043\273\073\251\171\263\325\002\051\315\211\243
\226\017\112\065\347\116\102\300\165\315\007\317\346\054\353\173
\056
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "CFCA EV ROOT"

# Issuer: CN=CFCA EV ROOT,O=China Financial Certification Authority,C=CN

# Serial Number: 407555286 (0x184accd6)

# Subject: CN=CFCA EV ROOT,O=China Financial Certification Authority,C=CN

# Not Valid Before: Wed Aug 08 03:07:01 2012

# Not Valid After : Mon Dec 31 03:07:01 2029

# Fingerprint (SHA-256):

5C:C3:D7:8E:4E:1D:5E:45:54:7A:04:E6:87:3E:64:F9:0C:F9:53:6D:1C:CC:2E:F8:00:F3:55:C4:C5:FD:70:FD

# Fingerprint (SHA1): E2:B8:29:4B:55:84:AB:6B:58:C2:90:46:6C:AC:3F:B8:39:8F:84:83

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "CFCA EV ROOT"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\342\270\051\113\125\204\253\153\130\302\220\106\154\254\077\270
\071\217\204\203
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\164\341\266\355\046\172\172\104\060\063\224\253\173\047\201\060
```

END

```

CKA_ISSUER MULTILINE_OCTAL
\060\126\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\060\060\056\006\003\125\004\012\014\047\103\150\151\156\141\040
\106\151\156\141\156\143\151\141\154\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164
\171\061\025\060\023\006\003\125\004\003\014\014\103\106\103\101
\040\105\126\040\122\117\117\124
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\004\030\112\314\326
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "OISTE WISeKey Global Root GB CA"
#
Issuer: CN=OISTE WISeKey Global Root GB CA,OU=OISTE Foundation Endorsed,O=WISeKey,C=CH
Serial Number:76:b1:20:52:74:f0:85:87:46:b3:f8:23:1a:f6:c2:c0
Subject: CN=OISTE WISeKey Global Root GB CA,OU=OISTE Foundation Endorsed,O=WISeKey,C=CH
Not Valid Before: Mon Dec 01 15:00:32 2014
Not Valid After : Thu Dec 01 15:10:31 2039
Fingerprint (SHA-256):
6B:9C:08:E8:6E:B0:F7:67:CF:AD:65:CD:98:B6:21:49:E5:49:4A:67:F5:84:5E:7B:D1:ED:01:9F:27:B8:6B:D6
Fingerprint (SHA1): 0F:F9:40:76:18:D3:D7:6A:4B:98:F0:A8:35:9E:0C:FD:27:AC:CC:ED
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "OISTE WISeKey Global Root GB CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\155\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\020\060\016\006\003\125\004\012\023\007\127\111\123\145\113\145
\171\061\042\060\040\006\003\125\004\013\023\031\117\111\123\124
\105\040\106\157\165\156\144\141\164\151\157\156\040\105\156\144
\157\162\163\145\144\061\050\060\046\006\003\125\004\003\023\037
\117\111\123\124\105\040\127\111\123\145\113\145\171\040\107\154
\157\142\141\154\040\122\157\157\164\040\107\102\040\103\101
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\155\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\020\060\016\006\003\125\004\012\023\007\127\111\123\145\113\145
\171\061\042\060\040\006\003\125\004\013\023\031\117\111\123\124
\105\040\106\157\165\156\144\141\164\151\157\156\040\105\156\144

```

\157\162\163\145\144\061\050\060\046\006\003\125\004\003\023\037  
\117\111\123\124\105\040\127\111\123\145\113\145\171\040\107\154  
\157\142\141\154\040\122\157\157\164\040\107\102\040\103\101

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\166\261\040\122\164\360\205\207\106\263\370\043\032\366  
\302\300

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\265\060\202\002\235\240\003\002\001\002\002\020\166  
\261\040\122\164\360\205\207\106\263\370\043\032\366\302\300\060  
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\155  
\061\013\060\011\006\003\125\004\006\023\002\103\110\061\020\060  
\016\006\003\125\004\012\023\007\127\111\123\145\113\145\171\061  
\042\060\040\006\003\125\004\013\023\031\117\111\123\124\105\040  
\106\157\165\156\144\141\164\151\157\156\040\105\156\144\157\162  
\163\145\144\061\050\060\046\006\003\125\004\003\023\037\117\111  
\123\124\105\040\127\111\123\145\113\145\171\040\107\154\157\142  
\141\154\040\122\157\157\164\040\107\102\040\103\101\060\036\027  
\015\061\064\061\062\060\061\061\065\060\060\063\062\132\027\015  
\063\071\061\062\060\061\061\065\061\060\063\061\132\060\155\061  
\013\060\011\006\003\125\004\006\023\002\103\110\061\020\060\016  
\006\003\125\004\012\023\007\127\111\123\145\113\145\171\061\042  
\060\040\006\003\125\004\013\023\031\117\111\123\124\105\040\106  
\157\165\156\144\141\164\151\157\156\040\105\156\144\157\162\163  
\145\144\061\050\060\046\006\003\125\004\003\023\037\117\111\123  
\124\105\040\127\111\123\145\113\145\171\040\107\154\157\142\141  
\154\040\122\157\157\164\040\107\102\040\103\101\060\202\001\042  
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003  
\202\001\017\000\060\202\001\012\002\202\001\001\000\330\027\267  
\034\112\044\052\326\227\261\312\342\036\373\175\070\357\230\365  
\262\071\230\116\047\270\021\135\173\322\045\224\210\202\025\046  
\152\033\061\273\250\133\041\041\053\330\017\116\237\132\361\261  
\132\344\171\326\062\043\053\341\123\314\231\105\134\173\117\255  
\274\277\207\112\013\113\227\132\250\366\110\354\175\173\015\315  
\041\006\337\236\025\375\101\212\110\267\040\364\241\172\033\127  
\324\135\120\377\272\147\330\043\231\037\310\077\343\336\377\157  
\133\167\261\153\156\270\311\144\367\341\312\101\106\016\051\161  
\320\271\043\374\311\201\137\116\367\157\337\277\204\255\163\144  
\273\267\102\216\151\366\324\166\035\176\235\247\270\127\212\121  
\147\162\327\324\250\270\225\124\100\163\003\366\352\364\353\376  
\050\102\167\077\235\043\033\262\266\075\200\024\007\114\056\117  
\367\325\012\026\015\275\146\103\067\176\043\103\171\303\100\206  
\365\114\051\332\216\232\255\015\245\004\207\210\036\205\343\351  
\123\325\233\310\213\003\143\170\353\340\031\112\156\273\057\153  
\063\144\130\223\255\151\277\217\033\357\202\110\307\002\003\001  
\000\001\243\121\060\117\060\013\006\003\125\035\017\004\004\003  
\002\001\206\060\017\006\003\125\035\023\001\001\377\004\005\060

\003\001\001\377\060\035\006\003\125\035\016\004\026\004\024\065  
\017\310\066\143\136\342\243\354\371\073\146\025\316\121\122\343  
\221\232\075\060\020\006\011\053\006\001\004\001\202\067\025\001  
\004\003\002\001\000\060\015\006\011\052\206\110\206\367\015\001  
\001\013\005\000\003\202\001\001\000\100\114\373\207\262\231\201  
\220\176\235\305\260\260\046\315\210\173\053\062\215\156\270\041  
\161\130\227\175\256\067\024\257\076\347\367\232\342\175\366\161  
\230\231\004\252\103\164\170\243\343\111\141\076\163\214\115\224  
\340\371\161\304\266\026\016\123\170\037\326\242\207\057\002\071  
\201\051\074\257\025\230\041\060\376\050\220\000\214\321\341\313  
\372\136\310\375\370\020\106\073\242\170\102\221\027\164\125\012  
\336\120\147\115\146\321\247\377\375\331\300\265\250\243\212\316  
\146\365\017\103\315\247\053\127\173\143\106\152\252\056\122\330  
\364\355\341\155\255\051\220\170\110\272\341\043\252\243\211\354  
\265\253\226\300\264\113\242\035\227\236\172\362\156\100\161\337  
\150\361\145\115\316\174\005\337\123\145\251\245\360\261\227\004  
\160\025\106\003\230\324\322\277\124\264\240\130\175\122\157\332  
\126\046\142\324\330\333\211\061\157\034\360\042\302\323\142\034  
\065\315\114\151\025\124\032\220\230\336\353\036\137\312\167\307  
\313\216\075\103\151\234\232\130\320\044\073\337\033\100\226\176  
\065\255\201\307\116\161\272\210\023

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "OISTE WISEKey Global Root GB CA"

# Issuer: CN=OISTE WISEKey Global Root GB CA,OU=OISTE Foundation Endorsed,O=WISEKey,C=CH

# Serial Number:76:b1:20:52:74:f0:85:87:46:b3:f8:23:1a:f6:c2:c0

# Subject: CN=OISTE WISEKey Global Root GB CA,OU=OISTE Foundation Endorsed,O=WISEKey,C=CH

# Not Valid Before: Mon Dec 01 15:00:32 2014

# Not Valid After : Thu Dec 01 15:10:31 2039

# Fingerprint (SHA-256):

6B:9C:08:E8:6E:B0:F7:67:CF:AD:65:CD:98:B6:21:49:E5:49:4A:67:F5:84:5E:7B:D1:ED:01:9F:27:B8:6B:D6

# Fingerprint (SHA1): 0F:F9:40:76:18:D3:D7:6A:4B:98:F0:A8:35:9E:0C:FD:27:AC:CC:ED

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "OISTE WISEKey Global Root GB CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\017\371\100\166\030\323\327\152\113\230\360\250\065\236\014\375  
\047\254\314\355

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\244\353\271\141\050\056\267\057\230\260\065\046\220\231\121\035

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\155\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\020\060\016\006\003\125\004\012\023\007\127\111\123\145\113\145
\171\061\042\060\040\006\003\125\004\013\023\031\117\111\123\124
\105\040\106\157\165\156\144\141\164\151\157\156\040\105\156\144
\157\162\163\145\144\061\050\060\046\006\003\125\004\003\023\037
\117\111\123\124\105\040\127\111\123\145\113\145\171\040\107\154
\157\142\141\154\040\122\157\157\164\040\107\102\040\103\101
END
```

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\166\261\040\122\164\360\205\207\106\263\370\043\032\366
\302\300
END
```

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
#
Certificate "SZAFIR ROOT CA2"
#
Issuer: CN=SZAFIR ROOT CA2,O=Krajowa Izba Rozliczeniowa S.A.,C=PL
Serial Number:3e:8a:5d:07:ec:55:d2:32:d5:b7:e3:b6:5f:01:eb:2d:dc:e4:d6:e4
Subject: CN=SZAFIR ROOT CA2,O=Krajowa Izba Rozliczeniowa S.A.,C=PL
Not Valid Before: Mon Oct 19 07:43:30 2015
Not Valid After : Fri Oct 19 07:43:30 2035
Fingerprint (SHA-256):
A1:33:9D:33:28:1A:0B:56:E5:57:D3:D3:2B:1C:E7:F9:36:7E:B0:94:BD:5F:A7:2A:7E:50:04:C8:DE:D7:CA:FE
Fingerprint (SHA1): E2:52:FA:95:3F:ED:DB:24:60:BD:6E:28:F3:9C:CC:CF:5E:B3:3F:DE
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SZAFIR ROOT CA2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\121\061\013\060\011\006\003\125\004\006\023\002\120\114\061
\050\060\046\006\003\125\004\012\014\037\113\162\141\152\157\167
\141\040\111\172\142\141\040\122\157\172\154\151\143\172\145\156
\151\157\167\141\040\123\056\101\056\061\030\060\026\006\003\125
\004\003\014\017\123\132\101\106\111\122\040\122\117\117\124\040
\103\101\062
END
```

```
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\121\061\013\060\011\006\003\125\004\006\023\002\120\114\061
\050\060\046\006\003\125\004\012\014\037\113\162\141\152\157\167
\141\040\111\172\142\141\040\122\157\172\154\151\143\172\145\156
\151\157\167\141\040\123\056\101\056\061\030\060\026\006\003\125
```

\004\003\014\017\123\132\101\106\111\122\040\122\117\117\124\040  
\103\101\062

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\024\076\212\135\007\354\125\322\062\325\267\343\266\137\001  
\353\055\334\344\326\344

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\162\060\202\002\132\240\003\002\001\002\002\024\076  
\212\135\007\354\125\322\062\325\267\343\266\137\001\353\055\334  
\344\326\344\060\015\006\011\052\206\110\206\367\015\001\001\013  
\005\000\060\121\061\013\060\011\006\003\125\004\006\023\002\120  
\114\061\050\060\046\006\003\125\004\012\014\037\113\162\141\152  
\157\167\141\040\111\172\142\141\040\122\157\172\154\151\143\172  
\145\156\151\157\167\141\040\123\056\101\056\061\030\060\026\006  
\003\125\004\003\014\017\123\132\101\106\111\122\040\122\117\117  
\124\040\103\101\062\060\036\027\015\061\065\061\060\061\071\060  
\067\064\063\063\060\132\027\015\063\065\061\060\061\071\060\067  
\064\063\063\060\132\060\121\061\013\060\011\006\003\125\004\006  
\023\002\120\114\061\050\060\046\006\003\125\004\012\014\037\113  
\162\141\152\157\167\141\040\111\172\142\141\040\122\157\172\154  
\151\143\172\145\156\151\157\167\141\040\123\056\101\056\061\030  
\060\026\006\003\125\004\003\014\017\123\132\101\106\111\122\040  
\122\117\117\124\040\103\101\062\060\202\001\042\060\015\006\011  
\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017\000  
\060\202\001\012\002\202\001\001\000\267\274\076\120\250\113\315  
\100\265\316\141\347\226\312\264\241\332\014\042\260\372\265\173  
\166\000\167\214\013\317\175\250\206\314\046\121\344\040\075\205  
\014\326\130\343\347\364\052\030\235\332\321\256\046\356\353\123  
\334\364\220\326\023\112\014\220\074\303\364\332\322\216\015\222  
\072\334\261\261\377\070\336\303\272\055\137\200\271\002\275\112  
\235\033\017\264\303\302\301\147\003\335\334\033\234\075\263\260  
\336\000\036\250\064\107\273\232\353\376\013\024\275\066\204\332  
\015\040\277\372\133\313\251\026\040\255\071\140\356\057\165\266  
\347\227\234\371\076\375\176\115\157\115\057\357\210\015\152\372  
\335\361\075\156\040\245\240\022\264\115\160\271\316\327\162\073  
\211\223\247\200\204\034\047\111\162\111\265\377\073\225\236\301  
\314\310\001\354\350\016\212\012\226\347\263\246\207\345\326\371  
\005\053\015\227\100\160\074\272\254\165\132\234\325\115\235\002  
\012\322\113\233\146\113\106\007\027\145\255\237\154\210\000\334  
\042\211\340\341\144\324\147\274\061\171\141\074\273\312\101\315  
\134\152\000\310\074\070\216\130\257\002\003\001\000\001\243\102  
\060\100\060\017\006\003\125\035\023\001\001\377\004\005\060\003  
\001\001\377\060\016\006\003\125\035\017\001\001\377\004\004\003  
\002\001\006\060\035\006\003\125\035\016\004\026\004\024\056\026  
\251\112\030\265\313\314\365\157\120\363\043\137\370\135\347\254  
\360\310\060\015\006\011\052\206\110\206\367\015\001\001\013\005  
\000\003\202\001\001\000\265\163\370\003\334\131\133\035\166\351

```
\243\052\173\220\050\262\115\300\063\117\252\232\261\324\270\344
\047\377\251\226\231\316\106\340\155\174\114\242\070\244\006\160
\360\364\101\021\354\077\107\215\077\162\207\371\073\375\244\157
\053\123\000\340\377\071\271\152\007\016\353\035\034\366\242\162
\220\313\202\075\021\202\213\322\273\237\052\257\041\346\143\206
\235\171\031\357\367\273\014\065\220\303\212\355\117\017\365\314
\022\331\244\076\273\240\374\040\225\137\117\046\057\021\043\203
\116\165\007\017\277\233\321\264\035\351\020\004\376\312\140\217
\242\114\270\255\317\341\220\017\315\256\012\307\135\173\267\120
\322\324\141\372\325\025\333\327\237\207\121\124\353\245\343\353
\311\205\240\045\040\067\373\216\316\014\064\204\341\074\201\262
\167\116\103\245\210\137\206\147\241\075\346\264\134\141\266\076
\333\376\267\050\305\242\007\256\265\312\312\215\052\022\357\227
\355\302\060\244\311\052\172\373\363\115\043\033\231\063\064\240
\056\365\251\013\077\324\135\341\317\204\237\342\031\302\137\212
\326\040\036\343\163\267
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "SZAFIR ROOT CA2"

# Issuer: CN=SZAFIR ROOT CA2,O=Krajowa Izba Rozliczeniowa S.A.,C=PL

# Serial Number:3e:8a:5d:07:ec:55:d2:32:d5:b7:e3:b6:5f:01:eb:2d:dc:e4:d6:e4

# Subject: CN=SZAFIR ROOT CA2,O=Krajowa Izba Rozliczeniowa S.A.,C=PL

# Not Valid Before: Mon Oct 19 07:43:30 2015

# Not Valid After : Fri Oct 19 07:43:30 2035

# Fingerprint (SHA-256):

A1:33:9D:33:28:1A:0B:56:E5:57:D3:D3:2B:1C:E7:F9:36:7E:B0:94:BD:5F:A7:2A:7E:50:04:C8:DE:D7:CA:FE

# Fingerprint (SHA1): E2:52:FA:95:3F:ED:DB:24:60:BD:6E:28:F3:9C:CC:CF:5E:B3:3F:DE

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "SZAFIR ROOT CA2"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\342\122\372\225\077\355\333\044\140\275\156\050\363\234\314\317
\136\263\077\336
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\021\144\301\211\260\044\261\214\261\007\176\211\236\121\236\231
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\121\061\013\060\011\006\003\125\004\006\023\002\120\114\061
\050\060\046\006\003\125\004\012\014\037\113\162\141\152\157\167
\141\040\111\172\142\141\040\122\157\172\154\151\143\172\145\156
\151\157\167\141\040\123\056\101\056\061\030\060\026\006\003\125
\004\003\014\017\123\132\101\106\111\122\040\122\117\117\124\040
```

```

\103\101\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\024\076\212\135\007\354\125\322\062\325\267\343\266\137\001
\353\055\334\344\326\344
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "Certum Trusted Network CA 2"
#
Issuer: CN=Certum Trusted Network CA 2,OU=Certum Certification Authority,O=Unizeto Technologies
S.A.,C=PL
Serial Number:21:d6:d0:4a:4f:25:0f:c9:32:37:fc:aa:5e:12:8d:e9
Subject: CN=Certum Trusted Network CA 2,OU=Certum Certification Authority,O=Unizeto Technologies
S.A.,C=PL
Not Valid Before: Thu Oct 06 08:39:56 2011
Not Valid After : Sat Oct 06 08:39:56 2046
Fingerprint (SHA-256):
B6:76:F2:ED:DA:E8:77:5C:D3:6C:B0:F6:3C:D1:D4:60:39:61:F4:9E:62:65:BA:01:3A:2F:03:07:B6:D0:B8:04
Fingerprint (SHA1): D3:DD:48:3E:2B:BF:4C:05:E8:AF:10:F5:FA:76:26:CF:D3:DC:30:92
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certum Trusted Network CA 2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\200\061\013\060\011\006\003\125\004\006\023\002\120\114
\061\042\060\040\006\003\125\004\012\023\031\125\156\151\172\145
\164\157\040\124\145\143\150\156\157\154\157\147\151\145\163\040
\123\056\101\056\061\047\060\045\006\003\125\004\013\023\036\103
\145\162\164\165\155\040\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\101\165\164\150\157\162\151\164\171\061\044\060
\042\006\003\125\004\003\023\033\103\145\162\164\165\155\040\124
\162\165\163\164\145\144\040\116\145\164\167\157\162\153\040\103
\101\040\062
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\200\061\013\060\011\006\003\125\004\006\023\002\120\114
\061\042\060\040\006\003\125\004\012\023\031\125\156\151\172\145
\164\157\040\124\145\143\150\156\157\154\157\147\151\145\163\040
\123\056\101\056\061\047\060\045\006\003\125\004\013\023\036\103
\145\162\164\165\155\040\103\145\162\164\151\146\151\143\141\164

```



\151\157\156\040\101\165\164\150\157\162\151\164\171\061\044\060  
\042\006\003\125\004\003\023\033\103\145\162\164\165\155\040\124  
\162\165\163\164\145\144\040\116\145\164\167\157\162\153\040\103  
\101\040\062

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\041\326\320\112\117\045\017\311\062\067\374\252\136\022  
\215\351

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\322\060\202\003\272\240\003\002\001\002\002\020\041  
\326\320\112\117\045\017\311\062\067\374\252\136\022\215\351\060  
\015\006\011\052\206\110\206\367\015\001\001\015\005\000\060\201  
\200\061\013\060\011\006\003\125\004\006\023\002\120\114\061\042  
\060\040\006\003\125\004\012\023\031\125\156\151\172\145\164\157  
\040\124\145\143\150\156\157\154\157\147\151\145\163\040\123\056  
\101\056\061\047\060\045\006\003\125\004\013\023\036\103\145\162  
\164\165\155\040\103\145\162\164\151\146\151\143\141\164\151\157  
\156\040\101\165\164\150\157\162\151\164\171\061\044\060\042\006  
\003\125\004\003\023\033\103\145\162\164\165\155\040\124\162\165  
\163\164\145\144\040\116\145\164\167\157\162\153\040\103\101\040  
\062\060\042\030\017\062\060\061\061\061\060\060\066\060\070\063  
\071\065\066\132\030\017\062\060\064\066\061\060\060\066\060\070  
\063\071\065\066\132\060\201\200\061\013\060\011\006\003\125\004  
\006\023\002\120\114\061\042\060\040\006\003\125\004\012\023\031  
\125\156\151\172\145\164\157\040\124\145\143\150\156\157\154\157  
\147\151\145\163\040\123\056\101\056\061\047\060\045\006\003\125  
\004\013\023\036\103\145\162\164\165\155\040\103\145\162\164\151  
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151  
\164\171\061\044\060\042\006\003\125\004\003\023\033\103\145\162  
\164\165\155\040\124\162\165\163\164\145\144\040\116\145\164\167  
\157\162\153\040\103\101\040\062\060\202\002\042\060\015\006\011  
\052\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000  
\060\202\002\012\002\202\002\001\000\275\371\170\370\346\325\200  
\014\144\235\206\033\226\144\147\077\042\072\036\165\001\175\357  
\373\134\147\214\311\314\134\153\251\221\346\271\102\345\040\113  
\233\332\233\173\271\231\135\331\233\200\113\327\204\100\053\047  
\323\350\272\060\273\076\011\032\247\111\225\357\053\100\044\302  
\227\307\247\356\233\045\357\250\012\000\227\205\132\252\235\334  
\051\311\342\065\007\353\160\115\112\326\301\263\126\270\241\101  
\070\233\321\373\061\177\217\340\137\341\261\077\017\216\026\111  
\140\327\006\215\030\371\252\046\020\253\052\323\320\321\147\215  
\033\106\276\107\060\325\056\162\321\305\143\332\347\143\171\104  
\176\113\143\044\211\206\056\064\077\051\114\122\213\052\247\300  
\342\221\050\211\271\300\133\371\035\331\347\047\255\377\232\002  
\227\301\306\120\222\233\002\054\275\251\271\064\131\012\277\204  
\112\377\337\376\263\237\353\331\236\340\230\043\354\246\153\167  
\026\052\333\314\255\073\034\244\207\334\106\163\136\031\142\150

\105\127\344\220\202\102\273\102\326\360\141\340\301\243\075\146  
\243\135\364\030\356\210\311\215\027\105\051\231\062\165\002\061  
\356\051\046\310\153\002\346\265\142\105\177\067\025\132\043\150  
\211\324\076\336\116\047\260\360\100\014\274\115\027\313\115\242  
\263\036\320\006\132\335\366\223\317\127\165\231\365\372\206\032  
\147\170\263\277\226\376\064\334\275\347\122\126\345\263\345\165  
\173\327\101\221\005\334\135\151\343\225\015\103\271\374\203\226  
\071\225\173\154\200\132\117\023\162\306\327\175\051\172\104\272  
\122\244\052\325\101\106\011\040\376\042\240\266\133\060\215\274  
\211\014\325\327\160\370\207\122\375\332\357\254\121\056\007\263  
\116\376\320\011\332\160\357\230\372\126\346\155\333\265\127\113  
\334\345\054\045\025\310\236\056\170\116\370\332\234\236\206\054  
\312\127\363\032\345\310\222\213\032\202\226\172\303\274\120\022  
\151\330\016\132\106\213\072\353\046\372\043\311\266\260\201\276  
\102\000\244\370\326\376\060\056\307\322\106\366\345\216\165\375  
\362\314\271\320\207\133\314\006\020\140\273\203\065\267\136\147  
\336\107\354\231\110\361\244\241\025\376\255\214\142\216\071\125  
\117\071\026\271\261\143\235\377\267\002\003\001\000\001\243\102  
\060\100\060\017\006\003\125\035\023\001\001\377\004\005\060\003  
\001\001\377\060\035\006\003\125\035\016\004\026\004\024\266\241  
\124\071\002\303\240\077\216\212\274\372\324\370\034\246\321\072  
\016\375\060\016\006\003\125\035\017\001\001\377\004\004\003\002  
\001\006\060\015\006\011\052\206\110\206\367\015\001\001\015\005  
\000\003\202\002\001\000\161\245\016\316\344\351\277\077\070\325  
\211\132\304\002\141\373\114\305\024\027\055\213\117\123\153\020  
\027\374\145\204\307\020\111\220\336\333\307\046\223\210\046\157  
\160\326\002\136\071\240\367\217\253\226\265\245\023\134\201\024  
\155\016\201\202\021\033\212\116\306\117\245\335\142\036\104\337  
\011\131\364\133\167\013\067\351\213\040\306\370\012\116\056\130  
\034\353\063\320\317\206\140\311\332\373\200\057\236\114\140\204  
\170\075\041\144\326\373\101\037\030\017\347\311\165\161\275\275  
\134\336\064\207\076\101\260\016\366\271\326\077\011\023\226\024  
\057\336\232\035\132\271\126\316\065\072\260\137\160\115\136\343  
\051\361\043\050\162\131\266\253\302\214\146\046\034\167\054\046  
\166\065\213\050\247\151\240\371\073\365\043\335\205\020\164\311  
\220\003\126\221\347\257\272\107\324\022\227\021\042\343\242\111  
\224\154\347\267\224\113\272\055\244\332\063\213\114\246\104\377  
\132\074\306\035\144\330\265\061\344\246\074\172\250\127\013\333  
\355\141\032\313\361\316\163\167\143\244\207\157\114\121\070\326  
\344\137\307\237\266\201\052\344\205\110\171\130\136\073\370\333  
\002\202\147\301\071\333\303\164\113\075\066\036\371\051\223\210  
\150\133\250\104\031\041\360\247\350\201\015\054\350\223\066\264  
\067\262\312\260\033\046\172\232\045\037\232\232\200\236\113\052  
\077\373\243\232\376\163\062\161\302\236\306\162\341\212\150\047  
\361\344\017\264\304\114\245\141\223\370\227\020\007\052\060\045  
\251\271\310\161\270\357\150\314\055\176\365\340\176\017\202\250  
\157\266\272\154\203\103\167\315\212\222\027\241\236\133\170\026  
\075\105\342\063\162\335\341\146\312\231\323\311\305\046\375\015

```
\150\004\106\256\266\331\233\214\276\031\276\261\306\362\031\343
\134\002\312\054\330\157\112\007\331\311\065\332\100\165\362\304
\247\031\157\236\102\020\230\165\346\225\213\140\274\355\305\022
\327\212\316\325\230\134\126\226\003\305\356\167\006\065\377\317
\344\356\077\023\141\356\333\332\055\205\360\315\256\235\262\030
\011\105\303\222\241\162\027\374\107\266\240\013\054\361\304\336
\103\150\010\152\137\073\360\166\143\373\314\006\054\246\306\342
\016\265\271\276\044\217
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

# Trust for "Certum Trusted Network CA 2"

# Issuer: CN=Certum Trusted Network CA 2,OU=Certum Certification Authority,O=Unizeto Technologies S.A.,C=PL

# Serial Number:21:d6:d0:4a:4f:25:0f:c9:32:37:fc:aa:5e:12:8d:e9

# Subject: CN=Certum Trusted Network CA 2,OU=Certum Certification Authority,O=Unizeto Technologies S.A.,C=PL

# Not Valid Before: Thu Oct 06 08:39:56 2011

# Not Valid After : Sat Oct 06 08:39:56 2046

# Fingerprint (SHA-256):

B6:76:F2:ED:DA:E8:77:5C:D3:6C:B0:F6:3C:D1:D4:60:39:61:F4:9E:62:65:BA:01:3A:2F:03:07:B6:D0:B8:04

# Fingerprint (SHA1): D3:DD:48:3E:2B:BF:4C:05:E8:AF:10:F5:FA:76:26:CF:D3:DC:30:92

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "Certum Trusted Network CA 2"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\323\335\110\076\053\277\114\005\350\257\020\365\372\166\046\317
\323\334\060\222
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\155\106\236\331\045\155\010\043\133\136\164\175\036\047\333\362
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\201\200\061\013\060\011\006\003\125\004\006\023\002\120\114
\061\042\060\040\006\003\125\004\012\023\031\125\156\151\172\145
\164\157\040\124\145\143\150\156\157\154\157\147\151\145\163\040
\123\056\101\056\061\047\060\045\006\003\125\004\013\023\036\103
\145\162\164\165\155\040\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\101\165\164\150\157\162\151\164\171\061\044\060
\042\006\003\125\004\003\023\033\103\145\162\164\165\155\040\124
\162\165\163\164\145\144\040\116\145\164\167\157\162\153\040\103
\101\040\062
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

\002\020\041\326\320\112\117\045\017\311\062\067\374\252\136\022

\215\351

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "Hellenic Academic and Research Institutions RootCA 2015"

#

# Issuer: CN=Hellenic Academic and Research Institutions RootCA 2015,O=Hellenic Academic and Research Institutions Cert. Authority,L=Athens,C=GR

# Serial Number: 0 (0x0)

# Subject: CN=Hellenic Academic and Research Institutions RootCA 2015,O=Hellenic Academic and Research Institutions Cert. Authority,L=Athens,C=GR

# Not Valid Before: Tue Jul 07 10:11:21 2015

# Not Valid After : Sat Jun 30 10:11:21 2040

# Fingerprint (SHA-256):

A0:40:92:9A:02:CE:53:B4:AC:F4:F2:FF:C6:98:1C:E4:49:6F:75:5E:6D:45:FE:0B:2A:69:2B:CD:52:52:3F:36

# Fingerprint (SHA1): 01:0C:06:95:A6:98:19:14:FF:BF:5F:C6:B0:B6:95:EA:29:E9:12:A6

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Hellenic Academic and Research Institutions RootCA 2015"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\201\246\061\013\060\011\006\003\125\004\006\023\002\107\122

\061\017\060\015\006\003\125\004\007\023\006\101\164\150\145\156

\163\061\104\060\102\006\003\125\004\012\023\073\110\145\154\154

\145\156\151\143\040\101\143\141\144\145\155\151\143\040\141\156

\144\040\122\145\163\145\141\162\143\150\040\111\156\163\164\151

\164\165\164\151\157\156\163\040\103\145\162\164\056\040\101\165

\164\150\157\162\151\164\171\061\100\060\076\006\003\125\004\003

\023\067\110\145\154\154\145\156\151\143\040\101\143\141\144\145

\155\151\143\040\141\156\144\040\122\145\163\145\141\162\143\150

\040\111\156\163\164\151\164\165\164\151\157\156\163\040\122\157

\157\164\103\101\040\062\060\061\065

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\246\061\013\060\011\006\003\125\004\006\023\002\107\122

\061\017\060\015\006\003\125\004\007\023\006\101\164\150\145\156

\163\061\104\060\102\006\003\125\004\012\023\073\110\145\154\154

\145\156\151\143\040\101\143\141\144\145\155\151\143\040\141\156

\144\040\122\145\163\145\141\162\143\150\040\111\156\163\164\151

\164\165\164\151\157\156\163\040\103\145\162\164\056\040\101\165

\164\150\157\162\151\164\171\061\100\060\076\006\003\125\004\003  
\023\067\110\145\154\154\145\156\151\143\040\101\143\141\144\145  
\155\151\143\040\141\156\144\040\122\145\163\145\141\162\143\150  
\040\111\156\163\164\151\164\165\164\151\157\156\163\040\122\157  
\157\164\103\101\040\062\060\061\065

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\000

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\006\013\060\202\003\363\240\003\002\001\002\002\001\000  
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060  
\201\246\061\013\060\011\006\003\125\004\006\023\002\107\122\061  
\017\060\015\006\003\125\004\007\023\006\101\164\150\145\156\163  
\061\104\060\102\006\003\125\004\012\023\073\110\145\154\154\145  
\156\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144  
\040\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164  
\165\164\151\157\156\163\040\103\145\162\164\056\040\101\165\164  
\150\157\162\151\164\171\061\100\060\076\006\003\125\004\003\023  
\067\110\145\154\154\145\156\151\143\040\101\143\141\144\145\155  
\151\143\040\141\156\144\040\122\145\163\145\141\162\143\150\040  
\111\156\163\164\151\164\165\164\151\157\156\163\040\122\157\157  
\164\103\101\040\062\060\061\065\060\036\027\015\061\065\060\067  
\060\067\061\060\061\061\062\061\132\027\015\064\060\060\066\063  
\060\061\060\061\061\062\061\132\060\201\246\061\013\060\011\006  
\003\125\004\006\023\002\107\122\061\017\060\015\006\003\125\004  
\007\023\006\101\164\150\145\156\163\061\104\060\102\006\003\125  
\004\012\023\073\110\145\154\154\145\156\151\143\040\101\143\141  
\144\145\155\151\143\040\141\156\144\040\122\145\163\145\141\162  
\143\150\040\111\156\163\164\151\164\165\164\151\157\156\163\040  
\103\145\162\164\056\040\101\165\164\150\157\162\151\164\171\061  
\100\060\076\006\003\125\004\003\023\067\110\145\154\154\145\156  
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040  
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165  
\164\151\157\156\163\040\122\157\157\164\103\101\040\062\060\061  
\065\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001  
\001\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002  
\001\000\302\370\251\077\033\211\374\074\074\004\135\075\220\066  
\260\221\072\171\074\146\132\357\155\071\001\111\032\264\267\317  
\177\115\043\123\267\220\000\343\023\052\050\246\061\361\221\000  
\343\050\354\256\041\101\316\037\332\375\175\022\133\001\203\017  
\271\260\137\231\341\362\022\203\200\115\006\076\337\254\257\347  
\241\210\153\061\257\360\213\320\030\063\270\333\105\152\064\364  
\002\200\044\050\012\002\025\225\136\166\052\015\231\072\024\133  
\366\313\313\123\274\023\115\001\210\067\224\045\033\102\274\042  
\330\216\243\226\136\072\331\062\333\076\350\360\020\145\355\164  
\341\057\247\174\257\047\064\273\051\175\233\266\317\011\310\345  
\323\012\374\210\145\145\164\012\334\163\034\134\315\100\261\034

\324\266\204\214\114\120\317\150\216\250\131\256\302\047\116\202  
\242\065\335\024\364\037\377\262\167\325\207\057\252\156\175\044  
\047\347\306\313\046\346\345\376\147\007\143\330\105\015\335\072  
\131\145\071\130\172\222\231\162\075\234\204\136\210\041\270\325  
\364\054\374\331\160\122\117\170\270\275\074\053\213\225\230\365  
\263\321\150\317\040\024\176\114\134\137\347\213\345\365\065\201  
\031\067\327\021\010\267\146\276\323\112\316\203\127\000\072\303  
\201\370\027\313\222\066\135\321\243\330\165\033\341\213\047\352  
\172\110\101\375\105\031\006\255\047\231\116\301\160\107\335\265  
\237\201\123\022\345\261\214\110\135\061\103\027\343\214\306\172  
\143\226\113\051\060\116\204\116\142\031\136\074\316\227\220\245  
\177\001\353\235\340\370\213\211\335\045\230\075\222\266\176\357  
\331\361\121\121\175\055\046\310\151\131\141\340\254\152\270\052  
\066\021\004\172\120\275\062\204\276\057\334\162\325\327\035\026  
\107\344\107\146\040\077\364\226\305\257\216\001\172\245\017\172  
\144\365\015\030\207\331\256\210\325\372\204\301\072\300\151\050  
\055\362\015\150\121\252\343\245\167\306\244\220\016\241\067\213  
\061\043\107\301\011\010\353\156\367\170\233\327\202\374\204\040  
\231\111\031\266\022\106\261\373\105\125\026\251\243\145\254\234  
\007\017\352\153\334\037\056\006\162\354\206\210\022\344\055\333  
\137\005\057\344\360\003\323\046\063\347\200\302\315\102\241\027  
\064\013\002\003\001\000\001\243\102\060\100\060\017\006\003\125  
\035\023\001\001\377\004\005\060\003\001\001\377\060\016\006\003  
\125\035\017\001\001\377\004\004\003\002\001\006\060\035\006\003  
\125\035\016\004\026\004\024\161\025\147\310\310\311\275\165\135  
\162\320\070\030\152\235\363\161\044\124\013\060\015\006\011\052  
\206\110\206\367\015\001\001\013\005\000\003\202\002\001\000\165  
\273\155\124\113\252\020\130\106\064\362\142\327\026\066\135\010  
\136\325\154\310\207\275\264\056\106\362\061\370\174\352\102\265  
\223\026\125\334\241\014\022\240\332\141\176\017\130\130\163\144  
\162\307\350\105\216\334\251\362\046\077\306\171\214\261\123\010  
\063\201\260\126\023\276\346\121\134\330\233\012\117\113\234\126  
\123\002\351\117\366\015\140\352\115\102\125\350\174\033\041\041  
\323\033\072\314\167\362\270\220\361\150\307\371\132\376\372\055  
\364\277\311\365\105\033\316\070\020\052\067\212\171\243\264\343  
\011\154\205\206\223\377\211\226\047\170\201\217\147\343\106\164  
\124\216\331\015\151\342\112\364\115\164\003\377\262\167\355\225  
\147\227\344\261\305\253\277\152\043\350\324\224\342\104\050\142  
\304\113\342\360\330\342\051\153\032\160\176\044\141\223\173\117  
\003\062\045\015\105\044\053\226\264\106\152\277\112\013\367\232  
\217\301\254\032\305\147\363\157\064\322\372\163\143\214\357\026  
\260\250\244\106\052\370\353\022\354\162\264\357\370\053\176\214  
\122\300\213\204\124\371\057\076\343\125\250\334\146\261\331\341  
\137\330\263\214\131\064\131\244\253\117\154\273\037\030\333\165  
\253\330\313\222\315\224\070\141\016\007\006\037\113\106\020\361  
\025\276\215\205\134\073\112\053\201\171\017\264\151\237\111\120  
\227\115\367\016\126\135\300\225\152\302\066\303\033\150\311\365  
\052\334\107\232\276\262\316\305\045\350\372\003\271\332\371\026

```
\156\221\204\365\034\050\310\374\046\314\327\034\220\126\247\137
\157\072\004\274\315\170\211\013\216\017\057\243\252\117\242\033
\022\075\026\010\100\017\361\106\114\327\252\173\010\301\012\365
\155\047\336\002\217\312\303\265\053\312\351\353\310\041\123\070
\245\314\073\330\167\067\060\242\117\331\157\321\362\100\255\101
\172\027\305\326\112\065\211\267\101\325\174\206\177\125\115\203
\112\245\163\040\300\072\257\220\361\232\044\216\331\216\161\312
\173\270\206\332\262\217\231\076\035\023\015\022\021\356\324\253
\360\351\025\166\002\344\340\337\252\040\036\133\141\205\144\100
\251\220\227\015\255\123\322\132\035\207\152\000\227\145\142\264
\276\157\152\247\365\054\102\355\062\255\266\041\236\276\274
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Trust for "Hellenic Academic and Research Institutions RootCA 2015"
```

```
Issuer: CN=Hellenic Academic and Research Institutions RootCA 2015,O=Hellenic Academic and Research
Institutions Cert. Authority,L=Athens,C=GR
```

```
Serial Number: 0 (0x0)
```

```
Subject: CN=Hellenic Academic and Research Institutions RootCA 2015,O=Hellenic Academic and Research
Institutions Cert. Authority,L=Athens,C=GR
```

```
Not Valid Before: Tue Jul 07 10:11:21 2015
```

```
Not Valid After : Sat Jun 30 10:11:21 2040
```

```
Fingerprint (SHA-256):
```

```
A0:40:92:9A:02:CE:53:B4:AC:F4:F2:FF:C6:98:1C:E4:49:6F:75:5E:6D:45:FE:0B:2A:69:2B:CD:52:52:3F:36
```

```
Fingerprint (SHA1): 01:0C:06:95:A6:98:19:14:FF:BF:5F:C6:B0:B6:95:EA:29:E9:12:A6
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "Hellenic Academic and Research Institutions RootCA 2015"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\001\014\006\225\246\230\031\024\377\277\137\306\260\266\225\352
\051\351\022\246
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\312\377\342\333\003\331\313\113\351\017\255\204\375\173\030\316
END
```

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\201\246\061\013\060\011\006\003\125\004\006\023\002\107\122
\061\017\060\015\006\003\125\004\007\023\006\101\164\150\145\156
\163\061\104\060\102\006\003\125\004\012\023\073\110\145\154\154
\145\156\151\143\040\101\143\141\144\145\155\151\143\040\141\156
\144\040\122\145\163\145\141\162\143\150\040\111\156\163\164\151
\164\165\164\151\157\156\163\040\103\145\162\164\056\040\101\165
\164\150\157\162\151\164\171\061\100\060\076\006\003\125\004\003
\023\067\110\145\154\154\145\156\151\143\040\101\143\141\144\145
```

```
\155\151\143\040\141\156\144\040\122\145\163\145\141\162\143\150
\040\111\156\163\164\151\164\165\164\151\157\156\163\040\122\157
\157\164\103\101\040\062\060\061\065
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\001\000
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "Hellenic Academic and Research Institutions ECC RootCA 2015"

#

# Issuer: CN=Hellenic Academic and Research Institutions ECC RootCA 2015,O=Hellenic Academic and Research  
Institutions Cert. Authority,L=Athens,C=GR

# Serial Number: 0 (0x0)

# Subject: CN=Hellenic Academic and Research Institutions ECC RootCA 2015,O=Hellenic Academic and  
Research Institutions Cert. Authority,L=Athens,C=GR

# Not Valid Before: Tue Jul 07 10:37:12 2015

# Not Valid After : Sat Jun 30 10:37:12 2040

# Fingerprint (SHA-256):

```
44:B5:45:AA:8A:25:E6:5A:73:CA:15:DC:27:FC:36:D2:4C:1C:B9:95:3A:06:65:39:B1:15:82:DC:48:7B:48:33
```

# Fingerprint (SHA1): 9F:F1:71:8D:92:D5:9A:F3:7D:74:97:B4:BC:6F:84:68:0B:BA:B6:66

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Hellenic Academic and Research Institutions ECC RootCA 2015"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

```
\060\201\252\061\013\060\011\006\003\125\004\006\023\002\107\122
\061\017\060\015\006\003\125\004\007\023\006\101\164\150\145\156
\163\061\104\060\102\006\003\125\004\012\023\073\110\145\154\154
\145\156\151\143\040\101\143\141\144\145\155\151\143\040\141\156
\144\040\122\145\163\145\141\162\143\150\040\111\156\163\164\151
\164\165\164\151\157\156\163\040\103\145\162\164\056\040\101\165
\164\150\157\162\151\164\171\061\104\060\102\006\003\125\004\003
\023\073\110\145\154\154\145\156\151\143\040\101\143\141\144\145
\155\151\143\040\141\156\144\040\122\145\163\145\141\162\143\150
\040\111\156\163\164\151\164\165\164\151\157\156\163\040\105\103
\103\040\122\157\157\164\103\101\040\062\060\061\065
```

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\201\252\061\013\060\011\006\003\125\004\006\023\002\107\122
\061\017\060\015\006\003\125\004\007\023\006\101\164\150\145\156
```



\163\061\104\060\102\006\003\125\004\012\023\073\110\145\154\154  
\145\156\151\143\040\101\143\141\144\145\155\151\143\040\141\156  
\144\040\122\145\163\145\141\162\143\150\040\111\156\163\164\151  
\164\165\164\151\157\156\163\040\103\145\162\164\056\040\101\165  
\164\150\157\162\151\164\171\061\104\060\102\006\003\125\004\003  
\023\073\110\145\154\154\145\156\151\143\040\101\143\141\144\145  
\155\151\143\040\141\156\144\040\122\145\163\145\141\162\143\150  
\040\111\156\163\164\151\164\165\164\151\157\156\163\040\105\103  
\103\040\122\157\157\164\103\101\040\062\060\061\065

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\000

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\002\303\060\202\002\112\240\003\002\001\002\002\001\000  
\060\012\006\010\052\206\110\316\075\004\003\002\060\201\252\061  
\013\060\011\006\003\125\004\006\023\002\107\122\061\017\060\015  
\006\003\125\004\007\023\006\101\164\150\145\156\163\061\104\060  
\102\006\003\125\004\012\023\073\110\145\154\154\145\156\151\143  
\040\101\143\141\144\145\155\151\143\040\141\156\144\040\122\145  
\163\145\141\162\143\150\040\111\156\163\164\151\164\165\164\151  
\157\156\163\040\103\145\162\164\056\040\101\165\164\150\157\162  
\151\164\171\061\104\060\102\006\003\125\004\003\023\073\110\145  
\154\154\145\156\151\143\040\101\143\141\144\145\155\151\143\040  
\141\156\144\040\122\145\163\145\141\162\143\150\040\111\156\163  
\164\151\164\165\164\151\157\156\163\040\105\103\103\040\122\157  
\157\164\103\101\040\062\060\061\065\060\036\027\015\061\065\060  
\067\060\067\061\060\063\067\061\062\132\027\015\064\060\060\066  
\063\060\061\060\063\067\061\062\132\060\201\252\061\013\060\011  
\006\003\125\004\006\023\002\107\122\061\017\060\015\006\003\125  
\004\007\023\006\101\164\150\145\156\163\061\104\060\102\006\003  
\125\004\012\023\073\110\145\154\154\145\156\151\143\040\101\143  
\141\144\145\155\151\143\040\141\156\144\040\122\145\163\145\141  
\162\143\150\040\111\156\163\164\151\164\165\164\151\157\156\163  
\040\103\145\162\164\056\040\101\165\164\150\157\162\151\164\171  
\061\104\060\102\006\003\125\004\003\023\073\110\145\154\154\145  
\156\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144  
\040\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164  
\165\164\151\157\156\163\040\105\103\103\040\122\157\157\164\103  
\101\040\062\060\061\065\060\166\060\020\006\007\052\206\110\316  
\075\002\001\006\005\053\201\004\000\042\003\142\000\004\222\240  
\101\350\113\202\204\134\342\370\061\021\231\206\144\116\011\045  
\057\235\101\057\012\256\065\117\164\225\262\121\144\153\215\153  
\346\077\160\225\360\005\104\107\246\162\070\120\166\225\002\132  
\216\256\050\236\371\055\116\231\357\054\110\157\114\045\051\350  
\321\161\133\337\035\301\165\067\264\327\372\173\172\102\234\152  
\012\126\132\174\151\013\252\200\011\044\154\176\301\106\243\102  
\060\100\060\017\006\003\125\035\023\001\001\377\004\005\060\003

```
\001\001\377\060\016\006\003\125\035\017\001\001\377\004\004\003
\002\001\006\060\035\006\003\125\035\016\004\026\004\024\264\042
\013\202\231\044\001\016\234\273\344\016\375\277\373\227\040\223
\231\052\060\012\006\010\052\206\110\316\075\004\003\002\003\147
\000\060\144\002\060\147\316\026\142\070\242\254\142\105\247\251
\225\044\300\032\047\234\062\073\300\300\325\272\251\347\370\004
\103\123\205\356\122\041\336\235\365\045\203\076\236\130\113\057
\327\147\023\016\041\002\060\005\341\165\001\336\150\355\052\037
\115\114\011\010\015\354\113\255\144\027\050\347\165\316\105\145
\162\041\027\313\042\101\016\214\023\230\070\232\124\155\233\312
\342\174\352\002\130\042\221
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Trust for "Hellenic Academic and Research Institutions ECC RootCA 2015"
```

```
Issuer: CN=Hellenic Academic and Research Institutions ECC RootCA 2015,O=Hellenic Academic and Research
Institutions Cert. Authority,L=Athens,C=GR
```

```
Serial Number: 0 (0x0)
```

```
Subject: CN=Hellenic Academic and Research Institutions ECC RootCA 2015,O=Hellenic Academic and
Research Institutions Cert. Authority,L=Athens,C=GR
```

```
Not Valid Before: Tue Jul 07 10:37:12 2015
```

```
Not Valid After : Sat Jun 30 10:37:12 2040
```

```
Fingerprint (SHA-256):
```

```
44:B5:45:AA:8A:25:E6:5A:73:CA:15:DC:27:FC:36:D2:4C:1C:B9:95:3A:06:65:39:B1:15:82:DC:48:7B:48:33
```

```
Fingerprint (SHA1): 9F:F1:71:8D:92:D5:9A:F3:7D:74:97:B4:BC:6F:84:68:0B:BA:B6:66
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "Hellenic Academic and Research Institutions ECC RootCA 2015"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\237\361\161\215\222\325\232\363\175\164\227\264\274\157\204\150
\013\272\266\146
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\201\345\264\027\353\302\365\341\113\015\101\173\111\222\376\357
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\201\252\061\013\060\011\006\003\125\004\006\023\002\107\122
\061\017\060\015\006\003\125\004\007\023\006\101\164\150\145\156
\163\061\104\060\102\006\003\125\004\012\023\073\110\145\154\154
\145\156\151\143\040\101\143\141\144\145\155\151\143\040\141\156
\144\040\122\145\163\145\141\162\143\150\040\111\156\163\164\151
\164\165\164\151\157\156\163\040\103\145\162\164\056\040\101\165
\164\150\157\162\151\164\171\061\104\060\102\006\003\125\004\003
\023\073\110\145\154\154\145\156\151\143\040\101\143\141\144\145
```

```

\155\151\143\040\141\156\144\040\122\145\163\145\141\162\143\150
\040\111\156\163\164\151\164\165\164\151\157\156\163\040\105\103
\103\040\122\157\157\164\103\101\040\062\060\061\065
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\000
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "ISRG Root X1"
#
Issuer: CN=ISRG Root X1,O=Internet Security Research Group,C=US
Serial Number:00:82:10:cf:b0:d2:40:e3:59:44:63:e0:bb:63:82:8b:00
Subject: CN=ISRG Root X1,O=Internet Security Research Group,C=US
Not Valid Before: Thu Jun 04 11:04:38 2015
Not Valid After : Mon Jun 04 11:04:38 2035
Fingerprint (SHA-256):
96:BC:EC:06:26:49:76:F3:74:60:77:9A:CF:28:C5:A7:CF:E8:A3:C0:AA:E1:1A:8F:FC:EE:05:C0:BD:DF:08:C6
Fingerprint (SHA1): CA:BD:2A:79:A1:07:6A:31:F2:1D:25:36:35:CB:03:9D:43:29:A5:E8
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ISRG Root X1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\117\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\051\060\047\006\003\125\004\012\023\040\111\156\164\145\162\156
\145\164\040\123\145\143\165\162\151\164\171\040\122\145\163\145
\141\162\143\150\040\107\162\157\165\160\061\025\060\023\006\003
\125\004\003\023\014\111\123\122\107\040\122\157\157\164\040\130
\061
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\117\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\051\060\047\006\003\125\004\012\023\040\111\156\164\145\162\156
\145\164\040\123\145\143\165\162\151\164\171\040\122\145\163\145
\141\162\143\150\040\107\162\157\165\160\061\025\060\023\006\003
\125\004\003\023\014\111\123\122\107\040\122\157\157\164\040\130
\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\021\000\202\020\317\260\322\100\343\131\104\143\340\273\143

```

\202\213\000

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\153\060\202\003\123\240\003\002\001\002\002\021\000  
\202\020\317\260\322\100\343\131\104\143\340\273\143\202\213\000  
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060  
\117\061\013\060\011\006\003\125\004\006\023\002\125\123\061\051  
\060\047\006\003\125\004\012\023\040\111\156\164\145\162\156\145  
\164\040\123\145\143\165\162\151\164\171\040\122\145\163\145\141  
\162\143\150\040\107\162\157\165\160\061\025\060\023\006\003\125  
\004\003\023\014\111\123\122\107\040\122\157\157\164\040\130\061  
\060\036\027\015\061\065\060\066\060\064\061\061\060\064\063\070  
\132\027\015\063\065\060\066\060\064\061\061\060\064\063\070\132  
\060\117\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\051\060\047\006\003\125\004\012\023\040\111\156\164\145\162\156  
\145\164\040\123\145\143\165\162\151\164\171\040\122\145\163\145  
\141\162\143\150\040\107\162\157\165\160\061\025\060\023\006\003  
\125\004\003\023\014\111\123\122\107\040\122\157\157\164\040\130  
\061\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001  
\001\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002  
\001\000\255\350\044\163\364\024\067\363\233\236\053\127\050\034  
\207\276\334\267\337\070\220\214\156\074\346\127\240\170\367\165  
\302\242\376\365\152\156\366\000\117\050\333\336\150\206\154\104  
\223\266\261\143\375\024\022\153\277\037\322\352\061\233\041\176  
\321\063\074\272\110\365\335\171\337\263\270\377\022\361\041\232  
\113\301\212\206\161\151\112\146\146\154\217\176\074\160\277\255  
\051\042\006\363\344\300\346\200\256\342\113\217\267\231\176\224  
\003\237\323\107\227\174\231\110\043\123\350\070\256\117\012\157  
\203\056\321\111\127\214\200\164\266\332\057\320\070\215\173\003  
\160\041\033\165\362\060\074\372\217\256\335\332\143\253\353\026  
\117\302\216\021\113\176\317\013\350\377\265\167\056\364\262\173  
\112\340\114\022\045\014\160\215\003\051\240\341\123\044\354\023  
\331\356\031\277\020\263\112\214\077\211\243\141\121\336\254\207  
\007\224\364\143\161\354\056\342\157\133\230\201\341\211\134\064  
\171\154\166\357\073\220\142\171\346\333\244\232\057\046\305\320  
\020\341\016\336\331\020\216\026\373\267\367\250\367\307\345\002  
\007\230\217\066\010\225\347\342\067\226\015\066\165\236\373\016  
\162\261\035\233\274\003\371\111\005\330\201\335\005\264\052\326  
\101\351\254\001\166\225\012\017\330\337\325\275\022\037\065\057  
\050\027\154\322\230\301\250\011\144\167\156\107\067\272\316\254  
\131\136\150\235\177\162\326\211\305\006\101\051\076\131\076\335  
\046\365\044\311\021\247\132\243\114\100\037\106\241\231\265\247  
\072\121\156\206\073\236\175\162\247\022\005\170\131\355\076\121  
\170\025\013\003\217\215\320\057\005\262\076\173\112\034\113\163  
\005\022\374\306\352\340\120\023\174\103\223\164\263\312\164\347  
\216\037\001\010\320\060\324\133\161\066\264\007\272\301\060\060  
\134\110\267\202\073\230\246\175\140\212\242\243\051\202\314\272  
\275\203\004\033\242\203\003\101\241\326\005\361\033\302\266\360

\250\174\206\073\106\250\110\052\210\334\166\232\166\277\037\152  
\245\075\031\217\353\070\363\144\336\310\053\015\012\050\377\367  
\333\342\025\102\324\042\320\047\135\341\171\376\030\347\160\210  
\255\116\346\331\213\072\306\335\047\121\156\377\274\144\365\063  
\103\117\002\003\001\000\001\243\102\060\100\060\016\006\003\125  
\035\017\001\001\377\004\004\003\002\001\006\060\017\006\003\125  
\035\023\001\001\377\004\005\060\003\001\001\377\060\035\006\003  
\125\035\016\004\026\004\024\171\264\131\346\173\266\345\344\001  
\163\200\010\210\310\032\130\366\351\233\156\060\015\006\011\052  
\206\110\206\367\015\001\001\013\005\000\003\202\002\001\000\125  
\037\130\251\274\262\250\120\320\014\261\330\032\151\040\047\051  
\010\254\141\165\134\212\156\370\202\345\151\057\325\366\126\113  
\271\270\163\020\131\323\041\227\176\347\114\161\373\262\322\140  
\255\071\250\013\352\027\041\126\205\361\120\016\131\353\316\340  
\131\351\272\311\025\357\206\235\217\204\200\366\344\351\221\220  
\334\027\233\142\033\105\360\146\225\322\174\157\302\352\073\357  
\037\317\313\326\256\047\361\251\260\310\256\375\175\176\232\372  
\042\004\353\377\331\177\352\221\053\042\261\027\016\217\362\212  
\064\133\130\330\374\001\311\124\271\270\046\314\212\210\063\211  
\114\055\204\074\202\337\356\226\127\005\272\054\273\367\304\267  
\307\116\073\202\276\061\310\042\163\163\222\321\302\200\244\071  
\071\020\063\043\202\114\074\237\206\262\125\230\035\276\051\206  
\214\042\233\236\342\153\073\127\072\202\160\115\334\011\307\211  
\313\012\007\115\154\350\135\216\311\357\316\253\307\273\265\053  
\116\105\326\112\320\046\314\345\162\312\010\152\245\225\343\025  
\241\367\244\355\311\054\137\245\373\377\254\050\002\056\276\327  
\173\273\343\161\173\220\026\323\007\136\106\123\174\067\007\102  
\214\323\304\226\234\325\231\265\052\340\225\032\200\110\256\114  
\071\007\316\314\107\244\122\225\053\272\270\373\255\322\063\123  
\175\345\035\115\155\325\241\261\307\102\157\346\100\047\065\134  
\243\050\267\007\215\347\215\063\220\347\043\237\373\120\234\171  
\154\106\325\264\025\263\226\156\176\233\014\226\072\270\122\055  
\077\326\133\341\373\010\302\204\376\044\250\243\211\332\254\152  
\341\030\052\261\250\103\141\133\323\037\334\073\215\166\362\055  
\350\215\165\337\027\063\154\075\123\373\173\313\101\137\377\334  
\242\320\141\070\341\226\270\254\135\213\067\327\165\325\063\300  
\231\021\256\235\101\301\162\165\204\276\002\101\102\137\147\044  
\110\224\321\233\047\276\007\077\271\270\117\201\164\121\341\172  
\267\355\235\043\342\276\340\325\050\004\023\074\061\003\236\335  
\172\154\217\306\007\030\306\177\336\107\216\077\050\236\004\006  
\317\245\124\064\167\275\354\211\233\351\027\103\337\133\333\137  
\376\216\036\127\242\315\100\235\176\142\042\332\336\030\047

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "ISRG Root X1"

```

Issuer: CN=ISRG Root X1,O=Internet Security Research Group,C=US
Serial Number:00:82:10:cf:b0:d2:40:e3:59:44:63:e0:bb:63:82:8b:00
Subject: CN=ISRG Root X1,O=Internet Security Research Group,C=US
Not Valid Before: Thu Jun 04 11:04:38 2015
Not Valid After : Mon Jun 04 11:04:38 2035
Fingerprint (SHA-256):
96:BC:EC:06:26:49:76:F3:74:60:77:9A:CF:28:C5:A7:CF:E8:A3:C0:AA:E1:1A:8F:FC:EE:05:C0:BD:DF:08:C6
Fingerprint (SHA1): CA:BD:2A:79:A1:07:6A:31:F2:1D:25:36:35:CB:03:9D:43:29:A5:E8
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ISRG Root X1"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\312\275\052\171\241\007\152\061\362\035\045\066\065\313\003\235
\103\051\245\350
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\014\322\371\340\332\027\163\351\355\206\115\245\343\160\347\116
END
CKA_ISSUER MULTILINE_OCTAL
\060\117\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\051\060\047\006\003\125\004\012\023\040\111\156\164\145\162\156
\145\164\040\123\145\143\165\162\151\164\171\040\122\145\163\145
\141\162\143\150\040\107\162\157\165\160\061\025\060\023\006\003
\125\004\003\023\014\111\123\122\107\040\122\157\157\164\040\130
\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\021\000\202\020\317\260\322\100\343\131\104\143\340\273\143
\202\213\000
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "AC RAIZ FNMT-RCM"
#
Issuer: OU=AC RAIZ FNMT-RCM,O=FNMT-RCM,C=ES
Serial Number:5d:93:8d:30:67:36:c8:06:1d:1a:c7:54:84:69:07
Subject: OU=AC RAIZ FNMT-RCM,O=FNMT-RCM,C=ES
Not Valid Before: Wed Oct 29 15:59:56 2008
Not Valid After : Tue Jan 01 00:00:00 2030
Fingerprint (SHA-256):
EB:C5:57:0C:29:01:8C:4D:67:B1:AA:12:7B:AF:12:F7:03:B4:61:1E:BC:17:B7:DA:B5:57:38:94:17:9B:93:FA
Fingerprint (SHA1): EC:50:35:07:B2:15:C4:95:62:19:E2:A8:9A:5B:42:99:2C:4C:2C:20

```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "AC RAIZ FNMT-RCM"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\073\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\021\060\017\006\003\125\004\012\014\010\106\116\115\124\055\122
\103\115\061\031\060\027\006\003\125\004\013\014\020\101\103\040
\122\101\111\132\040\106\116\115\124\055\122\103\115
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\073\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\021\060\017\006\003\125\004\012\014\010\106\116\115\124\055\122
\103\115\061\031\060\027\006\003\125\004\013\014\020\101\103\040
\122\101\111\132\040\106\116\115\124\055\122\103\115
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\017\135\223\215\060\147\066\310\006\035\032\307\124\204\151
\007
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\203\060\202\003\153\240\003\002\001\002\002\017\135
\223\215\060\147\066\310\006\035\032\307\124\204\151\007\060\015
\006\011\052\206\110\206\367\015\001\001\013\005\000\060\073\061
\013\060\011\006\003\125\004\006\023\002\105\123\061\021\060\017
\006\003\125\004\012\014\010\106\116\115\124\055\122\103\115\061
\031\060\027\006\003\125\004\013\014\020\101\103\040\122\101\111
\132\040\106\116\115\124\055\122\103\115\060\036\027\015\060\070
\061\060\062\071\061\065\065\071\065\066\132\027\015\063\060\060
\061\060\061\060\060\060\060\060\060\132\060\073\061\013\060\011
\006\003\125\004\006\023\002\105\123\061\021\060\017\006\003\125
\004\012\014\010\106\116\115\124\055\122\103\115\061\031\060\027
\006\003\125\004\013\014\020\101\103\040\122\101\111\132\040\106
\116\115\124\055\122\103\115\060\202\002\042\060\015\006\011\052
\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060
\202\002\012\002\202\002\001\000\272\161\200\172\114\206\156\177
\310\023\155\300\306\175\034\000\227\217\054\014\043\273\020\232
\100\251\032\267\207\210\370\233\126\152\373\346\173\216\213\222
\216\247\045\135\131\021\333\066\056\267\121\027\037\251\010\037
\004\027\044\130\252\067\112\030\337\345\071\324\127\375\327\301
\054\221\001\221\342\042\324\003\300\130\374\167\107\354\217\076
\164\103\272\254\064\215\115\070\166\147\216\260\310\157\060\063
\130\161\134\264\365\153\156\324\001\120\270\023\176\154\112\243
\111\321\040\031\356\274\300\051\030\145\247\336\376\357\335\012
\220\041\347\032\147\222\102\020\230\137\117\060\274\076\034\105
```

\264\020\327\150\100\024\300\100\372\347\167\027\172\346\013\217  
\145\133\074\331\232\122\333\265\275\236\106\317\075\353\221\005  
\002\300\226\262\166\114\115\020\226\073\222\372\234\177\017\231  
\337\276\043\065\105\036\002\134\376\265\250\233\231\045\332\136  
\363\042\303\071\365\344\052\056\323\306\037\304\154\252\305\034  
\152\001\005\112\057\322\305\301\250\064\046\135\146\245\322\002  
\041\371\030\267\006\365\116\231\157\250\253\114\121\350\317\120  
\030\305\167\310\071\011\054\111\222\062\231\250\273\027\027\171  
\260\132\305\346\243\304\131\145\107\065\203\136\251\350\065\013  
\231\273\344\315\040\306\233\112\006\071\265\150\374\042\272\356  
\125\214\053\116\352\363\261\343\374\266\231\232\325\102\372\161  
\115\010\317\207\036\152\161\175\371\323\264\351\245\161\201\173  
\302\116\107\226\245\366\166\205\243\050\217\351\200\156\201\123  
\245\155\137\270\110\371\302\371\066\246\056\111\377\270\226\302  
\214\007\263\233\210\130\374\353\033\034\336\055\160\342\227\222  
\060\241\211\343\274\125\250\047\326\113\355\220\255\213\372\143  
\045\131\055\250\065\335\312\227\063\274\345\315\307\235\321\354  
\357\136\016\112\220\006\046\143\255\271\331\065\055\007\272\166  
\145\054\254\127\217\175\364\007\224\327\201\002\226\135\243\007  
\111\325\172\320\127\371\033\347\123\106\165\252\260\171\102\313  
\150\161\010\351\140\275\071\151\316\364\257\303\126\100\307\255  
\122\242\011\344\157\206\107\212\037\353\050\047\135\203\040\257  
\004\311\154\126\232\213\106\365\002\003\001\000\001\243\201\203  
\060\201\200\060\017\006\003\125\035\023\001\001\377\004\005\060  
\003\001\001\377\060\016\006\003\125\035\017\001\001\377\004\004  
\003\002\001\006\060\035\006\003\125\035\016\004\026\004\024\367  
\175\305\375\304\350\232\033\167\144\247\365\035\240\314\277\207  
\140\232\155\060\076\006\003\125\035\040\004\067\060\065\060\063  
\006\004\125\035\040\000\060\053\060\051\006\010\053\006\001\005  
\005\007\002\001\026\035\150\164\164\160\072\057\057\167\167\167  
\056\143\145\162\164\056\146\156\155\164\056\145\163\057\144\160  
\143\163\057\060\015\006\011\052\206\110\206\367\015\001\001\013  
\005\000\003\202\002\001\000\007\220\112\337\363\043\116\360\303  
\234\121\145\233\234\042\242\212\014\205\363\163\051\153\115\376  
\001\342\251\014\143\001\277\004\147\245\235\230\137\375\001\023  
\372\354\232\142\351\206\376\266\142\322\156\114\224\373\300\165  
\105\174\145\014\370\262\067\317\254\017\317\215\157\371\031\367  
\217\354\036\362\160\236\360\312\270\357\267\377\166\067\166\133  
\366\156\210\363\257\142\062\042\223\015\072\152\216\024\146\014  
\055\123\164\127\145\036\325\262\335\043\201\073\245\146\043\047  
\147\011\217\341\167\252\103\315\145\121\010\355\121\130\376\346  
\071\371\313\107\204\244\025\361\166\273\244\356\244\073\304\137  
\357\262\063\226\021\030\267\311\145\276\030\341\243\244\334\372  
\030\371\323\274\023\233\071\172\064\272\323\101\373\372\062\212  
\052\267\053\206\013\151\203\070\276\315\212\056\013\160\255\215  
\046\222\356\036\365\001\053\012\331\326\227\233\156\340\250\031  
\034\072\041\213\014\036\100\255\003\347\335\146\176\365\271\040  
\015\003\350\226\371\202\105\324\071\340\240\000\135\327\230\346



```
\175\236\147\163\303\232\052\367\253\213\241\072\024\357\064\274
\122\016\211\230\232\004\100\204\035\176\105\151\223\127\316\353
\316\370\120\174\117\034\156\004\103\233\371\326\073\043\030\351
\352\216\321\115\106\215\361\073\344\152\312\272\373\043\267\233
\372\231\001\051\132\130\132\055\343\371\324\155\016\046\255\301
\156\064\274\062\370\014\005\372\145\243\333\073\067\203\042\351
\326\334\162\063\375\135\362\040\275\166\074\043\332\050\367\371
\033\353\131\144\325\334\137\162\176\040\374\315\211\265\220\147
\115\142\172\077\116\255\035\303\071\376\172\364\050\026\337\101
\366\110\200\005\327\017\121\171\254\020\253\324\354\003\146\346
\152\260\272\061\222\102\100\152\276\072\323\162\341\152\067\125
\274\254\035\225\267\151\141\362\103\221\164\346\240\323\012\044
\106\241\010\257\326\332\105\031\226\324\123\035\133\204\171\360
\300\367\107\357\213\217\305\006\256\235\114\142\235\377\106\004
\370\323\311\266\020\045\100\165\376\026\252\311\112\140\206\057
\272\357\060\167\344\124\342\270\204\231\130\200\252\023\213\121
\072\117\110\366\213\266\263
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Trust for "AC RAIZ FNMT-RCM"
```

```
Issuer: OU=AC RAIZ FNMT-RCM,O=FNMT-RCM,C=ES
```

```
Serial Number:5d:93:8d:30:67:36:c8:06:1d:1a:c7:54:84:69:07
```

```
Subject: OU=AC RAIZ FNMT-RCM,O=FNMT-RCM,C=ES
```

```
Not Valid Before: Wed Oct 29 15:59:56 2008
```

```
Not Valid After : Tue Jan 01 00:00:00 2030
```

```
Fingerprint (SHA-256):
```

```
EB:C5:57:0C:29:01:8C:4D:67:B1:AA:12:7B:AF:12:F7:03:B4:61:1E:BC:17:B7:DA:B5:57:38:94:17:9B:93:FA
```

```
Fingerprint (SHA1): EC:50:35:07:B2:15:C4:95:62:19:E2:A8:9A:5B:42:99:2C:4C:2C:20
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "AC RAIZ FNMT-RCM"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\354\120\065\007\262\025\304\225\142\031\342\250\232\133\102\231
\054\114\054\040
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\342\011\004\264\323\275\321\240\024\375\032\322\107\304\127\035
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\073\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\021\060\017\006\003\125\004\012\014\010\106\116\115\124\055\122
\103\115\061\031\060\027\006\003\125\004\013\014\020\101\103\040
\122\101\111\132\040\106\116\115\124\055\122\103\115
```

```

END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\017\135\223\215\060\147\066\310\006\035\032\307\124\204\151
\007
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "Amazon Root CA 1"
#
Issuer: CN=Amazon Root CA 1,O=Amazon,C=US
Serial Number:06:6c:9f:cf:99:bf:8c:0a:39:e2:f0:78:8a:43:e6:96:36:5b:ca
Subject: CN=Amazon Root CA 1,O=Amazon,C=US
Not Valid Before: Tue May 26 00:00:00 2015
Not Valid After : Sun Jan 17 00:00:00 2038
Fingerprint (SHA-256):
8E:CD:E6:88:4F:3D:87:B1:12:5B:A3:1A:C3:FC:B1:3D:70:16:DE:7F:57:CC:90:4F:E1:CB:97:C6:AE:98:19:6E
Fingerprint (SHA1): 8D:A7:F9:65:EC:5E:FC:37:91:0F:1C:6E:59:FD:C1:CC:6A:6E:DE:16
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Amazon Root CA 1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\071\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\017\060\015\006\003\125\004\012\023\006\101\155\141\172\157\156
\061\031\060\027\006\003\125\004\003\023\020\101\155\141\172\157
\156\040\122\157\157\164\040\103\101\040\061
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\071\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\017\060\015\006\003\125\004\012\023\006\101\155\141\172\157\156
\061\031\060\027\006\003\125\004\003\023\020\101\155\141\172\157
\156\040\122\157\157\164\040\103\101\040\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\023\006\154\237\317\231\277\214\012\071\342\360\170\212\103
\346\226\066\133\312
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\101\060\202\002\051\240\003\002\001\002\002\023\006
\154\237\317\231\277\214\012\071\342\360\170\212\103\346\226\066
\133\312\060\015\006\011\052\206\110\206\367\015\001\001\013\005

```

\000\060\071\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\017\060\015\006\003\125\004\012\023\006\101\155\141\172\157  
\156\061\031\060\027\006\003\125\004\003\023\020\101\155\141\172  
\157\156\040\122\157\157\164\040\103\101\040\061\060\036\027\015  
\061\065\060\065\062\066\060\060\060\060\060\132\027\015\063  
\070\060\061\061\067\060\060\060\060\060\132\060\071\061\013  
\060\011\006\003\125\004\006\023\002\125\123\061\017\060\015\006  
\003\125\004\012\023\006\101\155\141\172\157\156\061\031\060\027  
\006\003\125\004\003\023\020\101\155\141\172\157\156\040\122\157  
\157\164\040\103\101\040\061\060\202\001\042\060\015\006\011\052  
\206\110\206\367\015\001\001\001\005\000\003\202\001\017\000\060  
\202\001\012\002\202\001\001\000\262\170\200\161\312\170\325\343  
\161\257\107\200\120\164\175\156\330\327\210\166\364\231\150\367  
\130\041\140\371\164\204\001\057\254\002\055\206\323\240\103\172  
\116\262\244\320\066\272\001\276\215\333\110\310\007\027\066\114  
\364\356\210\043\307\076\353\067\365\265\031\370\111\150\260\336  
\327\271\166\070\035\141\236\244\376\202\066\245\345\112\126\344  
\105\341\371\375\264\026\372\164\332\234\233\065\071\057\372\260  
\040\120\006\154\172\320\200\262\246\371\257\354\107\031\217\120  
\070\007\334\242\207\071\130\370\272\325\251\371\110\147\060\226  
\356\224\170\136\157\211\243\121\300\060\206\146\241\105\146\272  
\124\353\243\303\221\371\110\334\377\321\350\060\055\175\055\164  
\160\065\327\210\044\367\236\304\131\156\273\163\207\027\362\062  
\106\050\270\103\372\267\035\252\312\264\362\237\044\016\055\113  
\367\161\134\136\151\377\352\225\002\313\070\212\256\120\070\157  
\333\373\055\142\033\305\307\036\124\341\167\340\147\310\017\234  
\207\043\326\077\100\040\177\040\200\304\200\114\076\073\044\046  
\216\004\256\154\232\310\252\015\002\003\001\000\001\243\102\060  
\100\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001  
\001\377\060\016\006\003\125\035\017\001\001\377\004\004\003\002  
\001\206\060\035\006\003\125\035\016\004\026\004\024\204\030\314  
\205\064\354\274\014\224\224\056\010\131\234\307\262\020\116\012  
\010\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000  
\003\202\001\001\000\230\362\067\132\101\220\241\032\305\166\121  
\050\040\066\043\016\256\346\050\273\252\370\224\256\110\244\060  
\177\033\374\044\215\113\264\310\241\227\366\266\361\172\160\310  
\123\223\314\010\050\343\230\045\317\043\244\371\336\041\323\174  
\205\011\255\116\232\165\072\302\013\152\211\170\166\104\107\030  
\145\154\215\101\216\073\177\232\313\364\265\247\120\327\005\054  
\067\350\003\113\255\351\141\240\002\156\365\362\360\305\262\355  
\133\267\334\372\224\134\167\236\023\245\177\122\255\225\362\370  
\223\073\336\213\134\133\312\132\122\133\140\257\024\367\113\357  
\243\373\237\100\225\155\061\124\374\102\323\307\106\037\043\255  
\331\017\110\160\232\331\165\170\161\321\162\103\064\165\156\127  
\131\302\002\134\046\140\051\317\043\031\026\216\210\103\245\324  
\344\313\010\373\043\021\103\350\103\051\162\142\241\251\135\136  
\010\324\220\256\270\330\316\024\302\320\125\362\206\366\304\223  
\103\167\146\141\300\271\350\101\327\227\170\140\003\156\112\162

```
\256\245\321\175\272\020\236\206\154\033\212\271\131\063\370\353
\304\220\276\361\271
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

# Trust for "Amazon Root CA 1"

# Issuer: CN=Amazon Root CA 1,O=Amazon,C=US

# Serial Number:06:6c:9f:cf:99:bf:8c:0a:39:e2:f0:78:8a:43:e6:96:36:5b:ca

# Subject: CN=Amazon Root CA 1,O=Amazon,C=US

# Not Valid Before: Tue May 26 00:00:00 2015

# Not Valid After : Sun Jan 17 00:00:00 2038

# Fingerprint (SHA-256):

8E:CD:E6:88:4F:3D:87:B1:12:5B:A3:1A:C3:FC:B1:3D:70:16:DE:7F:57:CC:90:4F:E1:CB:97:C6:AE:98:19:6E

# Fingerprint (SHA1): 8D:A7:F9:65:EC:5E:FC:37:91:0F:1C:6E:59:FD:C1:CC:6A:6E:DE:16

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "Amazon Root CA 1"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\215\247\371\145\354\136\374\067\221\017\034\156\131\375\301\314
\152\156\336\026
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\103\306\277\256\354\376\255\057\030\306\210\150\060\374\310\346
END
```

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\071\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\017\060\015\006\003\125\004\012\023\006\101\155\141\172\157\156
\061\031\060\027\006\003\125\004\003\023\020\101\155\141\172\157
\156\040\122\157\157\164\040\103\101\040\061
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\023\006\154\237\317\231\277\214\012\071\342\360\170\212\103
\346\226\066\133\312
```

END

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

```
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

```
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

```
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

#

# Certificate "Amazon Root CA 2"

#

# Issuer: CN=Amazon Root CA 2,O=Amazon,C=US

# Serial Number:06:6c:9f:d2:96:35:86:9f:0a:0f:e5:86:78:f8:5b:26:bb:8a:37

```
Subject: CN=Amazon Root CA 2,O=Amazon,C=US
Not Valid Before: Tue May 26 00:00:00 2015
Not Valid After : Sat May 26 00:00:00 2040
Fingerprint (SHA-256):
1B:A5:B2:AA:8C:65:40:1A:82:96:01:18:F8:0B:EC:4F:62:30:4D:83:CE:C4:71:3A:19:C3:9C:01:1E:A4:6D:B4
Fingerprint (SHA1): 5A:8C:EF:45:D7:A6:98:59:76:7A:8C:8B:44:96:B5:78:CF:47:4B:1A
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Amazon Root CA 2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\071\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\017\060\015\006\003\125\004\012\023\006\101\155\141\172\157\156
\061\031\060\027\006\003\125\004\003\023\020\101\155\141\172\157
\156\040\122\157\157\164\040\103\101\040\062
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\071\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\017\060\015\006\003\125\004\012\023\006\101\155\141\172\157\156
\061\031\060\027\006\003\125\004\003\023\020\101\155\141\172\157
\156\040\122\157\157\164\040\103\101\040\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\023\006\154\237\322\226\065\206\237\012\017\345\206\170\370
\133\046\273\212\067
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\101\060\202\003\051\240\003\002\001\002\002\023\006
\154\237\322\226\065\206\237\012\017\345\206\170\370\133\046\273
\212\067\060\015\006\011\052\206\110\206\367\015\001\001\014\005
\000\060\071\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\017\060\015\006\003\125\004\012\023\006\101\155\141\172\157
\156\061\031\060\027\006\003\125\004\003\023\020\101\155\141\172
\157\156\040\122\157\157\164\040\103\101\040\062\060\036\027\015
\061\065\060\065\062\066\060\060\060\060\060\060\132\027\015\064
\060\060\065\062\066\060\060\060\060\060\060\132\060\071\061\013
\060\011\006\003\125\004\006\023\002\125\123\061\017\060\015\006
\003\125\004\012\023\006\101\155\141\172\157\156\061\031\060\027
\006\003\125\004\003\023\020\101\155\141\172\157\156\040\122\157
\157\164\040\103\101\040\062\060\202\002\042\060\015\006\011\052
\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060
\202\002\012\002\202\002\001\000\255\226\237\055\234\112\114\112
\201\171\121\231\354\212\313\153\140\121\023\274\115\155\006\374
\260\010\215\335\031\020\152\307\046\014\065\330\300\157\040\204
\351\224\261\233\205\003\303\133\333\112\350\310\370\220\166\331
```

\133\117\343\114\350\006\066\115\314\232\254\075\014\220\053\222  
\324\006\031\140\254\067\104\171\205\201\202\255\132\067\340\015  
\314\235\246\114\122\166\352\103\235\267\004\321\120\366\125\340  
\325\322\246\111\205\351\067\351\312\176\256\134\225\115\110\232  
\077\256\040\132\155\210\225\331\064\270\122\032\103\220\260\277  
\154\005\271\266\170\267\352\320\344\072\074\022\123\142\377\112  
\362\173\276\065\005\251\022\064\343\363\144\164\142\054\075\000  
\111\132\050\376\062\104\273\207\335\145\047\002\161\073\332\112  
\367\037\332\315\367\041\125\220\117\017\354\256\202\341\237\153  
\331\105\323\273\360\137\207\355\074\054\071\206\332\077\336\354  
\162\125\353\171\243\255\333\335\174\260\272\034\316\374\336\117  
\065\166\317\017\370\170\037\152\066\121\106\047\141\133\351\236  
\317\360\242\125\175\174\045\212\157\057\264\305\317\204\056\053  
\375\015\121\020\154\373\137\033\274\033\176\305\256\073\230\001  
\061\222\377\013\127\364\232\262\271\127\351\253\357\015\166\321  
\360\356\364\316\206\247\340\156\351\264\151\241\337\151\366\063  
\306\151\056\227\023\236\245\207\260\127\020\201\067\311\123\263  
\273\177\366\222\321\234\320\030\364\222\156\332\203\117\246\143  
\231\114\245\373\136\357\041\144\172\040\137\154\144\205\025\313  
\067\351\142\014\013\052\026\334\001\056\062\332\076\113\365\236  
\072\366\027\100\224\357\236\221\010\206\372\276\143\250\132\063  
\354\313\164\103\225\371\154\151\122\066\307\051\157\374\125\003  
\134\037\373\237\275\107\353\347\111\107\225\013\116\211\042\011  
\111\340\365\141\036\361\277\056\212\162\156\200\131\377\127\072  
\371\165\062\243\116\137\354\355\050\142\331\115\163\362\314\201  
\027\140\355\315\353\334\333\247\312\305\176\002\275\362\124\010  
\124\375\264\055\011\054\027\124\112\230\321\124\341\121\147\010  
\322\355\156\176\157\077\322\055\201\131\051\146\313\220\071\225  
\021\036\164\047\376\335\353\257\002\003\001\000\001\243\102\060  
\100\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001  
\001\377\060\016\006\003\125\035\017\001\001\377\004\004\003\002  
\001\206\060\035\006\003\125\035\016\004\026\004\024\260\014\360  
\114\060\364\005\130\002\110\375\063\345\122\257\113\204\343\146  
\122\060\015\006\011\052\206\110\206\367\015\001\001\014\005\000  
\003\202\002\001\000\252\250\200\217\016\170\243\340\242\324\315  
\346\365\230\172\073\352\000\003\260\227\016\223\274\132\250\366  
\054\214\162\207\251\261\374\177\163\375\143\161\170\245\207\131  
\317\060\341\015\020\262\023\132\155\202\365\152\346\200\237\240  
\005\013\150\344\107\153\307\152\337\266\375\167\062\162\345\030  
\372\011\364\240\223\054\135\322\214\165\205\166\145\220\014\003  
\171\267\061\043\143\255\170\203\011\206\150\204\312\377\371\317  
\046\232\222\171\347\315\113\305\347\141\247\027\313\363\251\022  
\223\223\153\247\350\057\123\222\304\140\130\260\314\002\121\030  
\133\205\215\142\131\143\266\255\264\336\232\373\046\367\000\047  
\300\135\125\067\164\231\311\120\177\343\131\056\104\343\054\045  
\356\354\114\062\167\264\237\032\351\113\135\040\305\332\375\034  
\207\026\306\103\350\324\273\046\232\105\160\136\251\013\067\123  
\342\106\173\047\375\340\106\362\211\267\314\102\266\313\050\046

```
\156\331\245\311\072\310\101\023\140\367\120\214\025\256\262\155
\032\025\032\127\170\346\222\052\331\145\220\202\077\154\002\257
\256\022\072\047\226\066\004\327\035\242\200\143\251\233\361\345
\272\264\174\024\260\116\311\261\037\164\137\070\366\121\352\233
\372\054\242\021\324\251\055\047\032\105\261\257\262\116\161\015
\300\130\106\326\151\006\313\123\313\263\376\153\101\315\101\176
\175\114\017\174\162\171\172\131\315\136\112\016\254\233\251\230
\163\171\174\264\364\314\271\270\007\014\262\164\134\270\307\157
\210\241\220\247\364\252\371\277\147\072\364\032\025\142\036\267
\237\276\075\261\051\257\147\241\022\362\130\020\031\123\003\060
\033\270\032\211\366\234\275\227\003\216\243\011\363\035\213\041
\361\264\337\344\034\321\237\145\002\006\352\134\326\023\263\204
\357\242\245\134\214\167\051\247\150\300\153\256\100\322\250\264
\352\315\360\215\113\070\234\031\232\033\050\124\270\211\220\357
\312\165\201\076\036\362\144\044\307\030\257\116\377\107\236\007
\366\065\145\244\323\012\126\377\365\027\144\154\357\250\042\045
\111\223\266\337\000\027\332\130\176\135\356\305\033\260\321\321
\137\041\020\307\371\363\272\002\012\047\007\305\361\326\307\323
\340\373\011\140\154
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Trust for "Amazon Root CA 2"
```

```
Issuer: CN=Amazon Root CA 2,O=Amazon,C=US
```

```
Serial Number:06:6c:9f:d2:96:35:86:9f:0a:0f:e5:86:78:f8:5b:26:bb:8a:37
```

```
Subject: CN=Amazon Root CA 2,O=Amazon,C=US
```

```
Not Valid Before: Tue May 26 00:00:00 2015
```

```
Not Valid After : Sat May 26 00:00:00 2040
```

```
Fingerprint (SHA-256):
```

```
1B:A5:B2:AA:8C:65:40:1A:82:96:01:18:F8:0B:EC:4F:62:30:4D:83:CE:C4:71:3A:19:C3:9C:01:1E:A4:6D:B4
```

```
Fingerprint (SHA1): 5A:8C:EF:45:D7:A6:98:59:76:7A:8C:8B:44:96:B5:78:CF:47:4B:1A
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "Amazon Root CA 2"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\132\214\357\105\327\246\230\131\166\172\214\213\104\226\265\170
\317\107\113\032
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\310\345\215\316\250\102\342\172\300\052\134\174\236\046\277\146
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\071\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\017\060\015\006\003\125\004\012\023\006\101\155\141\172\157\156
```

```

\061\031\060\027\006\003\125\004\003\023\020\101\155\141\172\157
\156\040\122\157\157\164\040\103\101\040\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\023\006\154\237\322\226\065\206\237\012\017\345\206\170\370
\133\046\273\212\067
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "Amazon Root CA 3"
#
Issuer: CN=Amazon Root CA 3,O=Amazon,C=US
Serial Number:06:6c:9f:d5:74:97:36:66:3f:3b:0b:9a:d9:e8:9e:76:03:f2:4a
Subject: CN=Amazon Root CA 3,O=Amazon,C=US
Not Valid Before: Tue May 26 00:00:00 2015
Not Valid After : Sat May 26 00:00:00 2040
Fingerprint (SHA-256):
18:CE:6C:FE:7B:F1:4E:60:B2:E3:47:B8:DF:E8:68:CB:31:D0:2E:BB:3A:DA:27:15:69:F5:03:43:B4:6D:B3:A4
Fingerprint (SHA1): 0D:44:DD:8C:3C:8C:1A:1A:58:75:64:81:E9:0F:2E:2A:FF:B3:D2:6E
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Amazon Root CA 3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\071\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\017\060\015\006\003\125\004\012\023\006\101\155\141\172\157\156
\061\031\060\027\006\003\125\004\003\023\020\101\155\141\172\157
\156\040\122\157\157\164\040\103\101\040\063
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\071\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\017\060\015\006\003\125\004\012\023\006\101\155\141\172\157\156
\061\031\060\027\006\003\125\004\003\023\020\101\155\141\172\157
\156\040\122\157\157\164\040\103\101\040\063
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\023\006\154\237\325\164\227\066\146\077\073\013\232\331\350
\236\166\003\362\112
END
CKA_VALUE MULTILINE_OCTAL
\060\202\001\266\060\202\001\133\240\003\002\001\002\002\023\006

```



\154\237\325\164\227\066\146\077\073\013\232\331\350\236\166\003  
\362\112\060\012\006\010\052\206\110\316\075\004\003\002\060\071  
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\017\060  
\015\006\003\125\004\012\023\006\101\155\141\172\157\156\061\031  
\060\027\006\003\125\004\003\023\020\101\155\141\172\157\156\040  
\122\157\157\164\040\103\101\040\063\060\036\027\015\061\065\060  
\065\062\066\060\060\060\060\060\132\027\015\064\060\060\065  
\062\066\060\060\060\060\060\132\060\071\061\013\060\011\006  
\003\125\004\006\023\002\125\123\061\017\060\015\006\003\125\004  
\012\023\006\101\155\141\172\157\156\061\031\060\027\006\003\125  
\004\003\023\020\101\155\141\172\157\156\040\122\157\157\164\040  
\103\101\040\063\060\131\060\023\006\007\052\206\110\316\075\002  
\001\006\010\052\206\110\316\075\003\001\007\003\102\000\004\051  
\227\247\306\101\177\300\015\233\350\001\033\126\306\362\122\245  
\272\055\262\022\350\322\056\327\372\311\305\330\252\155\037\163  
\201\073\073\230\153\071\174\063\245\305\116\206\216\200\027\150  
\142\105\127\175\104\130\035\263\067\345\147\010\353\146\336\243  
\102\060\100\060\017\006\003\125\035\023\001\001\377\004\005\060  
\003\001\001\377\060\016\006\003\125\035\017\001\001\377\004\004  
\003\002\001\206\060\035\006\003\125\035\016\004\026\004\024\253  
\266\333\327\006\236\067\254\060\206\007\221\160\307\234\304\031  
\261\170\300\060\012\006\010\052\206\110\316\075\004\003\002\003  
\111\000\060\106\002\041\000\340\205\222\243\027\267\215\371\053  
\006\245\223\254\032\230\150\141\162\372\341\241\320\373\034\170  
\140\246\103\231\305\270\304\002\041\000\234\002\357\361\224\234  
\263\226\371\353\306\052\370\266\054\376\072\220\024\026\327\214  
\143\044\110\034\337\060\175\325\150\073

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Amazon Root CA 3"

# Issuer: CN=Amazon Root CA 3,O=Amazon,C=US

# Serial Number:06:6c:9f:d5:74:97:36:66:3f:3b:0b:9a:d9:e8:9e:76:03:f2:4a

# Subject: CN=Amazon Root CA 3,O=Amazon,C=US

# Not Valid Before: Tue May 26 00:00:00 2015

# Not Valid After : Sat May 26 00:00:00 2040

# Fingerprint (SHA-256):

18:CE:6C:FE:7B:F1:4E:60:B2:E3:47:B8:DF:E8:68:CB:31:D0:2E:BB:3A:DA:27:15:69:F5:03:43:B4:6D:B3:A4

# Fingerprint (SHA1): 0D:44:DD:8C:3C:8C:1A:1A:58:75:64:81:E9:0F:2E:2A:FF:B3:D2:6E

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Amazon Root CA 3"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\015\104\335\214\074\214\032\032\130\165\144\201\351\017\056\052

```

\377\263\322\156
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\240\324\357\013\367\265\330\111\225\052\354\365\304\374\201\207
END
CKA_ISSUER MULTILINE_OCTAL
\060\071\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\017\060\015\006\003\125\004\012\023\006\101\155\141\172\157\156
\061\031\060\027\006\003\125\004\003\023\020\101\155\141\172\157
\156\040\122\157\157\164\040\103\101\040\063
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\023\006\154\237\325\164\227\066\146\077\073\013\232\331\350
\236\166\003\362\112
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "Amazon Root CA 4"
#
Issuer: CN=Amazon Root CA 4,O=Amazon,C=US
Serial Number:06:6c:9f:d7:c1:bb:10:4c:29:43:e5:71:7b:7b:2c:c8:1a:c1:0e
Subject: CN=Amazon Root CA 4,O=Amazon,C=US
Not Valid Before: Tue May 26 00:00:00 2015
Not Valid After : Sat May 26 00:00:00 2040
Fingerprint (SHA-256):
E3:5D:28:41:9E:D0:20:25:CF:A6:90:38:CD:62:39:62:45:8D:A5:C6:95:FB:DE:A3:C2:2B:0B:FB:25:89:70:92
Fingerprint (SHA1): F6:10:84:07:D6:F8:BB:67:98:0C:C2:E2:44:C2:EB:AE:1C:EF:63:BE
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Amazon Root CA 4"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\071\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\017\060\015\006\003\125\004\012\023\006\101\155\141\172\157\156
\061\031\060\027\006\003\125\004\003\023\020\101\155\141\172\157
\156\040\122\157\157\164\040\103\101\040\064
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\071\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\017\060\015\006\003\125\004\012\023\006\101\155\141\172\157\156
\061\031\060\027\006\003\125\004\003\023\020\101\155\141\172\157

```

```
\156\040\122\157\157\164\040\103\101\040\064
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\023\006\154\237\327\301\273\020\114\051\103\345\161\173\173
\054\310\032\301\016
END
CKA_VALUE MULTILINE_OCTAL
\060\202\001\362\060\202\001\170\240\003\002\001\002\002\023\006
\154\237\327\301\273\020\114\051\103\345\161\173\173\054\310\032
\301\016\060\012\006\010\052\206\110\316\075\004\003\003\060\071
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\017\060
\015\006\003\125\004\012\023\006\101\155\141\172\157\156\061\031
\060\027\006\003\125\004\003\023\020\101\155\141\172\157\156\040
\122\157\157\164\040\103\101\040\064\060\036\027\015\061\065\060
\065\062\066\060\060\060\060\060\132\027\015\064\060\060\065
\062\066\060\060\060\060\060\132\060\071\061\013\060\011\006
\003\125\004\006\023\002\125\123\061\017\060\015\006\003\125\004
\012\023\006\101\155\141\172\157\156\061\031\060\027\006\003\125
\004\003\023\020\101\155\141\172\157\156\040\122\157\157\164\040
\103\101\040\064\060\166\060\020\006\007\052\206\110\316\075\002
\001\006\005\053\201\004\000\042\003\142\000\004\322\253\212\067
\117\243\123\015\376\301\212\173\113\250\173\106\113\143\260\142
\366\055\033\333\010\161\041\322\000\350\143\275\232\047\373\360
\071\156\135\352\075\245\311\201\252\243\133\040\230\105\135\026
\333\375\350\020\155\343\234\340\343\275\137\204\142\363\160\144
\063\240\313\044\057\160\272\210\241\052\240\165\370\201\256\142
\006\304\201\333\071\156\051\260\036\372\056\134\243\102\060\100
\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001
\377\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001
\206\060\035\006\003\125\035\016\004\026\004\024\323\354\307\072
\145\156\314\341\332\166\232\126\373\234\363\206\155\127\345\201
\060\012\006\010\052\206\110\316\075\004\003\003\003\150\000\060
\145\002\060\072\213\041\361\275\176\021\255\320\357\130\226\057
\326\353\235\176\220\215\053\317\146\125\303\054\343\050\251\160
\012\107\016\360\067\131\022\377\055\231\224\050\116\052\117\065
\115\063\132\002\061\000\352\165\000\116\073\304\072\224\022\221
\311\130\106\235\041\023\162\247\210\234\212\344\114\112\333\226
\324\254\213\153\153\111\022\123\063\255\327\344\276\044\374\265
\012\166\324\245\274\020
END
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Trust for "Amazon Root CA 4"
Issuer: CN=Amazon Root CA 4,O=Amazon,C=US
Serial Number:06:6c:9f:d7:c1:bb:10:4c:29:43:e5:71:7b:7b:2c:c8:1a:c1:0e
Subject: CN=Amazon Root CA 4,O=Amazon,C=US
```

```

Not Valid Before: Tue May 26 00:00:00 2015
Not Valid After : Sat May 26 00:00:00 2040
Fingerprint (SHA-256):
E3:5D:28:41:9E:D0:20:25:CF:A6:90:38:CD:62:39:62:45:8D:A5:C6:95:FB:DE:A3:C2:2B:0B:FB:25:89:70:92
Fingerprint (SHA1): F6:10:84:07:D6:F8:BB:67:98:0C:C2:E2:44:C2:EB:AE:1C:EF:63:BE
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Amazon Root CA 4"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\366\020\204\007\326\370\273\147\230\014\302\342\104\302\353\256
\034\357\143\276
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\211\274\047\325\353\027\215\006\152\151\325\375\211\107\264\315
END
CKA_ISSUER MULTILINE_OCTAL
\060\071\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\017\060\015\006\003\125\004\012\023\006\101\155\141\172\157\156
\061\031\060\027\006\003\125\004\003\023\020\101\155\141\172\157
\156\040\122\157\157\164\040\103\101\040\064
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\023\006\154\237\327\301\273\020\114\051\103\345\161\173\173
\054\310\032\301\016
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "Symantec Class 1 Public Primary Certification Authority - G6"
#
Issuer: CN=Symantec Class 1 Public Primary Certification Authority - G6,OU=Symantec Trust
Network,O=Symantec Corporation,C=US
Serial Number:24:32:75:f2:1d:2f:d2:09:33:f7:b4:6a:ca:d0:f3:98
Subject: CN=Symantec Class 1 Public Primary Certification Authority - G6,OU=Symantec Trust
Network,O=Symantec Corporation,C=US
Not Valid Before: Tue Oct 18 00:00:00 2011
Not Valid After : Tue Dec 01 23:59:59 2037
Fingerprint (SHA-256):
9D:19:0B:2E:31:45:66:68:5B:E8:A8:89:E2:7A:A8:C7:D7:AE:1D:8A:AD:DB:A3:C1:EC:F9:D2:48:63:CD:34:B9
Fingerprint (SHA1): 51:7F:61:1E:29:91:6B:53:82:FB:72:E7:44:D9:8D:C3:CC:53:6D:64
For Email Distrust After: Wed Aug 31 00:00:00 2022
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE

```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Symantec Class 1 Public Primary Certification Authority - G6"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\224\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\035\060\033\006\003\125\004\012\023\024\123\171\155\141\156
\164\145\143\040\103\157\162\160\157\162\141\164\151\157\156\061
\037\060\035\006\003\125\004\013\023\026\123\171\155\141\156\164
\145\143\040\124\162\165\163\164\040\116\145\164\167\157\162\153
\061\105\060\103\006\003\125\004\003\023\074\123\171\155\141\156
\164\145\143\040\103\154\141\163\163\040\061\040\120\165\142\154
\151\143\040\120\162\151\155\141\162\171\040\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\171\040\055\040\107\066
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\224\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\035\060\033\006\003\125\004\012\023\024\123\171\155\141\156
\164\145\143\040\103\157\162\160\157\162\141\164\151\157\156\061
\037\060\035\006\003\125\004\013\023\026\123\171\155\141\156\164
\145\143\040\124\162\165\163\164\040\116\145\164\167\157\162\153
\061\105\060\103\006\003\125\004\003\023\074\123\171\155\141\156
\164\145\143\040\103\154\141\163\163\040\061\040\120\165\142\154
\151\143\040\120\162\151\155\141\162\171\040\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\171\040\055\040\107\066
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\044\062\165\362\035\057\322\011\063\367\264\152\312\320
\363\230
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\366\060\202\002\336\240\003\002\001\002\002\020\044
\062\165\362\035\057\322\011\063\367\264\152\312\320\363\230\060
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\201
\224\061\013\060\011\006\003\125\004\006\023\002\125\123\061\035
\060\033\006\003\125\004\012\023\024\123\171\155\141\156\164\145
\143\040\103\157\162\160\157\162\141\164\151\157\156\061\037\060
\035\006\003\125\004\013\023\026\123\171\155\141\156\164\145\143
\040\124\162\165\163\164\040\116\145\164\167\157\162\153\061\105
\060\103\006\003\125\004\003\023\074\123\171\155\141\156\164\145
\143\040\103\154\141\163\163\040\061\040\120\165\142\154\151\143
\040\120\162\151\155\141\162\171\040\103\145\162\164\151\146\151
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171
\040\055\040\107\066\060\036\027\015\061\061\061\060\061\070\060
\060\060\060\060\060\132\027\015\063\067\061\062\060\061\062\063
```

\065\071\065\071\132\060\201\224\061\013\060\011\006\003\125\004  
\006\023\002\125\123\061\035\060\033\006\003\125\004\012\023\024  
\123\171\155\141\156\164\145\143\040\103\157\162\160\157\162\141  
\164\151\157\156\061\037\060\035\006\003\125\004\013\023\026\123  
\171\155\141\156\164\145\143\040\124\162\165\163\164\040\116\145  
\164\167\157\162\153\061\105\060\103\006\003\125\004\003\023\074  
\123\171\155\141\156\164\145\143\040\103\154\141\163\163\040\061  
\040\120\165\142\154\151\143\040\120\162\151\155\141\162\171\040  
\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165  
\164\150\157\162\151\164\171\040\055\040\107\066\060\202\001\042  
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003  
\202\001\017\000\060\202\001\012\002\202\001\001\000\307\071\327  
\111\144\251\231\202\042\114\352\105\331\007\026\343\173\364\203  
\350\231\163\372\153\261\066\340\232\167\240\100\302\201\215\001  
\307\314\214\275\217\175\367\171\343\172\114\003\115\331\373\375  
\207\070\050\054\335\232\213\124\010\333\147\373\033\214\376\050  
\222\057\276\267\262\110\247\201\241\330\136\210\303\314\071\100  
\101\132\321\334\345\332\020\237\057\332\001\115\375\056\106\174  
\371\056\047\012\151\067\356\221\243\033\152\314\104\277\033\307  
\303\324\021\262\120\140\227\011\275\056\042\365\101\204\146\237  
\315\100\246\251\000\200\301\037\225\222\237\336\363\110\357\333  
\035\167\141\374\177\337\356\226\244\162\320\266\076\377\170\047  
\257\313\222\025\151\010\333\143\020\342\346\227\254\156\334\254  
\366\242\316\036\107\231\271\211\267\022\346\241\324\315\131\021  
\147\303\157\205\330\102\116\050\276\131\125\131\004\225\253\217  
\067\200\277\015\360\374\037\072\144\061\130\201\170\327\342\065  
\366\040\077\051\270\217\026\156\076\110\334\265\114\007\341\362  
\032\352\176\012\171\326\250\275\353\135\206\053\115\002\003\001  
\000\001\243\102\060\100\060\016\006\003\125\035\017\001\001\377  
\004\004\003\002\001\006\060\017\006\003\125\035\023\001\001\377  
\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026  
\004\024\063\101\350\310\071\022\025\223\110\362\226\062\056\132  
\365\332\224\137\123\140\060\015\006\011\052\206\110\206\367\015  
\001\001\013\005\000\003\202\001\001\000\025\343\163\127\261\027  
\266\137\111\151\104\246\366\136\172\147\254\322\336\165\111\253  
\376\045\125\307\072\311\104\025\020\156\277\061\153\313\331\007  
\223\177\034\205\143\000\343\062\022\340\314\313\373\071\154\217  
\342\123\342\074\100\063\331\244\214\107\346\255\130\373\211\257  
\343\336\206\051\126\064\054\105\270\022\372\104\211\156\055\024  
\045\050\044\001\145\326\352\122\254\005\156\126\022\011\075\320  
\164\364\327\275\006\312\250\072\215\126\102\372\215\162\076\164  
\361\003\162\337\207\033\136\016\172\125\226\054\070\267\230\205  
\315\115\063\104\311\224\217\132\061\060\067\113\243\072\022\263  
\347\066\321\041\150\113\055\070\346\123\256\034\045\126\010\126  
\003\147\204\235\306\303\316\044\142\307\114\066\317\260\006\104  
\267\365\137\002\335\331\124\351\057\220\116\172\310\116\203\100  
\014\232\227\074\067\277\277\354\366\360\264\205\167\050\301\013  
\310\147\202\020\027\070\242\267\006\352\233\277\072\370\351\043

```
\007\277\164\340\230\070\025\125\170\356\162\000\134\031\243\364
\322\063\340\377\275\321\124\071\051\017
END
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER MULTILINE_OCTAL
\062\062\060\070\063\061\060\060\060\060\060\060\132
END
```

```
Trust for "Symantec Class 1 Public Primary Certification Authority - G6"
Issuer: CN=Symantec Class 1 Public Primary Certification Authority - G6,OU=Symantec Trust
Network,O=Symantec Corporation,C=US
Serial Number:24:32:75:f2:1d:2f:d2:09:33:f7:b4:6a:ca:d0:f3:98
Subject: CN=Symantec Class 1 Public Primary Certification Authority - G6,OU=Symantec Trust
Network,O=Symantec Corporation,C=US
Not Valid Before: Tue Oct 18 00:00:00 2011
Not Valid After : Tue Dec 01 23:59:59 2037
Fingerprint (SHA-256):
9D:19:0B:2E:31:45:66:68:5B:E8:A8:89:E2:7A:A8:C7:D7:AE:1D:8A:AD:DB:A3:C1:EC:F9:D2:48:63:CD:34:B9
Fingerprint (SHA1): 51:7F:61:1E:29:91:6B:53:82:FB:72:E7:44:D9:8D:C3:CC:53:6D:64
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Symantec Class 1 Public Primary Certification Authority - G6"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\121\177\141\036\051\221\153\123\202\373\162\347\104\331\215\303
\314\123\155\144
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\057\250\264\332\366\144\113\036\202\371\106\075\124\032\174\260
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\224\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\035\060\033\006\003\125\004\012\023\024\123\171\155\141\156
\164\145\143\040\103\157\162\160\157\162\141\164\151\157\156\061
\037\060\035\006\003\125\004\013\023\026\123\171\155\141\156\164
\145\143\040\124\162\165\163\164\040\116\145\164\167\157\162\153
\061\105\060\103\006\003\125\004\003\023\074\123\171\155\141\156
\164\145\143\040\103\154\141\163\163\040\061\040\120\165\142\154
\151\143\040\120\162\151\155\141\162\171\040\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\171\040\055\040\107\066
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\044\062\165\362\035\057\322\011\063\367\264\152\312\320
\363\230
END
```

```

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "Symantec Class 2 Public Primary Certification Authority - G6"
#
Issuer: CN=Symantec Class 2 Public Primary Certification Authority - G6,OU=Symantec Trust
Network,O=Symantec Corporation,C=US
Serial Number:64:82:9e:fc:37:1e:74:5d:fc:97:ff:97:c8:b1:ff:41
Subject: CN=Symantec Class 2 Public Primary Certification Authority - G6,OU=Symantec Trust
Network,O=Symantec Corporation,C=US
Not Valid Before: Tue Oct 18 00:00:00 2011
Not Valid After : Tue Dec 01 23:59:59 2037
Fingerprint (SHA-256):
CB:62:7D:18:B5:8A:D5:6D:DE:33:1A:30:45:6B:C6:5C:60:1A:4E:9B:18:DE:DC:EA:08:E7:DA:AA:07:81:5F:F0
Fingerprint (SHA1): 40:B3:31:A0:E9:BF:E8:55:BC:39:93:CA:70:4F:4E:C2:51:D4:1D:8F
For Email Distrust After: Wed Aug 31 00:00:00 2022
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Symantec Class 2 Public Primary Certification Authority - G6"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\224\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\035\060\033\006\003\125\004\012\023\024\123\171\155\141\156
\164\145\143\040\103\157\162\160\157\162\141\164\151\157\156\061
\037\060\035\006\003\125\004\013\023\026\123\171\155\141\156\164
\145\143\040\124\162\165\163\164\040\116\145\164\167\157\162\153
\061\105\060\103\006\003\125\004\003\023\074\123\171\155\141\156
\164\145\143\040\103\154\141\163\163\040\062\040\120\165\142\154
\151\143\040\120\162\151\155\141\162\171\040\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\171\040\055\040\107\066
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\224\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\035\060\033\006\003\125\004\012\023\024\123\171\155\141\156
\164\145\143\040\103\157\162\160\157\162\141\164\151\157\156\061
\037\060\035\006\003\125\004\013\023\026\123\171\155\141\156\164
\145\143\040\124\162\165\163\164\040\116\145\164\167\157\162\153
\061\105\060\103\006\003\125\004\003\023\074\123\171\155\141\156
\164\145\143\040\103\154\141\163\163\040\062\040\120\165\142\154
\151\143\040\120\162\151\155\141\162\171\040\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151

```



\164\171\040\055\040\107\066

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\144\202\236\374\067\036\164\135\374\227\377\227\310\261  
\377\101

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\366\060\202\002\336\240\003\002\001\002\002\020\144  
\202\236\374\067\036\164\135\374\227\377\227\310\261\377\101\060  
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\201  
\224\061\013\060\011\006\003\125\004\006\023\002\125\123\061\035  
\060\033\006\003\125\004\012\023\024\123\171\155\141\156\164\145  
\143\040\103\157\162\160\157\162\141\164\151\157\156\061\037\060  
\035\006\003\125\004\013\023\026\123\171\155\141\156\164\145\143  
\040\124\162\165\163\164\040\116\145\164\167\157\162\153\061\105  
\060\103\006\003\125\004\003\023\074\123\171\155\141\156\164\145  
\143\040\103\154\141\163\163\040\062\040\120\165\142\154\151\143  
\040\120\162\151\155\141\162\171\040\103\145\162\164\151\146\151  
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171  
\040\055\040\107\066\060\036\027\015\061\061\061\060\061\070\060  
\060\060\060\060\060\132\027\015\063\067\061\062\060\061\062\063  
\065\071\065\071\132\060\201\224\061\013\060\011\006\003\125\004  
\006\023\002\125\123\061\035\060\033\006\003\125\004\012\023\024  
\123\171\155\141\156\164\145\143\040\103\157\162\160\157\162\141  
\164\151\157\156\061\037\060\035\006\003\125\004\013\023\026\123  
\171\155\141\156\164\145\143\040\124\162\165\163\164\040\116\145  
\164\167\157\162\153\061\105\060\103\006\003\125\004\003\023\074  
\123\171\155\141\156\164\145\143\040\103\154\141\163\163\040\062  
\040\120\165\142\154\151\143\040\120\162\151\155\141\162\171\040  
\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165  
\164\150\157\162\151\164\171\040\055\040\107\066\060\202\001\042  
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003  
\202\001\017\000\060\202\001\012\002\202\001\001\000\315\314\351  
\005\310\143\205\313\077\100\143\027\275\030\372\065\346\004\147  
\127\145\230\051\244\117\311\134\217\017\064\322\370\332\250\023  
\142\252\270\036\120\147\170\260\026\114\240\071\251\025\172\256  
\355\322\242\300\360\220\067\051\030\046\134\350\015\074\266\154  
\111\077\301\340\334\331\113\266\024\031\013\246\323\226\341\326  
\011\343\031\046\034\371\037\145\113\371\032\103\034\000\203\326  
\320\252\111\242\324\333\346\142\070\272\120\024\103\155\371\061  
\370\126\026\331\070\002\221\317\353\154\335\273\071\116\231\341  
\060\147\105\361\324\360\215\303\337\376\362\070\007\041\175\000  
\136\126\104\263\344\140\275\221\053\234\253\133\004\162\017\262  
\050\331\162\253\005\040\102\045\251\133\003\152\040\020\314\061  
\360\053\332\065\054\320\373\232\227\116\360\202\113\053\330\137  
\066\243\013\055\257\143\015\035\045\177\241\156\134\142\241\215  
\050\076\241\374\034\040\370\001\057\272\125\232\021\260\031\322  
\310\120\171\153\016\152\005\327\252\004\066\262\243\362\341\137

\167\247\167\234\345\036\334\351\337\152\301\145\135\002\003\001  
\000\001\243\102\060\100\060\016\006\003\125\035\017\001\001\377  
\004\004\003\002\001\006\060\017\006\003\125\035\023\001\001\377  
\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026  
\004\024\207\214\040\225\310\230\112\321\326\200\006\112\220\064  
\104\337\034\115\277\260\060\015\006\011\052\206\110\206\367\015  
\001\001\013\005\000\003\202\001\001\000\201\216\262\245\146\226  
\267\041\245\266\357\157\043\132\137\333\201\305\102\245\170\301  
\151\375\364\074\327\371\134\153\160\162\032\374\132\227\115\000  
\200\210\210\202\212\303\161\015\216\305\211\233\054\355\215\013  
\322\162\124\365\175\324\134\103\127\351\363\256\245\002\021\366  
\166\053\201\127\335\175\332\164\060\375\124\107\366\340\026\156  
\246\264\012\110\346\347\165\007\017\051\031\071\316\171\364\266  
\154\305\137\231\325\037\113\372\337\155\054\074\015\124\200\160  
\360\210\013\200\317\306\150\242\270\035\160\331\166\214\374\356  
\245\311\317\255\035\317\231\045\127\132\142\105\313\026\153\275  
\111\315\245\243\214\151\171\045\256\270\114\154\213\100\146\113  
\026\077\317\002\032\335\341\154\153\007\141\152\166\025\051\231  
\177\033\335\210\200\301\277\265\217\163\305\246\226\043\204\246  
\050\206\044\063\152\001\056\127\163\045\266\136\277\217\346\035  
\141\250\100\051\147\035\207\233\035\177\233\237\231\315\061\326  
\124\276\142\273\071\254\150\022\110\221\040\245\313\261\335\376  
\157\374\132\344\202\125\131\257\061\251

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER MULTILINE\_OCTAL  
\062\062\060\070\063\061\060\060\060\060\060\060\132

END

# Trust for "Symantec Class 2 Public Primary Certification Authority - G6"  
# Issuer: CN=Symantec Class 2 Public Primary Certification Authority - G6,OU=Symantec Trust  
Network,O=Symantec Corporation,C=US  
# Serial Number:64:82:9e:fc:37:1e:74:5d:fc:97:ff:97:c8:b1:ff:41  
# Subject: CN=Symantec Class 2 Public Primary Certification Authority - G6,OU=Symantec Trust  
Network,O=Symantec Corporation,C=US  
# Not Valid Before: Tue Oct 18 00:00:00 2011  
# Not Valid After : Tue Dec 01 23:59:59 2037  
# Fingerprint (SHA-256):  
CB:62:7D:18:B5:8A:D5:6D:DE:33:1A:30:45:6B:C6:5C:60:1A:4E:9B:18:DE:DC:EA:08:E7:DA:AA:07:81:5F:F0  
# Fingerprint (SHA1): 40:B3:31:A0:E9:BF:E8:55:BC:39:93:CA:70:4F:4E:C2:51:D4:1D:8F  
CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "Symantec Class 2 Public Primary Certification Authority - G6"  
CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL  
\100\263\061\240\351\277\350\125\274\071\223\312\160\117\116\302

```

\121\324\035\217
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\175\013\203\345\373\174\255\007\117\040\251\265\337\143\355\171
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\224\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\035\060\033\006\003\125\004\012\023\024\123\171\155\141\156
\164\145\143\040\103\157\162\160\157\162\141\164\151\157\156\061
\037\060\035\006\003\125\004\013\023\026\123\171\155\141\156\164
\145\143\040\124\162\165\163\164\040\116\145\164\167\157\162\153
\061\105\060\103\006\003\125\004\003\023\074\123\171\155\141\156
\164\145\143\040\103\154\141\163\163\040\062\040\120\165\142\154
\151\143\040\120\162\151\155\141\162\171\040\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\171\040\055\040\107\066
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\144\202\236\374\067\036\164\135\374\227\377\227\310\261
\377\101
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "D-TRUST Root CA 3 2013"
#
Issuer: CN=D-TRUST Root CA 3 2013,O=D-Trust GmbH,C=DE
Serial Number: 1039788 (0xfddac)
Subject: CN=D-TRUST Root CA 3 2013,O=D-Trust GmbH,C=DE
Not Valid Before: Fri Sep 20 08:25:51 2013
Not Valid After : Wed Sep 20 08:25:51 2028
Fingerprint (SHA-256):
A1:A8:6D:04:12:1E:B8:7F:02:7C:66:F5:33:03:C2:8E:57:39:F9:43:FC:84:B3:8A:D6:AF:00:90:35:DD:94:57
Fingerprint (SHA1): 6C:7C:CC:E7:D4:AE:51:5F:99:08:CD:3F:F6:E8:C3:78:DF:6F:EF:97
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "D-TRUST Root CA 3 2013"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\105\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165\163
\164\040\107\155\142\110\061\037\060\035\006\003\125\004\003\014
\026\104\055\124\122\125\123\124\040\122\157\157\164\040\103\101

```

\040\063\040\062\060\061\063

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\105\061\013\060\011\006\003\125\004\006\023\002\104\105\061  
\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165\163  
\164\040\107\155\142\110\061\037\060\035\006\003\125\004\003\014  
\026\104\055\124\122\125\123\124\040\122\157\157\164\040\103\101  
\040\063\040\062\060\061\063

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\003\017\335\254

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\016\060\202\002\366\240\003\002\001\002\002\003\017  
\335\254\060\015\006\011\052\206\110\206\367\015\001\001\013\005  
\000\060\105\061\013\060\011\006\003\125\004\006\023\002\104\105  
\061\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165  
\163\164\040\107\155\142\110\061\037\060\035\006\003\125\004\003  
\014\026\104\055\124\122\125\123\124\040\122\157\157\164\040\103  
\101\040\063\040\062\060\061\063\060\036\027\015\061\063\060\071  
\062\060\060\070\062\065\065\061\132\027\015\062\070\060\071\062  
\060\060\070\062\065\065\061\132\060\105\061\013\060\011\006\003  
\125\004\006\023\002\104\105\061\025\060\023\006\003\125\004\012  
\014\014\104\055\124\162\165\163\164\040\107\155\142\110\061\037  
\060\035\006\003\125\004\003\014\026\104\055\124\122\125\123\124  
\040\122\157\157\164\040\103\101\040\063\040\062\060\061\063\060  
\202\001\042\060\015\006\011\052\206\110\206\367\015\001\001\001  
\005\000\003\202\001\017\000\060\202\001\012\002\202\001\001\000  
\304\173\102\222\202\037\354\355\124\230\216\022\300\312\011\337  
\223\156\072\223\134\033\344\020\167\236\116\151\210\154\366\341  
\151\362\366\233\242\141\261\275\007\040\164\230\145\361\214\046  
\010\315\250\065\312\200\066\321\143\155\350\104\172\202\303\154  
\136\336\273\350\066\322\304\150\066\214\237\062\275\204\042\340  
\334\302\356\020\106\071\155\257\223\071\256\207\346\303\274\011  
\311\054\153\147\133\331\233\166\165\114\013\340\273\305\327\274  
\076\171\362\137\276\321\220\127\371\256\366\146\137\061\277\323  
\155\217\247\272\112\363\043\145\273\267\357\243\045\327\012\352  
\130\266\357\210\372\372\171\262\122\130\325\360\254\214\241\121  
\164\051\225\252\121\073\220\062\003\237\034\162\164\220\336\075  
\355\141\322\345\343\375\144\107\345\271\267\112\251\367\037\256  
\226\206\004\254\057\343\244\201\167\267\132\026\377\330\017\077  
\366\267\170\314\244\257\372\133\074\022\133\250\122\211\162\357  
\210\363\325\104\201\206\225\043\237\173\335\274\331\064\357\174  
\224\074\252\300\101\302\343\235\120\032\300\344\031\042\374\263  
\002\003\001\000\001\243\202\001\005\060\202\001\001\060\017\006  
\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060\035  
\006\003\125\035\016\004\026\004\024\077\220\310\175\307\025\157

\363\044\217\251\303\057\113\242\017\041\262\057\347\060\016\006  
\003\125\035\017\001\001\377\004\004\003\002\001\006\060\201\276  
\006\003\125\035\037\004\201\266\060\201\263\060\164\240\162\240  
\160\206\156\154\144\141\160\072\057\057\144\151\162\145\143\164  
\157\162\171\056\144\055\164\162\165\163\164\056\156\145\164\057  
\103\116\075\104\055\124\122\125\123\124\045\062\060\122\157\157  
\164\045\062\060\103\101\045\062\060\063\045\062\060\062\060\061  
\063\054\117\075\104\055\124\162\165\163\164\045\062\060\107\155  
\142\110\054\103\075\104\105\077\143\145\162\164\151\146\151\143  
\141\164\145\162\145\166\157\143\141\164\151\157\156\154\151\163  
\164\060\073\240\071\240\067\206\065\150\164\164\160\072\057\057  
\143\162\154\056\144\055\164\162\165\163\164\056\156\145\164\057  
\143\162\154\057\144\055\164\162\165\163\164\137\162\157\157\164  
\137\143\141\137\063\137\062\060\061\063\056\143\162\154\060\015  
\006\011\052\206\110\206\367\015\001\001\013\005\000\003\202\001  
\001\000\016\131\016\130\344\164\110\043\104\317\064\041\265\234  
\024\032\255\232\113\267\263\210\155\134\251\027\160\360\052\237  
\215\173\371\173\205\372\307\071\350\020\010\260\065\053\137\317  
\002\322\323\234\310\013\036\356\005\124\256\067\223\004\011\175  
\154\217\302\164\274\370\034\224\276\061\001\100\055\363\044\040  
\267\204\125\054\134\310\365\164\112\020\031\213\243\307\355\065  
\326\011\110\323\016\300\272\071\250\260\106\002\260\333\306\210  
\131\302\276\374\173\261\053\317\176\142\207\125\226\314\001\157  
\233\147\041\225\065\213\370\020\374\161\033\267\113\067\151\246  
\073\326\354\213\356\301\260\363\045\311\217\222\175\241\352\303  
\312\104\277\046\245\164\222\234\343\164\353\235\164\331\313\115  
\207\330\374\264\151\154\213\240\103\007\140\170\227\351\331\223  
\174\302\106\274\233\067\122\243\355\212\074\023\251\173\123\113  
\111\232\021\005\054\013\156\126\254\037\056\202\154\340\151\147  
\265\016\155\055\331\344\300\025\361\077\372\030\162\341\025\155  
\047\133\055\060\050\053\237\110\232\144\053\231\357\362\165\111  
\137\134

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "D-TRUST Root CA 3 2013"

# Issuer: CN=D-TRUST Root CA 3 2013,O=D-Trust GmbH,C=DE

# Serial Number: 1039788 (0xfddac)

# Subject: CN=D-TRUST Root CA 3 2013,O=D-Trust GmbH,C=DE

# Not Valid Before: Fri Sep 20 08:25:51 2013

# Not Valid After : Wed Sep 20 08:25:51 2028

# Fingerprint (SHA-256):

A1:A8:6D:04:12:1E:B8:7F:02:7C:66:F5:33:03:C2:8E:57:39:F9:43:FC:84:B3:8A:D6:AF:00:90:35:DD:94:57

# Fingerprint (SHA1): 6C:7C:CC:E7:D4:AE:51:5F:99:08:CD:3F:F6:E8:C3:78:DF:6F:EF:97

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

```

CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "D-TRUST Root CA 3 2013"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\154\174\314\347\324\256\121\137\231\010\315\077\366\350\303\170
\337\157\357\227
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\267\042\146\230\176\326\003\340\301\161\346\165\315\126\105\277
END
CKA_ISSUER MULTILINE_OCTAL
\060\105\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165\163
\164\040\107\155\142\110\061\037\060\035\006\003\125\004\003\014
\026\104\055\124\122\125\123\124\040\122\157\157\164\040\103\101
\040\063\040\062\060\061\063
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\003\017\335\254
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "TUBITAK Kamu SM SSL Kok Sertifikasi - Surum 1"
#
Issuer: CN=TUBITAK Kamu SM SSL Kok Sertifikasi - Surum 1,OU=Kamu Sertifikasyon Merkezi - Kamu
SM,O=Turkiye Bilimsel ve Teknolojik Arastirma Kurumu - TUBITAK,L=Gebze - Kocaeli,C=TR
Serial Number: 1 (0x1)
Subject: CN=TUBITAK Kamu SM SSL Kok Sertifikasi - Surum 1,OU=Kamu Sertifikasyon Merkezi - Kamu
SM,O=Turkiye Bilimsel ve Teknolojik Arastirma Kurumu - TUBITAK,L=Gebze - Kocaeli,C=TR
Not Valid Before: Mon Nov 25 08:25:55 2013
Not Valid After : Sun Oct 25 08:25:55 2043
Fingerprint (SHA-256):
46:ED:C3:68:90:46:D5:3A:45:3F:B3:10:4A:B8:0D:CA:EC:65:8B:26:60:EA:16:29:DD:7E:86:79:90:64:87:16
Fingerprint (SHA1): 31:43:64:9B:EC:CE:27:EC:ED:3A:3F:0B:8F:0D:E4:E8:91:DD:EE:CA
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "TUBITAK Kamu SM SSL Kok Sertifikasi - Surum 1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\322\061\013\060\011\006\003\125\004\006\023\002\124\122
\061\030\060\026\006\003\125\004\007\023\017\107\145\142\172\145
\040\055\040\113\157\143\141\145\154\151\061\102\060\100\006\003

```

\125\004\012\023\071\124\165\162\153\151\171\145\040\102\151\154  
\151\155\163\145\154\040\166\145\040\124\145\153\156\157\154\157  
\152\151\153\040\101\162\141\163\164\151\162\155\141\040\113\165  
\162\165\155\165\040\055\040\124\125\102\111\124\101\113\061\055  
\060\053\006\003\125\004\013\023\044\113\141\155\165\040\123\145  
\162\164\151\146\151\153\141\163\171\157\156\040\115\145\162\153  
\145\172\151\040\055\040\113\141\155\165\040\123\115\061\066\060  
\064\006\003\125\004\003\023\055\124\125\102\111\124\101\113\040  
\113\141\155\165\040\123\115\040\123\123\114\040\113\157\153\040  
\123\145\162\164\151\146\151\153\141\163\151\040\055\040\123\165  
\162\165\155\040\061

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\322\061\013\060\011\006\003\125\004\006\023\002\124\122  
\061\030\060\026\006\003\125\004\007\023\017\107\145\142\172\145  
\040\055\040\113\157\143\141\145\154\151\061\102\060\100\006\003  
\125\004\012\023\071\124\165\162\153\151\171\145\040\102\151\154  
\151\155\163\145\154\040\166\145\040\124\145\153\156\157\154\157  
\152\151\153\040\101\162\141\163\164\151\162\155\141\040\113\165  
\162\165\155\165\040\055\040\124\125\102\111\124\101\113\061\055  
\060\053\006\003\125\004\013\023\044\113\141\155\165\040\123\145  
\162\164\151\146\151\153\141\163\171\157\156\040\115\145\162\153  
\145\172\151\040\055\040\113\141\155\165\040\123\115\061\066\060  
\064\006\003\125\004\003\023\055\124\125\102\111\124\101\113\040  
\113\141\155\165\040\123\115\040\123\123\114\040\113\157\153\040  
\123\145\162\164\151\146\151\153\141\163\151\040\055\040\123\165  
\162\165\155\040\061

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\001

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\143\060\202\003\113\240\003\002\001\002\002\001\001  
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060  
\201\322\061\013\060\011\006\003\125\004\006\023\002\124\122\061  
\030\060\026\006\003\125\004\007\023\017\107\145\142\172\145\040  
\055\040\113\157\143\141\145\154\151\061\102\060\100\006\003\125  
\004\012\023\071\124\165\162\153\151\171\145\040\102\151\154\151  
\155\163\145\154\040\166\145\040\124\145\153\156\157\154\157\152  
\151\153\040\101\162\141\163\164\151\162\155\141\040\113\165\162  
\165\155\165\040\055\040\124\125\102\111\124\101\113\061\055\060  
\053\006\003\125\004\013\023\044\113\141\155\165\040\123\145\162  
\164\151\146\151\153\141\163\171\157\156\040\115\145\162\153\145  
\172\151\040\055\040\113\141\155\165\040\123\115\061\066\060\064  
\006\003\125\004\003\023\055\124\125\102\111\124\101\113\040\113  
\141\155\165\040\123\115\040\123\123\114\040\113\157\153\040\123  
\145\162\164\151\146\151\153\141\163\151\040\055\040\123\165\162

\165\155\040\061\060\036\027\015\061\063\061\061\062\065\060\070  
\062\065\065\065\132\027\015\064\063\061\060\062\065\060\070\062  
\065\065\065\132\060\201\322\061\013\060\011\006\003\125\004\006  
\023\002\124\122\061\030\060\026\006\003\125\004\007\023\017\107  
\145\142\172\145\040\055\040\113\157\143\141\145\154\151\061\102  
\060\100\006\003\125\004\012\023\071\124\165\162\153\151\171\145  
\040\102\151\154\151\155\163\145\154\040\166\145\040\124\145\153  
\156\157\154\157\152\151\153\040\101\162\141\163\164\151\162\155  
\141\040\113\165\162\165\155\165\040\055\040\124\125\102\111\124  
\101\113\061\055\060\053\006\003\125\004\013\023\044\113\141\155  
\165\040\123\145\162\164\151\146\151\153\141\163\171\157\156\040  
\115\145\162\153\145\172\151\040\055\040\113\141\155\165\040\123  
\115\061\066\060\064\006\003\125\004\003\023\055\124\125\102\111  
\124\101\113\040\113\141\155\165\040\123\115\040\123\123\114\040  
\113\157\153\040\123\145\162\164\151\146\151\153\141\163\151\040  
\055\040\123\165\162\165\155\040\061\060\202\001\042\060\015\006  
\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017  
\000\060\202\001\012\002\202\001\001\000\257\165\060\063\252\273  
\153\323\231\054\022\067\204\331\215\173\227\200\323\156\347\377  
\233\120\225\076\220\225\126\102\327\031\174\046\204\215\222\372  
\001\035\072\017\342\144\070\267\214\274\350\210\371\213\044\253  
\056\243\365\067\344\100\216\030\045\171\203\165\037\073\377\154  
\250\305\306\126\370\264\355\212\104\243\253\154\114\374\035\320  
\334\357\150\275\317\344\252\316\360\125\367\242\064\324\203\153  
\067\174\034\302\376\265\003\354\127\316\274\264\265\305\355\000  
\017\123\067\052\115\364\117\014\203\373\206\317\313\376\214\116  
\275\207\371\247\213\041\127\234\172\337\003\147\211\054\235\227  
\141\247\020\270\125\220\177\016\055\047\070\164\337\347\375\332  
\116\022\343\115\025\042\002\310\340\340\374\017\255\212\327\311  
\124\120\314\073\017\312\026\200\204\320\121\126\303\216\126\177  
\211\042\063\057\346\205\012\275\245\250\033\066\336\323\334\054  
\155\073\307\023\275\131\043\054\346\345\244\367\330\013\355\352  
\220\100\104\250\225\273\223\325\320\200\064\266\106\170\016\037  
\000\223\106\341\356\351\371\354\117\027\002\003\001\000\001\243  
\102\060\100\060\035\006\003\125\035\016\004\026\004\024\145\077  
\307\212\206\306\074\335\074\124\134\065\370\072\355\122\014\107  
\127\310\060\016\006\003\125\035\017\001\001\377\004\004\003\002  
\001\006\060\017\006\003\125\035\023\001\001\377\004\005\060\003  
\001\001\377\060\015\006\011\052\206\110\206\367\015\001\001\013  
\005\000\003\202\001\001\000\052\077\341\361\062\216\256\341\230  
\134\113\136\317\153\036\152\011\322\042\251\022\307\136\127\175  
\163\126\144\200\204\172\223\344\011\271\020\315\237\052\047\341  
\000\167\276\110\310\065\250\201\237\344\270\054\311\177\016\260  
\322\113\067\135\352\271\325\013\136\064\275\364\163\051\303\355  
\046\025\234\176\010\123\212\130\215\320\113\050\337\301\263\337  
\040\363\371\343\343\072\337\314\234\224\330\116\117\303\153\027  
\267\367\162\350\255\146\063\265\045\123\253\340\370\114\251\235  
\375\362\015\272\256\271\331\252\306\153\371\223\273\256\253\270



```
\227\074\003\032\272\103\306\226\271\105\162\070\263\247\241\226
\075\221\173\176\300\041\123\114\207\355\362\013\124\225\121\223
\325\042\245\015\212\361\223\016\076\124\016\260\330\311\116\334
\362\061\062\126\352\144\371\352\265\235\026\146\102\162\363\177
\323\261\061\103\374\244\216\027\361\155\043\253\224\146\370\255
\373\017\010\156\046\055\177\027\007\011\262\214\373\120\300\237
\226\215\317\266\375\000\235\132\024\232\277\002\104\365\301\302
\237\042\136\242\017\241\343
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE
```

```
Trust for "TUBITAK Kamu SM SSL Kok Sertifikasi - Surum 1"
```

```
Issuer: CN=TUBITAK Kamu SM SSL Kok Sertifikasi - Surum 1,OU=Kamu Sertifikasyon Merkezi - Kamu
SM,O=Turkiye Bilimsel ve Teknolojik Arastirma Kurumu - TUBITAK,L=Gebze - Kocaeli,C=TR
```

```
Serial Number: 1 (0x1)
```

```
Subject: CN=TUBITAK Kamu SM SSL Kok Sertifikasi - Surum 1,OU=Kamu Sertifikasyon Merkezi - Kamu
SM,O=Turkiye Bilimsel ve Teknolojik Arastirma Kurumu - TUBITAK,L=Gebze - Kocaeli,C=TR
```

```
Not Valid Before: Mon Nov 25 08:25:55 2013
```

```
Not Valid After : Sun Oct 25 08:25:55 2043
```

```
Fingerprint (SHA-256):
```

```
46:ED:C3:68:90:46:D5:3A:45:3F:B3:10:4A:B8:0D:CA:EC:65:8B:26:60:EA:16:29:DD:7E:86:79:90:64:87:16
```

```
Fingerprint (SHA1): 31:43:64:9B:EC:CE:27:EC:ED:3A:3F:0B:8F:0D:E4:E8:91:DD:EE:CA
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "TUBITAK Kamu SM SSL Kok Sertifikasi - Surum 1"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\061\103\144\233\354\316\047\354\355\072\077\013\217\015\344\350
\221\335\356\312
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\334\000\201\334\151\057\076\057\260\073\366\075\132\221\216\111
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\201\322\061\013\060\011\006\003\125\004\006\023\002\124\122
\061\030\060\026\006\003\125\004\007\023\017\107\145\142\172\145
\040\055\040\113\157\143\141\145\154\151\061\102\060\100\006\003
\125\004\012\023\071\124\165\162\153\151\171\145\040\102\151\154
\151\155\163\145\154\040\166\145\040\124\145\153\156\157\154\157
\152\151\153\040\101\162\141\163\164\151\162\155\141\040\113\165
\162\165\155\165\040\055\040\124\125\102\111\124\101\113\061\055
\060\053\006\003\125\004\013\023\044\113\141\155\165\040\123\145
\162\164\151\146\151\153\141\163\171\157\156\040\115\145\162\153
\145\172\151\040\055\040\113\141\155\165\040\123\115\061\066\060
\064\006\003\125\004\003\023\055\124\125\102\111\124\101\113\040
```

```
\113\141\155\165\040\123\115\040\123\123\114\040\113\157\153\040
\123\145\162\164\151\146\151\153\141\163\151\040\055\040\123\165
\162\165\155\040\061
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\001\001
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "GDCA TrustAUTH R5 ROOT"

#

# Issuer: CN=GDCA TrustAUTH R5 ROOT,O="GUANG DONG CERTIFICATE AUTHORITY  
CO.,LTD.",C=CN

# Serial Number:7d:09:97:fe:f0:47:ea:7a

# Subject: CN=GDCA TrustAUTH R5 ROOT,O="GUANG DONG CERTIFICATE AUTHORITY  
CO.,LTD.",C=CN

# Not Valid Before: Wed Nov 26 05:13:15 2014

# Not Valid After : Mon Dec 31 15:59:59 2040

# Fingerprint (SHA-256):

BF:FF:8F:D0:44:33:48:7D:6A:8A:A6:0C:1A:29:76:7A:9F:C2:BB:B0:5E:42:0F:71:3A:13:B9:92:89:1D:38:93

# Fingerprint (SHA1): 0F:36:38:5B:81:1A:25:C3:9B:31:4E:83:CA:E9:34:66:70:CC:74:B4

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "GDCA TrustAUTH R5 ROOT"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

```
\060\142\061\013\060\011\006\003\125\004\006\023\002\103\116\061
```

```
\062\060\060\006\003\125\004\012\014\051\107\125\101\116\107\040
```

```
\104\117\116\107\040\103\105\122\124\111\106\111\103\101\124\105
```

```
\040\101\125\124\110\117\122\111\124\131\040\103\117\056\054\114
```

```
\124\104\056\061\037\060\035\006\003\125\004\003\014\026\107\104
```

```
\103\101\040\124\162\165\163\164\101\125\124\110\040\122\065\040
```

```
\122\117\117\124
```

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\142\061\013\060\011\006\003\125\004\006\023\002\103\116\061
```

```
\062\060\060\006\003\125\004\012\014\051\107\125\101\116\107\040
```

```
\104\117\116\107\040\103\105\122\124\111\106\111\103\101\124\105
```

```
\040\101\125\124\110\117\122\111\124\131\040\103\117\056\054\114
```

```
\124\104\056\061\037\060\035\006\003\125\004\003\014\026\107\104
```

```
\103\101\040\124\162\165\163\164\101\125\124\110\040\122\065\040
```

\122\117\117\124

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\010\175\011\227\376\360\107\352\172

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\210\060\202\003\160\240\003\002\001\002\002\010\175  
\011\227\376\360\107\352\172\060\015\006\011\052\206\110\206\367  
\015\001\001\013\005\000\060\142\061\013\060\011\006\003\125\004  
\006\023\002\103\116\061\062\060\060\006\003\125\004\012\014\051  
\107\125\101\116\107\040\104\117\116\107\040\103\105\122\124\111  
\106\111\103\101\124\105\040\101\125\124\110\117\122\111\124\131  
\040\103\117\056\054\114\124\104\056\061\037\060\035\006\003\125  
\004\003\014\026\107\104\103\101\040\124\162\165\163\164\101\125  
\124\110\040\122\065\040\122\117\117\124\060\036\027\015\061\064  
\061\061\062\066\060\065\061\063\061\065\132\027\015\064\060\061  
\062\063\061\061\065\065\071\065\071\132\060\142\061\013\060\011  
\006\003\125\004\006\023\002\103\116\061\062\060\060\006\003\125  
\004\012\014\051\107\125\101\116\107\040\104\117\116\107\040\103  
\105\122\124\111\106\111\103\101\124\105\040\101\125\124\110\117  
\122\111\124\131\040\103\117\056\054\114\124\104\056\061\037\060  
\035\006\003\125\004\003\014\026\107\104\103\101\040\124\162\165  
\163\164\101\125\124\110\040\122\065\040\122\117\117\124\060\202  
\002\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005  
\000\003\202\002\017\000\060\202\002\012\002\202\002\001\000\331  
\243\026\360\310\164\164\167\233\357\063\015\073\006\176\125\374  
\265\140\217\166\206\022\102\175\126\146\076\210\202\355\162\143  
\016\236\213\335\064\054\002\121\121\303\031\375\131\124\204\311  
\361\153\263\114\260\351\350\106\135\070\306\242\247\056\021\127  
\272\202\025\242\234\217\155\260\231\112\012\362\353\211\160\143  
\116\171\304\267\133\275\242\135\261\362\101\002\053\255\251\072  
\243\354\171\012\354\137\072\343\375\357\200\074\255\064\233\032  
\253\210\046\173\126\242\202\206\037\353\065\211\203\177\137\256  
\051\116\075\266\156\354\256\301\360\047\233\256\343\364\354\357  
\256\177\367\206\075\162\172\353\245\373\131\116\247\353\225\214  
\042\071\171\341\055\010\217\314\274\221\270\101\367\024\301\043  
\251\303\255\232\105\104\263\262\327\054\315\306\051\342\120\020  
\256\134\313\202\216\027\030\066\175\227\346\210\232\260\115\064  
\011\364\054\271\132\146\052\260\027\233\236\036\166\235\112\146  
\061\101\337\077\373\305\006\357\033\266\176\032\106\066\367\144  
\143\073\343\071\030\043\347\147\165\024\325\165\127\222\067\275  
\276\152\033\046\120\362\066\046\006\220\305\160\001\144\155\166  
\146\341\221\333\156\007\300\141\200\056\262\056\057\214\160\247  
\321\073\074\263\221\344\156\266\304\073\160\362\154\222\227\011  
\315\107\175\030\300\363\273\236\017\326\213\256\007\266\132\017  
\316\013\014\107\247\345\076\270\275\175\307\233\065\240\141\227  
\072\101\165\027\314\053\226\167\052\222\041\036\331\225\166\040  
\147\150\317\015\275\337\326\037\011\152\232\342\314\163\161\244

\057\175\022\200\267\123\060\106\136\113\124\231\017\147\311\245  
\310\362\040\301\202\354\235\021\337\302\002\373\032\073\321\355  
\040\232\357\145\144\222\020\015\052\342\336\160\361\030\147\202  
\214\141\336\270\274\321\057\234\373\017\320\053\355\033\166\271  
\344\071\125\370\370\241\035\270\252\200\000\114\202\347\262\177  
\011\270\274\060\240\057\015\365\122\236\216\367\222\263\012\000  
\035\000\124\227\006\340\261\007\331\307\017\134\145\175\074\155  
\131\127\344\355\245\215\351\100\123\237\025\113\240\161\366\032  
\041\343\332\160\006\041\130\024\207\205\167\171\252\202\171\002  
\003\001\000\001\243\102\060\100\060\035\006\003\125\035\016\004  
\026\004\024\342\311\100\237\115\316\350\232\241\174\317\016\077  
\145\305\051\210\152\031\121\060\017\006\003\125\035\023\001\001  
\377\004\005\060\003\001\001\377\060\016\006\003\125\035\017\001  
\001\377\004\004\003\002\001\206\060\015\006\011\052\206\110\206  
\367\015\001\001\013\005\000\003\202\002\001\000\321\111\127\340  
\247\314\150\130\272\001\017\053\031\315\215\260\141\105\254\021  
\355\143\120\151\370\037\177\276\026\217\375\235\353\013\252\062  
\107\166\322\147\044\355\275\174\063\062\227\052\307\005\206\146  
\015\027\175\024\025\033\324\353\375\037\232\366\136\227\151\267  
\032\045\244\012\263\221\077\137\066\254\213\354\127\250\076\347  
\201\212\030\127\071\205\164\032\102\307\351\133\023\137\217\371  
\010\351\222\164\215\365\107\322\253\073\326\373\170\146\116\066  
\175\371\351\222\351\004\336\375\111\143\374\155\373\024\161\223  
\147\057\107\112\267\271\377\036\052\163\160\106\060\277\132\362  
\057\171\245\341\215\014\331\371\262\143\067\214\067\145\205\160  
\152\134\133\011\162\271\255\143\074\261\335\370\374\062\277\067  
\206\344\273\216\230\047\176\272\037\026\341\160\021\362\003\337  
\045\142\062\047\046\030\062\204\237\377\000\072\023\272\232\115  
\364\117\270\024\160\042\261\312\053\220\316\051\301\160\364\057  
\235\177\362\220\036\326\132\337\267\106\374\346\206\372\313\340  
\040\166\172\272\246\313\365\174\336\142\245\261\213\356\336\202  
\146\212\116\072\060\037\077\200\313\255\047\272\014\136\327\320  
\261\126\312\167\161\262\265\165\241\120\251\100\103\027\302\050  
\331\317\122\213\133\310\143\324\102\076\240\063\172\106\056\367  
\012\040\106\124\176\152\117\061\361\201\176\102\164\070\145\163  
\047\356\306\174\270\216\327\245\072\327\230\241\234\214\020\125  
\323\333\113\354\100\220\362\315\156\127\322\142\016\174\127\223  
\261\247\155\315\235\203\273\052\347\345\266\073\161\130\255\375  
\321\105\274\132\221\356\123\025\157\323\105\011\165\156\272\220  
\135\036\004\317\067\337\036\250\146\261\214\346\040\152\357\374  
\110\116\164\230\102\257\051\157\056\152\307\373\175\321\146\061  
\042\314\206\000\176\146\203\014\102\364\275\064\222\303\032\352  
\117\312\176\162\115\013\160\214\246\110\273\246\241\024\366\373  
\130\104\231\024\256\252\013\223\151\240\051\045\112\245\313\053  
\335\212\146\007\026\170\025\127\161\033\354\365\107\204\363\236  
\061\067\172\325\177\044\255\344\274\375\375\314\156\203\350\014  
\250\267\101\154\007\335\275\074\206\227\057\322

END

```

CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "GDCA TrustAUTH R5 ROOT"
Issuer: CN=GDCA TrustAUTH R5 ROOT,O="GUANG DONG CERTIFICATE AUTHORITY
CO.,LTD.",C=CN
Serial Number:7d:09:97:fe:f0:47:ea:7a
Subject: CN=GDCA TrustAUTH R5 ROOT,O="GUANG DONG CERTIFICATE AUTHORITY
CO.,LTD.",C=CN
Not Valid Before: Wed Nov 26 05:13:15 2014
Not Valid After : Mon Dec 31 15:59:59 2040
Fingerprint (SHA-256):
BF:FF:8F:D0:44:33:48:7D:6A:8A:A6:0C:1A:29:76:7A:9F:C2:BB:B0:5E:42:0F:71:3A:13:B9:92:89:1D:38:93
Fingerprint (SHA1): 0F:36:38:5B:81:1A:25:C3:9B:31:4E:83:CA:E9:34:66:70:CC:74:B4
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GDCA TrustAUTH R5 ROOT"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\017\066\070\133\201\032\045\303\233\061\116\203\312\351\064\146
\160\314\164\264
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\143\314\331\075\064\065\134\157\123\243\342\010\160\110\037\264
END
CKA_ISSUER MULTILINE_OCTAL
\060\142\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\062\060\060\006\003\125\004\012\014\051\107\125\101\116\107\040
\104\117\116\107\040\103\105\122\124\111\106\111\103\101\124\105
\040\101\125\124\110\117\122\111\124\131\040\103\117\056\054\114
\124\104\056\061\037\060\035\006\003\125\004\003\014\026\107\104
\103\101\040\124\162\165\163\164\101\125\124\110\040\122\065\040
\122\117\117\124
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\175\011\227\376\360\107\352\172
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "TrustCor RootCert CA-1"
#
Issuer: CN=TrustCor RootCert CA-1,OU=TrustCor Certificate Authority,O=TrustCor Systems S. de

```

```
R.L.,L=Panama City,ST=Panama,C=PA
Serial Number:00:da:9b:ec:71:f3:03:b0:19
Subject: CN=TrustCor RootCert CA-1,OU=TrustCor Certificate Authority,O=TrustCor Systems S. de
R.L.,L=Panama City,ST=Panama,C=PA
Not Valid Before: Thu Feb 04 12:32:16 2016
Not Valid After : Mon Dec 31 17:23:16 2029
Fingerprint (SHA-256):
D4:0E:9C:86:CD:8F:E4:68:C1:77:69:59:F4:9E:A7:74:FA:54:86:84:B6:C4:06:F3:90:92:61:F4:DC:E2:57:5C
Fingerprint (SHA1): FF:BD:CD:E7:82:C8:43:5E:3C:6F:26:86:5C:CA:A8:3A:45:5B:C3:0A
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "TrustCor RootCert CA-1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\244\061\013\060\011\006\003\125\004\006\023\002\120\101
\061\017\060\015\006\003\125\004\010\014\006\120\141\156\141\155
\141\061\024\060\022\006\003\125\004\007\014\013\120\141\156\141
\155\141\040\103\151\164\171\061\044\060\042\006\003\125\004\012
\014\033\124\162\165\163\164\103\157\162\040\123\171\163\164\145
\155\163\040\123\056\040\144\145\040\122\056\114\056\061\047\060
\045\006\003\125\004\013\014\036\124\162\165\163\164\103\157\162
\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164
\150\157\162\151\164\171\061\037\060\035\006\003\125\004\003\014
\026\124\162\165\163\164\103\157\162\040\122\157\157\164\103\145
\162\164\040\103\101\055\061
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\244\061\013\060\011\006\003\125\004\006\023\002\120\101
\061\017\060\015\006\003\125\004\010\014\006\120\141\156\141\155
\141\061\024\060\022\006\003\125\004\007\014\013\120\141\156\141
\155\141\040\103\151\164\171\061\044\060\042\006\003\125\004\012
\014\033\124\162\165\163\164\103\157\162\040\123\171\163\164\145
\155\163\040\123\056\040\144\145\040\122\056\114\056\061\047\060
\045\006\003\125\004\013\014\036\124\162\165\163\164\103\157\162
\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164
\150\157\162\151\164\171\061\037\060\035\006\003\125\004\003\014
\026\124\162\165\163\164\103\157\162\040\122\157\157\164\103\145
\162\164\040\103\101\055\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\011\000\332\233\354\161\363\003\260\031
END
CKA_VALUE MULTILINE_OCTAL
\060\202\004\060\060\202\003\030\240\003\002\001\002\002\011\000
\332\233\354\161\363\003\260\031\060\015\006\011\052\206\110\206
```

\367\015\001\001\013\005\000\060\201\244\061\013\060\011\006\003  
\125\004\006\023\002\120\101\061\017\060\015\006\003\125\004\010  
\014\006\120\141\156\141\155\141\061\024\060\022\006\003\125\004  
\007\014\013\120\141\156\141\155\141\040\103\151\164\171\061\044  
\060\042\006\003\125\004\012\014\033\124\162\165\163\164\103\157  
\162\040\123\171\163\164\145\155\163\040\123\056\040\144\145\040  
\122\056\114\056\061\047\060\045\006\003\125\004\013\014\036\124  
\162\165\163\164\103\157\162\040\103\145\162\164\151\146\151\143  
\141\164\145\040\101\165\164\150\157\162\151\164\171\061\037\060  
\035\006\003\125\004\003\014\026\124\162\165\163\164\103\157\162  
\040\122\157\157\164\103\145\162\164\040\103\101\055\061\060\036  
\027\015\061\066\060\062\060\064\061\062\063\062\061\066\132\027  
\015\062\071\061\062\063\061\061\067\062\063\061\066\132\060\201  
\244\061\013\060\011\006\003\125\004\006\023\002\120\101\061\017  
\060\015\006\003\125\004\010\014\006\120\141\156\141\155\141\061  
\024\060\022\006\003\125\004\007\014\013\120\141\156\141\155\141  
\040\103\151\164\171\061\044\060\042\006\003\125\004\012\014\033  
\124\162\165\163\164\103\157\162\040\123\171\163\164\145\155\163  
\040\123\056\040\144\145\040\122\056\114\056\061\047\060\045\006  
\003\125\004\013\014\036\124\162\165\163\164\103\157\162\040\103  
\145\162\164\151\146\151\143\141\164\145\040\101\165\164\150\157  
\162\151\164\171\061\037\060\035\006\003\125\004\003\014\026\124  
\162\165\163\164\103\157\162\040\122\157\157\164\103\145\162\164  
\040\103\101\055\061\060\202\001\042\060\015\006\011\052\206\110  
\206\367\015\001\001\001\005\000\003\202\001\017\000\060\202\001  
\012\002\202\001\001\000\277\216\267\225\342\302\046\022\153\063  
\031\307\100\130\012\253\131\252\215\000\243\374\200\307\120\173  
\216\324\040\046\272\062\022\330\043\124\111\045\020\042\230\235  
\106\322\301\311\236\116\033\056\054\016\070\363\032\045\150\034  
\246\132\005\346\036\213\110\277\230\226\164\076\151\312\351\265  
\170\245\006\274\325\000\136\011\012\362\047\172\122\374\055\325  
\261\352\264\211\141\044\363\032\023\333\251\317\122\355\014\044  
\272\271\236\354\176\000\164\372\223\255\154\051\222\256\121\264  
\273\323\127\277\263\363\250\215\234\364\044\113\052\326\231\236  
\364\236\376\300\176\102\072\347\013\225\123\332\267\150\016\220  
\114\373\160\077\217\112\054\224\363\046\335\143\151\251\224\330  
\020\116\305\107\010\220\231\033\027\115\271\154\156\357\140\225  
\021\216\041\200\265\275\240\163\330\320\262\167\304\105\352\132  
\046\373\146\166\166\370\006\037\141\155\017\125\305\203\267\020  
\126\162\006\007\245\363\261\032\003\005\144\016\235\132\212\326  
\206\160\033\044\336\376\050\212\053\320\152\260\374\172\242\334  
\262\171\016\213\145\017\002\003\001\000\001\243\143\060\141\060  
\035\006\003\125\035\016\004\026\004\024\356\153\111\074\172\077  
\015\343\261\011\267\212\310\253\031\237\163\063\120\347\060\037  
\006\003\125\035\043\004\030\060\026\200\024\356\153\111\074\172  
\077\015\343\261\011\267\212\310\253\031\237\163\063\120\347\060  
\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377  
\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\206

\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\003  
\202\001\001\000\045\030\324\221\217\023\356\217\036\035\021\123  
\332\055\104\051\031\240\036\153\061\236\115\016\236\255\075\134  
\101\157\225\053\044\241\171\230\072\070\066\373\273\146\236\110  
\377\220\220\357\075\324\270\233\264\207\165\077\040\233\316\162  
\317\241\125\301\115\144\242\031\006\241\007\063\014\013\051\345  
\361\352\253\243\354\265\012\164\220\307\175\162\362\327\134\237  
\221\357\221\213\267\334\355\146\242\317\216\146\073\274\237\072  
\002\340\047\335\026\230\300\225\324\012\244\344\201\232\165\224  
\065\234\220\137\210\067\006\255\131\225\012\260\321\147\323\031  
\312\211\347\062\132\066\034\076\202\250\132\223\276\306\320\144  
\221\266\317\331\266\030\317\333\176\322\145\243\246\304\216\027  
\061\301\373\176\166\333\323\205\343\130\262\167\172\166\073\154  
\057\120\034\347\333\366\147\171\037\365\202\225\232\007\247\024  
\257\217\334\050\041\147\011\322\326\115\132\034\031\034\216\167  
\134\303\224\044\075\062\153\113\176\324\170\224\203\276\067\115  
\316\137\307\036\116\074\340\211\063\225\013\017\245\062\326\074  
\132\171\054\031

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "TrustCor RootCert CA-1"

# Issuer: CN=TrustCor RootCert CA-1,OU=TrustCor Certificate Authority,O=TrustCor Systems S. de  
R.L.,L=Panama City,ST=Panama,C=PA

# Serial Number:00:da:9b:ec:71:f3:03:b0:19

# Subject: CN=TrustCor RootCert CA-1,OU=TrustCor Certificate Authority,O=TrustCor Systems S. de  
R.L.,L=Panama City,ST=Panama,C=PA

# Not Valid Before: Thu Feb 04 12:32:16 2016

# Not Valid After : Mon Dec 31 17:23:16 2029

# Fingerprint (SHA-256):

D4:0E:9C:86:CD:8F:E4:68:C1:77:69:59:F4:9E:A7:74:FA:54:86:84:B6:C4:06:F3:90:92:61:F4:DC:E2:57:5C

# Fingerprint (SHA1): FF:BD:CD:E7:82:C8:43:5E:3C:6F:26:86:5C:CA:A8:3A:45:5B:C3:0A

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "TrustCor RootCert CA-1"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\377\275\315\347\202\310\103\136\074\157\046\206\134\312\250\072  
\105\133\303\012

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\156\205\361\334\032\000\323\042\325\262\262\254\153\067\005\105

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\244\061\013\060\011\006\003\125\004\006\023\002\120\101



```
\061\017\060\015\006\003\125\004\010\014\006\120\141\156\141\155
\141\061\024\060\022\006\003\125\004\007\014\013\120\141\156\141
\155\141\040\103\151\164\171\061\044\060\042\006\003\125\004\012
\014\033\124\162\165\163\164\103\157\162\040\123\171\163\164\145
\155\163\040\123\056\040\144\145\040\122\056\114\056\061\047\060
\045\006\003\125\004\013\014\036\124\162\165\163\164\103\157\162
\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164
\150\157\162\151\164\171\061\037\060\035\006\003\125\004\003\014
\026\124\162\165\163\164\103\157\162\040\122\157\157\164\103\145
\162\164\040\103\101\055\061
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\011\000\332\233\354\161\363\003\260\031
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "TrustCor RootCert CA-2"

#

# Issuer: CN=TrustCor RootCert CA-2,OU=TrustCor Certificate Authority,O=TrustCor Systems S. de  
R.L.,L=Panama City,ST=Panama,C=PA

# Serial Number:25:a1:df:ca:33:cb:59:02

# Subject: CN=TrustCor RootCert CA-2,OU=TrustCor Certificate Authority,O=TrustCor Systems S. de  
R.L.,L=Panama City,ST=Panama,C=PA

# Not Valid Before: Thu Feb 04 12:32:23 2016

# Not Valid After : Sun Dec 31 17:26:39 2034

# Fingerprint (SHA-256):

07:53:E9:40:37:8C:1B:D5:E3:83:6E:39:5D:AE:A5:CB:83:9E:50:46:F1:BD:0E:AE:19:51:CF:10:FE:C7:C9:65

# Fingerprint (SHA1): B8:BE:6D:CB:56:F1:55:B9:63:D4:12:CA:4E:06:34:C7:94:B2:1C:C0

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "TrustCor RootCert CA-2"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

```
\060\201\244\061\013\060\011\006\003\125\004\006\023\002\120\101
\061\017\060\015\006\003\125\004\010\014\006\120\141\156\141\155
\141\061\024\060\022\006\003\125\004\007\014\013\120\141\156\141
\155\141\040\103\151\164\171\061\044\060\042\006\003\125\004\012
\014\033\124\162\165\163\164\103\157\162\040\123\171\163\164\145
\155\163\040\123\056\040\144\145\040\122\056\114\056\061\047\060
\045\006\003\125\004\013\014\036\124\162\165\163\164\103\157\162
\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164
\150\157\162\151\164\171\061\037\060\035\006\003\125\004\003\014
```

\026\124\162\165\163\164\103\157\162\040\122\157\157\164\103\145  
\162\164\040\103\101\055\062

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\244\061\013\060\011\006\003\125\004\006\023\002\120\101  
\061\017\060\015\006\003\125\004\010\014\006\120\141\156\141\155  
\141\061\024\060\022\006\003\125\004\007\014\013\120\141\156\141  
\155\141\040\103\151\164\171\061\044\060\042\006\003\125\004\012  
\014\033\124\162\165\163\164\103\157\162\040\123\171\163\164\145  
\155\163\040\123\056\040\144\145\040\122\056\114\056\061\047\060  
\045\006\003\125\004\013\014\036\124\162\165\163\164\103\157\162  
\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164  
\150\157\162\151\164\171\061\037\060\035\006\003\125\004\003\014  
\026\124\162\165\163\164\103\157\162\040\122\157\157\164\103\145  
\162\164\040\103\101\055\062

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\010\045\241\337\312\063\313\131\002

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\006\057\060\202\004\027\240\003\002\001\002\002\010\045  
\241\337\312\063\313\131\002\060\015\006\011\052\206\110\206\367  
\015\001\001\013\005\000\060\201\244\061\013\060\011\006\003\125  
\004\006\023\002\120\101\061\017\060\015\006\003\125\004\010\014  
\006\120\141\156\141\155\141\061\024\060\022\006\003\125\004\007  
\014\013\120\141\156\141\155\141\040\103\151\164\171\061\044\060  
\042\006\003\125\004\012\014\033\124\162\165\163\164\103\157\162  
\040\123\171\163\164\145\155\163\040\123\056\040\144\145\040\122  
\056\114\056\061\047\060\045\006\003\125\004\013\014\036\124\162  
\165\163\164\103\157\162\040\103\145\162\164\151\146\151\143\141  
\164\145\040\101\165\164\150\157\162\151\164\171\061\037\060\035  
\006\003\125\004\003\014\026\124\162\165\163\164\103\157\162\040  
\122\157\157\164\103\145\162\164\040\103\101\055\062\060\036\027  
\015\061\066\060\062\060\064\061\062\063\062\062\063\132\027\015  
\063\064\061\062\063\061\061\067\062\066\063\071\132\060\201\244  
\061\013\060\011\006\003\125\004\006\023\002\120\101\061\017\060  
\015\006\003\125\004\010\014\006\120\141\156\141\155\141\061\024  
\060\022\006\003\125\004\007\014\013\120\141\156\141\155\141\040  
\103\151\164\171\061\044\060\042\006\003\125\004\012\014\033\124  
\162\165\163\164\103\157\162\040\123\171\163\164\145\155\163\040  
\123\056\040\144\145\040\122\056\114\056\061\047\060\045\006\003  
\125\004\013\014\036\124\162\165\163\164\103\157\162\040\103\145  
\162\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162  
\151\164\171\061\037\060\035\006\003\125\004\003\014\026\124\162  
\165\163\164\103\157\162\040\122\157\157\164\103\145\162\164\040  
\103\101\055\062\060\202\002\042\060\015\006\011\052\206\110\206  
\367\015\001\001\001\005\000\003\202\002\017\000\060\202\002\012

\002\202\002\001\000\247\040\156\302\052\242\142\044\225\220\166  
\310\070\176\200\322\253\301\233\145\005\224\364\301\012\020\325  
\002\254\355\237\223\307\207\310\260\047\053\102\014\075\012\076  
\101\132\236\165\335\215\312\340\233\354\150\062\244\151\222\150  
\214\013\201\016\126\240\076\032\335\054\045\024\202\057\227\323  
\144\106\364\124\251\334\072\124\055\061\053\231\202\362\331\052  
\327\357\161\000\270\061\244\276\172\044\007\303\102\040\362\212  
\324\222\004\033\145\126\114\154\324\373\266\141\132\107\043\264  
\330\151\264\267\072\320\164\074\014\165\241\214\116\166\241\351  
\333\052\245\073\372\316\260\377\176\152\050\375\047\034\310\261  
\351\051\361\127\156\144\264\320\301\025\155\016\276\056\016\106  
\310\136\364\121\376\357\016\143\072\073\161\272\317\157\131\312  
\014\343\233\135\111\270\114\342\127\261\230\212\102\127\234\166  
\357\357\275\321\150\250\322\364\011\273\167\065\276\045\202\010  
\304\026\054\104\040\126\251\104\021\167\357\135\264\035\252\136  
\153\076\213\062\366\007\057\127\004\222\312\365\376\235\302\351  
\350\263\216\114\113\002\061\331\344\074\110\202\047\367\030\202  
\166\110\072\161\261\023\241\071\325\056\305\064\302\035\142\205  
\337\003\376\115\364\257\075\337\134\133\215\372\160\341\245\176  
\047\307\206\056\152\217\022\306\204\136\103\121\120\234\031\233  
\170\346\374\366\355\107\176\173\075\146\357\023\023\210\137\074  
\241\143\373\371\254\207\065\237\363\202\236\244\077\012\234\061  
\151\213\231\244\210\112\216\156\146\115\357\026\304\017\171\050  
\041\140\015\205\026\175\327\124\070\361\222\126\375\265\063\114  
\203\334\327\020\237\113\375\306\370\102\275\272\174\163\002\340  
\377\175\315\133\341\324\254\141\173\127\325\112\173\133\324\205  
\130\047\135\277\370\053\140\254\240\046\256\024\041\047\306\167  
\232\063\200\074\136\106\077\367\303\261\243\206\063\306\350\136  
\015\271\065\054\252\106\301\205\002\165\200\240\353\044\373\025  
\252\344\147\177\156\167\077\364\004\212\057\174\173\343\027\141  
\360\335\011\251\040\310\276\011\244\320\176\104\303\262\060\112  
\070\252\251\354\030\232\007\202\053\333\270\234\030\255\332\340  
\106\027\254\317\135\002\003\001\000\001\243\143\060\141\060\035  
\006\003\125\035\016\004\026\004\024\331\376\041\100\156\224\236  
\274\233\075\234\175\230\040\031\345\214\060\142\262\060\037\006  
\003\125\035\043\004\030\060\026\200\024\331\376\041\100\156\224  
\236\274\233\075\234\175\230\040\031\345\214\060\142\262\060\017  
\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060  
\016\006\003\125\035\017\001\001\377\004\004\003\002\001\206\060  
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\003\202  
\002\001\000\236\105\236\014\073\266\357\341\072\310\174\321\000  
\075\317\342\352\006\265\262\072\273\006\113\150\172\320\043\227  
\164\247\054\360\010\330\171\132\327\132\204\212\330\022\232\033  
\331\175\134\115\160\305\245\371\253\345\243\211\211\335\001\372  
\354\335\371\351\222\227\333\260\106\102\363\323\142\252\225\376  
\061\147\024\151\130\220\012\252\013\356\067\043\307\120\121\264  
\365\176\236\343\173\367\344\314\102\062\055\111\014\313\377\111  
\014\233\036\064\375\156\156\226\212\171\003\266\157\333\011\313

\375\137\145\024\067\341\070\365\363\141\026\130\344\265\155\015  
\013\004\033\077\120\055\177\263\307\172\032\026\200\140\370\212  
\037\351\033\052\306\371\272\001\032\151\277\322\130\307\124\127  
\010\217\341\071\140\167\113\254\131\204\032\210\361\335\313\117  
\170\327\347\341\063\055\374\356\101\372\040\260\276\313\367\070  
\224\300\341\320\205\017\273\355\054\163\253\355\376\222\166\032  
\144\177\133\015\063\011\007\063\173\006\077\021\244\134\160\074  
\205\300\317\343\220\250\203\167\372\333\346\305\214\150\147\020  
\147\245\122\055\360\304\231\217\177\277\321\153\342\265\107\326  
\331\320\205\231\115\224\233\017\113\215\356\000\132\107\035\021  
\003\254\101\030\257\207\267\157\014\072\217\312\317\334\003\301  
\242\011\310\345\375\200\136\310\140\102\001\033\032\123\132\273  
\067\246\267\274\272\204\351\036\154\032\324\144\332\324\103\376  
\223\213\113\362\054\171\026\020\324\223\013\210\217\241\330\206  
\024\106\221\107\233\050\044\357\127\122\116\134\102\234\252\367  
\111\354\047\350\100\036\263\246\211\042\162\234\365\015\063\264  
\130\243\060\073\335\324\152\124\223\276\032\115\363\223\224\367  
\374\204\013\077\204\040\134\064\003\104\305\332\255\274\012\301  
\002\317\036\345\224\331\363\216\133\330\114\360\235\354\141\027  
\273\024\062\124\014\002\051\223\036\222\206\366\177\357\347\222  
\005\016\131\335\231\010\056\056\372\234\000\122\323\305\146\051  
\344\247\227\104\244\016\050\201\023\065\305\366\157\144\346\101  
\304\325\057\314\064\105\045\317\101\000\226\075\112\056\302\226  
\230\117\116\112\234\227\267\333\037\222\062\310\377\017\121\156  
\326\354\011

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "TrustCor RootCert CA-2"

# Issuer: CN=TrustCor RootCert CA-2,OU=TrustCor Certificate Authority,O=TrustCor Systems S. de  
R.L.,L=Panama City,ST=Panama,C=PA

# Serial Number:25:a1:df:ca:33:cb:59:02

# Subject: CN=TrustCor RootCert CA-2,OU=TrustCor Certificate Authority,O=TrustCor Systems S. de  
R.L.,L=Panama City,ST=Panama,C=PA

# Not Valid Before: Thu Feb 04 12:32:23 2016

# Not Valid After : Sun Dec 31 17:26:39 2034

# Fingerprint (SHA-256):

07:53:E9:40:37:8C:1B:D5:E3:83:6E:39:5D:AE:A5:CB:83:9E:50:46:F1:BD:0E:AE:19:51:CF:10:FE:C7:C9:65

# Fingerprint (SHA1): B8:BE:6D:CB:56:F1:55:B9:63:D4:12:CA:4E:06:34:C7:94:B2:1C:C0

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "TrustCor RootCert CA-2"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\270\276\155\313\126\361\125\271\143\324\022\312\116\006\064\307

```

\224\262\034\300
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\242\341\370\030\013\272\105\325\307\101\052\273\067\122\105\144
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\244\061\013\060\011\006\003\125\004\006\023\002\120\101
\061\017\060\015\006\003\125\004\010\014\006\120\141\156\141\155
\141\061\024\060\022\006\003\125\004\007\014\013\120\141\156\141
\155\141\040\103\151\164\171\061\044\060\042\006\003\125\004\012
\014\033\124\162\165\163\164\103\157\162\040\123\171\163\164\145
\155\163\040\123\056\040\144\145\040\122\056\114\056\061\047\060
\045\006\003\125\004\013\014\036\124\162\165\163\164\103\157\162
\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164
\150\157\162\151\164\171\061\037\060\035\006\003\125\004\003\014
\026\124\162\165\163\164\103\157\162\040\122\157\157\164\103\145
\162\164\040\103\101\055\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\045\241\337\312\063\313\131\002
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "TrustCor ECA-1"
#
Issuer: CN=TrustCor ECA-1,OU=TrustCor Certificate Authority,O=TrustCor Systems S. de R.L.,L=Panama
City,ST=Panama,C=PA
Serial Number:00:84:82:2c:5f:1c:62:d0:40
Subject: CN=TrustCor ECA-1,OU=TrustCor Certificate Authority,O=TrustCor Systems S. de R.L.,L=Panama
City,ST=Panama,C=PA
Not Valid Before: Thu Feb 04 12:32:33 2016
Not Valid After : Mon Dec 31 17:28:07 2029
Fingerprint (SHA-256):
5A:88:5D:B1:9C:01:D9:12:C5:75:93:88:93:8C:AF:BB:DF:03:1A:B2:D4:8E:91:EE:15:58:9B:42:97:1D:03:9C
Fingerprint (SHA1): 58:D1:DF:95:95:67:6B:63:C0:F0:5B:1C:17:4D:8B:84:0B:C8:78:BD
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "TrustCor ECA-1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\234\061\013\060\011\006\003\125\004\006\023\002\120\101
\061\017\060\015\006\003\125\004\010\014\006\120\141\156\141\155

```

\141\061\024\060\022\006\003\125\004\007\014\013\120\141\156\141  
\155\141\040\103\151\164\171\061\044\060\042\006\003\125\004\012  
\014\033\124\162\165\163\164\103\157\162\040\123\171\163\164\145  
\155\163\040\123\056\040\144\145\040\122\056\114\056\061\047\060  
\045\006\003\125\004\013\014\036\124\162\165\163\164\103\157\162  
\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164  
\150\157\162\151\164\171\061\027\060\025\006\003\125\004\003\014  
\016\124\162\165\163\164\103\157\162\040\105\103\101\055\061

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\234\061\013\060\011\006\003\125\004\006\023\002\120\101  
\061\017\060\015\006\003\125\004\010\014\006\120\141\156\141\155  
\141\061\024\060\022\006\003\125\004\007\014\013\120\141\156\141  
\155\141\040\103\151\164\171\061\044\060\042\006\003\125\004\012  
\014\033\124\162\165\163\164\103\157\162\040\123\171\163\164\145  
\155\163\040\123\056\040\144\145\040\122\056\114\056\061\047\060  
\045\006\003\125\004\013\014\036\124\162\165\163\164\103\157\162  
\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164  
\150\157\162\151\164\171\061\027\060\025\006\003\125\004\003\014  
\016\124\162\165\163\164\103\157\162\040\105\103\101\055\061

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\011\000\204\202\054\137\034\142\320\100

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\040\060\202\003\010\240\003\002\001\002\002\011\000  
\204\202\054\137\034\142\320\100\060\015\006\011\052\206\110\206  
\367\015\001\001\013\005\000\060\201\234\061\013\060\011\006\003  
\125\004\006\023\002\120\101\061\017\060\015\006\003\125\004\010  
\014\006\120\141\156\141\155\141\061\024\060\022\006\003\125\004  
\007\014\013\120\141\156\141\155\141\040\103\151\164\171\061\044  
\060\042\006\003\125\004\012\014\033\124\162\165\163\164\103\157  
\162\040\123\171\163\164\145\155\163\040\123\056\040\144\145\040  
\122\056\114\056\061\047\060\045\006\003\125\004\013\014\036\124  
\162\165\163\164\103\157\162\040\103\145\162\164\151\146\151\143  
\141\164\145\040\101\165\164\150\157\162\151\164\171\061\027\060  
\025\006\003\125\004\003\014\016\124\162\165\163\164\103\157\162  
\040\105\103\101\055\061\060\036\027\015\061\066\060\062\060\064  
\061\062\063\062\063\063\132\027\015\062\071\061\062\063\061\061  
\067\062\070\060\067\132\060\201\234\061\013\060\011\006\003\125  
\004\006\023\002\120\101\061\017\060\015\006\003\125\004\010\014  
\006\120\141\156\141\155\141\061\024\060\022\006\003\125\004\007  
\014\013\120\141\156\141\155\141\040\103\151\164\171\061\044\060  
\042\006\003\125\004\012\014\033\124\162\165\163\164\103\157\162  
\040\123\171\163\164\145\155\163\040\123\056\040\144\145\040\122  
\056\114\056\061\047\060\045\006\003\125\004\013\014\036\124\162  
\165\163\164\103\157\162\040\103\145\162\164\151\146\151\143\141

\164\145\040\101\165\164\150\157\162\151\164\171\061\027\060\025  
\006\003\125\004\003\014\016\124\162\165\163\164\103\157\162\040  
\105\103\101\055\061\060\202\001\042\060\015\006\011\052\206\110  
\206\367\015\001\001\001\005\000\003\202\001\017\000\060\202\001  
\012\002\202\001\001\000\317\217\340\021\265\237\250\166\166\333  
\337\017\124\357\163\143\051\202\255\107\306\243\153\355\376\137  
\063\370\103\121\351\032\063\221\061\027\240\164\304\324\247\001  
\346\262\222\076\152\235\355\016\371\164\230\100\323\077\003\200  
\006\202\100\350\261\342\247\121\247\035\203\046\153\253\336\372  
\027\221\053\330\306\254\036\261\236\031\001\325\227\246\352\015  
\267\304\125\037\047\174\322\010\325\166\037\051\025\207\100\071  
\335\070\105\021\165\320\232\247\064\340\277\315\310\122\035\271  
\107\176\015\270\273\306\014\366\163\127\026\132\176\103\221\037  
\125\072\306\155\104\004\252\234\251\234\247\114\211\027\203\256  
\243\004\136\122\200\213\036\022\045\021\031\327\014\175\175\061  
\104\101\352\333\257\260\034\357\201\320\054\305\232\041\233\075  
\355\102\073\120\046\362\354\316\161\141\006\142\041\124\116\177  
\301\235\076\177\040\214\200\313\052\330\227\142\310\203\063\221  
\175\260\242\132\017\127\350\073\314\362\045\262\324\174\057\354  
\115\306\241\072\025\172\347\266\135\065\365\366\110\112\066\105  
\146\324\272\230\130\301\002\003\001\000\001\243\143\060\141\060  
\035\006\003\125\035\016\004\026\004\024\104\236\110\365\314\155  
\110\324\240\113\177\376\131\044\057\203\227\231\232\206\060\037  
\006\003\125\035\043\004\030\060\026\200\024\104\236\110\365\314  
\155\110\324\240\113\177\376\131\044\057\203\227\231\232\206\060  
\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377  
\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\206  
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\003  
\202\001\001\000\005\076\065\134\025\160\233\311\307\163\141\157  
\162\053\324\302\217\362\103\135\002\316\304\224\271\224\021\203  
\147\135\342\147\154\165\166\277\273\014\252\066\306\255\107\223  
\143\334\036\176\326\336\056\376\351\031\062\070\003\177\024\366  
\000\163\054\131\261\041\006\341\373\254\030\225\014\243\377\231  
\226\367\053\047\233\325\044\314\035\335\301\072\340\230\104\260  
\304\344\076\167\261\163\251\144\054\366\034\001\174\077\135\105  
\205\300\205\347\045\217\225\334\027\363\074\237\032\156\260\312  
\343\035\052\351\114\143\372\044\141\142\326\332\176\266\034\154  
\365\002\035\324\052\335\125\220\353\052\021\107\074\056\136\164  
\262\202\042\245\175\123\037\105\354\047\221\175\347\042\026\350  
\300\150\066\330\306\361\117\200\104\062\371\341\321\321\035\252  
\336\250\253\234\004\257\255\040\016\144\230\115\245\153\300\110  
\130\226\151\115\334\007\214\121\223\242\337\237\017\075\213\140  
\264\202\215\252\010\116\142\105\340\371\013\322\340\340\074\133  
\336\134\161\047\045\302\346\003\201\213\020\123\343\307\125\242  
\264\237\327\346

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "TrustCor ECA-1"

# Issuer: CN=TrustCor ECA-1,OU=TrustCor Certificate Authority,O=TrustCor Systems S. de R.L.,L=Panama City,ST=Panama,C=PA

# Serial Number:00:84:82:2c:5f:1c:62:d0:40

# Subject: CN=TrustCor ECA-1,OU=TrustCor Certificate Authority,O=TrustCor Systems S. de R.L.,L=Panama City,ST=Panama,C=PA

# Not Valid Before: Thu Feb 04 12:32:33 2016

# Not Valid After : Mon Dec 31 17:28:07 2029

# Fingerprint (SHA-256):

5A:88:5D:B1:9C:01:D9:12:C5:75:93:88:93:8C:AF:BB:DF:03:1A:B2:D4:8E:91:EE:15:58:9B:42:97:1D:03:9C

# Fingerprint (SHA1): 58:D1:DF:95:95:67:6B:63:C0:F0:5B:1C:17:4D:8B:84:0B:C8:78:BD

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "TrustCor ECA-1"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\130\321\337\225\225\147\153\143\300\360\133\034\027\115\213\204

\013\310\170\275

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\047\222\043\035\012\365\100\174\351\346\153\235\330\365\347\154

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\234\061\013\060\011\006\003\125\004\006\023\002\120\101

\061\017\060\015\006\003\125\004\010\014\006\120\141\156\141\155

\141\061\024\060\022\006\003\125\004\007\014\013\120\141\156\141

\155\141\040\103\151\164\171\061\044\060\042\006\003\125\004\012

\014\033\124\162\165\163\164\103\157\162\040\123\171\163\164\145

\155\163\040\123\056\040\144\145\040\122\056\114\056\061\047\060

\045\006\003\125\004\013\014\036\124\162\165\163\164\103\157\162

\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164

\150\157\162\151\164\171\061\027\060\025\006\003\125\004\003\014

\016\124\162\165\163\164\103\157\162\040\105\103\101\055\061

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\011\000\204\202\054\137\034\142\320\100

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "SSL.com Root Certification Authority RSA"

#



```
Issuer: CN=SSL.com Root Certification Authority RSA,O=SSL Corporation,L=Houston,ST=Texas,C=US
Serial Number:7b:2c:9b:d3:16:80:32:99
Subject: CN=SSL.com Root Certification Authority RSA,O=SSL Corporation,L=Houston,ST=Texas,C=US
Not Valid Before: Fri Feb 12 17:39:39 2016
Not Valid After : Tue Feb 12 17:39:39 2041
Fingerprint (SHA-256):
85:66:6A:56:2E:E0:BE:5C:E9:25:C1:D8:89:0A:6F:76:A8:7E:C1:6D:4D:7D:5F:29:EA:74:19:CF:20:12:3B:69
Fingerprint (SHA1): B7:AB:33:08:D1:EA:44:77:BA:14:80:12:5A:6F:BD:A9:36:49:0C:BB
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SSL.com Root Certification Authority RSA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\174\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\016\060\014\006\003\125\004\010\014\005\124\145\170\141\163\061
\020\060\016\006\003\125\004\007\014\007\110\157\165\163\164\157
\156\061\030\060\026\006\003\125\004\012\014\017\123\123\114\040
\103\157\162\160\157\162\141\164\151\157\156\061\061\060\057\006
\003\125\004\003\014\050\123\123\114\056\143\157\155\040\122\157
\157\164\040\103\145\162\164\151\146\151\143\141\164\151\157\156
\040\101\165\164\150\157\162\151\164\171\040\122\123\101
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\174\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\016\060\014\006\003\125\004\010\014\005\124\145\170\141\163\061
\020\060\016\006\003\125\004\007\014\007\110\157\165\163\164\157
\156\061\030\060\026\006\003\125\004\012\014\017\123\123\114\040
\103\157\162\160\157\162\141\164\151\157\156\061\061\060\057\006
\003\125\004\003\014\050\123\123\114\056\143\157\155\040\122\157
\157\164\040\103\145\162\164\151\146\151\143\141\164\151\157\156
\040\101\165\164\150\157\162\151\164\171\040\122\123\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\173\054\233\323\026\200\062\231
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\335\060\202\003\305\240\003\002\001\002\002\010\173
\054\233\323\026\200\062\231\060\015\006\011\052\206\110\206\367
\015\001\001\013\005\000\060\174\061\013\060\011\006\003\125\004
\006\023\002\125\123\061\016\060\014\006\003\125\004\010\014\005
\124\145\170\141\163\061\020\060\016\006\003\125\004\007\014\007
\110\157\165\163\164\157\156\061\030\060\026\006\003\125\004\012
\014\017\123\123\114\040\103\157\162\160\157\162\141\164\151\157
\156\061\061\060\057\006\003\125\004\003\014\050\123\123\114\056
\143\157\155\040\122\157\157\164\040\103\145\162\164\151\146\151
```

\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171  
\040\122\123\101\060\036\027\015\061\066\060\062\061\062\061\067  
\063\071\063\071\132\027\015\064\061\060\062\061\062\061\067\063  
\071\063\071\132\060\174\061\013\060\011\006\003\125\004\006\023  
\002\125\123\061\016\060\014\006\003\125\004\010\014\005\124\145  
\170\141\163\061\020\060\016\006\003\125\004\007\014\007\110\157  
\165\163\164\157\156\061\030\060\026\006\003\125\004\012\014\017  
\123\123\114\040\103\157\162\160\157\162\141\164\151\157\156\061  
\061\060\057\006\003\125\004\003\014\050\123\123\114\056\143\157  
\155\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141  
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\040\122  
\123\101\060\202\002\042\060\015\006\011\052\206\110\206\367\015  
\001\001\001\005\000\003\202\002\017\000\060\202\002\012\002\202  
\002\001\000\371\017\335\243\053\175\313\320\052\376\354\147\205  
\246\347\056\033\272\167\341\343\365\257\244\354\372\112\135\221  
\304\127\107\153\030\167\153\166\362\375\223\344\075\017\302\026  
\236\013\146\303\126\224\236\027\203\205\316\126\357\362\026\375  
\000\142\365\042\011\124\350\145\027\116\101\271\340\117\106\227  
\252\033\310\270\156\142\136\151\261\137\333\052\002\176\374\154  
\312\363\101\330\355\320\350\374\077\141\110\355\260\003\024\035  
\020\016\113\031\340\273\116\354\206\145\377\066\363\136\147\002  
\013\235\206\125\141\375\172\070\355\376\342\031\000\267\157\241  
\120\142\165\164\074\240\372\310\045\222\264\156\172\042\307\370  
\036\241\343\262\335\221\061\253\053\035\004\377\245\112\004\067  
\351\205\244\063\053\375\342\326\125\064\174\031\244\112\150\307  
\262\250\323\267\312\241\223\210\353\301\227\274\214\371\035\331  
\042\204\044\164\307\004\075\152\251\051\223\314\353\270\133\341  
\376\137\045\252\064\130\310\301\043\124\235\033\230\021\303\070  
\234\176\075\206\154\245\017\100\206\174\002\364\134\002\117\050  
\313\256\161\237\017\072\310\063\376\021\045\065\352\374\272\305  
\140\075\331\174\030\325\262\251\323\165\170\003\162\042\312\072  
\303\037\357\054\345\056\251\372\236\054\266\121\106\375\257\003  
\326\352\140\150\352\205\026\066\153\205\351\036\300\263\335\304  
\044\334\200\052\201\101\155\224\076\310\340\311\201\101\000\236  
\136\277\177\305\010\230\242\030\054\102\100\263\371\157\070\047  
\113\116\200\364\075\201\107\340\210\174\352\034\316\265\165\134  
\121\056\034\053\177\032\162\050\347\000\265\321\164\306\327\344  
\237\255\007\223\266\123\065\065\374\067\344\303\366\135\026\276  
\041\163\336\222\012\370\240\143\152\274\226\222\152\076\370\274  
\145\125\233\336\365\015\211\046\004\374\045\032\246\045\151\313  
\302\155\312\174\342\131\137\227\254\353\357\056\310\274\327\033  
\131\074\053\314\362\031\310\223\153\047\143\031\317\374\351\046  
\370\312\161\233\177\223\376\064\147\204\116\231\353\374\263\170  
\011\063\160\272\146\246\166\355\033\163\353\032\245\015\304\042  
\023\040\224\126\012\116\054\154\116\261\375\317\234\011\272\242  
\063\355\207\002\003\001\000\001\243\143\060\141\060\035\006\003  
\125\035\016\004\026\004\024\335\004\011\007\242\365\172\175\122  
\123\022\222\225\356\070\200\045\015\246\131\060\017\006\003\125

\035\023\001\001\377\004\005\060\003\001\001\377\060\037\006\003  
\125\035\043\004\030\060\026\200\024\335\004\011\007\242\365\172  
\175\122\123\022\222\225\356\070\200\045\015\246\131\060\016\006  
\003\125\035\017\001\001\377\004\004\003\002\001\206\060\015\006  
\011\052\206\110\206\367\015\001\001\013\005\000\003\202\002\001  
\000\040\030\021\224\051\373\046\235\034\036\036\160\141\361\225  
\162\223\161\044\255\150\223\130\216\062\257\033\263\160\003\374  
\045\053\164\205\220\075\170\152\364\271\213\245\227\073\265\030  
\221\273\036\247\371\100\133\221\371\125\231\257\036\021\320\134  
\035\247\146\343\261\224\007\014\062\071\246\352\033\260\171\330  
\035\234\160\104\343\212\335\304\371\225\037\212\070\103\077\001  
\205\245\107\247\075\106\262\274\345\042\150\367\173\234\330\054  
\076\012\041\310\055\063\254\277\305\201\231\061\164\301\165\161  
\305\276\261\360\043\105\364\235\153\374\031\143\235\243\274\004  
\306\030\013\045\273\123\211\017\263\200\120\336\105\356\104\177  
\253\224\170\144\230\323\366\050\335\207\330\160\145\164\373\016  
\271\023\353\247\017\141\251\062\226\314\336\273\355\143\114\030  
\273\251\100\367\240\124\156\040\210\161\165\030\352\172\264\064  
\162\340\043\047\167\134\266\220\352\206\045\100\253\357\063\017  
\313\237\202\276\242\040\373\366\265\055\032\346\302\205\261\164  
\017\373\310\145\002\244\122\001\107\335\111\042\301\277\330\353  
\153\254\176\336\354\143\063\025\267\043\010\217\306\017\215\101  
\132\335\216\305\271\217\345\105\077\170\333\272\322\033\100\261  
\376\161\115\077\340\201\242\272\136\264\354\025\340\223\335\010  
\037\176\341\125\231\013\041\336\223\236\012\373\346\243\111\275  
\066\060\376\347\167\262\240\165\227\265\055\201\210\027\145\040  
\367\332\220\000\237\311\122\314\062\312\065\174\365\075\017\330  
\053\327\365\046\154\311\006\064\226\026\352\160\131\032\062\171  
\171\013\266\210\177\017\122\110\075\277\154\330\242\104\056\321  
\116\267\162\130\323\211\023\225\376\104\253\370\327\213\033\156  
\234\274\054\240\133\325\152\000\257\137\067\341\325\372\020\013  
\230\234\206\347\046\217\316\360\354\156\212\127\013\200\343\116  
\262\300\240\143\141\220\272\125\150\067\164\152\266\222\333\237  
\241\206\042\266\145\047\016\354\266\237\102\140\344\147\302\265  
\332\101\013\304\323\213\141\033\274\372\037\221\053\327\104\007  
\136\272\051\254\331\305\351\357\123\110\132\353\200\361\050\130  
\041\315\260\006\125\373\047\077\123\220\160\251\004\036\127\047  
\271

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "SSL.com Root Certification Authority RSA"

# Issuer: CN=SSL.com Root Certification Authority RSA,O=SSL Corporation,L=Houston,ST=Texas,C=US

# Serial Number:7b:2c:9b:d3:16:80:32:99

# Subject: CN=SSL.com Root Certification Authority RSA,O=SSL Corporation,L=Houston,ST=Texas,C=US

# Not Valid Before: Fri Feb 12 17:39:39 2016

```

Not Valid After : Tue Feb 12 17:39:39 2041
Fingerprint (SHA-256):
85:66:6A:56:2E:E0:BE:5C:E9:25:C1:D8:89:0A:6F:76:A8:7E:C1:6D:4D:7D:5F:29:EA:74:19:CF:20:12:3B:69
Fingerprint (SHA1): B7:AB:33:08:D1:EA:44:77:BA:14:80:12:5A:6F:BD:A9:36:49:0C:BB
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SSL.com Root Certification Authority RSA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\267\253\063\010\321\352\104\167\272\024\200\022\132\157\275\251
\066\111\014\273
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\206\151\022\300\160\361\354\254\254\302\325\274\245\133\241\051
END
CKA_ISSUER MULTILINE_OCTAL
\060\174\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\016\060\014\006\003\125\004\010\014\005\124\145\170\141\163\061
\020\060\016\006\003\125\004\007\014\007\110\157\165\163\164\157
\156\061\030\060\026\006\003\125\004\012\014\017\123\123\114\040
\103\157\162\160\157\162\141\164\151\157\156\061\061\060\057\006
\003\125\004\003\014\050\123\123\114\056\143\157\155\040\122\157
\157\164\040\103\145\162\164\151\146\151\143\141\164\151\157\156
\040\101\165\164\150\157\162\151\164\171\040\122\123\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\173\054\233\323\026\200\062\231
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "SSL.com Root Certification Authority ECC"
#
Issuer: CN=SSL.com Root Certification Authority ECC,O=SSL Corporation,L=Houston,ST=Texas,C=US
Serial Number:75:e6:df:cb:c1:68:5b:a8
Subject: CN=SSL.com Root Certification Authority ECC,O=SSL Corporation,L=Houston,ST=Texas,C=US
Not Valid Before: Fri Feb 12 18:14:03 2016
Not Valid After : Tue Feb 12 18:14:03 2041
Fingerprint (SHA-256):
34:17:BB:06:CC:60:07:DA:1B:96:1C:92:0B:8A:B4:CE:3F:AD:82:0E:4A:A3:0B:9A:CB:C4:A7:4E:BD:CE:BC:65
Fingerprint (SHA1): C3:19:7C:39:24:E6:54:AF:1B:C4:AB:20:95:7A:E2:C3:0E:13:02:6A
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE

```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SSL.com Root Certification Authority ECC"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\174\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\016\060\014\006\003\125\004\010\014\005\124\145\170\141\163\061
\020\060\016\006\003\125\004\007\014\007\110\157\165\163\164\157
\156\061\030\060\026\006\003\125\004\012\014\017\123\123\114\040
\103\157\162\160\157\162\141\164\151\157\156\061\061\060\057\006
\003\125\004\003\014\050\123\123\114\056\143\157\155\040\122\157
\157\164\040\103\145\162\164\151\146\151\143\141\164\151\157\156
\040\101\165\164\150\157\162\151\164\171\040\105\103\103
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\174\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\016\060\014\006\003\125\004\010\014\005\124\145\170\141\163\061
\020\060\016\006\003\125\004\007\014\007\110\157\165\163\164\157
\156\061\030\060\026\006\003\125\004\012\014\017\123\123\114\040
\103\157\162\160\157\162\141\164\151\157\156\061\061\060\057\006
\003\125\004\003\014\050\123\123\114\056\143\157\155\040\122\157
\157\164\040\103\145\162\164\151\146\151\143\141\164\151\157\156
\040\101\165\164\150\157\162\151\164\171\040\105\103\103
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\165\346\337\313\301\150\133\250
END
CKA_VALUE MULTILINE_OCTAL
\060\202\002\215\060\202\002\024\240\003\002\001\002\002\010\165
\346\337\313\301\150\133\250\060\012\006\010\052\206\110\316\075
\004\003\002\060\174\061\013\060\011\006\003\125\004\006\023\002
\125\123\061\016\060\014\006\003\125\004\010\014\005\124\145\170
\141\163\061\020\060\016\006\003\125\004\007\014\007\110\157\165
\163\164\157\156\061\030\060\026\006\003\125\004\012\014\017\123
\123\114\040\103\157\162\160\157\162\141\164\151\157\156\061\061
\060\057\006\003\125\004\003\014\050\123\123\114\056\143\157\155
\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\101\165\164\150\157\162\151\164\171\040\105\103
\103\060\036\027\015\061\066\060\062\061\062\061\070\061\064\060
\063\132\027\015\064\061\060\062\061\062\061\070\061\064\060\063
\132\060\174\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\016\060\014\006\003\125\004\010\014\005\124\145\170\141\163
\061\020\060\016\006\003\125\004\007\014\007\110\157\165\163\164
\157\156\061\030\060\026\006\003\125\004\012\014\017\123\123\114
\040\103\157\162\160\157\162\141\164\151\157\156\061\061\060\057
\006\003\125\004\003\014\050\123\123\114\056\143\157\155\040\122
\157\157\164\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171\040\105\103\103\060
```

```
\166\060\020\006\007\052\206\110\316\075\002\001\006\005\053\201
\004\000\042\003\142\000\004\105\156\251\120\304\246\043\066\236
\137\050\215\027\313\226\042\144\077\334\172\216\035\314\010\263
\242\161\044\272\216\111\271\004\033\107\226\130\253\055\225\310
\355\236\010\065\310\047\353\211\214\123\130\353\142\212\376\360
\133\017\153\061\122\143\101\073\211\315\354\354\266\215\031\323
\064\007\334\273\306\006\177\302\105\225\354\313\177\250\043\340
\011\351\201\372\363\107\323\243\143\060\141\060\035\006\003\125
\035\016\004\026\004\024\202\321\205\163\060\347\065\004\323\216
\002\222\373\345\244\321\304\041\350\315\060\017\006\003\125\035
\023\001\001\377\004\005\060\003\001\001\377\060\037\006\003\125
\035\043\004\030\060\026\200\024\202\321\205\163\060\347\065\004
\323\216\002\222\373\345\244\321\304\041\350\315\060\016\006\003
\125\035\017\001\001\377\004\004\003\002\001\206\060\012\006\010
\052\206\110\316\075\004\003\002\003\147\000\060\144\002\060\157
\347\353\131\021\244\140\317\141\260\226\173\355\005\371\057\023
\221\334\355\345\374\120\153\021\106\106\263\034\041\000\142\273
\276\303\347\350\315\007\231\371\015\013\135\162\076\304\252\002
\060\037\274\272\013\342\060\044\373\174\155\200\125\012\231\076
\200\015\063\345\146\243\263\243\273\245\325\213\217\011\054\246
\135\176\342\360\007\010\150\155\322\174\151\156\137\337\345\152
\145
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "SSL.com Root Certification Authority ECC"

# Issuer: CN=SSL.com Root Certification Authority ECC,O=SSL Corporation,L=Houston,ST=Texas,C=US

# Serial Number:75:e6:df:cb:c1:68:5b:a8

# Subject: CN=SSL.com Root Certification Authority ECC,O=SSL Corporation,L=Houston,ST=Texas,C=US

# Not Valid Before: Fri Feb 12 18:14:03 2016

# Not Valid After : Tue Feb 12 18:14:03 2041

# Fingerprint (SHA-256):

34:17:BB:06:CC:60:07:DA:1B:96:1C:92:0B:8A:B4:CE:3F:AD:82:0E:4A:A3:0B:9A:CB:C4:A7:4E:BD:CE:BC:65

# Fingerprint (SHA1): C3:19:7C:39:24:E6:54:AF:1B:C4:AB:20:95:7A:E2:C3:0E:13:02:6A

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "SSL.com Root Certification Authority ECC"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\303\031\174\071\044\346\124\257\033\304\253\040\225\172\342\303
\016\023\002\152
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\056\332\344\071\177\234\217\067\321\160\237\046\027\121\072\216
```

END

CKA\_ISSUER MULTILINE\_OCTAL  
\060\174\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\016\060\014\006\003\125\004\010\014\005\124\145\170\141\163\061  
\020\060\016\006\003\125\004\007\014\007\110\157\165\163\164\157  
\156\061\030\060\026\006\003\125\004\012\014\017\123\123\114\040  
\103\157\162\160\157\162\141\164\151\157\156\061\061\060\057\006  
\003\125\004\003\014\050\123\123\114\056\143\157\155\040\122\157  
\157\164\040\103\145\162\164\151\146\151\143\141\164\151\157\156  
\040\101\165\164\150\157\162\151\164\171\040\105\103\103

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\010\165\346\337\313\301\150\133\250

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "SSL.com EV Root Certification Authority RSA R2"

#

# Issuer: CN=SSL.com EV Root Certification Authority RSA R2,O=SSL Corporation,L=Houston,ST=Texas,C=US

# Serial Number:56:b6:29:cd:34:bc:78:f6

# Subject: CN=SSL.com EV Root Certification Authority RSA R2,O=SSL

Corporation,L=Houston,ST=Texas,C=US

# Not Valid Before: Wed May 31 18:14:37 2017

# Not Valid After : Fri May 30 18:14:37 2042

# Fingerprint (SHA-256):

2E:7B:F1:6C:C2:24:85:A7:BB:E2:AA:86:96:75:07:61:B0:AE:39:BE:3B:2F:E9:D0:CC:6D:4E:F7:34:91:42:5C

# Fingerprint (SHA1): 74:3A:F0:52:9B:D0:32:A0:F4:4A:83:CD:D4:BA:A9:7B:7C:2E:C4:9A

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "SSL.com EV Root Certification Authority RSA R2"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\201\202\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\016\060\014\006\003\125\004\010\014\005\124\145\170\141\163  
\061\020\060\016\006\003\125\004\007\014\007\110\157\165\163\164  
\157\156\061\030\060\026\006\003\125\004\012\014\017\123\123\114  
\040\103\157\162\160\157\162\141\164\151\157\156\061\067\060\065  
\006\003\125\004\003\014\056\123\123\114\056\143\157\155\040\105  
\126\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141  
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\040\122  
\123\101\040\122\062

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\202\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\016\060\014\006\003\125\004\010\014\005\124\145\170\141\163  
\061\020\060\016\006\003\125\004\007\014\007\110\157\165\163\164  
\157\156\061\030\060\026\006\003\125\004\012\014\017\123\123\114  
\040\103\157\162\160\157\162\141\164\151\157\156\061\067\060\065  
\006\003\125\004\003\014\056\123\123\114\056\143\157\155\040\105  
\126\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141  
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\040\122  
\123\101\040\122\062

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\010\126\266\051\315\064\274\170\366

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\353\060\202\003\323\240\003\002\001\002\002\010\126  
\266\051\315\064\274\170\366\060\015\006\011\052\206\110\206\367  
\015\001\001\013\005\000\060\201\202\061\013\060\011\006\003\125  
\004\006\023\002\125\123\061\016\060\014\006\003\125\004\010\014  
\005\124\145\170\141\163\061\020\060\016\006\003\125\004\007\014  
\007\110\157\165\163\164\157\156\061\030\060\026\006\003\125\004  
\012\014\017\123\123\114\040\103\157\162\160\157\162\141\164\151  
\157\156\061\067\060\065\006\003\125\004\003\014\056\123\123\114  
\056\143\157\155\040\105\126\040\122\157\157\164\040\103\145\162  
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157  
\162\151\164\171\040\122\123\101\040\122\062\060\036\027\015\061  
\067\060\065\063\061\061\070\061\064\063\067\132\027\015\064\062  
\060\065\063\060\061\070\061\064\063\067\132\060\201\202\061\013  
\060\011\006\003\125\004\006\023\002\125\123\061\016\060\014\006  
\003\125\004\010\014\005\124\145\170\141\163\061\020\060\016\006  
\003\125\004\007\014\007\110\157\165\163\164\157\156\061\030\060  
\026\006\003\125\004\012\014\017\123\123\114\040\103\157\162\160  
\157\162\141\164\151\157\156\061\067\060\065\006\003\125\004\003  
\014\056\123\123\114\056\143\157\155\040\105\126\040\122\157\157  
\164\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040  
\101\165\164\150\157\162\151\164\171\040\122\123\101\040\122\062  
\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001  
\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001  
\000\217\066\145\100\341\326\115\300\327\264\351\106\332\153\352  
\063\107\315\114\371\175\175\276\275\055\075\360\333\170\341\206  
\245\331\272\011\127\150\355\127\076\240\320\010\101\203\347\050  
\101\044\037\343\162\025\320\001\032\373\136\160\043\262\313\237  
\071\343\317\305\116\306\222\155\046\306\173\273\263\332\047\235  
\012\206\351\201\067\005\376\360\161\161\354\303\034\351\143\242  
\027\024\235\357\033\147\323\205\125\002\002\326\111\311\314\132  
\341\261\367\157\062\237\311\324\073\210\101\250\234\275\313\253  
\333\155\173\011\037\242\114\162\220\332\053\010\374\317\074\124  
\316\147\017\250\317\135\226\031\013\304\343\162\353\255\321\175



\035\047\357\222\353\020\277\133\353\073\257\317\200\335\301\322  
\226\004\133\172\176\244\251\074\070\166\244\142\216\240\071\136  
\352\167\317\135\000\131\217\146\054\076\007\242\243\005\046\021  
\151\227\352\205\267\017\226\013\113\310\100\341\120\272\056\212  
\313\367\017\232\042\347\177\232\067\023\315\362\115\023\153\041  
\321\300\314\042\362\241\106\366\104\151\234\312\141\065\007\000  
\157\326\141\010\021\352\272\270\366\351\263\140\345\115\271\354  
\237\024\146\311\127\130\333\315\207\151\370\212\206\022\003\107  
\277\146\023\166\254\167\175\064\044\205\203\315\327\252\234\220  
\032\237\041\054\177\170\267\144\270\330\350\246\364\170\263\125  
\313\204\322\062\304\170\256\243\217\141\335\316\010\123\255\354  
\210\374\025\344\232\015\346\237\032\167\316\114\217\270\024\025  
\075\142\234\206\070\006\000\146\022\344\131\166\132\123\300\002  
\230\242\020\053\150\104\173\216\171\316\063\112\166\252\133\201  
\026\033\265\212\330\320\000\173\136\142\264\011\326\206\143\016  
\246\005\225\111\272\050\213\210\223\262\064\034\330\244\125\156  
\267\034\320\336\231\125\073\043\364\042\340\371\051\146\046\354  
\040\120\167\333\112\013\217\276\345\002\140\160\101\136\324\256  
\120\071\042\024\046\313\262\073\163\164\125\107\007\171\201\071  
\250\060\023\104\345\004\212\256\226\023\045\102\017\271\123\304  
\233\374\315\344\034\336\074\372\253\326\006\112\037\147\246\230  
\060\034\335\054\333\334\030\225\127\146\306\377\134\213\126\365  
\167\002\003\001\000\001\243\143\060\141\060\017\006\003\125\035  
\023\001\001\377\004\005\060\003\001\001\377\060\037\006\003\125  
\035\043\004\030\060\026\200\024\371\140\273\324\343\325\064\366  
\270\365\006\200\045\247\163\333\106\151\250\236\060\035\006\003  
\125\035\016\004\026\004\024\371\140\273\324\343\325\064\366\270  
\365\006\200\045\247\163\333\106\151\250\236\060\016\006\003\125  
\035\017\001\001\377\004\004\003\002\001\206\060\015\006\011\052  
\206\110\206\367\015\001\001\013\005\000\003\202\002\001\000\126  
\263\216\313\012\235\111\216\277\244\304\221\273\146\027\005\121  
\230\165\373\345\120\054\172\236\361\024\372\253\323\212\076\377  
\221\051\217\143\213\330\264\251\124\001\015\276\223\206\057\371  
\112\155\307\136\365\127\371\312\125\034\022\276\107\017\066\305  
\337\152\267\333\165\302\107\045\177\271\361\143\370\150\055\125  
\004\321\362\215\260\244\317\274\074\136\037\170\347\245\240\040  
\160\260\004\305\267\367\162\247\336\042\015\275\063\045\106\214  
\144\222\046\343\076\056\143\226\332\233\214\075\370\030\011\327  
\003\314\175\206\202\340\312\004\007\121\120\327\377\222\325\014  
\357\332\206\237\231\327\353\267\257\150\342\071\046\224\272\150  
\267\277\203\323\352\172\147\075\142\147\256\045\345\162\350\342  
\344\354\256\022\366\113\053\074\237\351\260\100\363\070\124\263  
\375\267\150\310\332\306\217\121\074\262\373\221\334\034\347\233  
\235\341\267\015\162\217\342\244\304\251\170\371\353\024\254\306  
\103\005\302\145\071\050\030\002\303\202\262\235\005\276\145\355  
\226\137\145\164\074\373\011\065\056\173\234\023\375\033\017\135  
\307\155\201\072\126\017\314\073\341\257\002\057\042\254\106\312  
\106\074\240\034\114\326\104\264\136\056\134\025\146\011\341\046

\051\376\306\122\141\272\261\163\377\303\014\234\345\154\152\224  
\077\024\312\100\026\225\204\363\131\251\254\137\114\141\223\155  
\321\073\314\242\225\014\042\246\147\147\104\056\271\331\322\212  
\101\263\146\013\132\373\175\043\245\362\032\260\377\336\233\203  
\224\056\321\077\337\222\267\221\257\005\073\145\307\240\154\261  
\315\142\022\303\220\033\343\045\316\064\274\157\167\166\261\020  
\303\367\005\032\300\326\257\164\142\110\027\167\222\151\220\141  
\034\336\225\200\164\124\217\030\034\303\363\003\320\277\244\103  
\165\206\123\030\172\012\056\011\034\066\237\221\375\202\212\042  
\113\321\016\120\045\335\313\003\014\027\311\203\000\010\116\065  
\115\212\213\355\360\002\224\146\054\104\177\313\225\047\226\027  
\255\011\060\254\266\161\027\156\213\027\366\034\011\324\055\073  
\230\245\161\323\124\023\331\140\363\365\113\146\117\372\361\356  
\040\022\215\264\254\127\261\105\143\241\254\166\251\302\373

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "SSL.com EV Root Certification Authority RSA R2"

# Issuer: CN=SSL.com EV Root Certification Authority RSA R2,O=SSL Corporation,L=Houston,ST=Texas,C=US

# Serial Number:56:b6:29:cd:34:bc:78:f6

# Subject: CN=SSL.com EV Root Certification Authority RSA R2,O=SSL Corporation,L=Houston,ST=Texas,C=US

# Not Valid Before: Wed May 31 18:14:37 2017

# Not Valid After : Fri May 30 18:14:37 2042

# Fingerprint (SHA-256):

2E:7B:F1:6C:C2:24:85:A7:BB:E2:AA:86:96:75:07:61:B0:AE:39:BE:3B:2F:E9:D0:CC:6D:4E:F7:34:91:42:5C

# Fingerprint (SHA1): 74:3A:F0:52:9B:D0:32:A0:F4:4A:83:CD:D4:BA:A9:7B:7C:2E:C4:9A

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "SSL.com EV Root Certification Authority RSA R2"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\164\072\360\122\233\320\062\240\364\112\203\315\324\272\251\173  
\174\056\304\232

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\341\036\061\130\032\256\124\123\002\366\027\152\021\173\115\225

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\202\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\016\060\014\006\003\125\004\010\014\005\124\145\170\141\163  
\061\020\060\016\006\003\125\004\007\014\007\110\157\165\163\164  
\157\156\061\030\060\026\006\003\125\004\012\014\017\123\123\114  
\040\103\157\162\160\157\162\141\164\151\157\156\061\067\060\065  
\006\003\125\004\003\014\056\123\123\114\056\143\157\155\040\105

```
\126\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\040\122
\123\101\040\122\062
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\010\126\266\051\315\064\274\170\366
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "SSL.com EV Root Certification Authority ECC"

#

# Issuer: CN=SSL.com EV Root Certification Authority ECC,O=SSL Corporation,L=Houston,ST=Texas,C=US

# Serial Number:2c:29:9c:5b:16:ed:05:95

# Subject: CN=SSL.com EV Root Certification Authority ECC,O=SSL Corporation,L=Houston,ST=Texas,C=US

# Not Valid Before: Fri Feb 12 18:15:23 2016

# Not Valid After : Tue Feb 12 18:15:23 2041

# Fingerprint (SHA-256):

```
22:A2:C1:F7:BD:ED:70:4C:C1:E7:01:B5:F4:08:C3:10:88:0F:E9:56:B5:DE:2A:4A:44:F9:9C:87:3A:25:A7:C8
```

# Fingerprint (SHA1): 4C:DD:51:A3:D1:F5:20:32:14:B0:C6:C5:32:23:03:91:C7:46:42:6D

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "SSL.com EV Root Certification Authority ECC"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

```
\060\177\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\016\060\014\006\003\125\004\010\014\005\124\145\170\141\163\061
\020\060\016\006\003\125\004\007\014\007\110\157\165\163\164\157
\156\061\030\060\026\006\003\125\004\012\014\017\123\123\114\040
\103\157\162\160\157\162\141\164\151\157\156\061\064\060\062\006
\003\125\004\003\014\053\123\123\114\056\143\157\155\040\105\126
\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\101\165\164\150\157\162\151\164\171\040\105\103
\103
```

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\177\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\016\060\014\006\003\125\004\010\014\005\124\145\170\141\163\061
\020\060\016\006\003\125\004\007\014\007\110\157\165\163\164\157
\156\061\030\060\026\006\003\125\004\012\014\017\123\123\114\040
\103\157\162\160\157\162\141\164\151\157\156\061\064\060\062\006
\003\125\004\003\014\053\123\123\114\056\143\157\155\040\105\126
```

\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164  
\151\157\156\040\101\165\164\150\157\162\151\164\171\040\105\103  
\103  
END  
CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL  
\002\010\054\051\234\133\026\355\005\225  
END  
CKA\_VALUE MULTILINE\_OCTAL  
\060\202\002\224\060\202\002\032\240\003\002\001\002\002\010\054  
\051\234\133\026\355\005\225\060\012\006\010\052\206\110\316\075  
\004\003\002\060\177\061\013\060\011\006\003\125\004\006\023\002  
\125\123\061\016\060\014\006\003\125\004\010\014\005\124\145\170  
\141\163\061\020\060\016\006\003\125\004\007\014\007\110\157\165  
\163\164\157\156\061\030\060\026\006\003\125\004\012\014\017\123  
\123\114\040\103\157\162\160\157\162\141\164\151\157\156\061\064  
\060\062\006\003\125\004\003\014\053\123\123\114\056\143\157\155  
\040\105\126\040\122\157\157\164\040\103\145\162\164\151\146\151  
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171  
\040\105\103\103\060\036\027\015\061\066\060\062\061\062\061\070  
\061\065\062\063\132\027\015\064\061\060\062\061\062\061\070\061  
\065\062\063\132\060\177\061\013\060\011\006\003\125\004\006\023  
\002\125\123\061\016\060\014\006\003\125\004\010\014\005\124\145  
\170\141\163\061\020\060\016\006\003\125\004\007\014\007\110\157  
\165\163\164\157\156\061\030\060\026\006\003\125\004\012\014\017  
\123\123\114\040\103\157\162\160\157\162\141\164\151\157\156\061  
\064\060\062\006\003\125\004\003\014\053\123\123\114\056\143\157  
\155\040\105\126\040\122\157\157\164\040\103\145\162\164\151\146  
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164  
\171\040\105\103\103\060\166\060\020\006\007\052\206\110\316\075  
\002\001\006\005\053\201\004\000\042\003\142\000\004\252\022\107  
\220\230\033\373\357\303\100\007\203\040\116\361\060\202\242\006  
\321\362\222\206\141\362\366\041\150\312\000\304\307\352\103\000  
\124\206\334\375\037\337\000\270\101\142\134\334\160\026\062\336  
\037\231\324\314\305\007\310\010\037\141\026\007\121\075\175\134  
\007\123\343\065\070\214\337\315\237\331\056\015\112\266\031\056  
\132\160\132\006\355\276\360\241\260\312\320\011\051\243\143\060  
\141\060\035\006\003\125\035\016\004\026\004\024\133\312\136\345  
\336\322\201\252\315\250\055\144\121\266\331\162\233\227\346\117  
\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001  
\377\060\037\006\003\125\035\043\004\030\060\026\200\024\133\312  
\136\345\336\322\201\252\315\250\055\144\121\266\331\162\233\227  
\346\117\060\016\006\003\125\035\017\001\001\377\004\004\003\002  
\001\206\060\012\006\010\052\206\110\316\075\004\003\002\003\150  
\000\060\145\002\061\000\212\346\100\211\067\353\351\325\023\331  
\312\324\153\044\363\260\075\207\106\130\032\354\261\337\157\373  
\126\272\160\153\307\070\314\350\261\214\117\017\367\361\147\166  
\016\203\320\036\121\217\002\060\075\366\043\050\046\114\306\140  
\207\223\046\233\262\065\036\272\326\367\074\321\034\316\372\045

\074\246\032\201\025\133\363\022\017\154\356\145\212\311\207\250  
\371\007\340\142\232\214\134\112

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "SSL.com EV Root Certification Authority ECC"

# Issuer: CN=SSL.com EV Root Certification Authority ECC,O=SSL Corporation,L=Houston,ST=Texas,C=US

# Serial Number:2c:29:9c:5b:16:ed:05:95

# Subject: CN=SSL.com EV Root Certification Authority ECC,O=SSL Corporation,L=Houston,ST=Texas,C=US

# Not Valid Before: Fri Feb 12 18:15:23 2016

# Not Valid After : Tue Feb 12 18:15:23 2041

# Fingerprint (SHA-256):

22:A2:C1:F7:BD:ED:70:4C:C1:E7:01:B5:F4:08:C3:10:88:0F:E9:56:B5:DE:2A:4A:44:F9:9C:87:3A:25:A7:C8

# Fingerprint (SHA1): 4C:DD:51:A3:D1:F5:20:32:14:B0:C6:C5:32:23:03:91:C7:46:42:6D

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "SSL.com EV Root Certification Authority ECC"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\114\335\121\243\321\365\040\062\024\260\306\305\062\043\003\221  
\307\106\102\155

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\131\123\042\145\203\102\001\124\300\316\102\271\132\174\362\220

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\177\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\016\060\014\006\003\125\004\010\014\005\124\145\170\141\163\061  
\020\060\016\006\003\125\004\007\014\007\110\157\165\163\164\157  
\156\061\030\060\026\006\003\125\004\012\014\017\123\123\114\040  
\103\157\162\160\157\162\141\164\151\157\156\061\064\060\062\006  
\003\125\004\003\014\053\123\123\114\056\143\157\155\040\105\126  
\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164  
\151\157\156\040\101\165\164\150\157\162\151\164\171\040\105\103  
\103

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\010\054\051\234\133\026\355\005\225

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

```

Certificate "GlobalSign Root CA - R6"
#
Issuer: CN=GlobalSign,O=GlobalSign,OU=GlobalSign Root CA - R6
Serial Number:45:e6:bb:03:83:33:c3:85:65:48:e6:ff:45:51
Subject: CN=GlobalSign,O=GlobalSign,OU=GlobalSign Root CA - R6
Not Valid Before: Wed Dec 10 00:00:00 2014
Not Valid After : Sun Dec 10 00:00:00 2034
Fingerprint (SHA-256):
2C:AB:EA:FE:37:D0:6C:A2:2A:BA:73:91:C0:03:3D:25:98:29:52:C4:53:64:73:49:76:3A:3A:B5:AD:6C:CF:69
Fingerprint (SHA1): 80:94:64:0E:B5:A7:A1:CA:11:9C:1F:DD:D5:9F:81:02:63:A7:FB:D1
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GlobalSign Root CA - R6"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\114\061\040\060\036\006\003\125\004\013\023\027\107\154\157
\142\141\154\123\151\147\156\040\122\157\157\164\040\103\101\040
\055\040\122\066\061\023\060\021\006\003\125\004\012\023\012\107
\154\157\142\141\154\123\151\147\156\061\023\060\021\006\003\125
\004\003\023\012\107\154\157\142\141\154\123\151\147\156
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\114\061\040\060\036\006\003\125\004\013\023\027\107\154\157
\142\141\154\123\151\147\156\040\122\157\157\164\040\103\101\040
\055\040\122\066\061\023\060\021\006\003\125\004\012\023\012\107
\154\157\142\141\154\123\151\147\156\061\023\060\021\006\003\125
\004\003\023\012\107\154\157\142\141\154\123\151\147\156
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\016\105\346\273\003\203\063\303\205\145\110\346\377\105\121
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\203\060\202\003\153\240\003\002\001\002\002\016\105
\346\273\003\203\063\303\205\145\110\346\377\105\121\060\015\006
\011\052\206\110\206\367\015\001\001\014\005\000\060\114\061\040
\060\036\006\003\125\004\013\023\027\107\154\157\142\141\154\123
\151\147\156\040\122\157\157\164\040\103\101\040\055\040\122\066
\061\023\060\021\006\003\125\004\012\023\012\107\154\157\142\141
\154\123\151\147\156\061\023\060\021\006\003\125\004\003\023\012
\107\154\157\142\141\154\123\151\147\156\060\036\027\015\061\064
\061\062\061\060\060\060\060\060\060\060\060\132\027\015\063\064\061
\062\061\060\060\060\060\060\060\060\132\060\114\061\040\060\036
\006\003\125\004\013\023\027\107\154\157\142\141\154\123\151\147
\156\040\122\157\157\164\040\103\101\040\055\040\122\066\061\023
\060\021\006\003\125\004\012\023\012\107\154\157\142\141\154\123

```

\151\147\156\061\023\060\021\006\003\125\004\003\023\012\107\154  
\157\142\141\154\123\151\147\156\060\202\002\042\060\015\006\011  
\052\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000  
\060\202\002\012\002\202\002\001\000\225\007\350\163\312\146\371  
\354\024\312\173\074\367\015\010\361\264\105\013\054\202\264\110  
\306\353\133\074\256\203\270\101\222\063\024\244\157\177\351\052  
\314\306\260\210\153\305\266\211\321\306\262\377\024\316\121\024  
\041\354\112\335\033\132\306\326\207\356\115\072\025\006\355\144  
\146\013\222\200\312\104\336\163\224\116\363\247\211\177\117\170  
\143\010\310\022\120\155\102\146\057\115\271\171\050\115\122\032  
\212\032\200\267\031\201\016\176\304\212\274\144\114\041\034\103  
\150\327\075\074\212\305\262\146\325\220\232\267\061\006\305\276  
\342\155\062\006\246\036\371\271\353\252\243\270\277\276\202\143  
\120\320\360\030\211\337\344\017\171\365\352\242\037\052\322\160  
\056\173\347\274\223\273\155\123\342\110\174\214\020\007\070\377  
\146\262\167\141\176\340\352\214\074\252\264\244\366\363\225\112  
\022\007\155\375\214\262\211\317\320\240\141\167\310\130\164\260  
\324\043\072\367\135\072\312\242\333\235\011\336\135\104\055\220  
\361\201\315\127\222\372\176\274\120\004\143\064\337\153\223\030  
\276\153\066\262\071\344\254\044\066\267\360\357\266\034\023\127  
\223\266\336\262\370\342\205\267\163\242\270\065\252\105\362\340  
\235\066\241\157\124\212\361\162\126\156\056\210\305\121\102\104  
\025\224\356\243\305\070\226\233\116\116\132\013\107\363\006\066  
\111\167\060\274\161\067\345\246\354\041\010\165\374\346\141\026  
\077\167\325\331\221\227\204\012\154\324\002\115\164\300\024\355  
\375\071\373\203\362\136\024\241\004\260\013\351\376\356\217\341  
\156\013\262\010\263\141\146\011\152\261\006\072\145\226\131\300  
\360\065\375\311\332\050\215\032\021\207\160\201\012\250\232\165  
\035\236\072\206\005\000\236\333\200\326\045\371\334\005\236\047  
\131\114\166\071\133\352\371\245\241\330\203\017\321\377\337\060  
\021\371\205\317\063\110\365\312\155\144\024\054\172\130\117\323  
\113\010\111\305\225\144\032\143\016\171\075\365\263\214\312\130  
\255\234\102\105\171\156\016\207\031\134\124\261\145\266\277\214  
\233\334\023\351\015\157\270\056\334\147\156\311\213\021\265\204  
\024\212\000\031\160\203\171\221\227\221\324\032\047\277\067\036  
\062\007\330\024\143\074\050\114\257\002\003\001\000\001\243\143  
\060\141\060\016\006\003\125\035\017\001\001\377\004\004\003\002  
\001\006\060\017\006\003\125\035\023\001\001\377\004\005\060\003  
\001\001\377\060\035\006\003\125\035\016\004\026\004\024\256\154  
\005\243\223\023\342\242\347\342\327\034\326\307\360\177\310\147  
\123\240\060\037\006\003\125\035\043\004\030\060\026\200\024\256  
\154\005\243\223\023\342\242\347\342\327\034\326\307\360\177\310  
\147\123\240\060\015\006\011\052\206\110\206\367\015\001\001\014  
\005\000\003\202\002\001\000\203\045\355\350\321\375\225\122\315  
\236\300\004\240\221\151\346\134\320\204\336\334\255\242\117\350  
\107\170\326\145\230\251\133\250\074\207\174\002\212\321\156\267  
\026\163\346\137\300\124\230\325\164\276\301\315\342\021\221\255  
\043\030\075\335\341\162\104\226\264\225\136\300\173\216\231\170

\026\103\023\126\127\263\242\263\073\265\167\334\100\162\254\243  
\353\233\065\076\261\010\041\241\347\304\103\067\171\062\276\265  
\347\234\054\114\274\103\051\231\216\060\323\254\041\340\343\035  
\372\330\007\063\166\124\000\042\052\271\115\040\056\160\150\332  
\345\123\374\203\134\323\235\362\377\104\014\104\146\362\322\343  
\275\106\000\032\155\002\272\045\135\215\241\061\121\335\124\106  
\034\115\333\231\226\357\032\034\004\134\246\025\357\170\340\171  
\376\135\333\076\252\114\125\375\232\025\251\157\341\246\373\337  
\160\060\351\303\356\102\106\355\302\223\005\211\372\175\143\173  
\077\320\161\201\174\000\350\230\256\016\170\064\303\045\373\257  
\012\237\040\153\335\073\023\217\022\214\342\101\032\110\172\163  
\240\167\151\307\266\134\177\202\310\036\376\130\033\050\053\250  
\154\255\136\155\300\005\322\173\267\353\200\376\045\067\376\002  
\233\150\254\102\135\303\356\365\314\334\360\120\165\322\066\151  
\234\346\173\004\337\156\006\151\266\336\012\011\110\131\207\353  
\173\024\140\172\144\252\151\103\357\221\307\114\354\030\335\154  
\357\123\055\214\231\341\136\362\162\076\317\124\310\275\147\354  
\244\017\114\105\377\323\271\060\043\007\114\217\020\277\206\226  
\331\231\132\264\231\127\034\244\314\273\025\211\123\272\054\005  
\017\344\304\236\031\261\030\064\325\114\235\272\355\367\037\257  
\044\225\004\170\250\003\273\356\201\345\332\137\174\213\112\241  
\220\164\045\247\263\076\113\310\054\126\275\307\310\357\070\342  
\134\222\360\171\367\234\204\272\164\055\141\001\040\176\176\321  
\362\117\007\131\137\213\055\103\122\353\106\014\224\341\365\146  
\107\171\167\325\124\133\037\255\044\067\313\105\132\116\240\104  
\110\310\330\260\231\305\025\204\011\366\326\111\111\300\145\270  
\346\032\161\156\240\250\361\202\350\105\076\154\326\002\327\012  
\147\203\005\132\311\244\020

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "GlobalSign Root CA - R6"

# Issuer: CN=GlobalSign,O=GlobalSign,OU=GlobalSign Root CA - R6

# Serial Number:45:e6:bb:03:83:33:c3:85:65:48:e6:ff:45:51

# Subject: CN=GlobalSign,O=GlobalSign,OU=GlobalSign Root CA - R6

# Not Valid Before: Wed Dec 10 00:00:00 2014

# Not Valid After : Sun Dec 10 00:00:00 2034

# Fingerprint (SHA-256):

2C:AB:EA:FE:37:D0:6C:A2:2A:BA:73:91:C0:03:3D:25:98:29:52:C4:53:64:73:49:76:3A:3A:B5:AD:6C:CF:69

# Fingerprint (SHA1): 80:94:64:0E:B5:A7:A1:CA:11:9C:1F:DD:D5:9F:81:02:63:A7:FB:D1

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "GlobalSign Root CA - R6"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL



\200\224\144\016\265\247\241\312\021\234\037\335\325\237\201\002

\143\247\373\321

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\117\335\007\344\324\042\144\071\036\014\067\102\352\321\306\256

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\114\061\040\060\036\006\003\125\004\013\023\027\107\154\157

\142\141\154\123\151\147\156\040\122\157\157\164\040\103\101\040

\055\040\122\066\061\023\060\021\006\003\125\004\012\023\012\107

\154\157\142\141\154\123\151\147\156\061\023\060\021\006\003\125

\004\003\023\012\107\154\157\142\141\154\123\151\147\156

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\016\105\346\273\003\203\063\303\205\145\110\346\377\105\121

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "OISTE WISeKey Global Root GC CA"

#

# Issuer: CN=OISTE WISeKey Global Root GC CA,OU=OISTE Foundation Endorsed,O=WISeKey,C=CH

# Serial Number:21:2a:56:0c:ae:da:0c:ab:40:45:bf:2b:a2:2d:3a:ea

# Subject: CN=OISTE WISeKey Global Root GC CA,OU=OISTE Foundation Endorsed,O=WISeKey,C=CH

# Not Valid Before: Tue May 09 09:48:34 2017

# Not Valid After : Fri May 09 09:58:33 2042

# Fingerprint (SHA-256):

85:60:F9:1C:36:24:DA:BA:95:70:B5:FE:A0:DB:E3:6F:F1:1A:83:23:BE:94:86:85:4F:B3:F3:4A:55:71:19:8D

# Fingerprint (SHA1): E0:11:84:5E:34:DE:BE:88:81:B9:9C:F6:16:26:D1:96:1F:C3:B9:31

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "OISTE WISeKey Global Root GC CA"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\155\061\013\060\011\006\003\125\004\006\023\002\103\110\061

\020\060\016\006\003\125\004\012\023\007\127\111\123\145\113\145

\171\061\042\060\040\006\003\125\004\013\023\031\117\111\123\124

\105\040\106\157\165\156\144\141\164\151\157\156\040\105\156\144

\157\162\163\145\144\061\050\060\046\006\003\125\004\003\023\037

\117\111\123\124\105\040\127\111\123\145\113\145\171\040\107\154

\157\142\141\154\040\122\157\157\164\040\107\103\040\103\101

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\155\061\013\060\011\006\003\125\004\006\023\002\103\110\061  
\020\060\016\006\003\125\004\012\023\007\127\111\123\145\113\145  
\171\061\042\060\040\006\003\125\004\013\023\031\117\111\123\124  
\105\040\106\157\165\156\144\141\164\151\157\156\040\105\156\144  
\157\162\163\145\144\061\050\060\046\006\003\125\004\003\023\037  
\117\111\123\124\105\040\127\111\123\145\113\145\171\040\107\154  
\157\142\141\154\040\122\157\157\164\040\107\103\040\103\101

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\041\052\126\014\256\332\014\253\100\105\277\053\242\055  
\072\352

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\002\151\060\202\001\357\240\003\002\001\002\002\020\041  
\052\126\014\256\332\014\253\100\105\277\053\242\055\072\352\060  
\012\006\010\052\206\110\316\075\004\003\003\060\155\061\013\060  
\011\006\003\125\004\006\023\002\103\110\061\020\060\016\006\003  
\125\004\012\023\007\127\111\123\145\113\145\171\061\042\060\040  
\006\003\125\004\013\023\031\117\111\123\124\105\040\106\157\165  
\156\144\141\164\151\157\156\040\105\156\144\157\162\163\145\144  
\061\050\060\046\006\003\125\004\003\023\037\117\111\123\124\105  
\040\127\111\123\145\113\145\171\040\107\154\157\142\141\154\040  
\122\157\157\164\040\107\103\040\103\101\060\036\027\015\061\067  
\060\065\060\071\060\071\064\070\063\064\132\027\015\064\062\060  
\065\060\071\060\071\065\070\063\063\132\060\155\061\013\060\011  
\006\003\125\004\006\023\002\103\110\061\020\060\016\006\003\125  
\004\012\023\007\127\111\123\145\113\145\171\061\042\060\040\006  
\003\125\004\013\023\031\117\111\123\124\105\040\106\157\165\156  
\144\141\164\151\157\156\040\105\156\144\157\162\163\145\144\061  
\050\060\046\006\003\125\004\003\023\037\117\111\123\124\105\040  
\127\111\123\145\113\145\171\040\107\154\157\142\141\154\040\122  
\157\157\164\040\107\103\040\103\101\060\166\060\020\006\007\052  
\206\110\316\075\002\001\006\005\053\201\004\000\042\003\142\000  
\004\114\351\120\300\306\017\162\030\274\330\361\272\263\211\342  
\171\112\243\026\247\153\124\044\333\121\377\352\364\011\044\303  
\013\042\237\313\152\047\202\201\015\322\300\257\061\344\164\202  
\156\312\045\331\214\165\235\361\333\320\232\242\113\041\176\026  
\247\143\220\322\071\324\261\207\170\137\030\226\017\120\033\065  
\067\017\152\306\334\331\023\115\244\216\220\067\346\275\133\061  
\221\243\124\060\122\060\016\006\003\125\035\017\001\001\377\004  
\004\003\002\001\006\060\017\006\003\125\035\023\001\001\377\004  
\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026\004  
\024\110\207\024\254\343\303\236\220\140\072\327\312\211\356\323  
\255\214\264\120\146\060\020\006\011\053\006\001\004\001\202\067  
\025\001\004\003\002\001\000\060\012\006\010\052\206\110\316\075  
\004\003\003\003\150\000\060\145\002\060\046\307\151\133\334\325  
\347\262\347\310\014\214\214\303\335\171\214\033\143\325\311\122

\224\116\115\202\112\163\036\262\200\204\251\045\300\114\132\155  
\111\051\140\170\023\342\176\110\353\144\002\061\000\333\064\040  
\062\010\377\232\111\002\266\210\336\024\257\135\154\231\161\215  
\032\077\213\327\340\242\066\206\034\007\202\072\166\123\375\302  
\242\355\357\173\260\200\117\130\017\113\123\071\275

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "OISTE WISEKey Global Root GC CA"

# Issuer: CN=OISTE WISEKey Global Root GC CA,OU=OISTE Foundation Endorsed,O=WISEKey,C=CH

# Serial Number:21:2a:56:0c:ae:da:0c:ab:40:45:bf:2b:a2:2d:3a:ea

# Subject: CN=OISTE WISEKey Global Root GC CA,OU=OISTE Foundation Endorsed,O=WISEKey,C=CH

# Not Valid Before: Tue May 09 09:48:34 2017

# Not Valid After : Fri May 09 09:58:33 2042

# Fingerprint (SHA-256):

85:60:F9:1C:36:24:DA:BA:95:70:B5:FE:A0:DB:E3:6F:F1:1A:83:23:BE:94:86:85:4F:B3:F3:4A:55:71:19:8D

# Fingerprint (SHA1): E0:11:84:5E:34:DE:BE:88:81:B9:9C:F6:16:26:D1:96:1F:C3:B9:31

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "OISTE WISEKey Global Root GC CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\340\021\204\136\064\336\276\210\201\271\234\366\026\046\321\226  
\037\303\271\061

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\251\326\271\055\057\223\144\370\245\151\312\221\351\150\007\043  
END

CKA\_ISSUER MULTILINE\_OCTAL

\060\155\061\013\060\011\006\003\125\004\006\023\002\103\110\061  
\020\060\016\006\003\125\004\012\023\007\127\111\123\145\113\145  
\171\061\042\060\040\006\003\125\004\013\023\031\117\111\123\124  
\105\040\106\157\165\156\144\141\164\151\157\156\040\105\156\144  
\157\162\163\145\144\061\050\060\046\006\003\125\004\003\023\037  
\117\111\123\124\105\040\127\111\123\145\113\145\171\040\107\154  
\157\142\141\154\040\122\157\157\164\040\107\103\040\103\101

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\041\052\126\014\256\332\014\253\100\105\277\053\242\055  
\072\352

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

```

#
Certificate "UCA Global G2 Root"
#
Issuer: CN=UCA Global G2 Root,O=UniTrust,C=CN
Serial Number:5d:df:b1:da:5a:a3:ed:5d:be:5a:65:20:65:03:90:ef
Subject: CN=UCA Global G2 Root,O=UniTrust,C=CN
Not Valid Before: Fri Mar 11 00:00:00 2016
Not Valid After : Mon Dec 31 00:00:00 2040
Fingerprint (SHA-256):
9B:EA:11:C9:76:FE:01:47:64:C1:BE:56:A6:F9:14:B5:A5:60:31:7A:BD:99:88:39:33:82:E5:16:1A:A0:49:3C
Fingerprint (SHA1): 28:F9:78:16:19:7A:FF:18:25:18:AA:44:FE:C1:A0:CE:5C:B6:4C:8A
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "UCA Global G2 Root"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\075\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\021\060\017\006\003\125\004\012\014\010\125\156\151\124\162\165
\163\164\061\033\060\031\006\003\125\004\003\014\022\125\103\101
\040\107\154\157\142\141\154\040\107\062\040\122\157\157\164
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\075\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\021\060\017\006\003\125\004\012\014\010\125\156\151\124\162\165
\163\164\061\033\060\031\006\003\125\004\003\014\022\125\103\101
\040\107\154\157\142\141\154\040\107\062\040\122\157\157\164
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\135\337\261\332\132\243\355\135\276\132\145\040\145\003
\220\357
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\106\060\202\003\056\240\003\002\001\002\002\020\135
\337\261\332\132\243\355\135\276\132\145\040\145\003\220\357\060
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\075
\061\013\060\011\006\003\125\004\006\023\002\103\116\061\021\060
\017\006\003\125\004\012\014\010\125\156\151\124\162\165\163\164
\061\033\060\031\006\003\125\004\003\014\022\125\103\101\040\107
\154\157\142\141\154\040\107\062\040\122\157\157\164\060\036\027
\015\061\066\060\063\061\061\060\060\060\060\060\060\132\027\015
\064\060\061\062\063\061\060\060\060\060\060\060\132\060\075\061
\013\060\011\006\003\125\004\006\023\002\103\116\061\021\060\017
\006\003\125\004\012\014\010\125\156\151\124\162\165\163\164\061
\033\060\031\006\003\125\004\003\014\022\125\103\101\040\107\154

```

\157\142\141\154\040\107\062\040\122\157\157\164\060\202\002\042  
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003  
\202\002\017\000\060\202\002\012\002\202\002\001\000\305\346\053  
\157\174\357\046\005\047\243\201\044\332\157\313\001\371\231\232  
\251\062\302\042\207\141\101\221\073\313\303\150\033\006\305\114  
\251\053\301\147\027\042\035\053\355\371\051\211\223\242\170\275  
\222\153\240\243\015\242\176\312\223\263\246\321\214\065\325\165  
\371\027\366\317\105\305\345\172\354\167\223\240\217\043\256\016  
\032\003\177\276\324\320\355\056\173\253\106\043\133\377\054\346  
\124\172\224\300\052\025\360\311\215\260\172\073\044\341\327\150  
\342\061\074\006\063\106\266\124\021\246\245\057\042\124\052\130  
\015\001\002\361\372\025\121\147\154\300\372\327\266\033\177\321  
\126\210\057\032\072\215\073\273\202\021\340\107\000\320\122\207  
\253\373\206\176\017\044\153\100\235\064\147\274\215\307\055\206  
\157\171\076\216\251\074\027\113\177\260\231\343\260\161\140\334  
\013\365\144\303\316\103\274\155\161\271\322\336\047\133\212\350  
\330\306\256\341\131\175\317\050\055\065\270\225\126\032\361\262  
\130\113\267\022\067\310\174\263\355\113\200\341\215\372\062\043  
\266\157\267\110\225\010\261\104\116\205\214\072\002\124\040\057  
\337\277\127\117\073\072\220\041\327\301\046\065\124\040\354\307  
\077\107\354\357\132\277\113\172\301\255\073\027\120\134\142\330  
\017\113\112\334\053\372\156\274\163\222\315\354\307\120\350\101  
\226\327\251\176\155\330\351\035\217\212\265\271\130\222\272\112  
\222\053\014\126\375\200\353\010\360\136\051\156\033\034\014\257  
\217\223\211\255\333\275\243\236\041\312\211\031\354\337\265\303  
\032\353\026\376\170\066\114\326\156\320\076\027\034\220\027\153  
\046\272\373\172\057\277\021\034\030\016\055\163\003\217\240\345  
\065\240\132\342\114\165\035\161\341\071\070\123\170\100\314\203  
\223\327\012\236\235\133\217\212\344\345\340\110\344\110\262\107  
\315\116\052\165\052\173\362\042\366\311\276\011\221\226\127\172  
\210\210\254\356\160\254\371\334\051\343\014\034\073\022\116\104  
\326\247\116\260\046\310\363\331\032\227\221\150\352\357\215\106  
\006\322\126\105\130\232\074\014\017\203\270\005\045\303\071\317  
\073\244\064\211\267\171\022\057\107\305\347\251\227\151\374\246  
\167\147\265\337\173\361\172\145\025\344\141\126\145\002\003\001  
\000\001\243\102\060\100\060\016\006\003\125\035\017\001\001\377  
\004\004\003\002\001\006\060\017\006\003\125\035\023\001\001\377  
\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026  
\004\024\201\304\214\314\365\344\060\377\245\014\010\137\214\025  
\147\041\164\001\337\337\060\015\006\011\052\206\110\206\367\015  
\001\001\013\005\000\003\202\002\001\000\023\145\042\365\216\053  
\255\104\344\313\377\271\150\346\303\200\110\075\004\173\372\043  
\057\172\355\066\332\262\316\155\366\346\236\345\137\130\217\313  
\067\062\241\310\145\266\256\070\075\065\033\076\274\073\266\004  
\320\274\371\111\365\233\367\205\305\066\266\313\274\370\310\071  
\325\344\137\007\275\025\124\227\164\312\312\355\117\272\272\144  
\166\237\201\270\204\105\111\114\215\157\242\353\261\314\321\303  
\224\332\104\302\346\342\352\030\350\242\037\047\005\272\327\345

\326\251\315\335\357\166\230\215\000\016\315\033\372\003\267\216  
\200\130\016\047\077\122\373\224\242\312\136\145\311\326\204\332  
\271\065\161\363\046\300\117\167\346\201\047\322\167\073\232\024  
\157\171\364\366\320\341\323\224\272\320\127\121\275\047\005\015  
\301\375\310\022\060\356\157\215\021\053\010\235\324\324\277\200  
\105\024\232\210\104\332\060\352\264\247\343\356\357\133\202\325  
\076\326\255\170\222\333\134\074\363\330\255\372\270\153\177\304  
\066\050\266\002\025\212\124\054\234\260\027\163\216\320\067\243  
\024\074\230\225\000\014\051\005\133\236\111\111\261\137\307\343  
\313\317\047\145\216\065\027\267\127\310\060\331\101\133\271\024  
\266\350\302\017\224\061\247\224\230\314\152\353\265\341\047\365  
\020\250\001\350\216\022\142\350\210\314\265\177\106\227\300\233  
\020\146\070\032\066\106\137\042\150\075\337\311\306\023\047\253  
\123\006\254\242\074\206\006\145\157\261\176\261\051\104\232\243  
\272\111\151\050\151\217\327\345\137\255\004\206\144\157\032\240  
\014\305\010\142\316\200\243\320\363\354\150\336\276\063\307\027  
\133\177\200\304\114\114\261\246\204\212\303\073\270\011\315\024  
\201\272\030\343\124\127\066\376\333\057\174\107\241\072\063\310  
\371\130\073\104\117\261\312\002\211\004\226\050\150\305\113\270  
\046\211\273\326\063\057\120\325\376\232\211\272\030\062\222\124  
\306\133\340\235\371\136\345\015\042\233\366\332\342\310\041\262  
\142\041\252\206\100\262\056\144\323\137\310\343\176\021\147\105  
\037\005\376\343\242\357\263\250\263\363\175\217\370\014\037\042  
\037\055\160\264\270\001\064\166\060\000\345\043\170\247\126\327  
\120\037\212\373\006\365\302\031\360\320

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "UCA Global G2 Root"

# Issuer: CN=UCA Global G2 Root,O=UniTrust,C=CN

# Serial Number:5d:df:b1:da:5a:a3:ed:5d:be:5a:65:20:65:03:90:ef

# Subject: CN=UCA Global G2 Root,O=UniTrust,C=CN

# Not Valid Before: Fri Mar 11 00:00:00 2016

# Not Valid After : Mon Dec 31 00:00:00 2040

# Fingerprint (SHA-256):

9B:EA:11:C9:76:FE:01:47:64:C1:BE:56:A6:F9:14:B5:A5:60:31:7A:BD:99:88:39:33:82:E5:16:1A:A0:49:3C

# Fingerprint (SHA1): 28:F9:78:16:19:7A:FF:18:25:18:AA:44:FE:C1:A0:CE:5C:B6:4C:8A

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "UCA Global G2 Root"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\050\371\170\026\031\172\377\030\045\030\252\104\376\301\240\316  
\134\266\114\212

END

```

CKA_CERT_MD5_HASH MULTILINE_OCTAL
\200\376\360\304\112\360\134\142\062\237\034\272\170\251\120\370
END
CKA_ISSUER MULTILINE_OCTAL
\060\075\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\021\060\017\006\003\125\004\012\014\010\125\156\151\124\162\165
\163\164\061\033\060\031\006\003\125\004\003\014\022\125\103\101
\040\107\154\157\142\141\154\040\107\062\040\122\157\157\164
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\135\337\261\332\132\243\355\135\276\132\145\040\145\003
\220\357
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "UCA Extended Validation Root"
#
Issuer: CN=UCA Extended Validation Root,O=UniTrust,C=CN
Serial Number:4f:d2:2b:8f:f5:64:c8:33:9e:4f:34:58:66:23:70:60
Subject: CN=UCA Extended Validation Root,O=UniTrust,C=CN
Not Valid Before: Fri Mar 13 00:00:00 2015
Not Valid After : Fri Dec 31 00:00:00 2038
Fingerprint (SHA-256):
D4:3A:F9:B3:54:73:75:5C:96:84:FC:06:D7:D8:CB:70:EE:5C:28:E7:73:FB:29:4E:B4:1E:E7:17:22:92:4D:24
Fingerprint (SHA1): A3:A1:B0:6F:24:61:23:4A:E3:36:A5:C2:37:FC:A6:FF:DD:F0:D7:3A
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "UCA Extended Validation Root"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\107\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\021\060\017\006\003\125\004\012\014\010\125\156\151\124\162\165
\163\164\061\045\060\043\006\003\125\004\003\014\034\125\103\101
\040\105\170\164\145\156\144\145\144\040\126\141\154\151\144\141
\164\151\157\156\040\122\157\157\164
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\107\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\021\060\017\006\003\125\004\012\014\010\125\156\151\124\162\165
\163\164\061\045\060\043\006\003\125\004\003\014\034\125\103\101
\040\105\170\164\145\156\144\145\144\040\126\141\154\151\144\141

```

\164\151\157\156\040\122\157\157\164

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\117\322\053\217\365\144\310\063\236\117\064\130\146\043  
\160\140

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\132\060\202\003\102\240\003\002\001\002\002\020\117  
\322\053\217\365\144\310\063\236\117\064\130\146\043\160\140\060  
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\107  
\061\013\060\011\006\003\125\004\006\023\002\103\116\061\021\060  
\017\006\003\125\004\012\014\010\125\156\151\124\162\165\163\164  
\061\045\060\043\006\003\125\004\003\014\034\125\103\101\040\105  
\170\164\145\156\144\145\144\040\126\141\154\151\144\141\164\151  
\157\156\040\122\157\157\164\060\036\027\015\061\065\060\063\061  
\063\060\060\060\060\060\132\027\015\063\070\061\062\063\061  
\060\060\060\060\060\060\132\060\107\061\013\060\011\006\003\125  
\004\006\023\002\103\116\061\021\060\017\006\003\125\004\012\014  
\010\125\156\151\124\162\165\163\164\061\045\060\043\006\003\125  
\004\003\014\034\125\103\101\040\105\170\164\145\156\144\145\144  
\040\126\141\154\151\144\141\164\151\157\156\040\122\157\157\164  
\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001  
\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001  
\000\251\011\007\050\023\002\260\231\340\144\252\036\103\026\172  
\163\261\221\240\165\076\250\372\343\070\000\172\354\211\152\040  
\017\213\305\260\233\063\003\132\206\306\130\206\325\301\205\273  
\117\306\234\100\115\312\276\356\151\226\270\255\201\060\232\174  
\222\005\353\005\053\232\110\320\270\166\076\226\310\040\273\322  
\260\361\217\330\254\105\106\377\252\147\140\264\167\176\152\037  
\074\032\122\172\004\075\007\074\205\015\204\320\037\166\012\367  
\152\024\337\162\343\064\174\127\116\126\001\076\171\361\252\051  
\073\154\372\370\217\155\115\310\065\337\256\353\334\044\356\171  
\105\247\205\266\005\210\336\210\135\045\174\227\144\147\011\331  
\277\132\025\005\206\363\011\036\354\130\062\063\021\363\167\144  
\260\166\037\344\020\065\027\033\362\016\261\154\244\052\243\163  
\374\011\037\036\062\031\123\021\347\331\263\054\056\166\056\241  
\243\336\176\152\210\011\350\362\007\212\370\262\315\020\347\342  
\163\100\223\273\010\321\077\341\374\013\224\263\045\357\174\246  
\327\321\257\237\377\226\232\365\221\173\230\013\167\324\176\350  
\007\322\142\265\225\071\343\363\361\155\017\016\145\204\212\143  
\124\305\200\266\340\236\113\175\107\046\247\001\010\135\321\210  
\236\327\303\062\104\372\202\112\012\150\124\177\070\123\003\314  
\244\000\063\144\121\131\013\243\202\221\172\136\354\026\302\363  
\052\346\142\332\052\333\131\142\020\045\112\052\201\013\107\007  
\103\006\160\207\322\372\223\021\051\172\110\115\353\224\307\160  
\115\257\147\325\121\261\200\040\001\001\264\172\010\246\220\177  
\116\340\357\007\101\207\257\152\245\136\213\373\317\120\262\232  
\124\257\303\211\272\130\055\365\060\230\261\066\162\071\176\111



\004\375\051\247\114\171\344\005\127\333\224\271\026\123\215\106  
\263\035\225\141\127\126\177\257\360\026\133\141\130\157\066\120  
\021\013\330\254\053\225\026\032\016\037\010\315\066\064\145\020  
\142\146\325\200\137\024\040\137\055\014\240\170\012\150\326\054  
\327\351\157\053\322\112\005\223\374\236\157\153\147\377\210\361  
\116\245\151\112\122\067\005\352\306\026\215\322\304\231\321\202  
\053\073\272\065\165\367\121\121\130\363\310\007\335\344\264\003  
\177\002\003\001\000\001\243\102\060\100\060\035\006\003\125\035  
\016\004\026\004\024\331\164\072\344\060\075\015\367\022\334\176  
\132\005\237\036\064\232\367\341\024\060\017\006\003\125\035\023  
\001\001\377\004\005\060\003\001\001\377\060\016\006\003\125\035  
\017\001\001\377\004\004\003\002\001\206\060\015\006\011\052\206  
\110\206\367\015\001\001\013\005\000\003\202\002\001\000\066\215  
\227\314\102\025\144\051\067\233\046\054\326\373\256\025\151\054  
\153\032\032\367\137\266\371\007\114\131\352\363\311\310\271\256  
\314\272\056\172\334\300\365\260\055\300\073\257\237\160\005\021  
\152\237\045\117\001\051\160\343\345\014\341\352\132\174\334\111  
\273\301\036\052\201\365\026\113\162\221\310\242\061\271\252\332  
\374\235\037\363\135\100\002\023\374\116\034\006\312\263\024\220  
\124\027\031\022\032\361\037\327\014\151\132\366\161\170\364\224  
\175\221\013\216\354\220\124\216\274\157\241\114\253\374\164\144  
\375\161\232\370\101\007\241\315\221\344\074\232\340\233\062\071  
\163\253\052\325\151\310\170\221\046\061\175\342\307\060\361\374  
\024\170\167\022\016\023\364\335\026\224\277\113\147\173\160\123  
\205\312\260\273\363\070\115\054\220\071\300\015\302\135\153\351  
\342\345\325\210\215\326\054\277\253\033\276\265\050\207\022\027  
\164\156\374\175\374\217\320\207\046\260\033\373\271\154\253\342  
\236\075\025\301\073\056\147\002\130\221\237\357\370\102\037\054  
\267\150\365\165\255\317\265\366\377\021\175\302\360\044\245\255  
\323\372\240\074\251\372\135\334\245\240\357\104\244\276\326\350  
\345\344\023\226\027\173\006\076\062\355\307\267\102\274\166\243  
\330\145\070\053\070\065\121\041\016\016\157\056\064\023\100\341  
\053\147\014\155\112\101\060\030\043\132\062\125\231\311\027\340  
\074\336\366\354\171\255\053\130\031\242\255\054\042\032\225\216  
\276\226\220\135\102\127\304\371\024\003\065\053\034\055\121\127  
\010\247\072\336\077\344\310\264\003\163\302\301\046\200\273\013  
\102\037\255\015\257\046\162\332\314\276\263\243\203\130\015\202  
\305\037\106\121\343\234\030\314\215\233\215\354\111\353\165\120  
\325\214\050\131\312\164\064\332\214\013\041\253\036\352\033\345  
\307\375\025\076\300\027\252\373\043\156\046\106\313\372\371\261  
\162\153\151\317\042\204\013\142\017\254\331\031\000\224\242\166  
\074\324\055\232\355\004\236\055\006\142\020\067\122\034\205\162  
\033\047\345\314\306\061\354\067\354\143\131\233\013\035\166\314  
\176\062\232\210\225\010\066\122\273\336\166\137\166\111\111\255  
\177\275\145\040\262\311\301\053\166\030\166\237\126\261

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "UCA Extended Validation Root"

# Issuer: CN=UCA Extended Validation Root,O=UniTrust,C=CN

# Serial Number:4f:d2:2b:8f:f5:64:c8:33:9e:4f:34:58:66:23:70:60

# Subject: CN=UCA Extended Validation Root,O=UniTrust,C=CN

# Not Valid Before: Fri Mar 13 00:00:00 2015

# Not Valid After : Fri Dec 31 00:00:00 2038

# Fingerprint (SHA-256):

D4:3A:F9:B3:54:73:75:5C:96:84:FC:06:D7:D8:CB:70:EE:5C:28:E7:73:FB:29:4E:B4:1E:E7:17:22:92:4D:24

# Fingerprint (SHA1): A3:A1:B0:6F:24:61:23:4A:E3:36:A5:C2:37:FC:A6:FF:DD:F0:D7:3A

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "UCA Extended Validation Root"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\243\241\260\157\044\141\043\112\343\066\245\302\067\374\246\377  
\335\360\327\072

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\241\363\137\103\306\064\233\332\277\214\176\005\123\255\226\342

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\107\061\013\060\011\006\003\125\004\006\023\002\103\116\061  
\021\060\017\006\003\125\004\012\014\010\125\156\151\124\162\165  
\163\164\061\045\060\043\006\003\125\004\003\014\034\125\103\101  
\040\105\170\164\145\156\144\145\144\040\126\141\154\151\144\141  
\164\151\157\156\040\122\157\157\164

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\117\322\053\217\365\144\310\063\236\117\064\130\146\043  
\160\140

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "Certigna Root CA"

#

# Issuer: CN=Certigna Root CA,OU=0002 48146308100036,O=Dhimyotis,C=FR

# Serial Number:00:ca:e9:1b:89:f1:55:03:0d:a3:e6:41:6d:c4:e3:a6:e1

# Subject: CN=Certigna Root CA,OU=0002 48146308100036,O=Dhimyotis,C=FR

# Not Valid Before: Tue Oct 01 08:32:27 2013

# Not Valid After : Sat Oct 01 08:32:27 2033

# Fingerprint (SHA-256):

D4:8D:3D:23:EE:DB:50:A4:59:E5:51:97:60:1C:27:77:4B:9D:7B:18:C9:4D:5A:05:95:11:A1:02:50:B9:31:68

# Fingerprint (SHA1): 2D:0D:52:14:FF:9E:AD:99:24:01:74:20:47:6E:6C:85:27:27:F5:43

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Certigna Root CA"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\132\061\013\060\011\006\003\125\004\006\023\002\106\122\061  
\022\060\020\006\003\125\004\012\014\011\104\150\151\155\171\157  
\164\151\163\061\034\060\032\006\003\125\004\013\014\023\060\060  
\060\062\040\064\070\061\064\066\063\060\070\061\060\060\060\063  
\066\061\031\060\027\006\003\125\004\003\014\020\103\145\162\164  
\151\147\156\141\040\122\157\157\164\040\103\101

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\132\061\013\060\011\006\003\125\004\006\023\002\106\122\061  
\022\060\020\006\003\125\004\012\014\011\104\150\151\155\171\157  
\164\151\163\061\034\060\032\006\003\125\004\013\014\023\060\060  
\060\062\040\064\070\061\064\066\063\060\070\061\060\060\060\063  
\066\061\031\060\027\006\003\125\004\003\014\020\103\145\162\164  
\151\147\156\141\040\122\157\157\164\040\103\101

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\021\000\312\351\033\211\361\125\003\015\243\346\101\155\304  
\343\246\341

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\006\133\060\202\004\103\240\003\002\001\002\002\021\000  
\312\351\033\211\361\125\003\015\243\346\101\155\304\343\246\341  
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060  
\132\061\013\060\011\006\003\125\004\006\023\002\106\122\061\022  
\060\020\006\003\125\004\012\014\011\104\150\151\155\171\157\164  
\151\163\061\034\060\032\006\003\125\004\013\014\023\060\060\060  
\062\040\064\070\061\064\066\063\060\070\061\060\060\060\063\066  
\061\031\060\027\006\003\125\004\003\014\020\103\145\162\164\151  
\147\156\141\040\122\157\157\164\040\103\101\060\036\027\015\061  
\063\061\060\060\061\060\070\063\062\062\067\132\027\015\063\063  
\061\060\060\061\060\070\063\062\062\067\132\060\132\061\013\060  
\011\006\003\125\004\006\023\002\106\122\061\022\060\020\006\003  
\125\004\012\014\011\104\150\151\155\171\157\164\151\163\061\034  
\060\032\006\003\125\004\013\014\023\060\060\060\062\040\064\070  
\061\064\066\063\060\070\061\060\060\060\063\066\061\031\060\027  
\006\003\125\004\003\014\020\103\145\162\164\151\147\156\141\040  
\122\157\157\164\040\103\101\060\202\002\042\060\015\006\011\052  
\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060

\202\002\012\002\202\002\001\000\315\030\071\145\032\131\261\352  
\144\026\016\214\224\044\225\174\203\323\305\071\046\334\014\357  
\026\127\215\327\330\254\243\102\177\202\312\355\315\133\333\016  
\267\055\355\105\010\027\262\331\263\313\326\027\122\162\050\333  
\216\116\236\212\266\013\371\236\204\232\115\166\336\042\051\134  
\322\263\322\006\076\060\071\251\164\243\222\126\034\241\157\114  
\012\040\155\237\043\172\264\306\332\054\344\035\054\334\263\050  
\320\023\362\114\116\002\111\241\124\100\236\346\345\005\240\055  
\204\310\377\230\154\320\353\212\032\204\010\036\267\150\043\356  
\043\325\160\316\155\121\151\020\356\241\172\302\321\042\061\302  
\202\205\322\362\125\166\120\174\045\172\311\204\134\013\254\335  
\102\116\053\347\202\242\044\211\313\220\262\320\356\043\272\146  
\114\273\142\244\371\123\132\144\173\174\230\372\243\110\236\017  
\225\256\247\030\364\152\354\056\003\105\257\360\164\370\052\315  
\172\135\321\276\104\046\062\051\361\361\365\154\314\176\002\041  
\013\237\157\244\077\276\235\123\342\317\175\251\054\174\130\032  
\227\341\075\067\067\030\146\050\322\100\305\121\212\214\303\055  
\316\123\210\044\130\144\060\026\305\252\340\326\012\246\100\337  
\170\366\365\004\174\151\023\204\274\321\321\247\006\317\001\367  
\150\300\250\127\273\072\141\255\004\214\223\343\255\374\360\333  
\104\155\131\334\111\131\256\254\232\231\066\060\101\173\166\063  
\042\207\243\302\222\206\156\371\160\356\256\207\207\225\033\304  
\172\275\061\363\324\322\345\231\377\276\110\354\165\365\170\026  
\035\246\160\301\177\074\033\241\222\373\317\310\074\326\305\223  
\012\217\365\125\072\166\225\316\131\230\212\011\225\167\062\232  
\203\272\054\004\072\227\275\324\057\276\327\154\233\242\312\175  
\155\046\311\125\325\317\303\171\122\010\011\231\007\044\055\144  
\045\153\246\041\151\233\152\335\164\115\153\227\172\101\275\253  
\027\371\220\027\110\217\066\371\055\325\305\333\356\252\205\105  
\101\372\315\072\105\261\150\346\066\114\233\220\127\354\043\271  
\207\010\302\304\011\361\227\206\052\050\115\342\164\300\332\304  
\214\333\337\342\241\027\131\316\044\131\164\061\332\177\375\060  
\155\331\334\341\152\341\374\137\002\003\001\000\001\243\202\001  
\032\060\202\001\026\060\017\006\003\125\035\023\001\001\377\004  
\005\060\003\001\001\377\060\016\006\003\125\035\017\001\001\377  
\004\004\003\002\001\006\060\035\006\003\125\035\016\004\026\004  
\024\030\207\126\340\156\167\356\044\065\074\116\163\232\037\326  
\341\342\171\176\053\060\037\006\003\125\035\043\004\030\060\026  
\200\024\030\207\126\340\156\167\356\044\065\074\116\163\232\037  
\326\341\342\171\176\053\060\104\006\003\125\035\040\004\075\060  
\073\060\071\006\004\125\035\040\000\060\061\060\057\006\010\053  
\006\001\005\005\007\002\001\026\043\150\164\164\160\163\072\057  
\057\167\167\167\167\056\143\145\162\164\151\147\156\141\056\146  
\162\057\141\165\164\157\162\151\164\145\163\057\060\155\006\003  
\125\035\037\004\146\060\144\060\057\240\055\240\053\206\051\150  
\164\164\160\072\057\057\143\162\154\056\143\145\162\164\151\147  
\156\141\056\146\162\057\143\145\162\164\151\147\156\141\162\157  
\157\164\143\141\056\143\162\154\060\061\240\057\240\055\206\053

\150\164\164\160\072\057\057\143\162\154\056\144\150\151\155\171  
\157\164\151\163\056\143\157\155\057\143\145\162\164\151\147\156  
\141\162\157\157\164\143\141\056\143\162\154\060\015\006\011\052  
\206\110\206\367\015\001\001\013\005\000\003\202\002\001\000\224  
\270\236\117\360\343\225\010\042\347\315\150\101\367\034\125\325  
\174\000\342\055\072\211\135\150\070\057\121\042\013\112\215\313  
\351\273\135\076\273\134\075\261\050\376\344\123\125\023\317\241  
\220\033\002\035\137\146\106\011\063\050\341\015\044\227\160\323  
\020\037\352\144\127\226\273\135\332\347\304\214\117\114\144\106  
\035\134\207\343\131\336\102\321\233\250\176\246\211\335\217\034  
\311\060\202\355\073\234\315\300\351\031\340\152\330\002\165\067  
\253\367\064\050\050\221\362\004\012\117\065\343\140\046\001\372  
\320\021\214\371\021\152\356\257\075\303\120\323\217\137\063\171  
\074\206\250\163\105\220\214\040\266\162\163\027\043\276\007\145  
\345\170\222\015\272\001\300\353\214\034\146\277\254\206\167\001  
\224\015\234\346\351\071\215\037\246\121\214\231\014\071\167\341  
\264\233\372\034\147\127\157\152\152\216\251\053\114\127\171\172  
\127\042\317\315\137\143\106\215\134\131\072\206\370\062\107\142  
\243\147\015\030\221\334\373\246\153\365\110\141\163\043\131\216  
\002\247\274\104\352\364\111\235\361\124\130\371\140\257\332\030  
\244\057\050\105\334\172\240\210\206\135\363\073\347\377\051\065  
\200\374\144\103\224\346\343\034\157\276\255\016\052\143\231\053  
\311\176\205\366\161\350\006\003\225\376\336\217\110\034\132\324  
\222\350\053\356\347\061\333\272\004\152\207\230\347\305\137\357  
\175\247\042\367\001\330\115\371\211\320\016\232\005\131\244\236  
\230\331\157\053\312\160\276\144\302\125\243\364\351\257\303\222  
\051\334\210\026\044\231\074\215\046\230\266\133\267\314\316\267  
\067\007\375\046\331\230\205\044\377\131\043\003\232\355\235\235  
\250\344\136\070\316\327\122\015\157\322\077\155\261\005\153\111  
\316\212\221\106\163\364\366\057\360\250\163\167\016\145\254\241  
\215\146\122\151\176\113\150\014\307\036\067\047\203\245\214\307  
\002\344\024\315\111\001\260\163\263\375\306\220\072\157\322\154  
\355\073\356\354\221\276\242\103\135\213\000\112\146\045\104\160  
\336\100\017\370\174\025\367\242\316\074\327\136\023\214\201\027  
\030\027\321\275\361\167\020\072\324\145\071\301\047\254\127\054  
\045\124\377\242\332\117\212\141\071\136\256\075\112\214\275

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Certigna Root CA"

# Issuer: CN=Certigna Root CA,OU=0002 48146308100036,O=Dhimyotis,C=FR

# Serial Number:00:ca:e9:1b:89:f1:55:03:0d:a3:e6:41:6d:c4:e3:a6:e1

# Subject: CN=Certigna Root CA,OU=0002 48146308100036,O=Dhimyotis,C=FR

# Not Valid Before: Tue Oct 01 08:32:27 2013

# Not Valid After : Sat Oct 01 08:32:27 2033

# Fingerprint (SHA-256):

```

D4:8D:3D:23:EE:DB:50:A4:59:E5:51:97:60:1C:27:77:4B:9D:7B:18:C9:4D:5A:05:95:11:A1:02:50:B9:31:68
Fingerprint (SHA1): 2D:0D:52:14:FF:9E:AD:99:24:01:74:20:47:6E:6C:85:27:27:F5:43
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certigna Root CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\055\015\122\024\377\236\255\231\044\001\164\040\107\156\154\205
\047\047\365\103
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\016\134\060\142\047\353\133\274\327\256\142\272\351\325\337\167
END
CKA_ISSUER MULTILINE_OCTAL
\060\132\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\022\060\020\006\003\125\004\012\014\011\104\150\151\155\171\157
\164\151\163\061\034\060\032\006\003\125\004\013\014\023\060\060
\060\062\040\064\070\061\064\066\063\060\070\061\060\060\060\063
\066\061\031\060\027\006\003\125\004\003\014\020\103\145\162\164
\151\147\156\141\040\122\157\157\164\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\021\000\312\351\033\211\361\125\003\015\243\346\101\155\304
\343\246\341
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "emSign Root CA - G1"
#
Issuer: CN=emSign Root CA - G1,O=eMudhra Technologies Limited,OU=emSign PKI,C=IN
Serial Number:31:f5:e4:62:0c:6c:58:ed:d6:d8
Subject: CN=emSign Root CA - G1,O=eMudhra Technologies Limited,OU=emSign PKI,C=IN
Not Valid Before: Sun Feb 18 18:30:00 2018
Not Valid After : Wed Feb 18 18:30:00 2043
Fingerprint (SHA-256):
40:F6:AF:03:46:A9:9A:A1:CD:1D:55:5A:4E:9C:CE:62:C7:F9:63:46:03:EE:40:66:15:83:3D:C8:C8:D0:03:67
Fingerprint (SHA1): 8A:C7:AD:8F:73:AC:4E:C1:B5:75:4D:A5:40:F4:FC:CF:7C:B5:8E:8C
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "emSign Root CA - G1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

```

CKA\_SUBJECT MULTILINE\_OCTAL

\060\147\061\013\060\011\006\003\125\004\006\023\002\111\116\061  
\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156  
\040\120\113\111\061\045\060\043\006\003\125\004\012\023\034\145  
\115\165\144\150\162\141\040\124\145\143\150\156\157\154\157\147  
\151\145\163\040\114\151\155\151\164\145\144\061\034\060\032\006  
\003\125\004\003\023\023\145\155\123\151\147\156\040\122\157\157  
\164\040\103\101\040\055\040\107\061

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\147\061\013\060\011\006\003\125\004\006\023\002\111\116\061  
\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156  
\040\120\113\111\061\045\060\043\006\003\125\004\012\023\034\145  
\115\165\144\150\162\141\040\124\145\143\150\156\157\154\157\147  
\151\145\163\040\114\151\155\151\164\145\144\061\034\060\032\006  
\003\125\004\003\023\023\145\155\123\151\147\156\040\122\157\157  
\164\040\103\101\040\055\040\107\061

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\012\061\365\344\142\014\154\130\355\326\330

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\224\060\202\002\174\240\003\002\001\002\002\012\061  
\365\344\142\014\154\130\355\326\330\060\015\006\011\052\206\110  
\206\367\015\001\001\013\005\000\060\147\061\013\060\011\006\003  
\125\004\006\023\002\111\116\061\023\060\021\006\003\125\004\013  
\023\012\145\155\123\151\147\156\040\120\113\111\061\045\060\043  
\006\003\125\004\012\023\034\145\115\165\144\150\162\141\040\124  
\145\143\150\156\157\154\157\147\151\145\163\040\114\151\155\151  
\164\145\144\061\034\060\032\006\003\125\004\003\023\023\145\155  
\123\151\147\156\040\122\157\157\164\040\103\101\040\055\040\107  
\061\060\036\027\015\061\070\060\062\061\070\061\070\063\060\060  
\060\132\027\015\064\063\060\062\061\070\061\070\063\060\060\060  
\132\060\147\061\013\060\011\006\003\125\004\006\023\002\111\116  
\061\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147  
\156\040\120\113\111\061\045\060\043\006\003\125\004\012\023\034  
\145\115\165\144\150\162\141\040\124\145\143\150\156\157\154\157  
\147\151\145\163\040\114\151\155\151\164\145\144\061\034\060\032  
\006\003\125\004\003\023\023\145\155\123\151\147\156\040\122\157  
\157\164\040\103\101\040\055\040\107\061\060\202\001\042\060\015  
\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001  
\017\000\060\202\001\012\002\202\001\001\000\223\113\273\351\146  
\212\356\235\133\325\064\223\320\033\036\303\347\236\270\144\063  
\177\143\170\150\264\315\056\161\165\327\233\040\306\115\051\274  
\266\150\140\212\367\041\232\126\065\132\363\166\275\330\315\232  
\377\223\126\113\245\131\006\241\223\064\051\335\026\064\165\116  
\362\201\264\307\226\116\255\031\025\122\112\376\074\160\165\160

\315\257\053\253\025\232\063\074\252\263\213\252\315\103\375\365  
\352\160\377\355\317\021\073\224\316\116\062\026\323\043\100\052  
\167\263\257\074\001\054\154\355\231\054\213\331\116\151\230\262  
\367\217\101\260\062\170\141\326\015\137\303\372\242\100\222\035  
\134\027\346\160\076\065\347\242\267\302\142\342\253\244\070\114  
\265\071\065\157\352\003\151\372\072\124\150\205\155\326\362\057  
\103\125\036\221\015\016\330\325\152\244\226\321\023\074\054\170  
\120\350\072\222\322\027\126\345\065\032\100\034\076\215\054\355  
\071\337\102\340\203\101\164\337\243\315\302\206\140\110\150\343  
\151\013\124\000\213\344\166\151\041\015\171\116\064\010\136\024  
\302\314\261\267\255\327\174\160\212\307\205\002\003\001\000\001  
\243\102\060\100\060\035\006\003\125\035\016\004\026\004\024\373  
\357\015\206\236\260\343\335\251\271\361\041\027\177\076\374\360  
\167\053\032\060\016\006\003\125\035\017\001\001\377\004\004\003  
\002\001\006\060\017\006\003\125\035\023\001\001\377\004\005\060  
\003\001\001\377\060\015\006\011\052\206\110\206\367\015\001\001  
\013\005\000\003\202\001\001\000\131\377\362\214\365\207\175\161  
\075\243\237\033\133\321\332\370\323\234\153\066\275\233\251\141  
\353\336\026\054\164\075\236\346\165\332\327\272\247\274\102\027  
\347\075\221\353\345\175\335\076\234\361\317\222\254\154\110\314  
\302\042\077\151\073\305\266\025\057\243\065\306\150\052\034\127  
\257\071\357\215\320\065\303\030\014\173\000\126\034\315\213\031  
\164\336\276\017\022\340\320\252\241\077\002\064\261\160\316\235  
\030\326\010\003\011\106\356\140\340\176\266\304\111\004\121\175  
\160\140\274\252\262\377\171\162\172\246\035\075\137\052\370\312  
\342\375\071\267\107\271\353\176\337\004\043\257\372\234\006\007  
\351\373\143\223\200\100\265\306\154\012\061\050\316\014\237\317  
\263\043\065\200\101\215\154\304\067\173\201\057\200\241\100\102  
\205\351\331\070\215\350\241\123\315\001\277\151\350\132\006\362  
\105\013\220\372\256\341\277\235\362\256\127\074\245\256\262\126  
\364\213\145\100\351\375\061\201\054\364\071\011\330\356\153\247  
\264\246\035\025\245\230\367\001\201\330\205\175\363\121\134\161  
\210\336\272\314\037\200\176\112

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "emSign Root CA - G1"

# Issuer: CN=emSign Root CA - G1,O=eMudhra Technologies Limited,OU=emSign PKI,C=IN

# Serial Number:31:f5:e4:62:0c:6c:58:ed:d6:d8

# Subject: CN=emSign Root CA - G1,O=eMudhra Technologies Limited,OU=emSign PKI,C=IN

# Not Valid Before: Sun Feb 18 18:30:00 2018

# Not Valid After : Wed Feb 18 18:30:00 2043

# Fingerprint (SHA-256):

40:F6:AF:03:46:A9:9A:A1:CD:1D:55:5A:4E:9C:CE:62:C7:F9:63:46:03:EE:40:66:15:83:3D:C8:C8:D0:03:67

# Fingerprint (SHA1): 8A:C7:AD:8F:73:AC:4E:C1:B5:75:4D:A5:40:F4:FC:CF:7C:B5:8E:8C

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST



```

CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "emSign Root CA - G1"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\212\307\255\217\163\254\116\301\265\165\115\245\100\364\374\317
\174\265\216\214
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\234\102\204\127\335\313\013\247\056\225\255\266\363\332\274\254
END
CKA_ISSUER MULTILINE_OCTAL
\060\147\061\013\060\011\006\003\125\004\006\023\002\111\116\061
\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156
\040\120\113\111\061\045\060\043\006\003\125\004\012\023\034\145
\115\165\144\150\162\141\040\124\145\143\150\156\157\154\157\147
\151\145\163\040\114\151\155\151\164\145\144\061\034\060\032\006
\003\125\004\003\023\023\145\155\123\151\147\156\040\122\157\157
\164\040\103\101\040\055\040\107\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\012\061\365\344\142\014\154\130\355\326\330
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "emSign ECC Root CA - G3"
#
Issuer: CN=emSign ECC Root CA - G3,O=eMudhra Technologies Limited,OU=emSign PKI,C=IN
Serial Number:3c:f6:07:a9:68:70:0e:da:8b:84
Subject: CN=emSign ECC Root CA - G3,O=eMudhra Technologies Limited,OU=emSign PKI,C=IN
Not Valid Before: Sun Feb 18 18:30:00 2018
Not Valid After : Wed Feb 18 18:30:00 2043
Fingerprint (SHA-256):
86:A1:EC:BA:08:9C:4A:8D:3B:BE:27:34:C6:12:BA:34:1D:81:3E:04:3C:F9:E8:A8:62:CD:5C:57:A3:6B:BE:6B
Fingerprint (SHA1): 30:43:FA:4F:F2:57:DC:A0:C3:80:EE:2E:58:EA:78:B2:3F:E6:BB:C1
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "emSign ECC Root CA - G3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\153\061\013\060\011\006\003\125\004\006\023\002\111\116\061
\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156

```

\040\120\113\111\061\045\060\043\006\003\125\004\012\023\034\145  
\115\165\144\150\162\141\040\124\145\143\150\156\157\154\157\147  
\151\145\163\040\114\151\155\151\164\145\144\061\040\060\036\006  
\003\125\004\003\023\027\145\155\123\151\147\156\040\105\103\103  
\040\122\157\157\164\040\103\101\040\055\040\107\063

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\153\061\013\060\011\006\003\125\004\006\023\002\111\116\061  
\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156  
\040\120\113\111\061\045\060\043\006\003\125\004\012\023\034\145  
\115\165\144\150\162\141\040\124\145\143\150\156\157\154\157\147  
\151\145\163\040\114\151\155\151\164\145\144\061\040\060\036\006  
\003\125\004\003\023\027\145\155\123\151\147\156\040\105\103\103  
\040\122\157\157\164\040\103\101\040\055\040\107\063

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\012\074\366\007\251\150\160\016\332\213\204

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\002\116\060\202\001\323\240\003\002\001\002\002\012\074  
\366\007\251\150\160\016\332\213\204\060\012\006\010\052\206\110  
\316\075\004\003\003\060\153\061\013\060\011\006\003\125\004\006  
\023\002\111\116\061\023\060\021\006\003\125\004\013\023\012\145  
\155\123\151\147\156\040\120\113\111\061\045\060\043\006\003\125  
\004\012\023\034\145\115\165\144\150\162\141\040\124\145\143\150  
\156\157\154\157\147\151\145\163\040\114\151\155\151\164\145\144  
\061\040\060\036\006\003\125\004\003\023\027\145\155\123\151\147  
\156\040\105\103\103\040\122\157\157\164\040\103\101\040\055\040  
\107\063\060\036\027\015\061\070\060\062\061\070\061\070\063\060  
\060\060\132\027\015\064\063\060\062\061\070\061\070\063\060\060  
\060\132\060\153\061\013\060\011\006\003\125\004\006\023\002\111  
\116\061\023\060\021\006\003\125\004\013\023\012\145\155\123\151  
\147\156\040\120\113\111\061\045\060\043\006\003\125\004\012\023  
\034\145\115\165\144\150\162\141\040\124\145\143\150\156\157\154  
\157\147\151\145\163\040\114\151\155\151\164\145\144\061\040\060  
\036\006\003\125\004\003\023\027\145\155\123\151\147\156\040\105  
\103\103\040\122\157\157\164\040\103\101\040\055\040\107\063\060  
\166\060\020\006\007\052\206\110\316\075\002\001\006\005\053\201  
\004\000\042\003\142\000\004\043\245\014\270\055\022\365\050\363  
\261\262\335\342\002\022\200\236\071\137\111\115\237\311\045\064  
\131\164\354\273\006\034\347\300\162\257\350\256\057\341\101\124  
\207\024\250\112\262\350\174\202\346\133\152\265\334\263\165\316  
\213\006\320\206\043\277\106\325\216\017\077\004\364\327\034\222  
\176\366\245\143\302\365\137\216\056\117\241\030\031\002\053\062  
\012\202\144\175\026\223\321\243\102\060\100\060\035\006\003\125  
\035\016\004\026\004\024\174\135\002\204\023\324\314\212\233\201  
\316\027\034\056\051\036\234\110\143\102\060\016\006\003\125\035

```
\017\001\001\377\004\004\003\002\001\006\060\017\006\003\125\035
\023\001\001\377\004\005\060\003\001\001\377\060\012\006\010\052
\206\110\316\075\004\003\003\003\151\000\060\146\002\061\000\276
\363\141\317\002\020\035\144\225\007\270\030\156\210\205\005\057
\203\010\027\220\312\037\212\114\350\015\033\172\261\255\325\201
\011\107\357\073\254\010\004\174\134\231\261\355\107\007\322\002
\061\000\235\272\125\374\251\112\350\355\355\346\166\001\102\173
\310\370\140\331\215\121\213\125\073\373\214\173\353\145\011\303
\370\226\315\107\250\202\362\026\125\167\044\176\022\020\225\004
\054\243
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE
```

```
Trust for "emSign ECC Root CA - G3"
```

```
Issuer: CN=emSign ECC Root CA - G3,O=eMudhra Technologies Limited,OU=emSign PKI,C=IN
```

```
Serial Number:3c:f6:07:a9:68:70:0e:da:8b:84
```

```
Subject: CN=emSign ECC Root CA - G3,O=eMudhra Technologies Limited,OU=emSign PKI,C=IN
```

```
Not Valid Before: Sun Feb 18 18:30:00 2018
```

```
Not Valid After : Wed Feb 18 18:30:00 2043
```

```
Fingerprint (SHA-256):
```

```
86:A1:EC:BA:08:9C:4A:8D:3B:BE:27:34:C6:12:BA:34:1D:81:3E:04:3C:F9:E8:A8:62:CD:5C:57:A3:6B:BE:6B
```

```
Fingerprint (SHA1): 30:43:FA:4F:F2:57:DC:A0:C3:80:EE:2E:58:EA:78:B2:3F:E6:BB:C1
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "emSign ECC Root CA - G3"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\060\103\372\117\362\127\334\240\303\200\356\056\130\352\170\262
\077\346\273\301
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\316\013\162\321\237\210\216\320\120\003\350\343\270\213\147\100
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\153\061\013\060\011\006\003\125\004\006\023\002\111\116\061
\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156
\040\120\113\111\061\045\060\043\006\003\125\004\012\023\034\145
\115\165\144\150\162\141\040\124\145\143\150\156\157\154\157\147
\151\145\163\040\114\151\155\151\164\145\144\061\040\060\036\006
\003\125\004\003\023\027\145\155\123\151\147\156\040\105\103\103
\040\122\157\157\164\040\103\101\040\055\040\107\063
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\012\074\366\007\251\150\160\016\332\213\204
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "emSign Root CA - C1"

#

# Issuer: CN=emSign Root CA - C1,O=eMudhra Inc,OU=emSign PKI,C=US

# Serial Number:00:ae:cf:00:ba:c4:cf:32:f8:43:b2

# Subject: CN=emSign Root CA - C1,O=eMudhra Inc,OU=emSign PKI,C=US

# Not Valid Before: Sun Feb 18 18:30:00 2018

# Not Valid After : Wed Feb 18 18:30:00 2043

# Fingerprint (SHA-256):

12:56:09:AA:30:1D:A0:A2:49:B9:7A:82:39:CB:6A:34:21:6F:44:DC:AC:9F:39:54:B1:42:92:F2:E8:C8:60:8F

# Fingerprint (SHA1): E7:2E:F1:DF:FC:B2:09:28:CF:5D:D4:D5:67:37:B1:51:CB:86:4F:01

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "emSign Root CA - C1"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\126\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156  
\040\120\113\111\061\024\060\022\006\003\125\004\012\023\013\145  
\115\165\144\150\162\141\040\111\156\143\061\034\060\032\006\003  
\125\004\003\023\023\145\155\123\151\147\156\040\122\157\157\164  
\040\103\101\040\055\040\103\061

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\126\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156  
\040\120\113\111\061\024\060\022\006\003\125\004\012\023\013\145  
\115\165\144\150\162\141\040\111\156\143\061\034\060\032\006\003  
\125\004\003\023\023\145\155\123\151\147\156\040\122\157\157\164  
\040\103\101\040\055\040\103\061

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\013\000\256\317\000\272\304\317\062\370\103\262

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\163\060\202\002\133\240\003\002\001\002\002\013\000  
\256\317\000\272\304\317\062\370\103\262\060\015\006\011\052\206  
\110\206\367\015\001\001\013\005\000\060\126\061\013\060\011\006  
\003\125\004\006\023\002\125\123\061\023\060\021\006\003\125\004  
\013\023\012\145\155\123\151\147\156\040\120\113\111\061\024\060

\022\006\003\125\004\012\023\013\145\115\165\144\150\162\141\040  
\111\156\143\061\034\060\032\006\003\125\004\003\023\023\145\155  
\123\151\147\156\040\122\157\157\164\040\103\101\040\055\040\103  
\061\060\036\027\015\061\070\060\062\061\070\061\070\063\060\060  
\060\132\027\015\064\063\060\062\061\070\061\070\063\060\060\060  
\132\060\126\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147  
\156\040\120\113\111\061\024\060\022\006\003\125\004\012\023\013  
\145\115\165\144\150\162\141\040\111\156\143\061\034\060\032\006  
\003\125\004\003\023\023\145\155\123\151\147\156\040\122\157\157  
\164\040\103\101\040\055\040\103\061\060\202\001\042\060\015\006  
\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017  
\000\060\202\001\012\002\202\001\001\000\317\353\251\271\361\231  
\005\314\330\050\041\112\363\163\064\121\204\126\020\365\240\117  
\054\022\343\372\023\232\047\320\317\371\171\032\164\137\035\171  
\071\374\133\370\160\216\340\222\122\367\344\045\371\124\203\331  
\035\323\310\132\205\077\136\307\266\007\356\076\300\316\232\257  
\254\126\102\052\071\045\160\326\277\265\173\066\255\254\366\163  
\334\315\327\035\212\203\245\373\053\220\025\067\153\034\046\107  
\334\073\051\126\223\152\263\301\152\072\235\075\365\301\227\070  
\130\005\213\034\021\343\344\264\270\135\205\035\203\376\170\137  
\013\105\150\030\110\245\106\163\064\073\376\017\310\166\273\307  
\030\363\005\321\206\363\205\355\347\271\331\062\255\125\210\316  
\246\266\221\260\117\254\176\025\043\226\366\077\360\040\064\026  
\336\012\306\304\004\105\171\177\247\375\276\322\251\245\257\234  
\305\043\052\367\074\041\154\275\257\217\116\305\072\262\363\064  
\022\374\337\200\032\111\244\324\251\225\367\236\211\136\242\211  
\254\224\313\250\150\233\257\212\145\047\315\211\356\335\214\265  
\153\051\160\103\240\151\013\344\271\017\002\003\001\000\001\243  
\102\060\100\060\035\006\003\125\035\016\004\026\004\024\376\241  
\340\160\036\052\003\071\122\132\102\276\134\221\205\172\030\252  
\115\265\060\016\006\003\125\035\017\001\001\377\004\004\003\002  
\001\006\060\017\006\003\125\035\023\001\001\377\004\005\060\003  
\001\001\377\060\015\006\011\052\206\110\206\367\015\001\001\013  
\005\000\003\202\001\001\000\302\112\126\372\025\041\173\050\242  
\351\345\035\373\370\055\304\071\226\101\114\073\047\054\304\154  
\030\025\200\306\254\257\107\131\057\046\013\343\066\260\357\073  
\376\103\227\111\062\231\022\025\133\337\021\051\377\253\123\370  
\273\301\170\017\254\234\123\257\127\275\150\214\075\151\063\360  
\243\240\043\143\073\144\147\042\104\255\325\161\313\126\052\170  
\222\243\117\022\061\066\066\342\336\376\000\304\243\140\017\047  
\255\240\260\212\265\066\172\122\241\275\047\364\040\047\142\350  
\115\224\044\023\344\012\004\351\074\253\056\310\103\011\112\306  
\141\004\345\111\064\176\323\304\310\365\017\300\252\351\272\124  
\136\363\143\053\117\117\120\324\376\271\173\231\214\075\300\056  
\274\002\053\323\304\100\344\212\007\061\036\233\316\046\231\023  
\373\021\352\232\042\014\021\031\307\136\033\201\120\060\310\226  
\022\156\347\313\101\177\221\073\242\107\267\124\200\033\334\000

\314\232\220\352\303\303\120\006\142\014\060\300\025\110\247\250  
\131\174\341\256\042\242\342\012\172\017\372\142\253\122\114\341  
\361\337\312\276\203\015\102

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "emSign Root CA - C1"

# Issuer: CN=emSign Root CA - C1,O=eMudhra Inc,OU=emSign PKI,C=US

# Serial Number:00:ae:cf:00:ba:c4:cf:32:f8:43:b2

# Subject: CN=emSign Root CA - C1,O=eMudhra Inc,OU=emSign PKI,C=US

# Not Valid Before: Sun Feb 18 18:30:00 2018

# Not Valid After : Wed Feb 18 18:30:00 2043

# Fingerprint (SHA-256):

12:56:09:AA:30:1D:A0:A2:49:B9:7A:82:39:CB:6A:34:21:6F:44:DC:AC:9F:39:54:B1:42:92:F2:E8:C8:60:8F

# Fingerprint (SHA1): E7:2E:F1:DF:FC:B2:09:28:CF:5D:D4:D5:67:37:B1:51:CB:86:4F:01

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "emSign Root CA - C1"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\347\056\361\337\374\262\011\050\317\135\324\325\147\067\261\121  
\313\206\117\001

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\330\343\135\001\041\372\170\132\260\337\272\322\356\052\137\150

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\126\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156  
\040\120\113\111\061\024\060\022\006\003\125\004\012\023\013\145  
\115\165\144\150\162\141\040\111\156\143\061\034\060\032\006\003  
\125\004\003\023\023\145\155\123\151\147\156\040\122\157\157\164  
\040\103\101\040\055\040\103\061

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\013\000\256\317\000\272\304\317\062\370\103\262

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "emSign ECC Root CA - C3"

#

```
Issuer: CN=emSign ECC Root CA - C3,O=eMudhra Inc,OU=emSign PKI,C=US
Serial Number:7b:71:b6:82:56:b8:12:7c:9c:a8
Subject: CN=emSign ECC Root CA - C3,O=eMudhra Inc,OU=emSign PKI,C=US
Not Valid Before: Sun Feb 18 18:30:00 2018
Not Valid After : Wed Feb 18 18:30:00 2043
Fingerprint (SHA-256):
BC:4D:80:9B:15:18:9D:78:DB:3E:1D:8C:F4:F9:72:6A:79:5D:A1:64:3C:A5:F1:35:8E:1D:DB:0E:DC:0D:7E:B3
Fingerprint (SHA1): B6:AF:43:C2:9B:81:53:7D:F6:EF:6B:C3:1F:1F:60:15:0C:EE:48:66
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "emSign ECC Root CA - C3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\132\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156
\040\120\113\111\061\024\060\022\006\003\125\004\012\023\013\145
\115\165\144\150\162\141\040\111\156\143\061\040\060\036\006\003
\125\004\003\023\027\145\155\123\151\147\156\040\105\103\103\040
\122\157\157\164\040\103\101\040\055\040\103\063
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\132\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156
\040\120\113\111\061\024\060\022\006\003\125\004\012\023\013\145
\115\165\144\150\162\141\040\111\156\143\061\040\060\036\006\003
\125\004\003\023\027\145\155\123\151\147\156\040\105\103\103\040
\122\157\157\164\040\103\101\040\055\040\103\063
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\012\173\161\266\202\126\270\022\174\234\250
END
CKA_VALUE MULTILINE_OCTAL
\060\202\002\053\060\202\001\261\240\003\002\001\002\002\012\173
\161\266\202\126\270\022\174\234\250\060\012\006\010\052\206\110
\316\075\004\003\003\060\132\061\013\060\011\006\003\125\004\006
\023\002\125\123\061\023\060\021\006\003\125\004\013\023\012\145
\155\123\151\147\156\040\120\113\111\061\024\060\022\006\003\125
\004\012\023\013\145\115\165\144\150\162\141\040\111\156\143\061
\040\060\036\006\003\125\004\003\023\027\145\155\123\151\147\156
\040\105\103\103\040\122\157\157\164\040\103\101\040\055\040\103
\063\060\036\027\015\061\070\060\062\061\070\061\070\063\060\060\060
\060\132\027\015\064\063\060\062\061\070\061\070\063\060\060\060
\132\060\132\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147
\156\040\120\113\111\061\024\060\022\006\003\125\004\012\023\013
```

```
\145\115\165\144\150\162\141\040\111\156\143\061\040\060\036\006
\003\125\004\003\023\027\145\155\123\151\147\156\040\105\103\103
\040\122\157\157\164\040\103\101\040\055\040\103\063\060\166\060
\020\006\007\052\206\110\316\075\002\001\006\005\053\201\004\000
\042\003\142\000\004\375\245\141\256\173\046\020\035\351\267\042
\060\256\006\364\201\263\261\102\161\225\071\274\323\122\343\257
\257\371\362\227\065\222\066\106\016\207\225\215\271\071\132\351
\273\337\320\376\310\007\101\074\273\125\157\203\243\152\373\142
\260\201\211\002\160\175\110\305\112\343\351\042\124\042\115\223
\273\102\014\257\167\234\043\246\175\327\141\021\316\145\307\370
\177\376\365\362\251\243\102\060\100\060\035\006\003\125\035\016
\004\026\004\024\373\132\110\320\200\040\100\362\250\351\000\007
\151\031\167\247\346\303\364\317\060\016\006\003\125\035\017\001
\001\377\004\004\003\002\001\006\060\017\006\003\125\035\023\001
\001\377\004\005\060\003\001\001\377\060\012\006\010\052\206\110
\316\075\004\003\003\003\150\000\060\145\002\061\000\264\330\057
\002\211\375\266\114\142\272\103\116\023\204\162\265\256\335\034
\336\326\265\334\126\217\130\100\132\055\336\040\114\042\203\312
\223\250\176\356\022\100\307\326\207\117\370\337\205\002\060\034
\024\144\344\174\226\203\021\234\260\321\132\141\113\246\017\111
\323\000\374\241\374\344\245\377\177\255\327\060\320\307\167\177
\276\201\007\125\060\120\040\024\365\127\070\012\250\061\121
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Trust for "emSign ECC Root CA - C3"
```

```
Issuer: CN=emSign ECC Root CA - C3,O=eMudhra Inc,OU=emSign PKI,C=US
```

```
Serial Number:7b:71:b6:82:56:b8:12:7c:9c:a8
```

```
Subject: CN=emSign ECC Root CA - C3,O=eMudhra Inc,OU=emSign PKI,C=US
```

```
Not Valid Before: Sun Feb 18 18:30:00 2018
```

```
Not Valid After : Wed Feb 18 18:30:00 2043
```

```
Fingerprint (SHA-256):
```

```
BC:4D:80:9B:15:18:9D:78:DB:3E:1D:8C:F4:F9:72:6A:79:5D:A1:64:3C:A5:F1:35:8E:1D:DB:0E:DC:0D:7E:B3
```

```
Fingerprint (SHA1): B6:AF:43:C2:9B:81:53:7D:F6:EF:6B:C3:1F:1F:60:15:0C:EE:48:66
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "emSign ECC Root CA - C3"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\266\257\103\302\233\201\123\175\366\357\153\303\037\037\140\025
\014\356\110\146
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\076\123\263\243\201\356\327\020\370\323\260\035\027\222\365\325
```

END



```

CKA_ISSUER MULTILINE_OCTAL
\060\132\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156
\040\120\113\111\061\024\060\022\006\003\125\004\012\023\013\145
\115\165\144\150\162\141\040\111\156\143\061\040\060\036\006\003
\125\004\003\023\027\145\155\123\151\147\156\040\105\103\103\040
\122\157\157\164\040\103\101\040\055\040\103\063
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\012\173\161\266\202\126\270\022\174\234\250
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "Hongkong Post Root CA 3"
#
Issuer: CN=Hongkong Post Root CA 3,O=Hongkong Post,L=Hong Kong,ST=Hong Kong,C=HK
Serial Number:08:16:5f:8a:4c:a5:ec:00:c9:93:40:df:c4:c6:ae:23:b8:1c:5a:a4
Subject: CN=Hongkong Post Root CA 3,O=Hongkong Post,L=Hong Kong,ST=Hong Kong,C=HK
Not Valid Before: Sat Jun 03 02:29:46 2017
Not Valid After : Tue Jun 03 02:29:46 2042
Fingerprint (SHA-256):
5A:2F:C0:3F:0C:83:B0:90:BB:FA:40:60:4B:09:88:44:6C:76:36:18:3D:F9:84:6E:17:10:1A:44:7F:B8:EF:D6
Fingerprint (SHA1): 58:A2:D0:EC:20:52:81:5B:C1:F3:F8:64:02:24:4E:C2:8E:02:4B:02
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Hongkong Post Root CA 3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\157\061\013\060\011\006\003\125\004\006\023\002\110\113\061
\022\060\020\006\003\125\004\010\023\011\110\157\156\147\040\113
\157\156\147\061\022\060\020\006\003\125\004\007\023\011\110\157
\156\147\040\113\157\156\147\061\026\060\024\006\003\125\004\012
\023\015\110\157\156\147\153\157\156\147\040\120\157\163\164\061
\040\060\036\006\003\125\004\003\023\027\110\157\156\147\153\157
\156\147\040\120\157\163\164\040\122\157\157\164\040\103\101\040
\063
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\157\061\013\060\011\006\003\125\004\006\023\002\110\113\061
\022\060\020\006\003\125\004\010\023\011\110\157\156\147\040\113
\157\156\147\061\022\060\020\006\003\125\004\007\023\011\110\157

```

\156\147\040\113\157\156\147\061\026\060\024\006\003\125\004\012  
\023\015\110\157\156\147\153\157\156\147\040\120\157\163\164\061  
\040\060\036\006\003\125\004\003\023\027\110\157\156\147\153\157  
\156\147\040\120\157\163\164\040\122\157\157\164\040\103\101\040  
\063

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\024\010\026\137\212\114\245\354\000\311\223\100\337\304\306  
\256\043\270\034\132\244

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\317\060\202\003\267\240\003\002\001\002\002\024\010  
\026\137\212\114\245\354\000\311\223\100\337\304\306\256\043\270  
\034\132\244\060\015\006\011\052\206\110\206\367\015\001\001\013  
\005\000\060\157\061\013\060\011\006\003\125\004\006\023\002\110  
\113\061\022\060\020\006\003\125\004\010\023\011\110\157\156\147  
\040\113\157\156\147\061\022\060\020\006\003\125\004\007\023\011  
\110\157\156\147\040\113\157\156\147\061\026\060\024\006\003\125  
\004\012\023\015\110\157\156\147\153\157\156\147\040\120\157\163  
\164\061\040\060\036\006\003\125\004\003\023\027\110\157\156\147  
\153\157\156\147\040\120\157\163\164\040\122\157\157\164\040\103  
\101\040\063\060\036\027\015\061\067\060\066\060\063\060\062\062  
\071\064\066\132\027\015\064\062\060\066\060\063\060\062\062\071  
\064\066\132\060\157\061\013\060\011\006\003\125\004\006\023\002  
\110\113\061\022\060\020\006\003\125\004\010\023\011\110\157\156  
\147\040\113\157\156\147\061\022\060\020\006\003\125\004\007\023  
\011\110\157\156\147\040\113\157\156\147\061\026\060\024\006\003  
\125\004\012\023\015\110\157\156\147\153\157\156\147\040\120\157  
\163\164\061\040\060\036\006\003\125\004\003\023\027\110\157\156  
\147\153\157\156\147\040\120\157\163\164\040\122\157\157\164\040  
\103\101\040\063\060\202\002\042\060\015\006\011\052\206\110\206  
\367\015\001\001\001\005\000\003\202\002\017\000\060\202\002\012  
\002\202\002\001\000\263\210\327\352\316\017\040\116\276\346\326  
\003\155\356\131\374\302\127\337\051\150\241\203\016\076\150\307  
\150\130\234\034\140\113\211\103\014\271\324\025\262\356\301\116  
\165\351\265\247\357\345\351\065\231\344\314\034\347\113\137\215  
\063\060\040\063\123\331\246\273\325\076\023\216\351\037\207\111  
\255\120\055\120\312\030\276\001\130\242\023\160\226\273\211\210  
\126\200\134\370\275\054\074\341\114\127\210\273\323\271\225\357  
\313\307\366\332\061\164\050\246\346\124\211\365\101\061\312\345  
\046\032\315\202\340\160\332\073\051\273\325\003\365\231\272\125  
\365\144\321\140\016\263\211\111\270\212\057\005\322\204\105\050  
\174\217\150\120\022\170\374\013\265\123\313\302\230\034\204\243  
\236\260\276\043\244\332\334\310\053\036\332\156\105\036\211\230  
\332\371\000\056\006\351\014\073\160\325\120\045\210\231\313\315  
\163\140\367\325\377\065\147\305\241\274\136\253\315\112\270\105  
\353\310\150\036\015\015\024\106\022\343\322\144\142\212\102\230  
\274\264\306\010\010\370\375\250\114\144\234\166\001\275\057\251

\154\063\017\330\077\050\270\074\151\001\102\206\176\151\301\311  
\006\312\345\172\106\145\351\302\326\120\101\056\077\267\344\355  
\154\327\277\046\001\021\242\026\051\112\153\064\006\220\354\023  
\322\266\373\152\166\322\074\355\360\326\055\335\341\025\354\243  
\233\057\054\311\076\053\344\151\073\377\162\045\261\066\206\133  
\307\177\153\213\125\033\112\305\040\141\075\256\313\120\341\010  
\072\276\260\217\143\101\123\060\010\131\074\230\035\167\272\143  
\221\172\312\020\120\140\277\360\327\274\225\207\217\227\305\376  
\227\152\001\224\243\174\133\205\035\052\071\072\320\124\241\321  
\071\161\235\375\041\371\265\173\360\342\340\002\217\156\226\044  
\045\054\240\036\054\250\304\211\247\357\355\231\006\057\266\012  
\114\117\333\242\314\067\032\257\107\205\055\212\137\304\064\064  
\114\000\375\030\223\147\023\321\067\346\110\264\213\006\305\127  
\173\031\206\012\171\313\000\311\122\257\102\377\067\217\341\243  
\036\172\075\120\253\143\006\347\025\265\077\266\105\067\224\067  
\261\176\362\110\303\177\305\165\376\227\215\105\217\032\247\032  
\162\050\032\100\017\002\003\001\000\001\243\143\060\141\060\017  
\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060  
\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060  
\037\006\003\125\035\043\004\030\060\026\200\024\027\235\315\036  
\213\326\071\053\160\323\134\324\240\270\037\260\000\374\305\141  
\060\035\006\003\125\035\016\004\026\004\024\027\235\315\036\213  
\326\071\053\160\323\134\324\240\270\037\260\000\374\305\141\060  
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\003\202  
\002\001\000\126\325\173\156\346\042\001\322\102\233\030\325\016  
\327\146\043\134\343\376\240\307\222\322\351\224\255\113\242\306  
\354\022\174\164\325\110\322\131\024\231\300\353\271\321\353\364  
\110\060\133\255\247\127\163\231\251\323\345\267\321\056\131\044  
\130\334\150\056\056\142\330\152\344\160\013\055\040\120\040\244  
\062\225\321\000\230\273\323\375\367\062\362\111\256\306\172\340  
\107\276\156\316\313\243\162\072\055\151\135\313\310\350\105\071  
\324\372\102\301\021\114\167\135\222\373\152\377\130\104\345\353  
\201\236\257\240\231\255\276\251\001\146\313\070\035\074\337\103  
\037\364\115\156\264\272\027\106\374\175\375\207\201\171\152\015  
\063\017\372\057\370\024\271\200\263\135\115\252\227\341\371\344  
\030\305\370\325\070\214\046\074\375\362\050\342\356\132\111\210  
\054\337\171\075\216\236\220\074\275\101\112\072\335\133\366\232  
\264\316\077\045\060\177\062\175\242\003\224\320\334\172\241\122  
\336\156\223\215\030\046\375\125\254\275\217\233\322\317\257\347  
\206\054\313\037\011\157\243\157\251\204\324\163\277\115\241\164  
\033\116\043\140\362\314\016\252\177\244\234\114\045\250\262\146  
\073\070\377\331\224\060\366\162\204\276\150\125\020\017\306\163  
\054\026\151\223\007\376\261\105\355\273\242\125\152\260\332\265  
\112\002\045\047\205\327\267\267\206\104\026\211\154\200\053\076  
\227\251\234\325\176\125\114\306\336\105\020\034\352\351\073\237  
\003\123\356\356\172\001\002\026\170\324\350\302\276\106\166\210  
\023\077\042\273\110\022\035\122\000\264\002\176\041\032\036\234  
\045\364\363\075\136\036\322\034\371\263\055\266\367\067\134\306

```
\313\041\116\260\367\231\107\030\205\301\053\272\125\256\006\352
\320\007\262\334\253\320\202\226\165\316\322\120\376\231\347\317
\057\237\347\166\321\141\052\373\041\273\061\320\252\237\107\244
\262\042\312\026\072\120\127\304\133\103\147\305\145\142\003\111
\001\353\103\331\330\370\236\255\317\261\143\016\105\364\240\132
\054\233\055\305\246\300\255\250\107\364\047\114\070\015\056\033
\111\073\122\364\350\210\203\053\124\050\324\362\065\122\264\062
\203\142\151\144\014\221\234\237\227\352\164\026\375\037\021\006
\232\233\364
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Trust for "Hongkong Post Root CA 3"
```

```
Issuer: CN=Hongkong Post Root CA 3,O=Hongkong Post,L=Hong Kong,ST=Hong Kong,C=HK
```

```
Serial Number:08:16:5f:8a:4c:a5:ec:00:c9:93:40:df:c4:c6:ae:23:b8:1c:5a:a4
```

```
Subject: CN=Hongkong Post Root CA 3,O=Hongkong Post,L=Hong Kong,ST=Hong Kong,C=HK
```

```
Not Valid Before: Sat Jun 03 02:29:46 2017
```

```
Not Valid After : Tue Jun 03 02:29:46 2042
```

```
Fingerprint (SHA-256):
```

```
5A:2F:C0:3F:0C:83:B0:90:BB:FA:40:60:4B:09:88:44:6C:76:36:18:3D:F9:84:6E:17:10:1A:44:7F:B8:EF:D6
```

```
Fingerprint (SHA1): 58:A2:D0:EC:20:52:81:5B:C1:F3:F8:64:02:24:4E:C2:8E:02:4B:02
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "Hongkong Post Root CA 3"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\130\242\320\354\040\122\201\133\301\363\370\144\002\044\116\302
\216\002\113\002
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\021\374\237\275\163\060\002\212\375\077\363\130\271\313\040\360
END
```

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\157\061\013\060\011\006\003\125\004\006\023\002\110\113\061
\022\060\020\006\003\125\004\010\023\011\110\157\156\147\040\113
\157\156\147\061\022\060\020\006\003\125\004\007\023\011\110\157
\156\147\040\113\157\156\147\061\026\060\024\006\003\125\004\012
\023\015\110\157\156\147\153\157\156\147\040\120\157\163\164\061
\040\060\036\006\003\125\004\003\023\027\110\157\156\147\153\157
\156\147\040\120\157\163\164\040\122\157\157\164\040\103\101\040
\063
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\024\010\026\137\212\114\245\354\000\311\223\100\337\304\306
\256\043\270\034\132\244
```

```

END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "Entrust Root Certification Authority - G4"
#
Issuer: CN=Entrust Root Certification Authority - G4,OU="(c) 2015 Entrust, Inc. - for authorized use
only",OU=See www.entrust.net/legal-terms,O="Entrust, Inc.",C=US
Serial Number:00:d9:b5:43:7f:af:a9:39:0f:00:00:00:00:55:65:ad:58
Subject: CN=Entrust Root Certification Authority - G4,OU="(c) 2015 Entrust, Inc. - for authorized use
only",OU=See www.entrust.net/legal-terms,O="Entrust, Inc.",C=US
Not Valid Before: Wed May 27 11:11:16 2015
Not Valid After : Sun Dec 27 11:41:16 2037
Fingerprint (SHA-256):
DB:35:17:D1:F6:73:2A:2D:5A:B9:7C:53:3E:C7:07:79:EE:32:70:A6:2F:B4:AC:42:38:37:24:60:E6:F0:1E:88
Fingerprint (SHA1): 14:88:4E:86:26:37:B0:26:AF:59:62:5C:40:77:EC:35:29:BA:96:01
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Entrust Root Certification Authority - G4"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\276\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\026\060\024\006\003\125\004\012\023\015\105\156\164\162\165
\163\164\054\040\111\156\143\056\061\050\060\046\006\003\125\004
\013\023\037\123\145\145\040\167\167\167\056\145\156\164\162\165
\163\164\056\156\145\164\057\154\145\147\141\154\055\164\145\162
\155\163\061\071\060\067\006\003\125\004\013\023\060\050\143\051
\040\062\060\061\065\040\105\156\164\162\165\163\164\054\040\111
\156\143\056\040\055\040\146\157\162\040\141\165\164\150\157\162
\151\172\145\144\040\165\163\145\040\157\156\154\171\061\062\060
\060\006\003\125\004\003\023\051\105\156\164\162\165\163\164\040
\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164\151
\157\156\040\101\165\164\150\157\162\151\164\171\040\055\040\107
\064
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\276\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\026\060\024\006\003\125\004\012\023\015\105\156\164\162\165
\163\164\054\040\111\156\143\056\061\050\060\046\006\003\125\004
\013\023\037\123\145\145\040\167\167\167\056\145\156\164\162\165
\163\164\056\156\145\164\057\154\145\147\141\154\055\164\145\162
\155\163\061\071\060\067\006\003\125\004\013\023\060\050\143\051

```

\040\062\060\061\065\040\105\156\164\162\165\163\164\054\040\111  
\156\143\056\040\055\040\146\157\162\040\141\165\164\150\157\162  
\151\172\145\144\040\165\163\145\040\157\156\154\171\061\062\060  
\060\006\003\125\004\003\023\051\105\156\164\162\165\163\164\040  
\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164\151  
\157\156\040\101\165\164\150\157\162\151\164\171\040\055\040\107  
\064

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\021\000\331\265\103\177\257\251\071\017\000\000\000\000\125  
\145\255\130

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\006\113\060\202\004\063\240\003\002\001\002\002\021\000  
\331\265\103\177\257\251\071\017\000\000\000\000\125\145\255\130  
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060  
\201\276\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\026\060\024\006\003\125\004\012\023\015\105\156\164\162\165\163  
\164\054\040\111\156\143\056\061\050\060\046\006\003\125\004\013  
\023\037\123\145\145\040\167\167\167\056\145\156\164\162\165\163  
\164\056\156\145\164\057\154\145\147\141\154\055\164\145\162\155  
\163\061\071\060\067\006\003\125\004\013\023\060\050\143\051\040  
\062\060\061\065\040\105\156\164\162\165\163\164\054\040\111\156  
\143\056\040\055\040\146\157\162\040\141\165\164\150\157\162\151  
\172\145\144\040\165\163\145\040\157\156\154\171\061\062\060\060  
\006\003\125\004\003\023\051\105\156\164\162\165\163\164\040\122  
\157\157\164\040\103\145\162\164\151\146\151\143\141\164\151\157  
\156\040\101\165\164\150\157\162\151\164\171\040\055\040\107\064  
\060\036\027\015\061\065\060\065\062\067\061\061\061\061\061\066  
\132\027\015\063\067\061\062\062\067\061\061\064\061\061\066\132  
\060\201\276\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\026\060\024\006\003\125\004\012\023\015\105\156\164\162\165  
\163\164\054\040\111\156\143\056\061\050\060\046\006\003\125\004  
\013\023\037\123\145\145\040\167\167\167\056\145\156\164\162\165  
\163\164\056\156\145\164\057\154\145\147\141\154\055\164\145\162  
\155\163\061\071\060\067\006\003\125\004\013\023\060\050\143\051  
\040\062\060\061\065\040\105\156\164\162\165\163\164\054\040\111  
\156\143\056\040\055\040\146\157\162\040\141\165\164\150\157\162  
\151\172\145\144\040\165\163\145\040\157\156\154\171\061\062\060  
\060\006\003\125\004\003\023\051\105\156\164\162\165\163\164\040  
\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164\151  
\157\156\040\101\165\164\150\157\162\151\164\171\040\055\040\107  
\064\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001  
\001\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002  
\001\000\261\354\054\102\356\342\321\060\377\245\222\107\342\055  
\303\272\144\227\155\312\367\015\265\131\301\263\313\250\150\031  
\330\257\204\155\060\160\135\176\363\056\322\123\231\341\376\037  
\136\331\110\257\135\023\215\333\377\143\063\115\323\000\002\274

\304\370\321\006\010\224\171\130\212\025\336\051\263\375\375\304  
\117\350\252\342\240\073\171\315\277\153\103\062\335\331\164\020  
\271\367\364\150\324\273\320\207\325\252\113\212\052\157\052\004  
\265\262\246\307\240\172\346\110\253\322\321\131\314\326\176\043  
\346\227\154\360\102\345\334\121\113\025\101\355\111\112\311\336  
\020\227\326\166\301\357\245\265\066\024\227\065\330\170\042\065  
\122\357\103\275\333\047\333\141\126\202\064\334\313\210\140\014  
\013\132\345\054\001\306\124\257\327\252\301\020\173\322\005\132  
\270\100\236\206\247\303\220\206\002\126\122\011\172\234\322\047  
\202\123\112\145\122\152\365\074\347\250\362\234\257\213\275\323  
\016\324\324\136\156\207\236\152\075\105\035\321\135\033\364\351  
\012\254\140\231\373\211\264\377\230\054\317\174\035\351\002\252  
\004\232\036\270\334\210\156\045\263\154\146\367\074\220\363\127  
\301\263\057\365\155\362\373\312\241\370\051\235\106\213\263\152  
\366\346\147\007\276\054\147\012\052\037\132\262\076\127\304\323  
\041\041\143\145\122\221\033\261\231\216\171\176\346\353\215\000  
\331\132\252\352\163\350\244\202\002\107\226\376\133\216\124\141  
\243\353\057\113\060\260\213\043\165\162\174\041\074\310\366\361  
\164\324\034\173\243\005\125\356\273\115\073\062\276\232\167\146  
\236\254\151\220\042\007\037\141\072\226\276\345\232\117\314\005  
\074\050\131\323\301\014\124\250\131\141\275\310\162\114\350\334  
\237\207\177\275\234\110\066\136\225\243\016\271\070\044\125\374  
\165\146\353\002\343\010\064\051\112\306\343\053\057\063\240\332  
\243\206\245\022\227\375\200\053\332\024\102\343\222\275\076\362  
\135\136\147\164\056\034\210\107\051\064\137\342\062\250\234\045  
\067\214\272\230\000\227\213\111\226\036\375\045\212\254\334\332  
\330\135\164\156\146\260\377\104\337\241\030\306\276\110\057\067  
\224\170\370\225\112\077\177\023\136\135\131\375\164\206\103\143  
\163\111\002\003\001\000\001\243\102\060\100\060\017\006\003\125  
\035\023\001\001\377\004\005\060\003\001\001\377\060\016\006\003  
\125\035\017\001\001\377\004\004\003\002\001\006\060\035\006\003  
\125\035\016\004\026\004\024\237\070\304\126\043\303\071\350\240  
\161\154\350\124\114\344\350\072\261\277\147\060\015\006\011\052  
\206\110\206\367\015\001\001\013\005\000\003\202\002\001\000\022  
\345\102\246\173\213\017\014\344\106\245\266\140\100\207\214\045  
\176\255\270\150\056\133\306\100\166\074\003\370\311\131\364\363  
\253\142\316\020\215\264\132\144\214\150\300\260\162\103\064\322  
\033\013\366\054\123\322\312\220\113\206\146\374\252\203\042\364  
\213\032\157\046\110\254\166\167\010\277\305\230\134\364\046\211  
\236\173\303\271\144\062\001\177\323\303\335\130\155\354\261\253  
\204\125\164\167\204\004\047\122\153\206\114\316\335\271\145\377  
\326\306\136\237\232\020\231\113\165\152\376\152\351\227\040\344  
\344\166\172\306\320\044\252\220\315\040\220\272\107\144\373\177  
\007\263\123\170\265\012\142\362\163\103\316\101\053\201\152\056  
\205\026\224\123\324\153\137\162\042\253\121\055\102\325\000\234  
\231\277\336\273\224\073\127\375\232\365\206\313\126\073\133\210  
\001\345\174\050\113\003\371\111\203\174\262\177\174\343\355\216  
\241\177\140\123\216\125\235\120\064\022\017\267\227\173\154\207

```
\112\104\347\365\155\354\200\067\360\130\031\156\112\150\166\360
\037\222\344\352\265\222\323\141\121\020\013\255\247\331\137\307
\137\334\037\243\134\214\241\176\233\267\236\323\126\157\146\136
\007\226\040\355\013\164\373\146\116\213\021\025\351\201\111\176
\157\260\324\120\177\042\327\137\145\002\015\246\364\205\036\330
\256\006\113\112\247\322\061\146\302\370\316\345\010\246\244\002
\226\104\150\127\304\325\063\317\031\057\024\304\224\034\173\244
\331\360\237\016\261\200\342\321\236\021\144\251\210\021\072\166
\202\345\142\302\200\330\244\203\355\223\357\174\057\220\260\062
\114\226\025\150\110\122\324\231\010\300\044\350\034\343\263\245
\041\016\222\300\220\037\317\040\137\312\073\070\307\267\155\072
\363\346\104\270\016\061\153\210\216\160\353\234\027\122\250\101
\224\056\207\266\347\246\022\305\165\337\133\300\012\156\173\244
\344\136\206\371\066\224\337\167\303\351\015\300\071\361\171\273
\106\216\253\103\131\047\267\040\273\043\351\126\100\041\354\061
\075\145\252\103\362\075\337\160\104\341\272\115\046\020\073\230
\237\363\310\216\033\070\126\041\152\121\223\323\221\312\106\332
\211\267\075\123\203\054\010\037\213\217\123\335\377\254\037
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE

# Trust for "Entrust Root Certification Authority - G4"

# Issuer: CN=Entrust Root Certification Authority - G4,OU="(c) 2015 Entrust, Inc. - for authorized use only",OU=See www.entrust.net/legal-terms,O="Entrust, Inc.",C=US

# Serial Number:00:d9:b5:43:7f:af:a9:39:0f:00:00:00:00:55:65:ad:58

# Subject: CN=Entrust Root Certification Authority - G4,OU="(c) 2015 Entrust, Inc. - for authorized use only",OU=See www.entrust.net/legal-terms,O="Entrust, Inc.",C=US

# Not Valid Before: Wed May 27 11:11:16 2015

# Not Valid After : Sun Dec 27 11:41:16 2037

# Fingerprint (SHA-256):

DB:35:17:D1:F6:73:2A:2D:5A:B9:7C:53:3E:C7:07:79:EE:32:70:A6:2F:B4:AC:42:38:37:24:60:E6:F0:1E:88

# Fingerprint (SHA1): 14:88:4E:86:26:37:B0:26:AF:59:62:5C:40:77:EC:35:29:BA:96:01

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Entrust Root Certification Authority - G4"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\024\210\116\206\046\067\260\046\257\131\142\134\100\167\354\065
\051\272\226\001
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\211\123\361\203\043\267\174\216\005\361\214\161\070\116\037\210
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\201\276\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\026\060\024\006\003\125\004\012\023\015\105\156\164\162\165
\163\164\054\040\111\156\143\056\061\050\060\046\006\003\125\004
```



\013\023\037\123\145\145\040\167\167\167\056\145\156\164\162\165  
\163\164\056\156\145\164\057\154\145\147\141\154\055\164\145\162  
\155\163\061\071\060\067\006\003\125\004\013\023\060\050\143\051  
\040\062\060\061\065\040\105\156\164\162\165\163\164\054\040\111  
\156\143\056\040\055\040\146\157\162\040\141\165\164\150\157\162  
\151\172\145\144\040\165\163\145\040\157\156\154\171\061\062\060  
\060\006\003\125\004\003\023\051\105\156\164\162\165\163\164\040  
\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164\151  
\157\156\040\101\165\164\150\157\162\151\164\171\040\055\040\107  
\064

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\021\000\331\265\103\177\257\251\071\017\000\000\000\000\125  
\145\255\130

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "Microsoft ECC Root Certificate Authority 2017"

#

# Issuer: CN=Microsoft ECC Root Certificate Authority 2017,O=Microsoft Corporation,C=US

# Serial Number:66:f2:3d:af:87:de:8b:b1:4a:ea:0c:57:31:01:c2:ec

# Subject: CN=Microsoft ECC Root Certificate Authority 2017,O=Microsoft Corporation,C=US

# Not Valid Before: Wed Dec 18 23:06:45 2019

# Not Valid After : Fri Jul 18 23:16:04 2042

# Fingerprint (SHA-256):

35:8D:F3:9D:76:4A:F9:E1:B7:66:E9:C9:72:DF:35:2E:E1:5C:FA:C2:27:AF:6A:D1:D7:0E:8E:4A:6E:DC:BA:02

# Fingerprint (SHA1): 99:9A:64:C3:7F:F4:7D:9F:AB:95:F1:47:69:89:14:60:EE:C4:C3:C5

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Microsoft ECC Root Certificate Authority 2017"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\145\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\036\060\034\006\003\125\004\012\023\025\115\151\143\162\157\163  
\157\146\164\040\103\157\162\160\157\162\141\164\151\157\156\061  
\066\060\064\006\003\125\004\003\023\055\115\151\143\162\157\163  
\157\146\164\040\105\103\103\040\122\157\157\164\040\103\145\162  
\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151  
\164\171\040\062\060\061\067

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL



```
\264\016\372\126\110\324\244\060\026\221\170\333\124\214\145\001
\212\347\120\146\302\061\267\071\272\270\032\042\007\116\374\153
\124\026\040\377\053\265\347\114\014\115\246\117\163
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Trust for "Microsoft ECC Root Certificate Authority 2017"
```

```
Issuer: CN=Microsoft ECC Root Certificate Authority 2017,O=Microsoft Corporation,C=US
```

```
Serial Number:66:f2:3d:af:87:de:8b:b1:4a:ea:0c:57:31:01:c2:ec
```

```
Subject: CN=Microsoft ECC Root Certificate Authority 2017,O=Microsoft Corporation,C=US
```

```
Not Valid Before: Wed Dec 18 23:06:45 2019
```

```
Not Valid After : Fri Jul 18 23:16:04 2042
```

```
Fingerprint (SHA-256):
```

```
35:8D:F3:9D:76:4A:F9:E1:B7:66:E9:C9:72:DF:35:2E:E1:5C:FA:C2:27:AF:6A:D1:D7:0E:8E:4A:6E:DC:BA:02
```

```
Fingerprint (SHA1): 99:9A:64:C3:7F:F4:7D:9F:AB:95:F1:47:69:89:14:60:EE:C4:C3:C5
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "Microsoft ECC Root Certificate Authority 2017"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\231\232\144\303\177\364\175\237\253\225\361\107\151\211\024\140
\356\304\303\305
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\335\241\003\346\112\223\020\321\277\360\031\102\313\376\355\147
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\145\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\036\060\034\006\003\125\004\012\023\025\115\151\143\162\157\163
\157\146\164\040\103\157\162\160\157\162\141\164\151\157\156\061
\066\060\064\006\003\125\004\003\023\055\115\151\143\162\157\163
\157\146\164\040\105\103\103\040\122\157\157\164\040\103\145\162
\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151
\164\171\040\062\060\061\067
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\020\146\362\075\257\207\336\213\261\112\352\014\127\061\001
\302\354
```

END

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

```
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

```
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

```
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
#
```

```

Certificate "Microsoft RSA Root Certificate Authority 2017"
#
Issuer: CN=Microsoft RSA Root Certificate Authority 2017,O=Microsoft Corporation,C=US
Serial Number:1e:d3:97:09:5f:d8:b4:b3:47:70:1e:aa:be:7f:45:b3
Subject: CN=Microsoft RSA Root Certificate Authority 2017,O=Microsoft Corporation,C=US
Not Valid Before: Wed Dec 18 22:51:22 2019
Not Valid After : Fri Jul 18 23:00:23 2042
Fingerprint (SHA-256):
C7:41:F7:0F:4B:2A:8D:88:BF:2E:71:C1:41:22:EF:53:EF:10:EB:A0:CF:A5:E6:4C:FA:20:F4:18:85:30:73:E0
Fingerprint (SHA1): 73:A5:E6:4A:3B:FF:83:16:FF:0E:DC:CC:61:8A:90:6E:4E:AE:4D:74
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Microsoft RSA Root Certificate Authority 2017"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\145\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\036\060\034\006\003\125\004\012\023\025\115\151\143\162\157\163
\157\146\164\040\103\157\162\160\157\162\141\164\151\157\156\061
\066\060\064\006\003\125\004\003\023\055\115\151\143\162\157\163
\157\146\164\040\122\123\101\040\122\157\157\164\040\103\145\162
\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151
\164\171\040\062\060\061\067
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\145\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\036\060\034\006\003\125\004\012\023\025\115\151\143\162\157\163
\157\146\164\040\103\157\162\160\157\162\141\164\151\157\156\061
\066\060\064\006\003\125\004\003\023\055\115\151\143\162\157\163
\157\146\164\040\122\123\101\040\122\157\157\164\040\103\145\162
\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151
\164\171\040\062\060\061\067
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\036\323\227\011\137\330\264\263\107\160\036\252\276\177
\105\263
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\250\060\202\003\220\240\003\002\001\002\002\020\036
\323\227\011\137\330\264\263\107\160\036\252\276\177\105\263\060
\015\006\011\052\206\110\206\367\015\001\001\014\005\000\060\145
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\036\060
\034\006\003\125\004\012\023\025\115\151\143\162\157\163\157\146
\164\040\103\157\162\160\157\162\141\164\151\157\156\061\066\060
\064\006\003\125\004\003\023\055\115\151\143\162\157\163\157\146
\164\040\122\123\101\040\122\157\157\164\040\103\145\162\164\151

```

\146\151\143\141\164\145\040\101\165\164\150\157\162\151\164\171  
\040\062\060\061\067\060\036\027\015\061\071\061\062\061\070\062  
\062\065\061\062\062\132\027\015\064\062\060\067\061\070\062\063  
\060\060\062\063\132\060\145\061\013\060\011\006\003\125\004\006  
\023\002\125\123\061\036\060\034\006\003\125\004\012\023\025\115  
\151\143\162\157\163\157\146\164\040\103\157\162\160\157\162\141  
\164\151\157\156\061\066\060\064\006\003\125\004\003\023\055\115  
\151\143\162\157\163\157\146\164\040\122\123\101\040\122\157\157  
\164\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165  
\164\150\157\162\151\164\171\040\062\060\061\067\060\202\002\042  
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003  
\202\002\017\000\060\202\002\012\002\202\002\001\000\312\133\276  
\224\063\214\051\225\221\026\012\225\275\107\142\301\211\363\231  
\066\337\106\220\311\245\355\170\152\157\107\221\150\370\047\147  
\120\063\035\241\246\373\340\345\103\243\204\002\127\001\135\234  
\110\100\202\123\020\274\277\307\073\150\220\266\202\055\345\364  
\145\320\314\155\031\314\225\371\173\254\112\224\255\016\336\113  
\103\035\207\007\222\023\220\200\203\144\065\071\004\374\345\351  
\154\263\266\037\120\224\070\145\120\134\027\106\271\266\205\265  
\034\265\027\350\326\105\235\330\262\046\260\312\304\160\112\256  
\140\244\335\263\331\354\374\073\325\127\162\274\077\310\311\262  
\336\113\153\370\043\154\003\300\005\275\225\307\315\163\073\146  
\200\144\343\032\254\056\371\107\005\362\006\266\233\163\365\170  
\063\133\307\241\373\047\052\241\264\232\221\214\221\323\072\202  
\076\166\100\264\315\122\141\121\160\050\077\305\305\132\362\311  
\214\111\273\024\133\115\310\377\147\115\114\022\226\255\365\376  
\170\250\227\207\327\375\136\040\200\334\241\113\042\373\324\211  
\255\272\316\107\227\107\125\173\217\105\310\147\050\204\225\034  
\150\060\357\357\111\340\065\173\144\347\230\260\224\332\115\205  
\073\076\125\304\050\257\127\363\236\023\333\106\047\237\036\242  
\136\104\203\244\245\312\325\023\263\113\077\304\343\302\346\206  
\141\244\122\060\271\172\040\117\157\017\070\123\313\063\014\023  
\053\217\326\232\275\052\310\055\261\034\175\113\121\312\107\321  
\110\047\162\135\207\353\325\105\346\110\145\235\257\122\220\272  
\133\242\030\145\127\022\237\150\271\324\025\153\224\304\151\042  
\230\364\063\340\355\371\121\216\101\120\311\064\117\166\220\254  
\374\070\301\330\341\173\271\343\343\224\341\106\151\313\016\012  
\120\153\023\272\254\017\067\132\267\022\265\220\201\036\126\256  
\127\042\206\331\311\322\321\327\121\343\253\073\306\125\375\036  
\016\323\164\012\321\332\252\352\151\270\227\050\217\110\304\007  
\370\122\103\072\364\312\125\065\054\260\246\152\300\234\371\362  
\201\341\022\152\300\105\331\147\263\316\377\043\242\211\012\124  
\324\024\271\052\250\327\354\371\253\315\045\130\062\171\217\220  
\133\230\071\304\010\006\301\254\177\016\075\000\245\002\003\001  
\000\001\243\124\060\122\060\016\006\003\125\035\017\001\001\377  
\004\004\003\002\001\206\060\017\006\003\125\035\023\001\001\377  
\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026  
\004\024\011\313\131\177\206\262\160\217\032\303\071\343\300\331

\351\277\273\115\262\043\060\020\006\011\053\006\001\004\001\202  
\067\025\001\004\003\002\001\000\060\015\006\011\052\206\110\206  
\367\015\001\001\014\005\000\003\202\002\001\000\254\257\076\135  
\302\021\226\211\216\243\347\222\326\227\025\270\023\242\246\102  
\056\002\315\026\005\131\047\312\040\350\272\270\350\032\354\115  
\250\227\126\256\145\103\261\217\000\233\122\315\125\315\123\071  
\155\142\114\213\015\133\174\056\104\277\203\020\217\363\123\202  
\200\303\117\072\307\156\021\077\346\343\026\221\204\373\155\204  
\177\064\164\255\211\247\316\271\327\327\237\204\144\222\276\225  
\241\255\011\123\063\335\356\012\352\112\121\216\157\125\253\272  
\265\224\106\256\214\177\330\242\120\045\145\140\200\106\333\063  
\004\256\154\265\230\164\124\045\334\223\344\370\343\125\025\075  
\270\155\303\012\244\022\301\151\205\156\337\144\361\123\231\341  
\112\165\040\235\225\017\344\326\334\003\361\131\030\350\107\211  
\262\127\132\224\266\251\330\027\053\027\111\345\166\313\301\126  
\231\072\067\261\377\151\054\221\221\223\341\337\114\243\067\166  
\115\241\237\370\155\036\035\323\372\354\373\364\105\035\023\155  
\317\367\131\345\042\047\162\053\206\363\127\273\060\355\044\115  
\334\175\126\273\243\263\370\064\171\211\301\340\362\002\141\367  
\246\374\017\273\034\027\013\256\101\331\174\275\047\243\375\056  
\072\321\223\224\261\163\035\044\213\257\133\040\211\255\267\147  
\146\171\365\072\306\246\226\063\376\123\222\310\106\261\021\221  
\306\231\177\217\311\326\146\061\040\101\020\207\055\014\326\301  
\257\064\230\312\144\203\373\023\127\321\301\360\074\172\214\245  
\301\375\225\041\240\161\301\223\147\161\022\352\217\210\012\151  
\031\144\231\043\126\373\254\052\056\160\276\146\304\014\204\357  
\345\213\363\223\001\370\152\220\223\147\113\262\150\243\265\142  
\217\351\077\214\172\073\136\017\347\214\270\306\174\357\067\375  
\164\342\310\117\063\162\341\224\071\155\275\022\257\276\014\116  
\160\174\033\157\215\263\062\223\163\104\026\155\350\364\367\340  
\225\200\217\226\135\070\244\364\253\336\012\060\207\223\330\115  
\000\161\142\105\047\113\072\102\204\133\177\145\267\147\064\122  
\055\234\026\153\252\250\330\173\243\102\114\161\307\014\312\076  
\203\344\246\357\267\001\060\136\121\243\171\365\160\151\246\101  
\104\017\206\260\054\221\306\075\352\256\017\204

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Microsoft RSA Root Certificate Authority 2017"

# Issuer: CN=Microsoft RSA Root Certificate Authority 2017,O=Microsoft Corporation,C=US

# Serial Number:1e:d3:97:09:5f:d8:b4:b3:47:70:1e:aa:be:7f:45:b3

# Subject: CN=Microsoft RSA Root Certificate Authority 2017,O=Microsoft Corporation,C=US

# Not Valid Before: Wed Dec 18 22:51:22 2019

# Not Valid After : Fri Jul 18 23:00:23 2042

# Fingerprint (SHA-256):

C7:41:F7:0F:4B:2A:8D:88:BF:2E:71:C1:41:22:EF:53:EF:10:EB:A0:CF:A5:E6:4C:FA:20:F4:18:85:30:73:E0

```

Fingerprint (SHA1): 73:A5:E6:4A:3B:FF:83:16:FF:0E:DC:CC:61:8A:90:6E:4E:AE:4D:74
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Microsoft RSA Root Certificate Authority 2017"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\163\245\346\112\073\377\203\026\377\016\334\314\141\212\220\156
\116\256\115\164
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\020\377\000\377\317\311\370\307\172\300\356\065\216\311\017\107
END
CKA_ISSUER MULTILINE_OCTAL
\060\145\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\036\060\034\006\003\125\004\012\023\025\115\151\143\162\157\163
\157\146\164\040\103\157\162\160\157\162\141\164\151\157\156\061
\066\060\064\006\003\125\004\003\023\055\115\151\143\162\157\163
\157\146\164\040\122\123\101\040\122\157\157\164\040\103\145\162
\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151
\164\171\040\062\060\061\067
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\036\323\227\011\137\330\264\263\107\160\036\252\276\177
\105\263
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "e-Szigno Root CA 2017"
#
Issuer: CN=e-Szigno Root CA 2017,OID.2.5.4.97=VATHU-23584497,O=Microsec Ltd.,L=Budapest,C=HU
Serial Number:01:54:48:ef:21:fd:97:59:0d:f5:04:0a
Subject: CN=e-Szigno Root CA 2017,OID.2.5.4.97=VATHU-23584497,O=Microsec Ltd.,L=Budapest,C=HU
Not Valid Before: Tue Aug 22 12:07:06 2017
Not Valid After : Fri Aug 22 12:07:06 2042
Fingerprint (SHA-256):
BE:B0:0B:30:83:9B:9B:C3:2C:32:E4:44:79:05:95:06:41:F2:64:21:B1:5E:D0:89:19:8B:51:8A:E2:EA:1B:99
Fingerprint (SHA1): 89:D4:83:03:4F:9E:9A:48:80:5F:72:37:D4:A9:A6:EF:CB:7C:1F:D1
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "e-Szigno Root CA 2017"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

```

CKA\_SUBJECT MULTILINE\_OCTAL

\060\161\061\013\060\011\006\003\125\004\006\023\002\110\125\061  
\021\060\017\006\003\125\004\007\014\010\102\165\144\141\160\145  
\163\164\061\026\060\024\006\003\125\004\012\014\015\115\151\143  
\162\157\163\145\143\040\114\164\144\056\061\027\060\025\006\003  
\125\004\141\014\016\126\101\124\110\125\055\062\063\065\070\064  
\064\071\067\061\036\060\034\006\003\125\004\003\014\025\145\055  
\123\172\151\147\156\157\040\122\157\157\164\040\103\101\040\062  
\060\061\067

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\161\061\013\060\011\006\003\125\004\006\023\002\110\125\061  
\021\060\017\006\003\125\004\007\014\010\102\165\144\141\160\145  
\163\164\061\026\060\024\006\003\125\004\012\014\015\115\151\143  
\162\157\163\145\143\040\114\164\144\056\061\027\060\025\006\003  
\125\004\141\014\016\126\101\124\110\125\055\062\063\065\070\064  
\064\071\067\061\036\060\034\006\003\125\004\003\014\025\145\055  
\123\172\151\147\156\157\040\122\157\157\164\040\103\101\040\062  
\060\061\067

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\014\001\124\110\357\041\375\227\131\015\365\004\012

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\002\100\060\202\001\345\240\003\002\001\002\002\014\001  
\124\110\357\041\375\227\131\015\365\004\012\060\012\006\010\052  
\206\110\316\075\004\003\002\060\161\061\013\060\011\006\003\125  
\004\006\023\002\110\125\061\021\060\017\006\003\125\004\007\014  
\010\102\165\144\141\160\145\163\164\061\026\060\024\006\003\125  
\004\012\014\015\115\151\143\162\157\163\145\143\040\114\164\144  
\056\061\027\060\025\006\003\125\004\141\014\016\126\101\124\110  
\125\055\062\063\065\070\064\064\071\067\061\036\060\034\006\003  
\125\004\003\014\025\145\055\123\172\151\147\156\157\040\122\157  
\157\164\040\103\101\040\062\060\061\067\060\036\027\015\061\067  
\060\070\062\062\061\062\060\067\060\066\132\027\015\064\062\060  
\070\062\062\061\062\060\067\060\066\132\060\161\061\013\060\011  
\006\003\125\004\006\023\002\110\125\061\021\060\017\006\003\125  
\004\007\014\010\102\165\144\141\160\145\163\164\061\026\060\024  
\006\003\125\004\012\014\015\115\151\143\162\157\163\145\143\040  
\114\164\144\056\061\027\060\025\006\003\125\004\141\014\016\126  
\101\124\110\125\055\062\063\065\070\064\064\071\067\061\036\060  
\034\006\003\125\004\003\014\025\145\055\123\172\151\147\156\157  
\040\122\157\157\164\040\103\101\040\062\060\061\067\060\131\060  
\023\006\007\052\206\110\316\075\002\001\006\010\052\206\110\316  
\075\003\001\007\003\102\000\004\226\334\075\212\330\260\173\157  
\306\047\276\104\220\261\263\126\025\173\216\103\044\175\032\204  
\131\356\143\150\262\306\136\207\320\025\110\036\250\220\255\275



```
\123\242\332\336\072\220\246\140\137\150\062\265\206\101\337\207
\133\054\173\305\376\174\172\332\243\143\060\141\060\017\006\003
\125\035\023\001\001\377\004\005\060\003\001\001\377\060\016\006
\003\125\035\017\001\001\377\004\004\003\002\001\006\060\035\006
\003\125\035\016\004\026\004\024\207\021\025\010\321\252\301\170
\014\261\257\316\306\311\220\357\277\060\004\300\060\037\006\003
\125\035\043\004\030\060\026\200\024\207\021\025\010\321\252\301
\170\014\261\257\316\306\311\220\357\277\060\004\300\060\012\006
\010\052\206\110\316\075\004\003\002\003\111\000\060\106\002\041
\000\265\127\335\327\212\125\013\066\341\206\104\372\324\331\150
\215\270\334\043\212\212\015\324\057\175\352\163\354\277\115\154
\250\002\041\000\313\245\264\022\372\347\265\350\317\176\223\374
\363\065\217\157\116\132\174\264\274\116\262\374\162\252\133\131
\371\347\334\061
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Trust for "e-Szigno Root CA 2017"
```

```
Issuer: CN=e-Szigno Root CA 2017,OID.2.5.4.97=VATHU-23584497,O=Microsec Ltd.,L=Budapest,C=HU
```

```
Serial Number:01:54:48:ef:21:fd:97:59:0d:f5:04:0a
```

```
Subject: CN=e-Szigno Root CA 2017,OID.2.5.4.97=VATHU-23584497,O=Microsec Ltd.,L=Budapest,C=HU
```

```
Not Valid Before: Tue Aug 22 12:07:06 2017
```

```
Not Valid After : Fri Aug 22 12:07:06 2042
```

```
Fingerprint (SHA-256):
```

```
BE:B0:0B:30:83:9B:9B:C3:2C:32:E4:44:79:05:95:06:41:F2:64:21:B1:5E:D0:89:19:8B:51:8A:E2:EA:1B:99
```

```
Fingerprint (SHA1): 89:D4:83:03:4F:9E:9A:48:80:5F:72:37:D4:A9:A6:EF:CB:7C:1F:D1
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "e-Szigno Root CA 2017"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\211\324\203\003\117\236\232\110\200\137\162\067\324\251\246\357
\313\174\037\321
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\336\037\366\236\204\256\247\264\041\316\036\130\175\321\204\230
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\161\061\013\060\011\006\003\125\004\006\023\002\110\125\061
\021\060\017\006\003\125\004\007\014\010\102\165\144\141\160\145
\163\164\061\026\060\024\006\003\125\004\012\014\015\115\151\143
\162\157\163\145\143\040\114\164\144\056\061\027\060\025\006\003
\125\004\141\014\016\126\101\124\110\125\055\062\063\065\070\064
\064\071\067\061\036\060\034\006\003\125\004\003\014\025\145\055
\123\172\151\147\156\157\040\122\157\157\164\040\103\101\040\062
```

```

\060\061\067
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\014\001\124\110\357\041\375\227\131\015\365\004\012
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "certSIGN Root CA G2"
#
Issuer: OU=certSIGN ROOT CA G2,O=CERTSIGN SA,C=RO
Serial Number:11:00:34:b6:4e:c6:36:2d:36
Subject: OU=certSIGN ROOT CA G2,O=CERTSIGN SA,C=RO
Not Valid Before: Mon Feb 06 09:27:35 2017
Not Valid After : Thu Feb 06 09:27:35 2042
Fingerprint (SHA-256):
65:7C:FE:2F:A7:3F:AA:38:46:25:71:F3:32:A2:36:3A:46:FC:E7:02:09:51:71:07:02:CD:FB:B6:EE:DA:33:05
Fingerprint (SHA1): 26:F9:93:B4:ED:3D:28:27:B0:B9:4B:A7:E9:15:1D:A3:8D:92:E5:32
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "certSIGN Root CA G2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\101\061\013\060\011\006\003\125\004\006\023\002\122\117\061
\024\060\022\006\003\125\004\012\023\013\103\105\122\124\123\111
\107\116\040\123\101\061\034\060\032\006\003\125\004\013\023\023
\143\145\162\164\123\111\107\116\040\122\117\117\124\040\103\101
\040\107\062
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\101\061\013\060\011\006\003\125\004\006\023\002\122\117\061
\024\060\022\006\003\125\004\012\023\013\103\105\122\124\123\111
\107\116\040\123\101\061\034\060\032\006\003\125\004\013\023\023
\143\145\162\164\123\111\107\116\040\122\117\117\124\040\103\101
\040\107\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\011\021\000\064\266\116\306\066\055\066
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\107\060\202\003\057\240\003\002\001\002\002\011\021
\000\064\266\116\306\066\055\066\060\015\006\011\052\206\110\206

```

\367\015\001\001\013\005\000\060\101\061\013\060\011\006\003\125  
\004\006\023\002\122\117\061\024\060\022\006\003\125\004\012\023  
\013\103\105\122\124\123\111\107\116\040\123\101\061\034\060\032  
\006\003\125\004\013\023\023\143\145\162\164\123\111\107\116\040  
\122\117\117\124\040\103\101\040\107\062\060\036\027\015\061\067  
\060\062\060\066\060\071\062\067\063\065\132\027\015\064\062\060  
\062\060\066\060\071\062\067\063\065\132\060\101\061\013\060\011  
\006\003\125\004\006\023\002\122\117\061\024\060\022\006\003\125  
\004\012\023\013\103\105\122\124\123\111\107\116\040\123\101\061  
\034\060\032\006\003\125\004\013\023\023\143\145\162\164\123\111  
\107\116\040\122\117\117\124\040\103\101\040\107\062\060\202\002  
\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000  
\003\202\002\017\000\060\202\002\012\002\202\002\001\000\300\305  
\165\031\221\175\104\164\164\207\376\016\073\226\334\330\001\026  
\314\356\143\221\347\013\157\316\073\012\151\032\174\302\343\257  
\202\216\206\327\136\217\127\353\323\041\131\375\071\067\102\060  
\276\120\352\266\017\251\210\330\056\055\151\041\347\321\067\030  
\116\175\221\325\026\137\153\133\000\302\071\103\015\066\205\122  
\271\123\145\017\035\102\345\217\317\005\323\356\334\014\032\331  
\270\213\170\042\147\344\151\260\150\305\074\344\154\132\106\347  
\315\307\372\357\304\354\113\275\152\244\254\375\314\050\121\357  
\222\264\051\253\253\065\232\114\344\304\010\306\046\314\370\151  
\237\344\234\360\051\323\134\371\306\026\045\236\043\303\040\301  
\075\017\077\070\100\260\376\202\104\070\252\132\032\212\153\143  
\130\070\264\025\323\266\021\151\173\036\124\356\214\032\042\254  
\162\227\077\043\131\233\311\042\204\301\007\117\314\177\342\127  
\312\022\160\273\246\145\363\151\165\143\275\225\373\033\227\315  
\344\250\257\366\321\116\250\331\212\161\044\315\066\075\274\226  
\304\361\154\251\256\345\317\015\156\050\015\260\016\265\312\121  
\173\170\024\303\040\057\177\373\024\125\341\021\231\375\325\012  
\241\236\002\343\142\137\353\065\113\054\270\162\350\076\075\117  
\254\054\273\056\206\342\243\166\217\345\223\052\317\245\253\310  
\134\215\113\006\377\022\106\254\170\313\024\007\065\340\251\337  
\213\351\257\025\117\026\211\133\275\366\215\306\131\256\210\205  
\016\301\211\353\037\147\305\105\216\377\155\067\066\053\170\146  
\203\221\121\053\075\377\121\167\166\142\241\354\147\076\076\201  
\203\340\126\251\120\037\037\172\231\253\143\277\204\027\167\361  
\015\073\337\367\234\141\263\065\230\212\072\262\354\074\032\067  
\077\176\217\222\317\331\022\024\144\332\020\002\025\101\377\117  
\304\353\034\243\311\372\231\367\106\351\341\030\331\261\270\062  
\055\313\024\014\120\330\203\145\203\356\271\134\317\313\005\132  
\114\372\031\227\153\326\135\023\323\302\134\124\274\062\163\240  
\170\365\361\155\036\313\237\245\246\237\042\334\321\121\236\202  
\171\144\140\051\023\076\243\375\117\162\152\253\342\324\345\270  
\044\125\054\104\113\212\210\104\234\312\204\323\052\073\002\003  
\001\000\001\243\102\060\100\060\017\006\003\125\035\023\001\001  
\377\004\005\060\003\001\001\377\060\016\006\003\125\035\017\001  
\001\377\004\004\003\002\001\006\060\035\006\003\125\035\016\004

\026\004\024\202\041\055\146\306\327\240\340\025\353\316\114\011  
\167\304\140\236\124\156\003\060\015\006\011\052\206\110\206\367  
\015\001\001\013\005\000\003\202\002\001\000\140\336\032\270\347  
\362\140\202\325\003\063\201\313\006\212\361\042\111\351\350\352  
\221\177\306\063\136\150\031\003\206\073\103\001\317\007\160\344  
\010\036\145\205\221\346\021\042\267\365\002\043\216\256\271\036  
\175\037\176\154\346\275\045\325\225\032\362\005\246\257\205\002  
\157\256\370\326\061\377\045\311\112\310\307\212\251\331\237\113  
\111\233\021\127\231\222\103\021\336\266\063\244\314\327\215\144  
\175\324\315\074\050\054\264\232\226\352\115\365\304\104\304\045  
\252\040\200\330\051\125\367\340\101\374\006\046\377\271\066\365  
\103\024\003\146\170\341\021\261\332\040\137\106\000\170\000\041  
\245\036\000\050\141\170\157\250\001\001\217\235\064\232\377\364  
\070\220\373\270\321\263\162\006\311\161\346\201\305\171\355\013  
\246\171\362\023\013\234\367\135\016\173\044\223\264\110\333\206  
\137\336\120\206\170\347\100\346\061\250\220\166\160\141\257\234  
\067\054\021\265\202\267\252\256\044\064\133\162\014\151\015\315  
\131\237\366\161\257\234\013\321\012\070\371\006\042\203\123\045  
\014\374\121\304\346\276\342\071\225\013\044\255\257\321\225\344  
\226\327\164\144\153\161\116\002\074\252\205\363\040\243\103\071  
\166\133\154\120\376\232\234\024\036\145\024\212\025\275\243\202  
\105\132\111\126\152\322\234\261\143\062\345\141\340\123\042\016  
\247\012\111\352\313\176\037\250\342\142\200\366\020\105\122\230  
\006\030\336\245\315\057\177\252\324\351\076\010\162\354\043\003  
\002\074\246\252\330\274\147\164\075\024\027\373\124\113\027\343  
\323\171\075\155\153\111\311\050\016\056\164\120\277\014\331\106  
\072\020\206\311\247\077\351\240\354\177\353\245\167\130\151\161  
\346\203\012\067\362\206\111\152\276\171\010\220\366\002\026\144  
\076\345\332\114\176\014\064\311\371\137\266\263\050\121\247\247  
\053\252\111\372\215\145\051\116\343\153\023\247\224\243\055\121  
\155\170\014\104\313\337\336\010\157\316\243\144\253\323\225\204  
\324\271\122\124\162\173\226\045\314\274\151\343\110\156\015\320  
\307\235\047\232\252\370\023\222\335\036\337\143\237\065\251\026  
\066\354\214\270\203\364\075\211\217\315\264\027\136\327\263\027  
\101\020\135\047\163\140\205\127\111\042\007

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "certSIGN Root CA G2"

# Issuer: OU=certSIGN ROOT CA G2,O=CERTSIGN SA,C=RO

# Serial Number:11:00:34:b6:4e:c6:36:2d:36

# Subject: OU=certSIGN ROOT CA G2,O=CERTSIGN SA,C=RO

# Not Valid Before: Mon Feb 06 09:27:35 2017

# Not Valid After : Thu Feb 06 09:27:35 2042

# Fingerprint (SHA-256):

65:7C:FE:2F:A7:3F:AA:38:46:25:71:F3:32:A2:36:3A:46:FC:E7:02:09:51:71:07:02:CD:FB:B6:EE:DA:33:05

```

Fingerprint (SHA1): 26:F9:93:B4:ED:3D:28:27:B0:B9:4B:A7:E9:15:1D:A3:8D:92:E5:32
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "certSIGN Root CA G2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\046\371\223\264\355\075\050\047\260\271\113\247\351\025\035\243
\215\222\345\062
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\214\361\165\212\306\031\317\224\267\367\145\040\207\303\227\307
END
CKA_ISSUER MULTILINE_OCTAL
\060\101\061\013\060\011\006\003\125\004\006\023\002\122\117\061
\024\060\022\006\003\125\004\012\023\013\103\105\122\124\123\111
\107\116\040\123\101\061\034\060\032\006\003\125\004\013\023\023
\143\145\162\164\123\111\107\116\040\122\117\117\124\040\103\101
\040\107\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\011\021\000\064\266\116\306\066\055\066
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "Trustwave Global Certification Authority"
#
Issuer: CN=Trustwave Global Certification Authority,O="Trustwave Holdings,
Inc.",L=Chicago,ST=Illinois,C=US
Serial Number:05:f7:0e:86:da:49:f3:46:35:2e:ba:b2
Subject: CN=Trustwave Global Certification Authority,O="Trustwave Holdings,
Inc.",L=Chicago,ST=Illinois,C=US
Not Valid Before: Wed Aug 23 19:34:12 2017
Not Valid After : Sat Aug 23 19:34:12 2042
Fingerprint (SHA-256):
97:55:20:15:F5:DD:FC:3C:87:88:C0:06:94:45:55:40:88:94:45:00:84:F1:00:86:70:86:BC:1A:2B:B5:8D:C8
Fingerprint (SHA1): 2F:8F:36:4F:E1:58:97:44:21:59:87:A5:2A:9A:D0:69:95:26:7F:B5
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Trustwave Global Certification Authority"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL

```

\060\201\210\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\021\060\017\006\003\125\004\010\014\010\111\154\154\151\156  
\157\151\163\061\020\060\016\006\003\125\004\007\014\007\103\150  
\151\143\141\147\157\061\041\060\037\006\003\125\004\012\014\030  
\124\162\165\163\164\167\141\166\145\040\110\157\154\144\151\156  
\147\163\054\040\111\156\143\056\061\061\060\057\006\003\125\004  
\003\014\050\124\162\165\163\164\167\141\166\145\040\107\154\157  
\142\141\154\040\103\145\162\164\151\146\151\143\141\164\151\157  
\156\040\101\165\164\150\157\162\151\164\171

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\210\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\021\060\017\006\003\125\004\010\014\010\111\154\154\151\156  
\157\151\163\061\020\060\016\006\003\125\004\007\014\007\103\150  
\151\143\141\147\157\061\041\060\037\006\003\125\004\012\014\030  
\124\162\165\163\164\167\141\166\145\040\110\157\154\144\151\156  
\147\163\054\040\111\156\143\056\061\061\060\057\006\003\125\004  
\003\014\050\124\162\165\163\164\167\141\166\145\040\107\154\157  
\142\141\154\040\103\145\162\164\151\146\151\143\141\164\151\157  
\156\040\101\165\164\150\157\162\151\164\171

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\014\005\367\016\206\332\111\363\106\065\056\272\262

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\332\060\202\003\302\240\003\002\001\002\002\014\005  
\367\016\206\332\111\363\106\065\056\272\262\060\015\006\011\052  
\206\110\206\367\015\001\001\013\005\000\060\201\210\061\013\060  
\011\006\003\125\004\006\023\002\125\123\061\021\060\017\006\003  
\125\004\010\014\010\111\154\154\151\156\157\151\163\061\020\060  
\016\006\003\125\004\007\014\007\103\150\151\143\141\147\157\061  
\041\060\037\006\003\125\004\012\014\030\124\162\165\163\164\167  
\141\166\145\040\110\157\154\144\151\156\147\163\054\040\111\156  
\143\056\061\061\060\057\006\003\125\004\003\014\050\124\162\165  
\163\164\167\141\166\145\040\107\154\157\142\141\154\040\103\145  
\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150  
\157\162\151\164\171\060\036\027\015\061\067\060\070\062\063\061  
\071\063\064\061\062\132\027\015\064\062\060\070\062\063\061\071  
\063\064\061\062\132\060\201\210\061\013\060\011\006\003\125\004  
\006\023\002\125\123\061\021\060\017\006\003\125\004\010\014\010  
\111\154\154\151\156\157\151\163\061\020\060\016\006\003\125\004  
\007\014\007\103\150\151\143\141\147\157\061\041\060\037\006\003  
\125\004\012\014\030\124\162\165\163\164\167\141\166\145\040\110  
\157\154\144\151\156\147\163\054\040\111\156\143\056\061\061\060  
\057\006\003\125\004\003\014\050\124\162\165\163\164\167\141\166  
\145\040\107\154\157\142\141\154\040\103\145\162\164\151\146\151  
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171

\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001  
\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001  
\000\271\135\121\050\113\074\067\222\321\202\316\275\035\275\315  
\335\270\253\317\012\076\341\135\345\334\252\011\271\127\002\076  
\346\143\141\337\362\017\202\143\256\243\367\254\163\321\174\347  
\263\013\257\010\000\011\131\177\315\051\052\210\223\207\027\030  
\200\355\210\262\264\266\020\037\055\326\137\125\242\023\135\321  
\306\353\006\126\211\210\376\254\062\235\375\134\303\005\307\156  
\356\206\211\272\210\003\235\162\041\206\220\256\217\003\245\334  
\237\210\050\313\243\222\111\017\354\320\017\342\155\104\117\200  
\152\262\324\347\240\012\123\001\272\216\227\221\166\156\274\374  
\325\153\066\346\100\210\326\173\057\137\005\350\054\155\021\363  
\347\262\276\222\104\114\322\227\244\376\322\162\201\103\007\234  
\351\021\076\365\213\032\131\175\037\150\130\335\004\000\054\226  
\363\103\263\176\230\031\164\331\234\163\331\030\276\101\307\064  
\171\331\364\142\302\103\271\263\047\260\042\313\371\075\122\307  
\060\107\263\311\076\270\152\342\347\350\201\160\136\102\213\117  
\046\245\376\072\302\040\156\273\370\026\216\315\014\251\264\033  
\154\166\020\341\130\171\106\076\124\316\200\250\127\011\067\051  
\033\231\023\217\014\310\326\054\034\373\005\350\010\225\075\145  
\106\334\356\315\151\342\115\217\207\050\116\064\013\076\317\024  
\331\273\335\266\120\232\255\167\324\031\326\332\032\210\310\116  
\033\047\165\330\262\010\361\256\203\060\271\021\016\315\207\360  
\204\215\025\162\174\241\357\314\362\210\141\272\364\151\273\014  
\214\013\165\127\004\270\116\052\024\056\075\017\034\036\062\246  
\142\066\356\146\342\042\270\005\100\143\020\042\363\063\035\164  
\162\212\054\365\071\051\240\323\347\033\200\204\055\305\075\343  
\115\261\375\032\157\272\145\007\073\130\354\102\105\046\373\330  
\332\045\162\304\366\000\261\042\171\275\343\174\131\142\112\234  
\005\157\075\316\346\326\107\143\231\306\044\157\162\022\310\254  
\177\220\264\013\221\160\350\267\346\026\020\161\027\316\336\006  
\117\110\101\175\065\112\243\211\362\311\113\173\101\021\155\147  
\267\010\230\114\345\021\031\256\102\200\334\373\220\005\324\370  
\120\312\276\344\255\307\302\224\327\026\235\346\027\217\257\066  
\373\002\003\001\000\001\243\102\060\100\060\017\006\003\125\035  
\023\001\001\377\004\005\060\003\001\001\377\060\035\006\003\125  
\035\016\004\026\004\024\231\340\031\147\015\142\333\166\263\332  
\075\270\133\350\375\102\322\061\016\207\060\016\006\003\125\035  
\017\001\001\377\004\004\003\002\001\006\060\015\006\011\052\206  
\110\206\367\015\001\001\013\005\000\003\202\002\001\000\230\163  
\160\342\260\323\355\071\354\114\140\331\251\022\206\027\036\226  
\320\350\124\050\073\144\055\041\246\370\235\126\023\152\110\075  
\117\307\076\051\333\155\130\203\124\075\207\175\043\005\324\344  
\034\334\350\070\145\206\305\165\247\132\333\065\005\275\167\336  
\273\051\067\100\005\007\303\224\122\237\312\144\335\361\033\053  
\334\106\012\020\002\061\375\112\150\015\007\144\220\346\036\365  
\052\241\250\273\074\135\371\243\010\013\021\014\361\077\055\020  
\224\157\376\342\064\207\203\326\317\345\033\065\155\322\003\341

```
\260\015\250\240\252\106\047\202\066\247\025\266\010\246\102\124
\127\266\231\132\342\013\171\220\327\127\022\121\065\031\210\101
\150\045\324\067\027\204\025\373\001\162\334\225\336\122\046\040
\230\046\342\166\365\047\157\372\000\073\112\141\331\015\313\121
\223\052\375\026\006\226\247\043\232\043\110\376\121\275\266\304
\260\261\124\316\336\154\101\255\026\147\176\333\375\070\315\271
\070\116\262\301\140\313\235\027\337\130\236\172\142\262\046\217
\164\225\233\344\133\035\322\017\335\230\034\233\131\271\043\323
\061\240\246\377\070\335\317\040\117\351\130\126\072\147\303\321
\366\231\231\235\272\066\266\200\057\210\107\117\206\277\104\072
\200\344\067\034\246\272\352\227\230\021\320\204\142\107\144\036
\252\356\100\277\064\261\234\217\116\341\362\222\117\037\216\363
\236\227\336\363\246\171\152\211\161\117\113\047\027\110\376\354
\364\120\017\117\111\175\314\105\343\275\172\100\305\101\334\141
\126\047\006\151\345\162\101\201\323\266\001\211\240\057\072\162
\171\376\072\060\277\101\354\307\142\076\221\113\307\331\061\166
\102\371\367\074\143\354\046\214\163\014\175\032\035\352\250\174
\207\250\302\047\174\341\063\101\017\317\317\374\000\240\042\200
\236\112\247\157\000\260\101\105\267\042\312\150\110\305\102\242
\256\335\035\362\340\156\116\005\130\261\300\220\026\052\244\075
\020\100\276\217\142\143\203\251\234\202\175\055\002\351\203\060
\174\313\047\311\375\036\146\000\260\056\323\041\057\216\063\026
\154\230\355\020\250\007\326\314\223\317\333\321\151\034\344\312
\311\340\266\234\351\316\161\161\336\154\077\026\244\171
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Trust for "Trustwave Global Certification Authority"
```

```
Issuer: CN=Trustwave Global Certification Authority,O="Trustwave Holdings,
Inc.",L=Chicago,ST=Illinois,C=US
```

```
Serial Number:05:f7:0e:86:da:49:f3:46:35:2e:ba:b2
```

```
Subject: CN=Trustwave Global Certification Authority,O="Trustwave Holdings,
Inc.",L=Chicago,ST=Illinois,C=US
```

```
Not Valid Before: Wed Aug 23 19:34:12 2017
```

```
Not Valid After : Sat Aug 23 19:34:12 2042
```

```
Fingerprint (SHA-256):
```

```
97:55:20:15:F5:DD:FC:3C:87:88:C0:06:94:45:55:40:88:94:45:00:84:F1:00:86:70:86:BC:1A:2B:B5:8D:C8
```

```
Fingerprint (SHA1): 2F:8F:36:4F:E1:58:97:44:21:59:87:A5:2A:9A:D0:69:95:26:7F:B5
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "Trustwave Global Certification Authority"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\057\217\066\117\341\130\227\104\041\131\207\245\052\232\320\151
```

```
\225\046\177\265
```



```

END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\370\034\030\055\057\272\137\155\241\154\274\307\253\221\307\016
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\210\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\021\060\017\006\003\125\004\010\014\010\111\154\154\151\156
\157\151\163\061\020\060\016\006\003\125\004\007\014\007\103\150
\151\143\141\147\157\061\041\060\037\006\003\125\004\012\014\030
\124\162\165\163\164\167\141\166\145\040\110\157\154\144\151\156
\147\163\054\040\111\156\143\056\061\061\060\057\006\003\125\004
\003\014\050\124\162\165\163\164\167\141\166\145\040\107\154\157
\142\141\154\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\014\005\367\016\206\332\111\363\106\065\056\272\262
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "Trustwave Global ECC P256 Certification Authority"
#
Issuer: CN=Trustwave Global ECC P256 Certification Authority,O="Trustwave Holdings,
Inc.",L=Chicago,ST=Illinois,C=US
Serial Number:0d:6a:5f:08:3f:28:5c:3e:51:95:df:5d
Subject: CN=Trustwave Global ECC P256 Certification Authority,O="Trustwave Holdings,
Inc.",L=Chicago,ST=Illinois,C=US
Not Valid Before: Wed Aug 23 19:35:10 2017
Not Valid After : Sat Aug 23 19:35:10 2042
Fingerprint (SHA-256):
94:5B:BC:82:5E:A5:54:F4:89:D1:FD:51:A7:3D:DF:2E:A6:24:AC:70:19:A0:52:05:22:5C:22:A7:8C:CF:A8:B4
Fingerprint (SHA1): B4:90:82:DD:45:0C:BE:8B:5B:B1:66:D3:E2:A4:08:26:CD:ED:42:CF
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Trustwave Global ECC P256 Certification Authority"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\221\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\021\060\017\006\003\125\004\010\023\010\111\154\154\151\156
\157\151\163\061\020\060\016\006\003\125\004\007\023\007\103\150
\151\143\141\147\157\061\041\060\037\006\003\125\004\012\023\030
\124\162\165\163\164\167\141\166\145\040\110\157\154\144\151\156

```

\147\163\054\040\111\156\143\056\061\072\060\070\006\003\125\004  
\003\023\061\124\162\165\163\164\167\141\166\145\040\107\154\157  
\142\141\154\040\105\103\103\040\120\062\065\066\040\103\145\162  
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157  
\162\151\164\171

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\221\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\021\060\017\006\003\125\004\010\023\010\111\154\154\151\156  
\157\151\163\061\020\060\016\006\003\125\004\007\023\007\103\150  
\151\143\141\147\157\061\041\060\037\006\003\125\004\012\023\030  
\124\162\165\163\164\167\141\166\145\040\110\157\154\144\151\156  
\147\163\054\040\111\156\143\056\061\072\060\070\006\003\125\004  
\003\023\061\124\162\165\163\164\167\141\166\145\040\107\154\157  
\142\141\154\040\105\103\103\040\120\062\065\066\040\103\145\162  
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157  
\162\151\164\171

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\014\015\152\137\010\077\050\134\076\121\225\337\135

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\002\140\060\202\002\007\240\003\002\001\002\002\014\015  
\152\137\010\077\050\134\076\121\225\337\135\060\012\006\010\052  
\206\110\316\075\004\003\002\060\201\221\061\013\060\011\006\003  
\125\004\006\023\002\125\123\061\021\060\017\006\003\125\004\010  
\023\010\111\154\154\151\156\157\151\163\061\020\060\016\006\003  
\125\004\007\023\007\103\150\151\143\141\147\157\061\041\060\037  
\006\003\125\004\012\023\030\124\162\165\163\164\167\141\166\145  
\040\110\157\154\144\151\156\147\163\054\040\111\156\143\056\061  
\072\060\070\006\003\125\004\003\023\061\124\162\165\163\164\167  
\141\166\145\040\107\154\157\142\141\154\040\105\103\103\040\120  
\062\065\066\040\103\145\162\164\151\146\151\143\141\164\151\157  
\156\040\101\165\164\150\157\162\151\164\171\060\036\027\015\061  
\067\060\070\062\063\061\071\063\065\061\060\132\027\015\064\062  
\060\070\062\063\061\071\063\065\061\060\132\060\201\221\061\013  
\060\011\006\003\125\004\006\023\002\125\123\061\021\060\017\006  
\003\125\004\010\023\010\111\154\154\151\156\157\151\163\061\020  
\060\016\006\003\125\004\007\023\007\103\150\151\143\141\147\157  
\061\041\060\037\006\003\125\004\012\023\030\124\162\165\163\164  
\167\141\166\145\040\110\157\154\144\151\156\147\163\054\040\111  
\156\143\056\061\072\060\070\006\003\125\004\003\023\061\124\162  
\165\163\164\167\141\166\145\040\107\154\157\142\141\154\040\105  
\103\103\040\120\062\065\066\040\103\145\162\164\151\146\151\143  
\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171\060  
\131\060\023\006\007\052\206\110\316\075\002\001\006\010\052\206  
\110\316\075\003\001\007\003\102\000\004\176\373\154\346\043\343

```
\163\062\010\312\140\346\123\234\272\164\215\030\260\170\220\122
\200\335\070\300\112\035\321\250\314\223\244\227\006\070\312\015
\025\142\306\216\001\052\145\235\252\337\064\221\056\201\301\344
\063\222\061\304\375\011\072\246\077\255\243\103\060\101\060\017
\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060
\017\006\003\125\035\017\001\001\377\004\005\003\003\007\006\000
\060\035\006\003\125\035\016\004\026\004\024\243\101\006\254\220
\155\321\112\353\165\245\112\020\231\263\261\241\213\112\367\060
\012\006\010\052\206\110\316\075\004\003\002\003\107\000\060\104
\002\040\007\346\124\332\016\240\132\262\256\021\237\207\305\266
\377\151\336\045\276\370\240\267\010\363\104\316\052\337\010\041
\014\067\002\040\055\046\003\240\005\275\153\321\366\134\370\145
\314\206\155\263\234\064\110\143\204\011\305\215\167\032\342\314
\234\341\164\173
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Trust for "Trustwave Global ECC P256 Certification Authority"
Issuer: CN=Trustwave Global ECC P256 Certification Authority,O="Trustwave Holdings,
Inc.",L=Chicago,ST=Illinois,C=US
Serial Number:0d:6a:5f:08:3f:28:5c:3e:51:95:df:5d
Subject: CN=Trustwave Global ECC P256 Certification Authority,O="Trustwave Holdings,
Inc.",L=Chicago,ST=Illinois,C=US
Not Valid Before: Wed Aug 23 19:35:10 2017
Not Valid After : Sat Aug 23 19:35:10 2042
Fingerprint (SHA-256):
94:5B:BC:82:5E:A5:54:F4:89:D1:FD:51:A7:3D:DF:2E:A6:24:AC:70:19:A0:52:05:22:5C:22:A7:8C:CF:A8:B4
Fingerprint (SHA1): B4:90:82:DD:45:0C:BE:8B:5B:B1:66:D3:E2:A4:08:26:CD:ED:42:CF
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Trustwave Global ECC P256 Certification Authority"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\264\220\202\335\105\014\276\213\133\261\146\323\342\244\010\046
\315\355\102\317
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\133\104\343\215\135\066\206\046\350\015\005\322\131\247\203\124
END
```

```
CKA_ISSUER MULTILINE_OCTAL
\060\201\221\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\021\060\017\006\003\125\004\010\023\010\111\154\154\151\156
\157\151\163\061\020\060\016\006\003\125\004\007\023\007\103\150
\151\143\141\147\157\061\041\060\037\006\003\125\004\012\023\030
\124\162\165\163\164\167\141\166\145\040\110\157\154\144\151\156
```

```
\147\163\054\040\111\156\143\056\061\072\060\070\006\003\125\004
\003\023\061\124\162\165\163\164\167\141\166\145\040\107\154\157
\142\141\154\040\105\103\103\040\120\062\065\066\040\103\145\162
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157
\162\151\164\171
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\014\015\152\137\010\077\050\134\076\121\225\337\135
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "Trustwave Global ECC P384 Certification Authority"

#

# Issuer: CN=Trustwave Global ECC P384 Certification Authority,O="Trustwave Holdings,  
Inc.",L=Chicago,ST=Illinois,C=US

# Serial Number:08:bd:85:97:6c:99:27:a4:80:68:47:3b

# Subject: CN=Trustwave Global ECC P384 Certification Authority,O="Trustwave Holdings,  
Inc.",L=Chicago,ST=Illinois,C=US

# Not Valid Before: Wed Aug 23 19:36:43 2017

# Not Valid After : Sat Aug 23 19:36:43 2042

# Fingerprint (SHA-256):

55:90:38:59:C8:C0:C3:EB:B8:75:9E:CE:4E:25:57:22:5F:F5:75:8B:BD:38:EB:D4:82:76:60:1E:1B:D5:80:97

# Fingerprint (SHA1): E7:F3:A3:C8:CF:6F:C3:04:2E:6D:0E:67:32:C5:9E:68:95:0D:5E:D2

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Trustwave Global ECC P384 Certification Authority"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

```
\060\201\221\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\021\060\017\006\003\125\004\010\023\010\111\154\154\151\156
\157\151\163\061\020\060\016\006\003\125\004\007\023\007\103\150
\151\143\141\147\157\061\041\060\037\006\003\125\004\012\023\030
\124\162\165\163\164\167\141\166\145\040\110\157\154\144\151\156
\147\163\054\040\111\156\143\056\061\072\060\070\006\003\125\004
\003\023\061\124\162\165\163\164\167\141\166\145\040\107\154\157
\142\141\154\040\105\103\103\040\120\063\070\064\040\103\145\162
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157
\162\151\164\171
```

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\201\221\061\013\060\011\006\003\125\004\006\023\002\125\123
```

\061\021\060\017\006\003\125\004\010\023\010\111\154\154\151\156  
\157\151\163\061\020\060\016\006\003\125\004\007\023\007\103\150  
\151\143\141\147\157\061\041\060\037\006\003\125\004\012\023\030  
\124\162\165\163\164\167\141\166\145\040\110\157\154\144\151\156  
\147\163\054\040\111\156\143\056\061\072\060\070\006\003\125\004  
\003\023\061\124\162\165\163\164\167\141\166\145\040\107\154\157  
\142\141\154\040\105\103\103\040\120\063\070\064\040\103\145\162  
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157  
\162\151\164\171

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\014\010\275\205\227\154\231\047\244\200\150\107\073

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\002\235\060\202\002\044\240\003\002\001\002\002\014\010  
\275\205\227\154\231\047\244\200\150\107\073\060\012\006\010\052  
\206\110\316\075\004\003\003\060\201\221\061\013\060\011\006\003  
\125\004\006\023\002\125\123\061\021\060\017\006\003\125\004\010  
\023\010\111\154\154\151\156\157\151\163\061\020\060\016\006\003  
\125\004\007\023\007\103\150\151\143\141\147\157\061\041\060\037  
\006\003\125\004\012\023\030\124\162\165\163\164\167\141\166\145  
\040\110\157\154\144\151\156\147\163\054\040\111\156\143\056\061  
\072\060\070\006\003\125\004\003\023\061\124\162\165\163\164\167  
\141\166\145\040\107\154\157\142\141\154\040\105\103\103\040\120  
\063\070\064\040\103\145\162\164\151\146\151\143\141\164\151\157  
\156\040\101\165\164\150\157\162\151\164\171\060\036\027\015\061  
\067\060\070\062\063\061\071\063\066\064\063\132\027\015\064\062  
\060\070\062\063\061\071\063\066\064\063\132\060\201\221\061\013  
\060\011\006\003\125\004\006\023\002\125\123\061\021\060\017\006  
\003\125\004\010\023\010\111\154\154\151\156\157\151\163\061\020  
\060\016\006\003\125\004\007\023\007\103\150\151\143\141\147\157  
\061\041\060\037\006\003\125\004\012\023\030\124\162\165\163\164  
\167\141\166\145\040\110\157\154\144\151\156\147\163\054\040\111  
\156\143\056\061\072\060\070\006\003\125\004\003\023\061\124\162  
\165\163\164\167\141\166\145\040\107\154\157\142\141\154\040\105  
\103\103\040\120\063\070\064\040\103\145\162\164\151\146\151\143  
\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171\060  
\166\060\020\006\007\052\206\110\316\075\002\001\006\005\053\201  
\004\000\042\003\142\000\004\153\332\015\165\065\010\061\107\005  
\256\105\231\125\361\021\023\056\112\370\020\061\043\243\176\203  
\323\177\050\010\072\046\032\072\317\227\202\037\200\267\047\011  
\217\321\216\060\304\012\233\016\254\130\004\253\367\066\175\224  
\043\244\233\012\212\213\253\353\375\071\045\146\361\136\376\214  
\256\215\101\171\235\011\140\316\050\251\323\212\155\363\326\105  
\324\362\230\204\070\145\240\243\103\060\101\060\017\006\003\125  
\035\023\001\001\377\004\005\060\003\001\001\377\060\017\006\003  
\125\035\017\001\001\377\004\005\003\003\007\006\000\060\035\006  
\003\125\035\016\004\026\004\024\125\251\204\211\322\301\062\275

```
\030\313\154\246\007\116\310\347\235\276\202\220\060\012\006\010
\052\206\110\316\075\004\003\003\003\147\000\060\144\002\060\067
\001\222\227\105\022\176\240\363\076\255\031\072\162\335\364\120
\223\003\022\276\104\322\117\101\244\214\234\235\037\243\366\302
\222\347\110\024\376\116\233\245\221\127\256\306\067\162\273\002
\060\147\045\012\261\014\136\356\251\143\222\157\345\220\013\376
\146\042\312\107\375\212\061\367\203\376\172\277\020\276\030\053
\036\217\366\051\036\224\131\357\216\041\067\313\121\230\245\156
\113
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Trustwave Global ECC P384 Certification Authority"

# Issuer: CN=Trustwave Global ECC P384 Certification Authority,O="Trustwave Holdings,  
Inc.",L=Chicago,ST=Illinois,C=US

# Serial Number:08:bd:85:97:6c:99:27:a4:80:68:47:3b

# Subject: CN=Trustwave Global ECC P384 Certification Authority,O="Trustwave Holdings,  
Inc.",L=Chicago,ST=Illinois,C=US

# Not Valid Before: Wed Aug 23 19:36:43 2017

# Not Valid After : Sat Aug 23 19:36:43 2042

# Fingerprint (SHA-256):

55:90:38:59:C8:C0:C3:EB:B8:75:9E:CE:4E:25:57:22:5F:F5:75:8B:BD:38:EB:D4:82:76:60:1E:1B:D5:80:97

# Fingerprint (SHA1): E7:F3:A3:C8:CF:6F:C3:04:2E:6D:0E:67:32:C5:9E:68:95:0D:5E:D2

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Trustwave Global ECC P384 Certification Authority"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\347\363\243\310\317\157\303\004\056\155\016\147\062\305\236\150
\225\015\136\322
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\352\317\140\304\073\271\025\051\100\241\227\355\170\047\223\326
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\201\221\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\021\060\017\006\003\125\004\010\023\010\111\154\154\151\156
\157\151\163\061\020\060\016\006\003\125\004\007\023\007\103\150
\151\143\141\147\157\061\041\060\037\006\003\125\004\012\023\030
\124\162\165\163\164\167\141\166\145\040\110\157\154\144\151\156
\147\163\054\040\111\156\143\056\061\072\060\070\006\003\125\004
\003\023\061\124\162\165\163\164\167\141\166\145\040\107\154\157
\142\141\154\040\105\103\103\040\120\063\070\064\040\103\145\162
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157
\162\151\164\171
```

```

END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\014\010\275\205\227\154\231\047\244\200\150\107\073
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "NAVER Global Root Certification Authority"
#
Issuer: CN=NAVER Global Root Certification Authority,O=NAVER BUSINESS PLATFORM Corp.,C=KR
Serial Number:01:94:30:1e:a2:0b:dd:f5:c5:33:2a:b1:43:44:71:f8:d6:50:4d:0d
Subject: CN=NAVER Global Root Certification Authority,O=NAVER BUSINESS PLATFORM Corp.,C=KR
Not Valid Before: Fri Aug 18 08:58:42 2017
Not Valid After : Tue Aug 18 23:59:59 2037
Fingerprint (SHA-256):
88:F4:38:DC:F8:FF:D1:FA:8F:42:91:15:FF:E5:F8:2A:E1:E0:6E:0C:70:C3:75:FA:AD:71:7B:34:A4:9E:72:65
Fingerprint (SHA1): 8F:6B:F2:A9:27:4A:DA:14:A0:C4:F4:8E:61:27:F9:C0:1E:78:5D:D1
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "NAVER Global Root Certification Authority"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\151\061\013\060\011\006\003\125\004\006\023\002\113\122\061
\046\060\044\006\003\125\004\012\014\035\116\101\126\105\122\040
\102\125\123\111\116\105\123\123\040\120\114\101\124\106\117\122
\115\040\103\157\162\160\056\061\062\060\060\006\003\125\004\003
\014\051\116\101\126\105\122\040\107\154\157\142\141\154\040\122
\157\157\164\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\151\061\013\060\011\006\003\125\004\006\023\002\113\122\061
\046\060\044\006\003\125\004\012\014\035\116\101\126\105\122\040
\102\125\123\111\116\105\123\123\040\120\114\101\124\106\117\122
\115\040\103\157\162\160\056\061\062\060\060\006\003\125\004\003
\014\051\116\101\126\105\122\040\107\154\157\142\141\154\040\122
\157\157\164\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\024\001\224\060\036\242\013\335\365\305\063\052\261\103\104
\161\370\326\120\115\015

```

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\242\060\202\003\212\240\003\002\001\002\002\024\001  
\224\060\036\242\013\335\365\305\063\052\261\103\104\161\370\326  
\120\115\015\060\015\006\011\052\206\110\206\367\015\001\001\014  
\005\000\060\151\061\013\060\011\006\003\125\004\006\023\002\113  
\122\061\046\060\044\006\003\125\004\012\014\035\116\101\126\105  
\122\040\102\125\123\111\116\105\123\123\040\120\114\101\124\106  
\117\122\115\040\103\157\162\160\056\061\062\060\060\006\003\125  
\004\003\014\051\116\101\126\105\122\040\107\154\157\142\141\154  
\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164  
\151\157\156\040\101\165\164\150\157\162\151\164\171\060\036\027  
\015\061\067\060\070\061\070\060\070\065\070\064\062\132\027\015  
\063\067\060\070\061\070\062\063\065\071\065\071\132\060\151\061  
\013\060\011\006\003\125\004\006\023\002\113\122\061\046\060\044  
\006\003\125\004\012\014\035\116\101\126\105\122\040\102\125\123  
\111\116\105\123\123\040\120\114\101\124\106\117\122\115\040\103  
\157\162\160\056\061\062\060\060\006\003\125\004\003\014\051\116  
\101\126\105\122\040\107\154\157\142\141\154\040\122\157\157\164  
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101  
\165\164\150\157\162\151\164\171\060\202\002\042\060\015\006\011  
\052\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000  
\060\202\002\012\002\202\002\001\000\266\324\361\223\134\265\100  
\211\012\253\015\220\133\120\143\256\220\224\164\027\105\162\326  
\173\145\132\051\113\247\126\240\113\270\057\102\165\351\331\173  
\044\132\061\145\253\027\027\321\063\072\331\021\334\100\066\207  
\337\307\152\351\046\136\131\212\167\343\350\110\234\061\026\372  
\076\221\261\312\311\243\342\237\316\041\123\243\002\066\060\313  
\122\002\345\332\062\135\303\305\346\371\356\021\307\213\311\104  
\036\204\223\030\112\264\237\345\022\144\151\320\046\205\142\001  
\266\311\002\035\276\203\121\273\134\332\370\255\025\152\231\367  
\222\124\367\064\133\351\277\352\051\201\022\324\123\221\226\263  
\221\132\335\376\220\163\050\373\060\106\265\312\010\007\307\161  
\162\311\146\323\064\227\366\214\364\030\112\341\320\075\132\105  
\266\151\247\051\373\043\316\210\330\022\234\000\110\250\246\017  
\263\073\222\215\161\016\164\305\213\310\114\371\364\233\216\270  
\074\151\355\157\073\120\057\130\355\304\260\320\034\033\152\014  
\342\274\104\252\330\315\024\135\224\170\141\277\016\156\332\052  
\274\057\014\013\161\246\263\026\077\234\346\371\314\237\123\065  
\342\003\240\240\030\277\273\361\276\364\326\214\207\015\102\367  
\006\271\361\155\355\004\224\250\376\266\323\006\306\100\141\337  
\235\235\363\124\166\316\123\072\001\246\222\101\354\004\243\217  
\015\242\325\011\312\326\313\232\361\357\103\135\300\253\245\101  
\317\134\123\160\160\311\210\246\055\324\153\141\163\120\046\206  
\141\016\137\033\302\053\342\214\325\273\235\301\003\102\272\224  
\332\137\251\260\312\314\115\012\357\107\151\003\057\042\373\361  
\050\316\277\135\120\145\250\220\155\263\164\260\010\307\254\250  
\321\353\076\234\374\135\032\203\056\053\313\265\363\104\235\072



\247\027\141\226\242\161\323\160\226\025\115\267\114\163\356\031  
\134\305\133\076\101\376\254\165\140\073\033\143\316\000\335\332  
\010\220\142\264\345\055\356\110\247\153\027\231\124\276\207\112  
\343\251\136\004\114\353\020\155\124\326\357\361\350\362\142\026  
\313\200\153\355\075\355\365\037\060\245\256\113\311\023\355\212  
\001\001\311\270\121\130\300\146\072\261\146\113\304\325\061\002  
\142\351\164\204\014\333\115\106\055\002\003\001\000\001\243\102  
\060\100\060\035\006\003\125\035\016\004\026\004\024\322\237\210  
\337\241\315\054\275\354\365\073\001\001\223\063\047\262\353\140  
\113\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001  
\006\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001  
\001\377\060\015\006\011\052\206\110\206\367\015\001\001\014\005  
\000\003\202\002\001\000\062\312\200\263\235\075\124\006\335\322  
\322\056\360\244\001\041\013\147\110\312\155\216\340\310\252\015  
\252\215\041\127\217\306\076\172\312\333\121\324\122\263\324\226  
\204\245\130\140\177\345\013\216\037\365\334\012\025\201\345\073  
\266\267\042\057\011\234\023\026\261\154\014\065\010\155\253\143  
\162\355\334\276\354\307\127\346\060\040\161\326\327\020\301\023  
\125\001\214\052\103\344\101\361\317\072\172\123\222\316\242\003  
\005\015\070\337\002\273\020\056\331\073\322\233\172\300\241\246  
\370\265\061\346\364\165\311\271\123\231\165\107\042\132\024\025  
\307\170\033\266\235\351\014\370\033\166\361\205\204\336\241\332  
\022\357\244\342\020\227\172\170\336\014\121\227\250\041\100\213  
\206\275\015\360\136\116\113\066\273\073\040\037\212\102\126\341  
\013\032\277\173\320\042\103\054\104\214\373\345\052\264\154\034  
\034\272\224\340\023\176\041\346\232\302\313\305\102\144\264\036  
\224\173\010\045\310\161\314\207\105\127\205\323\237\051\142\042  
\203\121\227\000\030\227\167\152\230\222\311\174\140\154\337\154  
\175\112\344\160\114\302\236\270\035\367\320\064\307\017\314\373  
\247\377\003\276\255\160\220\332\013\335\310\155\227\137\232\177  
\011\062\101\375\315\242\314\132\155\114\362\252\111\376\146\370  
\351\330\065\353\016\050\036\356\110\057\072\320\171\011\070\174  
\246\042\202\223\225\320\003\276\276\002\240\005\335\040\042\343  
\157\035\210\064\140\306\346\012\271\011\165\013\360\007\350\151  
\226\065\307\373\043\201\216\070\071\270\105\053\103\170\242\321  
\054\024\377\015\050\162\162\225\233\136\011\333\211\104\230\252  
\241\111\273\161\122\362\277\366\377\047\241\066\257\270\266\167  
\210\335\072\244\155\233\064\220\334\024\135\060\277\267\353\027  
\344\207\267\161\320\241\327\167\025\324\102\327\362\363\061\231  
\135\233\335\026\155\077\352\006\043\370\106\242\042\355\223\366  
\335\232\346\052\207\261\230\124\361\042\367\153\105\343\342\216  
\166\035\232\215\304\006\215\066\267\024\363\235\124\151\267\216  
\074\325\244\155\223\201\267\255\366\275\144\173\302\311\150\071  
\240\222\234\315\064\206\221\220\372\144\121\235\376\376\353\245  
\365\165\336\211\367\162

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "NAVER Global Root Certification Authority"  
# Issuer: CN=NAVER Global Root Certification Authority,O=NAVER BUSINESS PLATFORM Corp.,C=KR  
# Serial Number:01:94:30:1e:a2:0b:dd:f5:c5:33:2a:b1:43:44:71:f8:d6:50:4d:0d  
# Subject: CN=NAVER Global Root Certification Authority,O=NAVER BUSINESS PLATFORM Corp.,C=KR  
# Not Valid Before: Fri Aug 18 08:58:42 2017  
# Not Valid After : Tue Aug 18 23:59:59 2037  
# Fingerprint (SHA-256):  
88:F4:38:DC:F8:FF:D1:FA:8F:42:91:15:FF:E5:F8:2A:E1:E0:6E:0C:70:C3:75:FA:AD:71:7B:34:A4:9E:72:65  
# Fingerprint (SHA1): 8F:6B:F2:A9:27:4A:DA:14:A0:C4:F4:8E:61:27:F9:C0:1E:78:5D:D1

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "NAVER Global Root Certification Authority"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\217\153\362\251\047\112\332\024\240\304\364\216\141\047\371\300  
\036\170\135\321

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\310\176\101\366\045\073\365\011\263\027\350\106\075\277\320\233

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\151\061\013\060\011\006\003\125\004\006\023\002\113\122\061  
\046\060\044\006\003\125\004\012\014\035\116\101\126\105\122\040  
\102\125\123\111\116\105\123\123\040\120\114\101\124\106\117\122  
\115\040\103\157\162\160\056\061\062\060\060\006\003\125\004\003  
\014\051\116\101\126\105\122\040\107\154\157\142\141\154\040\122  
\157\157\164\040\103\145\162\164\151\146\151\143\141\164\151\157  
\156\040\101\165\164\150\157\162\151\164\171

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\024\001\224\060\036\242\013\335\365\305\063\052\261\103\104  
\161\370\326\120\115\015

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "AC RAIZ FNMT-RCM SERVIDORES SEGUROS"

#

# Issuer: CN=AC RAIZ FNMT-RCM SERVIDORES SEGUROS,OID.2.5.4.97=VATES-  
Q2826004J,OU=Ceres,O=FNMT-RCM,C=ES

# Serial Number:62:f6:32:6c:e5:c4:e3:68:5c:1b:62:dd:9c:2e:9d:95

# Subject: CN=AC RAIZ FNMT-RCM SERVIDORES SEGUROS,OID.2.5.4.97=VATES-

Q2826004J,OU=Ceres,O=FNMT-RCM,C=ES  
# Not Valid Before: Thu Dec 20 09:37:33 2018  
# Not Valid After : Sun Dec 20 09:37:33 2043  
# Fingerprint (SHA-256):  
55:41:53:B1:3D:2C:F9:DD:B7:53:BF:BE:1A:4E:0A:E0:8D:0A:A4:18:70:58:FE:60:A2:B8:62:B2:E4:B8:7B:CB  
# Fingerprint (SHA1): 62:FF:D9:9E:C0:65:0D:03:CE:75:93:D2:ED:3F:2D:32:C9:E3:E5:4A  
CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "AC RAIZ FNMT-RCM SERVIDORES SEGUROS"  
CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509  
CKA\_SUBJECT MULTILINE\_OCTAL  
\060\170\061\013\060\011\006\003\125\004\006\023\002\105\123\061  
\021\060\017\006\003\125\004\012\014\010\106\116\115\124\055\122  
\103\115\061\016\060\014\006\003\125\004\013\014\005\103\145\162  
\145\163\061\030\060\026\006\003\125\004\141\014\017\126\101\124  
\105\123\055\121\062\070\062\066\060\060\064\112\061\054\060\052  
\006\003\125\004\003\014\043\101\103\040\122\101\111\132\040\106  
\116\115\124\055\122\103\115\040\123\105\122\126\111\104\117\122  
\105\123\040\123\105\107\125\122\117\123  
END  
CKA\_ID UTF8 "0"  
CKA\_ISSUER MULTILINE\_OCTAL  
\060\170\061\013\060\011\006\003\125\004\006\023\002\105\123\061  
\021\060\017\006\003\125\004\012\014\010\106\116\115\124\055\122  
\103\115\061\016\060\014\006\003\125\004\013\014\005\103\145\162  
\145\163\061\030\060\026\006\003\125\004\141\014\017\126\101\124  
\105\123\055\121\062\070\062\066\060\060\064\112\061\054\060\052  
\006\003\125\004\003\014\043\101\103\040\122\101\111\132\040\106  
\116\115\124\055\122\103\115\040\123\105\122\126\111\104\117\122  
\105\123\040\123\105\107\125\122\117\123  
END  
CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL  
\002\020\142\366\062\154\345\304\343\150\134\033\142\335\234\056  
\235\225  
END  
CKA\_VALUE MULTILINE\_OCTAL  
\060\202\002\156\060\202\001\363\240\003\002\001\002\002\020\142  
\366\062\154\345\304\343\150\134\033\142\335\234\056\235\225\060  
\012\006\010\052\206\110\316\075\004\003\003\060\170\061\013\060  
\011\006\003\125\004\006\023\002\105\123\061\021\060\017\006\003  
\125\004\012\014\010\106\116\115\124\055\122\103\115\061\016\060  
\014\006\003\125\004\013\014\005\103\145\162\145\163\061\030\060  
\026\006\003\125\004\141\014\017\126\101\124\105\123\055\121\062  
\070\062\066\060\060\064\112\061\054\060\052\006\003\125\004\003  
\014\043\101\103\040\122\101\111\132\040\106\116\115\124\055\122  
\103\115\040\123\105\122\126\111\104\117\122\105\123\040\123\105

\107\125\122\117\123\060\036\027\015\061\070\061\062\062\060\060  
\071\063\067\063\063\132\027\015\064\063\061\062\062\060\060\071  
\063\067\063\063\132\060\170\061\013\060\011\006\003\125\004\006  
\023\002\105\123\061\021\060\017\006\003\125\004\012\014\010\106  
\116\115\124\055\122\103\115\061\016\060\014\006\003\125\004\013  
\014\005\103\145\162\145\163\061\030\060\026\006\003\125\004\141  
\014\017\126\101\124\105\123\055\121\062\070\062\066\060\060\064  
\112\061\054\060\052\006\003\125\004\003\014\043\101\103\040\122  
\101\111\132\040\106\116\115\124\055\122\103\115\040\123\105\122  
\126\111\104\117\122\105\123\040\123\105\107\125\122\117\123\060  
\166\060\020\006\007\052\206\110\316\075\002\001\006\005\053\201  
\004\000\042\003\142\000\004\366\272\127\123\310\312\253\337\066  
\112\122\041\344\227\322\203\147\236\360\145\121\320\136\207\307  
\107\261\131\362\127\107\233\000\002\223\104\027\151\333\102\307  
\261\262\072\030\016\264\135\214\263\146\135\241\064\371\066\054  
\111\333\363\106\374\263\104\151\104\023\146\375\327\305\375\257  
\066\115\316\003\115\007\161\317\257\152\005\322\242\103\132\012  
\122\157\001\003\116\216\213\243\102\060\100\060\017\006\003\125  
\035\023\001\001\377\004\005\060\003\001\001\377\060\016\006\003  
\125\035\017\001\001\377\004\004\003\002\001\006\060\035\006\003  
\125\035\016\004\026\004\024\001\271\057\357\277\021\206\140\362  
\117\320\101\156\253\163\037\347\322\156\111\060\012\006\010\052  
\206\110\316\075\004\003\003\003\151\000\060\146\002\061\000\256  
\112\343\053\100\303\164\021\362\225\255\026\043\336\116\014\032  
\346\135\245\044\136\153\104\173\374\070\342\117\313\234\105\027  
\021\114\024\047\046\125\071\165\112\003\314\023\220\237\222\002  
\061\000\372\112\154\140\210\163\363\356\270\230\142\251\316\053  
\302\331\212\246\160\061\035\257\260\224\114\353\117\306\343\321  
\363\142\247\074\377\223\056\007\134\111\001\147\151\022\002\162  
\277\347

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "AC RAIZ FNMT-RCM SERVIDORES SEGUROS"

# Issuer: CN=AC RAIZ FNMT-RCM SERVIDORES SEGUROS,OID.2.5.4.97=VATES-  
Q2826004J,OU=Ceres,O=FNMT-RCM,C=ES

# Serial Number:62:f6:32:6c:e5:c4:e3:68:5c:1b:62:dd:9c:2e:9d:95

# Subject: CN=AC RAIZ FNMT-RCM SERVIDORES SEGUROS,OID.2.5.4.97=VATES-  
Q2826004J,OU=Ceres,O=FNMT-RCM,C=ES

# Not Valid Before: Thu Dec 20 09:37:33 2018

# Not Valid After : Sun Dec 20 09:37:33 2043

# Fingerprint (SHA-256):

55:41:53:B1:3D:2C:F9:DD:B7:53:BF:BE:1A:4E:0A:E0:8D:0A:A4:18:70:58:FE:60:A2:B8:62:B2:E4:B8:7B:CB

# Fingerprint (SHA1): 62:FF:D9:9E:C0:65:0D:03:CE:75:93:D2:ED:3F:2D:32:C9:E3:E5:4A

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

```

CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "AC RAIZ FNMT-RCM SERVIDORES SEGUROS"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\142\377\331\236\300\145\015\003\316\165\223\322\355\077\055\062
\311\343\345\112
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\031\066\234\122\003\057\322\321\273\043\314\335\036\022\125\273
END
CKA_ISSUER MULTILINE_OCTAL
\060\170\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\021\060\017\006\003\125\004\012\014\010\106\116\115\124\055\122
\103\115\061\016\060\014\006\003\125\004\013\014\005\103\145\162
\145\163\061\030\060\026\006\003\125\004\141\014\017\126\101\124
\105\123\055\121\062\070\062\066\060\060\064\112\061\054\060\052
\006\003\125\004\003\014\043\101\103\040\122\101\111\132\040\106
\116\115\124\055\122\103\115\040\123\105\122\126\111\104\117\122
\105\123\040\123\105\107\125\122\117\123
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\142\366\062\154\345\304\343\150\134\033\142\335\234\056
\235\225
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "GlobalSign Secure Mail Root R45"
#
Issuer: CN=GlobalSign Secure Mail Root R45,O=GlobalSign nv-sa,C=BE
Serial Number: 76:53:fe:a8:4c:50:ab:9f:8d:32:b5:1d:03:8f:57:dc
Subject: CN=GlobalSign Secure Mail Root R45,O=GlobalSign nv-sa,C=BE
Not Valid Before: Wed Mar 18 00:00:00 2020
Not Valid After : Sat Mar 18 00:00:00 2045
Fingerprint (SHA-256):
31:9A:F0:A7:72:9E:6F:89:26:9C:13:1E:A6:A3:A1:6F:CD:86:38:9F:DC:AB:3C:47:A4:A6:75:C1:61:A3:F9:74
Fingerprint (SHA1): 76:18:D1:F3:80:24:3D:52:40:C6:11:6A:AD:57:77:09:7D:81:30:A0
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GlobalSign Secure Mail Root R45"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\122\061\013\060\011\006\003\125\004\006\023\002\102\105\061

```

\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154  
\123\151\147\156\040\156\166\055\163\141\061\050\060\046\006\003  
\125\004\003\023\037\107\154\157\142\141\154\123\151\147\156\040  
\123\145\143\165\162\145\040\115\141\151\154\040\122\157\157\164  
\040\122\064\065

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\122\061\013\060\011\006\003\125\004\006\023\002\102\105\061  
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154  
\123\151\147\156\040\156\166\055\163\141\061\050\060\046\006\003  
\125\004\003\023\037\107\154\157\142\141\154\123\151\147\156\040  
\123\145\143\165\162\145\040\115\141\151\154\040\122\157\157\164  
\040\122\064\065

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\166\123\376\250\114\120\253\237\215\062\265\035\003\217  
\127\334

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\160\060\202\003\130\240\003\002\001\002\002\020\166  
\123\376\250\114\120\253\237\215\062\265\035\003\217\127\334\060  
\015\006\011\052\206\110\206\367\015\001\001\014\005\000\060\122  
\061\013\060\011\006\003\125\004\006\023\002\102\105\061\031\060  
\027\006\003\125\004\012\023\020\107\154\157\142\141\154\123\151  
\147\156\040\156\166\055\163\141\061\050\060\046\006\003\125\004  
\003\023\037\107\154\157\142\141\154\123\151\147\156\040\123\145  
\143\165\162\145\040\115\141\151\154\040\122\157\157\164\040\122  
\064\065\060\036\027\015\062\060\060\063\061\070\060\060\060\060  
\060\060\132\027\015\064\065\060\063\061\070\060\060\060\060\060  
\060\132\060\122\061\013\060\011\006\003\125\004\006\023\002\102  
\105\061\031\060\027\006\003\125\004\012\023\020\107\154\157\142  
\141\154\123\151\147\156\040\156\166\055\163\141\061\050\060\046  
\006\003\125\004\003\023\037\107\154\157\142\141\154\123\151\147  
\156\040\123\145\143\165\162\145\040\115\141\151\154\040\122\157  
\157\164\040\122\064\065\060\202\002\042\060\015\006\011\052\206  
\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060\202  
\002\012\002\202\002\001\000\334\171\314\155\006\371\155\273\340  
\126\004\154\177\340\165\314\055\005\111\350\113\334\124\354\133  
\167\225\162\277\177\142\235\205\251\212\044\120\137\123\345\333  
\164\157\244\051\133\023\052\011\255\232\305\057\302\367\166\073  
\241\105\106\252\103\346\044\376\053\260\157\062\160\031\106\132  
\171\046\057\374\075\175\137\144\313\127\314\141\141\250\331\225  
\156\343\225\240\156\177\107\022\030\326\357\003\311\373\212\372  
\232\275\202\025\251\125\167\113\021\117\131\340\153\303\161\363  
\014\330\124\325\201\150\076\023\271\025\056\207\212\074\104\047  
\066\142\044\156\370\054\005\162\060\141\275\102\221\043\304\235  
\045\247\331\124\232\024\243\061\255\200\171\014\247\143\154\230

\243\254\127\107\063\037\145\226\341\320\322\065\332\371\161\367  
\241\246\045\265\101\135\337\076\140\330\321\366\237\245\362\270  
\314\023\252\217\371\262\156\341\203\055\223\335\076\205\032\335  
\350\261\134\046\001\313\111\205\374\374\322\324\177\205\142\206  
\164\371\313\354\065\042\242\014\060\217\073\253\171\353\126\362  
\372\102\363\355\371\037\105\211\100\051\255\352\222\164\352\122  
\375\126\264\053\332\242\355\165\302\156\253\316\122\220\113\366  
\336\360\111\217\232\110\324\210\031\155\105\346\314\214\271\335  
\144\140\140\002\100\370\271\317\274\130\353\075\205\271\306\012  
\323\234\007\146\217\307\030\071\043\106\341\074\036\243\057\120  
\141\222\013\075\053\154\361\243\107\070\127\221\253\015\217\306  
\235\115\004\322\046\122\134\345\245\375\052\055\026\052\001\151  
\347\251\175\341\066\267\261\052\305\331\261\215\275\271\213\316  
\314\213\241\076\013\110\315\120\225\064\304\330\010\131\330\153  
\046\364\276\365\324\042\027\000\127\311\256\233\004\060\063\237  
\013\373\337\126\242\311\156\124\166\332\261\227\142\047\131\017  
\021\212\042\033\144\226\077\250\361\267\044\112\215\074\123\174  
\155\203\166\075\262\046\110\163\365\104\026\001\055\011\052\216  
\026\226\120\320\163\006\135\273\042\110\202\114\012\106\132\077  
\200\377\134\362\362\232\254\054\010\340\326\352\360\022\070\201  
\117\246\020\355\106\253\314\026\234\013\317\144\246\231\002\205  
\104\147\106\255\375\115\347\002\003\001\000\001\243\102\060\100  
\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\206  
\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001  
\377\060\035\006\003\125\035\016\004\026\004\024\240\223\025\050  
\156\356\217\010\262\065\306\236\142\171\164\247\261\016\053\173  
\060\015\006\011\052\206\110\206\367\015\001\001\014\005\000\003  
\202\002\001\000\105\012\370\321\134\254\142\201\320\004\327\266  
\377\127\121\211\013\014\313\336\044\145\067\373\253\236\355\146  
\364\352\014\031\151\211\270\031\261\060\126\264\331\366\367\276  
\306\256\227\313\105\366\021\214\072\060\144\114\301\237\131\300  
\106\102\010\006\107\144\027\170\340\225\007\006\326\214\242\254  
\251\331\077\323\173\126\117\374\304\207\050\337\266\053\026\043  
\300\237\037\133\343\326\104\136\042\117\043\004\214\065\026\265  
\171\007\206\134\057\227\342\366\010\144\246\334\333\250\212\343  
\244\173\167\015\321\051\223\050\040\264\123\243\113\116\137\336  
\301\366\165\043\374\037\074\170\117\160\061\170\057\242\065\124  
\161\004\254\310\304\155\303\366\221\261\376\315\356\104\156\201  
\366\100\305\076\052\001\277\253\114\261\003\077\015\021\344\017  
\322\044\343\042\210\233\237\137\107\075\121\111\340\011\067\176  
\027\041\061\166\267\147\161\110\050\113\045\327\020\350\237\141  
\131\026\305\076\062\116\037\014\316\243\314\017\344\307\021\007  
\042\057\070\010\335\133\227\353\102\154\131\232\232\356\172\320  
\235\337\305\333\011\103\056\012\252\031\075\153\350\152\060\172  
\127\346\277\263\152\071\251\217\343\361\117\145\150\266\275\237  
\050\217\241\026\132\011\120\072\062\056\035\057\104\021\102\246  
\000\346\061\230\377\055\241\017\346\244\140\126\317\171\327\262  
\116\327\260\372\156\014\127\043\307\316\037\245\261\114\155\031

```
\111\236\016\177\160\217\161\077\130\050\237\165\335\141\340\072
\267\071\266\356\227\324\065\121\373\213\111\140\310\074\146\256
\227\356\215\046\131\127\273\170\360\172\120\060\011\260\140\252
\237\116\334\311\076\036\072\334\142\223\063\260\072\124\164\157
\054\061\105\321\153\021\062\152\150\166\366\075\366\152\023\136
\044\230\347\352\035\232\317\170\202\007\140\367\115\020\323\201
\232\105\215\236\257\233\334\200\307\103\262\225\150\244\303\016
\350\012\107\025\277\124\063\334\001\347\325\246\036\163\330\172
\262\277\057\255\343\125\060\236\337\016\101\274\340\021\365\241
\014\250\042\341\343\000\243\116\160\174\222\343\004\321\172\102
\212\165\220\131\343\233\321\114\242\144\275\163\171\233\157\362
\263\301\366\074
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Trust for "GlobalSign Secure Mail Root R45"
```

```
Issuer: CN=GlobalSign Secure Mail Root R45,O=GlobalSign nv-sa,C=BE
```

```
Serial Number:76:53:fe:a8:4c:50:ab:9f:8d:32:b5:1d:03:8f:57:dc
```

```
Subject: CN=GlobalSign Secure Mail Root R45,O=GlobalSign nv-sa,C=BE
```

```
Not Valid Before: Wed Mar 18 00:00:00 2020
```

```
Not Valid After : Sat Mar 18 00:00:00 2045
```

```
Fingerprint (SHA-256):
```

```
31:9A:F0:A7:72:9E:6F:89:26:9C:13:1E:A6:A3:A1:6F:CD:86:38:9F:DC:AB:3C:47:A4:A6:75:C1:61:A3:F9:74
```

```
Fingerprint (SHA1): 76:18:D1:F3:80:24:3D:52:40:C6:11:6A:AD:57:77:09:7D:81:30:A0
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "GlobalSign Secure Mail Root R45"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\166\030\321\363\200\044\075\122\100\306\021\152\255\127\167\011
```

```
\175\201\060\240
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\223\304\173\263\016\124\107\034\103\054\213\276\160\205\142\051
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\122\061\013\060\011\006\003\125\004\006\023\002\102\105\061
```

```
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154
```

```
\123\151\147\156\040\156\166\055\163\141\061\050\060\046\006\003
```

```
\125\004\003\023\037\107\154\157\142\141\154\123\151\147\156\040
```

```
\123\145\143\165\162\145\040\115\141\151\154\040\122\157\157\164
```

```
\040\122\064\065
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\020\166\123\376\250\114\120\253\237\215\062\265\035\003\217
```



```

\127\334
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "GlobalSign Secure Mail Root E45"
#
Issuer: CN=GlobalSign Secure Mail Root E45,O=GlobalSign nv-sa,C=BE
Serial Number:76:53:fe:aa:27:1d:95:46:5d:d6:f1:9e:e5:b8:90:0a
Subject: CN=GlobalSign Secure Mail Root E45,O=GlobalSign nv-sa,C=BE
Not Valid Before: Wed Mar 18 00:00:00 2020
Not Valid After : Sat Mar 18 00:00:00 2045
Fingerprint (SHA-256):
5C:BF:6F:B8:1F:D4:17:EA:41:28:CD:6F:81:72:A3:C9:40:20:94:F7:4A:B2:ED:3A:06:B4:40:5D:04:F3:0B:19
Fingerprint (SHA1): 18:2E:1F:32:4F:89:DF:BE:FE:88:89:F0:93:C2:C4:A0:2B:67:75:21
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GlobalSign Secure Mail Root E45"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\122\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154
\123\151\147\156\040\156\166\055\163\141\061\050\060\046\006\003
\125\004\003\023\037\107\154\157\142\141\154\123\151\147\156\040
\123\145\143\165\162\145\040\115\141\151\154\040\122\157\157\164
\040\105\064\065
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\122\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154
\123\151\147\156\040\156\166\055\163\141\061\050\060\046\006\003
\125\004\003\023\037\107\154\157\142\141\154\123\151\147\156\040
\123\145\143\165\162\145\040\115\141\151\154\040\122\157\157\164
\040\105\064\065
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\166\123\376\252\047\035\225\106\135\326\361\236\345\270
\220\012
END
CKA_VALUE MULTILINE_OCTAL
\060\202\002\041\060\202\001\247\240\003\002\001\002\002\020\166
\123\376\252\047\035\225\106\135\326\361\236\345\270\220\012\060

```

\012\006\010\052\206\110\316\075\004\003\003\060\122\061\013\060  
\011\006\003\125\004\006\023\002\102\105\061\031\060\027\006\003  
\125\004\012\023\020\107\154\157\142\141\154\123\151\147\156\040  
\156\166\055\163\141\061\050\060\046\006\003\125\004\003\023\037  
\107\154\157\142\141\154\123\151\147\156\040\123\145\143\165\162  
\145\040\115\141\151\154\040\122\157\157\164\040\105\064\065\060  
\036\027\015\062\060\060\063\061\070\060\060\060\060\060\132  
\027\015\064\065\060\063\061\070\060\060\060\060\060\132\060  
\122\061\013\060\011\006\003\125\004\006\023\002\102\105\061\031  
\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154\123  
\151\147\156\040\156\166\055\163\141\061\050\060\046\006\003\125  
\004\003\023\037\107\154\157\142\141\154\123\151\147\156\040\123  
\145\143\165\162\145\040\115\141\151\154\040\122\157\157\164\040  
\105\064\065\060\166\060\020\006\007\052\206\110\316\075\002\001  
\006\005\053\201\004\000\042\003\142\000\004\371\171\213\201\107  
\067\211\226\077\105\111\120\177\032\046\013\223\062\176\056\300  
\300\247\010\232\303\156\217\233\076\013\042\354\067\123\267\157  
\212\260\274\047\067\113\155\251\106\073\331\037\377\245\241\104  
\273\055\163\277\236\101\007\134\123\233\121\010\072\132\273\157  
\070\307\026\221\170\302\112\023\151\035\202\337\132\057\000\210  
\226\242\056\034\164\371\235\176\146\067\212\243\102\060\100\060  
\016\006\003\125\035\017\001\001\377\004\004\003\002\001\206\060  
\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377  
\060\035\006\003\125\035\016\004\026\004\024\337\023\136\213\137  
\302\100\002\375\126\267\224\114\266\036\325\246\261\024\226\060  
\012\006\010\052\206\110\316\075\004\003\003\003\150\000\060\145  
\002\060\023\260\276\327\161\040\076\344\253\234\316\066\022\175  
\137\114\037\052\265\151\105\063\137\323\055\132\262\344\210\307  
\336\012\066\102\062\171\235\246\153\272\341\371\104\052\173\212  
\303\022\002\061\000\240\146\034\116\207\235\207\311\355\231\114  
\033\012\356\055\140\303\067\307\035\315\265\162\260\331\306\357  
\274\362\377\077\360\122\335\010\347\252\144\171\303\344\151\127  
\221\057\244\313\174

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "GlobalSign Secure Mail Root E45"

# Issuer: CN=GlobalSign Secure Mail Root E45,O=GlobalSign nv-sa,C=BE

# Serial Number:76:53:fe:aa:27:1d:95:46:5d:d6:f1:9e:e5:b8:90:0a

# Subject: CN=GlobalSign Secure Mail Root E45,O=GlobalSign nv-sa,C=BE

# Not Valid Before: Wed Mar 18 00:00:00 2020

# Not Valid After : Sat Mar 18 00:00:00 2045

# Fingerprint (SHA-256):

5C:BF:6F:B8:1F:D4:17:EA:41:28:CD:6F:81:72:A3:C9:40:20:94:F7:4A:B2:ED:3A:06:B4:40:5D:04:F3:0B:19

# Fingerprint (SHA1): 18:2E:1F:32:4F:89:DF:BE:FE:88:89:F0:93:C2:C4:A0:2B:67:75:21

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

```

CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GlobalSign Secure Mail Root E45"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\030\056\037\062\117\211\337\276\376\210\211\360\223\302\304\240
\053\147\165\041
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\305\374\306\056\237\364\122\055\052\250\244\272\373\147\062\377
END
CKA_ISSUER MULTILINE_OCTAL
\060\122\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154
\123\151\147\156\040\156\166\055\163\141\061\050\060\046\006\003
\125\004\003\023\037\107\154\157\142\141\154\123\151\147\156\040
\123\145\143\165\162\145\040\115\141\151\154\040\122\157\157\164
\040\105\064\065
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\166\123\376\252\047\035\225\106\135\326\361\236\345\270
\220\012
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "GlobalSign Root R46"
#
Issuer: CN=GlobalSign Root R46,O=GlobalSign nv-sa,C=BE
Serial Number:11:d2:bb:b9:d7:23:18:9e:40:5f:0a:9d:2d:d0:df:25:67:d1
Subject: CN=GlobalSign Root R46,O=GlobalSign nv-sa,C=BE
Not Valid Before: Wed Mar 20 00:00:00 2019
Not Valid After : Tue Mar 20 00:00:00 2046
Fingerprint (SHA-256):
4F:A3:12:6D:8D:3A:11:D1:C4:85:5A:4F:80:7C:BA:D6:CF:91:9D:3A:5A:88:B0:3B:EA:2C:63:72:D9:3C:40:C9
Fingerprint (SHA1): 53:A2:B0:4B:CA:6B:D6:45:E6:39:8A:8E:C4:0D:D2:BF:77:C3:A2:90
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GlobalSign Root R46"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\106\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154

```

\123\151\147\156\040\156\166\055\163\141\061\034\060\032\006\003  
\125\004\003\023\023\107\154\157\142\141\154\123\151\147\156\040  
\122\157\157\164\040\122\064\066

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\106\061\013\060\011\006\003\125\004\006\023\002\102\105\061  
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154  
\123\151\147\156\040\156\166\055\163\141\061\034\060\032\006\003  
\125\004\003\023\023\107\154\157\142\141\154\123\151\147\156\040  
\122\157\157\164\040\122\064\066

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\022\021\322\273\271\327\043\030\236\100\137\012\235\055\320  
\337\045\147\321

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\132\060\202\003\102\240\003\002\001\002\002\022\021  
\322\273\271\327\043\030\236\100\137\012\235\055\320\337\045\147  
\321\060\015\006\011\052\206\110\206\367\015\001\001\014\005\000  
\060\106\061\013\060\011\006\003\125\004\006\023\002\102\105\061  
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154  
\123\151\147\156\040\156\166\055\163\141\061\034\060\032\006\003  
\125\004\003\023\023\107\154\157\142\141\154\123\151\147\156\040  
\122\157\157\164\040\122\064\066\060\036\027\015\061\071\060\063  
\062\060\060\060\060\060\060\060\132\027\015\064\066\060\063\062  
\060\060\060\060\060\060\060\132\060\106\061\013\060\011\006\003  
\125\004\006\023\002\102\105\061\031\060\027\006\003\125\004\012  
\023\020\107\154\157\142\141\154\123\151\147\156\040\156\166\055  
\163\141\061\034\060\032\006\003\125\004\003\023\023\107\154\157  
\142\141\154\123\151\147\156\040\122\157\157\164\040\122\064\066  
\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001  
\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001  
\000\254\254\164\062\350\263\145\345\272\355\103\046\035\246\211  
\015\105\272\051\210\262\244\035\143\335\323\301\054\011\127\211  
\071\241\125\351\147\064\167\014\156\344\125\035\122\045\322\023  
\153\136\341\035\251\267\175\211\062\137\015\236\237\054\172\143  
\140\100\037\246\260\266\170\217\231\124\226\010\130\256\344\006  
\274\142\005\002\026\277\257\250\043\003\266\224\017\274\156\154  
\302\313\325\246\273\014\351\366\301\002\373\041\336\146\335\027  
\253\164\102\357\360\164\057\045\364\352\153\125\133\220\333\235  
\337\136\207\012\100\373\255\031\153\373\367\312\140\210\336\332  
\301\217\326\256\325\177\324\074\203\356\327\026\114\203\105\063  
\153\047\320\206\320\034\055\153\363\253\175\361\205\251\365\050  
\322\255\357\363\204\113\034\207\374\023\243\072\162\242\132\021  
\053\326\047\161\047\355\201\055\155\146\201\222\207\264\033\130  
\172\314\077\012\372\106\117\115\170\134\370\053\110\343\004\204  
\313\135\366\264\152\263\145\374\102\236\121\046\043\040\313\075

\024\371\201\355\145\026\000\117\032\144\227\146\010\317\214\173  
\343\053\300\235\371\024\362\033\361\126\152\026\277\054\205\205  
\315\170\070\232\353\102\152\002\064\030\203\027\116\224\126\370  
\266\202\265\363\226\335\075\363\276\177\040\167\076\173\031\043  
\153\054\324\162\163\103\127\175\340\370\327\151\117\027\066\004  
\371\300\220\140\067\105\336\346\014\330\164\215\256\234\242\155  
\164\135\102\276\006\365\331\144\156\002\020\254\211\260\114\073  
\007\115\100\176\044\305\212\230\202\171\216\244\247\202\040\215  
\043\372\047\161\311\337\306\101\164\240\115\366\221\026\334\106  
\214\137\051\143\061\131\161\014\330\157\302\266\062\175\373\346  
\135\123\246\176\025\374\273\165\174\135\354\370\366\027\034\354  
\307\153\031\313\363\173\360\053\007\245\331\154\171\124\166\154  
\235\034\246\156\016\351\171\014\250\043\152\243\337\033\060\061  
\237\261\124\173\376\152\313\146\252\334\145\320\242\236\112\232  
\007\041\153\201\217\333\304\131\372\336\042\300\004\234\343\252  
\133\066\223\350\075\275\172\241\235\013\166\261\013\307\235\375  
\317\230\250\006\302\370\052\243\241\203\240\267\045\162\245\002  
\343\002\003\001\000\001\243\102\060\100\060\016\006\003\125\035  
\017\001\001\377\004\004\003\002\001\206\060\017\006\003\125\035  
\023\001\001\377\004\005\060\003\001\001\377\060\035\006\003\125  
\035\016\004\026\004\024\003\134\253\163\201\207\250\314\260\246  
\325\224\342\066\226\111\377\005\231\054\060\015\006\011\052\206  
\110\206\367\015\001\001\014\005\000\003\202\002\001\000\174\170  
\354\366\002\054\273\133\176\222\053\135\071\334\276\330\035\242  
\102\063\115\371\357\244\052\073\104\151\036\254\331\105\243\116  
\074\247\330\044\121\262\124\034\223\116\304\357\173\223\205\140  
\046\352\011\110\340\365\273\307\351\150\322\273\152\061\161\314  
\171\256\021\250\360\231\375\345\037\274\057\250\314\127\353\166  
\304\041\246\107\123\125\115\150\277\005\244\356\327\046\253\142  
\332\103\067\113\342\306\265\345\262\203\031\072\307\323\333\115  
\236\010\172\363\356\317\076\142\373\254\350\140\314\321\307\241  
\134\203\105\304\105\314\363\027\153\024\311\004\002\076\322\044  
\246\171\351\036\316\242\347\301\131\025\237\035\342\113\232\076  
\237\166\010\055\153\330\272\127\024\332\203\352\376\214\125\351  
\320\116\251\314\167\061\261\104\021\172\134\261\076\323\024\105  
\025\030\142\044\023\322\313\115\316\134\203\301\066\362\020\265  
\016\210\155\270\341\126\237\211\336\226\146\071\107\144\054\156  
\115\256\142\173\277\140\164\031\270\126\254\222\254\026\062\355  
\255\150\125\376\230\272\323\064\336\364\311\141\303\016\206\366  
\113\204\140\356\015\173\265\062\130\171\221\125\054\201\103\263  
\164\037\172\252\045\236\035\327\241\213\271\315\102\056\004\244  
\146\203\115\211\065\266\154\250\066\112\171\041\170\042\320\102  
\274\321\100\061\220\241\276\004\317\312\147\355\365\360\200\323  
\140\311\203\052\042\005\320\007\073\122\277\014\236\252\053\371  
\273\346\037\217\045\272\205\215\027\036\002\376\135\120\004\127  
\317\376\055\274\357\134\300\032\253\266\237\044\306\337\163\150  
\110\220\054\024\364\077\122\032\344\322\313\024\303\141\151\317  
\342\371\030\305\272\063\237\024\243\004\135\271\161\367\265\224

```
\330\366\063\301\132\301\064\213\174\233\335\223\072\347\023\242
\160\141\237\257\217\353\330\305\165\370\063\146\324\164\147\072
\067\167\234\347\335\244\017\166\103\146\212\103\362\237\373\014
\102\170\143\321\342\017\157\173\324\241\075\164\227\205\267\110
\071\101\326\040\374\320\072\263\372\350\157\304\212\272\161\067
\276\213\227\261\170\061\117\263\347\266\003\023\316\124\235\256
\045\131\314\177\065\137\010\367\100\105\061\170\052\172
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

# Trust for "GlobalSign Root R46"

# Issuer: CN=GlobalSign Root R46,O=GlobalSign nv-sa,C=BE

# Serial Number: 11:d2:bb:b9:d7:23:18:9e:40:5f:0a:9d:2d:d0:df:25:67:d1

# Subject: CN=GlobalSign Root R46,O=GlobalSign nv-sa,C=BE

# Not Valid Before: Wed Mar 20 00:00:00 2019

# Not Valid After : Tue Mar 20 00:00:00 2046

# Fingerprint (SHA-256):

4F:A3:12:6D:8D:3A:11:D1:C4:85:5A:4F:80:7C:BA:D6:CF:91:9D:3A:5A:88:B0:3B:EA:2C:63:72:D9:3C:40:C9

# Fingerprint (SHA1): 53:A2:B0:4B:CA:6B:D6:45:E6:39:8A:8E:C4:0D:D2:BF:77:C3:A2:90

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "GlobalSign Root R46"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\123\242\260\113\312\153\326\105\346\071\212\216\304\015\322\277
```

```
\167\303\242\220
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\304\024\060\344\372\146\103\224\052\152\033\044\137\031\320\357
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\106\061\013\060\011\006\003\125\004\006\023\002\102\105\061
```

```
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154
```

```
\123\151\147\156\040\156\166\055\163\141\061\034\060\032\006\003
```

```
\125\004\003\023\023\107\154\157\142\141\154\123\151\147\156\040
```

```
\122\157\157\164\040\122\064\066
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\022\021\322\273\271\327\043\030\236\100\137\012\235\055\320
```

```
\337\045\147\321
```

END

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

```
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

```
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

```
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
#
Certificate "GlobalSign Root E46"
#
Issuer: CN=GlobalSign Root E46,O=GlobalSign nv-sa,C=BE
Serial Number:11:d2:bb:ba:33:6e:d4:bc:e6:24:68:c5:0d:84:1d:98:e8:43
Subject: CN=GlobalSign Root E46,O=GlobalSign nv-sa,C=BE
Not Valid Before: Wed Mar 20 00:00:00 2019
Not Valid After : Tue Mar 20 00:00:00 2046
Fingerprint (SHA-256):
CB:B9:C4:4D:84:B8:04:3E:10:50:EA:31:A6:9F:51:49:55:D7:BF:D2:E2:C6:B4:93:01:01:9A:D6:1D:9F:50:58
Fingerprint (SHA1): 39:B4:6C:D5:FE:80:06:EB:E2:2F:4A:BB:08:33:A0:AF:DB:B9:DD:84
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GlobalSign Root E46"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\106\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154
\123\151\147\156\040\156\166\055\163\141\061\034\060\032\006\003
\125\004\003\023\023\107\154\157\142\141\154\123\151\147\156\040
\122\157\157\164\040\105\064\066
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\106\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154
\123\151\147\156\040\156\166\055\163\141\061\034\060\032\006\003
\125\004\003\023\023\107\154\157\142\141\154\123\151\147\156\040
\122\157\157\164\040\105\064\066
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\022\021\322\273\272\063\156\324\274\346\044\150\305\015\204
\035\230\350\103
END
CKA_VALUE MULTILINE_OCTAL
\060\202\002\013\060\202\001\221\240\003\002\001\002\002\022\021
\322\273\272\063\156\324\274\346\044\150\305\015\204\035\230\350
\103\060\012\006\010\052\206\110\316\075\004\003\003\060\106\061
\013\060\011\006\003\125\004\006\023\002\102\105\061\031\060\027
\006\003\125\004\012\023\020\107\154\157\142\141\154\123\151\147
\156\040\156\166\055\163\141\061\034\060\032\006\003\125\004\003
\023\023\107\154\157\142\141\154\123\151\147\156\040\122\157\157
\164\040\105\064\066\060\036\027\015\061\071\060\063\062\060\060
\060\060\060\060\060\132\027\015\064\066\060\063\062\060\060\060
\060\060\060\060\132\060\106\061\013\060\011\006\003\125\004\006
```

```
\023\002\102\105\061\031\060\027\006\003\125\004\012\023\020\107
\154\157\142\141\154\123\151\147\156\040\156\166\055\163\141\061
\034\060\032\006\003\125\004\003\023\023\107\154\157\142\141\154
\123\151\147\156\040\122\157\157\164\040\105\064\066\060\166\060
\020\006\007\052\206\110\316\075\002\001\006\005\053\201\004\000
\042\003\142\000\004\234\016\261\317\267\350\236\122\167\165\064
\372\245\106\247\255\062\031\062\264\007\251\047\312\224\273\014
\322\012\020\307\332\211\260\227\014\160\023\011\001\216\330\352
\107\352\276\262\200\053\315\374\050\015\333\254\274\244\206\067
\355\160\010\000\165\352\223\013\173\056\122\234\043\150\043\006
\103\354\222\057\123\204\333\373\107\024\007\350\137\224\147\135
\311\172\201\074\040\243\102\060\100\060\016\006\003\125\035\017
\001\001\377\004\004\003\002\001\206\060\017\006\003\125\035\023
\001\001\377\004\005\060\003\001\001\377\060\035\006\003\125\035
\016\004\026\004\024\061\012\220\217\266\306\235\322\104\113\200
\265\242\346\037\261\022\117\033\225\060\012\006\010\052\206\110
\316\075\004\003\003\003\150\000\060\145\002\061\000\337\124\220
\355\233\357\213\224\002\223\027\202\231\276\263\236\054\366\013
\221\214\237\112\024\261\366\144\274\273\150\121\023\014\003\367
\025\213\204\140\271\213\377\122\216\347\214\274\034\002\060\074
\371\021\324\214\116\300\301\141\302\025\114\252\253\035\013\061
\137\073\034\342\000\227\104\061\346\376\163\226\057\332\226\323
\376\010\007\263\064\211\274\005\237\367\036\206\356\213\160
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Trust for "GlobalSign Root E46"
```

```
Issuer: CN=GlobalSign Root E46,O=GlobalSign nv-sa,C=BE
```

```
Serial Number:11:d2:bb:ba:33:6e:d4:bc:e6:24:68:c5:0d:84:1d:98:e8:43
```

```
Subject: CN=GlobalSign Root E46,O=GlobalSign nv-sa,C=BE
```

```
Not Valid Before: Wed Mar 20 00:00:00 2019
```

```
Not Valid After : Tue Mar 20 00:00:00 2046
```

```
Fingerprint (SHA-256):
```

```
CB:B9:C4:4D:84:B8:04:3E:10:50:EA:31:A6:9F:51:49:55:D7:BF:D2:E2:C6:B4:93:01:01:9A:D6:1D:9F:50:58
```

```
Fingerprint (SHA1): 39:B4:6C:D5:FE:80:06:EB:E2:2F:4A:BB:08:33:A0:AF:DB:B9:DD:84
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "GlobalSign Root E46"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\071\264\154\325\376\200\006\353\342\057\112\273\010\063\240\257
\333\271\335\204
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\265\270\146\355\336\010\203\343\311\342\001\064\006\254\121\157
```



```

END
CKA_ISSUER MULTILINE_OCTAL
\060\106\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154
\123\151\147\156\040\156\166\055\163\141\061\034\060\032\006\003
\125\004\003\023\023\107\154\157\142\141\154\123\151\147\156\040
\122\157\157\164\040\105\064\066
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\022\021\322\273\272\063\156\324\274\346\044\150\305\015\204
\035\230\350\103
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "GLOBALTRUST 2020"
#
Issuer: CN=GLOBALTRUST 2020,O=e-commerce monitoring GmbH,C=AT
Serial Number:5a:4b:bd:5a:fb:4f:8a:5b:fa:65:e5
Subject: CN=GLOBALTRUST 2020,O=e-commerce monitoring GmbH,C=AT
Not Valid Before: Mon Feb 10 00:00:00 2020
Not Valid After : Sun Jun 10 00:00:00 2040
Fingerprint (SHA-256):
9A:29:6A:51:82:D1:D4:51:A2:E3:7F:43:9B:74:DA:AF:A2:67:52:33:29:F9:0F:9A:0D:20:07:C3:34:E2:3C:9A
Fingerprint (SHA1): D0:67:C1:13:51:01:0C:AA:D0:C7:6A:65:37:31:16:26:4F:53:71:A2
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GLOBALTRUST 2020"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\115\061\013\060\011\006\003\125\004\006\023\002\101\124\061
\043\060\041\006\003\125\004\012\023\032\145\055\143\157\155\155
\145\162\143\145\040\155\157\156\151\164\157\162\151\156\147\040
\107\155\142\110\061\031\060\027\006\003\125\004\003\023\020\107
\114\117\102\101\114\124\122\125\123\124\040\062\060\062\060
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\115\061\013\060\011\006\003\125\004\006\023\002\101\124\061
\043\060\041\006\003\125\004\012\023\032\145\055\143\157\155\155
\145\162\143\145\040\155\157\156\151\164\157\162\151\156\147\040
\107\155\142\110\061\031\060\027\006\003\125\004\003\023\020\107
\114\117\102\101\114\124\122\125\123\124\040\062\060\062\060

```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\013\132\113\275\132\373\117\212\133\372\145\345

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\202\060\202\003\152\240\003\002\001\002\002\013\132  
\113\275\132\373\117\212\133\372\145\345\060\015\006\011\052\206  
\110\206\367\015\001\001\013\005\000\060\115\061\013\060\011\006  
\003\125\004\006\023\002\101\124\061\043\060\041\006\003\125\004  
\012\023\032\145\055\143\157\155\155\145\162\143\145\040\155\157  
\156\151\164\157\162\151\156\147\040\107\155\142\110\061\031\060  
\027\006\003\125\004\003\023\020\107\114\117\102\101\114\124\122  
\125\123\124\040\062\060\062\060\060\036\027\015\062\060\060\062  
\061\060\060\060\060\060\060\060\132\027\015\064\060\060\066\061  
\060\060\060\060\060\060\060\132\060\115\061\013\060\011\006\003  
\125\004\006\023\002\101\124\061\043\060\041\006\003\125\004\012  
\023\032\145\055\143\157\155\155\145\162\143\145\040\155\157\156  
\151\164\157\162\151\156\147\040\107\155\142\110\061\031\060\027  
\006\003\125\004\003\023\020\107\114\117\102\101\114\124\122\125  
\123\124\040\062\060\062\060\060\202\002\042\060\015\006\011\052  
\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060  
\202\002\012\002\202\002\001\000\256\056\126\255\033\034\357\366  
\225\217\240\167\033\053\323\143\217\204\115\105\242\017\237\133  
\105\253\131\173\121\064\371\354\213\212\170\305\335\153\257\275  
\304\337\223\105\036\277\221\070\013\256\016\026\347\101\163\370  
\333\273\321\270\121\340\313\203\073\163\070\156\167\212\017\131  
\143\046\315\247\052\316\124\373\270\342\300\174\107\316\140\174  
\077\262\163\362\300\031\266\212\222\207\065\015\220\050\242\344  
\025\004\143\076\272\257\356\174\136\314\246\213\120\262\070\367  
\101\143\312\316\377\151\217\150\016\225\066\345\314\271\214\011  
\312\113\335\061\220\226\310\314\037\375\126\226\064\333\216\034  
\352\054\276\205\056\143\335\252\251\225\323\375\051\225\023\360  
\310\230\223\331\055\026\107\220\021\203\242\072\042\242\050\127  
\242\353\376\300\214\050\240\246\175\347\052\102\073\202\200\143  
\245\143\037\031\314\174\262\146\250\302\323\155\067\157\342\176  
\006\121\331\105\204\037\022\316\044\122\144\205\013\110\200\116  
\207\261\042\042\060\252\353\256\276\340\002\340\100\350\260\102  
\200\003\121\252\264\176\252\104\327\103\141\363\242\153\026\211  
\111\244\243\244\053\212\002\304\170\364\150\212\301\344\172\066  
\261\157\033\226\033\167\111\215\324\311\006\162\217\317\123\343  
\334\027\205\040\112\334\230\047\323\221\046\053\107\036\151\007  
\257\336\242\344\344\324\153\013\263\136\174\324\044\200\107\051  
\151\073\156\350\254\375\100\353\330\355\161\161\053\362\350\130  
\035\353\101\227\042\305\037\324\071\320\047\217\207\343\030\364  
\340\251\106\015\365\164\072\202\056\320\156\054\221\243\061\134  
\073\106\352\173\004\020\126\136\200\035\365\245\145\350\202\374  
\342\007\214\142\105\365\040\336\106\160\206\241\274\223\323\036  
\164\246\154\260\054\367\003\014\210\014\313\324\162\123\206\274

\140\106\363\230\152\302\361\277\103\371\160\040\167\312\067\101  
\171\125\122\143\215\133\022\237\305\150\304\210\235\254\362\060  
\253\267\243\061\227\147\255\217\027\017\154\307\163\355\044\224  
\153\310\203\232\320\232\067\111\004\253\261\026\310\154\111\111  
\055\253\241\320\214\222\362\101\112\171\041\045\333\143\327\266  
\234\247\176\102\151\373\072\143\002\003\001\000\001\243\143\060  
\141\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001  
\001\377\060\016\006\003\125\035\017\001\001\377\004\004\003\002  
\001\006\060\035\006\003\125\035\016\004\026\004\024\334\056\037  
\321\141\067\171\344\253\325\325\263\022\161\150\075\152\150\234  
\042\060\037\006\003\125\035\043\004\030\060\026\200\024\334\056  
\037\321\141\067\171\344\253\325\325\263\022\161\150\075\152\150  
\234\042\060\015\006\011\052\206\110\206\367\015\001\001\013\005  
\000\003\202\002\001\000\221\360\102\002\150\100\356\303\150\300  
\124\057\337\354\142\303\303\236\212\240\061\050\252\203\216\244  
\126\226\022\020\206\126\272\227\162\322\124\060\174\255\031\325  
\035\150\157\373\024\102\330\215\016\363\265\321\245\343\002\102  
\136\334\350\106\130\007\065\002\060\340\274\164\112\301\103\052  
\377\333\032\320\260\257\154\303\375\313\263\365\177\155\003\056  
\131\126\235\055\055\065\214\262\326\103\027\054\222\012\313\135  
\350\214\017\113\160\103\320\202\377\250\314\277\244\224\300\276  
\207\275\212\343\223\173\306\217\233\026\235\047\145\274\172\305  
\102\202\154\134\007\320\251\301\210\140\104\351\230\205\026\137  
\370\217\312\001\020\316\045\303\371\140\033\240\305\227\303\323  
\054\210\061\242\275\060\354\320\320\300\022\361\301\071\343\345  
\365\370\326\112\335\064\315\373\157\301\117\343\000\213\126\342  
\222\367\050\262\102\167\162\043\147\307\077\021\025\262\304\003  
\005\276\273\021\173\012\277\250\156\347\377\130\103\317\233\147  
\240\200\007\266\035\312\255\155\352\101\021\176\055\164\223\373  
\302\274\276\121\104\305\357\150\045\047\200\343\310\240\324\022  
\354\331\245\067\035\067\174\264\221\312\332\324\261\226\201\357  
\150\134\166\020\111\257\176\245\067\200\261\034\122\275\063\201  
\114\217\371\335\145\331\024\315\212\045\130\364\342\305\203\245  
\011\220\324\154\024\143\265\100\337\353\300\374\304\130\176\015  
\024\026\207\124\047\156\126\344\160\204\270\154\062\022\176\202  
\061\103\276\327\335\174\241\255\256\326\253\040\022\357\012\303  
\020\214\111\226\065\334\013\165\136\261\117\325\117\064\016\021  
\040\007\165\103\105\351\243\021\332\254\243\231\302\266\171\047  
\342\271\357\310\342\366\065\051\172\164\372\305\177\202\005\142  
\246\012\352\150\262\171\107\006\156\362\127\250\025\063\306\367  
\170\112\075\102\173\153\176\376\367\106\352\321\353\216\357\210  
\150\133\350\301\331\161\176\375\144\357\377\147\107\210\130\045  
\057\076\206\007\275\373\250\345\202\250\254\245\323\151\103\315  
\061\210\111\204\123\222\300\261\071\033\071\203\001\060\304\362  
\251\372\320\003\275\162\067\140\126\037\066\174\275\071\221\365  
\155\015\277\173\327\222

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "GLOBALTRUST 2020"

# Issuer: CN=GLOBALTRUST 2020,O=e-commerce monitoring GmbH,C=AT

# Serial Number:5a:4b:bd:5a:fb:4f:8a:5b:fa:65:e5

# Subject: CN=GLOBALTRUST 2020,O=e-commerce monitoring GmbH,C=AT

# Not Valid Before: Mon Feb 10 00:00:00 2020

# Not Valid After : Sun Jun 10 00:00:00 2040

# Fingerprint (SHA-256):

9A:29:6A:51:82:D1:D4:51:A2:E3:7F:43:9B:74:DA:AF:A2:67:52:33:29:F9:0F:9A:0D:20:07:C3:34:E2:3C:9A

# Fingerprint (SHA1): D0:67:C1:13:51:01:0C:AA:D0:C7:6A:65:37:31:16:26:4F:53:71:A2

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "GLOBALTRUST 2020"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\320\147\301\023\121\001\014\252\320\307\152\145\067\061\026\046

\117\123\161\242

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\212\307\157\313\155\343\314\242\361\174\203\372\016\170\327\350

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\115\061\013\060\011\006\003\125\004\006\023\002\101\124\061

\043\060\041\006\003\125\004\012\023\032\145\055\143\157\155\155

\145\162\143\145\040\155\157\156\151\164\157\162\151\156\147\040

\107\155\142\110\061\031\060\027\006\003\125\004\003\023\020\107

\114\117\102\101\114\124\122\125\123\124\040\062\060\062\060

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\013\132\113\275\132\373\117\212\133\372\145\345

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "ANF Secure Server Root CA"

#

# Issuer: CN=ANF Secure Server Root CA,OU=ANF CA Raiz,O=ANF Autoridad de  
Certificacion,C=ES,serialNumber=G63287510

# Serial Number:0d:d3:e3:bc:6c:f9:6b:b1

# Subject: CN=ANF Secure Server Root CA,OU=ANF CA Raiz,O=ANF Autoridad de  
Certificacion,C=ES,serialNumber=G63287510

# Not Valid Before: Wed Sep 04 10:00:38 2019

```
Not Valid After : Tue Aug 30 10:00:38 2039
Fingerprint (SHA-256):
FB:8F:EC:75:91:69:B9:10:6B:1E:51:16:44:C6:18:C5:13:04:37:3F:6C:06:43:08:8D:8B:EF:FD:1B:99:75:99
Fingerprint (SHA1): 5B:6E:68:D0:CC:15:B6:A0:5F:1E:C1:5F:AE:02:FC:6B:2F:5D:6F:74
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ANF Secure Server Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\204\061\022\060\020\006\003\125\004\005\023\011\107\066
\063\062\070\067\065\061\060\061\013\060\011\006\003\125\004\006
\023\002\105\123\061\047\060\045\006\003\125\004\012\023\036\101
\116\106\040\101\165\164\157\162\151\144\141\144\040\144\145\040
\103\145\162\164\151\146\151\143\141\143\151\157\156\061\024\060
\022\006\003\125\004\013\023\013\101\116\106\040\103\101\040\122
\141\151\172\061\042\060\040\006\003\125\004\003\023\031\101\116
\106\040\123\145\143\165\162\145\040\123\145\162\166\145\162\040
\122\157\157\164\040\103\101
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\204\061\022\060\020\006\003\125\004\005\023\011\107\066
\063\062\070\067\065\061\060\061\013\060\011\006\003\125\004\006
\023\002\105\123\061\047\060\045\006\003\125\004\012\023\036\101
\116\106\040\101\165\164\157\162\151\144\141\144\040\144\145\040
\103\145\162\164\151\146\151\143\141\143\151\157\156\061\024\060
\022\006\003\125\004\013\023\013\101\116\106\040\103\101\040\122
\141\151\172\061\042\060\040\006\003\125\004\003\023\031\101\116
\106\040\123\145\143\165\162\145\040\123\145\162\166\145\162\040
\122\157\157\164\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\015\323\343\274\154\371\153\261
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\357\060\202\003\327\240\003\002\001\002\002\010\015
\323\343\274\154\371\153\261\060\015\006\011\052\206\110\206\367
\015\001\001\013\005\000\060\201\204\061\022\060\020\006\003\125
\004\005\023\011\107\066\063\062\070\067\065\061\060\061\013\060
\011\006\003\125\004\006\023\002\105\123\061\047\060\045\006\003
\125\004\012\023\036\101\116\106\040\101\165\164\157\162\151\144
\141\144\040\144\145\040\103\145\162\164\151\146\151\143\141\143
\151\157\156\061\024\060\022\006\003\125\004\013\023\013\101\116
\106\040\103\101\040\122\141\151\172\061\042\060\040\006\003\125
\004\003\023\031\101\116\106\040\123\145\143\165\162\145\040\123
\145\162\166\145\162\040\122\157\157\164\040\103\101\060\036\027
```

\015\061\071\060\071\060\064\061\060\060\060\063\070\132\027\015  
\063\071\060\070\063\060\061\060\060\060\063\070\132\060\201\204  
\061\022\060\020\006\003\125\004\005\023\011\107\066\063\062\070  
\067\065\061\060\061\013\060\011\006\003\125\004\006\023\002\105  
\123\061\047\060\045\006\003\125\004\012\023\036\101\116\106\040  
\101\165\164\157\162\151\144\141\144\040\144\145\040\103\145\162  
\164\151\146\151\143\141\143\151\157\156\061\024\060\022\006\003  
\125\004\013\023\013\101\116\106\040\103\101\040\122\141\151\172  
\061\042\060\040\006\003\125\004\003\023\031\101\116\106\040\123  
\145\143\165\162\145\040\123\145\162\166\145\162\040\122\157\157  
\164\040\103\101\060\202\002\042\060\015\006\011\052\206\110\206  
\367\015\001\001\001\005\000\003\202\002\017\000\060\202\002\012  
\002\202\002\001\000\333\353\153\053\346\144\124\225\202\220\243  
\162\244\031\001\235\234\013\201\137\163\111\272\247\254\363\004  
\116\173\226\013\354\021\340\133\246\034\316\033\322\015\203\034  
\053\270\236\035\176\105\062\140\017\007\351\167\130\176\237\152  
\310\141\116\266\046\301\114\215\377\114\357\064\262\037\145\330  
\271\170\365\255\251\161\271\357\117\130\035\245\336\164\040\227  
\241\355\150\114\336\222\027\113\274\253\377\145\232\236\373\107  
\331\127\162\363\011\241\256\166\104\023\156\234\055\104\071\274  
\371\307\073\244\130\075\101\275\264\302\111\243\310\015\322\227  
\057\007\145\122\000\247\156\310\257\150\354\364\024\226\266\127  
\037\126\303\071\237\053\155\344\363\076\366\065\144\332\014\034  
\241\204\113\057\113\113\342\054\044\235\155\223\100\353\265\043  
\216\062\312\157\105\323\250\211\173\036\317\036\372\133\103\213  
\315\315\250\017\152\312\014\136\271\236\107\217\360\331\266\012  
\013\130\145\027\063\271\043\344\167\031\175\313\112\056\222\173  
\117\057\020\167\261\215\057\150\234\142\314\340\120\370\354\221  
\247\124\114\127\011\325\166\143\305\350\145\036\356\155\152\317  
\011\235\372\174\117\255\140\010\375\126\231\017\025\054\173\251  
\200\253\214\141\217\112\007\166\102\336\075\364\335\262\044\063  
\133\270\265\243\104\311\254\177\167\074\035\043\354\202\251\246  
\342\310\006\114\002\376\254\134\231\231\013\057\020\212\246\364  
\177\325\207\164\015\131\111\105\366\360\161\134\071\051\326\277  
\112\043\213\365\137\001\143\322\207\163\050\265\113\012\365\370  
\253\202\054\176\163\045\062\035\013\143\012\027\201\000\377\266  
\166\136\347\264\261\100\312\041\273\325\200\121\345\110\122\147  
\054\322\141\211\007\015\017\316\102\167\300\104\163\234\104\120  
\240\333\020\012\055\225\034\201\257\344\034\345\024\036\361\066  
\101\001\002\057\175\163\247\336\102\314\114\351\211\015\126\367  
\237\221\324\003\306\154\311\217\333\330\034\340\100\230\135\146  
\231\230\200\156\055\377\001\305\316\313\106\037\254\002\306\103  
\346\256\242\204\074\305\116\036\075\155\311\024\114\343\056\101  
\273\312\071\277\066\074\052\031\252\101\207\116\245\316\113\062  
\171\335\220\111\177\002\003\001\000\001\243\143\060\141\060\037  
\006\003\125\035\043\004\030\060\026\200\024\234\137\320\154\143  
\243\137\223\312\223\230\010\255\214\207\245\054\134\301\067\060  
\035\006\003\125\035\016\004\026\004\024\234\137\320\154\143\243

\137\223\312\223\230\010\255\214\207\245\054\134\301\067\060\016  
\006\003\125\035\017\001\001\377\004\004\003\002\001\206\060\017  
\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060  
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\003\202  
\002\001\000\116\036\271\212\306\240\230\077\156\303\151\300\152  
\134\111\122\254\313\053\135\170\070\301\325\124\204\237\223\360  
\207\031\075\054\146\211\353\015\102\374\314\360\165\205\077\213  
\364\200\135\171\345\027\147\275\065\202\342\362\074\216\175\133  
\066\313\132\200\000\051\362\316\053\054\361\217\252\155\005\223  
\154\162\307\126\353\337\120\043\050\345\105\020\075\350\147\243  
\257\016\125\017\220\011\142\357\113\131\242\366\123\361\300\065  
\344\057\301\044\275\171\057\116\040\042\073\375\032\040\260\244  
\016\054\160\355\164\077\270\023\225\006\121\310\350\207\046\312  
\244\133\152\026\041\222\335\163\140\236\020\030\336\074\201\352  
\350\030\303\174\211\362\213\120\076\275\021\342\025\003\250\066  
\175\063\001\154\110\025\327\210\220\231\004\305\314\346\007\364  
\274\364\220\355\023\342\352\213\303\217\243\063\017\301\051\114  
\023\116\332\025\126\161\163\162\202\120\366\232\063\174\242\261  
\250\032\064\164\145\134\316\321\353\253\123\340\032\200\330\352  
\072\111\344\046\060\233\345\034\212\250\251\025\062\206\231\222  
\012\020\043\126\022\340\366\316\114\342\273\276\333\215\222\163  
\001\146\057\142\076\262\162\047\105\066\355\115\126\343\227\231  
\377\072\065\076\245\124\112\122\131\113\140\333\356\376\170\021  
\177\112\334\024\171\140\266\153\144\003\333\025\203\341\242\276  
\366\043\227\120\360\011\063\066\247\161\226\045\363\271\102\175  
\333\070\077\054\130\254\350\102\341\016\330\323\073\114\056\202  
\351\203\056\153\061\331\335\107\206\117\155\227\221\056\117\342  
\050\161\065\026\321\362\163\376\045\053\007\107\044\143\047\310  
\370\366\331\153\374\022\061\126\010\300\123\102\257\234\320\063  
\176\374\006\360\061\104\003\024\361\130\352\362\152\015\251\021  
\262\203\276\305\032\277\007\352\131\334\243\210\065\357\234\166  
\062\074\115\006\042\316\025\345\335\236\330\217\332\336\322\304  
\071\345\027\201\317\070\107\353\177\210\155\131\033\337\237\102  
\024\256\176\317\250\260\146\145\332\067\257\237\252\075\352\050  
\266\336\325\061\130\026\202\133\352\273\031\165\002\163\032\312  
\110\032\041\223\220\012\216\223\204\247\175\073\043\030\222\211  
\240\215\254

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "ANF Secure Server Root CA"

# Issuer: CN=ANF Secure Server Root CA,OU=ANF CA Raiz,O=ANF Autoridad de  
Certificacion,C=ES,serialNumber=G63287510

# Serial Number:0d:d3:e3:bc:6c:f9:6b:b1

# Subject: CN=ANF Secure Server Root CA,OU=ANF CA Raiz,O=ANF Autoridad de  
Certificacion,C=ES,serialNumber=G63287510

```

Not Valid Before: Wed Sep 04 10:00:38 2019
Not Valid After : Tue Aug 30 10:00:38 2039
Fingerprint (SHA-256):
FB:8F:EC:75:91:69:B9:10:6B:1E:51:16:44:C6:18:C5:13:04:37:3F:6C:06:43:08:8D:8B:EF:FD:1B:99:75:99
Fingerprint (SHA1): 5B:6E:68:D0:CC:15:B6:A0:5F:1E:C1:5F:AE:02:FC:6B:2F:5D:6F:74
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ANF Secure Server Root CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\133\156\150\320\314\025\266\240\137\036\301\137\256\002\374\153
\057\135\157\164
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\046\246\104\132\331\257\116\057\262\035\266\145\260\116\350\226
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\204\061\022\060\020\006\003\125\004\005\023\011\107\066
\063\062\070\067\065\061\060\061\013\060\011\006\003\125\004\006
\023\002\105\123\061\047\060\045\006\003\125\004\012\023\036\101
\116\106\040\101\165\164\157\162\151\144\141\144\040\144\145\040
\103\145\162\164\151\146\151\143\141\143\151\157\156\061\024\060
\022\006\003\125\004\013\023\013\101\116\106\040\103\101\040\122
\141\151\172\061\042\060\040\006\003\125\004\003\023\031\101\116
\106\040\123\145\143\165\162\145\040\123\145\162\166\145\162\040
\122\157\157\164\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\015\323\343\274\154\371\153\261
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "Certum EC-384 CA"
#
Issuer: CN=Certum EC-384 CA,OU=Certum Certification Authority,O=Asseco Data Systems S.A.,C=PL
Serial Number:78:8f:27:5c:81:12:52:20:a5:04:d0:2d:dd:ba:73:f4
Subject: CN=Certum EC-384 CA,OU=Certum Certification Authority,O=Asseco Data Systems S.A.,C=PL
Not Valid Before: Mon Mar 26 07:24:54 2018
Not Valid After : Thu Mar 26 07:24:54 2043
Fingerprint (SHA-256):
6B:32:80:85:62:53:18:AA:50:D1:73:C9:8D:8B:DA:09:D5:7E:27:41:3D:11:4C:F7:87:A0:F5:D0:6C:03:0C:F6
Fingerprint (SHA1): F3:3E:78:3C:AC:DF:F4:A2:CC:AC:67:55:69:56:D7:E5:16:3C:E1:ED
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

```



```
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certum EC-384 CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\164\061\013\060\011\006\003\125\004\006\023\002\120\114\061
\041\060\037\006\003\125\004\012\023\030\101\163\163\145\143\157
\040\104\141\164\141\040\123\171\163\164\145\155\163\040\123\056
\101\056\061\047\060\045\006\003\125\004\013\023\036\103\145\162
\164\165\155\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171\061\031\060\027\006
\003\125\004\003\023\020\103\145\162\164\165\155\040\105\103\055
\063\070\064\040\103\101
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\164\061\013\060\011\006\003\125\004\006\023\002\120\114\061
\041\060\037\006\003\125\004\012\023\030\101\163\163\145\143\157
\040\104\141\164\141\040\123\171\163\164\145\155\163\040\123\056
\101\056\061\047\060\045\006\003\125\004\013\023\036\103\145\162
\164\165\155\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171\061\031\060\027\006
\003\125\004\003\023\020\103\145\162\164\165\155\040\105\103\055
\063\070\064\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\170\217\047\134\201\022\122\040\245\004\320\055\335\272
\163\364
END
CKA_VALUE MULTILINE_OCTAL
\060\202\002\145\060\202\001\353\240\003\002\001\002\002\020\170
\217\047\134\201\022\122\040\245\004\320\055\335\272\163\364\060
\012\006\010\052\206\110\316\075\004\003\003\060\164\061\013\060
\011\006\003\125\004\006\023\002\120\114\061\041\060\037\006\003
\125\004\012\023\030\101\163\163\145\143\157\040\104\141\164\141
\040\123\171\163\164\145\155\163\040\123\056\101\056\061\047\060
\045\006\003\125\004\013\023\036\103\145\162\164\165\155\040\103
\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164
\150\157\162\151\164\171\061\031\060\027\006\003\125\004\003\023
\020\103\145\162\164\165\155\040\105\103\055\063\070\064\040\103
\101\060\036\027\015\061\070\060\063\062\066\060\067\062\064\065
\064\132\027\015\064\063\060\063\062\066\060\067\062\064\065\064
\132\060\164\061\013\060\011\006\003\125\004\006\023\002\120\114
\061\041\060\037\006\003\125\004\012\023\030\101\163\163\145\143
\157\040\104\141\164\141\040\123\171\163\164\145\155\163\040\123
\056\101\056\061\047\060\045\006\003\125\004\013\023\036\103\145
\162\164\165\155\040\103\145\162\164\151\146\151\143\141\164\151
```

```
\157\156\040\101\165\164\150\157\162\151\164\171\061\031\060\027
\006\003\125\004\003\023\020\103\145\162\164\165\155\040\105\103
\055\063\070\064\040\103\101\060\166\060\020\006\007\052\206\110
\316\075\002\001\006\005\053\201\004\000\042\003\142\000\004\304
\050\216\253\030\133\152\276\156\144\067\143\344\315\354\253\072
\367\314\241\270\016\202\111\327\206\051\237\241\224\362\343\140
\170\230\201\170\006\115\362\354\232\016\127\140\203\237\264\346
\027\057\032\263\135\002\133\211\043\074\302\021\005\052\247\210
\023\030\363\120\204\327\275\064\054\047\211\125\377\316\114\347
\337\246\037\050\304\360\124\303\271\174\267\123\255\353\302\243
\102\060\100\060\017\006\003\125\035\023\001\001\377\004\005\060
\003\001\001\377\060\035\006\003\125\035\016\004\026\004\024\215
\006\146\164\044\166\072\363\211\367\274\326\275\107\175\057\274
\020\137\113\060\016\006\003\125\035\017\001\001\377\004\004\003
\002\001\006\060\012\006\010\052\206\110\316\075\004\003\003\003
\150\000\060\145\002\060\003\125\055\246\346\030\304\174\357\311
\120\156\301\047\017\234\207\257\156\325\033\010\030\275\222\051
\301\357\224\221\170\322\072\034\125\211\142\345\033\011\036\272
\144\153\361\166\264\324\002\061\000\264\102\204\231\377\253\347
\236\373\221\227\047\135\334\260\133\060\161\316\136\070\032\152
\331\045\347\352\367\141\222\126\370\352\332\066\302\207\145\226
\056\162\045\057\177\337\303\023\311
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Trust for "Certum EC-384 CA"
```

```
Issuer: CN=Certum EC-384 CA,OU=Certum Certification Authority,O=Asseco Data Systems S.A.,C=PL
```

```
Serial Number:78:8f:27:5c:81:12:52:20:a5:04:d0:2d:dd:ba:73:f4
```

```
Subject: CN=Certum EC-384 CA,OU=Certum Certification Authority,O=Asseco Data Systems S.A.,C=PL
```

```
Not Valid Before: Mon Mar 26 07:24:54 2018
```

```
Not Valid After : Thu Mar 26 07:24:54 2043
```

```
Fingerprint (SHA-256):
```

```
6B:32:80:85:62:53:18:AA:50:D1:73:C9:8D:8B:DA:09:D5:7E:27:41:3D:11:4C:F7:87:A0:F5:D0:6C:03:0C:F6
```

```
Fingerprint (SHA1): F3:3E:78:3C:AC:DF:F4:A2:CC:AC:67:55:69:56:D7:E5:16:3C:E1:ED
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "Certum EC-384 CA"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\363\076\170\074\254\337\364\242\314\254\147\125\151\126\327\345
```

```
\026\074\341\355
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\266\145\263\226\140\227\022\241\354\116\341\075\243\306\311\361
```

END

```
CKA_ISSUER MULTILINE_OCTAL
\060\164\061\013\060\011\006\003\125\004\006\023\002\120\114\061
\041\060\037\006\003\125\004\012\023\030\101\163\163\145\143\157
\040\104\141\164\141\040\123\171\163\164\145\155\163\040\123\056
\101\056\061\047\060\045\006\003\125\004\013\023\036\103\145\162
\164\165\155\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171\061\031\060\027\006
\003\125\004\003\023\020\103\145\162\164\165\155\040\105\103\055
\063\070\064\040\103\101
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\020\170\217\047\134\201\022\122\040\245\004\320\055\335\272
\163\364
```

END

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

#

```
Certificate "Certum Trusted Root CA"
```

#

```
Issuer: CN=Certum Trusted Root CA,OU=Certum Certification Authority,O=Asseco Data Systems S.A.,C=PL
```

```
Serial Number: 1e:bf:59:50:b8:c9:80:37:4c:06:f7:eb:55:4f:b5:ed
```

```
Subject: CN=Certum Trusted Root CA,OU=Certum Certification Authority,O=Asseco Data Systems S.A.,C=PL
```

```
Not Valid Before: Fri Mar 16 12:10:13 2018
```

```
Not Valid After : Mon Mar 16 12:10:13 2043
```

```
Fingerprint (SHA-256):
```

```
FE:76:96:57:38:55:77:3E:37:A9:5E:7A:D4:D9:CC:96:C3:01:57:C1:5D:31:76:5B:A9:B1:57:04:E1:AE:78:FD
```

```
Fingerprint (SHA1): C8:83:44:C0:18:AE:9F:CC:F1:87:B7:8F:22:D1:C5:D7:45:84:BA:E5
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "Certum Trusted Root CA"
```

```
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
```

```
CKA_SUBJECT MULTILINE_OCTAL
```

```
\060\172\061\013\060\011\006\003\125\004\006\023\002\120\114\061
\041\060\037\006\003\125\004\012\023\030\101\163\163\145\143\157
\040\104\141\164\141\040\123\171\163\164\145\155\163\040\123\056
\101\056\061\047\060\045\006\003\125\004\013\023\036\103\145\162
\164\165\155\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171\061\037\060\035\006
\003\125\004\003\023\026\103\145\162\164\165\155\040\124\162\165
\163\164\145\144\040\122\157\157\164\040\103\101
```

END

```
CKA_ID UTF8 "0"
```

```
CKA_ISSUER MULTILINE_OCTAL
```

\060\172\061\013\060\011\006\003\125\004\006\023\002\120\114\061  
\041\060\037\006\003\125\004\012\023\030\101\163\163\145\143\157  
\040\104\141\164\141\040\123\171\163\164\145\155\163\040\123\056  
\101\056\061\047\060\045\006\003\125\004\013\023\036\103\145\162  
\164\165\155\040\103\145\162\164\151\146\151\143\141\164\151\157  
\156\040\101\165\164\150\157\162\151\164\171\061\037\060\035\006  
\003\125\004\003\023\026\103\145\162\164\165\155\040\124\162\165  
\163\164\145\144\040\122\157\157\164\040\103\101

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\036\277\131\120\270\311\200\067\114\006\367\353\125\117  
\265\355

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\300\060\202\003\250\240\003\002\001\002\002\020\036  
\277\131\120\270\311\200\067\114\006\367\353\125\117\265\355\060  
\015\006\011\052\206\110\206\367\015\001\001\015\005\000\060\172  
\061\013\060\011\006\003\125\004\006\023\002\120\114\061\041\060  
\037\006\003\125\004\012\023\030\101\163\163\145\143\157\040\104  
\141\164\141\040\123\171\163\164\145\155\163\040\123\056\101\056  
\061\047\060\045\006\003\125\004\013\023\036\103\145\162\164\165  
\155\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040  
\101\165\164\150\157\162\151\164\171\061\037\060\035\006\003\125  
\004\003\023\026\103\145\162\164\165\155\040\124\162\165\163\164  
\145\144\040\122\157\157\164\040\103\101\060\036\027\015\061\070  
\060\063\061\066\061\062\061\060\061\063\132\027\015\064\063\060  
\063\061\066\061\062\061\060\061\063\132\060\172\061\013\060\011  
\006\003\125\004\006\023\002\120\114\061\041\060\037\006\003\125  
\004\012\023\030\101\163\163\145\143\157\040\104\141\164\141\040  
\123\171\163\164\145\155\163\040\123\056\101\056\061\047\060\045  
\006\003\125\004\013\023\036\103\145\162\164\165\155\040\103\145  
\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150  
\157\162\151\164\171\061\037\060\035\006\003\125\004\003\023\026  
\103\145\162\164\165\155\040\124\162\165\163\164\145\144\040\122  
\157\157\164\040\103\101\060\202\002\042\060\015\006\011\052\206  
\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060\202  
\002\012\002\202\002\001\000\321\055\216\273\267\066\352\155\067  
\221\237\116\223\247\005\344\051\003\045\316\034\202\367\174\231  
\237\101\006\315\355\243\272\300\333\011\054\301\174\337\051\176  
\113\145\057\223\247\324\001\153\003\050\030\243\330\235\005\301  
\052\330\105\361\221\336\337\073\320\200\002\214\317\070\017\352  
\247\134\170\021\244\301\310\205\134\045\323\323\262\347\045\317  
\021\124\227\253\065\300\036\166\034\357\000\123\237\071\334\024  
\245\054\042\045\263\162\162\374\215\263\345\076\010\036\024\052  
\067\013\210\074\312\260\364\310\302\241\256\274\301\276\051\147  
\125\342\374\255\131\134\376\275\127\054\260\220\215\302\355\067  
\266\174\231\210\265\325\003\232\075\025\015\075\072\250\250\105  
\360\225\116\045\131\035\315\230\151\273\323\314\062\311\215\357

\201\376\255\175\211\273\272\140\023\312\145\225\147\240\363\031  
\366\003\126\324\152\323\047\342\241\255\203\360\112\022\042\167  
\034\005\163\342\031\161\102\300\354\165\106\232\220\130\340\152  
\216\053\245\106\060\004\216\031\262\027\343\276\251\272\177\126  
\361\044\003\327\262\041\050\166\016\066\060\114\171\325\101\232  
\232\250\270\065\272\014\072\362\104\033\040\210\367\305\045\327  
\075\306\343\076\103\335\207\376\304\352\365\123\076\114\145\377  
\073\112\313\170\132\153\027\137\015\307\303\117\116\232\052\242  
\355\127\115\042\342\106\232\077\017\221\064\044\175\125\343\214  
\225\067\323\032\360\011\053\054\322\311\215\264\015\000\253\147  
\051\050\330\001\365\031\004\266\035\276\166\376\162\134\304\205  
\312\322\200\101\337\005\250\243\325\204\220\117\013\363\340\077  
\233\031\322\067\211\077\362\173\122\034\214\366\341\367\074\007  
\227\214\016\242\131\201\014\262\220\075\323\343\131\106\355\017  
\251\247\336\200\153\132\252\007\266\031\313\274\127\363\227\041  
\172\014\261\053\164\076\353\332\247\147\055\114\304\230\236\066  
\011\166\146\146\374\032\077\352\110\124\034\276\060\275\200\120  
\277\174\265\316\000\366\014\141\331\347\044\003\340\343\001\201  
\016\275\330\205\064\210\275\262\066\250\173\134\010\345\104\200  
\214\157\370\057\325\041\312\035\034\320\373\304\265\207\321\072  
\116\307\166\265\065\110\265\002\003\001\000\001\243\102\060\100  
\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001  
\377\060\035\006\003\125\035\016\004\026\004\024\214\373\034\165  
\274\002\323\237\116\056\110\331\371\140\124\252\304\263\117\372  
\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006  
\060\015\006\011\052\206\110\206\367\015\001\001\015\005\000\003  
\202\002\001\000\110\242\325\000\013\056\320\077\274\034\325\265  
\124\111\036\132\153\364\344\362\340\100\067\340\314\024\173\271  
\311\372\065\265\165\027\223\152\005\151\205\234\315\117\031\170  
\133\031\201\363\143\076\303\316\133\217\365\057\136\001\166\023  
\077\054\000\271\315\226\122\071\111\155\004\116\305\351\017\206  
\015\341\372\263\137\202\022\361\072\316\146\006\044\064\053\350  
\314\312\347\151\334\207\235\302\064\327\171\321\323\167\270\252  
\131\130\376\235\046\372\070\206\076\235\212\207\144\127\345\027  
\072\342\371\215\271\343\063\170\301\220\330\270\335\267\203\121  
\344\304\314\043\325\006\174\346\121\323\315\064\061\300\366\106  
\273\013\255\374\075\020\005\052\073\112\221\045\356\214\324\204  
\207\200\052\274\011\214\252\072\023\137\350\064\171\120\301\020  
\031\371\323\050\036\324\321\121\060\051\263\256\220\147\326\037  
\012\143\261\305\251\306\102\061\143\027\224\357\151\313\057\372  
\214\024\175\304\103\030\211\331\360\062\100\346\200\342\106\137  
\345\343\301\000\131\250\371\350\040\274\211\054\016\107\064\013  
\352\127\302\123\066\374\247\324\257\061\315\376\002\345\165\372  
\271\047\011\371\363\365\073\312\175\237\251\042\313\210\311\252  
\321\107\075\066\167\250\131\144\153\047\317\357\047\301\343\044  
\265\206\367\256\176\062\115\260\171\150\321\071\350\220\130\303  
\203\274\017\054\326\227\353\316\014\341\040\307\332\267\076\303  
\077\277\057\334\064\244\373\053\041\315\147\217\113\364\343\352

```
\324\077\347\117\272\271\245\223\105\034\146\037\041\372\144\136
\157\340\166\224\062\313\165\365\156\345\366\217\307\270\244\314
\250\226\175\144\373\044\132\112\003\154\153\070\306\350\003\103
\232\367\127\271\263\051\151\223\070\364\003\362\273\373\202\153
\007\040\321\122\037\232\144\002\173\230\146\333\134\115\132\017
\320\204\225\240\074\024\103\006\312\312\333\270\101\066\332\152
\104\147\207\257\257\343\105\021\025\151\010\262\276\026\071\227
\044\157\022\105\321\147\135\011\250\311\025\332\372\322\246\137
\023\141\037\277\205\254\264\255\255\005\224\010\203\036\165\027
\323\161\073\223\120\043\131\240\355\074\221\124\235\166\000\305
\303\270\070\333
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE
```

```
Trust for "Certum Trusted Root CA"
```

```
Issuer: CN=Certum Trusted Root CA,OU=Certum Certification Authority,O=Asseco Data Systems S.A.,C=PL
```

```
Serial Number: 1e:bf:59:50:b8:c9:80:37:4c:06:f7:eb:55:4f:b5:ed
```

```
Subject: CN=Certum Trusted Root CA,OU=Certum Certification Authority,O=Asseco Data Systems S.A.,C=PL
```

```
Not Valid Before: Fri Mar 16 12:10:13 2018
```

```
Not Valid After : Mon Mar 16 12:10:13 2043
```

```
Fingerprint (SHA-256):
```

```
FE:76:96:57:38:55:77:3E:37:A9:5E:7A:D4:D9:CC:96:C3:01:57:C1:5D:31:76:5B:A9:B1:57:04:E1:AE:78:FD
```

```
Fingerprint (SHA1): C8:83:44:C0:18:AE:9F:CC:F1:87:B7:8F:22:D1:C5:D7:45:84:BA:E5
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "Certum Trusted Root CA"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\310\203\104\300\030\256\237\314\361\207\267\217\042\321\305\327
\105\204\272\345
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\121\341\302\347\376\114\204\257\131\016\057\364\124\157\352\051
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\172\061\013\060\011\006\003\125\004\006\023\002\120\114\061
\041\060\037\006\003\125\004\012\023\030\101\163\163\145\143\157
\040\104\141\164\141\040\123\171\163\164\145\155\163\040\123\056
\101\056\061\047\060\045\006\003\125\004\013\023\036\103\145\162
\164\165\155\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171\061\037\060\035\006
\003\125\004\003\023\026\103\145\162\164\165\155\040\124\162\165
\163\164\145\144\040\122\157\157\164\040\103\101
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```

\002\020\036\277\131\120\270\311\200\067\114\006\367\353\125\117
\265\355
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "TunTrust Root CA"
#
Issuer: CN=TunTrust Root CA,O=Agence Nationale de Certification Electronique,C=TN
Serial Number:13:02:d5:e2:40:4c:92:46:86:16:67:5d:b4:bb:bb:b2:6b:3e:fc:13
Subject: CN=TunTrust Root CA,O=Agence Nationale de Certification Electronique,C=TN
Not Valid Before: Fri Apr 26 08:57:56 2019
Not Valid After : Tue Apr 26 08:57:56 2044
Fingerprint (SHA-256):
2E:44:10:2A:B5:8C:B8:54:19:45:1C:8E:19:D9:AC:F3:66:2C:AF:BC:61:4B:6A:53:96:0A:30:F7:D0:E2:EB:41
Fingerprint (SHA1): CF:E9:70:84:0F:E0:73:0F:9D:F6:0C:7F:2C:4B:EE:20:46:34:9C:BB
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "TunTrust Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\141\061\013\060\011\006\003\125\004\006\023\002\124\116\061
\067\060\065\006\003\125\004\012\014\056\101\147\145\156\143\145
\040\116\141\164\151\157\156\141\154\145\040\144\145\040\103\145
\162\164\151\146\151\143\141\164\151\157\156\040\105\154\145\143
\164\162\157\156\151\161\165\145\061\031\060\027\006\003\125\004
\003\014\020\124\165\156\124\162\165\163\164\040\122\157\157\164
\040\103\101
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\141\061\013\060\011\006\003\125\004\006\023\002\124\116\061
\067\060\065\006\003\125\004\012\014\056\101\147\145\156\143\145
\040\116\141\164\151\157\156\141\154\145\040\144\145\040\103\145
\162\164\151\146\151\143\141\164\151\157\156\040\105\154\145\143
\164\162\157\156\151\161\165\145\061\031\060\027\006\003\125\004
\003\014\020\124\165\156\124\162\165\163\164\040\122\157\157\164
\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\024\023\002\325\342\100\114\222\106\206\026\147\135\264\273
\273\262\153\076\374\023
END

```

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\263\060\202\003\233\240\003\002\001\002\002\024\023  
\002\325\342\100\114\222\106\206\026\147\135\264\273\273\262\153  
\076\374\023\060\015\006\011\052\206\110\206\367\015\001\001\013  
\005\000\060\141\061\013\060\011\006\003\125\004\006\023\002\124  
\116\061\067\060\065\006\003\125\004\012\014\056\101\147\145\156  
\143\145\040\116\141\164\151\157\156\141\154\145\040\144\145\040  
\103\145\162\164\151\146\151\143\141\164\151\157\156\040\105\154  
\145\143\164\162\157\156\151\161\165\145\061\031\060\027\006\003  
\125\004\003\014\020\124\165\156\124\162\165\163\164\040\122\157  
\157\164\040\103\101\060\036\027\015\061\071\060\064\062\066\060  
\070\065\067\065\066\132\027\015\064\064\060\064\062\066\060\070  
\065\067\065\066\132\060\141\061\013\060\011\006\003\125\004\006  
\023\002\124\116\061\067\060\065\006\003\125\004\012\014\056\101  
\147\145\156\143\145\040\116\141\164\151\157\156\141\154\145\040  
\144\145\040\103\145\162\164\151\146\151\143\141\164\151\157\156  
\040\105\154\145\143\164\162\157\156\151\161\165\145\061\031\060  
\027\006\003\125\004\003\014\020\124\165\156\124\162\165\163\164  
\040\122\157\157\164\040\103\101\060\202\002\042\060\015\006\011  
\052\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000  
\060\202\002\012\002\202\002\001\000\303\315\323\374\275\004\123  
\335\014\040\072\325\210\056\005\113\101\365\203\202\176\367\131  
\237\236\236\143\350\163\332\366\006\251\117\037\264\371\013\037  
\071\214\232\040\320\176\006\324\354\064\331\206\274\165\133\207  
\210\360\322\331\324\243\012\262\154\033\353\111\054\076\254\135  
\330\224\003\240\354\064\345\060\304\065\175\373\046\115\033\156  
\060\124\330\365\200\105\234\071\255\234\311\045\004\115\232\220  
\076\116\100\156\212\153\315\051\147\306\314\055\340\164\350\005  
\127\012\110\120\372\172\103\332\176\354\133\232\016\142\166\376  
\352\235\035\205\162\354\021\273\065\350\037\047\277\301\241\307  
\273\110\026\335\126\327\314\116\240\341\271\254\333\325\203\031  
\032\205\321\224\227\327\312\243\145\013\363\070\371\002\256\335  
\366\147\317\311\077\365\212\054\107\032\231\157\005\015\375\320  
\035\202\061\374\051\314\000\130\227\221\114\200\000\034\063\205  
\226\057\313\101\302\213\020\204\303\011\044\211\037\265\017\331  
\331\167\107\030\222\224\140\134\307\231\003\074\376\367\225\247  
\175\120\241\200\302\251\203\255\130\226\125\041\333\206\131\324  
\257\306\274\335\201\156\007\333\140\142\376\354\020\156\332\150  
\001\364\203\033\251\076\242\133\043\327\144\306\337\334\242\175  
\330\113\272\202\322\121\370\146\277\006\106\344\171\052\046\066  
\171\217\037\116\231\035\262\217\014\016\034\377\311\135\300\375  
\220\020\246\261\067\363\315\072\044\156\264\205\220\277\200\271  
\014\214\325\233\326\310\361\126\077\032\200\211\172\251\342\033  
\062\121\054\076\362\337\173\366\135\172\051\031\216\345\310\275  
\066\161\213\135\114\302\035\077\255\130\242\317\075\160\115\246  
\120\230\045\334\043\371\270\130\101\010\161\277\117\270\204\240  
\217\000\124\025\374\221\155\130\247\226\073\353\113\226\047\315  
\153\242\241\206\254\015\174\124\346\146\114\146\137\220\276\041



\232\002\106\055\344\203\302\200\271\317\113\076\350\177\074\001  
\354\217\136\315\177\322\050\102\001\225\212\342\227\075\020\041  
\175\366\235\034\305\064\241\354\054\016\012\122\054\022\125\160  
\044\075\313\302\024\065\103\135\047\116\276\300\275\252\174\226  
\347\374\236\141\255\104\323\000\227\002\003\001\000\001\243\143  
\060\141\060\035\006\003\125\035\016\004\026\004\024\006\232\233  
\037\123\175\361\365\244\310\323\206\076\241\163\131\264\367\104  
\041\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001  
\001\377\060\037\006\003\125\035\043\004\030\060\026\200\024\006  
\232\233\037\123\175\361\365\244\310\323\206\076\241\163\131\264  
\367\104\041\060\016\006\003\125\035\017\001\001\377\004\004\003  
\002\001\006\060\015\006\011\052\206\110\206\367\015\001\001\013  
\005\000\003\202\002\001\000\252\005\156\266\335\025\311\277\263  
\306\040\366\006\107\260\206\223\045\323\215\271\310\000\077\227  
\365\122\047\210\161\311\164\375\353\312\144\333\133\357\036\135  
\272\277\321\353\356\134\151\272\026\310\363\271\217\323\066\056  
\100\111\007\015\131\336\213\020\260\111\005\342\377\221\077\113  
\267\335\002\216\370\201\050\134\314\334\155\257\137\024\234\175  
\130\170\015\366\200\011\271\351\016\227\051\031\270\267\353\370  
\026\313\125\022\344\306\175\273\304\354\370\265\034\116\076\147  
\277\305\137\033\155\155\107\050\252\004\130\141\326\166\277\042  
\177\320\007\152\247\144\123\360\227\215\235\200\077\273\301\007  
\333\145\257\346\233\062\232\303\124\223\304\034\010\303\104\373  
\173\143\021\103\321\152\032\141\152\171\155\220\117\051\216\107  
\005\301\022\151\151\326\306\066\061\341\374\372\200\272\134\117  
\304\353\267\062\254\370\165\141\027\327\020\031\271\361\322\011  
\357\172\102\235\133\132\013\324\306\225\116\052\316\377\007\327  
\117\176\030\006\210\361\031\265\331\230\273\256\161\304\034\347  
\164\131\130\357\014\211\317\213\037\165\223\032\004\024\222\110  
\120\251\353\127\051\000\026\343\066\034\310\370\277\360\063\325  
\101\017\304\314\074\335\351\063\103\001\221\020\053\036\321\271  
\135\315\062\031\213\217\214\040\167\327\042\304\102\334\204\026  
\233\045\155\350\264\125\161\177\260\174\263\323\161\111\271\317  
\122\244\004\077\334\075\240\273\257\063\236\012\060\140\216\333  
\235\135\224\250\275\140\347\142\200\166\201\203\014\214\314\060  
\106\111\342\014\322\250\257\353\141\161\357\347\042\142\251\367  
\134\144\154\237\026\214\147\066\047\105\365\011\173\277\366\020  
\012\361\260\215\124\103\214\004\272\243\077\357\342\065\307\371  
\164\340\157\064\101\320\277\163\145\127\040\371\233\147\172\146  
\150\044\116\200\145\275\020\231\006\131\362\145\257\270\306\107  
\273\375\220\170\213\101\163\056\257\125\037\334\073\222\162\156  
\204\323\320\141\114\015\314\166\127\342\055\205\042\025\066\015  
\353\001\235\353\330\353\304\204\231\373\300\014\314\062\350\343  
\167\332\203\104\213\236\125\050\300\213\130\323\220\076\116\033  
\000\361\025\255\203\053\232

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "TunTrust Root CA"

# Issuer: CN=TunTrust Root CA,O=Agence Nationale de Certification Electronique,C=TN

# Serial Number:13:02:d5:e2:40:4c:92:46:86:16:67:5d:b4:bb:bb:b2:6b:3e:fc:13

# Subject: CN=TunTrust Root CA,O=Agence Nationale de Certification Electronique,C=TN

# Not Valid Before: Fri Apr 26 08:57:56 2019

# Not Valid After : Tue Apr 26 08:57:56 2044

# Fingerprint (SHA-256):

2E:44:10:2A:B5:8C:B8:54:19:45:1C:8E:19:D9:AC:F3:66:2C:AF:BC:61:4B:6A:53:96:0A:30:F7:D0:E2:EB:41

# Fingerprint (SHA1): CF:E9:70:84:0F:E0:73:0F:9D:F6:0C:7F:2C:4B:EE:20:46:34:9C:BB

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "TunTrust Root CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\317\351\160\204\017\340\163\017\235\366\014\177\054\113\356\040  
\106\064\234\273

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\205\023\271\220\133\066\134\266\136\270\132\370\340\061\127\264

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\141\061\013\060\011\006\003\125\004\006\023\002\124\116\061  
\067\060\065\006\003\125\004\012\014\056\101\147\145\156\143\145  
\040\116\141\164\151\157\156\141\154\145\040\144\145\040\103\145  
\162\164\151\146\151\143\141\164\151\157\156\040\105\154\145\143  
\164\162\157\156\151\161\165\145\061\031\060\027\006\003\125\004  
\003\014\020\124\165\156\124\162\165\163\164\040\122\157\157\164  
\040\103\101

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\024\023\002\325\342\100\114\222\106\206\026\147\135\264\273  
\273\262\153\076\374\023

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "HARICA TLS RSA Root CA 2021"

#

# Issuer: CN=HARICA TLS RSA Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR

# Serial Number:39:ca:93:1c:ef:43:f3:c6:8e:93:c7:f4:64:89:38:7e

# Subject: CN=HARICA TLS RSA Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR

# Not Valid Before: Fri Feb 19 10:55:38 2021

```
Not Valid After : Mon Feb 13 10:55:37 2045
Fingerprint (SHA-256):
D9:5D:0E:8E:DA:79:52:5B:F9:BE:B1:1B:14:D2:10:0D:32:94:98:5F:0C:62:D9:FA:BD:9C:D9:99:EC:CB:7B:1D
Fingerprint (SHA1): 02:2D:05:82:FA:88:CE:14:0C:06:79:DE:7F:14:10:E9:45:D7:A5:6D
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "HARICA TLS RSA Root CA 2021"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\154\061\013\060\011\006\003\125\004\006\023\002\107\122\061
\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165
\164\151\157\156\163\040\103\101\061\044\060\042\006\003\125\004
\003\014\033\110\101\122\111\103\101\040\124\114\123\040\122\123
\101\040\122\157\157\164\040\103\101\040\062\060\062\061
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\154\061\013\060\011\006\003\125\004\006\023\002\107\122\061
\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165
\164\151\157\156\163\040\103\101\061\044\060\042\006\003\125\004
\003\014\033\110\101\122\111\103\101\040\124\114\123\040\122\123
\101\040\122\157\157\164\040\103\101\040\062\060\062\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\071\312\223\034\357\103\363\306\216\223\307\364\144\211
\070\176
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\244\060\202\003\214\240\003\002\001\002\002\020\071
\312\223\034\357\103\363\306\216\223\307\364\144\211\070\176\060
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\154
\061\013\060\011\006\003\125\004\006\023\002\107\122\061\067\060
\065\006\003\125\004\012\014\056\110\145\154\154\145\156\151\143
\040\101\143\141\144\145\155\151\143\040\141\156\144\040\122\145
\163\145\141\162\143\150\040\111\156\163\164\151\164\165\164\151
\157\156\163\040\103\101\061\044\060\042\006\003\125\004\003\014
\033\110\101\122\111\103\101\040\124\114\123\040\122\123\101\040
\122\157\157\164\040\103\101\040\062\060\062\061\060\036\027\015
\062\061\060\062\061\071\061\060\065\065\063\070\132\027\015\064
\065\060\062\061\063\061\060\065\065\063\067\132\060\154\061\013
\060\011\006\003\125\004\006\023\002\107\122\061\067\060\065\006
\003\125\004\012\014\056\110\145\154\154\145\156\151\143\040\101
```

\143\141\144\145\155\151\143\040\141\156\144\040\122\145\163\145  
\141\162\143\150\040\111\156\163\164\151\164\165\164\151\157\156  
\163\040\103\101\061\044\060\042\006\003\125\004\003\014\033\110  
\101\122\111\103\101\040\124\114\123\040\122\123\101\040\122\157  
\157\164\040\103\101\040\062\060\062\061\060\202\002\042\060\015  
\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202\002  
\017\000\060\202\002\012\002\202\002\001\000\213\302\347\257\145  
\233\005\147\226\311\015\044\271\320\016\144\374\316\342\044\030  
\054\204\177\167\121\313\004\021\066\270\136\355\151\161\247\236  
\344\045\011\227\147\301\107\302\317\221\026\066\142\075\070\004  
\341\121\202\377\254\322\264\151\335\056\354\021\243\105\356\153  
\153\073\114\277\214\215\244\036\235\021\271\351\070\371\172\016  
\014\230\342\043\035\321\116\143\324\347\270\101\104\373\153\257  
\153\332\037\323\305\221\210\133\244\211\222\321\201\346\214\071  
\130\240\326\151\103\251\255\230\122\130\156\333\012\373\153\317  
\150\372\343\244\136\072\105\163\230\007\352\137\002\162\336\014  
\245\263\237\256\251\035\267\035\263\374\212\131\347\156\162\145  
\255\365\060\224\043\007\363\202\026\113\065\230\234\123\273\057  
\312\344\132\331\307\215\035\374\230\231\373\054\244\202\153\360  
\052\037\216\013\137\161\134\134\256\102\173\051\211\201\313\003  
\243\231\312\210\236\013\100\011\101\063\333\346\130\172\375\256  
\231\160\300\132\017\326\023\206\161\057\166\151\374\220\335\333  
\055\156\321\362\233\365\032\153\236\157\025\214\172\360\113\050  
\240\042\070\200\044\154\066\244\073\362\060\221\363\170\023\317  
\301\077\065\253\361\035\021\043\265\103\042\236\001\222\267\030  
\002\345\021\321\202\333\025\000\314\141\067\301\052\174\232\341  
\320\272\263\120\106\356\202\254\235\061\370\373\043\342\003\000  
\110\160\243\011\046\171\025\123\140\363\070\134\255\070\352\201  
\000\143\024\271\063\136\335\013\333\240\105\007\032\063\011\370  
\115\264\247\002\246\151\364\302\131\005\210\145\205\126\256\113  
\313\340\336\074\175\055\032\310\351\373\037\243\141\112\326\052  
\023\255\167\114\032\030\233\221\017\130\330\006\124\305\227\370  
\252\077\040\212\246\205\246\167\366\246\374\034\342\356\156\224  
\063\052\203\120\204\012\345\117\206\370\120\105\170\000\201\353  
\133\150\343\046\215\314\173\134\121\364\024\054\100\276\032\140  
\035\172\162\141\035\037\143\055\210\252\316\242\105\220\010\374  
\153\276\263\120\052\132\375\250\110\030\106\326\220\100\222\220  
\012\204\136\150\061\370\353\355\015\323\035\306\175\231\030\125  
\126\047\145\056\215\105\305\044\354\316\343\002\003\001\000\001  
\243\102\060\100\060\017\006\003\125\035\023\001\001\377\004\005  
\060\003\001\001\377\060\035\006\003\125\035\016\004\026\004\024  
\012\110\043\246\140\244\222\012\063\352\223\133\305\127\352\045  
\115\275\022\356\060\016\006\003\125\035\017\001\001\377\004\004  
\003\002\001\206\060\015\006\011\052\206\110\206\367\015\001\001  
\013\005\000\003\202\002\001\000\076\220\110\252\156\142\025\045  
\146\173\014\325\214\213\211\235\327\355\116\007\357\234\320\024  
\137\136\120\275\150\226\220\244\024\021\252\150\155\011\065\071  
\100\011\332\364\011\054\064\245\173\131\204\111\051\227\164\310

\007\036\107\155\362\316\034\120\046\343\236\075\100\123\077\367  
\177\226\166\020\305\106\245\320\040\113\120\364\065\073\030\364  
\125\152\101\033\107\006\150\074\273\011\010\142\331\137\125\102  
\252\254\123\205\254\225\126\066\126\253\344\005\214\305\250\332  
\037\243\151\275\123\017\304\377\334\312\343\176\362\114\210\206  
\107\106\032\363\000\365\200\221\242\334\103\102\224\233\040\360  
\321\315\262\353\054\123\302\123\170\112\117\004\224\101\232\217  
\047\062\301\345\111\031\277\361\362\302\213\250\012\071\061\050  
\264\175\142\066\054\115\354\037\063\266\176\167\155\176\120\360  
\237\016\327\021\217\317\030\305\343\047\376\046\357\005\235\317  
\317\067\305\320\173\332\073\260\026\204\014\072\223\326\276\027  
\333\017\076\016\031\170\011\307\251\002\162\042\113\367\067\166  
\272\165\304\205\003\132\143\325\261\165\005\302\271\275\224\255  
\214\025\231\247\223\175\366\305\363\252\164\317\004\205\224\230  
\000\364\342\371\312\044\145\277\340\142\257\310\305\372\262\311  
\236\126\110\332\171\375\226\166\025\276\243\216\126\304\263\064  
\374\276\107\364\301\264\250\374\325\060\210\150\356\313\256\311  
\143\304\166\276\254\070\030\341\136\134\317\256\072\042\121\353  
\321\213\263\363\053\063\007\124\207\372\264\262\023\173\272\123  
\004\142\001\235\361\300\117\356\341\072\324\213\040\020\372\002  
\127\346\357\301\013\267\220\106\234\031\051\214\334\157\240\112  
\151\151\224\267\044\145\240\377\254\077\316\001\373\041\056\375  
\150\370\233\362\245\317\061\070\134\025\252\346\227\000\301\337  
\132\245\247\071\252\351\204\177\074\121\250\072\331\224\133\214  
\277\117\010\161\345\333\250\134\324\322\246\376\000\243\306\026  
\307\017\350\200\316\034\050\144\164\031\010\323\102\343\316\000  
\135\177\261\334\023\260\341\005\313\321\040\252\206\164\236\071  
\347\221\375\377\133\326\367\255\246\057\003\013\155\343\127\124  
\353\166\123\030\215\021\230\272

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "HARICA TLS RSA Root CA 2021"

# Issuer: CN=HARICA TLS RSA Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR

# Serial Number:39:ca:93:1c:ef:43:f3:c6:8e:93:c7:f4:64:89:38:7e

# Subject: CN=HARICA TLS RSA Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR

# Not Valid Before: Fri Feb 19 10:55:38 2021

# Not Valid After : Mon Feb 13 10:55:37 2045

# Fingerprint (SHA-256):

D9:5D:0E:8E:DA:79:52:5B:F9:BE:B1:1B:14:D2:10:0D:32:94:98:5F:0C:62:D9:FA:BD:9C:D9:99:EC:CB:7B:1D

# Fingerprint (SHA1): 02:2D:05:82:FA:88:CE:14:0C:06:79:DE:7F:14:10:E9:45:D7:A5:6D

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "HARICA TLS RSA Root CA 2021"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL  
\002\055\005\202\372\210\316\024\014\006\171\336\177\024\020\351  
\105\327\245\155  
END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL  
\145\107\233\130\206\335\054\360\374\242\204\037\036\226\304\221  
END

CKA\_ISSUER MULTILINE\_OCTAL  
\060\154\061\013\060\011\006\003\125\004\006\023\002\107\122\061  
\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156  
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040  
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165  
\164\151\157\156\163\040\103\101\061\044\060\042\006\003\125\004  
\003\014\033\110\101\122\111\103\101\040\124\114\123\040\122\123  
\101\040\122\157\157\164\040\103\101\040\062\060\062\061  
END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL  
\002\020\071\312\223\034\357\103\363\306\216\223\307\364\144\211  
\070\176  
END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#  
# Certificate "HARICA TLS ECC Root CA 2021"  
#  
# Issuer: CN=HARICA TLS ECC Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR  
# Serial Number:67:74:9d:8d:77:d8:3b:6a:db:22:f4:ff:59:e2:bf:ce  
# Subject: CN=HARICA TLS ECC Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR  
# Not Valid Before: Fri Feb 19 11:01:10 2021  
# Not Valid After : Mon Feb 13 11:01:09 2045  
# Fingerprint (SHA-256):  
3F:99:CC:47:4A:CF:CE:4D:FE:D5:87:94:66:5E:47:8D:15:47:73:9F:2E:78:0F:1B:B4:CA:9B:13:30:97:D4:01  
# Fingerprint (SHA1): BC:B0:C1:9D:E9:98:92:70:19:38:57:E9:8D:A7:B4:5D:6E:EE:01:48

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "HARICA TLS ECC Root CA 2021"  
CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509  
CKA\_SUBJECT MULTILINE\_OCTAL  
\060\154\061\013\060\011\006\003\125\004\006\023\002\107\122\061  
\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156  
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040  
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165  
\164\151\157\156\163\040\103\101\061\044\060\042\006\003\125\004

\003\014\033\110\101\122\111\103\101\040\124\114\123\040\105\103  
\103\040\122\157\157\164\040\103\101\040\062\060\062\061  
END  
CKA\_ID UTF8 "0"  
CKA\_ISSUER MULTILINE\_OCTAL  
\060\154\061\013\060\011\006\003\125\004\006\023\002\107\122\061  
\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156  
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040  
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165  
\164\151\157\156\163\040\103\101\061\044\060\042\006\003\125\004  
\003\014\033\110\101\122\111\103\101\040\124\114\123\040\105\103  
\103\040\122\157\157\164\040\103\101\040\062\060\062\061  
END  
CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL  
\002\020\147\164\235\215\167\330\073\152\333\042\364\377\131\342  
\277\316  
END  
CKA\_VALUE MULTILINE\_OCTAL  
\060\202\002\124\060\202\001\333\240\003\002\001\002\002\020\147  
\164\235\215\167\330\073\152\333\042\364\377\131\342\277\316\060  
\012\006\010\052\206\110\316\075\004\003\003\060\154\061\013\060  
\011\006\003\125\004\006\023\002\107\122\061\067\060\065\006\003  
\125\004\012\014\056\110\145\154\154\145\156\151\143\040\101\143  
\141\144\145\155\151\143\040\141\156\144\040\122\145\163\145\141  
\162\143\150\040\111\156\163\164\151\164\165\164\151\157\156\163  
\040\103\101\061\044\060\042\006\003\125\004\003\014\033\110\101  
\122\111\103\101\040\124\114\123\040\105\103\103\040\122\157\157  
\164\040\103\101\040\062\060\062\061\060\036\027\015\062\061\060  
\062\061\071\061\061\060\061\061\060\132\027\015\064\065\060\062  
\061\063\061\061\060\061\060\071\132\060\154\061\013\060\011\006  
\003\125\004\006\023\002\107\122\061\067\060\065\006\003\125\004  
\012\014\056\110\145\154\154\145\156\151\143\040\101\143\141\144  
\145\155\151\143\040\141\156\144\040\122\145\163\145\141\162\143  
\150\040\111\156\163\164\151\164\165\164\151\157\156\163\040\103  
\101\061\044\060\042\006\003\125\004\003\014\033\110\101\122\111  
\103\101\040\124\114\123\040\105\103\103\040\122\157\157\164\040  
\103\101\040\062\060\062\061\060\166\060\020\006\007\052\206\110  
\316\075\002\001\006\005\053\201\004\000\042\003\142\000\004\070  
\010\376\261\240\226\322\172\254\257\111\072\320\300\340\303\073  
\050\252\361\162\155\145\000\107\210\204\374\232\046\153\252\113  
\272\154\004\012\210\136\027\362\125\207\374\060\260\064\342\064  
\130\127\032\204\123\351\060\331\251\362\226\164\303\121\037\130  
\111\061\314\230\116\140\021\207\165\323\162\224\220\117\233\020  
\045\052\250\170\055\276\220\101\130\220\025\162\247\241\267\243  
\102\060\100\060\017\006\003\125\035\023\001\001\377\004\005\060  
\003\001\001\377\060\035\006\003\125\035\016\004\026\004\024\311  
\033\123\201\022\376\004\325\026\321\252\274\232\157\267\240\225  
\031\156\312\060\016\006\003\125\035\017\001\001\377\004\004\003

```
\002\001\206\060\012\006\010\052\206\110\316\075\004\003\003\003
\147\000\060\144\002\060\021\336\256\370\334\116\210\260\251\360
\042\255\302\121\100\357\140\161\055\356\217\002\304\135\003\160
\111\244\222\352\305\024\210\160\246\323\015\260\252\312\054\100
\234\373\351\202\156\232\002\060\053\107\232\007\306\321\302\201
\174\312\013\226\030\101\033\243\364\060\011\236\265\043\050\015
\237\024\266\074\123\242\114\006\151\175\372\154\221\306\052\111
\105\346\354\267\023\341\072\154
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Trust for "HARICA TLS ECC Root CA 2021"
```

```
Issuer: CN=HARICA TLS ECC Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR
```

```
Serial Number:67:74:9d:8d:77:d8:3b:6a:db:22:f4:ff:59:e2:bf:ce
```

```
Subject: CN=HARICA TLS ECC Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR
```

```
Not Valid Before: Fri Feb 19 11:01:10 2021
```

```
Not Valid After : Mon Feb 13 11:01:09 2045
```

```
Fingerprint (SHA-256):
```

```
3F:99:CC:47:4A:CF:CE:4D:FE:D5:87:94:66:5E:47:8D:15:47:73:9F:2E:78:0F:1B:B4:CA:9B:13:30:97:D4:01
```

```
Fingerprint (SHA1): BC:B0:C1:9D:E9:98:92:70:19:38:57:E9:8D:A7:B4:5D:6E:EE:01:48
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "HARICA TLS ECC Root CA 2021"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\274\260\301\235\351\230\222\160\031\070\127\351\215\247\264\135
\156\356\001\110
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\256\367\114\345\146\065\321\267\233\214\042\223\164\323\113\260
END
```

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\154\061\013\060\011\006\003\125\004\006\023\002\107\122\061
\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165
\164\151\157\156\163\040\103\101\061\044\060\042\006\003\125\004
\003\014\033\110\101\122\111\103\101\040\124\114\123\040\105\103
\103\040\122\157\157\164\040\103\101\040\062\060\062\061
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\020\147\164\235\215\167\330\073\152\333\042\364\377\131\342
\277\316
```

END

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```



```

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "HARICA Client RSA Root CA 2021"
#
Issuer: CN=HARICA Client RSA Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR
Serial Number:55:52:f8:1e:db:1b:24:2c:9e:bb:96:18:cd:02:28:3e
Subject: CN=HARICA Client RSA Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR
Not Valid Before: Fri Feb 19 10:58:46 2021
Not Valid After : Mon Feb 13 10:58:45 2045
Fingerprint (SHA-256):
1B:E7:AB:E3:06:86:B1:63:48:AF:D1:C6:1B:68:66:A0:EA:7F:48:21:E6:7D:5E:8A:F9:37:CF:80:11:BC:75:0D
Fingerprint (SHA1): 46:C6:90:0A:77:3A:B6:BC:F4:65:AD:AC:FC:E3:F7:07:00:6E:DE:6E
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "HARICA Client RSA Root CA 2021"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\157\061\013\060\011\006\003\125\004\006\023\002\107\122\061
\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165
\164\151\157\156\163\040\103\101\061\047\060\045\006\003\125\004
\003\014\036\110\101\122\111\103\101\040\103\154\151\145\156\164
\040\122\123\101\040\122\157\157\164\040\103\101\040\062\060\062
\061
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\157\061\013\060\011\006\003\125\004\006\023\002\107\122\061
\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165
\164\151\157\156\163\040\103\101\061\047\060\045\006\003\125\004
\003\014\036\110\101\122\111\103\101\040\103\154\151\145\156\164
\040\122\123\101\040\122\157\157\164\040\103\101\040\062\060\062
\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\125\122\370\036\333\033\044\054\236\273\226\030\315\002
\050\076
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\252\060\202\003\222\240\003\002\001\002\002\020\125

```

\122\370\036\333\033\044\054\236\273\226\030\315\002\050\076\060  
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\157  
\061\013\060\011\006\003\125\004\006\023\002\107\122\061\067\060  
\065\006\003\125\004\012\014\056\110\145\154\154\145\156\151\143  
\040\101\143\141\144\145\155\151\143\040\141\156\144\040\122\145  
\163\145\141\162\143\150\040\111\156\163\164\151\164\165\164\151  
\157\156\163\040\103\101\061\047\060\045\006\003\125\004\003\014  
\036\110\101\122\111\103\101\040\103\154\151\145\156\164\040\122  
\123\101\040\122\157\157\164\040\103\101\040\062\060\062\061\060  
\036\027\015\062\061\060\062\061\071\061\060\065\070\064\066\132  
\027\015\064\065\060\062\061\063\061\060\065\070\064\065\132\060  
\157\061\013\060\011\006\003\125\004\006\023\002\107\122\061\067  
\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156\151  
\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040\122  
\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165\164  
\151\157\156\163\040\103\101\061\047\060\045\006\003\125\004\003  
\014\036\110\101\122\111\103\101\040\103\154\151\145\156\164\040  
\122\123\101\040\122\157\157\164\040\103\101\040\062\060\062\061  
\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001  
\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001  
\000\201\333\127\102\220\054\164\065\364\370\270\164\031\115\253  
\011\132\167\105\201\163\142\260\065\237\370\320\267\063\000\207  
\023\266\226\253\016\124\022\060\007\274\233\267\110\327\321\031  
\203\256\216\330\251\361\251\000\204\260\214\136\236\350\014\217  
\124\151\277\366\324\010\117\046\160\376\030\101\143\032\263\062  
\213\100\370\007\253\127\061\360\306\026\166\147\232\264\335\057  
\362\321\153\305\320\222\204\221\161\156\017\056\143\351\037\123  
\244\335\122\023\314\011\203\051\201\014\305\123\165\104\261\016  
\147\123\030\320\303\037\210\113\237\224\044\264\051\274\273\350  
\116\375\157\322\025\035\111\334\215\160\362\021\032\040\121\125  
\021\272\210\157\304\367\120\171\326\252\061\342\204\075\136\062  
\310\167\052\120\161\345\013\057\351\266\352\357\253\012\063\071  
\016\375\217\245\147\103\202\216\230\151\011\011\033\100\315\070  
\147\107\352\311\354\227\161\022\336\044\365\162\074\321\367\103  
\114\046\367\220\262\211\351\105\113\125\075\061\005\172\101\342  
\225\272\103\300\027\305\266\205\075\031\215\144\160\363\133\254  
\315\237\323\051\165\207\113\225\147\152\246\370\321\335\274\220  
\206\211\103\051\251\067\133\365\135\260\046\132\123\102\166\220  
\053\317\236\126\154\053\124\317\134\232\145\337\133\213\110\140  
\070\174\373\305\013\317\166\004\143\002\063\052\175\365\203\147  
\347\372\306\103\375\053\017\324\046\057\167\244\062\301\044\352  
\144\235\277\263\070\161\061\104\362\107\270\242\146\101\241\373  
\233\173\274\307\106\152\165\277\132\242\214\350\152\104\301\270  
\226\265\300\062\010\055\173\164\065\163\262\312\306\376\257\021  
\162\030\366\347\310\302\317\245\052\352\173\326\131\350\174\240  
\262\152\100\011\151\016\245\226\333\321\000\271\361\210\156\066  
\360\210\262\235\361\122\362\303\174\277\060\211\074\012\151\371  
\042\244\145\341\233\340\164\306\261\205\227\226\054\256\224\217

\120\246\071\022\037\276\107\362\201\170\323\165\066\236\175\132  
\040\227\342\122\256\231\237\306\174\233\146\363\376\330\317\356  
\275\227\006\035\055\205\334\076\066\123\226\173\040\272\350\310  
\341\255\226\142\076\021\174\263\000\204\236\247\114\161\253\112  
\067\002\003\001\000\001\243\102\060\100\060\017\006\003\125\035  
\023\001\001\377\004\005\060\003\001\001\377\060\035\006\003\125  
\035\016\004\026\004\024\240\326\007\075\136\044\367\173\240\104  
\056\044\122\015\031\252\053\004\221\247\060\016\006\003\125\035  
\017\001\001\377\004\004\003\002\001\206\060\015\006\011\052\206  
\110\206\367\015\001\001\013\005\000\003\202\002\001\000\015\107  
\371\011\146\061\122\354\171\356\302\250\362\150\076\355\226\105  
\313\072\246\230\143\077\352\053\115\116\003\320\034\202\341\313  
\323\345\326\253\133\147\050\274\235\376\014\231\012\200\125\247  
\316\033\043\141\015\260\127\360\376\340\312\276\346\220\333\203  
\054\276\203\216\364\171\266\376\320\015\102\247\130\037\151\352  
\201\365\005\245\376\106\150\353\154\170\311\340\352\347\346\336  
\061\305\322\325\054\202\143\050\235\135\250\032\176\210\346\347  
\053\361\054\325\320\005\236\334\055\275\067\146\324\004\242\247  
\255\277\072\302\250\073\255\377\215\235\063\340\271\232\204\241  
\207\037\166\364\202\164\327\016\371\060\110\076\133\210\076\252  
\134\153\326\057\014\350\216\163\302\030\221\203\071\266\146\132  
\320\037\140\047\135\115\343\366\072\015\146\120\234\170\173\253  
\363\023\020\256\017\057\253\350\144\263\030\040\235\106\065\144  
\045\163\352\233\020\134\130\065\211\261\106\110\247\364\254\324  
\035\236\133\314\251\245\032\023\117\044\120\252\331\033\155\261  
\100\373\235\335\130\164\304\302\157\024\162\354\333\065\237\270  
\124\165\105\303\246\310\032\050\065\072\256\145\362\251\230\316  
\257\133\311\070\214\061\073\177\314\334\226\375\342\133\326\320  
\131\364\166\272\013\313\117\203\020\307\100\320\035\140\351\052  
\345\110\130\167\014\105\151\276\031\161\004\044\342\343\044\037  
\112\310\301\076\231\365\226\230\070\110\045\241\025\260\033\327  
\342\204\030\133\366\161\065\232\150\173\100\314\030\134\014\044  
\235\324\225\365\231\252\106\352\256\254\277\364\024\031\044\350  
\214\354\343\365\274\006\150\212\052\014\005\137\012\227\165\247  
\334\176\300\375\327\172\030\337\060\321\070\113\037\260\230\160  
\277\314\174\163\360\156\304\061\245\244\227\035\254\277\316\154  
\041\112\276\047\043\147\363\006\126\201\012\221\216\266\341\003  
\005\063\054\332\064\010\115\116\120\043\255\037\245\305\324\172  
\376\352\011\354\247\050\140\213\106\174\265\352\233\335\117\371  
\347\153\025\306\210\317\103\333\345\047\334\004\126\156\157\106  
\025\361\126\055\350\134\014\163\303\043\201\070\040\313\311\014  
\151\317\054\253\073\204\140\063\031\122\375\151\024\063

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "HARICA Client RSA Root CA 2021"

```

Issuer: CN=HARICA Client RSA Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR
Serial Number:55:52:f8:1e:db:1b:24:2c:9e:bb:96:18:cd:02:28:3e
Subject: CN=HARICA Client RSA Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR
Not Valid Before: Fri Feb 19 10:58:46 2021
Not Valid After : Mon Feb 13 10:58:45 2045
Fingerprint (SHA-256):
1B:E7:AB:E3:06:86:B1:63:48:AF:D1:C6:1B:68:66:A0:EA:7F:48:21:E6:7D:5E:8A:F9:37:CF:80:11:BC:75:0D
Fingerprint (SHA1): 46:C6:90:0A:77:3A:B6:BC:F4:65:AD:AC:FC:E3:F7:07:00:6E:DE:6E
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "HARICA Client RSA Root CA 2021"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\106\306\220\012\167\072\266\274\364\145\255\254\374\343\367\007
\000\156\336\156
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\157\355\134\327\210\314\070\251\334\351\335\331\135\333\330\355
END
CKA_ISSUER MULTILINE_OCTAL
\060\157\061\013\060\011\006\003\125\004\006\023\002\107\122\061
\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165
\164\151\157\156\163\040\103\101\061\047\060\045\006\003\125\004
\003\014\036\110\101\122\111\103\101\040\103\154\151\145\156\164
\040\122\123\101\040\122\157\157\164\040\103\101\040\062\060\062
\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\125\122\370\036\333\033\044\054\236\273\226\030\315\002
\050\076
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "HARICA Client ECC Root CA 2021"
#
Issuer: CN=HARICA Client ECC Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR
Serial Number:31:68:d9:d8:e1:62:57:1e:d2:19:44:88:e6:10:7d:f0
Subject: CN=HARICA Client ECC Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR
Not Valid Before: Fri Feb 19 11:03:34 2021
Not Valid After : Mon Feb 13 11:03:33 2045
Fingerprint (SHA-256):

```

8D:D4:B5:37:3C:B0:DE:36:76:9C:12:33:92:80:D8:27:46:B3:AA:6C:D4:26:E7:97:A3:1B:AB:E4:27:9C:F0:0B

# Fingerprint (SHA1): BE:64:D3:DA:14:4B:D2:6B:CD:AF:8F:DB:A6:A6:72:F8:DE:26:F9:00

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "HARICA Client ECC Root CA 2021"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\157\061\013\060\011\006\003\125\004\006\023\002\107\122\061  
\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156  
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040  
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165  
\164\151\157\156\163\040\103\101\061\047\060\045\006\003\125\004  
\003\014\036\110\101\122\111\103\101\040\103\154\151\145\156\164  
\040\105\103\103\040\122\157\157\164\040\103\101\040\062\060\062  
\061

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\157\061\013\060\011\006\003\125\004\006\023\002\107\122\061  
\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156  
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040  
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165  
\164\151\157\156\163\040\103\101\061\047\060\045\006\003\125\004  
\003\014\036\110\101\122\111\103\101\040\103\154\151\145\156\164  
\040\105\103\103\040\122\157\157\164\040\103\101\040\062\060\062  
\061

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\061\150\331\330\341\142\127\036\322\031\104\210\346\020  
\175\360

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\002\132\060\202\001\341\240\003\002\001\002\002\020\061  
\150\331\330\341\142\127\036\322\031\104\210\346\020\175\360\060  
\012\006\010\052\206\110\316\075\004\003\003\060\157\061\013\060  
\011\006\003\125\004\006\023\002\107\122\061\067\060\065\006\003  
\125\004\012\014\056\110\145\154\154\145\156\151\143\040\101\143  
\141\144\145\155\151\143\040\141\156\144\040\122\145\163\145\141  
\162\143\150\040\111\156\163\164\151\164\165\164\151\157\156\163  
\040\103\101\061\047\060\045\006\003\125\004\003\014\036\110\101  
\122\111\103\101\040\103\154\151\145\156\164\040\105\103\103\040  
\122\157\157\164\040\103\101\040\062\060\062\061\060\036\027\015  
\062\061\060\062\061\071\061\061\060\063\063\064\132\027\015\064  
\065\060\062\061\063\061\061\060\063\063\063\132\060\157\061\013  
\060\011\006\003\125\004\006\023\002\107\122\061\067\060\065\006  
\003\125\004\012\014\056\110\145\154\154\145\156\151\143\040\101

\143\141\144\145\155\151\143\040\141\156\144\040\122\145\163\145  
\141\162\143\150\040\111\156\163\164\151\164\165\164\151\157\156  
\163\040\103\101\061\047\060\045\006\003\125\004\003\014\036\110  
\101\122\111\103\101\040\103\154\151\145\156\164\040\105\103\103  
\040\122\157\157\164\040\103\101\040\062\060\062\061\060\166\060  
\020\006\007\052\206\110\316\075\002\001\006\005\053\201\004\000  
\042\003\142\000\004\007\030\255\225\226\224\320\134\017\202\367  
\052\100\372\002\311\311\075\066\246\243\004\152\301\155\225\001  
\210\140\022\124\154\134\242\053\156\023\072\210\225\014\034\046  
\206\066\112\211\031\267\030\336\073\350\250\120\037\312\337\133  
\277\111\200\025\333\343\060\341\035\132\307\052\212\001\007\376  
\155\054\064\357\050\050\227\274\301\371\127\206\225\213\065\317  
\236\132\321\150\225\243\102\060\100\060\017\006\003\125\035\023  
\001\001\377\004\005\060\003\001\001\377\060\035\006\003\125\035  
\016\004\026\004\024\122\010\322\276\062\201\045\375\365\032\227  
\354\116\137\032\273\123\315\220\255\060\016\006\003\125\035\017  
\001\001\377\004\004\003\002\001\206\060\012\006\010\052\206\110  
\316\075\004\003\003\003\147\000\060\144\002\060\114\061\105\106  
\117\250\346\276\303\167\262\032\030\113\055\210\173\130\346\253  
\224\153\104\003\260\027\377\337\202\163\104\121\054\375\223\035  
\006\173\024\322\211\354\100\014\357\041\001\056\002\060\057\311  
\056\132\154\054\035\331\225\340\236\260\271\134\122\174\366\370  
\070\312\056\361\324\035\362\242\111\242\225\370\301\130\136\117  
\376\163\012\357\061\260\253\043\130\023\214\213\336\073

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "HARICA Client ECC Root CA 2021"  
# Issuer: CN=HARICA Client ECC Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR  
# Serial Number:31:68:d9:d8:e1:62:57:1e:d2:19:44:88:e6:10:7d:f0  
# Subject: CN=HARICA Client ECC Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR  
# Not Valid Before: Fri Feb 19 11:03:34 2021  
# Not Valid After : Mon Feb 13 11:03:33 2045  
# Fingerprint (SHA-256):

8D:D4:B5:37:3C:B0:DE:36:76:9C:12:33:92:80:D8:27:46:B3:AA:6C:D4:26:E7:97:A3:1B:AB:E4:27:9C:F0:0B

# Fingerprint (SHA1): BE:64:D3:DA:14:4B:D2:6B:CD:AF:8F:DB:A6:A6:72:F8:DE:26:F9:00

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "HARICA Client ECC Root CA 2021"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\276\144\323\332\024\113\322\153\315\257\217\333\246\246\162\370  
\336\046\371\000

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\255\270\120\246\251\202\172\154\075\032\252\244\322\143\244\104

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\157\061\013\060\011\006\003\125\004\006\023\002\107\122\061

\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156

\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040

\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165

\164\151\157\156\163\040\103\101\061\047\060\045\006\003\125\004

\003\014\036\110\101\122\111\103\101\040\103\154\151\145\156\164

\040\105\103\103\040\122\157\157\164\040\103\101\040\062\060\062

\061

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\061\150\331\330\341\142\127\036\322\031\104\210\346\020

\175\360

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "Autoridad de Certificacion Firmaprofesional CIF A62634068"

#

# Issuer: CN=Autoridad de Certificacion Firmaprofesional CIF A62634068,C=ES

# Serial Number:1b:70:e9:d2:ff:ae:6c:71

# Subject: CN=Autoridad de Certificacion Firmaprofesional CIF A62634068,C=ES

# Not Valid Before: Tue Sep 23 15:22:07 2014

# Not Valid After : Mon May 05 15:22:07 2036

# Fingerprint (SHA-256):

57:DE:05:83:EF:D2:B2:6E:03:61:DA:99:DA:9D:F4:64:8D:EF:7E:E8:44:1C:3B:72:8A:FA:9B:CD:E0:F9:B2:6A

# Fingerprint (SHA1): 0B:BE:C2:27:22:49:CB:39:AA:DB:35:5C:53:E3:8C:AE:78:FF:B6:FE

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Autoridad de Certificacion Firmaprofesional CIF A62634068 1"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\121\061\013\060\011\006\003\125\004\006\023\002\105\123\061

\102\060\100\006\003\125\004\003\014\071\101\165\164\157\162\151

\144\141\144\040\144\145\040\103\145\162\164\151\146\151\143\141

\143\151\157\156\040\106\151\162\155\141\160\162\157\146\145\163

\151\157\156\141\154\040\103\111\106\040\101\066\062\066\063\064

\060\066\070

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\121\061\013\060\011\006\003\125\004\006\023\002\105\123\061  
\102\060\100\006\003\125\004\003\014\071\101\165\164\157\162\151  
\144\141\144\040\144\145\040\103\145\162\164\151\146\151\143\141  
\143\151\157\156\040\106\151\162\155\141\160\162\157\146\145\163  
\151\157\156\141\154\040\103\111\106\040\101\066\062\066\063\064  
\060\066\070

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\010\033\160\351\322\377\256\154\161

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\006\024\060\202\003\374\240\003\002\001\002\002\010\033  
\160\351\322\377\256\154\161\060\015\006\011\052\206\110\206\367  
\015\001\001\013\005\000\060\121\061\013\060\011\006\003\125\004  
\006\023\002\105\123\061\102\060\100\006\003\125\004\003\014\071  
\101\165\164\157\162\151\144\141\144\040\144\145\040\103\145\162  
\164\151\146\151\143\141\143\151\157\156\040\106\151\162\155\141  
\160\162\157\146\145\163\151\157\156\141\154\040\103\111\106\040  
\101\066\062\066\063\064\060\066\070\060\036\027\015\061\064\060  
\071\062\063\061\065\062\062\060\067\132\027\015\063\066\060\065  
\060\065\061\065\062\062\060\067\132\060\121\061\013\060\011\006  
\003\125\004\006\023\002\105\123\061\102\060\100\006\003\125\004  
\003\014\071\101\165\164\157\162\151\144\141\144\040\144\145\040  
\103\145\162\164\151\146\151\143\141\143\151\157\156\040\106\151  
\162\155\141\160\162\157\146\145\163\151\157\156\141\154\040\103  
\111\106\040\101\066\062\066\063\064\060\066\070\060\202\002\042  
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003  
\202\002\017\000\060\202\002\012\002\202\002\001\000\312\226\153  
\216\352\370\373\361\242\065\340\177\114\332\340\303\122\327\175  
\266\020\310\002\136\263\103\052\304\117\152\262\312\034\135\050  
\232\170\021\032\151\131\127\257\265\040\102\344\213\017\346\337  
\133\246\003\222\057\365\021\344\142\327\062\161\070\331\004\014  
\161\253\075\121\176\017\007\337\143\005\134\351\277\224\157\301  
\051\202\300\264\332\121\260\301\074\273\255\067\112\134\312\361  
\113\066\016\044\253\277\303\204\167\375\250\120\364\261\347\306  
\057\322\055\131\215\172\012\116\226\151\122\002\252\066\230\354  
\374\372\024\203\014\067\037\311\222\067\177\327\201\055\345\304  
\271\340\076\064\376\147\364\076\146\321\323\364\100\317\136\142  
\064\017\160\006\076\040\030\132\316\367\162\033\045\154\223\164  
\024\223\243\163\261\016\252\207\020\043\131\137\040\005\031\107  
\355\150\216\222\022\312\135\374\326\053\262\222\074\040\317\341  
\137\257\040\276\240\166\177\166\345\354\032\206\141\063\076\347  
\173\264\077\240\017\216\242\271\152\157\271\207\046\157\101\154  
\210\246\120\375\152\143\013\365\223\026\033\031\217\262\355\233  
\233\311\220\365\001\014\337\031\075\017\076\070\043\311\057\217  
\014\321\002\376\033\125\326\116\320\215\074\257\117\244\363\376  
\257\052\323\005\235\171\010\241\313\127\061\264\234\310\220\262  
\147\364\030\026\223\072\374\107\330\321\170\226\061\037\272\053



\014\137\135\231\255\143\211\132\044\040\166\330\337\375\253\116  
\246\042\252\235\136\346\047\212\175\150\051\243\347\212\270\332  
\021\273\027\055\231\235\023\044\106\367\305\342\330\237\216\177  
\307\217\164\155\132\262\350\162\365\254\356\044\020\255\057\024  
\332\377\055\232\106\161\107\276\102\337\273\001\333\364\177\323  
\050\217\061\131\133\323\311\002\246\264\122\312\156\227\373\103  
\305\010\046\157\212\364\273\375\237\050\252\015\325\105\363\023  
\072\035\330\300\170\217\101\147\074\036\224\144\256\173\013\305  
\350\331\001\210\071\032\227\206\144\101\325\073\207\014\156\372  
\017\306\275\110\024\277\071\115\324\236\101\266\217\226\035\143  
\226\223\331\225\006\170\061\150\236\067\006\073\200\211\105\141  
\071\043\307\033\104\243\025\345\034\370\222\060\273\002\003\001  
\000\001\243\201\357\060\201\354\060\035\006\003\125\035\016\004  
\026\004\024\145\315\353\253\065\036\000\076\176\325\164\300\034  
\264\163\107\016\032\144\057\060\022\006\003\125\035\023\001\001  
\377\004\010\060\006\001\001\377\002\001\001\060\201\246\006\003  
\125\035\040\004\201\236\060\201\233\060\201\230\006\004\125\035  
\040\000\060\201\217\060\057\006\010\053\006\001\005\005\007\002  
\001\026\043\150\164\164\160\072\057\057\167\167\167\056\146\151  
\162\155\141\160\162\157\146\145\163\151\157\156\141\154\056\143  
\157\155\057\143\160\163\060\134\006\010\053\006\001\005\005\007  
\002\002\060\120\036\116\000\120\000\141\000\163\000\145\000\157  
\000\040\000\144\000\145\000\040\000\154\000\141\000\040\000\102  
\000\157\000\156\000\141\000\156\000\157\000\166\000\141\000\040  
\000\064\000\067\000\040\000\102\000\141\000\162\000\143\000\145  
\000\154\000\157\000\156\000\141\000\040\000\060\000\070\000\060  
\000\061\000\067\060\016\006\003\125\035\017\001\001\377\004\004  
\003\002\001\006\060\015\006\011\052\206\110\206\367\015\001\001  
\013\005\000\003\202\002\001\000\164\207\050\002\053\167\037\146  
\211\144\355\217\164\056\106\034\273\250\370\370\013\035\203\266  
\072\247\350\105\212\007\267\340\076\040\313\341\010\333\023\010  
\370\050\241\065\262\200\263\013\121\300\323\126\232\215\063\105  
\111\257\111\360\340\075\007\172\105\023\132\377\310\227\330\323  
\030\054\175\226\370\335\242\145\103\160\223\220\025\272\220\337  
\350\031\260\333\054\212\140\017\267\157\224\007\036\035\246\311  
\205\366\275\064\370\100\170\142\020\160\072\276\175\113\071\201  
\251\020\324\226\101\273\370\137\034\013\035\010\362\261\260\211  
\172\362\367\240\340\304\217\213\170\265\073\130\245\043\216\117  
\125\376\066\073\340\014\267\312\052\060\101\040\264\200\315\256  
\374\166\146\163\250\256\156\341\174\332\003\350\224\040\346\042  
\243\320\037\220\135\040\123\024\046\127\332\124\227\337\026\104  
\020\001\036\210\146\217\162\070\223\335\040\267\064\276\327\361  
\356\143\216\107\171\050\006\374\363\131\105\045\140\042\063\033  
\243\137\250\272\052\332\032\075\315\100\352\214\356\005\025\225  
\325\245\054\040\057\247\230\050\356\105\374\361\270\210\000\054  
\217\102\332\121\325\234\345\023\150\161\105\103\213\236\013\041  
\074\113\134\005\334\032\237\230\216\332\275\042\236\162\315\255  
\012\313\314\243\147\233\050\164\304\233\327\032\074\004\130\246

\202\235\255\307\173\157\377\200\226\351\370\215\152\275\030\220  
\035\377\111\032\220\122\067\223\057\074\002\135\202\166\013\121  
\347\026\307\127\370\070\371\247\315\233\042\124\357\143\260\025  
\155\123\145\003\112\136\112\240\262\247\216\111\000\131\070\325  
\307\364\200\144\365\156\225\120\270\021\176\025\160\070\112\260  
\177\320\304\062\160\300\031\377\311\070\055\024\054\146\364\102  
\104\346\125\166\033\200\025\127\377\300\247\247\252\071\252\330  
\323\160\320\056\272\353\224\152\372\137\064\206\347\142\265\375  
\212\360\060\205\224\311\257\044\002\057\157\326\335\147\376\343  
\260\125\117\004\230\117\244\101\126\342\223\320\152\350\326\363  
\373\145\340\316\165\304\061\131\014\356\202\310\014\140\063\112  
\031\272\204\147\047\017\274\102\135\275\044\124\015\354\035\160  
\006\137\244\274\372\040\174\125

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Autoridad de Certificacion Firmaprofesional CIF A62634068"

# Issuer: CN=Autoridad de Certificacion Firmaprofesional CIF A62634068,C=ES

# Serial Number:1b:70:e9:d2:ff:ae:6c:71

# Subject: CN=Autoridad de Certificacion Firmaprofesional CIF A62634068,C=ES

# Not Valid Before: Tue Sep 23 15:22:07 2014

# Not Valid After : Mon May 05 15:22:07 2036

# Fingerprint (SHA-256):

57:DE:05:83:EF:D2:B2:6E:03:61:DA:99:DA:9D:F4:64:8D:EF:7E:E8:44:1C:3B:72:8A:FA:9B:CD:E0:F9:B2:6A

# Fingerprint (SHA1): 0B:BE:C2:27:22:49:CB:39:AA:DB:35:5C:53:E3:8C:AE:78:FF:B6:FE

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Autoridad de Certificacion Firmaprofesional CIF A62634068 1"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\013\276\302\047\042\111\313\071\252\333\065\134\123\343\214\256  
\170\377\266\376

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\116\156\233\124\114\312\267\372\110\344\220\261\025\113\034\243  
END

CKA\_ISSUER MULTILINE\_OCTAL

\060\121\061\013\060\011\006\003\125\004\006\023\002\105\123\061  
\102\060\100\006\003\125\004\003\014\071\101\165\164\157\162\151  
\144\141\144\040\144\145\040\103\145\162\164\151\146\151\143\141  
\143\151\157\156\040\106\151\162\155\141\160\162\157\146\145\163  
\151\157\156\141\154\040\103\111\106\040\101\066\062\066\063\064  
\060\066\070

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```

\002\010\033\160\351\322\377\256\154\161
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "vTrus ECC Root CA"
#
Issuer: CN=vTrus ECC Root CA,O="iTrusChina Co.,Ltd.",C=CN
Serial Number:6e:6a:bc:59:aa:53:be:98:39:67:a2:d2:6b:a4:3b:e6:6d:1c:d6:da
Subject: CN=vTrus ECC Root CA,O="iTrusChina Co.,Ltd.",C=CN
Not Valid Before: Tue Jul 31 07:26:44 2018
Not Valid After : Fri Jul 31 07:26:44 2043
Fingerprint (SHA-256):
30:FB:BA:2C:32:23:8E:2A:98:54:7A:F9:79:31:E5:50:42:8B:9B:3F:1C:8E:EB:66:33:DC:FA:86:C5:B2:7D:D3
Fingerprint (SHA1): F6:9C:DB:B0:FC:F6:02:13:B6:52:32:A6:A3:91:3F:16:70:DA:C3:E1
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "vTrus ECC Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\107\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\034\060\032\006\003\125\004\012\023\023\151\124\162\165\163\103
\150\151\156\141\040\103\157\056\054\114\164\144\056\061\032\060
\030\006\003\125\004\003\023\021\166\124\162\165\163\040\105\103
\103\040\122\157\157\164\040\103\101
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\107\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\034\060\032\006\003\125\004\012\023\023\151\124\162\165\163\103
\150\151\156\141\040\103\157\056\054\114\164\144\056\061\032\060
\030\006\003\125\004\003\023\021\166\124\162\165\163\040\105\103
\103\040\122\157\157\164\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\024\156\152\274\131\252\123\276\230\071\147\242\322\153\244
\073\346\155\034\326\332
END
CKA_VALUE MULTILINE_OCTAL
\060\202\002\017\060\202\001\225\240\003\002\001\002\002\024\156
\152\274\131\252\123\276\230\071\147\242\322\153\244\073\346\155
\034\326\332\060\012\006\010\052\206\110\316\075\004\003\003\060
\107\061\013\060\011\006\003\125\004\006\023\002\103\116\061\034

```

\060\032\006\003\125\004\012\023\023\151\124\162\165\163\103\150  
\151\156\141\040\103\157\056\054\114\164\144\056\061\032\060\030  
\006\003\125\004\003\023\021\166\124\162\165\163\040\105\103\103  
\040\122\157\157\164\040\103\101\060\036\027\015\061\070\060\067  
\063\061\060\067\062\066\064\064\132\027\015\064\063\060\067\063  
\061\060\067\062\066\064\064\132\060\107\061\013\060\011\006\003  
\125\004\006\023\002\103\116\061\034\060\032\006\003\125\004\012  
\023\023\151\124\162\165\163\103\150\151\156\141\040\103\157\056  
\054\114\164\144\056\061\032\060\030\006\003\125\004\003\023\021  
\166\124\162\165\163\040\105\103\103\040\122\157\157\164\040\103  
\101\060\166\060\020\006\007\052\206\110\316\075\002\001\006\005  
\053\201\004\000\042\003\142\000\004\145\120\112\256\214\171\226  
\112\252\034\010\303\243\242\315\376\131\126\101\167\375\046\224  
\102\273\035\315\010\333\163\262\133\165\363\317\234\116\202\364  
\277\370\141\046\205\154\326\205\133\162\160\322\375\333\142\264  
\337\123\213\275\261\104\130\142\102\011\307\372\177\133\020\347  
\376\100\375\300\330\303\053\062\347\160\246\267\246\040\125\035  
\173\200\135\113\217\147\114\361\020\243\102\060\100\060\035\006  
\003\125\035\016\004\026\004\024\230\071\315\276\330\262\214\367  
\262\253\341\255\044\257\173\174\241\333\037\317\060\017\006\003  
\125\035\023\001\001\377\004\005\060\003\001\001\377\060\016\006  
\003\125\035\017\001\001\377\004\004\003\002\001\006\060\012\006  
\010\052\206\110\316\075\004\003\003\003\150\000\060\145\002\060  
\127\235\335\126\361\307\343\351\270\111\120\153\233\151\303\157  
\354\303\175\045\344\127\225\023\100\233\122\323\073\363\100\031  
\274\046\307\055\006\236\265\173\066\237\365\045\324\143\153\000  
\002\061\000\351\323\306\236\126\232\052\314\241\332\077\310\146  
\053\323\130\234\040\205\372\253\221\212\160\160\021\070\140\144  
\013\142\011\221\130\000\371\115\373\064\150\332\011\255\041\006  
\030\224\316

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "vTrus ECC Root CA"

# Issuer: CN=vTrus ECC Root CA,O="iTrusChina Co.,Ltd.",C=CN

# Serial Number:6e:6a:bc:59:aa:53:be:98:39:67:a2:d2:6b:a4:3b:e6:6d:1c:d6:da

# Subject: CN=vTrus ECC Root CA,O="iTrusChina Co.,Ltd.",C=CN

# Not Valid Before: Tue Jul 31 07:26:44 2018

# Not Valid After : Fri Jul 31 07:26:44 2043

# Fingerprint (SHA-256):

30:FB:BA:2C:32:23:8E:2A:98:54:7A:F9:79:31:E5:50:42:8B:9B:3F:1C:8E:EB:66:33:DC:FA:86:C5:B2:7D:D3

# Fingerprint (SHA1): F6:9C:DB:B0:FC:F6:02:13:B6:52:32:A6:A3:91:3F:16:70:DA:C3:E1

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

```

CKA_LABEL UTF8 "vTrus ECC Root CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\366\234\333\260\374\366\002\023\266\122\062\246\243\221\077\026
\160\332\303\341
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\336\113\301\365\122\214\233\103\341\076\217\125\124\027\215\205
END
CKA_ISSUER MULTILINE_OCTAL
\060\107\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\034\060\032\006\003\125\004\012\023\023\151\124\162\165\163\103
\150\151\156\141\040\103\157\056\054\114\164\144\056\061\032\060
\030\006\003\125\004\003\023\021\166\124\162\165\163\040\105\103
\103\040\122\157\157\164\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\024\156\152\274\131\252\123\276\230\071\147\242\322\153\244
\073\346\155\034\326\332
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "vTrus Root CA"
#
Issuer: CN=vTrus Root CA,O="iTrusChina Co.,Ltd.",C=CN
Serial Number:43:e3:71:13:d8:b3:59:14:5d:b7:ce:8c:fd:35:fd:6f:bc:05:8d:45
Subject: CN=vTrus Root CA,O="iTrusChina Co.,Ltd.",C=CN
Not Valid Before: Tue Jul 31 07:24:05 2018
Not Valid After : Fri Jul 31 07:24:05 2043
Fingerprint (SHA-256):
8A:71:DE:65:59:33:6F:42:6C:26:E5:38:80:D0:0D:88:A1:8D:A4:C6:A9:1F:0D:CB:61:94:E2:06:C5:C9:63:87
Fingerprint (SHA1): 84:1A:69:FB:F5:CD:1A:25:34:13:3D:E3:F8:FC:B8:99:D0:C9:14:B7
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "vTrus Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\103\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\034\060\032\006\003\125\004\012\023\023\151\124\162\165\163\103
\150\151\156\141\040\103\157\056\054\114\164\144\056\061\026\060
\024\006\003\125\004\003\023\015\166\124\162\165\163\040\122\157
\157\164\040\103\101
END

```

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\103\061\013\060\011\006\003\125\004\006\023\002\103\116\061  
\034\060\032\006\003\125\004\012\023\023\151\124\162\165\163\103  
\150\151\156\141\040\103\157\056\054\114\164\144\056\061\026\060  
\024\006\003\125\004\003\023\015\166\124\162\165\163\040\122\157  
\157\164\040\103\101

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\024\103\343\161\023\330\263\131\024\135\267\316\214\375\065  
\375\157\274\005\215\105

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\126\060\202\003\076\240\003\002\001\002\002\024\103  
\343\161\023\330\263\131\024\135\267\316\214\375\065\375\157\274  
\005\215\105\060\015\006\011\052\206\110\206\367\015\001\001\013  
\005\000\060\103\061\013\060\011\006\003\125\004\006\023\002\103  
\116\061\034\060\032\006\003\125\004\012\023\023\151\124\162\165  
\163\103\150\151\156\141\040\103\157\056\054\114\164\144\056\061  
\026\060\024\006\003\125\004\003\023\015\166\124\162\165\163\040  
\122\157\157\164\040\103\101\060\036\027\015\061\070\060\067\063  
\061\060\067\062\064\060\065\132\027\015\064\063\060\067\063\061  
\060\067\062\064\060\065\132\060\103\061\013\060\011\006\003\125  
\004\006\023\002\103\116\061\034\060\032\006\003\125\004\012\023  
\023\151\124\162\165\163\103\150\151\156\141\040\103\157\056\054  
\114\164\144\056\061\026\060\024\006\003\125\004\003\023\015\166  
\124\162\165\163\040\122\157\157\164\040\103\101\060\202\002\042  
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003  
\202\002\017\000\060\202\002\012\002\202\002\001\000\275\125\174  
\141\323\270\035\004\142\005\240\256\154\267\160\264\101\352\113  
\003\136\020\077\220\132\034\213\073\260\146\213\154\110\246\034  
\042\272\325\100\222\356\063\262\043\131\311\216\274\130\332\213  
\236\320\031\362\057\131\306\214\143\132\272\237\243\013\260\263  
\232\134\272\021\270\022\351\014\273\317\156\154\200\207\051\024  
\003\054\215\044\232\310\144\203\265\152\254\023\054\063\361\237  
\334\054\141\074\032\077\160\125\233\255\000\122\177\317\004\271  
\376\066\372\234\300\026\256\142\376\226\114\103\176\125\024\276  
\032\263\322\155\302\257\166\146\225\153\052\260\224\167\205\136  
\004\017\142\035\143\165\367\153\347\313\133\232\160\354\076\147  
\005\360\376\007\010\200\317\050\333\005\306\024\047\057\206\175  
\360\047\336\377\346\176\063\110\347\013\036\130\321\047\053\123  
\016\127\112\145\327\373\242\200\140\374\114\274\065\123\001\152  
\227\162\202\257\361\035\160\350\234\365\357\136\302\154\307\107  
\176\132\224\205\046\115\073\272\353\114\350\260\011\302\145\302  
\235\235\011\233\116\265\227\005\254\365\006\240\367\066\005\176  
\364\220\262\153\304\264\371\144\352\351\032\012\310\015\250\355  
\047\311\324\347\263\271\253\202\042\220\047\075\052\350\174\220  
\357\274\117\375\342\012\044\247\336\145\044\244\135\352\300\166

\060\323\167\120\370\015\004\233\224\066\001\163\312\006\130\246  
\323\073\334\372\004\106\023\125\212\311\104\107\270\121\071\032  
\056\350\064\342\171\313\131\112\012\177\274\246\357\037\003\147  
\152\131\053\045\142\223\331\123\031\146\074\047\142\051\206\115  
\244\153\356\377\324\116\272\325\264\342\216\110\132\000\031\011  
\361\005\331\316\221\261\367\353\351\071\117\366\157\004\103\232  
\125\365\076\005\024\275\277\263\131\264\330\216\063\204\243\220  
\122\252\263\002\225\140\371\014\114\150\371\356\325\027\015\370  
\161\127\265\045\344\051\356\145\135\257\321\356\074\027\013\132  
\103\305\245\206\352\044\236\342\005\007\334\064\102\022\221\326  
\071\164\256\114\101\202\333\362\246\110\321\263\233\363\063\252  
\363\246\300\305\116\365\364\235\166\143\346\002\306\042\113\301  
\225\077\120\144\054\124\345\266\360\074\051\317\127\002\003\001  
\000\001\243\102\060\100\060\035\006\003\125\035\016\004\026\004  
\024\124\142\160\143\361\165\204\103\130\216\321\026\040\261\306  
\254\032\274\366\211\060\017\006\003\125\035\023\001\001\377\004  
\005\060\003\001\001\377\060\016\006\003\125\035\017\001\001\377  
\004\004\003\002\001\006\060\015\006\011\052\206\110\206\367\015  
\001\001\013\005\000\003\202\002\001\000\051\272\222\111\247\255  
\360\361\160\303\344\227\360\237\251\045\325\153\236\064\376\346  
\032\144\366\072\153\122\262\020\170\032\237\114\332\212\332\354  
\034\067\122\340\102\113\373\154\166\312\044\013\071\022\025\235  
\237\021\055\374\171\144\334\340\340\365\335\340\127\311\245\262  
\166\160\120\244\376\267\012\160\325\240\064\361\165\327\115\111  
\272\021\321\263\330\354\202\377\353\016\304\277\144\055\175\143  
\156\027\170\354\135\174\210\310\353\216\127\166\331\131\004\372  
\274\122\037\105\254\360\172\200\354\354\157\166\256\221\333\020  
\216\004\334\222\337\240\366\346\256\111\323\301\154\022\033\314  
\051\252\371\010\245\342\067\024\312\261\270\146\357\032\202\344  
\360\370\361\247\026\151\267\333\251\141\074\237\365\061\313\344  
\000\106\302\057\164\261\261\327\201\356\250\046\225\274\210\257  
\114\065\007\052\002\312\170\024\155\107\053\100\126\351\313\052  
\140\241\147\003\240\316\214\274\260\162\147\304\061\316\333\064  
\345\045\003\140\045\173\161\230\344\300\033\053\137\164\102\322  
\113\305\131\010\007\207\276\305\303\177\347\226\331\341\334\050  
\227\326\217\005\343\365\233\116\312\035\120\107\005\123\260\312  
\071\347\205\240\211\301\005\073\001\067\323\077\111\342\167\353  
\043\310\210\146\073\075\071\166\041\106\361\354\137\043\270\353  
\242\146\165\164\301\100\367\330\150\232\223\342\055\251\056\275  
\034\243\036\310\164\306\244\055\172\040\253\073\270\260\106\375  
\157\335\137\122\125\165\142\360\227\240\174\327\070\375\045\337  
\315\240\233\020\317\213\270\070\136\136\305\264\246\002\066\241  
\036\137\034\317\342\226\235\051\252\375\230\256\122\341\363\101  
\122\373\251\056\162\226\237\047\343\252\163\175\370\032\043\146  
\173\073\253\145\260\062\001\113\025\076\075\242\117\014\053\065  
\242\306\331\147\022\065\060\315\166\056\026\263\231\236\115\117  
\116\055\073\064\103\341\232\016\015\244\146\227\272\322\034\112  
\114\054\052\213\213\201\117\161\032\251\335\134\173\173\010\305

```
\000\015\067\100\343\174\173\124\137\057\205\137\166\366\367\247
\260\034\127\126\301\162\350\255\242\257\215\063\111\272\037\212
\334\346\164\174\140\206\157\207\227\173
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

# Trust for "vTrus Root CA"

# Issuer: CN=vTrus Root CA,O="iTrusChina Co.,Ltd.",C=CN

# Serial Number:43:e3:71:13:d8:b3:59:14:5d:b7:ce:8c:fd:35:fd:6f:bc:05:8d:45

# Subject: CN=vTrus Root CA,O="iTrusChina Co.,Ltd.",C=CN

# Not Valid Before: Tue Jul 31 07:24:05 2018

# Not Valid After : Fri Jul 31 07:24:05 2043

# Fingerprint (SHA-256):

8A:71:DE:65:59:33:6F:42:6C:26:E5:38:80:D0:0D:88:A1:8D:A4:C6:A9:1F:0D:CB:61:94:E2:06:C5:C9:63:87

# Fingerprint (SHA1): 84:1A:69:FB:F5:CD:1A:25:34:13:3D:E3:F8:FC:B8:99:D0:C9:14:B7

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "vTrus Root CA"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\204\032\151\373\365\315\032\045\064\023\075\343\370\374\270\231
\320\311\024\267
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\270\311\067\337\372\153\061\204\144\305\352\021\152\033\165\374
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\103\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\034\060\032\006\003\125\004\012\023\023\151\124\162\165\163\103
\150\151\156\141\040\103\157\056\054\114\164\144\056\061\026\060
\024\006\003\125\004\003\023\015\166\124\162\165\163\040\122\157
\157\164\040\103\101
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\024\103\343\161\023\330\263\131\024\135\267\316\214\375\065
\375\157\274\005\215\105
```

END

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

```
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

```
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

```
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

#

# Certificate "ISRG Root X2"

#



```
Issuer: CN=ISRG Root X2,O=Internet Security Research Group,C=US
Serial Number:41:d2:9d:d1:72:ea:ee:a7:80:c1:2c:6c:e9:2f:87:52
Subject: CN=ISRG Root X2,O=Internet Security Research Group,C=US
Not Valid Before: Fri Sep 04 00:00:00 2020
Not Valid After : Mon Sep 17 16:00:00 2040
Fingerprint (SHA-256):
69:72:9B:8E:15:A8:6E:FC:17:7A:57:AF:B7:17:1D:FC:64:AD:D2:8C:2F:CA:8C:F1:50:7E:34:45:3C:CB:14:70
Fingerprint (SHA1): BD:B1:B9:3C:D5:97:8D:45:C6:26:14:55:F8:DB:95:C7:5A:D1:53:AF
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ISRG Root X2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\117\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\051\060\047\006\003\125\004\012\023\040\111\156\164\145\162\156
\145\164\040\123\145\143\165\162\151\164\171\040\122\145\163\145
\141\162\143\150\040\107\162\157\165\160\061\025\060\023\006\003
\125\004\003\023\014\111\123\122\107\040\122\157\157\164\040\130
\062
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\117\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\051\060\047\006\003\125\004\012\023\040\111\156\164\145\162\156
\145\164\040\123\145\143\165\162\151\164\171\040\122\145\163\145
\141\162\143\150\040\107\162\157\165\160\061\025\060\023\006\003
\125\004\003\023\014\111\123\122\107\040\122\157\157\164\040\130
\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\101\322\235\321\162\352\356\247\200\301\054\154\351\057
\207\122
END
CKA_VALUE MULTILINE_OCTAL
\060\202\002\033\060\202\001\241\240\003\002\001\002\002\020\101
\322\235\321\162\352\356\247\200\301\054\154\351\057\207\122\060
\012\006\010\052\206\110\316\075\004\003\003\060\117\061\013\060
\011\006\003\125\004\006\023\002\125\123\061\051\060\047\006\003
\125\004\012\023\040\111\156\164\145\162\156\145\164\040\123\145
\143\165\162\151\164\171\040\122\145\163\145\141\162\143\150\040
\107\162\157\165\160\061\025\060\023\006\003\125\004\003\023\014
\111\123\122\107\040\122\157\157\164\040\130\062\060\036\027\015
\062\060\060\071\060\064\060\060\060\060\060\132\027\015\064
\060\060\071\061\067\061\066\060\060\060\060\132\060\117\061\013
\060\011\006\003\125\004\006\023\002\125\123\061\051\060\047\006
\003\125\004\012\023\040\111\156\164\145\162\156\145\164\040\123
```

```
\145\143\165\162\151\164\171\040\122\145\163\145\141\162\143\150
\040\107\162\157\165\160\061\025\060\023\006\003\125\004\003\023
\014\111\123\122\107\040\122\157\157\164\040\130\062\060\166\060
\020\006\007\052\206\110\316\075\002\001\006\005\053\201\004\000
\042\003\142\000\004\315\233\325\237\200\203\012\354\011\112\363
\026\112\076\134\317\167\254\336\147\005\015\035\007\266\334\026
\373\132\213\024\333\342\161\140\304\272\105\225\021\211\216\352
\006\337\367\052\026\034\244\271\305\305\062\340\003\340\036\202
\030\070\213\327\105\330\012\152\156\346\000\167\373\002\121\175
\042\330\012\156\232\133\167\337\360\372\101\354\071\334\165\312
\150\007\014\037\352\243\102\060\100\060\016\006\003\125\035\017
\001\001\377\004\004\003\002\001\006\060\017\006\003\125\035\023
\001\001\377\004\005\060\003\001\001\377\060\035\006\003\125\035
\016\004\026\004\024\174\102\226\256\336\113\110\073\372\222\370
\236\214\317\155\213\251\162\067\225\060\012\006\010\052\206\110
\316\075\004\003\003\003\150\000\060\145\002\060\173\171\116\106
\120\204\302\104\207\106\033\105\160\377\130\231\336\364\375\244
\322\125\246\040\055\164\326\064\274\101\243\120\137\001\047\126
\264\276\047\165\006\257\022\056\165\230\215\374\002\061\000\213
\365\167\154\324\310\145\252\340\013\054\356\024\235\047\067\244
\371\123\245\121\344\051\203\327\370\220\061\133\102\237\012\365
\376\256\000\150\347\214\111\017\266\157\133\133\025\362\347
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Trust for "ISRG Root X2"
```

```
Issuer: CN=ISRG Root X2,O=Internet Security Research Group,C=US
```

```
Serial Number:41:d2:9d:d1:72:ea:ee:a7:80:c1:2c:6c:e9:2f:87:52
```

```
Subject: CN=ISRG Root X2,O=Internet Security Research Group,C=US
```

```
Not Valid Before: Fri Sep 04 00:00:00 2020
```

```
Not Valid After : Mon Sep 17 16:00:00 2040
```

```
Fingerprint (SHA-256):
```

```
69:72:9B:8E:15:A8:6E:FC:17:7A:57:AF:B7:17:1D:FC:64:AD:D2:8C:2F:CA:8C:F1:50:7E:34:45:3C:CB:14:70
```

```
Fingerprint (SHA1): BD:B1:B9:3C:D5:97:8D:45:C6:26:14:55:F8:DB:95:C7:5A:D1:53:AF
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "ISRG Root X2"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\275\261\271\074\325\227\215\105\306\046\024\125\370\333\225\307
\132\321\123\257
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\323\236\304\036\043\074\246\337\317\243\176\155\340\024\346\345
```

END

```

CKA_ISSUER MULTILINE_OCTAL
\060\117\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\051\060\047\006\003\125\004\012\023\040\111\156\164\145\162\156
\145\164\040\123\145\143\165\162\151\164\171\040\122\145\163\145
\141\162\143\150\040\107\162\157\165\160\061\025\060\023\006\003
\125\004\003\023\014\111\123\122\107\040\122\157\157\164\040\130
\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\101\322\235\321\162\352\356\247\200\301\054\154\351\057
\207\122
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "HiPKI Root CA - G1"
#
Issuer: CN=HiPKI Root CA - G1,O="Chunghwa Telecom Co., Ltd.",C=TW
Serial Number:2d:dd:ac:ce:62:97:94:a1:43:e8:b0:cd:76:6a:5e:60
Subject: CN=HiPKI Root CA - G1,O="Chunghwa Telecom Co., Ltd.",C=TW
Not Valid Before: Fri Feb 22 09:46:04 2019
Not Valid After : Thu Dec 31 15:59:59 2037
Fingerprint (SHA-256):
F0:15:CE:3C:C2:39:BF:EF:06:4B:E9:F1:D2:C4:17:E1:A0:26:4A:0A:94:BE:1F:0C:8D:12:18:64:EB:69:49:CC
Fingerprint (SHA1): 6A:92:E4:A8:EE:1B:EC:96:45:37:E3:29:57:49:CD:96:E3:E5:D2:60
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "HiPKI Root CA - G1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\117\061\013\060\011\006\003\125\004\006\023\002\124\127\061
\043\060\041\006\003\125\004\012\014\032\103\150\165\156\147\150
\167\141\040\124\145\154\145\143\157\155\040\103\157\056\054\040
\114\164\144\056\061\033\060\031\006\003\125\004\003\014\022\110
\151\120\113\111\040\122\157\157\164\040\103\101\040\055\040\107
\061
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\117\061\013\060\011\006\003\125\004\006\023\002\124\127\061
\043\060\041\006\003\125\004\012\014\032\103\150\165\156\147\150
\167\141\040\124\145\154\145\143\157\155\040\103\157\056\054\040
\114\164\144\056\061\033\060\031\006\003\125\004\003\014\022\110

```

\151\120\113\111\040\122\157\157\164\040\103\101\040\055\040\107  
\061  
END  
CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL  
\002\020\055\335\254\316\142\227\224\241\103\350\260\315\166\152  
\136\140  
END  
CKA\_VALUE MULTILINE\_OCTAL  
\060\202\005\152\060\202\003\122\240\003\002\001\002\002\020\055  
\335\254\316\142\227\224\241\103\350\260\315\166\152\136\140\060  
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\117  
\061\013\060\011\006\003\125\004\006\023\002\124\127\061\043\060  
\041\006\003\125\004\012\014\032\103\150\165\156\147\150\167\141  
\040\124\145\154\145\143\157\155\040\103\157\056\054\040\114\164  
\144\056\061\033\060\031\006\003\125\004\003\014\022\110\151\120  
\113\111\040\122\157\157\164\040\103\101\040\055\040\107\061\060  
\036\027\015\061\071\060\062\062\062\060\071\064\066\060\064\132  
\027\015\063\067\061\062\063\061\061\065\065\071\065\071\132\060  
\117\061\013\060\011\006\003\125\004\006\023\002\124\127\061\043  
\060\041\006\003\125\004\012\014\032\103\150\165\156\147\150\167  
\141\040\124\145\154\145\143\157\155\040\103\157\056\054\040\114  
\164\144\056\061\033\060\031\006\003\125\004\003\014\022\110\151  
\120\113\111\040\122\157\157\164\040\103\101\040\055\040\107\061  
\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001  
\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001  
\000\364\036\177\122\163\062\014\163\344\275\023\164\243\324\060  
\250\320\256\113\330\266\337\165\107\146\364\174\347\071\004\036  
\152\160\040\322\132\107\162\147\125\364\245\350\235\325\036\041  
\241\360\147\272\314\041\150\276\104\123\277\215\371\342\334\057  
\125\310\067\077\037\244\300\234\263\344\167\134\240\106\376\167  
\372\032\240\070\352\355\232\162\336\053\275\224\127\072\272\354  
\171\347\137\175\102\144\071\172\046\066\367\044\360\325\057\272  
\225\230\021\146\255\227\065\326\165\001\200\340\257\364\204\141  
\214\015\036\137\174\207\226\136\101\257\353\207\352\370\135\361  
\056\210\005\076\114\042\273\332\037\052\335\122\106\144\071\363  
\102\316\331\236\014\263\260\167\227\144\234\300\364\243\056\037  
\225\007\260\027\337\060\333\000\030\226\114\241\201\113\335\004  
\155\123\243\075\374\007\254\324\305\067\202\353\344\225\010\031  
\050\202\322\102\072\243\330\123\354\171\211\140\110\140\310\162  
\222\120\334\003\217\203\077\262\102\127\132\333\152\351\021\227  
\335\205\050\274\060\114\253\343\302\261\105\104\107\037\340\212  
\026\007\226\322\041\017\123\300\355\251\176\324\116\354\233\011  
\354\257\102\254\060\326\277\321\020\105\340\246\026\262\245\305  
\323\117\163\224\063\161\002\241\152\243\326\063\227\117\041\143  
\036\133\217\331\301\136\105\161\167\017\201\135\137\041\232\255  
\203\314\372\136\326\215\043\137\033\075\101\257\040\165\146\132  
\112\366\237\373\253\030\367\161\300\266\035\061\354\073\040\353  
\313\342\270\365\256\222\262\367\341\204\113\362\242\362\223\232

\042\236\323\024\157\066\124\275\037\136\131\025\271\163\250\301  
\174\157\173\142\351\026\154\107\132\145\363\016\021\233\106\331  
\375\155\334\326\234\300\264\175\245\260\335\077\126\157\241\371  
\366\344\022\110\375\006\177\022\127\266\251\043\117\133\003\303  
\340\161\052\043\267\367\260\261\073\274\230\275\326\230\250\014  
\153\366\216\022\147\246\362\262\130\344\002\011\023\074\251\273  
\020\264\322\060\105\361\354\367\000\021\337\145\370\334\053\103  
\125\277\026\227\304\017\325\054\141\204\252\162\206\376\346\072  
\176\302\077\175\356\374\057\024\076\346\205\335\120\157\267\111  
\355\002\003\001\000\001\243\102\060\100\060\017\006\003\125\035  
\023\001\001\377\004\005\060\003\001\001\377\060\035\006\003\125  
\035\016\004\026\004\024\362\167\027\372\136\250\376\366\075\161  
\325\150\272\311\106\014\070\330\257\260\060\016\006\003\125\035  
\017\001\001\377\004\004\003\002\001\206\060\015\006\011\052\206  
\110\206\367\015\001\001\013\005\000\003\202\002\001\000\120\121  
\360\165\334\160\004\343\377\252\165\324\161\242\313\236\217\250  
\251\323\257\165\307\124\317\072\034\004\231\042\254\304\021\342  
\357\063\112\246\043\035\016\015\107\330\067\307\157\257\064\177  
\117\201\153\065\117\351\162\245\061\342\170\347\367\116\224\030  
\133\100\175\317\153\041\124\206\346\225\172\373\306\312\352\234  
\110\116\127\011\135\057\254\364\245\264\227\063\130\325\254\171  
\251\314\137\371\205\372\122\305\215\370\221\024\353\072\015\027  
\320\122\302\173\343\302\163\216\106\170\006\070\054\350\134\332  
\146\304\364\244\360\126\031\063\051\132\145\222\005\107\106\112  
\253\204\303\036\047\241\037\021\222\231\047\165\223\017\274\066  
\073\227\127\217\046\133\014\273\234\017\324\156\060\007\324\334  
\137\066\150\146\071\203\226\047\046\212\310\304\071\376\232\041  
\157\325\162\206\351\177\142\345\227\116\320\044\320\100\260\320  
\165\010\216\275\150\356\010\327\156\174\020\160\106\033\174\340  
\210\262\236\162\206\231\001\343\277\237\111\031\264\045\276\126  
\145\256\027\143\345\036\337\350\377\107\245\277\341\046\005\204  
\344\260\300\257\347\010\231\250\014\136\046\200\105\324\370\150  
\057\226\217\256\342\112\034\234\026\014\023\157\070\207\366\273  
\310\064\137\222\003\121\171\160\246\337\313\365\231\115\171\315  
\116\274\127\237\103\116\153\056\053\030\370\152\163\214\272\305  
\065\357\071\152\101\036\317\161\250\242\262\206\007\133\072\311  
\341\357\077\145\004\200\107\062\104\160\225\116\061\147\152\164  
\133\020\105\165\352\260\237\320\346\065\376\116\237\213\314\053  
\222\105\133\156\045\140\205\106\315\321\252\260\166\146\223\167  
\226\276\203\276\070\266\044\116\046\013\314\355\172\126\032\340  
\351\132\306\144\255\114\172\000\110\104\057\271\100\273\023\076  
\276\025\170\235\205\201\112\052\127\336\325\031\103\332\333\312  
\133\107\206\203\013\077\266\015\166\170\163\171\042\136\261\200  
\037\317\276\321\077\126\020\230\053\225\207\241\037\235\144\024  
\140\071\054\263\000\125\056\344\365\263\016\127\304\221\101\000  
\234\077\350\245\337\352\366\377\310\360\255\155\122\250\027\253  
\233\141\374\022\121\065\344\045\375\257\252\152\206\071

END

```

CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE

Trust for "HiPKI Root CA - G1"
Issuer: CN=HiPKI Root CA - G1,O="Chunghwa Telecom Co., Ltd.",C=TW
Serial Number:2d:dd:ac:ce:62:97:94:a1:43:e8:b0:cd:76:6a:5e:60
Subject: CN=HiPKI Root CA - G1,O="Chunghwa Telecom Co., Ltd.",C=TW
Not Valid Before: Fri Feb 22 09:46:04 2019
Not Valid After : Thu Dec 31 15:59:59 2037
Fingerprint (SHA-256):
F0:15:CE:3C:C2:39:BF:EF:06:4B:E9:F1:D2:C4:17:E1:A0:26:4A:0A:94:BE:1F:0C:8D:12:18:64:EB:69:49:CC
Fingerprint (SHA1): 6A:92:E4:A8:EE:1B:EC:96:45:37:E3:29:57:49:CD:96:E3:E5:D2:60
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "HiPKI Root CA - G1"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\152\222\344\250\356\033\354\226\105\067\343\051\127\111\315\226
\343\345\322\140
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\151\105\337\026\145\113\350\150\232\217\166\137\377\200\236\323
END
CKA_ISSUER MULTILINE_OCTAL
\060\117\061\013\060\011\006\003\125\004\006\023\002\124\127\061
\043\060\041\006\003\125\004\012\014\032\103\150\165\156\147\150
\167\141\040\124\145\154\145\143\157\155\040\103\157\056\054\040
\114\164\144\056\061\033\060\031\006\003\125\004\003\014\022\110
\151\120\113\111\040\122\157\157\164\040\103\101\040\055\040\107
\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\055\335\254\316\142\227\224\241\103\350\260\315\166\152
\136\140
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "GlobalSign ECC Root CA - R4"
#
Issuer: CN=GlobalSign,O=GlobalSign,OU=GlobalSign ECC Root CA - R4
Serial Number:02:03:e5:7e:f5:3f:93:fd:a5:09:21:b2:a6
Subject: CN=GlobalSign,O=GlobalSign,OU=GlobalSign ECC Root CA - R4

```

```
Not Valid Before: Tue Nov 13 00:00:00 2012
Not Valid After : Tue Jan 19 03:14:07 2038
Fingerprint (SHA-256):
B0:85:D7:0B:96:4F:19:1A:73:E4:AF:0D:54:AE:7A:0E:07:AA:FD:AF:9B:71:DD:08:62:13:8A:B7:32:5A:24:A2
Fingerprint (SHA1): 6B:A0:B0:98:E1:71:EF:5A:AD:FE:48:15:80:77:10:F4:BD:6F:0B:28
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GlobalSign ECC Root CA - R4"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\120\061\044\060\042\006\003\125\004\013\023\033\107\154\157
\142\141\154\123\151\147\156\040\105\103\103\040\122\157\157\164
\040\103\101\040\055\040\122\064\061\023\060\021\006\003\125\004
\012\023\012\107\154\157\142\141\154\123\151\147\156\061\023\060
\021\006\003\125\004\003\023\012\107\154\157\142\141\154\123\151
\147\156
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\120\061\044\060\042\006\003\125\004\013\023\033\107\154\157
\142\141\154\123\151\147\156\040\105\103\103\040\122\157\157\164
\040\103\101\040\055\040\122\064\061\023\060\021\006\003\125\004
\012\023\012\107\154\157\142\141\154\123\151\147\156\061\023\060
\021\006\003\125\004\003\023\012\107\154\157\142\141\154\123\151
\147\156
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\015\002\003\345\176\365\077\223\375\245\011\041\262\246
END
CKA_VALUE MULTILINE_OCTAL
\060\202\001\334\060\202\001\203\240\003\002\001\002\002\015\002
\003\345\176\365\077\223\375\245\011\041\262\246\060\012\006\010
\052\206\110\316\075\004\003\002\060\120\061\044\060\042\006\003
\125\004\013\023\033\107\154\157\142\141\154\123\151\147\156\040
\105\103\103\040\122\157\157\164\040\103\101\040\055\040\122\064
\061\023\060\021\006\003\125\004\012\023\012\107\154\157\142\141
\154\123\151\147\156\061\023\060\021\006\003\125\004\003\023\012
\107\154\157\142\141\154\123\151\147\156\060\036\027\015\061\062
\061\061\061\063\060\060\060\060\060\060\132\027\015\063\070\060
\061\061\071\060\063\061\064\060\067\132\060\120\061\044\060\042
\006\003\125\004\013\023\033\107\154\157\142\141\154\123\151\147
\156\040\105\103\103\040\122\157\157\164\040\103\101\040\055\040
\122\064\061\023\060\021\006\003\125\004\012\023\012\107\154\157
\142\141\154\123\151\147\156\061\023\060\021\006\003\125\004\003
\023\012\107\154\157\142\141\154\123\151\147\156\060\131\060\023
\006\007\052\206\110\316\075\002\001\006\010\052\206\110\316\075
```

```
\003\001\007\003\102\000\004\270\306\171\323\217\154\045\016\237
\056\071\031\034\003\244\256\232\345\071\007\011\026\312\143\261
\271\206\370\212\127\301\127\316\102\372\163\241\367\145\102\377
\036\301\000\262\156\163\016\377\307\041\345\030\244\252\331\161
\077\250\324\271\316\214\035\243\102\060\100\060\016\006\003\125
\035\017\001\001\377\004\004\003\002\001\206\060\017\006\003\125
\035\023\001\001\377\004\005\060\003\001\001\377\060\035\006\003
\125\035\016\004\026\004\024\124\260\173\255\105\270\342\100\177
\373\012\156\373\276\063\311\074\243\204\325\060\012\006\010\052
\206\110\316\075\004\003\002\003\107\000\060\104\002\040\042\117
\164\162\271\140\257\361\346\234\240\026\005\120\137\303\136\073
\156\141\164\357\276\001\304\276\030\110\131\141\202\062\002\040
\046\235\124\143\100\336\067\140\120\317\310\330\355\235\202\256
\067\230\274\243\217\114\114\251\064\053\154\357\373\225\233\046
END
```

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Trust for "GlobalSign ECC Root CA - R4"
```

```
Issuer: CN=GlobalSign,O=GlobalSign,OU=GlobalSign ECC Root CA - R4
```

```
Serial Number:02:03:e5:7e:f5:3f:93:fd:a5:09:21:b2:a6
```

```
Subject: CN=GlobalSign,O=GlobalSign,OU=GlobalSign ECC Root CA - R4
```

```
Not Valid Before: Tue Nov 13 00:00:00 2012
```

```
Not Valid After : Tue Jan 19 03:14:07 2038
```

```
Fingerprint (SHA-256):
```

```
B0:85:D7:0B:96:4F:19:1A:73:E4:AF:0D:54:AE:7A:0E:07:AA:FD:AF:9B:71:DD:08:62:13:8A:B7:32:5A:24:A2
```

```
Fingerprint (SHA1): 6B:A0:B0:98:E1:71:EF:5A:AD:FE:48:15:80:77:10:F4:BD:6F:0B:28
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "GlobalSign ECC Root CA - R4"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\153\240\260\230\341\161\357\132\255\376\110\025\200\167\020\364
\275\157\013\050
```

```
END
```

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\046\051\370\155\341\210\277\242\145\177\252\304\315\017\177\374
END
```

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\120\061\044\060\042\006\003\125\004\013\023\033\107\154\157
\142\141\154\123\151\147\156\040\105\103\103\040\122\157\157\164
\040\103\101\040\055\040\122\064\061\023\060\021\006\003\125\004
\012\023\012\107\154\157\142\141\154\123\151\147\156\061\023\060
\021\006\003\125\004\003\023\012\107\154\157\142\141\154\123\151
\147\156
```

```
END
```



```

CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\015\002\003\345\176\365\077\223\375\245\011\041\262\246
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "GTS Root R1"
#
Issuer: CN=GTS Root R1,O=Google Trust Services LLC,C=US
Serial Number:02:03:e5:93:6f:31:b0:13:49:88:6b:a2:17
Subject: CN=GTS Root R1,O=Google Trust Services LLC,C=US
Not Valid Before: Wed Jun 22 00:00:00 2016
Not Valid After : Sun Jun 22 00:00:00 2036
Fingerprint (SHA-256):
D9:47:43:2A:BD:E7:B7:FA:90:FC:2E:6B:59:10:1B:12:80:E0:E1:C7:E4:E4:0F:A3:C6:88:7F:FF:57:A7:F4:CF
Fingerprint (SHA1): E5:8C:1C:C4:91:3B:38:63:4B:E9:10:6E:E3:AD:8E:6B:9D:D9:81:4A
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GTS Root R1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\107\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\042\060\040\006\003\125\004\012\023\031\107\157\157\147\154\145
\040\124\162\165\163\164\040\123\145\162\166\151\143\145\163\040
\114\114\103\061\024\060\022\006\003\125\004\003\023\013\107\124
\123\040\122\157\157\164\040\122\061
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\107\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\042\060\040\006\003\125\004\012\023\031\107\157\157\147\154\145
\040\124\162\165\163\164\040\123\145\162\166\151\143\145\163\040
\114\114\103\061\024\060\022\006\003\125\004\003\023\013\107\124
\123\040\122\157\157\164\040\122\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\015\002\003\345\223\157\061\260\023\111\210\153\242\027
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\127\060\202\003\077\240\003\002\001\002\002\015\002
\003\345\223\157\061\260\023\111\210\153\242\027\060\015\006\011
\052\206\110\206\367\015\001\001\014\005\000\060\107\061\013\060
\011\006\003\125\004\006\023\002\125\123\061\042\060\040\006\003

```

\125\004\012\023\031\107\157\157\147\154\145\040\124\162\165\163  
\164\040\123\145\162\166\151\143\145\163\040\114\114\103\061\024  
\060\022\006\003\125\004\003\023\013\107\124\123\040\122\157\157  
\164\040\122\061\060\036\027\015\061\066\060\066\062\062\060\060  
\060\060\060\060\132\027\015\063\066\060\066\062\062\060\060\060  
\060\060\060\132\060\107\061\013\060\011\006\003\125\004\006\023  
\002\125\123\061\042\060\040\006\003\125\004\012\023\031\107\157  
\157\147\154\145\040\124\162\165\163\164\040\123\145\162\166\151  
\143\145\163\040\114\114\103\061\024\060\022\006\003\125\004\003  
\023\013\107\124\123\040\122\157\157\164\040\122\061\060\202\002  
\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000  
\003\202\002\017\000\060\202\002\012\002\202\002\001\000\266\021  
\002\213\036\343\241\167\233\073\334\277\224\076\267\225\247\100  
\074\241\375\202\371\175\062\006\202\161\366\366\214\177\373\350  
\333\274\152\056\227\227\243\214\113\371\053\366\261\371\316\204  
\035\261\371\305\227\336\357\271\362\243\351\274\022\211\136\247  
\252\122\253\370\043\047\313\244\261\234\143\333\327\231\176\360  
\012\136\353\150\246\364\306\132\107\015\115\020\063\343\116\261  
\023\243\310\030\154\113\354\374\011\220\337\235\144\051\045\043  
\007\241\264\322\075\056\140\340\317\322\011\207\273\315\110\360  
\115\302\302\172\210\212\273\272\317\131\031\326\257\217\260\007  
\260\236\061\361\202\301\300\337\056\246\155\154\031\016\265\330  
\176\046\032\105\003\075\260\171\244\224\050\255\017\177\046\345  
\250\010\376\226\350\074\150\224\123\356\203\072\210\053\025\226  
\011\262\340\172\214\056\165\326\234\353\247\126\144\217\226\117  
\150\256\075\227\302\204\217\300\274\100\300\013\134\275\366\207  
\263\065\154\254\030\120\177\204\340\114\315\222\323\040\351\063  
\274\122\231\257\062\265\051\263\045\052\264\110\371\162\341\312  
\144\367\346\202\020\215\350\235\302\212\210\372\070\146\212\374  
\143\371\001\371\170\375\173\134\167\372\166\207\372\354\337\261  
\016\171\225\127\264\275\046\357\326\001\321\353\026\012\273\216  
\013\265\305\305\212\125\253\323\254\352\221\113\051\314\031\244  
\062\045\116\052\361\145\104\320\002\316\252\316\111\264\352\237  
\174\203\260\100\173\347\103\253\247\154\243\217\175\211\201\372  
\114\245\377\325\216\303\316\113\340\265\330\263\216\105\317\166  
\300\355\100\053\375\123\017\260\247\325\073\015\261\212\242\003  
\336\061\255\314\167\352\157\173\076\326\337\221\042\022\346\276  
\372\330\062\374\020\143\024\121\162\336\135\326\026\223\275\051  
\150\063\357\072\146\354\007\212\046\337\023\327\127\145\170\047  
\336\136\111\024\000\242\000\177\232\250\041\266\251\261\225\260  
\245\271\015\026\021\332\307\154\110\074\100\340\176\015\132\315  
\126\074\321\227\005\271\313\113\355\071\113\234\304\077\322\125  
\023\156\044\260\326\161\372\364\301\272\314\355\033\365\376\201  
\101\330\000\230\075\072\310\256\172\230\067\030\005\225\002\003  
\001\000\001\243\102\060\100\060\016\006\003\125\035\017\001\001  
\377\004\004\003\002\001\206\060\017\006\003\125\035\023\001\001  
\377\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004  
\026\004\024\344\257\053\046\161\032\053\110\047\205\057\122\146

\054\357\360\211\023\161\076\060\015\006\011\052\206\110\206\367  
\015\001\001\014\005\000\003\202\002\001\000\237\252\102\046\333  
\013\233\276\377\036\226\222\056\076\242\145\112\152\230\272\042  
\313\175\301\072\330\202\012\006\306\366\245\336\300\116\207\146  
\171\241\371\246\130\234\252\371\265\346\140\347\340\350\261\036  
\102\101\063\013\067\075\316\211\160\025\312\265\044\250\317\153  
\265\322\100\041\230\317\042\064\317\073\305\042\204\340\305\016  
\212\174\135\210\344\065\044\316\233\076\032\124\036\156\333\262  
\207\247\374\363\372\201\125\024\142\012\131\251\042\005\061\076  
\202\326\356\333\127\064\274\063\225\323\027\033\350\047\242\213  
\173\116\046\032\172\132\144\266\321\254\067\361\375\240\363\070  
\354\162\360\021\165\235\313\064\122\215\346\166\153\027\306\337  
\206\253\047\216\111\053\165\146\201\020\041\246\352\076\364\256  
\045\377\174\025\336\316\214\045\077\312\142\160\012\367\057\011  
\146\007\310\077\034\374\360\333\105\060\337\142\210\301\265\017  
\235\303\237\112\336\131\131\107\305\207\042\066\346\202\247\355  
\012\271\342\007\240\215\173\172\112\074\161\322\342\003\241\037  
\062\007\335\033\344\102\316\014\000\105\141\200\265\013\040\131  
\051\170\275\371\125\313\143\305\074\114\364\266\377\333\152\137  
\061\153\231\236\054\301\153\120\244\327\346\030\024\275\205\077  
\147\253\106\237\240\377\102\247\072\177\134\313\135\260\160\035  
\053\064\365\324\166\011\014\353\170\114\131\005\363\063\102\303  
\141\025\020\033\167\115\316\042\214\324\205\362\105\175\267\123  
\352\357\100\132\224\012\134\040\137\116\100\135\142\042\166\337  
\377\316\141\275\214\043\170\322\067\002\340\216\336\321\021\067  
\211\366\277\355\111\007\142\256\222\354\100\032\257\024\011\331  
\320\116\262\242\367\276\356\356\330\377\334\032\055\336\270\066  
\161\342\374\171\267\224\045\321\110\163\133\241\065\347\263\231  
\147\165\301\031\072\053\107\116\323\102\216\375\061\310\026\146  
\332\322\014\074\333\263\216\311\241\015\200\017\173\026\167\024  
\277\377\333\011\224\262\223\274\040\130\025\351\333\161\103\363  
\336\020\303\000\334\250\052\225\266\302\326\077\220\153\166\333  
\154\376\214\274\362\160\065\014\334\231\031\065\334\327\310\106  
\143\325\066\161\256\127\373\267\202\155\334

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "GTS Root R1"

# Issuer: CN=GTS Root R1,O=Google Trust Services LLC,C=US

# Serial Number:02:03:e5:93:6f:31:b0:13:49:88:6b:a2:17

# Subject: CN=GTS Root R1,O=Google Trust Services LLC,C=US

# Not Valid Before: Wed Jun 22 00:00:00 2016

# Not Valid After : Sun Jun 22 00:00:00 2036

# Fingerprint (SHA-256):

D9:47:43:2A:BD:E7:B7:FA:90:FC:2E:6B:59:10:1B:12:80:E0:E1:C7:E4:E4:0F:A3:C6:88:7F:FF:57:A7:F4:CF

# Fingerprint (SHA1): E5:8C:1C:C4:91:3B:38:63:4B:E9:10:6E:E3:AD:8E:6B:9D:D9:81:4A

```

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GTS Root R1"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\345\214\034\304\221\073\070\143\113\351\020\156\343\255\216\153
\235\331\201\112
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\005\376\320\277\161\250\243\166\143\332\001\340\330\122\334\100
END
CKA_ISSUER MULTILINE_OCTAL
\060\107\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\042\060\040\006\003\125\004\012\023\031\107\157\157\147\154\145
\040\124\162\165\163\164\040\123\145\162\166\151\143\145\163\040
\114\114\103\061\024\060\022\006\003\125\004\003\023\013\107\124
\123\040\122\157\157\164\040\122\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\015\002\003\345\223\157\061\260\023\111\210\153\242\027
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "GTS Root R2"
#
Issuer: CN=GTS Root R2,O=Google Trust Services LLC,C=US
Serial Number:02:03:e5:ae:c5:8d:04:25:1a:ab:11:25:aa
Subject: CN=GTS Root R2,O=Google Trust Services LLC,C=US
Not Valid Before: Wed Jun 22 00:00:00 2016
Not Valid After : Sun Jun 22 00:00:00 2036
Fingerprint (SHA-256):
8D:25:CD:97:22:9D:BF:70:35:6B:DA:4E:B3:CC:73:40:31:E2:4C:F0:0F:AF:CF:D3:2D:C7:6E:B5:84:1C:7E:A8
Fingerprint (SHA1): 9A:44:49:76:32:DB:DE:FA:D0:BC:FB:5A:7B:17:BD:9E:56:09:24:94
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GTS Root R2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\107\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\042\060\040\006\003\125\004\012\023\031\107\157\157\147\154\145
\040\124\162\165\163\164\040\123\145\162\166\151\143\145\163\040

```

\114\114\103\061\024\060\022\006\003\125\004\003\023\013\107\124  
\123\040\122\157\157\164\040\122\062

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\107\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\042\060\040\006\003\125\004\012\023\031\107\157\157\147\154\145  
\040\124\162\165\163\164\040\123\145\162\166\151\143\145\163\040  
\114\114\103\061\024\060\022\006\003\125\004\003\023\013\107\124  
\123\040\122\157\157\164\040\122\062

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\015\002\003\345\256\305\215\004\045\032\253\021\045\252

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\127\060\202\003\077\240\003\002\001\002\002\015\002  
\003\345\256\305\215\004\045\032\253\021\045\252\060\015\006\011  
\052\206\110\206\367\015\001\001\014\005\000\060\107\061\013\060  
\011\006\003\125\004\006\023\002\125\123\061\042\060\040\006\003  
\125\004\012\023\031\107\157\157\147\154\145\040\124\162\165\163  
\164\040\123\145\162\166\151\143\145\163\040\114\114\103\061\024  
\060\022\006\003\125\004\003\023\013\107\124\123\040\122\157\157  
\164\040\122\062\060\036\027\015\061\066\060\066\062\062\060\060  
\060\060\060\060\132\027\015\063\066\060\066\062\062\060\060\060  
\060\060\060\132\060\107\061\013\060\011\006\003\125\004\006\023  
\002\125\123\061\042\060\040\006\003\125\004\012\023\031\107\157  
\157\147\154\145\040\124\162\165\163\164\040\123\145\162\166\151  
\143\145\163\040\114\114\103\061\024\060\022\006\003\125\004\003  
\023\013\107\124\123\040\122\157\157\164\040\122\062\060\202\002  
\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000  
\003\202\002\017\000\060\202\002\012\002\202\002\001\000\316\336  
\375\246\373\354\354\024\064\074\007\006\132\154\131\367\031\065  
\335\367\301\235\125\252\323\315\073\244\223\162\357\012\372\155  
\235\366\360\205\200\133\241\110\122\237\071\305\267\356\050\254  
\357\313\166\150\024\271\337\255\001\154\231\037\304\042\035\237  
\376\162\167\340\054\133\257\344\004\277\117\162\240\032\064\230  
\350\071\150\354\225\045\173\166\241\346\151\271\205\031\275\211  
\214\376\255\355\066\352\163\274\377\203\342\313\175\301\322\316  
\112\263\215\005\236\213\111\223\337\301\133\320\156\136\360\056  
\060\056\202\374\372\274\264\027\012\110\345\210\233\305\233\153  
\336\260\312\264\003\360\332\364\220\270\145\144\367\134\114\255  
\350\176\146\136\231\327\270\302\076\310\320\023\235\255\356\344  
\105\173\211\125\367\212\037\142\122\204\022\263\302\100\227\343  
\212\037\107\221\246\164\132\322\370\261\143\050\020\270\263\011  
\270\126\167\100\242\046\230\171\306\376\337\045\356\076\345\240  
\177\324\141\017\121\113\074\077\214\332\341\160\164\330\302\150  
\241\371\301\014\351\241\342\177\273\125\074\166\006\356\152\116  
\314\222\210\060\115\232\275\117\013\110\232\204\265\230\243\325

\373\163\301\127\141\335\050\126\165\023\256\207\216\347\014\121  
\011\020\165\210\114\274\215\371\173\074\324\042\110\037\052\334  
\353\153\273\104\261\313\063\161\062\106\257\255\112\361\214\350  
\164\072\254\347\032\042\163\200\322\060\367\045\102\307\042\073  
\073\022\255\226\056\306\303\166\007\252\040\267\065\111\127\351  
\222\111\350\166\026\162\061\147\053\226\176\212\243\307\224\126  
\042\277\152\113\176\001\041\262\043\062\337\344\232\104\155\131  
\133\135\365\000\240\034\233\306\170\227\215\220\377\233\310\252  
\264\257\021\121\071\136\331\373\147\255\325\133\021\235\062\232  
\033\275\325\272\133\245\311\313\045\151\123\125\047\134\340\312  
\066\313\210\141\373\036\267\320\313\356\026\373\323\246\114\336  
\222\245\324\342\337\365\006\124\336\056\235\113\264\223\060\252  
\201\316\335\032\334\121\163\015\117\160\351\345\266\026\041\031  
\171\262\346\211\013\165\144\312\325\253\274\011\301\030\241\377  
\324\124\241\205\074\375\024\044\003\262\207\323\244\267\002\003  
\001\000\001\243\102\060\100\060\016\006\003\125\035\017\001\001  
\377\004\004\003\002\001\206\060\017\006\003\125\035\023\001\001  
\377\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004  
\026\004\024\273\377\312\216\043\237\117\231\312\333\342\150\246  
\245\025\047\027\036\331\016\060\015\006\011\052\206\110\206\367  
\015\001\001\014\005\000\003\202\002\001\000\037\312\316\335\307  
\276\241\237\331\047\114\013\334\027\230\021\152\210\336\075\346  
\161\126\162\262\236\032\116\234\325\053\230\044\135\233\153\173  
\260\063\202\011\275\337\045\106\352\230\236\266\033\376\203\074  
\322\142\141\301\004\355\316\340\305\311\310\023\023\125\347\250  
\143\255\214\173\001\376\167\060\341\316\150\233\005\370\022\356  
\171\061\240\101\105\065\050\012\161\244\044\117\214\334\074\202  
\007\137\146\334\175\020\376\014\141\263\005\225\356\341\256\201  
\017\250\370\307\217\115\250\043\002\046\153\035\203\122\125\316  
\265\057\000\312\200\100\340\341\164\254\140\365\207\200\235\256  
\066\144\221\135\260\150\030\352\212\141\311\167\250\227\304\311  
\307\245\374\125\113\363\360\177\271\145\075\047\150\320\314\153  
\372\123\235\341\221\032\311\135\032\226\155\062\207\355\003\040  
\310\002\316\132\276\331\352\375\262\115\304\057\033\337\137\172  
\365\370\213\306\356\061\072\045\121\125\147\215\144\062\173\351  
\236\303\202\272\052\055\351\036\264\340\110\006\242\374\147\257  
\037\042\002\163\373\040\012\257\235\124\113\241\315\377\140\107  
\260\077\135\357\033\126\275\227\041\226\055\012\321\136\235\070  
\002\107\154\271\364\366\043\045\270\240\152\232\053\167\010\372  
\304\261\050\220\046\130\010\074\342\176\252\327\075\157\272\061  
\210\012\005\353\047\265\241\111\356\240\105\124\173\346\047\145  
\231\040\041\250\243\274\373\030\226\273\122\157\014\355\203\121  
\114\351\131\342\040\140\305\302\145\222\202\214\363\020\037\016  
\212\227\276\167\202\155\077\217\035\135\274\111\047\275\314\117  
\017\341\316\166\206\004\043\305\300\214\022\133\375\333\204\240  
\044\361\110\377\144\174\320\276\134\026\321\357\231\255\300\037  
\373\313\256\274\070\042\006\046\144\332\332\227\016\077\050\025  
\104\250\117\000\312\360\232\314\317\164\152\264\076\074\353\225

```
\354\265\323\132\330\201\231\351\103\030\067\353\263\273\321\130
\142\101\363\146\322\217\252\170\225\124\040\303\132\056\164\053
\325\321\276\030\151\300\254\325\244\317\071\272\121\204\003\145
\351\142\300\142\376\330\115\125\226\342\320\021\372\110\064\021
\354\236\355\005\035\344\310\326\035\206\313
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

# Trust for "GTS Root R2"

# Issuer: CN=GTS Root R2,O=Google Trust Services LLC,C=US

# Serial Number:02:03:e5:ae:c5:8d:04:25:1a:ab:11:25:aa

# Subject: CN=GTS Root R2,O=Google Trust Services LLC,C=US

# Not Valid Before: Wed Jun 22 00:00:00 2016

# Not Valid After : Sun Jun 22 00:00:00 2036

# Fingerprint (SHA-256):

8D:25:CD:97:22:9D:BF:70:35:6B:DA:4E:B3:CC:73:40:31:E2:4C:F0:0F:AF:CF:D3:2D:C7:6E:B5:84:1C:7E:A8

# Fingerprint (SHA1): 9A:44:49:76:32:DB:DE:FA:D0:BC:FB:5A:7B:17:BD:9E:56:09:24:94

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "GTS Root R2"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\232\104\111\166\062\333\336\372\320\274\373\132\173\027\275\236
\126\011\044\224
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\036\071\300\123\346\036\051\202\013\312\122\125\066\135\127\334
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\107\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\042\060\040\006\003\125\004\012\023\031\107\157\157\147\154\145
\040\124\162\165\163\164\040\123\145\162\166\151\143\145\163\040
\114\114\103\061\024\060\022\006\003\125\004\003\023\013\107\124
\123\040\122\157\157\164\040\122\062
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\015\002\003\345\256\305\215\004\045\032\253\021\045\252
```

END

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

```
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

```
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

```
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

#

# Certificate "GTS Root R3"

```
#
Issuer: CN=GTS Root R3,O=Google Trust Services LLC,C=US
Serial Number:02:03:e5:b8:82:eb:20:f8:25:27:6d:3d:66
Subject: CN=GTS Root R3,O=Google Trust Services LLC,C=US
Not Valid Before: Wed Jun 22 00:00:00 2016
Not Valid After : Sun Jun 22 00:00:00 2036
Fingerprint (SHA-256):
34:D8:A7:3E:E2:08:D9:BC:DB:0D:95:65:20:93:4B:4E:40:E6:94:82:59:6E:8B:6F:73:C8:42:6B:01:0A:6F:48
Fingerprint (SHA1): ED:E5:71:80:2B:C8:92:B9:5B:83:3C:D2:32:68:3F:09:CD:A0:1E:46
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GTS Root R3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\107\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\042\060\040\006\003\125\004\012\023\031\107\157\157\147\154\145
\040\124\162\165\163\164\040\123\145\162\166\151\143\145\163\040
\114\114\103\061\024\060\022\006\003\125\004\003\023\013\107\124
\123\040\122\157\157\164\040\122\063
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\107\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\042\060\040\006\003\125\004\012\023\031\107\157\157\147\154\145
\040\124\162\165\163\164\040\123\145\162\166\151\143\145\163\040
\114\114\103\061\024\060\022\006\003\125\004\003\023\013\107\124
\123\040\122\157\157\164\040\122\063
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\015\002\003\345\270\202\353\040\370\045\047\155\075\146
END
CKA_VALUE MULTILINE_OCTAL
\060\202\002\011\060\202\001\216\240\003\002\001\002\002\015\002
\003\345\270\202\353\040\370\045\047\155\075\146\060\012\006\010
\052\206\110\316\075\004\003\003\060\107\061\013\060\011\006\003
\125\004\006\023\002\125\123\061\042\060\040\006\003\125\004\012
\023\031\107\157\157\147\154\145\040\124\162\165\163\164\040\123
\145\162\166\151\143\145\163\040\114\114\103\061\024\060\022\006
\003\125\004\003\023\013\107\124\123\040\122\157\157\164\040\122
\063\060\036\027\015\061\066\060\066\062\062\060\060\060\060\060
\060\132\027\015\063\066\060\066\062\062\060\060\060\060\060\060
\132\060\107\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\042\060\040\006\003\125\004\012\023\031\107\157\157\147\154
\145\040\124\162\165\163\164\040\123\145\162\166\151\143\145\163
\040\114\114\103\061\024\060\022\006\003\125\004\003\023\013\107
\124\123\040\122\157\157\164\040\122\063\060\166\060\020\006\007
```



\052\206\110\316\075\002\001\006\005\053\201\004\000\042\003\142  
\000\004\037\117\063\207\063\051\212\241\204\336\313\307\041\130  
\101\211\352\126\235\053\113\205\306\035\114\047\274\177\046\121  
\162\157\342\237\326\243\312\314\105\024\106\213\255\357\176\206  
\214\354\261\176\057\377\251\161\235\030\204\105\004\101\125\156  
\053\352\046\177\273\220\001\343\113\031\272\344\124\226\105\011  
\261\325\154\221\104\255\204\023\216\232\214\015\200\014\062\366  
\340\047\243\102\060\100\060\016\006\003\125\035\017\001\001\377  
\004\004\003\002\001\206\060\017\006\003\125\035\023\001\001\377  
\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026  
\004\024\301\361\046\272\240\055\256\205\201\317\323\361\052\022  
\275\270\012\147\375\274\060\012\006\010\052\206\110\316\075\004  
\003\003\003\151\000\060\146\002\061\000\366\341\040\225\024\173  
\124\243\220\026\021\277\204\310\352\157\153\027\236\036\106\230  
\040\233\237\323\015\331\254\323\057\315\174\370\133\056\125\273  
\277\335\222\367\244\014\334\061\341\242\002\061\000\374\227\146  
\146\345\103\026\023\203\335\307\337\057\276\024\070\355\001\316  
\261\027\032\021\165\351\275\003\217\046\176\204\345\311\140\246  
\225\327\124\131\267\347\021\054\211\324\271\356\027

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "GTS Root R3"

# Issuer: CN=GTS Root R3,O=Google Trust Services LLC,C=US

# Serial Number:02:03:e5:b8:82:eb:20:f8:25:27:6d:3d:66

# Subject: CN=GTS Root R3,O=Google Trust Services LLC,C=US

# Not Valid Before: Wed Jun 22 00:00:00 2016

# Not Valid After : Sun Jun 22 00:00:00 2036

# Fingerprint (SHA-256):

34:D8:A7:3E:E2:08:D9:BC:DB:0D:95:65:20:93:4B:4E:40:E6:94:82:59:6E:8B:6F:73:C8:42:6B:01:0A:6F:48

# Fingerprint (SHA1): ED:E5:71:80:2B:C8:92:B9:5B:83:3C:D2:32:68:3F:09:CD:A0:1E:46

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "GTS Root R3"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\355\345\161\200\053\310\222\271\133\203\074\322\062\150\077\011  
\315\240\036\106

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\076\347\235\130\002\224\106\121\224\345\340\042\112\213\347\163

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\107\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\042\060\040\006\003\125\004\012\023\031\107\157\157\147\154\145

```

\040\124\162\165\163\164\040\123\145\162\166\151\143\145\163\040
\114\114\103\061\024\060\022\006\003\125\004\003\023\013\107\124
\123\040\122\157\157\164\040\122\063
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\015\002\003\345\270\202\353\040\370\045\047\155\075\146
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "GTS Root R4"
#
Issuer: CN=GTS Root R4,O=Google Trust Services LLC,C=US
Serial Number:02:03:e5:c0:68:ef:63:1a:9c:72:90:50:52
Subject: CN=GTS Root R4,O=Google Trust Services LLC,C=US
Not Valid Before: Wed Jun 22 00:00:00 2016
Not Valid After : Sun Jun 22 00:00:00 2036
Fingerprint (SHA-256):
34:9D:FA:40:58:C5:E2:63:12:3B:39:8A:E7:95:57:3C:4E:13:13:C8:3F:E6:8F:93:55:6C:D5:E8:03:1B:3C:7D
Fingerprint (SHA1): 77:D3:03:67:B5:E0:0C:15:F6:0C:38:61:DF:7C:E1:3B:92:46:4D:47
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GTS Root R4"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\107\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\042\060\040\006\003\125\004\012\023\031\107\157\157\147\154\145
\040\124\162\165\163\164\040\123\145\162\166\151\143\145\163\040
\114\114\103\061\024\060\022\006\003\125\004\003\023\013\107\124
\123\040\122\157\157\164\040\122\064
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\107\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\042\060\040\006\003\125\004\012\023\031\107\157\157\147\154\145
\040\124\162\165\163\164\040\123\145\162\166\151\143\145\163\040
\114\114\103\061\024\060\022\006\003\125\004\003\023\013\107\124
\123\040\122\157\157\164\040\122\064
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\015\002\003\345\300\150\357\143\032\234\162\220\120\122
END
CKA_VALUE MULTILINE_OCTAL

```

\060\202\002\011\060\202\001\216\240\003\002\001\002\002\015\002  
\003\345\300\150\357\143\032\234\162\220\120\122\060\012\006\010  
\052\206\110\316\075\004\003\003\060\107\061\013\060\011\006\003  
\125\004\006\023\002\125\123\061\042\060\040\006\003\125\004\012  
\023\031\107\157\157\147\154\145\040\124\162\165\163\164\040\123  
\145\162\166\151\143\145\163\040\114\114\103\061\024\060\022\006  
\003\125\004\003\023\013\107\124\123\040\122\157\157\164\040\122  
\064\060\036\027\015\061\066\060\066\062\062\060\060\060\060  
\060\132\027\015\063\066\060\066\062\062\060\060\060\060\060  
\132\060\107\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\042\060\040\006\003\125\004\012\023\031\107\157\157\147\154  
\145\040\124\162\165\163\164\040\123\145\162\166\151\143\145\163  
\040\114\114\103\061\024\060\022\006\003\125\004\003\023\013\107  
\124\123\040\122\157\157\164\040\122\064\060\166\060\020\006\007  
\052\206\110\316\075\002\001\006\005\053\201\004\000\042\003\142  
\000\004\363\164\163\247\150\213\140\256\103\270\065\305\201\060  
\173\113\111\235\373\301\141\316\346\336\106\275\153\325\141\030  
\065\256\100\335\163\367\211\221\060\132\353\074\356\205\174\242  
\100\166\073\251\306\270\107\330\052\347\222\221\152\163\351\261  
\162\071\237\051\237\242\230\323\137\136\130\206\145\017\241\204  
\145\006\321\334\213\311\307\163\310\214\152\057\345\304\253\321  
\035\212\243\102\060\100\060\016\006\003\125\035\017\001\001\377  
\004\004\003\002\001\206\060\017\006\003\125\035\023\001\001\377  
\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026  
\004\024\200\114\326\353\164\377\111\066\243\325\330\374\265\076  
\305\152\360\224\035\214\060\012\006\010\052\206\110\316\075\004  
\003\003\003\151\000\060\146\002\061\000\350\100\377\203\336\003  
\364\237\256\035\172\247\056\271\257\117\366\203\035\016\055\205  
\001\035\321\331\152\354\017\302\257\307\136\126\136\134\325\034  
\130\042\050\013\367\060\266\057\261\174\002\061\000\360\141\074  
\247\364\240\202\343\041\325\204\035\163\206\234\055\257\312\064  
\233\361\237\271\043\066\342\274\140\003\235\200\263\232\126\310  
\341\342\273\024\171\312\315\041\324\224\265\111\103

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "GTS Root R4"

# Issuer: CN=GTS Root R4,O=Google Trust Services LLC,C=US

# Serial Number:02:03:e5:c0:68:ef:63:1a:9c:72:90:50:52

# Subject: CN=GTS Root R4,O=Google Trust Services LLC,C=US

# Not Valid Before: Wed Jun 22 00:00:00 2016

# Not Valid After : Sun Jun 22 00:00:00 2036

# Fingerprint (SHA-256):

34:9D:FA:40:58:C5:E2:63:12:3B:39:8A:E7:95:57:3C:4E:13:13:C8:3F:E6:8F:93:55:6C:D5:E8:03:1B:3C:7D

# Fingerprint (SHA1): 77:D3:03:67:B5:E0:0C:15:F6:0C:38:61:DF:7C:E1:3B:92:46:4D:47

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

```

CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GTS Root R4"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\167\323\003\147\265\340\014\025\366\014\070\141\337\174\341\073
\222\106\115\107
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\103\226\203\167\031\115\166\263\235\145\122\344\035\042\245\350
END
CKA_ISSUER MULTILINE_OCTAL
\060\107\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\042\060\040\006\003\125\004\012\023\031\107\157\157\147\154\145
\040\124\162\165\163\164\040\123\145\162\166\151\143\145\163\040
\114\114\103\061\024\060\022\006\003\125\004\003\023\013\107\124
\123\040\122\157\157\164\040\122\064
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\015\002\003\345\300\150\357\143\032\234\162\220\120\122
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
Certificate "Telia Root CA v2"
#
Issuer: CN=Telia Root CA v2,O=Telia Finland Oyj,C=FI
Serial Number:01:67:5f:27:d6:fe:7a:e3:e4:ac:be:09:5b:05:9e
Subject: CN=Telia Root CA v2,O=Telia Finland Oyj,C=FI
Not Valid Before: Thu Nov 29 11:55:54 2018
Not Valid After : Sun Nov 29 11:55:54 2043
Fingerprint (SHA-256):
24:2B:69:74:2F:CB:1E:5B:2A:BF:98:89:8B:94:57:21:87:54:4E:5B:4D:99:11:78:65:73:62:1F:6A:74:B8:2C
Fingerprint (SHA1): B9:99:CD:D1:73:50:8A:C4:47:05:08:9C:8C:88:FB:BE:A0:2B:40:CD
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Telia Root CA v2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\104\061\013\060\011\006\003\125\004\006\023\002\106\111\061
\032\060\030\006\003\125\004\012\014\021\124\145\154\151\141\040
\106\151\156\154\141\156\144\040\117\171\152\061\031\060\027\006
\003\125\004\003\014\020\124\145\154\151\141\040\122\157\157\164

```

\040\103\101\040\166\062

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\104\061\013\060\011\006\003\125\004\006\023\002\106\111\061  
\032\060\030\006\003\125\004\012\014\021\124\145\154\151\141\040  
\106\151\156\154\141\156\144\040\117\171\152\061\031\060\027\006  
\003\125\004\003\014\020\124\145\154\151\141\040\122\157\157\164  
\040\103\101\040\166\062

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\017\001\147\137\047\326\376\172\343\344\254\276\011\133\005  
\236

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\164\060\202\003\134\240\003\002\001\002\002\017\001  
\147\137\047\326\376\172\343\344\254\276\011\133\005\236\060\015  
\006\011\052\206\110\206\367\015\001\001\013\005\000\060\104\061  
\013\060\011\006\003\125\004\006\023\002\106\111\061\032\060\030  
\006\003\125\004\012\014\021\124\145\154\151\141\040\106\151\156  
\154\141\156\144\040\117\171\152\061\031\060\027\006\003\125\004  
\003\014\020\124\145\154\151\141\040\122\157\157\164\040\103\101  
\040\166\062\060\036\027\015\061\070\061\061\062\071\061\061\065  
\065\065\064\132\027\015\064\063\061\061\062\071\061\061\065\065  
\065\064\132\060\104\061\013\060\011\006\003\125\004\006\023\002  
\106\111\061\032\060\030\006\003\125\004\012\014\021\124\145\154  
\151\141\040\106\151\156\154\141\156\144\040\117\171\152\061\031  
\060\027\006\003\125\004\003\014\020\124\145\154\151\141\040\122  
\157\157\164\040\103\101\040\166\062\060\202\002\042\060\015\006  
\011\052\206\110\206\367\015\001\001\001\005\000\003\202\002\017  
\000\060\202\002\012\002\202\002\001\000\262\320\077\007\274\342  
\173\320\153\231\370\342\167\151\347\316\235\244\003\274\202\155  
\241\376\201\145\037\114\047\254\216\000\272\026\173\353\060\152  
\000\300\263\164\150\176\262\257\307\325\142\263\172\077\120\312  
\214\066\104\044\143\322\066\351\014\205\366\103\166\325\114\241  
\140\162\147\342\050\063\245\313\061\270\072\042\043\064\270\175  
\275\126\042\100\235\352\364\173\003\255\150\374\262\201\117\230  
\320\164\352\215\345\175\315\143\303\243\366\336\222\302\130\031  
\340\226\273\305\304\251\075\245\164\226\376\257\371\211\252\275  
\225\027\124\330\170\104\361\014\167\025\222\340\230\102\247\244  
\326\252\040\222\315\301\240\263\226\262\072\204\102\215\175\325  
\225\344\326\333\351\142\304\130\263\171\305\214\323\065\063\203  
\237\165\241\122\047\141\070\361\131\075\216\120\340\275\171\074  
\347\154\226\376\136\331\002\145\264\216\134\320\021\064\337\135  
\277\122\247\201\000\303\177\231\105\231\025\325\027\310\012\123  
\354\143\363\231\175\314\151\022\206\302\027\360\001\236\277\204  
\274\321\122\313\033\222\146\316\244\123\345\241\277\304\333\011  
\326\346\211\126\053\310\343\174\336\343\377\211\345\065\156\050

\350\154\013\043\121\251\045\005\353\110\370\335\261\312\372\154  
\010\121\357\267\030\154\104\312\046\341\163\306\211\006\201\345  
\212\254\260\342\051\306\271\044\263\153\104\021\364\245\103\302  
\114\103\345\160\066\214\266\063\127\172\225\056\202\240\364\134  
\020\263\141\203\366\002\005\206\056\174\055\154\334\003\106\156  
\065\223\325\172\225\057\336\040\330\133\176\224\220\004\152\272  
\131\075\004\005\165\235\067\242\016\056\075\353\301\244\122\203  
\376\320\153\324\146\216\334\306\351\022\116\035\052\127\252\020  
\274\174\136\202\175\246\246\311\362\055\271\365\027\047\255\321  
\016\211\124\053\225\372\300\255\035\230\024\170\063\102\206\012  
\251\163\265\373\164\015\267\033\060\031\304\132\016\034\047\267  
\332\030\320\377\212\310\005\272\361\252\034\242\067\267\346\110  
\244\106\054\224\352\250\166\142\107\213\020\123\007\110\127\154  
\342\222\115\266\256\005\313\334\301\112\136\217\254\075\031\116  
\302\355\140\165\053\333\301\312\102\325\002\003\001\000\001\243  
\143\060\141\060\037\006\003\125\035\043\004\030\060\026\200\024  
\162\254\344\063\171\252\105\207\366\375\254\035\236\326\307\057  
\206\330\044\071\060\035\006\003\125\035\016\004\026\004\024\162  
\254\344\063\171\252\105\207\366\375\254\035\236\326\307\057\206  
\330\044\071\060\016\006\003\125\035\017\001\001\377\004\004\003  
\002\001\006\060\017\006\003\125\035\023\001\001\377\004\005\060  
\003\001\001\377\060\015\006\011\052\206\110\206\367\015\001\001  
\013\005\000\003\202\002\001\000\240\073\131\247\011\224\076\066  
\204\322\176\057\071\245\226\227\372\021\255\374\147\363\161\011  
\362\262\211\204\147\104\257\271\357\355\226\354\234\144\333\062  
\060\157\147\232\254\176\137\262\253\001\066\176\201\372\344\204  
\136\322\254\066\340\153\142\305\175\113\016\202\155\322\166\142  
\321\376\227\370\237\060\174\030\371\264\122\167\202\035\166\333  
\323\035\251\360\301\232\000\275\155\165\330\175\347\372\307\070  
\243\234\160\350\106\171\003\257\056\164\333\165\370\156\123\014  
\003\310\231\032\211\065\031\074\323\311\124\174\250\360\054\346  
\156\007\171\157\152\341\346\352\221\202\151\012\035\303\176\131  
\242\236\153\106\025\230\133\323\257\106\035\142\310\316\200\122  
\111\021\077\311\004\022\303\023\174\077\073\212\226\333\074\240  
\036\012\264\213\124\262\044\147\015\357\202\313\276\074\175\321  
\342\177\256\026\326\126\130\271\332\040\261\203\025\241\357\212  
\115\062\157\101\057\023\122\202\224\327\032\301\170\242\121\335  
\053\160\155\267\032\371\367\260\340\147\227\126\333\174\141\123  
\011\003\050\002\100\307\263\330\375\234\160\152\306\050\303\205  
\351\342\355\032\223\240\336\113\230\242\204\076\005\167\001\226  
\075\373\264\040\017\234\162\002\172\022\057\325\243\272\121\170  
\257\052\053\104\145\116\265\375\012\350\301\315\171\207\141\053  
\336\200\127\105\277\147\361\233\221\136\245\244\354\131\110\020  
\015\070\307\260\372\303\104\155\004\365\170\120\034\222\226\133  
\332\365\270\056\272\133\317\345\360\152\235\113\057\130\163\055  
\117\055\304\034\076\364\263\077\253\025\016\073\031\101\212\244  
\301\127\022\146\161\114\372\123\343\127\353\142\225\011\236\124  
\335\321\302\074\127\074\275\070\255\230\144\267\270\003\232\123

```
\126\140\135\263\330\102\033\134\113\022\212\034\353\353\175\306
\172\151\307\047\177\244\370\213\362\344\224\146\207\113\351\224
\007\011\022\171\212\262\353\164\004\334\316\364\104\131\340\026
\312\305\054\130\327\074\173\317\142\206\152\120\175\065\066\146
\247\373\067\347\050\307\330\320\255\245\151\224\217\350\301\337
\044\370\033\007\061\207\201\330\135\366\350\050\330\112\122\200
\254\023\356\120\024\036\230\307
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

# Trust for "Telia Root CA v2"

# Issuer: CN=Telia Root CA v2,O=Telia Finland Oyj,C=FI

# Serial Number:01:67:5f:27:d6:fe:7a:e3:e4:ac:be:09:5b:05:9e

# Subject: CN=Telia Root CA v2,O=Telia Finland Oyj,C=FI

# Not Valid Before: Thu Nov 29 11:55:54 2018

# Not Valid After : Sun Nov 29 11:55:54 2043

# Fingerprint (SHA-256):

24:2B:69:74:2F:CB:1E:5B:2A:BF:98:89:8B:94:57:21:87:54:4E:5B:4D:99:11:78:65:73:62:1F:6A:74:B8:2C

# Fingerprint (SHA1): B9:99:CD:D1:73:50:8A:C4:47:05:08:9C:8C:88:FB:BE:A0:2B:40:CD

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "Telia Root CA v2"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\271\231\315\321\163\120\212\304\107\005\010\234\214\210\373\276
```

```
\240\053\100\315
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\016\217\254\252\202\337\205\261\364\334\020\034\374\231\331\110
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\104\061\013\060\011\006\003\125\004\006\023\002\106\111\061
```

```
\032\060\030\006\003\125\004\012\014\021\124\145\154\151\141\040
```

```
\106\151\156\154\141\156\144\040\117\171\152\061\031\060\027\006
```

```
\003\125\004\003\014\020\124\145\154\151\141\040\122\157\157\164
```

```
\040\103\101\040\166\062
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\017\001\147\137\047\326\376\172\343\344\254\276\011\133\005
```

```
\236
```

END

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

```
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

```
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

```
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
#
Certificate "D-TRUST BR Root CA 1 2020"
#
Issuer: CN=D-TRUST BR Root CA 1 2020,O=D-Trust GmbH,C=DE
Serial Number:7c:c9:8f:2b:84:d7:df:ea:0f:c9:65:9a:d3:4b:4d:96
Subject: CN=D-TRUST BR Root CA 1 2020,O=D-Trust GmbH,C=DE
Not Valid Before: Tue Feb 11 09:45:00 2020
Not Valid After : Sun Feb 11 09:44:59 2035
Fingerprint (SHA-256):
E5:9A:AA:81:60:09:C2:2B:FF:5B:25:BA:D3:7D:F3:06:F0:49:79:7C:1F:81:D8:5A:B0:89:E6:57:BD:8F:00:44
Fingerprint (SHA1): 1F:5B:98:F0:E3:B5:F7:74:3C:ED:E6:B0:36:7D:32:CD:F4:09:41:67
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "D-TRUST BR Root CA 1 2020"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\110\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\025\060\023\006\003\125\004\012\023\014\104\055\124\162\165\163
\164\040\107\155\142\110\061\042\060\040\006\003\125\004\003\023
\031\104\055\124\122\125\123\124\040\102\122\040\122\157\157\164
\040\103\101\040\061\040\062\060\062\060
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\110\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\025\060\023\006\003\125\004\012\023\014\104\055\124\162\165\163
\164\040\107\155\142\110\061\042\060\040\006\003\125\004\003\023
\031\104\055\124\122\125\123\124\040\102\122\040\122\157\157\164
\040\103\101\040\061\040\062\060\062\060
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\174\311\217\053\204\327\337\352\017\311\145\232\323\113
\115\226
END
CKA_VALUE MULTILINE_OCTAL
\060\202\002\333\060\202\002\140\240\003\002\001\002\002\020\174
\311\217\053\204\327\337\352\017\311\145\232\323\113\115\226\060
\012\006\010\052\206\110\316\075\004\003\003\060\110\061\013\060
\011\006\003\125\004\006\023\002\104\105\061\025\060\023\006\003
\125\004\012\023\014\104\055\124\162\165\163\164\040\107\155\142
\110\061\042\060\040\006\003\125\004\003\023\031\104\055\124\122
\125\123\124\040\102\122\040\122\157\157\164\040\103\101\040\061
\040\062\060\062\060\060\036\027\015\062\060\060\062\061\061\060
\071\064\065\060\060\132\027\015\063\065\060\062\061\061\060\071
\064\064\065\071\132\060\110\061\013\060\011\006\003\125\004\006
```



\023\002\104\105\061\025\060\023\006\003\125\004\012\023\014\104  
\055\124\162\165\163\164\040\107\155\142\110\061\042\060\040\006  
\003\125\004\003\023\031\104\055\124\122\125\123\124\040\102\122  
\040\122\157\157\164\040\103\101\040\061\040\062\060\062\060\060  
\166\060\020\006\007\052\206\110\316\075\002\001\006\005\053\201  
\004\000\042\003\142\000\004\306\313\307\050\321\373\204\365\232  
\357\102\024\040\341\103\153\156\165\255\374\053\003\204\324\166  
\223\045\327\131\073\101\145\153\036\346\064\052\273\164\366\022  
\316\350\155\347\253\344\074\116\077\104\010\213\315\026\161\313  
\277\222\231\364\244\327\074\120\124\122\220\205\203\170\224\147  
\147\243\034\011\031\075\165\064\205\336\355\140\175\307\014\264  
\101\122\271\156\345\356\102\243\202\001\015\060\202\001\011\060  
\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377  
\060\035\006\003\125\035\016\004\026\004\024\163\221\020\253\377  
\125\263\132\174\011\045\325\262\272\010\240\153\253\037\155\060  
\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060  
\201\306\006\003\125\035\037\004\201\276\060\201\273\060\076\240  
\074\240\072\206\070\150\164\164\160\072\057\057\143\162\154\056  
\144\055\164\162\165\163\164\056\156\145\164\057\143\162\154\057  
\144\055\164\162\165\163\164\137\142\162\137\162\157\157\164\137  
\143\141\137\061\137\062\060\062\060\056\143\162\154\060\171\240  
\167\240\165\206\163\154\144\141\160\072\057\057\144\151\162\145  
\143\164\157\162\171\056\144\055\164\162\165\163\164\056\156\145  
\164\057\103\116\075\104\055\124\122\125\123\124\045\062\060\102  
\122\045\062\060\122\157\157\164\045\062\060\103\101\045\062\060  
\061\045\062\060\062\060\062\060\054\117\075\104\055\124\162\165  
\163\164\045\062\060\107\155\142\110\054\103\075\104\105\077\143  
\145\162\164\151\146\151\143\141\164\145\162\145\166\157\143\141  
\164\151\157\156\154\151\163\164\060\012\006\010\052\206\110\316  
\075\004\003\003\003\151\000\060\146\002\061\000\224\220\055\023  
\372\341\143\370\141\143\350\255\205\170\124\221\234\270\223\070  
\076\032\101\332\100\026\123\102\010\312\057\216\361\076\201\126  
\300\252\330\355\030\304\260\256\364\076\372\046\002\061\000\363  
\050\342\306\333\053\231\373\267\121\270\044\243\244\224\172\032  
\077\346\066\342\003\127\063\212\060\313\202\307\326\024\021\325  
\165\143\133\024\225\234\037\001\317\330\325\162\247\017\073

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "D-TRUST BR Root CA 1 2020"  
# Issuer: CN=D-TRUST BR Root CA 1 2020,O=D-Trust GmbH,C=DE  
# Serial Number:7c:c9:8f:2b:84:d7:df:ea:0f:c9:65:9a:d3:4b:4d:96  
# Subject: CN=D-TRUST BR Root CA 1 2020,O=D-Trust GmbH,C=DE  
# Not Valid Before: Tue Feb 11 09:45:00 2020  
# Not Valid After : Sun Feb 11 09:44:59 2035  
# Fingerprint (SHA-256):

E5:9A:AA:81:60:09:C2:2B:FF:5B:25:BA:D3:7D:F3:06:F0:49:79:7C:1F:81:D8:5A:B0:89:E6:57:BD:8F:00:44

# Fingerprint (SHA1): 1F:5B:98:F0:E3:B5:F7:74:3C:ED:E6:B0:36:7D:32:CD:F4:09:41:67

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "D-TRUST BR Root CA 1 2020"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\037\133\230\360\343\265\367\164\074\355\346\260\066\175\062\315  
\364\011\101\147

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\265\252\113\325\355\367\343\125\056\217\162\012\363\165\270\355

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\110\061\013\060\011\006\003\125\004\006\023\002\104\105\061  
\025\060\023\006\003\125\004\012\023\014\104\055\124\162\165\163  
\164\040\107\155\142\110\061\042\060\040\006\003\125\004\003\023  
\031\104\055\124\122\125\123\124\040\102\122\040\122\157\157\164  
\040\103\101\040\061\040\062\060\062\060

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\174\311\217\053\204\327\337\352\017\311\145\232\323\113  
\115\226

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "D-TRUST EV Root CA 1 2020"

#

# Issuer: CN=D-TRUST EV Root CA 1 2020,O=D-Trust GmbH,C=DE

# Serial Number:5f:02:41:d7:7a:87:7c:4c:03:a3:ac:96:8d:fb:ff:d0

# Subject: CN=D-TRUST EV Root CA 1 2020,O=D-Trust GmbH,C=DE

# Not Valid Before: Tue Feb 11 10:00:00 2020

# Not Valid After : Sun Feb 11 09:59:59 2035

# Fingerprint (SHA-256):

08:17:0D:1A:A3:64:53:90:1A:2F:95:92:45:E3:47:DB:0C:8D:37:AB:AA:BC:56:B8:1A:A1:00:DC:95:89:70:DB

# Fingerprint (SHA1): 61:DB:8C:21:59:69:03:90:D8:7C:9C:12:86:54:CF:9D:3D:F4:DD:07

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "D-TRUST EV Root CA 1 2020"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\110\061\013\060\011\006\003\125\004\006\023\002\104\105\061  
\025\060\023\006\003\125\004\012\023\014\104\055\124\162\165\163  
\164\040\107\155\142\110\061\042\060\040\006\003\125\004\003\023  
\031\104\055\124\122\125\123\124\040\105\126\040\122\157\157\164  
\040\103\101\040\061\040\062\060\062\060

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\110\061\013\060\011\006\003\125\004\006\023\002\104\105\061  
\025\060\023\006\003\125\004\012\023\014\104\055\124\162\165\163  
\164\040\107\155\142\110\061\042\060\040\006\003\125\004\003\023  
\031\104\055\124\122\125\123\124\040\105\126\040\122\157\157\164  
\040\103\101\040\061\040\062\060\062\060

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\137\002\101\327\172\207\174\114\003\243\254\226\215\373  
\377\320

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\002\333\060\202\002\140\240\003\002\001\002\002\020\137  
\002\101\327\172\207\174\114\003\243\254\226\215\373\377\320\060  
\012\006\010\052\206\110\316\075\004\003\003\060\110\061\013\060  
\011\006\003\125\004\006\023\002\104\105\061\025\060\023\006\003  
\125\004\012\023\014\104\055\124\162\165\163\164\040\107\155\142  
\110\061\042\060\040\006\003\125\004\003\023\031\104\055\124\122  
\125\123\124\040\105\126\040\122\157\157\164\040\103\101\040\061  
\040\062\060\062\060\060\036\027\015\062\060\060\062\061\061\061  
\060\060\060\060\060\132\027\015\063\065\060\062\061\061\060\071  
\065\071\065\071\132\060\110\061\013\060\011\006\003\125\004\006  
\023\002\104\105\061\025\060\023\006\003\125\004\012\023\014\104  
\055\124\162\165\163\164\040\107\155\142\110\061\042\060\040\006  
\003\125\004\003\023\031\104\055\124\122\125\123\124\040\105\126  
\040\122\157\157\164\040\103\101\040\061\040\062\060\062\060\060  
\166\060\020\006\007\052\206\110\316\075\002\001\006\005\053\201  
\004\000\042\003\142\000\004\361\013\335\206\103\040\031\337\227  
\205\350\042\112\233\317\235\230\277\264\005\046\311\313\343\246  
\322\217\305\236\170\173\061\211\251\211\255\047\074\145\020\202  
\374\337\303\235\116\360\063\043\304\322\062\365\034\260\337\063  
\027\135\305\360\261\212\371\357\271\267\024\312\051\112\302\017  
\251\177\165\145\111\052\060\147\364\144\367\326\032\167\332\303  
\302\227\141\102\173\111\255\243\202\001\015\060\202\001\011\060  
\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377  
\060\035\006\003\125\035\016\004\026\004\024\177\020\001\026\067  
\072\244\050\344\120\370\244\367\354\153\062\266\376\351\213\060  
\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060  
\201\306\006\003\125\035\037\004\201\276\060\201\273\060\076\240  
\074\240\072\206\070\150\164\164\160\072\057\057\143\162\154\056  
\144\055\164\162\165\163\164\056\156\145\164\057\143\162\154\057

\144\055\164\162\165\163\164\137\145\166\137\162\157\157\164\137  
\143\141\137\061\137\062\060\062\060\056\143\162\154\060\171\240  
\167\240\165\206\163\154\144\141\160\072\057\057\144\151\162\145  
\143\164\157\162\171\056\144\055\164\162\165\163\164\056\156\145  
\164\057\103\116\075\104\055\124\122\125\123\124\045\062\060\105  
\126\045\062\060\122\157\157\164\045\062\060\103\101\045\062\060  
\061\045\062\060\062\060\062\060\054\117\075\104\055\124\162\165  
\163\164\045\062\060\107\155\142\110\054\103\075\104\105\077\143  
\145\162\164\151\146\151\143\141\164\145\162\145\166\157\143\141  
\164\151\157\156\154\151\163\164\060\012\006\010\052\206\110\316  
\075\004\003\003\003\151\000\060\146\002\061\000\312\074\306\052  
\165\302\136\165\142\071\066\000\140\132\213\301\223\231\314\331  
\333\101\073\073\207\231\027\073\325\314\117\312\042\367\240\200  
\313\371\264\261\033\126\365\162\322\374\031\321\002\061\000\221  
\367\060\223\077\020\106\053\161\244\320\073\104\233\300\051\002  
\005\262\101\167\121\363\171\132\236\216\024\240\116\102\322\133  
\201\363\064\152\003\347\042\070\120\133\355\031\117\103\026

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "D-TRUST EV Root CA 1 2020"

# Issuer: CN=D-TRUST EV Root CA 1 2020,O=D-Trust GmbH,C=DE

# Serial Number:5f:02:41:d7:7a:87:7c:4c:03:a3:ac:96:8d:fb:ff:d0

# Subject: CN=D-TRUST EV Root CA 1 2020,O=D-Trust GmbH,C=DE

# Not Valid Before: Tue Feb 11 10:00:00 2020

# Not Valid After : Sun Feb 11 09:59:59 2035

# Fingerprint (SHA-256):

08:17:0D:1A:A3:64:53:90:1A:2F:95:92:45:E3:47:DB:0C:8D:37:AB:AA:BC:56:B8:1A:A1:00:DC:95:89:70:DB

# Fingerprint (SHA1): 61:DB:8C:21:59:69:03:90:D8:7C:9C:12:86:54:CF:9D:3D:F4:DD:07

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "D-TRUST EV Root CA 1 2020"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\141\333\214\041\131\151\003\220\330\174\234\022\206\124\317\235  
\075\364\335\007

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\214\055\235\160\237\110\231\021\006\021\373\351\313\060\300\156

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\110\061\013\060\011\006\003\125\004\006\023\002\104\105\061  
\025\060\023\006\003\125\004\012\023\014\104\055\124\162\165\163  
\164\040\107\155\142\110\061\042\060\040\006\003\125\004\003\023  
\031\104\055\124\122\125\123\124\040\105\126\040\122\157\157\164

```
\040\103\101\040\061\040\062\060\062\060
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\137\002\101\327\172\207\174\114\003\243\254\226\215\373
\377\320
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
Certificate "CAEDICOM Root"
Issuer: C=ES,O=EDICOM,CN=CAEDICOM Root
Serial Number:fb:71:26:58:ad:99:e5
Subject: C=ES,O=EDICOM,CN=CAEDICOM Root
Not Valid Before: Wed May 21 11:06:35 2014
Not Valid After: Sun May 21 10:20:00 2034
Fingerprint (MD5): cd:d5:a1:fe:28:31:9c:13:be:d5:c1:e8:cf:56:f0:76
Fingerprint (SHA1): 55:9b:ba:7b:0f:fe:80:d6:d3:82:9b:1f:d0:7a:a4:d3:22:19:47:90
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "CAEDICOM Root"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\066\061\026\060\024\006\003\125\004\003\014\015\103\101\105
\104\111\103\117\115\040\122\157\157\164\061\017\060\015\006\003
\125\004\012\014\006\105\104\111\103\117\115\061\013\060\011\006
\003\125\004\006\023\002\105\123
END
```

```
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\066\061\026\060\024\006\003\125\004\003\014\015\103\101\105
\104\111\103\117\115\040\122\157\157\164\061\017\060\015\006\003
\125\004\012\014\006\105\104\111\103\117\115\061\013\060\011\006
\003\125\004\006\023\002\105\123
END
```

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\000\373\161\046\130\255\231\345
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\121\060\202\003\071\240\003\002\001\002\002\010\000
\373\161\046\130\255\231\345\060\015\006\011\052\206\110\206\367
\015\001\001\013\005\000\060\066\061\026\060\024\006\003\125\004
\003\014\015\103\101\105\104\111\103\117\115\040\122\157\157\164
\061\017\060\015\006\003\125\004\012\014\006\105\104\111\103\117
```

\115\061\013\060\011\006\003\125\004\006\023\002\105\123\060\036  
\027\015\061\064\060\065\062\061\061\061\060\066\063\065\132\027  
\015\063\064\060\065\062\061\061\060\062\060\060\060\132\060\066  
\061\026\060\024\006\003\125\004\003\014\015\103\101\105\104\111  
\103\117\115\040\122\157\157\164\061\017\060\015\006\003\125\004  
\012\014\006\105\104\111\103\117\115\061\013\060\011\006\003\125  
\004\006\023\002\105\123\060\202\002\042\060\015\006\011\052\206  
\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060\202  
\002\012\002\202\002\001\000\333\200\312\350\111\164\307\323\070  
\056\361\305\043\142\374\066\214\057\036\176\071\013\351\006\364  
\125\233\245\230\051\224\355\206\107\062\203\363\305\222\172\005  
\327\051\002\076\026\303\050\177\065\144\051\172\171\273\241\342  
\036\141\024\215\347\000\320\334\242\124\145\212\337\151\271\161  
\107\177\070\070\026\106\247\151\061\021\065\114\341\052\177\377  
\155\117\225\075\343\135\110\115\031\123\010\132\153\041\325\022  
\060\151\227\220\257\055\301\365\177\101\137\111\066\217\115\270  
\036\032\225\137\332\017\157\134\025\065\304\021\274\137\205\233  
\275\255\073\125\136\273\337\316\273\257\134\231\140\335\037\151  
\032\111\110\041\371\011\012\317\162\247\360\362\336\345\170\031  
\276\022\335\315\207\171\101\316\057\105\327\013\221\020\021\004  
\036\022\235\362\070\003\137\026\151\256\240\012\332\300\371\353  
\240\015\030\017\171\136\221\235\344\037\024\234\064\023\031\002  
\104\272\121\303\356\171\262\140\024\243\257\274\110\055\050\070  
\150\001\103\144\312\016\206\203\142\320\212\031\246\047\361\053  
\173\113\051\041\133\232\314\150\102\020\310\113\117\017\043\262  
\210\174\304\134\156\027\160\305\167\257\225\300\045\244\042\012  
\323\174\371\330\162\310\320\055\275\247\350\322\055\213\114\241  
\156\012\374\264\100\063\273\232\153\374\244\352\311\376\340\064  
\210\103\314\306\274\077\165\322\245\251\257\372\227\271\076\267  
\316\124\240\115\300\135\056\301\050\330\143\124\162\270\254\132  
\365\072\373\040\141\006\072\364\240\053\070\253\314\203\014\111  
\324\156\076\155\017\076\163\057\066\346\363\117\263\300\000\321  
\105\111\133\214\366\243\230\035\204\177\231\012\303\352\012\074  
\303\323\044\170\110\147\365\033\073\016\035\016\103\261\004\165  
\301\240\071\166\213\366\331\002\245\035\341\236\133\007\273\066  
\127\112\041\115\371\211\151\264\154\017\327\257\240\025\044\231  
\347\370\327\123\224\354\022\277\244\245\327\355\356\216\065\167  
\167\334\246\177\040\124\222\326\143\326\162\236\115\052\266\217  
\163\363\031\241\304\260\037\346\064\243\013\000\076\227\111\047  
\141\252\252\004\101\063\070\265\120\121\314\066\025\333\037\377  
\275\312\110\203\110\247\263\002\003\001\000\001\243\143\060\141  
\060\035\006\003\125\035\016\004\026\004\024\024\315\052\131\170  
\143\253\141\031\350\270\075\241\340\132\300\165\347\371\313\060  
\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377  
\060\037\006\003\125\035\043\004\030\060\026\200\024\024\315\052  
\131\170\143\253\141\031\350\270\075\241\340\132\300\165\347\371  
\313\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001  
\006\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000

\003\202\002\001\000\075\011\031\000\266\221\002\154\354\016\367  
\341\342\142\260\277\063\015\375\125\022\364\010\232\367\053\055  
\256\367\234\107\330\037\006\001\023\265\216\347\262\202\013\075  
\204\131\103\324\007\330\053\134\020\172\044\054\312\215\350\325  
\243\071\234\061\314\353\340\072\341\325\277\317\307\207\173\140  
\377\107\071\327\243\104\326\010\046\133\317\132\124\354\210\323  
\216\017\171\074\310\243\117\246\302\216\047\360\336\022\256\136  
\031\255\347\042\126\212\130\062\340\371\006\320\251\052\264\065  
\233\014\206\046\121\000\224\107\120\374\245\304\045\141\371\130  
\360\105\160\056\111\166\177\021\326\157\265\371\051\005\341\015  
\303\116\130\037\257\035\354\067\320\112\371\006\006\201\323\333  
\240\226\270\016\221\060\171\346\120\337\210\270\013\251\134\324  
\007\364\311\250\314\175\217\223\143\011\144\000\005\052\150\146  
\103\273\242\273\376\225\256\371\304\245\012\210\142\110\170\045  
\174\052\077\021\144\246\323\042\040\107\235\062\326\362\343\310  
\244\141\164\347\202\302\104\272\240\321\135\137\274\361\104\016  
\203\117\034\120\205\304\351\347\154\374\346\270\125\341\242\032  
\200\267\220\104\247\204\042\227\107\042\336\253\070\067\317\265  
\362\034\076\102\160\273\165\266\145\050\153\313\177\202\065\252  
\366\363\040\170\050\163\007\226\060\160\245\052\161\134\241\171  
\244\026\271\106\075\136\264\000\111\205\211\323\016\337\201\256  
\130\215\130\326\341\305\104\170\056\034\040\273\242\107\227\277  
\166\024\073\251\050\217\237\013\165\322\241\074\355\053\307\216  
\220\241\172\242\231\060\142\374\205\035\065\163\073\363\265\131  
\042\033\315\010\261\014\235\165\152\333\205\073\016\207\237\062  
\117\222\000\001\001\114\111\150\202\200\101\154\371\375\161\275  
\213\364\170\012\140\243\236\261\122\035\300\212\343\236\305\277  
\053\031\152\230\247\261\336\025\120\237\252\224\045\217\251\200  
\202\247\162\272\111\144\011\047\141\053\156\274\043\050\063\135  
\236\156\360\271\275\040\062\214\335\240\013\231\273\264\204\004  
\044\165\051\226\367\247\245\027\270\121\005\353\164\255\121\171  
\226\374\273\373\337\011\055\010\222\104\316\300\322\263\030\307  
\024\042\277\041\361

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "CAEDICOM Root"  
# Issuer: C=ES,O=EDICOM,CN=CAEDICOM Root  
# Serial Number:fb:71:26:58:ad:99:e5  
# Subject: C=ES,O=EDICOM,CN=CAEDICOM Root  
# Not Valid Before: Wed May 21 11:06:35 2014  
# Not Valid After: Sun May 21 10:20:00 2034  
# Fingerprint (MD5): cd:d5:a1:fe:28:31:9c:13:be:d5:c1:e8:cf:56:f0:76  
# Fingerprint (SHA1): 55:9b:ba:7b:0f:fe:80:d6:d3:82:9b:1f:d0:7a:a4:d3:22:19:47:90  
CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

```

CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "CAEDICOM Root"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\125\233\272\173\017\376\200\326\323\202\233\037\320\172\244\323
\042\031\107\220
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\315\325\241\376\050\061\234\023\276\325\301\350\317\126\360\166
END
CKA_ISSUER MULTILINE_OCTAL
\060\066\061\026\060\024\006\003\125\004\003\014\015\103\101\105
\104\111\103\117\115\040\122\157\157\164\061\017\060\015\006\003
\125\004\012\014\006\105\104\111\103\117\115\061\013\060\011\006
\003\125\004\006\023\002\105\123
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\000\373\161\046\130\255\231\345
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "I.CA Root CA/RSA"
Issuer: 2.5.4.5=NTRCZ-26439395,CN=I.CA Root CA/RSA,O=První certifikační autorita\, a.s.,C=CZ
Serial Number:05:f5:e1:00
Subject: 2.5.4.5=NTRCZ-26439395,CN=I.CA Root CA/RSA,O=První certifikační autorita\, a.s.,C=CZ
Not Valid Before: Wed May 27 12:20:00 2015
Not Valid After: Sun May 27 12:20:00 2040
Fingerprint (MD5): 34:ba:8d:c4:33:9a:b5:27:ee:bd:5b:7c:7d:82:97:7f
Fingerprint (SHA1): 9b:09:59:89:81:54:08:1b:f6:a9:0e:9b:9e:58:a4:69:0c:9b:a1:04
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "I.CA Root CA/RSA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\160\061\013\060\011\006\003\125\004\006\023\002\103\132\061
\055\060\053\006\003\125\004\012\014\044\120\162\166\156\303\255
\040\143\145\162\164\151\146\151\153\141\304\215\156\303\255\040
\141\165\164\157\162\151\164\141\054\040\141\056\163\056\061\031
\060\027\006\003\125\004\003\014\020\111\056\103\101\040\122\157
\157\164\040\103\101\057\122\123\101\061\027\060\025\006\003\125
\004\005\023\016\116\124\122\103\132\055\062\066\064\063\071\063

```



\071\065  
END  
CKA\_ID UTF8 "0"  
CKA\_ISSUER MULTILINE\_OCTAL  
\060\160\061\013\060\011\006\003\125\004\006\023\002\103\132\061  
\055\060\053\006\003\125\004\012\014\044\120\162\166\156\303\255  
\040\143\145\162\164\151\146\151\153\141\304\215\156\303\255\040  
\141\165\164\157\162\151\164\141\054\040\141\056\163\056\061\031  
\060\027\006\003\125\004\003\014\020\111\056\103\101\040\122\157  
\157\164\040\103\101\057\122\123\101\061\027\060\025\006\003\125  
\004\005\023\016\116\124\122\103\132\055\062\066\064\063\071\063  
\071\065

END  
CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL  
\002\004\005\365\341\000

END  
CKA\_VALUE MULTILINE\_OCTAL  
\060\202\006\176\060\202\004\146\240\003\002\001\002\002\004\005  
\365\341\000\060\015\006\011\052\206\110\206\367\015\001\001\015  
\005\000\060\160\061\013\060\011\006\003\125\004\006\023\002\103  
\132\061\055\060\053\006\003\125\004\012\014\044\120\162\166\156  
\303\255\040\143\145\162\164\151\146\151\153\141\304\215\156\303  
\255\040\141\165\164\157\162\151\164\141\054\040\141\056\163\056  
\061\031\060\027\006\003\125\004\003\014\020\111\056\103\101\040  
\122\157\157\164\040\103\101\057\122\123\101\061\027\060\025\006  
\003\125\004\005\023\016\116\124\122\103\132\055\062\066\064\063  
\071\063\071\065\060\036\027\015\061\065\060\065\062\067\061\062  
\062\060\060\060\132\027\015\064\060\060\065\062\067\061\062\062  
\060\060\060\132\060\160\061\013\060\011\006\003\125\004\006\023  
\002\103\132\061\055\060\053\006\003\125\004\012\014\044\120\162  
\166\156\303\255\040\143\145\162\164\151\146\151\153\141\304\215  
\156\303\255\040\141\165\164\157\162\151\164\141\054\040\141\056  
\163\056\061\031\060\027\006\003\125\004\003\014\020\111\056\103  
\101\040\122\157\157\164\040\103\101\057\122\123\101\061\027\060  
\025\006\003\125\004\005\023\016\116\124\122\103\132\055\062\066  
\064\063\071\063\071\065\060\202\002\042\060\015\006\011\052\206  
\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060\202  
\002\012\002\202\002\001\000\252\077\125\265\211\257\166\024\006  
\052\144\046\224\070\017\137\366\334\004\157\061\105\365\012\375  
\073\177\233\162\157\370\100\174\376\135\375\064\231\005\070\224  
\111\272\261\360\275\370\231\134\300\121\372\252\015\373\346\161  
\025\205\143\021\052\167\006\221\222\006\210\263\374\024\341\231  
\106\264\051\202\256\204\203\356\265\046\207\156\370\213\125\104  
\235\100\330\377\052\132\252\350\177\322\145\341\024\107\302\174  
\061\375\165\141\012\033\214\200\112\236\264\342\056\024\107\061  
\356\274\005\121\256\246\176\317\021\270\305\110\275\005\124\302  
\204\344\247\150\153\370\270\372\176\050\311\271\317\344\041\117  
\145\311\210\150\240\070\331\165\245\021\073\114\034\156\113\036

\324\206\154\301\255\005\107\323\054\224\015\314\207\055\032\055  
\303\326\314\336\204\376\354\153\300\341\043\023\241\323\234\030  
\176\340\162\327\134\125\274\114\263\100\061\033\234\100\315\232  
\353\200\016\161\256\327\142\156\132\026\117\037\366\145\105\321  
\237\172\205\101\031\302\172\072\316\041\222\344\224\160\114\273  
\250\101\306\304\273\065\315\365\072\236\143\251\215\240\152\321  
\040\104\252\052\266\110\245\162\303\316\236\344\130\110\107\011  
\177\002\101\363\015\034\155\011\170\360\327\024\321\240\125\374  
\021\326\132\032\000\171\345\073\346\010\313\122\236\244\011\253  
\153\347\154\234\052\057\042\175\373\271\120\262\336\120\323\057  
\014\162\271\326\263\267\263\010\346\353\173\254\364\264\305\366  
\301\062\037\247\031\041\365\334\136\067\252\307\037\123\233\103  
\076\346\236\237\332\015\327\126\242\017\123\151\055\125\277\353  
\206\170\021\277\246\327\132\115\363\016\223\163\352\377\016\320  
\347\217\361\310\263\360\330\030\163\154\245\162\210\361\160\114  
\107\124\266\233\132\321\274\046\067\215\030\337\233\153\056\333  
\013\045\263\212\262\343\255\006\134\155\273\175\027\003\007\001  
\212\060\227\211\164\155\112\224\167\056\353\356\317\260\036\265  
\352\166\364\265\024\070\225\327\325\331\057\077\262\244\046\314  
\115\243\134\215\011\363\136\014\205\062\316\126\154\002\010\361  
\113\243\253\277\310\124\240\005\205\164\344\165\035\172\274\234  
\073\140\075\152\375\031\221\002\003\001\000\001\243\202\001\036  
\060\202\001\032\060\016\006\003\125\035\017\001\001\377\004\004  
\003\002\001\006\060\017\006\003\125\035\023\001\001\377\004\005  
\060\003\001\001\377\060\035\006\003\125\035\016\004\026\004\024  
\166\271\003\110\373\325\030\241\241\067\240\355\314\150\202\114  
\122\064\066\015\060\201\327\006\003\125\035\040\004\201\317\060  
\201\314\060\201\311\006\004\125\035\040\000\060\201\300\060\201  
\275\006\010\053\006\001\005\005\007\002\002\060\201\260\032\201  
\255\124\145\156\164\157\040\153\166\141\154\151\146\151\153\157  
\166\141\156\171\040\163\171\163\164\145\155\157\166\171\040\143  
\145\162\164\151\146\151\153\141\164\040\142\171\154\040\166\171  
\144\141\156\040\160\157\144\154\145\040\172\141\153\157\156\141  
\040\062\062\067\057\062\060\060\060\040\123\142\056\040\166\040  
\160\154\141\164\156\145\155\040\172\156\145\156\151\057\124\150  
\151\163\040\161\165\141\154\151\146\151\145\144\040\163\171\163  
\164\145\155\040\143\145\162\164\151\146\151\143\141\164\145\040  
\167\141\163\040\151\163\163\165\145\144\040\141\143\143\157\162  
\144\151\156\147\040\164\157\040\101\143\164\040\116\157\056\040  
\062\062\067\057\062\060\060\060\040\103\157\154\154\056\060\015  
\006\011\052\206\110\206\367\015\001\001\015\005\000\003\202\002  
\001\000\031\124\002\045\203\333\042\226\213\035\225\236\231\333  
\064\316\223\320\037\056\173\134\140\044\152\014\327\205\104\170  
\037\034\111\362\024\370\203\124\031\246\235\062\146\270\043\246  
\073\206\052\237\066\374\027\374\120\017\140\306\067\375\044\250  
\367\171\247\216\277\330\007\025\124\136\122\014\276\370\246\330  
\310\101\104\361\366\023\334\203\031\133\257\335\144\367\063\026  
\207\017\025\132\361\144\274\324\347\125\077\062\070\211\232\363

\314\110\305\154\061\161\222\232\046\027\302\174\107\002\155\065  
\047\237\363\032\341\252\035\015\164\021\251\223\174\101\250\157  
\273\216\234\305\001\344\163\366\272\120\056\346\020\324\274\157  
\023\232\070\271\151\106\245\006\326\362\114\154\067\253\074\370  
\333\032\306\125\360\310\370\035\041\156\057\000\152\261\342\155  
\132\004\055\175\335\011\117\366\357\024\057\300\022\352\011\031  
\053\032\312\240\161\233\261\072\062\274\377\103\030\363\175\057  
\365\056\210\351\121\266\361\111\220\114\377\046\307\303\131\335  
\164\137\301\120\135\070\134\235\150\125\151\152\264\100\167\311  
\137\062\051\110\124\223\301\263\041\043\166\241\125\060\151\043  
\077\061\111\304\241\315\073\166\131\225\132\202\264\255\161\265  
\276\246\221\314\200\025\112\057\316\224\256\030\125\111\165\040  
\104\270\363\001\233\301\170\054\216\020\114\247\144\255\255\072  
\353\114\035\126\056\177\224\324\036\320\012\325\311\124\201\016  
\036\376\367\224\371\141\072\077\065\356\323\140\311\373\110\262  
\156\302\331\276\172\156\230\005\160\000\243\321\027\307\306\064  
\257\154\365\115\217\135\122\014\335\200\233\172\155\347\230\343  
\071\205\134\077\213\314\104\242\100\066\062\223\022\126\220\002  
\236\076\131\150\002\037\126\210\036\257\301\376\017\173\125\215  
\227\331\273\246\223\107\272\174\370\107\266\071\327\214\362\100  
\154\207\234\014\376\055\335\334\161\374\016\221\010\244\103\075  
\212\127\335\335\007\353\247\227\121\320\272\204\231\255\213\171  
\376\311\004\220\203\023\053\351\227\015\145\211\362\021\055\067  
\216\113\270\273\322\172\071\052\305\334\320\135\015\335\004\047  
\230\237\130\375\216\206\273\005\177\360\355\067\222\220\335\234  
\275\374

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "I.CA Root CA/RSA"

# Issuer: 2.5.4.5=NTRCZ-26439395,CN=I.CA Root CA/RSA,O=První certifikační autorita, a.s.,C=CZ

# Serial Number:05:f5:e1:00

# Subject: 2.5.4.5=NTRCZ-26439395,CN=I.CA Root CA/RSA,O=První certifikační autorita, a.s.,C=CZ

# Not Valid Before: Wed May 27 12:20:00 2015

# Not Valid After: Sun May 27 12:20:00 2040

# Fingerprint (MD5): 34:ba:8d:c4:33:9a:b5:27:ee:bd:5b:7c:7d:82:97:7f

# Fingerprint (SHA1): 9b:09:59:89:81:54:08:1b:f6:a9:0e:9b:9e:58:a4:69:0c:9b:a1:04

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "I.CA Root CA/RSA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\233\011\131\211\201\124\010\033\366\251\016\233\236\130\244\151

\014\233\241\004

```

END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\064\272\215\304\063\232\265\047\356\275\133\174\175\202\227\177
END
CKA_ISSUER MULTILINE_OCTAL
\060\160\061\013\060\011\006\003\125\004\006\023\002\103\132\061
\055\060\053\006\003\125\004\012\014\044\120\162\166\156\303\255
\040\143\145\162\164\151\146\151\153\141\304\215\156\303\255\040
\141\165\164\157\162\151\164\141\054\040\141\056\163\056\061\031
\060\027\006\003\125\004\003\014\020\111\056\103\101\040\122\157
\157\164\040\103\101\057\122\123\101\061\027\060\025\006\003\125
\004\005\023\016\116\124\122\103\132\055\062\066\064\063\071\063
\071\065
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\004\005\365\341\000
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "MULTICERT Root Certification Authority 01"
Issuer: CN=MULTICERT Root Certification Authority 01,O=MULTICERT - Serviços de Certificação
Electrónica S.A.,C=PT
Serial Number:54:4d:a5:bc:40:35:56:5a
Subject: CN=MULTICERT Root Certification Authority 01,O=MULTICERT - Serviços de Certificação
Electrónica S.A.,C=PT
Not Valid Before: Fri Apr 04 08:59:47 2014
Not Valid After: Mon Apr 04 08:59:47 2039
Fingerprint (MD5): 30:b4:c2:a5:23:02:1d:2e:1b:c0:59:f2:ca:23:99:20
Fingerprint (SHA1): 46:af:7a:31:b5:99:46:0d:46:9d:60:41:14:5b:13:65:1d:f9:17:0a
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "MULTICERT Root Certification Authority 01"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\205\061\013\060\011\006\003\125\004\006\023\002\120\124
\061\102\060\100\006\003\125\004\012\014\071\115\125\114\124\111
\103\105\122\124\040\055\040\123\145\162\166\151\303\247\157\163
\040\144\145\040\103\145\162\164\151\146\151\143\141\303\247\303
\243\157\040\105\154\145\143\164\162\303\263\156\151\143\141\040
\123\056\101\056\061\062\060\060\006\003\125\004\003\014\051\115
\125\114\124\111\103\105\122\124\040\122\157\157\164\040\103\145
\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150

```

\157\162\151\164\171\040\060\061

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\205\061\013\060\011\006\003\125\004\006\023\002\120\124  
\061\102\060\100\006\003\125\004\012\014\071\115\125\114\124\111  
\103\105\122\124\040\055\040\123\145\162\166\151\303\247\157\163  
\040\144\145\040\103\145\162\164\151\146\151\143\141\303\247\303  
\243\157\040\105\154\145\143\164\162\303\263\156\151\143\141\040  
\123\056\101\056\061\062\060\060\006\003\125\004\003\014\051\115  
\125\114\124\111\103\105\122\124\040\122\157\157\164\040\103\145  
\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150  
\157\162\151\164\171\040\060\061

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\010\124\115\245\274\100\065\126\132

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\361\060\202\003\331\240\003\002\001\002\002\010\124  
\115\245\274\100\065\126\132\060\015\006\011\052\206\110\206\367  
\015\001\001\013\005\000\060\201\205\061\013\060\011\006\003\125  
\004\006\023\002\120\124\061\102\060\100\006\003\125\004\012\014  
\071\115\125\114\124\111\103\105\122\124\040\055\040\123\145\162  
\166\151\303\247\157\163\040\144\145\040\103\145\162\164\151\146  
\151\143\141\303\247\303\243\157\040\105\154\145\143\164\162\303  
\263\156\151\143\141\040\123\056\101\056\061\062\060\060\006\003  
\125\004\003\014\051\115\125\114\124\111\103\105\122\124\040\122  
\157\157\164\040\103\145\162\164\151\146\151\143\141\164\151\157  
\156\040\101\165\164\150\157\162\151\164\171\040\060\061\060\036  
\027\015\061\064\060\064\060\064\060\070\065\071\064\067\132\027  
\015\063\071\060\064\060\064\060\070\065\071\064\067\132\060\201  
\205\061\013\060\011\006\003\125\004\006\023\002\120\124\061\102  
\060\100\006\003\125\004\012\014\071\115\125\114\124\111\103\105  
\122\124\040\055\040\123\145\162\166\151\303\247\157\163\040\144  
\145\040\103\145\162\164\151\146\151\143\141\303\247\303\243\157  
\040\105\154\145\143\164\162\303\263\156\151\143\141\040\123\056  
\101\056\061\062\060\060\006\003\125\004\003\014\051\115\125\114  
\124\111\103\105\122\124\040\122\157\157\164\040\103\145\162\164  
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162  
\151\164\171\040\060\061\060\202\002\042\060\015\006\011\052\206  
\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060\202  
\002\012\002\202\002\001\000\316\334\077\364\031\156\273\025\151  
\206\364\344\315\347\072\160\073\307\232\213\073\203\000\201\133  
\373\040\026\132\276\277\130\000\137\051\346\127\157\176\212\054  
\025\007\134\032\143\214\102\137\026\335\332\211\204\105\127\027  
\226\240\234\241\165\042\101\032\072\375\305\027\221\023\366\276  
\142\012\274\156\045\055\133\300\214\020\146\367\342\326\373\334  
\110\061\243\032\250\345\115\110\311\242\034\163\376\217\146\100

\143\167\131\007\074\075\024\237\324\367\205\221\320\303\102\365  
\033\141\263\167\200\200\052\155\022\002\226\213\121\331\301\157  
\047\013\032\007\064\000\377\322\131\114\051\350\327\031\143\330  
\221\264\077\374\216\016\045\362\241\022\007\145\312\065\336\253  
\376\026\243\010\214\257\177\176\022\364\131\026\005\037\350\255  
\164\171\062\367\170\002\266\264\314\253\333\036\070\141\004\031  
\172\101\100\332\132\021\144\165\002\375\144\321\326\224\102\017  
\042\347\145\315\257\220\016\014\133\061\001\231\121\357\105\214  
\175\245\070\332\236\174\113\344\246\350\263\244\202\326\003\064  
\056\117\267\121\253\167\070\011\365\006\376\334\146\033\017\077  
\372\175\357\214\125\276\340\015\206\225\241\334\275\304\303\010  
\321\105\036\362\275\276\160\361\346\046\306\273\010\261\050\245  
\302\245\355\210\326\241\300\373\043\361\047\071\314\341\204\007  
\031\274\176\366\314\070\377\156\020\273\106\351\043\211\044\201  
\377\000\342\121\000\334\122\120\175\023\120\175\026\075\100\215  
\323\277\371\212\145\330\142\022\051\167\302\272\302\111\064\117  
\212\171\151\311\113\025\363\064\336\317\257\206\342\345\310\251  
\126\141\114\006\124\132\305\154\031\352\363\310\104\315\044\032  
\166\321\161\000\131\153\331\165\233\316\375\020\376\261\203\242  
\245\267\222\206\166\233\112\367\035\334\214\205\246\130\255\212  
\246\150\151\027\311\155\033\246\317\047\113\051\054\335\161\102  
\032\211\020\345\325\233\022\137\111\213\204\274\330\010\134\373  
\317\070\102\257\276\321\156\173\221\252\146\100\305\005\176\053  
\320\146\266\307\337\122\376\364\105\155\043\222\041\236\022\001  
\220\163\203\342\245\011\015\327\300\370\205\225\036\143\321\077  
\065\332\224\321\067\331\365\002\003\001\000\001\243\143\060\141  
\060\035\006\003\125\035\016\004\026\004\024\325\071\034\234\133  
\157\004\252\242\225\114\357\040\335\051\164\244\305\105\161\060  
\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377  
\060\037\006\003\125\035\043\004\030\060\026\200\024\325\071\034  
\234\133\157\004\252\242\225\114\357\040\335\051\164\244\305\105  
\161\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001  
\006\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000  
\003\202\002\001\000\077\347\137\363\042\026\336\203\236\040\344  
\202\347\345\236\167\311\373\053\260\164\015\337\033\164\042\017  
\163\020\241\260\027\354\114\014\324\050\160\152\146\162\104\151  
\020\223\166\065\317\057\370\217\074\253\031\174\161\222\225\161  
\033\067\025\302\033\050\172\357\156\170\070\337\373\217\233\001  
\040\334\257\366\326\215\011\146\332\304\106\251\374\225\252\104  
\043\022\337\107\300\260\025\354\265\261\236\154\017\221\252\246  
\072\345\301\015\140\154\120\100\160\134\134\310\316\263\314\353  
\355\252\210\031\126\245\244\310\014\172\345\166\100\147\063\264  
\075\226\334\167\313\043\170\371\123\133\317\215\336\261\247\216  
\132\172\242\062\143\243\210\327\045\141\132\135\111\072\162\346  
\317\252\224\206\154\156\367\202\340\216\147\223\050\305\250\015  
\115\357\070\255\171\112\146\215\204\001\010\004\171\363\122\306  
\101\347\232\142\006\263\365\022\036\354\331\000\103\323\353\226  
\167\164\341\171\371\024\224\204\155\272\124\202\005\214\337\001

```
\362\060\210\201\254\172\057\213\103\054\166\064\316\065\347\207
\216\116\013\012\245\032\127\261\123\132\277\153\330\276\000\176
\306\371\356\146\061\010\261\337\224\063\204\234\167\117\173\144
\057\357\216\017\131\050\042\313\360\134\076\053\375\065\326\225
\377\003\354\145\122\176\276\362\031\370\173\325\122\054\122\167
\232\221\146\101\160\215\325\111\347\013\110\177\212\256\336\105
\075\335\376\346\322\344\222\303\173\316\060\240\111\156\067\255
\250\323\054\266\075\236\041\333\006\127\342\360\256\006\373\331
\305\021\067\241\173\333\035\021\174\150\166\040\076\365\274\245
\331\146\265\041\255\105\046\306\135\036\002\243\101\304\324\175
\201\031\313\027\227\006\017\346\354\164\000\106\304\165\335\075
\360\103\064\257\246\274\374\366\202\373\317\305\372\263\017\045
\245\077\146\020\326\236\202\245\333\072\023\171\336\215\251\327
\246\215\206\322\057\331\151\015\342\165\170\176\111\137\042\253
\206\160\050\121\263\172\266\240\171\372\324\345\203\247\260\167
\312\333\001\202\357\342\276\115\057\323\300\115\320\343\151\156
\174\046\233\353\246\373\105\357\261\004\212\057\252\041\006\366
\346\324\274\101\043
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE
```

# Microsoft Code Signing Only Certificate

# Trust for "MULTICERT Root Certification Authority 01"

# Issuer: CN=MULTICERT Root Certification Authority 01,O=MULTICERT - Serviços de Certificação  
Electrónica S.A.,C=PT

# Serial Number:54:4d:a5:bc:40:35:56:5a

# Subject: CN=MULTICERT Root Certification Authority 01,O=MULTICERT - Serviços de Certificação  
Electrónica S.A.,C=PT

# Not Valid Before: Fri Apr 04 08:59:47 2014

# Not Valid After: Mon Apr 04 08:59:47 2039

# Fingerprint (MD5): 30:b4:c2:a5:23:02:1d:2e:1b:c0:59:f2:ca:23:99:20

# Fingerprint (SHA1): 46:af:7a:31:b5:99:46:0d:46:9d:60:41:14:5b:13:65:1d:f9:17:0a

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "MULTICERT Root Certification Authority 01"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\106\257\172\061\265\231\106\015\106\235\140\101\024\133\023\145
\035\371\027\012
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\060\264\302\245\043\002\035\056\033\300\131\362\312\043\231\040
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\201\205\061\013\060\011\006\003\125\004\006\023\002\120\124
```

```
\061\102\060\100\006\003\125\004\012\014\071\115\125\114\124\111
\103\105\122\124\040\055\040\123\145\162\166\151\303\247\157\163
\040\144\145\040\103\145\162\164\151\146\151\143\141\303\247\303
\243\157\040\105\154\145\143\164\162\303\263\156\151\143\141\040
\123\056\101\056\061\062\060\060\006\003\125\004\003\014\051\115
\125\114\124\111\103\105\122\124\040\122\157\157\164\040\103\145
\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150
\157\162\151\164\171\040\060\061
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\010\124\115\245\274\100\065\126\132
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "Certification Authority of WoSign G2"

# Issuer: CN=Certification Authority of WoSign G2,O=WoSign CA Limited,C=CN

# Serial Number:6b:25:da:8a:88:9d:7c:bc:0f:05:b3:b1:7a:61:45:44

# Subject: CN=Certification Authority of WoSign G2,O=WoSign CA Limited,C=CN

# Not Valid Before: Sat Nov 08 00:58:58 2014

# Not Valid After: Tue Nov 08 00:58:58 2044

# Fingerprint (MD5): c8:1c:7d:19:aa:cb:71:93:f2:50:f8:52:a8:1e:ba:60

# Fingerprint (SHA1): fb:ed:dc:90:65:b7:27:20:37:bc:55:0c:9c:56:de:bb:f2:78:94:e1

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Certification Authority of WoSign G2"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

```
\060\130\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\032\060\030\006\003\125\004\012\023\021\127\157\123\151\147\156
\040\103\101\040\114\151\155\151\164\145\144\061\055\060\053\006
\003\125\004\003\023\044\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\101\165\164\150\157\162\151\164\171\040\157\146
\040\127\157\123\151\147\156\040\107\062
```

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\130\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\032\060\030\006\003\125\004\012\023\021\127\157\123\151\147\156
\040\103\101\040\114\151\155\151\164\145\144\061\055\060\053\006
\003\125\004\003\023\044\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\101\165\164\150\157\162\151\164\171\040\157\146
\040\127\157\123\151\147\156\040\107\062
```



END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\153\045\332\212\210\235\174\274\017\005\263\261\172\141  
\105\104

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\174\060\202\002\144\240\003\002\001\002\002\020\153  
\045\332\212\210\235\174\274\017\005\263\261\172\141\105\104\060  
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\130  
\061\013\060\011\006\003\125\004\006\023\002\103\116\061\032\060  
\030\006\003\125\004\012\023\021\127\157\123\151\147\156\040\103  
\101\040\114\151\155\151\164\145\144\061\055\060\053\006\003\125  
\004\003\023\044\103\145\162\164\151\146\151\143\141\164\151\157  
\156\040\101\165\164\150\157\162\151\164\171\040\157\146\040\127  
\157\123\151\147\156\040\107\062\060\036\027\015\061\064\061\061  
\060\070\060\060\065\070\065\070\132\027\015\064\064\061\061\060  
\070\060\060\065\070\065\070\132\060\130\061\013\060\011\006\003  
\125\004\006\023\002\103\116\061\032\060\030\006\003\125\004\012  
\023\021\127\157\123\151\147\156\040\103\101\040\114\151\155\151  
\164\145\144\061\055\060\053\006\003\125\004\003\023\044\103\145  
\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150  
\157\162\151\164\171\040\157\146\040\127\157\123\151\147\156\040  
\107\062\060\202\001\042\060\015\006\011\052\206\110\206\367\015  
\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002\202  
\001\001\000\276\305\304\240\042\200\111\117\277\331\207\021\306  
\123\341\273\017\275\140\177\257\366\202\016\037\334\260\216\075  
\227\340\120\074\217\072\357\146\073\105\007\233\040\370\343\327  
\045\206\065\220\026\242\135\157\060\031\010\207\013\177\006\262  
\235\142\217\336\257\222\245\140\324\053\200\232\122\077\365\232  
\203\351\064\132\313\331\325\142\134\346\016\340\337\006\230\016  
\200\174\312\264\035\023\210\153\016\250\044\167\003\320\356\133  
\363\312\151\221\065\071\126\305\155\343\367\075\117\136\223\070  
\044\312\030\351\044\313\222\003\335\314\034\075\011\160\344\040  
\344\361\256\254\273\163\151\243\143\072\017\105\017\241\112\232  
\302\321\143\254\313\020\370\075\346\116\050\267\353\304\225\261  
\254\375\136\253\372\101\313\135\235\113\334\364\174\166\357\147  
\177\000\172\215\322\240\032\134\115\042\341\265\332\335\166\263  
\324\166\337\136\270\213\230\310\024\124\314\153\027\222\267\340  
\112\277\111\224\141\013\070\220\217\135\044\154\045\173\073\171  
\331\342\176\235\255\237\230\241\006\374\170\024\140\127\370\356  
\200\167\261\002\003\001\000\001\243\102\060\100\060\016\006\003  
\125\035\017\001\001\377\004\004\003\002\001\006\060\017\006\003  
\125\035\023\001\001\377\004\005\060\003\001\001\377\060\035\006  
\003\125\035\016\004\026\004\024\372\140\251\353\145\305\335\026  
\024\010\116\014\017\215\233\340\367\144\257\147\060\015\006\011  
\052\206\110\206\367\015\001\001\013\005\000\003\202\001\001\000  
\127\303\172\066\202\234\215\230\342\253\100\252\107\217\307\247  
\133\355\174\347\075\146\132\073\061\273\337\363\026\063\221\374

```
\174\173\245\302\246\146\343\252\260\267\047\230\077\111\327\140
\147\147\077\066\117\112\313\361\024\372\132\207\050\034\355\217
\101\062\306\225\371\175\332\275\173\133\302\260\041\343\217\106
\334\041\070\103\164\114\373\060\370\027\162\301\062\374\310\221
\027\304\314\130\067\116\013\314\132\367\041\065\050\203\154\140
\055\104\353\122\214\120\075\265\154\022\327\372\011\273\154\262
\112\261\305\211\344\374\323\122\330\141\027\376\172\224\204\217
\171\266\063\131\272\017\304\013\342\160\240\113\170\056\372\310
\237\375\257\221\145\012\170\070\025\345\227\027\024\335\371\340
\054\064\370\070\320\204\042\000\300\024\121\030\053\002\334\060
\132\360\350\001\174\065\072\043\257\010\344\257\252\216\050\102
\111\056\360\365\231\064\276\355\017\113\030\341\322\044\074\273
\135\107\267\041\362\215\321\012\231\216\343\156\076\255\160\340
\217\271\312\314\156\201\061\366\173\234\172\171\344\147\161\030
END
```

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
Trust for "Certification Authority of WoSign G2"
Issuer: CN=Certification Authority of WoSign G2,O=WoSign CA Limited,C=CN
Serial Number:6b:25:da:8a:88:9d:7c:bc:0f:05:b3:b1:7a:61:45:44
Subject: CN=Certification Authority of WoSign G2,O=WoSign CA Limited,C=CN
Not Valid Before: Sat Nov 08 00:58:58 2014
Not Valid After: Tue Nov 08 00:58:58 2044
Fingerprint (MD5): c8:1c:7d:19:aa:cb:71:93:f2:50:f8:52:a8:1e:ba:60
Fingerprint (SHA1): fb:ed:dc:90:65:b7:27:20:37:bc:55:0c:9c:56:de:bb:f2:78:94:e1
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certification Authority of WoSign G2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\373\355\334\220\145\267\047\040\067\274\125\014\234\126\336\273
\362\170\224\341
END
```

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\310\034\175\031\252\313\161\223\362\120\370\122\250\036\272\140
END
```

```
CKA_ISSUER MULTILINE_OCTAL
\060\130\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\032\060\030\006\003\125\004\012\023\021\127\157\123\151\147\156
\040\103\101\040\114\151\155\151\164\145\144\061\055\060\053\006
\003\125\004\003\023\044\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\101\165\164\150\157\162\151\164\171\040\157\146
\040\127\157\123\151\147\156\040\107\062
END
```

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\153\045\332\212\210\235\174\274\017\005\263\261\172\141
\105\104
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
Certificate "CA WoSign ECC Root"
Issuer: CN=CA WoSign ECC Root,O=WoSign CA Limited,C=CN
Serial Number:68:4a:58:70:80:6b:f0:8f:02:fa:f6:de:e8:b0:90:90
Subject: CN=CA WoSign ECC Root,O=WoSign CA Limited,C=CN
Not Valid Before: Sat Nov 08 00:58:58 2014
Not Valid After: Tue Nov 08 00:58:58 2044
Fingerprint (MD5): 80:c6:53:ee:61:82:28:72:f0:ff:21:b9:17:ca:b2:20
Fingerprint (SHA1): d2:7a:d2:be:ed:94:c0:a1:3c:c7:25:21:ea:5d:71:be:81:19:f3:2b
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "CA WoSign ECC Root"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
```

```
CKA_SUBJECT MULTILINE_OCTAL
\060\106\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\032\060\030\006\003\125\004\012\023\021\127\157\123\151\147\156
\040\103\101\040\114\151\155\151\164\145\144\061\033\060\031\006
\003\125\004\003\023\022\103\101\040\127\157\123\151\147\156\040
\105\103\103\040\122\157\157\164
```

```
END
CKA_ID UTF8 "0"
```

```
CKA_ISSUER MULTILINE_OCTAL
\060\106\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\032\060\030\006\003\125\004\012\023\021\127\157\123\151\147\156
\040\103\101\040\114\151\155\151\164\145\144\061\033\060\031\006
\003\125\004\003\023\022\103\101\040\127\157\123\151\147\156\040
\105\103\103\040\122\157\157\164
```

```
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\150\112\130\160\200\153\360\217\002\372\366\336\350\260
\220\220
```

```
END
CKA_VALUE MULTILINE_OCTAL
\060\202\002\011\060\202\001\217\240\003\002\001\002\002\020\150
\112\130\160\200\153\360\217\002\372\366\336\350\260\220\220\060
\012\006\010\052\206\110\316\075\004\003\003\060\106\061\013\060
\011\006\003\125\004\006\023\002\103\116\061\032\060\030\006\003
```

\125\004\012\023\021\127\157\123\151\147\156\040\103\101\040\114  
\151\155\151\164\145\144\061\033\060\031\006\003\125\004\003\023  
\022\103\101\040\127\157\123\151\147\156\040\105\103\103\040\122  
\157\157\164\060\036\027\015\061\064\061\061\060\070\060\060\065  
\070\065\070\132\027\015\064\064\061\061\060\070\060\060\065\070  
\065\070\132\060\106\061\013\060\011\006\003\125\004\006\023\002  
\103\116\061\032\060\030\006\003\125\004\012\023\021\127\157\123  
\151\147\156\040\103\101\040\114\151\155\151\164\145\144\061\033  
\060\031\006\003\125\004\003\023\022\103\101\040\127\157\123\151  
\147\156\040\105\103\103\040\122\157\157\164\060\166\060\020\006  
\007\052\206\110\316\075\002\001\006\005\053\201\004\000\042\003  
\142\000\004\341\375\216\270\103\044\253\226\173\205\302\272\013  
\255\215\340\072\343\044\271\322\261\276\210\072\312\277\112\270  
\371\357\054\057\257\121\120\074\107\165\154\370\224\267\233\374  
\050\036\305\124\314\143\235\026\113\123\301\347\040\253\315\254  
\045\322\177\217\302\301\132\202\136\060\213\172\124\316\003\265  
\221\177\252\224\320\321\212\110\314\202\005\046\241\325\121\022  
\326\173\066\243\102\060\100\060\016\006\003\125\035\017\001\001  
\377\004\004\003\002\001\006\060\017\006\003\125\035\023\001\001  
\377\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004  
\026\004\024\252\375\325\132\243\366\207\213\062\205\375\321\062  
\133\200\105\223\363\003\270\060\012\006\010\052\206\110\316\075  
\004\003\003\003\150\000\060\145\002\061\000\344\244\204\260\201  
\325\075\260\164\254\224\244\350\016\075\000\164\114\241\227\153  
\371\015\121\074\241\331\073\364\015\253\251\237\276\116\162\312  
\205\324\331\354\265\062\105\030\157\253\255\002\060\175\307\367  
\151\143\057\241\341\230\357\023\020\321\171\077\321\376\352\073  
\177\336\126\364\220\261\025\021\330\262\042\025\320\057\303\046  
\056\153\361\221\262\220\145\364\232\346\220\356\112

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "CA WoSign ECC Root"  
# Issuer: CN=CA WoSign ECC Root,O=WoSign CA Limited,C=CN  
# Serial Number:68:4a:58:70:80:6b:f0:8f:02:fa:f6:de:e8:b0:90:90  
# Subject: CN=CA WoSign ECC Root,O=WoSign CA Limited,C=CN  
# Not Valid Before: Sat Nov 08 00:58:58 2014  
# Not Valid After: Tue Nov 08 00:58:58 2044  
# Fingerprint (MD5): 80:c6:53:ee:61:82:28:72:f0:ff:21:b9:17:ca:b2:20  
# Fingerprint (SHA1): d2:7a:d2:be:ed:94:c0:a1:3c:c7:25:21:ea:5d:71:be:81:19:f3:2b  
CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "CA WoSign ECC Root"

```

CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\322\172\322\276\355\224\300\241\074\307\045\041\352\135\161\276
\201\031\363\053
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\200\306\123\356\141\202\050\162\360\377\041\271\027\312\262\040
END
CKA_ISSUER MULTILINE_OCTAL
\060\106\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\032\060\030\006\003\125\004\012\023\021\127\157\123\151\147\156
\040\103\101\040\114\151\155\151\164\145\144\061\033\060\031\006
\003\125\004\003\023\022\103\101\040\127\157\123\151\147\156\040
\105\103\103\040\122\157\157\164
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\150\112\130\160\200\153\360\217\002\372\366\336\350\260
\220\220
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "CCA India 2015 SPL"
Issuer: CN=CCA India 2015 SPL,O=India PKI,C=IN
Serial Number: 10165 (0x27b5)
Subject: CN=CCA India 2015 SPL,O=India PKI,C=IN
Not Valid Before: Thu Jan 29 11:36:43 2015
Not Valid After: Wed Jan 29 11:36:43 2025
Fingerprint (MD5): 16:da:3e:ac:1d:0a:57:a9:b4:e2:de:d0:93:96:dc:d4
Fingerprint (SHA1): 3b:c6:dc:e0:03:07:bd:67:60:41:eb:d8:59:70:c6:2f:8f:da:51:09
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "CCA India 2015 SPL"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\076\061\013\060\011\006\003\125\004\006\023\002\111\116\061
\022\060\020\006\003\125\004\012\023\011\111\156\144\151\141\040
\120\113\111\061\033\060\031\006\003\125\004\003\023\022\103\103
\101\040\111\156\144\151\141\040\062\060\061\065\040\123\120\114
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\076\061\013\060\011\006\003\125\004\006\023\002\111\116\061
\022\060\020\006\003\125\004\012\023\011\111\156\144\151\141\040

```

\120\113\111\061\033\060\031\006\003\125\004\003\023\022\103\103  
\101\040\111\156\144\151\141\040\062\060\061\065\040\123\120\114  
END  
CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL  
\002\002\047\265  
END  
CKA\_VALUE MULTILINE\_OCTAL  
\060\202\003\053\060\202\002\023\240\003\002\001\002\002\002\047  
\265\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000  
\060\076\061\013\060\011\006\003\125\004\006\023\002\111\116\061  
\022\060\020\006\003\125\004\012\023\011\111\156\144\151\141\040  
\120\113\111\061\033\060\031\006\003\125\004\003\023\022\103\103  
\101\040\111\156\144\151\141\040\062\060\061\065\040\123\120\114  
\060\036\027\015\061\065\060\061\062\071\061\061\063\066\064\063  
\132\027\015\062\065\060\061\062\071\061\061\063\066\064\063\132  
\060\076\061\013\060\011\006\003\125\004\006\023\002\111\116\061  
\022\060\020\006\003\125\004\012\023\011\111\156\144\151\141\040  
\120\113\111\061\033\060\031\006\003\125\004\003\023\022\103\103  
\101\040\111\156\144\151\141\040\062\060\061\065\040\123\120\114  
\060\202\001\042\060\015\006\011\052\206\110\206\367\015\001\001  
\001\005\000\003\202\001\017\000\060\202\001\012\002\202\001\001  
\000\227\327\066\211\075\067\101\016\221\077\153\040\137\374\072  
\176\073\132\135\057\303\014\207\123\074\030\242\310\141\163\015  
\010\016\126\036\322\156\140\245\127\145\334\376\317\120\206\017  
\132\116\253\142\213\004\312\126\357\341\321\236\256\164\255\252  
\372\077\101\130\321\125\160\160\076\105\311\033\200\163\374\010  
\210\344\213\162\250\012\265\051\127\260\255\012\221\101\032\234  
\137\120\175\254\027\032\045\133\041\360\225\053\347\337\067\254  
\064\363\007\260\361\035\301\023\357\173\056\072\305\251\141\220  
\262\170\137\124\120\074\263\132\125\143\266\313\020\243\157\373  
\015\364\266\357\346\010\336\242\020\277\166\227\177\352\331\226  
\321\324\303\163\002\161\264\251\260\254\254\037\027\040\245\107  
\106\326\104\002\070\231\276\313\024\170\376\346\137\304\177\335  
\157\351\252\107\024\220\021\330\035\200\300\025\324\214\240\231  
\343\031\016\012\017\314\032\010\234\324\123\007\000\340\037\111  
\277\202\202\114\317\233\330\156\323\324\021\000\022\154\017\175  
\140\147\112\214\120\333\362\057\340\271\171\207\203\303\134\302  
\071\002\003\001\000\001\243\063\060\061\060\017\006\003\125\035  
\023\001\001\377\004\005\060\003\001\001\377\060\021\006\003\125  
\035\016\004\012\004\010\114\021\160\252\217\335\037\007\060\013  
\006\003\125\035\017\004\004\003\002\001\006\060\015\006\011\052  
\206\110\206\367\015\001\001\013\005\000\003\202\001\001\000\055  
\274\214\025\312\064\355\114\050\042\273\341\123\045\113\072\227  
\251\355\046\242\244\253\115\373\012\022\156\347\065\346\147\016  
\030\201\142\066\245\314\302\337\032\345\150\001\201\116\263\231  
\324\107\025\022\235\166\351\241\246\023\035\260\377\175\273\127  
\343\357\131\233\310\073\120\151\306\143\072\254\240\301\345\220  
\350\144\051\134\110\101\151\067\254\073\273\335\343\125\306\327

```
\222\015\225\203\260\050\127\302\243\251\226\247\312\336\114\036
\232\377\076\245\056\047\136\333\146\147\047\205\357\253\212\134
\163\174\210\315\107\146\360\235\203\314\204\217\342\051\364\037
\101\157\267\365\041\015\365\224\126\121\343\374\377\023\130\267
\237\003\356\051\237\322\001\260\142\236\224\275\031\206\132\103
\372\152\211\201\260\352\134\030\207\312\200\225\373\355\001\277
\021\032\337\225\024\256\056\342\257\315\221\220\272\263\047\303
\157\020\330\331\016\264\245\164\154\201\267\137\031\314\376\047
\116\263\105\230\130\030\234\127\304\222\162\022\317\247\202\071
\325\341\020\227\012\206\060\105\205\143\250\153\115\232\374
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

# Microsoft Code Signing Only Certificate

# Trust for "CCA India 2015 SPL"

# Issuer: CN=CCA India 2015 SPL,O=India PKI,C=IN

# Serial Number: 10165 (0x27b5)

# Subject: CN=CCA India 2015 SPL,O=India PKI,C=IN

# Not Valid Before: Thu Jan 29 11:36:43 2015

# Not Valid After: Wed Jan 29 11:36:43 2025

# Fingerprint (MD5): 16:da:3e:ac:1d:0a:57:a9:b4:e2:de:d0:93:96:dc:d4

# Fingerprint (SHA1): 3b:c6:dc:e0:03:07:bd:67:60:41:eb:d8:59:70:c6:2f:8f:da:51:09

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "CCA India 2015 SPL"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\073\306\334\340\003\007\275\147\140\101\353\330\131\160\306\057
\217\332\121\011
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\026\332\076\254\035\012\127\251\264\342\336\320\223\226\334\324
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\076\061\013\060\011\006\003\125\004\006\023\002\111\116\061
\022\060\020\006\003\125\004\012\023\011\111\156\144\151\141\040
\120\113\111\061\033\060\031\006\003\125\004\003\023\022\103\103
\101\040\111\156\144\151\141\040\062\060\061\065\040\123\120\114
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\002\047\265
```

END

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

```
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

```
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "Swedish Government Root Authority v3"

# Issuer: CN=Swedish Government Root Authority v3,O=Swedish Social Insurance Agency,C=SE

# Serial Number:32:69:a2:bf:40:6b:8d:b4:47:83:64:3c:8b:0d:c9:43

# Subject: CN=Swedish Government Root Authority v3,O=Swedish Social Insurance Agency,C=SE

# Not Valid Before: Tue Sep 29 11:32:32 2015

# Not Valid After: Sat Sep 29 11:42:09 2040

# Fingerprint (MD5): 63:e2:fd:ea:a2:55:6a:70:54:fb:3a:22:e3:34:b1:17

# Fingerprint (SHA1): 74:6f:88:f9:ac:16:3c:53:00:9e:ef:92:0c:40:67:75:6a:15:71:7e

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Swedish Government Root Authority v3"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\146\061\013\060\011\006\003\125\004\006\023\002\123\105\061  
\050\060\046\006\003\125\004\012\023\037\123\167\145\144\151\163  
\150\040\123\157\143\151\141\154\040\111\156\163\165\162\141\156  
\143\145\040\101\147\145\156\143\171\061\055\060\053\006\003\125  
\004\003\023\044\123\167\145\144\151\163\150\040\107\157\166\145  
\162\156\155\145\156\164\040\122\157\157\164\040\101\165\164\150  
\157\162\151\164\171\040\166\063

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\146\061\013\060\011\006\003\125\004\006\023\002\123\105\061  
\050\060\046\006\003\125\004\012\023\037\123\167\145\144\151\163  
\150\040\123\157\143\151\141\154\040\111\156\163\165\162\141\156  
\143\145\040\101\147\145\156\143\171\061\055\060\053\006\003\125  
\004\003\023\044\123\167\145\144\151\163\150\040\107\157\166\145  
\162\156\155\145\156\164\040\122\157\157\164\040\101\165\164\150  
\157\162\151\164\171\040\166\063

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\062\151\242\277\100\153\215\264\107\203\144\074\213\015  
\311\103

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\252\060\202\003\222\240\003\002\001\002\002\020\062  
\151\242\277\100\153\215\264\107\203\144\074\213\015\311\103\060  
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\146  
\061\013\060\011\006\003\125\004\006\023\002\123\105\061\050\060  
\046\006\003\125\004\012\023\037\123\167\145\144\151\163\150\040  
\123\157\143\151\141\154\040\111\156\163\165\162\141\156\143\145  
\040\101\147\145\156\143\171\061\055\060\053\006\003\125\004\003



\023\044\123\167\145\144\151\163\150\040\107\157\166\145\162\156  
\155\145\156\164\040\122\157\157\164\040\101\165\164\150\157\162  
\151\164\171\040\166\063\060\036\027\015\061\065\060\071\062\071  
\061\061\063\062\063\062\132\027\015\064\060\060\071\062\071\061  
\061\064\062\060\071\132\060\146\061\013\060\011\006\003\125\004  
\006\023\002\123\105\061\050\060\046\006\003\125\004\012\023\037  
\123\167\145\144\151\163\150\040\123\157\143\151\141\154\040\111  
\156\163\165\162\141\156\143\145\040\101\147\145\156\143\171\061  
\055\060\053\006\003\125\004\003\023\044\123\167\145\144\151\163  
\150\040\107\157\166\145\162\156\155\145\156\164\040\122\157\157  
\164\040\101\165\164\150\157\162\151\164\171\040\166\063\060\202  
\002\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005  
\000\003\202\002\017\000\060\202\002\012\002\202\002\001\000\272  
\036\242\151\033\150\117\134\217\272\364\043\307\136\146\005\170  
\205\066\130\243\242\177\147\357\242\014\026\222\244\112\213\340  
\240\222\207\125\067\013\304\321\304\320\100\103\227\062\120\117  
\354\225\107\267\077\257\103\005\345\204\227\011\357\126\124\347  
\103\063\107\375\255\361\072\233\230\244\341\344\121\243\271\254  
\214\013\356\045\006\011\362\323\272\065\147\141\214\302\275\046  
\313\327\143\314\327\203\063\331\114\342\357\371\033\237\250\313  
\015\166\001\055\162\311\042\273\150\221\336\220\017\073\075\264  
\102\275\031\175\237\204\134\074\176\102\067\206\261\140\302\110  
\207\122\116\134\127\376\316\222\256\312\076\126\267\263\236\225  
\232\224\370\057\241\320\242\056\302\124\132\154\314\314\326\255  
\113\107\320\056\207\202\063\250\173\120\071\247\052\054\261\133  
\047\012\237\255\365\024\353\374\215\123\262\163\053\124\043\364  
\214\227\231\227\373\065\334\314\265\372\063\024\046\215\165\247  
\044\246\350\024\056\055\246\200\050\203\232\077\270\312\073\307  
\365\030\340\375\354\216\171\373\252\102\154\112\113\026\176\363  
\202\003\156\272\347\021\006\245\237\204\053\322\140\155\351\106  
\356\101\132\226\271\024\375\034\077\206\022\361\124\046\046\375  
\147\200\057\345\250\055\050\056\103\267\144\302\357\344\267\176  
\226\334\204\213\047\331\166\075\230\201\123\024\334\102\105\241  
\124\147\371\332\030\146\220\012\264\107\220\074\001\345\053\243  
\146\357\157\373\062\203\361\063\175\062\041\154\245\105\025\077  
\057\363\125\221\110\223\237\045\317\055\074\071\073\122\015\032  
\257\307\337\253\157\200\330\220\313\236\161\162\152\102\151\223  
\352\222\000\075\111\004\331\243\134\272\105\373\002\020\377\255  
\151\164\122\245\070\143\232\146\210\004\262\021\272\023\252\071  
\325\203\137\355\145\133\123\310\235\134\262\205\240\170\160\065  
\115\134\044\020\244\366\061\052\222\125\101\331\363\027\154\231  
\023\130\372\335\050\320\154\023\275\133\207\215\223\203\255\130  
\051\126\025\264\130\047\112\233\021\154\240\246\147\105\072\316  
\320\330\316\377\220\063\354\132\061\115\017\122\022\373\255\366  
\141\137\344\057\157\015\146\060\345\240\117\317\317\375\137\002  
\003\001\000\001\243\124\060\122\060\016\006\003\125\035\017\001  
\001\377\004\004\003\002\001\006\060\017\006\003\125\035\023\001  
\001\377\004\005\060\003\001\001\377\060\035\006\003\125\035\016

\004\026\004\024\234\274\001\347\253\144\065\365\061\233\215\265  
\373\027\231\210\002\313\233\362\060\020\006\011\053\006\001\004  
\001\202\067\025\001\004\003\002\001\000\060\015\006\011\052\206  
\110\206\367\015\001\001\013\005\000\003\202\002\001\000\207\253  
\152\344\347\153\044\122\075\366\042\203\117\123\004\105\062\234  
\141\132\026\134\234\104\265\243\321\226\320\100\376\317\146\025  
\136\176\100\000\040\025\375\247\252\144\332\247\141\146\150\302  
\335\122\161\045\240\152\271\335\300\315\316\206\010\324\074\065  
\021\057\175\364\157\322\332\014\227\003\145\227\203\264\076\072  
\313\011\164\215\353\005\312\172\351\200\260\267\121\055\042\223  
\343\232\031\356\355\227\010\041\203\255\307\012\221\137\304\312  
\333\136\257\270\347\214\272\072\111\322\125\003\065\031\031\120  
\112\342\206\247\273\170\075\225\375\261\037\106\362\117\146\362  
\373\277\205\144\266\012\043\030\222\011\236\111\105\061\266\326  
\024\127\236\374\211\105\164\177\071\314\300\152\150\310\317\107  
\320\341\036\307\323\057\055\371\054\044\073\374\152\272\224\023  
\336\314\162\362\242\035\313\037\237\325\203\167\046\136\176\233  
\240\257\151\237\170\333\245\301\156\161\134\110\102\116\053\330  
\170\270\325\017\245\077\154\313\217\220\315\107\330\220\031\111  
\205\326\154\374\342\253\252\102\277\313\023\227\277\151\104\165  
\143\065\055\332\240\307\375\141\367\312\101\075\124\234\364\066  
\300\344\156\041\110\237\135\161\142\201\323\362\045\346\131\214  
\131\101\046\110\247\343\353\147\152\323\354\064\267\230\367\314  
\312\243\066\006\225\347\310\060\131\367\377\311\241\321\344\171  
\274\337\023\037\056\331\263\165\321\004\267\043\011\041\314\035  
\041\034\047\234\016\053\372\301\207\030\311\372\371\111\203\214  
\022\026\373\305\022\316\073\017\102\372\360\005\145\176\250\307  
\353\122\112\371\230\136\161\243\254\022\307\050\161\032\132\165  
\317\207\312\037\067\050\034\024\235\220\120\157\306\277\112\314  
\307\045\317\061\335\133\221\116\166\250\021\325\166\146\331\277  
\200\163\142\260\354\303\376\104\274\315\131\023\013\014\055\330  
\241\314\252\142\115\124\105\136\244\122\243\214\127\074\024\061  
\223\124\316\245\026\124\136\055\102\263\356\145\251\266\235\077  
\154\316\141\331\126\313\336\352\240\126\336\155\206\003\372\267  
\201\152\214\322\330\363\327\266\300\254\051\204\131\043\016\233  
\227\152\346\240\316\325\052\124\030\357\120\230\171\040

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "Swedish Government Root Authority v3"  
# Issuer: CN=Swedish Government Root Authority v3,O=Swedish Social Insurance Agency,C=SE  
# Serial Number:32:69:a2:bf:40:6b:8d:b4:47:83:64:3c:8b:0d:c9:43  
# Subject: CN=Swedish Government Root Authority v3,O=Swedish Social Insurance Agency,C=SE  
# Not Valid Before: Tue Sep 29 11:32:32 2015  
# Not Valid After: Sat Sep 29 11:42:09 2040

```

Fingerprint (MD5): 63:e2:fd:ea:a2:55:6a:70:54:fb:3a:22:e3:34:b1:17
Fingerprint (SHA1): 74:6f:88:f9:ac:16:3c:53:00:9e:ef:92:0c:40:67:75:6a:15:71:7e
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Swedish Government Root Authority v3"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\164\157\210\371\254\026\074\123\000\236\357\222\014\100\147\165
\152\025\161\176
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\143\342\375\352\242\125\152\160\124\373\072\042\343\064\261\027
END
CKA_ISSUER MULTILINE_OCTAL
\060\146\061\013\060\011\006\003\125\004\006\023\002\123\105\061
\050\060\046\006\003\125\004\012\023\037\123\167\145\144\151\163
\150\040\123\157\143\151\141\154\040\111\156\163\165\162\141\156
\143\145\040\101\147\145\156\143\171\061\055\060\053\006\003\125
\004\003\023\044\123\167\145\144\151\163\150\040\107\157\166\145
\162\156\155\145\156\164\040\122\157\157\164\040\101\165\164\150
\157\162\151\164\171\040\166\063
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\062\151\242\277\100\153\215\264\107\203\144\074\213\015
\311\103
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

```

```

Microsoft Code Signing Only Certificate
Certificate "Swedish Government Root Authority v2"
Issuer: CN=Swedish Government Root Authority v2,O=Swedish Social Insurance Agency,C=SE
Serial Number:54:12:15:9f:ab:8a:75:93:44:94:ca:77:40:56:2e:ef
Subject: CN=Swedish Government Root Authority v2,O=Swedish Social Insurance Agency,C=SE
Not Valid Before: Tue May 05 11:15:23 2015
Not Valid After: Sat May 05 11:24:19 2040
Fingerprint (MD5): 33:85:e1:95:66:4b:83:50:73:42:c2:e0:da:a0:40:92
Fingerprint (SHA1): 32:f4:42:09:3b:36:d7:03:1b:75:ca:4d:ad:dc:b3:27:fa:a0:2b:9c
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Swedish Government Root Authority v2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL

```

\060\146\061\013\060\011\006\003\125\004\006\023\002\123\105\061  
\050\060\046\006\003\125\004\012\023\037\123\167\145\144\151\163  
\150\040\123\157\143\151\141\154\040\111\156\163\165\162\141\156  
\143\145\040\101\147\145\156\143\171\061\055\060\053\006\003\125  
\004\003\023\044\123\167\145\144\151\163\150\040\107\157\166\145  
\162\156\155\145\156\164\040\122\157\157\164\040\101\165\164\150  
\157\162\151\164\171\040\166\062

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\146\061\013\060\011\006\003\125\004\006\023\002\123\105\061  
\050\060\046\006\003\125\004\012\023\037\123\167\145\144\151\163  
\150\040\123\157\143\151\141\154\040\111\156\163\165\162\141\156  
\143\145\040\101\147\145\156\143\171\061\055\060\053\006\003\125  
\004\003\023\044\123\167\145\144\151\163\150\040\107\157\166\145  
\162\156\155\145\156\164\040\122\157\157\164\040\101\165\164\150  
\157\162\151\164\171\040\166\062

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\124\022\025\237\253\212\165\223\104\224\312\167\100\126  
\056\357

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\006\013\060\202\003\363\240\003\002\001\002\002\020\124  
\022\025\237\253\212\165\223\104\224\312\167\100\126\056\357\060  
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\146  
\061\013\060\011\006\003\125\004\006\023\002\123\105\061\050\060  
\046\006\003\125\004\012\023\037\123\167\145\144\151\163\150\040  
\123\157\143\151\141\154\040\111\156\163\165\162\141\156\143\145  
\040\101\147\145\156\143\171\061\055\060\053\006\003\125\004\003  
\023\044\123\167\145\144\151\163\150\040\107\157\166\145\162\156  
\155\145\156\164\040\122\157\157\164\040\101\165\164\150\157\162  
\151\164\171\040\166\062\060\036\027\015\061\065\060\065\060\065  
\061\061\061\065\062\063\132\027\015\064\060\060\065\060\065\061  
\061\062\064\061\071\132\060\146\061\013\060\011\006\003\125\004  
\006\023\002\123\105\061\050\060\046\006\003\125\004\012\023\037  
\123\167\145\144\151\163\150\040\123\157\143\151\141\154\040\111  
\156\163\165\162\141\156\143\145\040\101\147\145\156\143\171\061  
\055\060\053\006\003\125\004\003\023\044\123\167\145\144\151\163  
\150\040\107\157\166\145\162\156\155\145\156\164\040\122\157\157  
\164\040\101\165\164\150\157\162\151\164\171\040\166\062\060\202  
\002\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005  
\000\003\202\002\017\000\060\202\002\012\002\202\002\001\000\310  
\256\265\103\274\102\105\113\065\143\077\002\113\305\377\333\066  
\327\047\305\302\256\105\146\243\161\207\026\115\211\117\141\224  
\340\126\106\270\320\104\023\346\163\220\360\141\170\101\212\340  
\032\176\067\254\002\051\276\350\377\002\046\306\032\174\012\261  
\217\144\051\242\332\007\212\325\044\205\150\031\222\062\337\237

\051\140\130\155\052\205\200\021\066\311\266\302\323\236\204\014  
\272\121\021\314\124\351\253\006\060\022\217\040\167\005\300\306  
\215\232\233\131\310\266\205\350\160\007\002\261\036\377\327\151  
\317\026\106\213\141\057\102\315\122\246\330\016\172\057\207\055  
\306\057\074\042\103\261\223\176\303\026\166\331\314\327\213\354  
\021\033\320\311\161\024\302\211\111\176\361\244\020\252\065\074  
\250\033\273\377\354\062\100\345\275\052\363\246\001\023\310\214  
\227\031\220\316\143\371\260\153\175\367\371\212\316\156\340\205  
\347\333\224\325\172\040\045\240\065\360\251\367\257\132\050\132  
\014\310\363\164\071\213\061\073\042\314\111\045\311\157\270\134  
\172\056\054\226\343\057\243\076\312\171\167\151\221\132\370\360  
\305\123\067\116\123\155\111\047\126\142\312\345\371\163\140\251  
\027\073\133\242\045\257\055\173\311\267\333\317\031\021\072\063  
\161\071\131\132\003\351\347\054\014\377\155\234\162\143\143\200  
\005\130\123\206\334\050\165\026\302\345\360\023\131\241\201\377  
\005\014\231\250\266\074\154\056\305\016\000\230\201\351\203\167  
\146\103\073\132\216\205\105\114\262\317\271\075\344\234\066\223  
\100\172\123\025\051\324\021\220\272\241\140\212\235\253\364\112  
\112\152\335\207\252\301\355\005\332\236\133\126\341\210\117\052  
\153\225\050\206\146\120\241\357\332\112\262\220\012\066\067\111  
\205\227\102\170\007\147\346\233\040\241\014\154\311\317\317\376  
\167\225\204\132\172\073\027\260\357\114\367\055\221\252\317\031  
\157\306\371\022\050\347\036\012\246\226\315\041\260\003\142\120  
\203\006\040\346\350\336\337\103\026\026\271\201\240\360\201\064  
\133\313\301\211\366\363\350\042\270\316\270\122\076\121\036\261  
\005\270\267\003\053\013\254\164\165\123\044\341\166\270\117\045  
\166\135\357\321\232\363\156\112\270\174\113\370\212\300\031\002  
\003\001\000\001\243\201\264\060\201\261\060\016\006\003\125\035  
\017\001\001\377\004\004\003\002\001\006\060\022\006\003\125\035  
\023\001\001\377\004\010\060\006\001\001\377\002\001\001\060\035  
\006\003\125\035\016\004\026\004\024\143\153\102\140\123\127\021  
\273\310\044\211\045\002\146\104\164\241\015\045\156\060\020\006  
\011\053\006\001\004\001\202\067\025\001\004\003\002\001\000\060  
\021\006\003\125\035\040\004\012\060\010\060\006\006\004\125\035  
\040\000\060\107\006\003\125\035\045\004\100\060\076\006\010\053  
\006\001\005\005\007\003\001\006\010\053\006\001\005\005\007\003  
\002\006\010\053\006\001\005\005\007\003\004\006\012\053\006\001  
\004\001\202\067\012\003\014\006\010\053\006\001\005\005\007\003  
\003\006\010\053\006\001\005\005\007\003\010\060\015\006\011\052  
\206\110\206\367\015\001\001\013\005\000\003\202\002\001\000\043  
\056\252\205\227\113\244\134\020\257\332\370\075\275\223\130\057  
\170\373\031\167\003\071\026\107\111\162\125\314\207\350\275\244  
\177\322\253\044\254\347\324\120\356\235\330\203\306\231\040\373  
\026\057\210\306\027\067\312\213\036\253\320\342\154\007\130\270  
\144\221\241\020\241\151\067\165\136\376\332\163\024\346\212\153  
\276\302\140\041\057\300\371\243\004\110\066\133\067\276\332\154  
\375\351\226\216\236\361\123\174\217\145\104\247\125\175\013\224  
\116\124\366\377\062\275\057\175\234\245\136\102\304\114\051\343

\020\144\057\346\317\132\073\064\125\050\141\321\047\022\273\156  
\124\233\201\130\254\325\136\235\127\003\240\115\321\377\067\164  
\246\215\363\371\225\375\052\211\165\172\171\067\375\046\171\057  
\047\163\177\251\031\040\345\320\137\230\350\226\005\217\230\171  
\351\171\020\101\051\001\103\365\151\067\314\120\020\150\265\330  
\104\116\016\362\231\343\047\054\152\216\137\273\175\273\153\161  
\113\006\212\335\052\330\012\077\133\310\162\056\130\141\012\017  
\201\150\036\107\307\351\055\272\357\215\334\016\243\043\303\262  
\055\265\107\261\213\264\076\047\110\347\334\010\142\014\124\376  
\103\327\225\112\277\007\057\112\100\176\006\245\121\207\046\211  
\005\335\074\312\117\376\034\047\351\333\210\036\300\262\376\343  
\357\037\176\261\350\131\225\240\117\253\012\211\000\340\163\262  
\347\034\301\027\120\200\207\114\322\103\031\131\225\322\133\024  
\133\012\133\300\174\211\161\172\265\012\300\212\105\057\356\304  
\300\376\124\055\347\225\044\167\005\056\356\164\306\240\220\261  
\163\334\102\326\240\165\311\130\131\005\242\336\021\277\131\351  
\015\247\046\302\156\300\106\212\306\036\323\365\352\017\175\075  
\162\315\031\225\114\272\340\150\227\215\130\300\152\357\171\367  
\262\150\152\270\162\066\303\044\014\350\062\355\275\361\237\310  
\357\336\165\322\333\166\251\224\047\070\364\001\141\277\146\070  
\217\152\075\334\000\133\263\374\104\337\003\113\371\361\166\045  
\065\377\122\037\010\035\320\245\024\351\213\006\053\170\203\054  
\161\134\117\221\207\143\326\014\016\005\210\074\224\240\261\132  
\124\026\337\335\121\303\250\066\056\054\202\174\271\232\260

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "Swedish Government Root Authority v2"  
# Issuer: CN=Swedish Government Root Authority v2,O=Swedish Social Insurance Agency,C=SE  
# Serial Number:54:12:15:9f:ab:8a:75:93:44:94:ca:77:40:56:2e:ef  
# Subject: CN=Swedish Government Root Authority v2,O=Swedish Social Insurance Agency,C=SE  
# Not Valid Before: Tue May 05 11:15:23 2015  
# Not Valid After: Sat May 05 11:24:19 2040  
# Fingerprint (MD5): 33:85:e1:95:66:4b:83:50:73:42:c2:e0:da:a0:40:92  
# Fingerprint (SHA1): 32:f4:42:09:3b:36:d7:03:1b:75:ca:4d:ad:dc:b3:27:fa:a0:2b:9c  
CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "Swedish Government Root Authority v2"  
CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL  
\062\364\102\011\073\066\327\003\033\165\312\115\255\334\263\047  
\372\240\053\234  
END  
CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\063\205\341\225\146\113\203\120\163\102\302\340\332\240\100\222

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\146\061\013\060\011\006\003\125\004\006\023\002\123\105\061  
\050\060\046\006\003\125\004\012\023\037\123\167\145\144\151\163  
\150\040\123\157\143\151\141\154\040\111\156\163\165\162\141\156  
\143\145\040\101\147\145\156\143\171\061\055\060\053\006\003\125  
\004\003\023\044\123\167\145\144\151\163\150\040\107\157\166\145  
\162\156\155\145\156\164\040\122\157\157\164\040\101\165\164\150  
\157\162\151\164\171\040\166\062

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\124\022\025\237\253\212\165\223\104\224\312\167\100\126  
\056\357

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "Tunisian Root Certificate Authority - TunRootCA2"

# Issuer: O=National Digital Certification Agency,CN=Tunisian Root Certificate Authority - TunRootCA2,C=TN

# Serial Number:21:66:15:05:05:27:05:05:bc:8a:b0:1d:af:0a:be:c4

# Subject: O=National Digital Certification Agency,CN=Tunisian Root Certificate Authority - TunRootCA2,C=TN

# Not Valid Before: Tue May 05 08:57:01 2015

# Not Valid After: Wed May 05 08:57:01 2027

# Fingerprint (MD5): 03:d1:25:b1:f0:55:ad:ca:dd:7c:59:93:50:ef:17:21

# Fingerprint (SHA1): 96:38:63:3c:90:56:ae:88:14:a0:65:d2:3b:dc:60:a0:ee:70:2f:a7

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Tunisian Root Certificate Authority - TunRootCA2"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\170\061\013\060\011\006\003\125\004\006\023\002\124\116\061  
\071\060\067\006\003\125\004\003\023\060\124\165\156\151\163\151  
\141\156\040\122\157\157\164\040\103\145\162\164\151\146\151\143  
\141\164\145\040\101\165\164\150\157\162\151\164\171\040\055\040  
\124\165\156\122\157\157\164\103\101\062\061\056\060\054\006\003  
\125\004\012\023\045\116\141\164\151\157\156\141\154\040\104\151  
\147\151\164\141\154\040\103\145\162\164\151\146\151\143\141\164  
\151\157\156\040\101\147\145\156\143\171

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\170\061\013\060\011\006\003\125\004\006\023\002\124\116\061

\071\060\067\006\003\125\004\003\023\060\124\165\156\151\163\151  
\141\156\040\122\157\157\164\040\103\145\162\164\151\146\151\143  
\141\164\145\040\101\165\164\150\157\162\151\164\171\040\055\040  
\124\165\156\122\157\157\164\103\101\062\061\056\060\054\006\003  
\125\004\012\023\045\116\141\164\151\157\156\141\154\040\104\151  
\147\151\164\141\154\040\103\145\162\164\151\146\151\143\141\164  
\151\157\156\040\101\147\145\156\143\171

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\041\146\025\005\005\047\005\005\274\212\260\035\257\012  
\276\304

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\274\060\202\003\244\240\003\002\001\002\002\020\041  
\146\025\005\005\047\005\005\274\212\260\035\257\012\276\304\060  
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\170  
\061\013\060\011\006\003\125\004\006\023\002\124\116\061\071\060  
\067\006\003\125\004\003\023\060\124\165\156\151\163\151\141\156  
\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164  
\145\040\101\165\164\150\157\162\151\164\171\040\055\040\124\165  
\156\122\157\157\164\103\101\062\061\056\060\054\006\003\125\004  
\012\023\045\116\141\164\151\157\156\141\154\040\104\151\147\151  
\164\141\154\040\103\145\162\164\151\146\151\143\141\164\151\157  
\156\040\101\147\145\156\143\171\060\036\027\015\061\065\060\065  
\060\065\060\070\065\067\060\061\132\027\015\062\067\060\065\060  
\065\060\070\065\067\060\061\132\060\170\061\013\060\011\006\003  
\125\004\006\023\002\124\116\061\071\060\067\006\003\125\004\003  
\023\060\124\165\156\151\163\151\141\156\040\122\157\157\164\040  
\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164\150  
\157\162\151\164\171\040\055\040\124\165\156\122\157\157\164\103  
\101\062\061\056\060\054\006\003\125\004\012\023\045\116\141\164  
\151\157\156\141\154\040\104\151\147\151\164\141\154\040\103\145  
\162\164\151\146\151\143\141\164\151\157\156\040\101\147\145\156  
\143\171\060\202\002\042\060\015\006\011\052\206\110\206\367\015  
\001\001\001\005\000\003\202\002\017\000\060\202\002\012\002\202  
\002\001\000\260\007\347\142\373\320\015\125\316\147\267\127\215  
\156\014\251\047\124\036\353\251\044\253\147\217\217\234\141\017  
\333\050\062\057\073\370\054\145\222\055\256\272\063\222\300\053  
\236\362\037\136\155\043\135\263\130\037\215\241\300\155\165\205  
\012\260\023\116\133\126\106\213\071\275\013\202\273\072\103\233  
\010\272\106\356\371\027\353\315\310\327\343\165\023\336\256\121  
\110\012\316\040\225\106\237\002\354\125\214\164\252\132\374\374  
\352\011\063\065\156\243\107\006\307\335\176\204\150\016\307\022  
\312\224\303\355\346\154\002\155\336\002\211\065\263\004\313\105  
\370\174\107\244\323\037\337\345\134\043\342\363\042\173\271\113  
\242\375\027\065\135\110\351\277\365\263\045\143\213\347\170\353  
\374\165\047\275\210\134\246\205\077\101\337\225\174\335\172\106  
\217\376\036\332\261\253\330\323\216\315\006\214\311\330\122\102



|021|122|242|203|217|134|203|173|344|047|266|217|037|240|136|075  
|322|165|175|171|123|223|006|227|343|003|307|226|054|332|001|074  
|171|305|073|120|350|260|323|241|244|342|323|203|175|104|370|020  
|317|240|032|052|362|145|200|275|167|301|230|145|166|256|022|041  
|142|312|072|276|276|265|231|303|133|304|321|277|233|300|012|312  
|130|036|025|246|327|041|136|261|115|012|345|160|170|232|150|346  
|164|146|062|024|052|036|021|276|210|367|006|366|125|243|303|037  
|156|027|220|125|321|212|100|211|126|103|325|117|346|242|311|210  
|144|000|005|121|077|127|264|074|266|276|152|221|161|100|361|242  
|134|361|327|355|234|266|127|366|131|324|052|021|345|324|345|277  
|273|036|321|310|327|137|104|005|233|273|211|072|255|247|103|167  
|176|025|140|174|210|135|233|354|245|134|322|106|255|014|213|124  
|105|324|224|121|125|105|122|252|134|330|021|254|370|126|042|154  
|331|322|024|351|267|116|102|205|124|106|370|001|306|075|046|006  
|167|350|262|065|033|360|235|102|311|177|376|200|047|001|120|313  
|177|305|254|124|372|153|155|226|214|101|244|241|322|347|265|221  
|110|157|167|034|213|302|053|164|376|074|134|304|135|224|316|253  
|361|040|226|153|301|014|132|137|371|345|065|271|154|243|020|147  
|357|221|252|110|016|357|110|267|166|130|142|331|276|236|102|263  
|244|275|065|002|003|001|000|001|243|102|060|100|060|035|006|003  
|125|035|016|004|026|004|024|314|163|305|243|152|051|061|227|247  
|215|240|330|124|301|012|165|266|043|077|246|060|017|006|003|125  
|035|023|001|001|377|004|005|060|003|001|001|377|060|016|006|003  
|125|035|017|001|001|377|004|004|003|002|001|006|060|015|006|011  
|052|206|110|206|367|015|001|001|013|005|000|003|202|002|001|000  
|056|362|207|110|355|231|236|237|001|014|074|311|012|170|123|174  
|030|065|336|266|345|154|364|000|200|341|233|213|331|372|373|252  
|373|145|267|322|311|365|327|247|313|176|311|261|242|161|130|155  
|131|067|326|340|063|020|312|265|331|162|333|116|045|067|252|246  
|335|035|030|275|365|311|212|234|172|210|356|037|002|304|055|222  
|124|175|127|342|134|031|030|043|002|172|134|111|225|266|230|347  
|302|140|101|145|100|273|354|132|267|161|234|120|362|163|166|373  
|137|015|357|065|317|264|151|215|205|350|114|220|027|003|013|311  
|263|056|040|067|143|021|142|246|117|343|064|340|373|171|125|347  
|306|302|256|102|376|260|064|154|111|043|016|162|007|173|146|005  
|125|110|373|022|017|240|300|372|116|321|373|075|314|376|375|026  
|113|126|120|315|021|054|247|233|367|261|012|317|246|353|357|335  
|216|270|256|102|010|174|244|214|224|352|206|307|103|343|367|074  
|212|337|107|322|060|100|310|055|123|365|157|021|111|314|041|214  
|226|103|117|020|240|107|241|126|215|037|034|133|330|126|133|353  
|064|166|341|065|072|161|324|314|041|057|236|065|050|362|132|336  
|236|344|356|107|152|020|350|070|275|112|264|175|004|177|005|256  
|110|012|264|003|277|056|263|012|033|237|313|255|335|115|320|207  
|041|267|107|166|202|203|055|307|127|276|232|025|243|033|060|030  
|154|243|072|161|157|144|107|050|222|333|021|141|040|232|167|145  
|055|371|254|126|023|154|113|243|137|377|233|244|350|357|347|130  
|350|173|236|073|177|152|247|276|071|012|023|224|311|110|116|146  
|144|330|123|114|354|101|153|375|374|066|056|327|016|337|141|013

```
\173\265\100\254\335\102\111\155\236\200\277\140\225\360\351\300
\077\173\273\030\351\070\265\126\116\247\176\212\142\357\230\036
\370\170\100\251\273\330\351\345\264\264\371\343\147\234\354\123
\317\270\102\264\057\223\201\065\240\154\366\272\040\212\150\075
\367\155\377\177\323\114\367\172\224\150\003\167\103\073\065\121
\252\123\022\076\107\023\024\071\254\326\145\217\250\106\377\074
\041\364\322\277\320\110\244\176\247\121\233\227\022\365\231\064
\027\043\126\204\023\143\313\064\312\037\312\272\250\007\051\363
\103\044\012\111\177\375\016\324\220\360\253\103\041\142\234\217
END
```

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
```

```
Trust for "Tunisian Root Certificate Authority - TunRootCA2"
```

```
Issuer: O=National Digital Certification Agency,CN=Tunisian Root Certificate Authority - TunRootCA2,C=TN
```

```
Serial Number:21:66:15:05:05:27:05:05:bc:8a:b0:1d:af:0a:be:c4
```

```
Subject: O=National Digital Certification Agency,CN=Tunisian Root Certificate Authority - TunRootCA2,C=TN
```

```
Not Valid Before: Tue May 05 08:57:01 2015
```

```
Not Valid After: Wed May 05 08:57:01 2027
```

```
Fingerprint (MD5): 03:d1:25:b1:f0:55:ad:ca:dd:7c:59:93:50:ef:17:21
```

```
Fingerprint (SHA1): 96:38:63:3c:90:56:ae:88:14:a0:65:d2:3b:dc:60:a0:ee:70:2f:a7
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "Tunisian Root Certificate Authority - TunRootCA2"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\226\070\143\074\220\126\256\210\024\240\145\322\073\334\140\240
\356\160\057\247
```

```
END
```

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\003\321\045\261\360\125\255\312\335\174\131\223\120\357\027\041
END
```

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\170\061\013\060\011\006\003\125\004\006\023\002\124\116\061
\071\060\067\006\003\125\004\003\023\060\124\165\156\151\163\151
\141\156\040\122\157\157\164\040\103\145\162\164\151\146\151\143
\141\164\145\040\101\165\164\150\157\162\151\164\171\040\055\040
\124\165\156\122\157\157\164\103\101\062\061\056\060\054\006\003
\125\004\012\023\045\116\141\164\151\157\156\141\154\040\104\151
\147\151\164\141\154\040\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\101\147\145\156\143\171
```

```
END
```

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\020\041\146\025\005\005\047\005\005\274\212\260\035\257\012
\276\304
```

```
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
Certificate "OpenTrust Root CA G1"
Issuer: CN=OpenTrust Root CA G1,O=OpenTrust,C=FR
Serial Number:11:20:b3:90:55:39:7d:7f:36:6d:64:c2:a7:9f:6b:63:8e:67
Subject: CN=OpenTrust Root CA G1,O=OpenTrust,C=FR
Not Valid Before: Mon May 26 08:45:50 2014
Not Valid After: Fri Jan 15 00:00:00 2038
Fingerprint (MD5): 76:00:cc:81:29:cd:55:5e:88:6a:7a:2e:f7:4d:39:da
Fingerprint (SHA1): 79:91:e8:34:f7:e2:ee:dd:08:95:01:52:e9:55:2d:14:e9:58:d5:7e
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "OpenTrust Root CA G1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\100\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\022\060\020\006\003\125\004\012\014\011\117\160\145\156\124\162
\165\163\164\061\035\060\033\006\003\125\004\003\014\024\117\160
\145\156\124\162\165\163\164\040\122\157\157\164\040\103\101\040
\107\061
```

```
END
```

```
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\100\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\022\060\020\006\003\125\004\012\014\011\117\160\145\156\124\162
\165\163\164\061\035\060\033\006\003\125\004\003\014\024\117\160
\145\156\124\162\165\163\164\040\122\157\157\164\040\103\101\040
\107\061
```

```
END
```

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\022\021\040\263\220\125\071\175\177\066\155\144\302\247\237
\153\143\216\147
```

```
END
```

```
CKA_VALUE MULTILINE_OCTAL
\060\202\005\157\060\202\003\127\240\003\002\001\002\002\022\021
\040\263\220\125\071\175\177\066\155\144\302\247\237\153\143\216
\147\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000
\060\100\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\022\060\020\006\003\125\004\012\014\011\117\160\145\156\124\162
\165\163\164\061\035\060\033\006\003\125\004\003\014\024\117\160
\145\156\124\162\165\163\164\040\122\157\157\164\040\103\101\040
```

\107\061\060\036\027\015\061\064\060\065\062\066\060\070\064\065  
\065\060\132\027\015\063\070\060\061\061\065\060\060\060\060\060  
\060\132\060\100\061\013\060\011\006\003\125\004\006\023\002\106  
\122\061\022\060\020\006\003\125\004\012\014\011\117\160\145\156  
\124\162\165\163\164\061\035\060\033\006\003\125\004\003\014\024  
\117\160\145\156\124\162\165\163\164\040\122\157\157\164\040\103  
\101\040\107\061\060\202\002\042\060\015\006\011\052\206\110\206  
\367\015\001\001\001\005\000\003\202\002\017\000\060\202\002\012  
\002\202\002\001\000\370\171\106\332\226\305\060\136\212\161\003  
\055\160\244\273\260\305\010\334\315\346\065\300\200\244\021\055  
\335\346\207\256\135\075\221\322\207\154\067\267\332\142\236\233  
\302\044\327\217\361\333\246\246\337\106\157\121\246\161\313\076  
\033\061\147\142\367\021\133\064\047\325\171\116\214\233\130\275  
\042\020\015\134\047\014\335\060\345\250\323\135\041\070\164\027  
\376\343\037\266\117\073\153\055\333\175\140\037\214\175\114\005  
\302\353\001\026\025\230\024\216\321\220\167\042\077\354\302\071  
\270\171\072\360\111\044\342\225\221\334\141\064\222\214\124\164  
\357\261\175\214\001\342\070\175\301\137\152\137\044\262\216\142  
\027\255\171\040\255\253\035\267\340\264\226\110\117\146\103\020  
\006\026\044\003\341\340\234\216\306\106\117\216\032\231\341\217  
\271\216\063\154\151\336\130\255\240\016\247\144\124\021\151\104  
\146\117\114\022\247\216\054\175\304\324\133\305\000\064\060\301  
\331\231\376\062\316\007\204\264\116\315\012\377\066\115\142\361  
\247\143\127\344\333\152\247\256\277\053\271\311\346\262\047\211  
\345\176\232\034\115\150\306\301\030\336\063\053\121\106\113\034  
\216\367\075\014\371\212\064\024\304\373\063\065\043\361\314\361  
\052\307\245\273\260\242\316\376\123\153\115\101\033\146\050\262  
\226\372\247\256\012\116\271\071\063\104\234\164\301\223\034\370  
\340\236\044\045\103\361\233\043\202\252\337\054\040\260\334\066  
\116\003\263\174\002\324\346\173\032\252\207\023\277\076\241\164  
\273\233\016\341\300\223\237\327\244\146\312\273\033\073\343\060  
\364\063\131\212\007\162\003\125\347\163\152\003\061\156\157\226  
\033\343\242\237\257\222\307\355\365\102\267\045\114\073\023\004  
\317\034\226\257\034\042\243\320\253\005\262\114\022\043\122\334  
\375\031\133\047\234\036\073\172\375\102\043\333\043\200\023\360  
\274\121\025\124\224\246\167\076\320\164\121\275\121\024\010\071  
\067\313\037\064\251\060\235\122\204\056\125\220\261\272\337\125  
\000\013\330\126\055\261\111\111\162\200\251\142\327\300\366\030  
\021\004\125\315\164\173\317\141\160\171\364\173\054\134\134\222  
\374\345\270\132\253\114\223\225\241\047\356\245\276\317\161\043  
\102\272\233\166\055\002\003\001\000\001\243\143\060\141\060\016  
\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060\017  
\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060  
\035\006\003\125\035\016\004\026\004\024\227\106\041\127\041\065  
\332\066\125\307\363\361\067\160\345\010\366\223\051\266\060\037  
\006\003\125\035\043\004\030\060\026\200\024\227\106\041\127\041  
\065\332\066\125\307\363\361\067\160\345\010\366\223\051\266\060  
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\003\202

\002\001\000\035\335\002\140\174\340\065\247\346\230\173\352\104  
\316\147\100\117\362\223\156\146\324\071\211\046\254\323\115\004  
\074\273\207\041\077\067\364\161\045\332\113\272\253\226\202\201  
\221\266\355\331\261\244\145\227\342\157\144\131\244\226\356\140  
\312\037\043\373\105\272\377\217\044\360\312\251\061\177\171\037  
\200\263\055\062\272\144\147\140\257\271\131\315\337\232\111\323  
\250\202\261\371\230\224\212\314\340\273\340\004\033\231\140\261  
\106\145\334\010\242\262\106\236\104\210\352\223\176\127\026\322  
\025\162\137\056\113\253\324\235\143\270\343\110\345\376\204\056  
\130\012\237\103\035\376\267\030\222\206\103\113\016\234\062\206  
\054\140\365\351\110\352\225\355\160\051\361\325\057\375\065\264  
\127\317\333\205\110\231\271\302\157\154\217\315\170\225\254\144  
\050\375\126\260\303\157\303\276\131\122\341\137\204\217\200\362  
\364\015\066\255\166\263\243\265\341\144\166\072\130\334\175\117  
\136\126\154\345\125\131\127\245\337\361\212\146\060\214\324\122  
\142\070\167\264\276\050\327\312\066\304\233\005\360\370\025\333  
\333\361\357\064\235\035\170\112\210\126\147\156\140\377\217\310  
\213\341\216\275\102\251\063\012\131\102\022\022\052\372\261\235  
\103\216\005\233\231\332\142\255\127\066\263\035\266\015\171\055  
\226\270\353\362\014\113\014\245\224\306\060\247\046\031\055\355  
\114\006\120\060\361\375\130\075\271\113\027\137\031\264\152\204  
\124\264\070\117\071\242\015\226\150\303\050\224\375\355\055\037  
\112\153\103\226\056\220\001\020\373\070\246\201\013\320\277\165  
\323\324\271\316\361\077\157\016\034\036\067\161\345\030\207\165  
\031\077\120\271\136\244\105\064\255\260\312\346\345\023\166\017  
\061\024\251\216\055\224\326\325\205\115\163\025\117\113\362\262  
\076\355\154\275\375\016\235\146\163\260\075\264\367\277\250\340  
\021\244\304\256\165\011\112\143\000\110\040\246\306\235\013\011  
\212\264\340\346\316\076\307\076\046\070\351\053\336\246\010\111  
\003\004\220\212\351\217\277\350\266\264\052\243\043\215\034\034  
\262\071\222\250\217\002\134\100\071\165\324\163\101\002\167\336  
\315\340\103\207\326\344\272\112\303\154\022\177\376\052\346\043  
\326\214\161

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "OpenTrust Root CA G1"  
# Issuer: CN=OpenTrust Root CA G1,O=OpenTrust,C=FR  
# Serial Number: 11:20:b3:90:55:39:7d:7f:36:6d:64:c2:a7:9f:6b:63:8e:67  
# Subject: CN=OpenTrust Root CA G1,O=OpenTrust,C=FR  
# Not Valid Before: Mon May 26 08:45:50 2014  
# Not Valid After: Fri Jan 15 00:00:00 2038  
# Fingerprint (MD5): 76:00:cc:81:29:cd:55:5e:88:6a:7a:2e:f7:4d:39:da  
# Fingerprint (SHA1): 79:91:e8:34:f7:e2:ee:dd:08:95:01:52:e9:55:2d:14:e9:58:d5:7e  
CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

```

CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "OpenTrust Root CA G1"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\171\221\350\064\367\342\356\335\010\225\001\122\351\125\055\024
\351\130\325\176
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\166\000\314\201\051\315\125\136\210\152\172\056\367\115\071\332
END
CKA_ISSUER MULTILINE_OCTAL
\060\100\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\022\060\020\006\003\125\004\012\014\011\117\160\145\156\124\162
\165\163\164\061\035\060\033\006\003\125\004\003\014\024\117\160
\145\156\124\162\165\163\164\040\122\157\157\164\040\103\101\040
\107\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\022\021\040\263\220\125\071\175\177\066\155\144\302\247\237
\153\143\216\147
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

```

```

Microsoft Code Signing Only Certificate
Certificate "OpenTrust Root CA G2"
Issuer: CN=OpenTrust Root CA G2,O=OpenTrust,C=FR
Serial Number:11:20:a1:69:1b:bf:bd:b9:bd:52:96:8f:23:e8:48:bf:26:11
Subject: CN=OpenTrust Root CA G2,O=OpenTrust,C=FR
Not Valid Before: Mon May 26 00:00:00 2014
Not Valid After: Fri Jan 15 00:00:00 2038
Fingerprint (MD5): 57:24:b6:59:24:6b:ae:c8:fe:1c:0c:20:f2:c0:4e:eb
Fingerprint (SHA1): 79:5f:88:60:c5:ab:7c:3d:92:e6:cb:f4:8d:e1:45:cd:11:ef:60:0b

```

```

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "OpenTrust Root CA G2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\100\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\022\060\020\006\003\125\004\012\014\011\117\160\145\156\124\162
\165\163\164\061\035\060\033\006\003\125\004\003\014\024\117\160
\145\156\124\162\165\163\164\040\122\157\157\164\040\103\101\040
\107\062

```

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\100\061\013\060\011\006\003\125\004\006\023\002\106\122\061  
\022\060\020\006\003\125\004\012\014\011\117\160\145\156\124\162  
\165\163\164\061\035\060\033\006\003\125\004\003\014\024\117\160  
\145\156\124\162\165\163\164\040\122\157\157\164\040\103\101\040  
\107\062

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\022\021\040\241\151\033\277\275\271\275\122\226\217\043\350  
\110\277\046\021

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\157\060\202\003\127\240\003\002\001\002\002\022\021  
\040\241\151\033\277\275\271\275\122\226\217\043\350\110\277\046  
\021\060\015\006\011\052\206\110\206\367\015\001\001\015\005\000  
\060\100\061\013\060\011\006\003\125\004\006\023\002\106\122\061  
\022\060\020\006\003\125\004\012\014\011\117\160\145\156\124\162  
\165\163\164\061\035\060\033\006\003\125\004\003\014\024\117\160  
\145\156\124\162\165\163\164\040\122\157\157\164\040\103\101\040  
\107\062\060\036\027\015\061\064\060\065\062\066\060\060\060\060  
\060\060\132\027\015\063\070\060\061\061\065\060\060\060\060\060  
\060\132\060\100\061\013\060\011\006\003\125\004\006\023\002\106  
\122\061\022\060\020\006\003\125\004\012\014\011\117\160\145\156  
\124\162\165\163\164\061\035\060\033\006\003\125\004\003\014\024  
\117\160\145\156\124\162\165\163\164\040\122\157\157\164\040\103  
\101\040\107\062\060\202\002\042\060\015\006\011\052\206\110\206  
\367\015\001\001\001\005\000\003\202\002\017\000\060\202\002\012  
\002\202\002\001\000\314\266\127\245\063\224\020\201\062\123\337  
\141\176\017\166\071\317\134\302\123\165\035\111\172\226\070\335  
\242\163\152\361\157\336\136\242\132\271\161\041\276\066\331\241  
\374\274\356\154\250\174\064\032\161\032\350\032\330\137\016\104  
\006\355\247\340\363\322\141\013\340\062\242\226\321\070\360\302  
\332\001\027\374\344\254\117\350\356\211\036\164\253\117\277\036  
\011\266\066\152\126\363\341\356\226\211\146\044\006\344\315\102  
\072\112\335\340\232\260\304\202\105\263\376\311\253\134\174\076  
\311\353\027\057\014\175\156\256\245\217\310\254\045\012\157\372  
\325\105\230\322\065\011\366\003\103\224\376\331\277\040\225\171  
\200\230\212\331\211\065\273\121\033\244\067\175\374\231\073\253  
\377\277\254\015\217\103\261\231\173\026\020\176\035\157\107\304  
\025\217\004\226\010\006\102\004\370\204\326\035\274\221\246\102  
\276\111\325\152\210\077\274\055\121\321\236\215\340\122\314\127  
\335\065\065\130\333\264\217\044\210\344\213\337\334\153\124\322  
\201\053\262\316\222\113\034\037\106\372\035\330\222\313\166\147  
\265\011\231\011\345\254\027\024\125\160\306\074\240\126\012\003  
\263\334\142\031\337\310\265\060\177\365\074\046\165\021\275\327  
\033\263\207\236\007\257\145\161\345\240\317\032\247\011\020\035

\223\211\146\133\350\074\142\062\265\265\072\156\351\205\001\213  
\236\103\214\147\163\050\131\133\353\343\334\054\314\245\046\162  
\142\022\264\346\234\203\104\366\121\244\342\300\172\044\127\312  
\016\245\077\072\265\073\213\345\166\356\160\346\222\336\026\134  
\050\133\227\031\047\222\376\172\222\124\316\223\071\012\026\207  
\274\143\263\365\261\223\134\340\156\267\320\352\371\142\062\210  
\104\373\277\047\050\266\060\225\135\022\050\271\225\276\217\123  
\030\345\242\030\026\342\126\244\262\054\020\365\035\067\246\370  
\267\366\320\131\134\211\367\302\325\265\224\164\321\325\376\033  
\266\360\346\326\036\173\322\074\313\250\343\365\030\363\041\037  
\156\357\115\150\006\173\055\135\156\103\211\246\300\371\240\277  
\202\036\317\123\177\264\353\054\333\135\366\152\175\100\044\005  
\162\211\070\001\223\313\161\302\071\135\006\021\366\157\170\370  
\067\015\071\204\047\002\003\001\000\001\243\143\060\141\060\016  
\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060\017  
\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060  
\035\006\003\125\035\016\004\026\004\024\152\071\372\102\042\367  
\346\211\000\115\136\175\063\203\313\270\156\167\206\257\060\037  
\006\003\125\035\043\004\030\060\026\200\024\152\071\372\102\042  
\367\346\211\000\115\136\175\063\203\313\270\156\167\206\257\060  
\015\006\011\052\206\110\206\367\015\001\001\015\005\000\003\202  
\002\001\000\230\313\253\100\074\345\063\002\227\177\055\207\246  
\217\324\136\112\257\270\036\347\273\161\373\200\144\045\251\263  
\032\076\150\135\047\046\247\272\052\341\360\127\203\012\144\117  
\036\042\164\033\351\220\137\360\254\317\377\117\150\172\070\244  
\020\154\015\261\307\244\167\200\030\266\242\050\104\166\247\064  
\235\161\204\057\312\131\322\107\210\231\101\042\311\060\230\141  
\156\075\250\250\005\155\321\037\300\121\104\126\177\047\065\002  
\335\136\230\012\102\353\060\277\215\241\233\121\252\073\352\223  
\106\144\305\000\171\336\041\153\366\127\240\206\327\006\162\354  
\160\106\113\213\163\335\240\041\165\076\334\035\300\217\323\117  
\163\034\205\331\376\177\142\310\225\157\266\323\173\214\272\123  
\302\157\233\104\114\171\320\035\160\263\327\237\002\364\262\007  
\260\307\345\370\255\043\016\246\126\311\051\022\167\110\331\057  
\106\375\073\360\374\164\160\222\245\216\070\010\037\144\060\266  
\267\113\373\066\254\020\216\240\122\063\143\235\003\065\126\305  
\151\275\306\043\132\047\224\366\244\022\370\055\063\074\241\126  
\245\137\326\031\351\355\174\010\275\167\315\047\144\314\224\332  
\116\106\120\207\340\371\301\123\200\036\273\255\373\107\122\213  
\033\375\242\371\336\016\042\267\075\063\131\154\324\336\365\225  
\006\062\015\121\031\101\134\076\117\006\367\271\053\200\047\366  
\243\252\172\174\006\341\103\303\023\071\142\032\066\275\340\050  
\056\224\002\344\051\056\140\125\256\100\075\260\164\222\136\360  
\040\144\226\077\137\105\135\210\265\212\332\002\240\133\105\124  
\336\070\075\011\300\250\112\145\106\026\374\252\277\124\116\115  
\133\276\070\103\267\050\312\213\063\252\032\045\272\045\134\051  
\057\133\112\156\214\352\055\234\052\366\005\166\340\167\227\200  
\210\335\147\023\157\035\150\044\213\117\267\164\201\345\364\140



```
\237\172\125\327\076\067\332\026\153\076\167\254\256\030\160\225
\010\171\051\003\212\376\301\073\263\077\032\017\244\073\136\037
\130\241\225\311\253\057\163\112\320\055\156\232\131\017\125\030
\170\055\074\121\246\227\213\346\273\262\160\252\114\021\336\377
\174\053\067\324\172\321\167\064\217\347\371\102\367\074\201\014
\113\122\012
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

# Microsoft Code Signing Only Certificate

# Trust for "OpenTrust Root CA G2"

# Issuer: CN=OpenTrust Root CA G2,O=OpenTrust,C=FR

# Serial Number: 11:20:a1:69:1b:bf:bd:b9:bd:52:96:8f:23:e8:48:bf:26:11

# Subject: CN=OpenTrust Root CA G2,O=OpenTrust,C=FR

# Not Valid Before: Mon May 26 00:00:00 2014

# Not Valid After: Fri Jan 15 00:00:00 2038

# Fingerprint (MD5): 57:24:b6:59:24:6b:ae:c8:fe:1c:0c:20:f2:c0:4e:eb

# Fingerprint (SHA1): 79:5f:88:60:c5:ab:7c:3d:92:e6:cb:f4:8d:e1:45:cd:11:ef:60:0b

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "OpenTrust Root CA G2"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\171\137\210\140\305\253\174\075\222\346\313\364\215\341\105\315
\021\357\140\013
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\127\044\266\131\044\153\256\310\376\034\014\040\362\300\116\353
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\100\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\022\060\020\006\003\125\004\012\014\011\117\160\145\156\124\162
\165\163\164\061\035\060\033\006\003\125\004\003\014\024\117\160
\145\156\124\162\165\163\164\040\122\157\157\164\040\103\101\040
\107\062
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\022\021\040\241\151\033\277\275\271\275\122\226\217\043\350
\110\277\046\021
```

END

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

```
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

```
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

```
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```

Microsoft Code Signing Only Certificate
Certificate "OpenTrust Root CA G3"
Issuer: CN=OpenTrust Root CA G3,O=OpenTrust,C=FR
Serial Number:11:20:e6:f8:4c:fc:24:b0:be:05:40:ac:da:83:1b:34:60:3f
Subject: CN=OpenTrust Root CA G3,O=OpenTrust,C=FR
Not Valid Before: Mon May 26 00:00:00 2014
Not Valid After: Fri Jan 15 00:00:00 2038
Fingerprint (MD5): 21:37:b4:17:16:92:7b:67:46:70:a9:96:d7:a8:13:24
Fingerprint (SHA1): 6e:26:64:f3:56:bf:34:55:bf:d1:93:3f:7c:01:de:d8:13:da:8a:a6
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "OpenTrust Root CA G3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\100\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\022\060\020\006\003\125\004\012\014\011\117\160\145\156\124\162
\165\163\164\061\035\060\033\006\003\125\004\003\014\024\117\160
\145\156\124\162\165\163\164\040\122\157\157\164\040\103\101\040
\107\063
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\100\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\022\060\020\006\003\125\004\012\014\011\117\160\145\156\124\162
\165\163\164\061\035\060\033\006\003\125\004\003\014\024\117\160
\145\156\124\162\165\163\164\040\122\157\157\164\040\103\101\040
\107\063
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\022\021\040\346\370\114\374\044\260\276\005\100\254\332\203
\033\064\140\077
END
CKA_VALUE MULTILINE_OCTAL
\060\202\002\041\060\202\001\246\240\003\002\001\002\002\022\021
\040\346\370\114\374\044\260\276\005\100\254\332\203\033\064\140
\077\060\012\006\010\052\206\110\316\075\004\003\003\060\100\061
\013\060\011\006\003\125\004\006\023\002\106\122\061\022\060\020
\006\003\125\004\012\014\011\117\160\145\156\124\162\165\163\164
\061\035\060\033\006\003\125\004\003\014\024\117\160\145\156\124
\162\165\163\164\040\122\157\157\164\040\103\101\040\107\063\060
\036\027\015\061\064\060\065\062\066\060\060\060\060\060\132
\027\015\063\070\060\061\061\065\060\060\060\060\060\060\132\060
\100\061\013\060\011\006\003\125\004\006\023\002\106\122\061\022
\060\020\006\003\125\004\012\014\011\117\160\145\156\124\162\165
\163\164\061\035\060\033\006\003\125\004\003\014\024\117\160\145
\156\124\162\165\163\164\040\122\157\157\164\040\103\101\040\107

```

```
\063\060\166\060\020\006\007\052\206\110\316\075\002\001\006\005
\053\201\004\000\042\003\142\000\004\112\356\130\256\115\312\146
\336\006\072\243\021\374\340\030\360\156\034\272\055\060\014\211
\331\326\356\233\163\203\251\043\025\214\057\131\212\132\335\024
\352\235\131\053\103\267\006\354\062\266\272\356\101\265\255\135
\241\205\314\352\035\024\146\243\147\176\106\342\224\363\347\266
\126\241\025\131\241\117\067\227\271\042\036\275\021\353\364\262
\037\136\303\024\232\345\331\227\231\243\143\060\141\060\016\006
\003\125\035\017\001\001\377\004\004\003\002\001\006\060\017\006
\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060\035
\006\003\125\035\016\004\026\004\024\107\167\303\024\213\142\071
\014\311\157\341\120\115\320\020\130\334\225\210\155\060\037\006
\003\125\035\043\004\030\060\026\200\024\107\167\303\024\213\142
\071\014\311\157\341\120\115\320\020\130\334\225\210\155\060\012
\006\010\052\206\110\316\075\004\003\003\003\151\000\060\146\002
\061\000\217\250\334\235\272\014\004\027\372\025\351\075\057\051
\001\227\277\201\026\063\100\223\154\374\371\355\200\160\157\252
\217\333\204\302\213\365\065\312\006\334\144\157\150\026\341\217
\221\271\002\061\000\330\113\245\313\302\320\010\154\351\030\373
\132\335\115\137\044\013\260\000\041\045\357\217\247\004\046\161
\342\174\151\345\135\232\370\101\037\073\071\223\223\235\125\352
\315\215\361\373\301
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
Trust for "OpenTrust Root CA G3"
Issuer: CN=OpenTrust Root CA G3,O=OpenTrust,C=FR
Serial Number:11:20:e6:f8:4c:fc:24:b0:be:05:40:ac:da:83:1b:34:60:3f
Subject: CN=OpenTrust Root CA G3,O=OpenTrust,C=FR
Not Valid Before: Mon May 26 00:00:00 2014
Not Valid After: Fri Jan 15 00:00:00 2038
Fingerprint (MD5): 21:37:b4:17:16:92:7b:67:46:70:a9:96:d7:a8:13:24
Fingerprint (SHA1): 6e:26:64:f3:56:bf:34:55:bf:d1:93:3f:7c:01:de:d8:13:da:8a:a6
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "OpenTrust Root CA G3"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\156\046\144\363\126\277\064\125\277\321\223\077\174\001\336\330
\023\332\212\246
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\041\067\264\027\026\222\173\147\106\160\251\226\327\250\023\044
END
```

```

CKA_ISSUER MULTILINE_OCTAL
\060\100\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\022\060\020\006\003\125\004\012\014\011\117\160\145\156\124\162
\165\163\164\061\035\060\033\006\003\125\004\003\014\024\117\160
\145\156\124\162\165\163\164\040\122\157\157\164\040\103\101\040
\107\063
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\022\021\040\346\370\114\374\044\260\276\005\100\254\332\203
\033\064\140\077
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "Certplus Root CA G1"
Issuer: CN=Certplus Root CA G1,O=Certplus,C=FR
Serial Number: 11:20:55:83:e4:2d:3e:54:56:85:2d:83:37:b7:2c:dc:46:11
Subject: CN=Certplus Root CA G1,O=Certplus,C=FR
Not Valid Before: Mon May 26 00:00:00 2014
Not Valid After: Fri Jan 15 00:00:00 2038
Fingerprint (MD5): 7f:09:9c:f7:d9:b9:5c:69:69:56:d5:37:3e:14:0d:42
Fingerprint (SHA1): 22:fd:d0:b7:fd:a2:4e:0d:ac:49:2c:a0:ac:a6:7b:6a:1f:e3:f7:66
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certplus Root CA G1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\076\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\021\060\017\006\003\125\004\012\014\010\103\145\162\164\160\154
\165\163\061\034\060\032\006\003\125\004\003\014\023\103\145\162
\164\160\154\165\163\040\122\157\157\164\040\103\101\040\107\061
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\076\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\021\060\017\006\003\125\004\012\014\010\103\145\162\164\160\154
\165\163\061\034\060\032\006\003\125\004\003\014\023\103\145\162
\164\160\154\165\163\040\122\157\157\164\040\103\101\040\107\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\022\021\040\125\203\344\055\076\124\126\205\055\203\067\267
\054\334\106\021
END

```

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\153\060\202\003\123\240\003\002\001\002\002\022\021  
\040\125\203\344\055\076\124\126\205\055\203\067\267\054\334\106  
\021\060\015\006\011\052\206\110\206\367\015\001\001\015\005\000  
\060\076\061\013\060\011\006\003\125\004\006\023\002\106\122\061  
\021\060\017\006\003\125\004\012\014\010\103\145\162\164\160\154  
\165\163\061\034\060\032\006\003\125\004\003\014\023\103\145\162  
\164\160\154\165\163\040\122\157\157\164\040\103\101\040\107\061  
\060\036\027\015\061\064\060\065\062\066\060\060\060\060\060  
\132\027\015\063\070\060\061\061\065\060\060\060\060\060\132  
\060\076\061\013\060\011\006\003\125\004\006\023\002\106\122\061  
\021\060\017\006\003\125\004\012\014\010\103\145\162\164\160\154  
\165\163\061\034\060\032\006\003\125\004\003\014\023\103\145\162  
\164\160\154\165\163\040\122\157\157\164\040\103\101\040\107\061  
\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001  
\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001  
\000\332\120\207\266\332\270\251\076\235\144\372\126\063\232\126  
\075\026\345\003\225\262\064\034\232\155\142\005\324\330\217\347  
\211\144\237\272\333\144\213\144\346\171\052\141\315\257\217\132  
\211\221\145\271\130\374\264\003\137\221\077\055\020\025\340\176  
\317\274\374\177\103\147\250\255\136\066\043\330\230\263\115\363  
\103\236\071\174\052\374\354\210\325\210\356\160\275\205\026\055  
\352\113\211\074\243\161\102\376\034\375\323\034\055\020\270\206  
\124\352\103\270\333\306\207\332\250\256\200\045\317\172\046\035  
\252\221\260\110\157\256\265\336\236\330\327\372\000\375\306\217  
\320\121\273\142\175\244\261\214\262\377\040\021\272\065\143\005  
\206\107\140\103\063\220\366\107\242\003\117\226\115\235\117\301  
\352\352\234\242\376\064\056\336\267\312\033\166\244\267\255\237  
\351\250\324\170\077\170\376\362\070\011\066\035\322\026\002\310  
\354\052\150\257\365\216\224\357\055\023\172\036\102\112\035\025  
\061\256\014\004\127\374\141\163\363\061\126\206\061\200\240\304  
\021\156\060\166\343\224\360\137\004\304\254\207\162\211\230\305  
\235\314\127\010\232\364\014\374\175\172\005\072\372\107\200\071  
\266\317\204\023\167\157\047\352\377\226\147\027\010\155\351\015  
\326\043\120\060\260\025\164\023\076\345\057\377\016\315\304\013  
\112\135\360\330\000\063\111\146\353\241\030\174\131\056\075\050  
\271\141\161\313\265\245\272\270\352\334\342\160\157\010\152\334  
\207\147\064\357\337\060\162\335\363\311\077\043\377\065\341\276  
\041\051\040\060\201\344\031\245\040\351\045\312\163\061\164\051  
\276\342\102\325\363\262\046\146\307\150\375\031\263\347\040\223  
\231\350\135\340\136\207\347\106\350\045\234\012\051\044\324\315  
\130\206\122\100\044\262\173\017\230\022\040\044\366\220\154\107  
\310\015\273\030\040\056\331\375\374\213\362\051\352\207\164\225  
\340\102\120\170\204\004\101\141\260\364\041\043\217\055\313\050  
\041\362\152\154\364\032\246\305\024\264\067\145\117\225\375\200  
\310\370\162\345\045\153\304\140\261\173\155\216\112\212\163\316  
\131\373\160\172\163\006\023\331\323\164\067\044\101\012\021\157  
\227\334\347\344\176\241\275\025\362\272\207\017\075\150\212\026

\007\002\003\001\000\001\243\143\060\141\060\016\006\003\125\035  
\017\001\001\377\004\004\003\002\001\006\060\017\006\003\125\035  
\023\001\001\377\004\005\060\003\001\001\377\060\035\006\003\125  
\035\016\004\026\004\024\250\301\300\233\221\250\103\025\174\135  
\006\047\264\052\121\330\227\013\201\261\060\037\006\003\125\035  
\043\004\030\060\026\200\024\250\301\300\233\221\250\103\025\174  
\135\006\047\264\052\121\330\227\013\201\261\060\015\006\011\052  
\206\110\206\367\015\001\001\015\005\000\003\202\002\001\000\234  
\126\157\001\176\321\275\114\365\212\306\360\046\037\344\340\070  
\030\314\062\303\051\073\235\101\051\064\141\306\327\360\000\241  
\353\244\162\217\224\027\274\023\054\165\264\127\356\012\174\011  
\172\334\325\312\241\320\064\023\370\167\253\237\345\376\330\036  
\164\212\205\007\217\177\314\171\172\312\226\315\315\375\117\373  
\375\043\015\220\365\364\136\323\306\141\175\236\021\340\002\356  
\011\004\331\007\335\246\212\267\014\203\044\273\203\120\222\376  
\140\165\021\076\330\235\260\212\172\265\340\235\233\313\220\122  
\113\260\223\052\324\076\026\063\345\236\306\145\025\076\144\073  
\004\077\333\014\217\137\134\035\151\037\257\363\351\041\214\363  
\357\227\366\232\267\031\266\204\164\234\243\124\265\160\116\143  
\330\127\135\123\041\233\100\222\103\372\326\167\125\063\117\144  
\325\373\320\054\152\216\155\045\246\357\205\350\002\304\123\076  
\271\236\207\274\314\065\032\336\241\351\212\143\207\145\036\021  
\052\333\143\167\227\024\276\232\024\231\021\262\300\356\260\117  
\370\024\041\062\103\117\237\253\242\313\250\017\252\073\006\125  
\306\022\051\127\010\324\067\327\207\047\255\111\131\247\221\253  
\104\172\136\215\160\333\227\316\110\120\261\163\223\366\360\203  
\140\371\315\361\341\061\375\133\174\161\041\143\024\024\252\257  
\305\336\223\176\150\261\354\042\242\252\220\165\236\265\103\162  
\352\144\243\204\113\375\014\250\046\153\161\227\356\126\143\146  
\350\102\124\371\307\035\337\320\217\133\337\310\060\157\210\376  
\015\304\063\034\123\250\243\375\110\020\362\344\012\116\341\025  
\127\374\156\144\060\302\125\021\334\352\251\315\112\124\254\051  
\143\104\317\112\100\240\326\150\131\033\063\371\357\072\213\333  
\040\222\334\102\204\277\001\253\207\300\325\040\202\333\306\271  
\203\205\102\134\017\103\073\152\111\065\325\230\364\025\277\372  
\141\201\014\011\040\030\322\320\027\014\313\110\000\120\351\166  
\202\214\144\327\072\240\007\125\314\036\061\300\357\072\264\145  
\373\343\277\102\153\236\017\250\275\153\230\334\330\333\313\213  
\244\335\327\131\364\156\335\376\252\303\221\320\056\102\007\300  
\014\115\123\315\044\261\114\133\036\121\364\337\351\222\372

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "Certplus Root CA G1"  
# Issuer: CN=Certplus Root CA G1,O=Certplus,C=FR

```
Serial Number:11:20:55:83:e4:2d:3e:54:56:85:2d:83:37:b7:2c:dc:46:11
Subject: CN=Certplus Root CA G1,O=Certplus,C=FR
Not Valid Before: Mon May 26 00:00:00 2014
Not Valid After: Fri Jan 15 00:00:00 2038
Fingerprint (MD5): 7f:09:9c:f7:d9:b9:5c:69:69:56:d5:37:3e:14:0d:42
Fingerprint (SHA1): 22:fd:d0:b7:fd:a2:4e:0d:ac:49:2c:a0:ac:a6:7b:6a:1f:e3:f7:66
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certplus Root CA G1"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\042\375\320\267\375\242\116\015\254\111\054\240\254\246\173\152
\037\343\367\146
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\177\011\234\367\331\271\134\151\151\126\325\067\076\024\015\102
END
CKA_ISSUER MULTILINE_OCTAL
\060\076\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\021\060\017\006\003\125\004\012\014\010\103\145\162\164\160\154
\165\163\061\034\060\032\006\003\125\004\003\014\023\103\145\162
\164\160\154\165\163\040\122\157\157\164\040\103\101\040\107\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\022\021\040\125\203\344\055\076\124\126\205\055\203\067\267
\054\334\106\021
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
Certificate "Certplus Root CA G2"
Issuer: CN=Certplus Root CA G2,O=Certplus,C=FR
Serial Number:11:20:d9:91:ce:ae:a3:e8:c5:e7:ff:e9:02:af:cf:73:bc:55
Subject: CN=Certplus Root CA G2,O=Certplus,C=FR
Not Valid Before: Mon May 26 00:00:00 2014
Not Valid After: Fri Jan 15 00:00:00 2038
Fingerprint (MD5): a7:ee:c4:78:2d:1b:ee:2d:b9:29:ce:d6:a7:96:32:31
Fingerprint (SHA1): 4f:65:8e:1f:e9:06:d8:28:02:e9:54:47:41:c9:54:25:5d:69:cc:1a
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certplus Root CA G2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
```

CKA\_SUBJECT MULTILINE\_OCTAL

\060\076\061\013\060\011\006\003\125\004\006\023\002\106\122\061  
\021\060\017\006\003\125\004\012\014\010\103\145\162\164\160\154  
\165\163\061\034\060\032\006\003\125\004\003\014\023\103\145\162  
\164\160\154\165\163\040\122\157\157\164\040\103\101\040\107\062  
END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\076\061\013\060\011\006\003\125\004\006\023\002\106\122\061  
\021\060\017\006\003\125\004\012\014\010\103\145\162\164\160\154  
\165\163\061\034\060\032\006\003\125\004\003\014\023\103\145\162  
\164\160\154\165\163\040\122\157\157\164\040\103\101\040\107\062  
END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\022\021\040\331\221\316\256\243\350\305\347\377\351\002\257  
\317\163\274\125  
END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\002\034\060\202\001\242\240\003\002\001\002\002\022\021  
\040\331\221\316\256\243\350\305\347\377\351\002\257\317\163\274  
\125\060\012\006\010\052\206\110\316\075\004\003\003\060\076\061  
\013\060\011\006\003\125\004\006\023\002\106\122\061\021\060\017  
\006\003\125\004\012\014\010\103\145\162\164\160\154\165\163\061  
\034\060\032\006\003\125\004\003\014\023\103\145\162\164\160\154  
\165\163\040\122\157\157\164\040\103\101\040\107\062\060\036\027  
\015\061\064\060\065\062\066\060\060\060\060\060\060\132\027\015  
\063\070\060\061\061\065\060\060\060\060\060\060\132\060\076\061  
\013\060\011\006\003\125\004\006\023\002\106\122\061\021\060\017  
\006\003\125\004\012\014\010\103\145\162\164\160\154\165\163\061  
\034\060\032\006\003\125\004\003\014\023\103\145\162\164\160\154  
\165\163\040\122\157\157\164\040\103\101\040\107\062\060\166\060  
\020\006\007\052\206\110\316\075\002\001\006\005\053\201\004\000  
\042\003\142\000\004\315\017\133\126\202\337\360\105\032\326\255  
\367\171\360\035\311\254\226\326\236\116\234\037\264\102\021\312  
\206\277\155\373\205\243\305\345\031\134\327\356\246\077\151\147  
\330\170\342\246\311\304\333\055\171\056\347\213\215\002\157\061  
\042\115\006\343\140\162\105\235\016\102\167\236\316\317\345\177  
\205\233\030\344\374\314\056\162\323\026\223\116\312\231\143\134  
\241\005\052\154\006\243\143\060\141\060\016\006\003\125\035\017  
\001\001\377\004\004\003\002\001\006\060\017\006\003\125\035\023  
\001\001\377\004\005\060\003\001\001\377\060\035\006\003\125\035  
\016\004\026\004\024\332\203\143\002\171\216\332\114\306\074\043  
\024\330\217\303\040\253\050\140\131\060\037\006\003\125\035\043  
\004\030\060\026\200\024\332\203\143\002\171\216\332\114\306\074  
\043\024\330\217\303\040\253\050\140\131\060\012\006\010\052\206  
\110\316\075\004\003\003\003\150\000\060\145\002\060\160\376\260  
\013\331\367\203\227\354\363\125\035\324\334\263\006\016\376\063  
\230\235\213\071\220\153\224\041\355\266\327\135\326\114\327\041



```
\247\347\277\041\017\053\315\367\052\334\205\007\235\002\061\000
\206\024\026\345\334\260\145\302\300\216\024\237\277\044\026\150
\345\274\371\171\151\334\255\105\053\367\266\061\163\314\006\245
\123\223\221\032\223\256\160\152\147\272\327\236\345\141\032\137
END
```

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
Trust for "Certplus Root CA G2"
Issuer: CN=Certplus Root CA G2,O=Certplus,C=FR
Serial Number:11:20:d9:91:ce:ae:a3:e8:c5:e7:ff:e9:02:af:cf:73:bc:55
Subject: CN=Certplus Root CA G2,O=Certplus,C=FR
Not Valid Before: Mon May 26 00:00:00 2014
Not Valid After: Fri Jan 15 00:00:00 2038
Fingerprint (MD5): a7:ee:c4:78:2d:1b:ee:2d:b9:29:ce:d6:a7:96:32:31
Fingerprint (SHA1): 4f:65:8e:1f:e9:06:d8:28:02:e9:54:47:41:c9:54:25:5d:69:cc:1a
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certplus Root CA G2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\117\145\216\037\351\006\330\050\002\351\124\107\101\311\124\045
\135\151\314\032
END
```

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\247\356\304\170\055\033\356\055\271\051\316\326\247\226\062\061
END
```

```
CKA_ISSUER MULTILINE_OCTAL
\060\076\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\021\060\017\006\003\125\004\012\014\010\103\145\162\164\160\154
\165\163\061\034\060\032\006\003\125\004\003\014\023\103\145\162
\164\160\154\165\163\040\122\157\157\164\040\103\101\040\107\062
END
```

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\022\021\040\331\221\316\256\243\350\305\347\377\351\002\257
\317\163\274\125
END
```

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
Certificate "Government Root Certification Authority"
Issuer: O=Government Root Certification Authority,C=TW
```

```
Serial Number:b6:4b:88:07:e2:23:ee:c8:5c:12:ad:a6:0e:06:a1:f2
Subject: O=Government Root Certification Authority,C=TW
Not Valid Before: Fri Sep 28 08:58:51 2012
Not Valid After: Thu Dec 31 15:59:59 2037
Fingerprint (MD5): 2f:d4:2d:cd:86:7f:36:b0:5f:1c:e0:53:8d:b6:a2:5b
Fingerprint (SHA1): b0:91:aa:91:38:47:f3:13:d7:27:bc:ef:c8:17:9f:08:6f:3a:8c:0f
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Government Root Certification Authority"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\077\061\013\060\011\006\003\125\004\006\023\002\124\127\061
\060\060\056\006\003\125\004\012\014\047\107\157\166\145\162\156
\155\145\156\164\040\122\157\157\164\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164
\171
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\077\061\013\060\011\006\003\125\004\006\023\002\124\127\061
\060\060\056\006\003\125\004\012\014\047\107\157\166\145\162\156
\155\145\156\164\040\122\157\157\164\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164
\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\021\000\266\113\210\007\342\043\356\310\134\022\255\246\016
\006\241\362
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\113\060\202\003\063\240\003\002\001\002\002\021\000
\266\113\210\007\342\043\356\310\134\022\255\246\016\006\241\362
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060
\077\061\013\060\011\006\003\125\004\006\023\002\124\127\061\060
\060\056\006\003\125\004\012\014\047\107\157\166\145\162\156\155
\145\156\164\040\122\157\157\164\040\103\145\162\164\151\146\151
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171
\060\036\027\015\061\062\060\071\062\070\060\070\065\070\065\061
\132\027\015\063\067\061\062\063\061\061\065\065\071\065\071\132
\060\077\061\013\060\011\006\003\125\004\006\023\002\124\127\061
\060\060\056\006\003\125\004\012\014\047\107\157\166\145\162\156
\155\145\156\164\040\122\157\157\164\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164
\171\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001
\001\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002
\001\000\266\377\227\074\201\276\001\130\044\047\257\216\001\053
```

\326\162\222\060\062\033\137\233\174\324\324\177\350\241\140\163  
\060\127\020\000\372\120\226\044\376\120\346\214\072\225\321\127  
\171\204\325\147\123\014\052\202\076\030\134\270\060\046\032\326  
\136\306\055\262\004\121\016\357\337\014\143\107\353\304\022\010  
\121\053\231\161\136\325\151\173\341\135\311\167\035\040\354\126  
\216\345\141\140\055\374\351\034\200\337\372\152\203\273\005\265  
\036\043\022\234\202\312\012\363\024\035\040\344\006\217\103\044  
\231\237\266\012\223\132\163\033\026\071\276\005\266\361\214\245  
\144\222\217\005\344\134\166\367\071\303\317\055\275\016\330\313  
\250\016\061\233\311\106\017\147\123\103\004\217\310\262\310\203  
\200\137\272\362\017\253\201\065\242\040\041\227\316\017\211\064  
\170\017\317\037\116\351\373\214\050\074\336\064\347\355\237\322  
\146\365\305\312\061\170\322\316\120\321\140\202\143\235\340\114  
\367\007\256\203\064\235\111\111\103\324\176\275\055\342\352\307  
\161\145\200\010\344\066\236\171\160\012\074\207\051\351\344\222  
\224\352\006\222\051\047\170\346\255\327\075\351\012\013\136\364  
\340\326\206\235\055\162\313\213\144\126\346\364\256\170\245\240  
\071\063\130\074\334\250\217\215\264\152\055\375\210\163\351\225  
\120\163\004\337\021\210\076\102\326\002\164\373\054\304\157\274  
\154\326\340\200\157\321\206\245\062\127\003\326\115\364\116\012  
\231\042\166\176\112\100\202\370\311\344\116\313\123\055\307\261  
\266\342\323\302\165\047\156\271\016\161\262\064\374\277\034\116  
\302\075\370\066\351\012\314\130\232\241\030\206\116\342\341\252  
\263\163\131\156\136\235\264\302\010\257\257\134\375\244\002\157  
\377\270\015\273\325\253\327\156\237\032\117\221\100\360\037\106  
\125\155\240\222\303\211\315\267\261\377\034\263\313\243\234\012  
\343\376\315\252\274\001\354\335\124\312\221\335\117\023\207\244  
\366\230\357\375\111\326\127\052\074\246\134\366\140\067\277\330  
\076\176\116\150\052\043\062\072\276\156\344\042\075\007\044\317  
\212\313\233\135\121\263\060\322\161\155\316\106\212\155\174\112  
\063\104\332\022\057\066\113\362\351\361\121\011\155\333\152\227  
\016\027\002\003\001\000\001\243\102\060\100\060\017\006\003\125  
\035\023\001\001\377\004\005\060\003\001\001\377\060\035\006\003  
\125\035\016\004\026\004\024\325\147\035\340\234\172\054\234\313  
\305\230\347\035\007\046\052\206\354\164\315\060\016\006\003\125  
\035\017\001\001\377\004\004\003\002\001\006\060\015\006\011\052  
\206\110\206\367\015\001\001\013\005\000\003\202\002\001\000\220  
\073\345\302\123\102\050\352\365\061\116\216\075\221\236\115\011  
\363\330\261\122\346\117\254\014\061\041\273\361\352\231\314\203  
\374\266\050\344\354\204\007\016\017\116\227\273\157\150\106\217  
\016\121\025\225\370\072\073\037\137\202\016\014\161\016\274\221  
\117\256\063\056\043\101\364\046\153\117\023\207\372\170\366\056  
\302\017\221\005\227\252\152\301\152\237\274\204\236\010\052\047  
\335\332\207\027\206\341\263\312\135\355\070\251\051\156\204\336  
\106\153\374\047\031\120\245\022\172\214\175\142\374\332\347\314  
\274\237\111\257\006\270\047\047\362\211\367\026\075\030\346\275  
\336\365\214\022\221\237\343\004\215\376\007\024\032\132\254\071  
\202\033\361\070\031\341\143\343\257\154\266\246\121\027\353\372

\113\353\213\042\366\227\376\020\072\137\224\240\113\123\161\077  
\132\341\020\370\162\217\226\200\335\215\002\230\000\141\075\215  
\274\055\261\107\314\332\135\341\040\247\214\061\134\361\343\332  
\271\012\206\107\310\241\075\007\243\074\246\163\156\224\221\355  
\156\044\072\371\311\060\321\007\250\201\175\046\175\175\204\337  
\206\311\213\345\256\015\036\276\211\110\121\025\203\230\226\057  
\112\353\163\064\327\164\315\311\157\320\302\272\053\366\232\376  
\231\335\140\024\216\033\371\234\071\074\177\103\211\123\350\345  
\302\253\276\042\255\047\070\233\167\050\267\243\143\143\247\201  
\347\251\151\105\353\216\170\126\314\005\204\307\373\255\266\060  
\174\143\005\237\055\214\044\177\113\213\222\374\070\036\237\240  
\245\127\263\156\235\330\144\270\160\232\140\122\160\310\251\320  
\377\306\234\355\020\141\136\315\203\016\156\350\115\002\101\112  
\342\166\004\171\326\124\077\212\230\062\024\240\335\055\234\347  
\272\202\161\243\206\125\051\231\322\051\333\165\072\367\333\103  
\377\266\133\373\267\176\065\200\216\015\154\256\171\267\066\055  
\227\122\241\260\007\234\007\345\053\066\315\003\227\224\275\055  
\016\064\006\374\300\026\211\374\067\124\344\326\317\075\023\004  
\362\221\331\311\066\056\076\305\132\320\245\114\202\303\377\056  
\174\046\166\367\363\375\105\242\245\156\125\256\056\314\317\054  
\211\064\332\366\015\347\221\250\020\352\027\235\362\366\354

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "Government Root Certification Authority"  
# Issuer: O=Government Root Certification Authority,C=TW  
# Serial Number:b6:4b:88:07:e2:23:ee:c8:5c:12:ad:a6:0e:06:a1:f2  
# Subject: O=Government Root Certification Authority,C=TW  
# Not Valid Before: Fri Sep 28 08:58:51 2012  
# Not Valid After: Thu Dec 31 15:59:59 2037  
# Fingerprint (MD5): 2f:d4:2d:cd:86:7f:36:b0:5f:1c:e0:53:8d:b6:a2:5b  
# Fingerprint (SHA1): b0:91:aa:91:38:47:f3:13:d7:27:bc:ef:c8:17:9f:08:6f:3a:8c:0f

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "Government Root Certification Authority"  
CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL  
\260\221\252\221\070\107\363\023\327\047\274\357\310\027\237\010  
\157\072\214\017

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL  
\057\324\055\315\206\177\066\260\137\034\340\123\215\266\242\133  
END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\077\061\013\060\011\006\003\125\004\006\023\002\124\127\061
\060\060\056\006\003\125\004\012\014\047\107\157\166\145\162\156
\155\145\156\164\040\122\157\157\164\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164
\171
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\021\000\266\113\210\007\342\043\356\310\134\022\255\246\016
\006\241\362
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "A-Trust-Qual-02"

# Issuer: CN=A-Trust-Qual-02,OU=A-Trust-Qual-02,O=A-Trust Ges. f. Sicherheitssysteme im elektr. Datenverkehr GmbH,C=AT

# Serial Number:14:4d:e4

# Subject: CN=A-Trust-Qual-02,OU=A-Trust-Qual-02,O=A-Trust Ges. f. Sicherheitssysteme im elektr. Datenverkehr GmbH,C=AT

# Not Valid Before: Tue Jul 01 11:23:33 2014

# Not Valid After: Mon Jul 01 09:23:33 2024

# Fingerprint (MD5): 4b:d4:35:43:a8:b2:43:6d:d7:78:e2:89:a2:a9:39:ab

# Fingerprint (SHA1): cd:78:7a:3d:5c:ba:82:07:08:28:48:36:5e:9a:cd:e9:68:33:64:d8

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "A-Trust-Qual-02"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

```
\060\201\213\061\013\060\011\006\003\125\004\006\023\002\101\124
\061\110\060\106\006\003\125\004\012\014\077\101\055\124\162\165
\163\164\040\107\145\163\056\040\146\056\040\123\151\143\150\145
\162\150\145\151\164\163\163\171\163\164\145\155\145\040\151\155
\040\145\154\145\153\164\162\056\040\104\141\164\145\156\166\145
\162\153\145\150\162\040\107\155\142\110\061\030\060\026\006\003
\125\004\013\014\017\101\055\124\162\165\163\164\055\121\165\141
\154\055\060\062\061\030\060\026\006\003\125\004\003\014\017\101
\055\124\162\165\163\164\055\121\165\141\154\055\060\062
```

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\201\213\061\013\060\011\006\003\125\004\006\023\002\101\124
\061\110\060\106\006\003\125\004\012\014\077\101\055\124\162\165
\163\164\040\107\145\163\056\040\146\056\040\123\151\143\150\145
```

\162\150\145\151\164\163\163\171\163\164\145\155\145\040\151\155  
\040\145\154\145\153\164\162\056\040\104\141\164\145\156\166\145  
\162\153\145\150\162\040\107\155\142\110\061\030\060\026\006\003  
\125\004\013\014\017\101\055\124\162\165\163\164\055\121\165\141  
\154\055\060\062\061\030\060\026\006\003\125\004\003\014\017\101  
\055\124\162\165\163\164\055\121\165\141\154\055\060\062

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\003\024\115\344

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\313\060\202\002\263\240\003\002\001\002\002\003\024  
\115\344\060\015\006\011\052\206\110\206\367\015\001\001\005\005  
\000\060\201\213\061\013\060\011\006\003\125\004\006\023\002\101  
\124\061\110\060\106\006\003\125\004\012\014\077\101\055\124\162  
\165\163\164\040\107\145\163\056\040\146\056\040\123\151\143\150  
\145\162\150\145\151\164\163\163\171\163\164\145\155\145\040\151  
\155\040\145\154\145\153\164\162\056\040\104\141\164\145\156\166  
\145\162\153\145\150\162\040\107\155\142\110\061\030\060\026\006  
\003\125\004\013\014\017\101\055\124\162\165\163\164\055\121\165  
\141\154\055\060\062\061\030\060\026\006\003\125\004\003\014\017  
\101\055\124\162\165\163\164\055\121\165\141\154\055\060\062\060  
\036\027\015\061\064\060\067\060\061\061\061\062\063\063\063\132  
\027\015\062\064\060\067\060\061\060\071\062\063\063\063\132\060  
\201\213\061\013\060\011\006\003\125\004\006\023\002\101\124\061  
\110\060\106\006\003\125\004\012\014\077\101\055\124\162\165\163  
\164\040\107\145\163\056\040\146\056\040\123\151\143\150\145\162  
\150\145\151\164\163\163\171\163\164\145\155\145\040\151\155\040  
\145\154\145\153\164\162\056\040\104\141\164\145\156\166\145\162  
\153\145\150\162\040\107\155\142\110\061\030\060\026\006\003\125  
\004\013\014\017\101\055\124\162\165\163\164\055\121\165\141\154  
\055\060\062\061\030\060\026\006\003\125\004\003\014\017\101\055  
\124\162\165\163\164\055\121\165\141\154\055\060\062\060\202\001  
\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000  
\003\202\001\017\000\060\202\001\012\002\202\001\001\000\226\221  
\253\327\216\260\131\270\001\275\264\036\255\231\375\241\374\352  
\014\226\153\217\056\111\110\330\351\344\044\202\341\330\272\314  
\353\336\007\134\110\306\031\202\001\107\102\011\341\174\271\237  
\256\217\366\356\136\153\250\250\126\210\070\126\263\346\376\311  
\235\117\064\070\121\074\234\276\363\254\234\034\310\075\134\232  
\204\256\367\224\054\024\262\144\067\140\216\024\260\073\052\315  
\211\265\042\257\367\344\177\356\054\053\063\371\216\074\255\114  
\242\127\017\373\202\305\216\037\001\337\123\214\301\025\244\335  
\356\232\222\022\322\050\351\142\027\045\140\061\357\317\061\224  
\363\175\363\344\074\041\253\220\374\155\317\143\247\306\022\000  
\161\111\327\034\310\240\355\143\232\175\343\217\050\335\140\371  
\330\346\026\253\046\321\320\057\275\347\015\011\337\156\324\354  
\345\070\123\364\144\013\272\132\314\200\265\070\131\354\200\131

\145\204\061\152\137\125\221\114\044\345\044\232\203\204\172\276  
\200\361\356\137\040\007\252\167\027\154\013\342\125\252\226\170  
\010\002\236\227\360\053\256\130\365\200\120\077\376\073\002\003  
\001\000\001\243\066\060\064\060\017\006\003\125\035\023\001\001  
\377\004\005\060\003\001\001\377\060\021\006\003\125\035\016\004  
\012\004\010\102\075\053\044\246\301\105\316\060\016\006\003\125  
\035\017\001\001\377\004\004\003\002\001\006\060\015\006\011\052  
\206\110\206\367\015\001\001\005\005\000\003\202\001\001\000\141  
\061\363\210\065\011\270\136\234\305\350\071\244\072\146\377\002  
\264\227\035\376\113\071\272\205\230\203\050\240\332\366\116\114  
\263\255\104\312\374\321\076\231\332\346\327\224\137\166\333\073  
\221\225\152\374\200\237\101\041\136\150\373\326\150\005\152\342  
\231\107\377\156\216\216\363\023\126\376\303\176\007\317\005\114  
\103\132\251\102\270\071\303\234\360\025\103\354\250\376\216\142  
\004\016\156\122\123\033\247\234\347\154\073\145\307\001\177\346  
\005\252\162\177\341\053\024\224\010\375\156\210\343\310\224\247  
\336\126\373\021\230\027\011\001\332\042\305\063\077\041\315\164  
\245\253\311\060\143\210\333\112\047\002\273\320\144\005\004\155  
\164\013\003\307\054\362\166\261\174\136\201\243\176\224\366\171  
\072\302\176\352\361\123\327\205\130\236\220\034\235\327\261\172  
\364\017\232\207\102\052\303\204\217\177\320\152\065\022\036\325  
\214\161\214\070\102\232\065\255\335\252\062\023\166\105\006\341  
\243\133\352\366\212\226\377\274\145\065\373\152\062\313\141\135  
\331\323\046\210\304\073\200\150\126\137\325\372\201\142\335

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "A-Trust-Qual-02"

# Issuer: CN=A-Trust-Qual-02,OU=A-Trust-Qual-02,O=A-Trust Ges. f. Sicherheitssysteme im elektr. Datenverkehr GmbH,C=AT

# Serial Number: 14:4d:e4

# Subject: CN=A-Trust-Qual-02,OU=A-Trust-Qual-02,O=A-Trust Ges. f. Sicherheitssysteme im elektr. Datenverkehr GmbH,C=AT

# Not Valid Before: Tue Jul 01 11:23:33 2014

# Not Valid After: Mon Jul 01 09:23:33 2024

# Fingerprint (MD5): 4b:d4:35:43:a8:b2:43:6d:d7:78:e2:89:a2:a9:39:ab

# Fingerprint (SHA1): cd:78:7a:3d:5c:ba:82:07:08:28:48:36:5e:9a:cd:e9:68:33:64:d8

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "A-Trust-Qual-02"

CKA\_CERT\_SHA1\_HASH MULTILINE OCTAL

\315\170\172\075\134\272\202\007\010\050\110\066\136\232\315\351  
\150\063\144\330

```

END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\113\324\065\103\250\262\103\155\327\170\342\211\242\251\071\253
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\213\061\013\060\011\006\003\125\004\006\023\002\101\124
\061\110\060\106\006\003\125\004\012\014\077\101\055\124\162\165
\163\164\040\107\145\163\056\040\146\056\040\123\151\143\150\145
\162\150\145\151\164\163\163\171\163\164\145\155\145\040\151\155
\040\145\154\145\153\164\162\056\040\104\141\164\145\156\166\145
\162\153\145\150\162\040\107\155\142\110\061\030\060\026\006\003
\125\004\013\014\017\101\055\124\162\165\163\164\055\121\165\141
\154\055\060\062\061\030\060\026\006\003\125\004\003\014\017\101
\055\124\162\165\163\164\055\121\165\141\154\055\060\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\003\024\115\344
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "Thailand National Root Certification Authority - G1"
Issuer: CN=Thailand National Root Certification Authority - G1,OU=Thailand National Root Certification
Authority,O=Electronic Transactions Development Agency (Public Organization),C=TH
Serial Number:51:52:c5:8c
Subject: CN=Thailand National Root Certification Authority - G1,OU=Thailand National Root Certification
Authority,O=Electronic Transactions Development Agency (Public Organization),C=TH
Not Valid Before: Wed Mar 27 09:40:22 2013
Not Valid After: Thu Mar 27 10:10:22 2036
Fingerprint (MD5): da:9d:b6:26:4a:e5:22:a0:bb:8d:a4:f7:bc:0d:25:cc
Fingerprint (SHA1): 66:f2:dc:fb:3f:81:4d:de:e9:b3:20:6f:11:de:fe:1b:fb:df:e1:32
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Thailand National Root Certification Authority - G1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\317\061\013\060\011\006\003\125\004\006\023\002\124\110
\061\111\060\107\006\003\125\004\012\014\100\105\154\145\143\164
\162\157\156\151\143\040\124\162\141\156\163\141\143\164\151\157
\156\163\040\104\145\166\145\154\157\160\155\145\156\164\040\101
\147\145\156\143\171\040\050\120\165\142\154\151\143\040\117\162
\147\141\156\151\172\141\164\151\157\156\051\061\067\060\065\006
\003\125\004\013\014\056\124\150\141\151\154\141\156\144\040\116

```



\141\164\151\157\156\141\154\040\122\157\157\164\040\103\145\162  
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157  
\162\151\164\171\061\074\060\072\006\003\125\004\003\014\063\124  
\150\141\151\154\141\156\144\040\116\141\164\151\157\156\141\154  
\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164  
\151\157\156\040\101\165\164\150\157\162\151\164\171\040\055\040  
\107\061

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\317\061\013\060\011\006\003\125\004\006\023\002\124\110  
\061\111\060\107\006\003\125\004\012\014\100\105\154\145\143\164  
\162\157\156\151\143\040\124\162\141\156\163\141\143\164\151\157  
\156\163\040\104\145\166\145\154\157\160\155\145\156\164\040\101  
\147\145\156\143\171\040\050\120\165\142\154\151\143\040\117\162  
\147\141\156\151\172\141\164\151\157\156\051\061\067\060\065\006  
\003\125\004\013\014\056\124\150\141\151\154\141\156\144\040\116  
\141\164\151\157\156\141\154\040\122\157\157\164\040\103\145\162  
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157  
\162\151\164\171\061\074\060\072\006\003\125\004\003\014\063\124  
\150\141\151\154\141\156\144\040\116\141\164\151\157\156\141\154  
\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164  
\151\157\156\040\101\165\164\150\157\162\151\164\171\040\055\040  
\107\061

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\004\121\122\305\214

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\006\201\060\202\004\151\240\003\002\001\002\002\004\121  
\122\305\214\060\015\006\011\052\206\110\206\367\015\001\001\015  
\005\000\060\201\317\061\013\060\011\006\003\125\004\006\023\002  
\124\110\061\111\060\107\006\003\125\004\012\014\100\105\154\145  
\143\164\162\157\156\151\143\040\124\162\141\156\163\141\143\164  
\151\157\156\163\040\104\145\166\145\154\157\160\155\145\156\164  
\040\101\147\145\156\143\171\040\050\120\165\142\154\151\143\040  
\117\162\147\141\156\151\172\141\164\151\157\156\051\061\067\060  
\065\006\003\125\004\013\014\056\124\150\141\151\154\141\156\144  
\040\116\141\164\151\157\156\141\154\040\122\157\157\164\040\103  
\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164  
\150\157\162\151\164\171\061\074\060\072\006\003\125\004\003\014  
\063\124\150\141\151\154\141\156\144\040\116\141\164\151\157\156  
\141\154\040\122\157\157\164\040\103\145\162\164\151\146\151\143  
\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171\040  
\055\040\107\061\060\036\027\015\061\063\060\063\062\067\060\071  
\064\060\062\062\132\027\015\063\066\060\063\062\067\061\060\061  
\060\062\062\132\060\201\317\061\013\060\011\006\003\125\004\006  
\023\002\124\110\061\111\060\107\006\003\125\004\012\014\100\105

\154\145\143\164\162\157\156\151\143\040\124\162\141\156\163\141  
\143\164\151\157\156\163\040\104\145\166\145\154\157\160\155\145  
\156\164\040\101\147\145\156\143\171\040\050\120\165\142\154\151  
\143\040\117\162\147\141\156\151\172\141\164\151\157\156\051\061  
\067\060\065\006\003\125\004\013\014\056\124\150\141\151\154\141  
\156\144\040\116\141\164\151\157\156\141\154\040\122\157\157\164  
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101  
\165\164\150\157\162\151\164\171\061\074\060\072\006\003\125\004  
\003\014\063\124\150\141\151\154\141\156\144\040\116\141\164\151  
\157\156\141\154\040\122\157\157\164\040\103\145\162\164\151\146  
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164  
\171\040\055\040\107\061\060\202\002\042\060\015\006\011\052\206  
\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060\202  
\002\012\002\202\002\001\000\326\272\112\344\214\361\232\056\211  
\027\302\100\363\202\000\061\376\023\002\172\145\312\010\330\253  
\042\261\002\232\161\064\112\144\131\202\345\102\106\353\043\366  
\213\132\042\261\317\066\347\163\155\024\155\367\111\224\136\357  
\347\064\131\147\366\250\317\126\131\043\204\125\342\373\032\021  
\312\243\371\212\253\147\036\202\023\320\213\071\232\277\017\302  
\017\074\326\141\330\352\233\317\025\016\276\324\360\314\077\163  
\234\004\364\242\161\163\175\200\260\235\061\361\006\371\260\023  
\345\210\111\060\366\026\175\210\127\051\072\054\242\214\220\230  
\316\021\026\316\115\121\017\374\307\262\314\362\146\030\041\200  
\005\210\255\271\320\305\013\170\001\376\116\322\010\213\066\361  
\126\317\156\272\163\046\013\326\367\245\106\152\151\116\226\266  
\247\006\126\314\346\056\061\237\156\213\355\234\000\125\107\364  
\173\246\172\266\337\001\035\110\004\013\253\102\302\160\112\224  
\275\374\254\121\362\253\077\326\353\140\337\010\377\365\022\262  
\211\052\172\271\105\231\045\175\174\357\317\025\320\110\054\020  
\326\324\274\010\047\265\206\051\324\343\323\304\052\220\022\366  
\242\052\371\213\257\026\377\002\363\172\156\317\242\313\152\264  
\340\162\013\373\076\205\177\342\207\340\057\103\043\370\205\311  
\231\352\326\100\336\240\373\347\336\166\377\217\200\071\353\147  
\022\023\246\373\345\243\374\046\200\131\143\362\322\043\353\037  
\306\110\163\121\235\267\263\240\133\253\152\210\371\277\373\161  
\121\334\156\266\166\357\260\133\362\313\210\060\272\006\333\033  
\101\323\125\264\255\264\352\040\041\374\324\167\266\075\133\241  
\014\055\045\041\122\043\122\327\064\123\155\026\004\122\146\370  
\325\352\361\054\130\362\073\261\361\176\103\265\334\202\270\136  
\343\207\341\243\244\137\347\211\016\274\234\351\051\072\045\247  
\330\117\152\207\324\226\104\227\030\026\207\302\161\122\205\316  
\172\214\255\036\147\276\272\055\277\243\041\047\305\347\060\351  
\006\231\033\260\014\343\276\122\145\223\115\141\113\362\070\346  
\217\030\361\002\122\230\056\246\016\035\005\317\046\354\001\043  
\007\066\366\340\023\067\251\107\210\003\207\107\313\335\262\001  
\037\137\144\033\004\233\305\002\003\001\000\001\243\143\060\141  
\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001  
\377\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001

\006\060\037\006\003\125\035\043\004\030\060\026\200\024\177\043  
\166\267\203\052\161\367\054\321\210\017\335\114\137\062\012\150  
\273\177\060\035\006\003\125\035\016\004\026\004\024\177\043\166  
\267\203\052\161\367\054\321\210\017\335\114\137\062\012\150\273  
\177\060\015\006\011\052\206\110\206\367\015\001\001\015\005\000  
\003\202\002\001\000\015\145\034\132\007\251\236\254\114\311\137  
\117\335\061\154\331\342\123\035\077\221\215\132\263\214\275\064  
\236\056\115\312\130\323\257\131\142\111\066\163\260\141\166\021  
\276\213\066\307\224\252\370\066\151\007\040\337\134\057\013\366  
\216\002\026\357\122\006\070\335\355\064\140\252\207\136\027\316  
\070\155\120\115\345\337\345\121\276\035\004\226\364\334\352\345  
\331\352\216\336\237\164\313\202\224\123\201\154\373\136\054\325  
\241\165\226\115\373\060\134\315\141\240\236\241\314\202\271\122  
\162\013\207\143\141\173\141\064\164\266\056\335\342\341\207\265  
\111\024\141\025\107\112\113\076\167\271\010\322\066\117\130\147  
\102\211\200\170\132\022\043\355\105\073\335\277\040\046\124\374  
\133\077\140\001\030\101\343\147\165\023\267\052\025\160\314\313  
\171\322\024\370\363\302\340\052\020\367\371\102\330\334\332\012  
\323\001\005\333\127\230\311\266\353\014\231\012\312\214\175\357  
\073\026\050\300\367\137\341\107\121\323\370\006\105\007\360\013  
\272\302\234\230\354\322\177\115\176\375\006\374\163\302\302\125  
\022\142\320\043\104\337\042\344\370\171\347\245\020\116\076\311  
\216\252\203\351\066\352\253\171\306\005\204\315\226\150\174\164  
\254\077\062\377\256\311\100\354\217\120\277\120\250\267\116\325  
\255\066\152\327\047\063\372\347\330\055\331\067\230\205\033\246  
\014\352\173\020\023\160\036\236\210\305\334\076\216\271\015\125  
\337\001\316\320\111\166\121\333\020\142\170\101\255\151\143\245  
\225\011\267\030\006\157\375\004\147\324\020\017\116\333\073\137  
\014\143\174\353\144\275\156\113\000\250\201\372\222\062\206\060  
\214\011\277\175\130\077\145\015\251\067\321\105\343\146\151\304  
\150\364\142\251\250\036\067\331\056\231\111\240\260\006\214\100  
\177\205\261\365\361\114\113\070\240\010\314\052\331\226\300\354  
\300\015\074\056\105\127\303\357\225\332\266\313\356\133\145\250  
\053\062\257\311\047\371\025\123\067\165\130\037\113\352\227\242  
\042\134\147\126\342\240\314\065\304\254\303\061\100\271\234\003  
\172\275\311\110\016\352\152\025\332\234\274\170\157\311\025\347  
\144\003\331\111\023\146\105\113\055\364\204\231\263\352\247\022  
\225\345\223\056\374

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Thailand National Root Certification Authority - G1"

# Issuer: CN=Thailand National Root Certification Authority - G1,OU=Thailand National Root Certification Authority,O=Electronic Transactions Development Agency (Public Organization),C=TH

# Serial Number:51:52:c5:8c

```
Subject: CN=Thailand National Root Certification Authority - G1,OU=Thailand National Root Certification
Authority,O=Electronic Transactions Development Agency (Public Organization),C=TH
Not Valid Before: Wed Mar 27 09:40:22 2013
Not Valid After: Thu Mar 27 10:10:22 2036
Fingerprint (MD5): da:9d:b6:26:4a:e5:22:a0:bb:8d:a4:f7:bc:0d:25:cc
Fingerprint (SHA1): 66:f2:dc:fb:3f:81:4d:de:e9:b3:20:6f:11:de:fe:1b:fb:df:e1:32
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Thailand National Root Certification Authority - G1"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\146\362\334\373\077\201\115\336\351\263\040\157\021\336\376\033
\373\337\341\062
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\332\235\266\046\112\345\042\240\273\215\244\367\274\015\045\314
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\317\061\013\060\011\006\003\125\004\006\023\002\124\110
\061\111\060\107\006\003\125\004\012\014\100\105\154\145\143\164
\162\157\156\151\143\040\124\162\141\156\163\141\143\164\151\157
\156\163\040\104\145\166\145\154\157\160\155\145\156\164\040\101
\147\145\156\143\171\040\050\120\165\142\154\151\143\040\117\162
\147\141\156\151\172\141\164\151\157\156\051\061\067\060\065\006
\003\125\004\013\014\056\124\150\141\151\154\141\156\144\040\116
\141\164\151\157\156\141\154\040\122\157\157\164\040\103\145\162
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157
\162\151\164\171\061\074\060\072\006\003\125\004\003\014\063\124
\150\141\151\154\141\156\144\040\116\141\164\151\157\156\141\154
\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\101\165\164\150\157\162\151\164\171\040\055\040
\107\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\004\121\122\305\214
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "Certification Authority of WoSign"
Issuer: CN=Certification Authority of WoSign,O=WoSign CA Limited,C=CN
Serial Number:5e:68:d6:11:71:94:63:50:56:00:68:f3:3e:c9:c5:91
Subject: CN=Certification Authority of WoSign,O=WoSign CA Limited,C=CN
Not Valid Before: Sat Aug 08 01:00:01 2009
```

```
Not Valid After: Mon Aug 08 01:00:01 2039
Fingerprint (MD5): a1:f2:f9:b5:d2:c8:7a:74:b8:f3:05:f1:d7:e1:84:8d
Fingerprint (SHA1): b9:42:94:bf:91:ea:8f:b6:4b:e6:10:97:c7:fb:00:13:59:b6:76:cb
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certification Authority of WoSign"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\125\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\032\060\030\006\003\125\004\012\023\021\127\157\123\151\147\156
\040\103\101\040\114\151\155\151\164\145\144\061\052\060\050\006
\003\125\004\003\023\041\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\101\165\164\150\157\162\151\164\171\040\157\146
\040\127\157\123\151\147\156
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\125\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\032\060\030\006\003\125\004\012\023\021\127\157\123\151\147\156
\040\103\101\040\114\151\155\151\164\145\144\061\052\060\050\006
\003\125\004\003\023\041\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\101\165\164\150\157\162\151\164\171\040\157\146
\040\127\157\123\151\147\156
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\136\150\326\021\161\224\143\120\126\000\150\363\076\311
\305\221
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\166\060\202\003\136\240\003\002\001\002\002\020\136
\150\326\021\161\224\143\120\126\000\150\363\076\311\305\221\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\125
\061\013\060\011\006\003\125\004\006\023\002\103\116\061\032\060
\030\006\003\125\004\012\023\021\127\157\123\151\147\156\040\103
\101\040\114\151\155\151\164\145\144\061\052\060\050\006\003\125
\004\003\023\041\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171\040\157\146\040\127
\157\123\151\147\156\060\036\027\015\060\071\060\070\060\070\060
\061\060\060\060\061\132\027\015\063\071\060\070\060\070\060\061
\060\060\060\061\132\060\125\061\013\060\011\006\003\125\004\006
\023\002\103\116\061\032\060\030\006\003\125\004\012\023\021\127
\157\123\151\147\156\040\103\101\040\114\151\155\151\164\145\144
\061\052\060\050\006\003\125\004\003\023\041\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\171\040\157\146\040\127\157\123\151\147\156\060\202\002\042
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003
```

\202\002\017\000\060\202\002\012\002\202\002\001\000\275\312\215  
\254\270\221\025\126\227\173\153\134\172\302\336\153\331\241\260  
\303\020\043\372\247\241\262\314\061\372\076\331\246\051\157\026  
\075\340\153\370\270\100\137\333\071\250\000\172\213\240\115\124  
\175\302\042\170\374\216\011\270\250\205\327\314\225\227\113\164  
\330\236\176\360\000\344\016\211\256\111\050\104\032\020\231\062  
\017\045\210\123\244\015\263\017\022\010\026\013\003\161\047\034  
\177\341\333\322\375\147\150\304\005\135\012\016\135\160\327\330  
\227\240\274\123\101\232\221\215\364\236\066\146\172\176\126\301  
\220\137\346\261\150\040\066\244\214\044\054\054\107\013\131\166  
\146\060\265\276\336\355\217\370\235\323\273\001\060\346\362\363  
\016\340\054\222\200\363\205\371\050\212\264\124\056\232\355\367  
\166\374\025\150\026\353\112\154\353\056\022\217\324\317\376\014  
\307\134\035\013\176\005\062\276\136\260\011\052\102\325\311\116  
\220\263\131\015\273\172\176\315\325\010\132\264\177\330\034\151  
\021\371\047\017\173\006\257\124\203\030\173\341\335\124\172\121  
\150\156\167\374\306\277\122\112\146\106\241\262\147\032\273\243  
\117\167\240\276\135\377\374\126\013\103\162\167\220\312\236\371  
\362\071\365\015\251\364\352\327\347\263\020\057\060\102\067\041  
\314\060\160\311\206\230\017\314\130\115\203\273\175\345\032\245  
\067\215\266\254\062\227\000\072\143\161\044\036\236\067\304\377  
\164\324\067\300\342\376\210\106\140\021\335\010\077\120\066\253  
\270\172\244\225\142\152\156\260\312\152\041\132\151\363\363\373  
\035\160\071\225\363\247\156\246\201\211\241\210\305\073\161\312  
\243\122\356\203\273\375\240\167\364\344\157\347\102\333\155\112  
\231\212\064\110\274\027\334\344\200\010\042\266\362\061\300\077  
\004\076\353\237\040\171\326\270\006\144\144\002\061\327\251\315  
\122\373\204\105\151\011\000\052\334\125\213\304\006\106\113\300  
\112\035\011\133\071\050\375\251\253\316\000\371\056\110\113\046  
\346\060\114\245\130\312\264\104\202\117\347\221\036\063\303\260  
\223\377\021\374\201\322\312\037\161\051\335\166\117\222\045\257  
\035\201\267\017\057\214\303\006\314\057\047\243\112\344\016\231  
\272\174\036\105\037\177\252\031\105\226\375\374\075\002\003\001  
\000\001\243\102\060\100\060\016\006\003\125\035\017\001\001\377  
\004\004\003\002\001\006\060\017\006\003\125\035\023\001\001\377  
\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026  
\004\024\341\146\317\016\321\361\263\113\267\006\040\024\376\207  
\022\325\366\376\373\076\060\015\006\011\052\206\110\206\367\015  
\001\001\005\005\000\003\202\002\001\000\250\313\162\100\262\166  
\301\176\173\374\255\144\343\062\173\314\074\266\135\106\323\365  
\054\342\160\135\310\056\330\006\175\230\321\013\041\240\211\131  
\044\001\235\371\257\011\175\012\043\202\064\325\374\174\162\231  
\271\243\327\124\364\352\122\160\016\305\365\326\073\341\072\011  
\062\346\041\071\223\275\263\025\352\117\152\364\365\213\077\057  
\174\215\130\056\305\341\071\240\076\307\075\112\163\236\100\172  
\300\053\141\251\147\311\363\044\271\263\155\125\054\132\035\236  
\045\162\316\013\255\252\307\125\142\013\276\373\143\263\141\104  
\043\243\313\341\032\016\367\232\006\115\336\324\043\116\041\226

\133\071\133\127\035\057\135\010\136\011\171\377\174\227\265\115  
\203\256\015\326\346\243\171\340\063\320\231\226\002\060\247\076  
\377\322\243\103\077\005\132\006\352\104\002\332\174\370\110\320  
\063\251\371\007\307\225\341\365\076\365\135\161\272\362\225\251  
\164\210\141\131\343\277\312\132\023\272\162\264\214\135\066\207  
\351\246\305\074\023\277\336\320\104\046\356\267\354\056\160\372  
\327\235\267\254\345\305\100\132\346\327\154\173\054\303\126\233  
\107\315\013\316\372\033\264\041\327\267\146\270\364\045\060\213  
\134\015\271\352\147\262\364\155\256\325\241\236\117\330\237\351  
\047\002\260\035\006\326\217\343\373\110\022\237\177\021\241\020  
\076\114\121\072\226\260\321\023\361\307\330\046\256\072\312\221  
\304\151\235\337\001\051\144\121\157\150\332\024\354\010\101\227  
\220\215\320\262\200\362\317\302\075\277\221\150\305\200\147\036  
\304\140\023\125\325\141\231\127\174\272\225\017\141\111\072\312  
\165\274\311\012\223\077\147\016\022\362\050\342\061\033\300\127  
\026\337\010\174\031\301\176\017\037\205\036\012\066\174\133\176  
\047\274\172\277\340\333\364\332\122\275\336\014\124\160\061\221  
\103\225\310\274\360\076\335\011\176\060\144\120\355\177\001\244  
\063\147\115\150\117\276\025\357\260\366\002\021\242\033\023\045  
\072\334\302\131\361\343\134\106\273\147\054\002\106\352\036\110  
\246\346\133\331\265\274\121\242\222\226\333\252\306\067\042\246  
\376\314\040\164\243\055\251\056\153\313\300\202\021\041\265\223  
\171\356\104\206\276\327\036\344\036\373

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "Certification Authority of WoSign"  
# Issuer: CN=Certification Authority of WoSign,O=WoSign CA Limited,C=CN  
# Serial Number:5e:68:d6:11:71:94:63:50:56:00:68:f3:3e:c9:c5:91  
# Subject: CN=Certification Authority of WoSign,O=WoSign CA Limited,C=CN  
# Not Valid Before: Sat Aug 08 01:00:01 2009  
# Not Valid After: Mon Aug 08 01:00:01 2039  
# Fingerprint (MD5): a1:f2:f9:b5:d2:c8:7a:74:b8:f3:05:f1:d7:e1:84:8d  
# Fingerprint (SHA1): b9:42:94:bf:91:ea:8f:b6:4b:e6:10:97:c7:fb:00:13:59:b6:76:cb  
CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "Certification Authority of WoSign"  
CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL  
\271\102\224\277\221\352\217\266\113\346\020\227\307\373\000\023  
\131\266\166\313

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL  
\241\362\371\265\322\310\172\164\270\363\005\361\327\341\204\215

```

END
CKA_ISSUER MULTILINE_OCTAL
\060\125\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\032\060\030\006\003\125\004\012\023\021\127\157\123\151\147\156
\040\103\101\040\114\151\155\151\164\145\144\061\052\060\050\006
\003\125\004\003\023\041\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\101\165\164\150\157\162\151\164\171\040\157\146
\040\127\157\123\151\147\156
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\136\150\326\021\161\224\143\120\126\000\150\363\076\311
\305\221
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "CA "
Issuer: CN=CA ,O=WoSign CA Limited,C=CN
Serial Number:50:70:6b:cd:d8:13:fc:1b:4e:3b:33:72:d2:11:48:8d
Subject: CN=CA ,O=WoSign CA Limited,C=CN
Not Valid Before: Sat Aug 08 01:00:01 2009
Not Valid After: Mon Aug 08 01:00:01 2039
Fingerprint (MD5): 78:83:5b:52:16:76:c4:24:3b:83:78:e8:ac:da:9a:93
Fingerprint (SHA1): 16:32:47:8d:89:f9:21:3a:92:00:85:63:f5:a4:a7:d3:12:40:8a:d6
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "CA "
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\106\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\032\060\030\006\003\125\004\012\023\021\127\157\123\151\147\156
\040\103\101\040\114\151\155\151\164\145\144\061\033\060\031\006
\003\125\004\003\014\022\103\101\040\346\262\203\351\200\232\346
\240\271\350\257\201\344\271\246
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\106\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\032\060\030\006\003\125\004\012\023\021\127\157\123\151\147\156
\040\103\101\040\114\151\155\151\164\145\144\061\033\060\031\006
\003\125\004\003\014\022\103\101\040\346\262\203\351\200\232\346
\240\271\350\257\201\344\271\246
END

```



CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\120\160\153\315\330\023\374\033\116\073\063\162\322\021  
\110\215

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\130\060\202\003\100\240\003\002\001\002\002\020\120  
\160\153\315\330\023\374\033\116\073\063\162\322\021\110\215\060  
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\106  
\061\013\060\011\006\003\125\004\006\023\002\103\116\061\032\060  
\030\006\003\125\004\012\023\021\127\157\123\151\147\156\040\103  
\101\040\114\151\155\151\164\145\144\061\033\060\031\006\003\125  
\004\003\014\022\103\101\040\346\262\203\351\200\232\346\240\271  
\350\257\201\344\271\246\060\036\027\015\060\071\060\070\060\070  
\060\061\060\060\060\061\132\027\015\063\071\060\070\060\070\060  
\061\060\060\060\061\132\060\106\061\013\060\011\006\003\125\004  
\006\023\002\103\116\061\032\060\030\006\003\125\004\012\023\021  
\127\157\123\151\147\156\040\103\101\040\114\151\155\151\164\145  
\144\061\033\060\031\006\003\125\004\003\014\022\103\101\040\346  
\262\203\351\200\232\346\240\271\350\257\201\344\271\246\060\202  
\002\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005  
\000\003\202\002\017\000\060\202\002\012\002\202\002\001\000\320  
\111\041\036\045\374\207\301\052\302\254\333\166\206\006\116\347  
\320\164\064\334\355\145\065\374\120\326\210\077\244\360\177\353  
\017\137\171\057\211\261\375\274\143\130\067\223\233\070\370\267  
\133\251\372\330\161\307\264\274\200\227\215\154\113\361\120\325  
\052\051\252\250\031\172\226\346\225\216\164\355\227\012\127\165  
\364\005\333\155\013\071\271\001\177\252\366\326\332\154\346\005  
\340\244\115\122\374\333\320\164\267\021\214\173\215\117\377\207  
\203\256\377\005\003\023\127\120\067\376\214\226\122\020\114\137  
\277\224\161\151\331\226\076\014\103\117\276\060\300\237\071\164  
\117\006\105\135\243\326\126\071\150\007\314\207\117\120\167\223  
\161\331\104\010\261\212\064\351\211\254\333\233\116\341\331\344  
\122\105\214\056\024\037\221\153\031\035\150\051\054\126\304\342  
\036\023\127\144\360\141\343\271\021\337\260\341\127\240\033\255  
\327\137\321\257\333\053\055\077\320\150\216\017\352\237\017\213  
\065\130\033\023\034\364\336\065\241\012\135\326\352\337\022\157  
\300\373\151\007\106\162\334\201\366\004\043\027\340\115\165\341  
\162\157\260\050\353\233\341\341\203\241\237\112\135\257\314\233  
\372\002\040\266\030\142\167\221\073\243\325\145\255\334\174\220  
\167\034\104\101\244\112\213\353\225\162\351\366\011\144\334\250  
\055\237\164\170\350\301\242\011\143\234\357\240\333\117\235\225  
\253\040\117\267\260\367\207\134\246\240\344\067\070\307\134\343  
\065\017\054\255\243\200\242\354\056\135\300\317\355\213\005\302  
\346\163\156\366\211\325\365\322\106\216\352\155\143\033\036\212  
\311\175\246\370\234\353\345\325\143\205\115\163\146\151\021\376  
\310\016\364\301\307\146\111\123\176\344\031\153\361\351\172\131  
\243\155\176\305\027\346\047\306\357\033\333\157\374\015\115\006  
\001\264\016\134\060\106\125\140\257\070\145\072\312\107\272\254

\054\314\106\037\262\106\226\077\363\355\046\005\356\167\241\152  
\153\176\055\155\130\134\112\324\216\147\270\361\332\325\106\212  
\047\371\021\362\311\102\376\116\336\337\037\134\304\244\206\207  
\026\063\241\247\027\030\245\015\344\005\345\053\302\053\013\242  
\225\220\271\375\140\074\116\211\076\347\234\356\037\273\001\002  
\003\001\000\001\243\102\060\100\060\016\006\003\125\035\017\001  
\001\377\004\004\003\002\001\006\060\017\006\003\125\035\023\001  
\001\377\004\005\060\003\001\001\377\060\035\006\003\125\035\016  
\004\026\004\024\340\115\277\334\233\101\135\023\350\144\360\247  
\351\025\244\341\201\301\272\061\060\015\006\011\052\206\110\206  
\367\015\001\001\013\005\000\003\202\002\001\000\152\212\160\070  
\131\266\332\213\030\310\276\052\323\266\031\325\146\051\172\135  
\315\133\057\163\034\046\116\243\175\157\253\267\051\115\246\351  
\245\021\203\247\071\163\257\020\104\222\346\045\135\117\141\372  
\310\006\276\116\113\357\376\363\061\376\306\174\160\012\101\130  
\332\350\231\113\226\311\170\274\230\174\002\051\355\011\200\346  
\012\072\202\002\052\342\311\057\310\126\031\046\356\170\034\043  
\375\367\223\145\116\347\363\230\230\257\315\335\331\236\100\210  
\061\050\072\253\056\013\260\254\014\044\372\172\046\230\363\022  
\141\020\364\135\027\367\176\342\170\227\124\342\214\350\051\272  
\214\020\062\275\335\063\153\070\206\176\071\075\016\003\162\247  
\135\171\217\105\212\131\256\133\041\156\061\106\325\131\215\317  
\025\137\335\061\045\317\333\140\326\201\104\162\051\002\127\366  
\226\324\326\377\352\051\333\071\305\270\054\212\032\215\316\313  
\347\102\061\206\005\150\016\236\024\335\000\220\272\151\105\010  
\333\156\220\201\206\247\052\005\077\346\204\071\370\267\371\127  
\137\114\244\171\132\020\014\136\325\153\377\065\137\005\121\036  
\154\243\165\251\317\120\203\323\174\364\146\367\202\215\075\014  
\175\350\337\173\250\016\033\054\234\256\100\160\207\332\355\247  
\026\202\132\276\065\154\040\116\042\141\331\274\121\172\315\172  
\141\334\113\021\371\376\147\064\317\056\004\146\141\134\127\227  
\043\214\363\206\033\110\337\052\257\247\301\377\330\216\076\003  
\273\330\052\260\372\024\045\262\121\153\206\103\205\056\007\043  
\026\200\215\114\373\264\143\073\314\303\164\355\033\243\036\376  
\065\017\137\174\035\026\206\365\016\303\225\361\057\257\135\045  
\073\121\346\327\166\101\070\321\113\003\071\050\245\036\221\162  
\324\175\253\227\063\304\323\076\340\151\266\050\171\240\011\215  
\034\321\377\101\162\110\006\374\232\056\347\040\371\233\242\336  
\211\355\256\074\011\257\312\127\263\222\211\160\100\344\057\117  
\302\160\203\100\327\044\054\153\347\011\037\323\325\307\301\010  
\364\333\016\073\034\007\013\103\021\204\041\206\351\200\324\165  
\330\253\361\002\142\301\261\176\125\141\317\023\327\046\260\327  
\234\313\051\213\070\112\013\016\220\215\272\241

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

```

Microsoft Code Signing Only Certificate
Trust for "CA "
Issuer: CN=CA ,O=WoSign CA Limited,C=CN
Serial Number:50:70:6b:cd:d8:13:fc:1b:4e:3b:33:72:d2:11:48:8d
Subject: CN=CA ,O=WoSign CA Limited,C=CN
Not Valid Before: Sat Aug 08 01:00:01 2009
Not Valid After: Mon Aug 08 01:00:01 2039
Fingerprint (MD5): 78:83:5b:52:16:76:c4:24:3b:83:78:e8:ac:da:9a:93
Fingerprint (SHA1): 16:32:47:8d:89:f9:21:3a:92:00:85:63:f5:a4:a7:d3:12:40:8a:d6
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "CA "
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\026\062\107\215\211\371\041\072\222\000\205\143\365\244\247\323
\022\100\212\326
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\170\203\133\122\026\166\304\044\073\203\170\350\254\332\232\223
END
CKA_ISSUER MULTILINE_OCTAL
\060\106\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\032\060\030\006\003\125\004\012\023\021\127\157\123\151\147\156
\040\103\101\040\114\151\155\151\164\145\144\061\033\060\031\006
\003\125\004\003\014\022\103\101\040\346\262\203\351\200\232\346
\240\271\350\257\201\344\271\246
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\120\160\153\315\330\023\374\033\116\073\063\162\322\021
\110\215
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

```

```

Microsoft Code Signing Only Certificate
Certificate "SSC GDL CA Root B"
Issuer: CN=SSC GDL CA Root B,OU=CA ROOT Services,O=Skaitmeninio sertifikavimo centras,C=LT
Serial Number:3e:8c:4f:bc:e4:29:83:82:4d:84:55:8e:d5:35:80:cf
Subject: CN=SSC GDL CA Root B,OU=CA ROOT Services,O=Skaitmeninio sertifikavimo centras,C=LT
Not Valid Before: Tue Jun 04 14:20:15 2013
Not Valid After: Sat Jun 04 14:21:55 2033
Fingerprint (MD5): ca:b5:ab:b2:55:7b:93:36:32:53:23:ed:79:27:30:4a
Fingerprint (SHA1): c8:60:a3:18:fc:f5:b7:13:0b:10:07:ad:7f:61:4a:40:ff:ff:18:5f
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE

```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SSC GDL CA Root B"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\161\061\013\060\011\006\003\125\004\006\023\002\114\124\061
\053\060\051\006\003\125\004\012\023\042\123\153\141\151\164\155
\145\156\151\156\151\157\040\163\145\162\164\151\146\151\153\141
\166\151\155\157\040\143\145\156\164\162\141\163\061\031\060\027
\006\003\125\004\013\023\020\103\101\040\122\117\117\124\040\123
\145\162\166\151\143\145\163\061\032\060\030\006\003\125\004\003
\023\021\123\123\103\040\107\104\114\040\103\101\040\122\157\157
\164\040\102
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\161\061\013\060\011\006\003\125\004\006\023\002\114\124\061
\053\060\051\006\003\125\004\012\023\042\123\153\141\151\164\155
\145\156\151\156\151\157\040\163\145\162\164\151\146\151\153\141
\166\151\155\157\040\143\145\156\164\162\141\163\061\031\060\027
\006\003\125\004\013\023\020\103\101\040\122\117\117\124\040\123
\145\162\166\151\143\145\163\061\032\060\030\006\003\125\004\003
\023\021\123\123\103\040\107\104\114\040\103\101\040\122\157\157
\164\040\102
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\076\214\117\274\344\051\203\202\115\204\125\216\325\065
\200\317
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\256\060\202\003\226\240\003\002\001\002\002\020\076
\214\117\274\344\051\203\202\115\204\125\216\325\065\200\317\060
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\161
\061\013\060\011\006\003\125\004\006\023\002\114\124\061\053\060
\051\006\003\125\004\012\023\042\123\153\141\151\164\155\145\156
\151\156\151\157\040\163\145\162\164\151\146\151\153\141\166\151
\155\157\040\143\145\156\164\162\141\163\061\031\060\027\006\003
\125\004\013\023\020\103\101\040\122\117\117\124\040\123\145\162
\166\151\143\145\163\061\032\060\030\006\003\125\004\003\023\021
\123\123\103\040\107\104\114\040\103\101\040\122\157\157\164\040
\102\060\036\027\015\061\063\060\066\060\064\061\064\062\060\061
\065\132\027\015\063\063\060\066\060\064\061\064\062\061\065\065
\132\060\161\061\013\060\011\006\003\125\004\006\023\002\114\124
\061\053\060\051\006\003\125\004\012\023\042\123\153\141\151\164
\155\145\156\151\156\151\157\040\163\145\162\164\151\146\151\153
\141\166\151\155\157\040\143\145\156\164\162\141\163\061\031\060
\027\006\003\125\004\013\023\020\103\101\040\122\117\117\124\040
\123\145\162\166\151\143\145\163\061\032\060\030\006\003\125\004
```

\003\023\021\123\123\103\040\107\104\114\040\103\101\040\122\157  
\157\164\040\102\060\202\002\042\060\015\006\011\052\206\110\206  
\367\015\001\001\001\005\000\003\202\002\017\000\060\202\002\012  
\002\202\002\001\000\217\225\351\322\353\301\163\045\307\070\147  
\360\203\216\123\274\266\313\316\272\163\333\117\047\366\042\220  
\077\102\277\041\326\336\142\202\264\157\004\005\111\011\073\167  
\001\327\113\137\122\322\331\031\307\155\174\014\251\072\011\142  
\344\052\030\151\214\240\335\353\254\023\266\016\071\021\200\151  
\116\143\137\334\074\015\372\331\214\142\276\144\205\062\062\131  
\227\120\223\211\337\373\377\324\330\145\161\307\106\125\242\033  
\231\141\037\334\120\000\310\027\171\350\120\260\014\136\346\376  
\166\246\001\116\011\310\160\154\372\220\263\136\334\075\007\315  
\111\243\116\126\136\022\117\144\101\177\176\014\025\303\240\336  
\263\243\051\006\111\104\241\137\157\077\201\240\104\115\360\173  
\012\070\050\355\022\356\143\227\303\173\135\214\117\161\335\225  
\072\332\056\250\001\106\012\363\154\350\265\361\037\010\000\361  
\100\222\033\046\000\061\165\071\106\111\046\271\244\324\161\167  
\021\244\117\063\314\011\333\331\321\041\113\222\104\254\316\170  
\142\202\027\373\372\022\264\175\325\362\206\355\364\176\226\024  
\346\215\003\122\257\315\027\242\325\034\245\376\201\246\232\355  
\175\344\331\016\062\146\020\217\333\331\063\061\201\176\051\127  
\357\314\262\241\140\356\212\133\271\145\333\177\033\232\054\217  
\047\061\211\212\050\265\257\261\126\324\003\042\356\045\117\330  
\232\275\322\154\127\274\203\246\110\037\054\125\007\011\064\053  
\271\171\054\002\245\240\137\174\166\237\044\062\074\055\222\337  
\353\110\127\207\241\366\376\043\372\064\253\211\365\150\033\216  
\037\252\156\016\245\322\041\322\357\271\321\261\111\127\065\132  
\204\323\036\342\002\155\122\020\177\342\214\115\041\333\062\062  
\034\175\314\226\042\003\055\152\247\006\102\155\156\220\207\372  
\034\134\260\117\320\003\101\023\372\013\123\346\301\020\002\110  
\013\167\143\364\245\234\121\173\230\146\327\305\166\062\345\157  
\135\024\141\175\014\273\155\225\100\332\251\046\307\367\251\313  
\322\376\047\301\053\366\261\150\206\376\343\142\122\231\120\216  
\053\336\101\041\007\033\207\365\100\035\160\255\317\375\302\103  
\250\065\126\021\102\305\313\136\146\241\310\250\150\367\376\114  
\127\141\066\122\201\002\003\001\000\001\243\102\060\100\060\016  
\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060\017  
\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060  
\035\006\003\125\035\016\004\026\004\024\162\003\106\207\141\366  
\035\263\324\225\143\271\120\167\156\015\253\230\376\057\060\015  
\006\011\052\206\110\206\367\015\001\001\013\005\000\003\202\002  
\001\000\010\333\212\062\201\164\063\161\026\354\041\205\123\110  
\012\157\037\162\343\343\004\370\056\267\077\363\044\225\117\234  
\355\023\341\210\202\002\366\146\367\267\261\055\200\047\255\256  
\270\155\376\043\007\021\010\253\164\141\214\050\022\371\366\020  
\064\360\317\266\174\243\165\055\022\324\224\337\164\356\261\230  
\253\261\356\042\142\113\131\037\177\376\032\145\255\115\342\244  
\021\077\023\041\264\330\065\213\166\100\246\137\275\063\021\337

\230\343\041\136\035\243\273\170\066\002\073\330\375\144\204\332  
\067\315\131\355\374\014\320\164\244\153\161\074\066\022\104\236  
\176\156\117\012\041\034\145\037\113\022\154\277\216\162\326\335  
\076\000\160\230\001\105\053\354\225\220\343\323\151\070\347\053  
\235\176\145\131\133\341\333\205\312\143\376\253\277\344\320\375  
\344\122\272\032\346\376\306\220\272\173\316\361\244\142\305\107  
\276\044\307\240\172\345\041\341\306\010\340\014\211\203\217\200  
\151\375\356\240\337\172\114\072\323\110\052\026\277\256\246\225  
\265\335\150\037\373\016\265\005\214\321\262\104\174\140\060\126  
\166\027\265\065\117\250\325\012\353\302\265\156\002\356\234\137  
\016\243\261\001\250\345\123\157\176\203\101\037\025\330\377\341  
\302\266\032\361\106\234\144\240\032\340\112\312\270\246\264\211  
\044\356\173\225\231\142\324\342\100\273\316\243\232\175\035\162  
\363\033\201\101\167\000\136\354\074\242\060\005\074\315\174\110  
\066\023\310\062\260\153\157\237\070\050\070\151\134\173\346\342  
\255\203\273\155\023\321\056\267\321\166\157\135\060\136\271\120  
\105\110\326\110\200\223\121\311\026\251\020\135\147\306\313\176  
\147\175\005\117\364\040\357\044\045\136\355\147\103\306\373\156  
\171\373\262\362\310\311\316\101\174\005\340\255\213\315\012\105  
\056\342\142\237\227\221\364\371\143\354\362\302\140\212\334\033  
\377\041\250\377\043\207\214\163\215\260\072\314\037\217\061\162  
\012\375\226\241\337\032\123\323\066\266\260\167\106\336\003\366  
\302\200\056\157\227\043\341\021\314\121\230\077\356\100\377\364  
\075\233\210\177\214\273\341\131\206\275\011\064\047\134\236\012  
\223\062\073\125\052\251\136\013\015\017\251\246\121\004\342\233  
\052\021

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "SSC GDL CA Root B"

# Issuer: CN=SSC GDL CA Root B,OU=CA ROOT Services,O=Skaitmeninio sertifikavimo centras,C=LT

# Serial Number:3e:8c:4f:bc:e4:29:83:82:4d:84:55:8e:d5:35:80:cf

# Subject: CN=SSC GDL CA Root B,OU=CA ROOT Services,O=Skaitmeninio sertifikavimo centras,C=LT

# Not Valid Before: Tue Jun 04 14:20:15 2013

# Not Valid After: Sat Jun 04 14:21:55 2033

# Fingerprint (MD5): ca:b5:ab:b2:55:7b:93:36:32:53:23:ed:79:27:30:4a

# Fingerprint (SHA1): c8:60:a3:18:fc:f5:b7:13:0b:10:07:ad:7f:61:4a:40:ff:ff:18:5f

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "SSC GDL CA Root B"

CKA\_CERT\_SHA1\_HASH MULTILINE OCTAL

\310\140\243\030\374\365\267\023\013\020\007\255\177\141\112\100

\377\377\030\137

```

END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\312\265\253\262\125\173\223\066\062\123\043\355\171\047\060\112
END
CKA_ISSUER MULTILINE_OCTAL
\060\161\061\013\060\011\006\003\125\004\006\023\002\114\124\061
\053\060\051\006\003\125\004\012\023\042\123\153\141\151\164\155
\145\156\151\156\151\157\040\163\145\162\164\151\146\151\153\141
\166\151\155\157\040\143\145\156\164\162\141\163\061\031\060\027
\006\003\125\004\013\023\020\103\101\040\122\117\117\124\040\123
\145\162\166\151\143\145\163\061\032\060\030\006\003\125\004\003
\023\021\123\123\103\040\107\104\114\040\103\101\040\122\157\157
\164\040\102
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\076\214\117\274\344\051\203\202\115\204\125\216\325\065
\200\317
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "SAPO Class 2 Root CA"
Issuer: 1.2.840.113549.1.9.1=pkiaadmin@trustcentre.co.za,CN=SAPO Class 2 Root CA,OU=SAPO Trust
Centre,O=South African Post Office Limited,L=Somerset West,ST=Western Cape,C=ZA
Serial Number: 1 (0x1)
Subject: 1.2.840.113549.1.9.1=pkiaadmin@trustcentre.co.za,CN=SAPO Class 2 Root CA,OU=SAPO Trust
Centre,O=South African Post Office Limited,L=Somerset West,ST=Western Cape,C=ZA
Not Valid Before: Wed Sep 15 00:00:00 2010
Not Valid After: Sat Sep 14 00:00:00 2030
Fingerprint (MD5): 0a:7b:e7:df:15:44:93:ed:92:72:42:1a:28:4b:0c:ee
Fingerprint (SHA1): e4:55:01:60:8a:a1:ef:89:e2:7b:8c:d3:c3:b3:4c:03:b0:38:e6:d7
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SAPO Class 2 Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\316\061\013\060\011\006\003\125\004\006\023\002\132\101
\061\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145
\162\156\040\103\141\160\145\061\026\060\024\006\003\125\004\007
\023\015\123\157\155\145\162\163\145\164\040\127\145\163\164\061
\052\060\050\006\003\125\004\012\023\041\123\157\165\164\150\040
\101\146\162\151\143\141\156\040\120\157\163\164\040\117\146\146
\151\143\145\040\114\151\155\151\164\145\144\061\032\060\030\006

```

\003\125\004\013\023\021\123\101\120\117\040\124\162\165\163\164  
\040\103\145\156\164\162\145\061\035\060\033\006\003\125\004\003  
\023\024\123\101\120\117\040\103\154\141\163\163\040\062\040\122  
\157\157\164\040\103\101\061\051\060\047\006\011\052\206\110\206  
\367\015\001\011\001\026\032\160\153\151\141\144\155\151\156\100  
\164\162\165\163\164\143\145\156\164\162\145\056\143\157\056\172  
\141

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\316\061\013\060\011\006\003\125\004\006\023\002\132\101  
\061\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145  
\162\156\040\103\141\160\145\061\026\060\024\006\003\125\004\007  
\023\015\123\157\155\145\162\163\145\164\040\127\145\163\164\061  
\052\060\050\006\003\125\004\012\023\041\123\157\165\164\150\040  
\101\146\162\151\143\141\156\040\120\157\163\164\040\117\146\146  
\151\143\145\040\114\151\155\151\164\145\144\061\032\060\030\006  
\003\125\004\013\023\021\123\101\120\117\040\124\162\165\163\164  
\040\103\145\156\164\162\145\061\035\060\033\006\003\125\004\003  
\023\024\123\101\120\117\040\103\154\141\163\163\040\062\040\122  
\157\157\164\040\103\101\061\051\060\047\006\011\052\206\110\206  
\367\015\001\011\001\026\032\160\153\151\141\144\155\151\156\100  
\164\162\165\163\164\143\145\156\164\162\145\056\143\157\056\172  
\141

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\001

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\130\060\202\003\100\240\003\002\001\002\002\001\001  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060  
\201\316\061\013\060\011\006\003\125\004\006\023\002\132\101\061  
\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145\162  
\156\040\103\141\160\145\061\026\060\024\006\003\125\004\007\023  
\015\123\157\155\145\162\163\145\164\040\127\145\163\164\061\052  
\060\050\006\003\125\004\012\023\041\123\157\165\164\150\040\101  
\146\162\151\143\141\156\040\120\157\163\164\040\117\146\146\151  
\143\145\040\114\151\155\151\164\145\144\061\032\060\030\006\003  
\125\004\013\023\021\123\101\120\117\040\124\162\165\163\164\040  
\103\145\156\164\162\145\061\035\060\033\006\003\125\004\003\023  
\024\123\101\120\117\040\103\154\141\163\163\040\062\040\122\157  
\157\164\040\103\101\061\051\060\047\006\011\052\206\110\206\367  
\015\001\011\001\026\032\160\153\151\141\144\155\151\156\100\164  
\162\165\163\164\143\145\156\164\162\145\056\143\157\056\172\141  
\060\036\027\015\061\060\060\071\061\065\060\060\060\060\060  
\132\027\015\063\060\060\071\061\064\060\060\060\060\060\060\132  
\060\201\316\061\013\060\011\006\003\125\004\006\023\002\132\101  
\061\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145



\162\156\040\103\141\160\145\061\026\060\024\006\003\125\004\007  
\023\015\123\157\155\145\162\163\145\164\040\127\145\163\164\061  
\052\060\050\006\003\125\004\012\023\041\123\157\165\164\150\040  
\101\146\162\151\143\141\156\040\120\157\163\164\040\117\146\146  
\151\143\145\040\114\151\155\151\164\145\144\061\032\060\030\006  
\003\125\004\013\023\021\123\101\120\117\040\124\162\165\163\164  
\040\103\145\156\164\162\145\061\035\060\033\006\003\125\004\003  
\023\024\123\101\120\117\040\103\154\141\163\163\040\062\040\122  
\157\157\164\040\103\101\061\051\060\047\006\011\052\206\110\206  
\367\015\001\011\001\026\032\160\153\151\141\144\155\151\156\100  
\164\162\165\163\164\143\145\156\164\162\145\056\143\157\056\172  
\141\060\202\001\042\060\015\006\011\052\206\110\206\367\015\001  
\001\001\005\000\003\202\001\017\000\060\202\001\012\002\202\001  
\001\000\267\174\151\174\140\365\154\046\364\252\034\027\177\135  
\324\021\113\347\363\332\347\163\247\372\244\102\111\150\077\332  
\245\100\134\006\150\137\116\314\275\276\201\070\044\055\314\046  
\240\104\155\003\313\043\340\273\336\205\123\113\224\137\137\173  
\252\310\032\227\376\327\043\223\355\260\152\275\330\374\000\076  
\263\222\004\340\113\276\117\073\230\247\235\355\315\143\360\201  
\347\154\230\324\154\140\125\000\345\271\074\346\064\225\135\340  
\375\161\207\351\377\201\356\345\167\157\030\377\363\311\174\245  
\225\335\202\334\024\331\242\341\276\315\047\163\273\105\133\077  
\164\261\142\170\146\020\042\054\365\150\363\027\210\026\073\232  
\033\035\373\024\256\015\272\362\220\125\242\325\060\326\053\225  
\062\307\071\156\173\145\322\167\070\316\156\126\245\331\043\253  
\070\262\073\121\205\300\035\033\267\021\057\005\151\107\330\002  
\312\222\250\341\063\336\205\010\233\355\220\325\330\041\231\161  
\277\266\365\163\357\147\010\230\144\322\362\052\172\113\041\026  
\341\037\130\141\336\221\107\037\041\237\037\376\214\043\206\203  
\030\047\002\003\001\000\001\243\077\060\075\060\016\006\003\125  
\035\017\001\001\377\004\004\003\002\001\006\060\014\006\003\125  
\035\023\004\005\060\003\001\001\377\060\035\006\003\125\035\016  
\004\026\004\024\253\235\043\223\375\037\063\112\062\055\252\044  
\132\362\055\144\251\001\232\101\060\015\006\011\052\206\110\206  
\367\015\001\001\005\005\000\003\202\001\001\000\126\122\121\271  
\017\002\341\366\056\234\261\061\132\246\370\316\274\356\002\204  
\025\011\361\050\122\137\347\341\054\275\333\171\012\172\277\353  
\142\236\325\206\107\051\356\164\060\354\114\165\265\036\343\252  
\063\357\255\341\152\114\277\067\001\276\125\203\114\251\122\330  
\067\230\120\157\150\335\107\101\267\054\060\310\156\114\007\054  
\306\323\111\271\265\134\322\313\314\324\066\306\007\015\030\117  
\077\143\000\304\354\266\210\373\001\144\143\255\321\367\167\174  
\144\124\053\022\075\064\025\205\360\240\272\171\051\137\230\233  
\102\352\256\301\250\237\023\211\212\155\351\270\070\311\141\355  
\140\354\367\052\130\005\233\241\140\170\203\027\341\176\137\350  
\375\170\340\153\126\052\206\166\256\133\302\136\353\105\344\060  
\270\061\355\144\261\135\056\300\075\200\015\307\047\023\323\166  
\342\206\373\334\333\200\012\201\341\375\010\371\013\304\061\264

```
\143\133\347\214\063\345\006\266\122\152\263\327\351\153\343\062
\170\062\146\224\116\335\215\167\155\323\044\050\133\124\141\167
\002\147\165\224\113\127\113\346\154\305\071\157
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

# Microsoft Code Signing Only Certificate

# Trust for "SAPO Class 2 Root CA"

# Issuer: 1.2.840.113549.1.9.1=pkiadmin@trustcentre.co.za,CN=SAPO Class 2 Root CA,OU=SAPO Trust Centre,O=South African Post Office Limited,L=Somerset West,ST=Western Cape,C=ZA

# Serial Number: 1 (0x1)

# Subject: 1.2.840.113549.1.9.1=pkiadmin@trustcentre.co.za,CN=SAPO Class 2 Root CA,OU=SAPO Trust Centre,O=South African Post Office Limited,L=Somerset West,ST=Western Cape,C=ZA

# Not Valid Before: Wed Sep 15 00:00:00 2010

# Not Valid After: Sat Sep 14 00:00:00 2030

# Fingerprint (MD5): 0a:7b:e7:df:15:44:93:ed:92:72:42:1a:28:4b:0c:ee

# Fingerprint (SHA1): e4:55:01:60:8a:a1:ef:89:e2:7b:8c:d3:c3:b3:4c:03:b0:38:e6:d7

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "SAPO Class 2 Root CA"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\344\125\001\140\212\241\357\211\342\173\214\323\303\263\114\003
\260\070\346\327
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\012\173\347\337\025\104\223\355\222\162\102\032\050\113\014\356
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\201\316\061\013\060\011\006\003\125\004\006\023\002\132\101
\061\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145
\162\156\040\103\141\160\145\061\026\060\024\006\003\125\004\007
\023\015\123\157\155\145\162\163\145\164\040\127\145\163\164\061
\052\060\050\006\003\125\004\012\023\041\123\157\165\164\150\040
\101\146\162\151\143\141\156\040\120\157\163\164\040\117\146\146
\151\143\145\040\114\151\155\151\164\145\144\061\032\060\030\006
\003\125\004\013\023\021\123\101\120\117\040\124\162\165\163\164
\040\103\145\156\164\162\145\061\035\060\033\006\003\125\004\003
\023\024\123\101\120\117\040\103\154\141\163\163\040\062\040\122
\157\157\164\040\103\101\061\051\060\047\006\011\052\206\110\206
\367\015\001\011\001\026\032\160\153\151\141\144\155\151\156\100
\164\162\165\163\164\143\145\156\164\162\145\056\143\157\056\172
\141
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```

\002\001\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "SAPO Class 3 Root CA"
Issuer: 1.2.840.113549.1.9.1=pkiadmin@trustcentre.co.za,CN=SAPO Class 3 Root CA,OU=SAPO Trust
Centre,O=South African Post Office Limited,L=Somerset West,ST=Western Cape,C=ZA
Serial Number: 2 (0x2)
Subject: 1.2.840.113549.1.9.1=pkiadmin@trustcentre.co.za,CN=SAPO Class 3 Root CA,OU=SAPO Trust
Centre,O=South African Post Office Limited,L=Somerset West,ST=Western Cape,C=ZA
Not Valid Before: Wed Sep 15 00:00:00 2010
Not Valid After: Sat Sep 14 00:00:00 2030
Fingerprint (MD5): 54:e5:eb:35:d1:75:05:3c:7c:df:30:d6:bf:f3:ff:53
Fingerprint (SHA1): 38:dd:76:59:c7:35:10:0b:00:a2:37:e4:91:b7:bc:0f:fc:d2:31:6c
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SAPO Class 3 Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\316\061\013\060\011\006\003\125\004\006\023\002\132\101
\061\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145
\162\156\040\103\141\160\145\061\026\060\024\006\003\125\004\007
\023\015\123\157\155\145\162\163\145\164\040\127\145\163\164\061
\052\060\050\006\003\125\004\012\023\041\123\157\165\164\150\040
\101\146\162\151\143\141\156\040\120\157\163\164\040\117\146\146
\151\143\145\040\114\151\155\151\164\145\144\061\032\060\030\006
\003\125\004\013\023\021\123\101\120\117\040\124\162\165\163\164
\040\103\145\156\164\162\145\061\035\060\033\006\003\125\004\003
\023\024\123\101\120\117\040\103\154\141\163\163\040\063\040\122
\157\157\164\040\103\101\061\051\060\047\006\011\052\206\110\206
\367\015\001\011\001\026\032\160\153\151\141\144\155\151\156\100
\164\162\165\163\164\143\145\156\164\162\145\056\143\157\056\172
\141
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\316\061\013\060\011\006\003\125\004\006\023\002\132\101
\061\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145
\162\156\040\103\141\160\145\061\026\060\024\006\003\125\004\007
\023\015\123\157\155\145\162\163\145\164\040\127\145\163\164\061
\052\060\050\006\003\125\004\012\023\041\123\157\165\164\150\040
\101\146\162\151\143\141\156\040\120\157\163\164\040\117\146\146

```

\151\143\145\040\114\151\155\151\164\145\144\061\032\060\030\006  
\003\125\004\013\023\021\123\101\120\117\040\124\162\165\163\164  
\040\103\145\156\164\162\145\061\035\060\033\006\003\125\004\003  
\023\024\123\101\120\117\040\103\154\141\163\163\040\063\040\122  
\157\157\164\040\103\101\061\051\060\047\006\011\052\206\110\206  
\367\015\001\011\001\026\032\160\153\151\141\144\155\151\156\100  
\164\162\165\163\164\143\145\156\164\162\145\056\143\157\056\172  
\141

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\002

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\006\130\060\202\004\100\240\003\002\001\002\002\001\002  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060  
\201\316\061\013\060\011\006\003\125\004\006\023\002\132\101\061  
\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145\162  
\156\040\103\141\160\145\061\026\060\024\006\003\125\004\007\023  
\015\123\157\155\145\162\163\145\164\040\127\145\163\164\061\052  
\060\050\006\003\125\004\012\023\041\123\157\165\164\150\040\101  
\146\162\151\143\141\156\040\120\157\163\164\040\117\146\146\151  
\143\145\040\114\151\155\151\164\145\144\061\032\060\030\006\003  
\125\004\013\023\021\123\101\120\117\040\124\162\165\163\164\040  
\103\145\156\164\162\145\061\035\060\033\006\003\125\004\003\023  
\024\123\101\120\117\040\103\154\141\163\163\040\063\040\122\157  
\157\164\040\103\101\061\051\060\047\006\011\052\206\110\206\367  
\015\001\011\001\026\032\160\153\151\141\144\155\151\156\100\164  
\162\165\163\164\143\145\156\164\162\145\056\143\157\056\172\141  
\060\036\027\015\061\060\060\071\061\065\060\060\060\060\060\060  
\132\027\015\063\060\060\071\061\064\060\060\060\060\060\060\132  
\060\201\316\061\013\060\011\006\003\125\004\006\023\002\132\101  
\061\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145  
\162\156\040\103\141\160\145\061\026\060\024\006\003\125\004\007  
\023\015\123\157\155\145\162\163\145\164\040\127\145\163\164\061  
\052\060\050\006\003\125\004\012\023\041\123\157\165\164\150\040  
\101\146\162\151\143\141\156\040\120\157\163\164\040\117\146\146  
\151\143\145\040\114\151\155\151\164\145\144\061\032\060\030\006  
\003\125\004\013\023\021\123\101\120\117\040\124\162\165\163\164  
\040\103\145\156\164\162\145\061\035\060\033\006\003\125\004\003  
\023\024\123\101\120\117\040\103\154\141\163\163\040\063\040\122  
\157\157\164\040\103\101\061\051\060\047\006\011\052\206\110\206  
\367\015\001\011\001\026\032\160\153\151\141\144\155\151\156\100  
\164\162\165\163\164\143\145\156\164\162\145\056\143\157\056\172  
\141\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001  
\001\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002  
\001\000\312\170\032\007\274\366\373\264\267\211\274\320\031\126  
\070\052\131\235\007\352\032\371\370\370\150\147\136\217\357\312  
\367\365\152\211\346\243\225\177\251\333\051\044\034\065\320\070

\226\154\076\126\044\377\136\142\121\220\056\207\350\234\307\332  
\274\063\361\236\241\157\013\216\012\044\364\370\115\220\246\262  
\315\136\021\323\302\227\114\365\137\100\035\046\044\115\215\011  
\020\013\377\273\040\033\223\046\031\014\103\077\351\216\274\061  
\067\020\156\221\312\110\202\126\106\307\274\271\072\236\106\201  
\146\317\331\350\134\020\317\071\236\145\303\236\305\132\364\113  
\314\104\231\146\206\364\162\033\243\123\111\352\256\107\315\062  
\015\160\346\240\240\166\007\235\377\130\357\344\074\221\300\265  
\344\334\270\001\014\323\376\263\102\240\073\141\002\324\067\133  
\327\114\105\225\322\165\135\365\156\060\137\127\121\213\262\377  
\176\310\213\234\252\243\101\067\014\020\221\250\246\205\134\271  
\307\217\005\121\262\320\170\322\342\113\111\351\324\032\247\073  
\254\252\063\346\232\052\003\100\230\157\164\122\023\061\224\321  
\022\301\264\313\060\371\377\104\270\222\133\122\326\060\331\063  
\321\165\343\031\245\026\025\267\124\127\361\126\120\316\116\276  
\003\073\057\354\266\060\356\024\140\136\137\172\065\364\116\144  
\007\021\352\245\007\146\033\156\223\342\260\117\136\326\340\104  
\340\263\334\256\357\270\375\250\263\354\354\345\071\210\104\264  
\241\273\024\140\144\217\326\222\223\313\363\314\120\335\351\007  
\310\147\147\371\360\207\204\221\262\000\142\351\277\112\025\164  
\305\277\004\114\005\106\135\012\313\345\352\141\000\341\157\101  
\261\064\216\246\000\242\174\246\245\246\372\154\114\103\345\250  
\046\232\064\230\036\207\230\347\114\170\321\217\237\005\125\135  
\212\113\311\317\240\013\175\006\220\234\030\222\262\304\262\327  
\343\105\331\153\163\303\227\071\277\051\036\006\011\125\100\272  
\274\332\110\165\103\355\376\104\176\075\054\346\142\221\003\375  
\075\211\357\176\364\135\044\217\245\013\053\263\076\172\051\050  
\274\273\077\277\353\167\205\004\046\213\224\262\220\365\353\215  
\117\242\104\042\120\250\234\052\104\110\000\170\031\253\235\010  
\226\025\002\003\001\000\001\243\077\060\075\060\016\006\003\125  
\035\017\001\001\377\004\004\003\002\001\006\060\014\006\003\125  
\035\023\004\005\060\003\001\001\377\060\035\006\003\125\035\016  
\004\026\004\024\141\263\171\122\235\112\225\222\121\216\202\044  
\160\323\216\100\310\305\146\320\060\015\006\011\052\206\110\206  
\367\015\001\001\005\005\000\003\202\002\001\000\177\306\263\044  
\204\120\067\371\304\260\305\060\074\026\351\120\015\172\272\264  
\073\322\043\345\351\211\170\152\345\343\033\005\036\221\034\316  
\006\227\215\146\026\007\104\357\201\271\010\176\243\307\071\064  
\270\277\232\155\215\260\301\040\102\056\015\367\013\006\003\117  
\156\313\274\267\260\057\031\161\215\216\257\012\115\130\061\213  
\104\231\052\050\146\205\307\200\046\146\260\107\302\071\262\372  
\117\076\125\275\334\211\047\113\163\063\004\376\173\107\220\311  
\005\300\055\063\370\267\010\202\051\101\103\375\046\123\346\372  
\037\067\126\215\117\027\272\330\375\072\204\160\330\076\360\063  
\256\304\005\110\124\241\271\325\041\077\352\076\307\251\061\107  
\367\233\256\112\142\230\321\147\040\145\336\171\341\261\062\036  
\153\337\373\200\153\107\134\071\307\016\010\252\307\243\356\051  
\351\064\342\233\371\165\270\046\353\210\235\264\071\021\056\160

\375\121\004\062\273\017\171\204\120\041\105\174\057\344\331\377  
\045\070\006\043\253\116\261\016\334\073\061\012\255\332\113\000  
\151\153\056\342\303\014\311\005\001\105\146\341\245\211\141\034  
\144\231\215\013\230\220\263\176\146\073\013\330\253\350\165\016  
\331\177\232\156\175\311\203\047\311\274\350\064\070\302\132\207  
\062\162\007\014\376\325\224\321\360\300\170\362\200\250\106\365  
\153\232\354\342\331\026\216\212\372\204\366\321\122\311\234\262  
\041\126\140\103\246\020\367\177\111\277\276\007\323\120\144\155  
\002\272\052\125\054\317\331\302\156\257\174\013\110\320\361\341  
\247\302\255\164\217\206\344\355\252\372\134\203\175\102\350\175  
\007\035\007\125\314\053\151\062\271\167\202\150\306\167\362\042  
\151\246\311\012\135\207\231\345\161\236\175\057\023\036\322\364  
\375\011\171\047\130\053\012\207\201\052\373\152\043\055\113\044  
\205\164\026\107\030\017\011\305\376\251\110\044\343\254\320\151  
\075\137\123\230\062\275\354\340\121\301\123\112\261\366\073\360  
\064\110\365\232\336\334\321\340\343\275\045\263\104\350\072\163  
\311\171\320\254\321\355\342\000\012\137\241\035\146\131\112\163  
\150\324\005\162\063\070\247\153\257\221\333\015\307\214\100\350  
\236\220\210\311\373\376\044\327\201\254\363\336

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "SAPO Class 3 Root CA"

# Issuer: 1.2.840.113549.1.9.1=pkiadmin@trustcentre.co.za,CN=SAPO Class 3 Root CA,OU=SAPO Trust  
Centre,O=South African Post Office Limited,L=Somerset West,ST=Western Cape,C=ZA

# Serial Number: 2 (0x2)

# Subject: 1.2.840.113549.1.9.1=pkiadmin@trustcentre.co.za,CN=SAPO Class 3 Root CA,OU=SAPO Trust  
Centre,O=South African Post Office Limited,L=Somerset West,ST=Western Cape,C=ZA

# Not Valid Before: Wed Sep 15 00:00:00 2010

# Not Valid After: Sat Sep 14 00:00:00 2030

# Fingerprint (MD5): 54:e5:eb:35:d1:75:05:3c:7c:df:30:d6:bf:f3:ff:53

# Fingerprint (SHA1): 38:dd:76:59:c7:35:10:0b:00:a2:37:e4:91:b7:bc:0f:fc:d2:31:6c

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "SAPO Class 3 Root CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\070\335\166\131\307\065\020\013\000\242\067\344\221\267\274\017  
\374\322\061\154

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\124\345\353\065\321\165\005\074\174\337\060\326\277\363\377\123

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\201\316\061\013\060\011\006\003\125\004\006\023\002\132\101
\061\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145
\162\156\040\103\141\160\145\061\026\060\024\006\003\125\004\007
\023\015\123\157\155\145\162\163\145\164\040\127\145\163\164\061
\052\060\050\006\003\125\004\012\023\041\123\157\165\164\150\040
\101\146\162\151\143\141\156\040\120\157\163\164\040\117\146\146
\151\143\145\040\114\151\155\151\164\145\144\061\032\060\030\006
\003\125\004\013\023\021\123\101\120\117\040\124\162\165\163\164
\040\103\145\156\164\162\145\061\035\060\033\006\003\125\004\003
\023\024\123\101\120\117\040\103\154\141\163\163\040\063\040\122
\157\157\164\040\103\101\061\051\060\047\006\011\052\206\110\206
\367\015\001\011\001\026\032\160\153\151\141\144\155\151\156\100
\164\162\165\163\164\143\145\156\164\162\145\056\143\157\056\172
\141
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\001\002
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "SAPO Class 4 Root CA"

# Issuer: 1.2.840.1.13549.1.9.1=pkiaadmin@trustcentre.co.za,CN=SAPO Class 4 Root CA,OU=SAPO Trust Centre,O=South African Post Office Limited,L=Somerset West,ST=Western Cape,C=ZA

# Serial Number: 3 (0x3)

# Subject: 1.2.840.1.13549.1.9.1=pkiaadmin@trustcentre.co.za,CN=SAPO Class 4 Root CA,OU=SAPO Trust Centre,O=South African Post Office Limited,L=Somerset West,ST=Western Cape,C=ZA

# Not Valid Before: Wed Sep 15 00:00:00 2010

# Not Valid After: Sat Sep 14 00:00:00 2030

# Fingerprint (MD5): f8:a7:f6:89:94:8c:61:f7:43:98:36:df:22:82:9b:3b

# Fingerprint (SHA1): 20:a8:f5:ff:c4:3a:f4:a9:bc:89:88:1e:bf:99:20:ff:91:e9:fd:0a

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "SAPO Class 4 Root CA"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

```
\060\201\316\061\013\060\011\006\003\125\004\006\023\002\132\101
\061\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145
\162\156\040\103\141\160\145\061\026\060\024\006\003\125\004\007
\023\015\123\157\155\145\162\163\145\164\040\127\145\163\164\061
\052\060\050\006\003\125\004\012\023\041\123\157\165\164\150\040
\101\146\162\151\143\141\156\040\120\157\163\164\040\117\146\146
\151\143\145\040\114\151\155\151\164\145\144\061\032\060\030\006
```

\003\125\004\013\023\021\123\101\120\117\040\124\162\165\163\164  
\040\103\145\156\164\162\145\061\035\060\033\006\003\125\004\003  
\023\024\123\101\120\117\040\103\154\141\163\163\040\064\040\122  
\157\157\164\040\103\101\061\051\060\047\006\011\052\206\110\206  
\367\015\001\011\001\026\032\160\153\151\141\144\155\151\156\100  
\164\162\165\163\164\143\145\156\164\162\145\056\143\157\056\172  
\141

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\316\061\013\060\011\006\003\125\004\006\023\002\132\101  
\061\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145  
\162\156\040\103\141\160\145\061\026\060\024\006\003\125\004\007  
\023\015\123\157\155\145\162\163\145\164\040\127\145\163\164\061  
\052\060\050\006\003\125\004\012\023\041\123\157\165\164\150\040  
\101\146\162\151\143\141\156\040\120\157\163\164\040\117\146\146  
\151\143\145\040\114\151\155\151\164\145\144\061\032\060\030\006  
\003\125\004\013\023\021\123\101\120\117\040\124\162\165\163\164  
\040\103\145\156\164\162\145\061\035\060\033\006\003\125\004\003  
\023\024\123\101\120\117\040\103\154\141\163\163\040\064\040\122  
\157\157\164\040\103\101\061\051\060\047\006\011\052\206\110\206  
\367\015\001\011\001\026\032\160\153\151\141\144\155\151\156\100  
\164\162\165\163\164\143\145\156\164\162\145\056\143\157\056\172  
\141

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\003

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\006\130\060\202\004\100\240\003\002\001\002\002\001\003  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060  
\201\316\061\013\060\011\006\003\125\004\006\023\002\132\101\061  
\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145\162  
\156\040\103\141\160\145\061\026\060\024\006\003\125\004\007\023  
\015\123\157\155\145\162\163\145\164\040\127\145\163\164\061\052  
\060\050\006\003\125\004\012\023\041\123\157\165\164\150\040\101  
\146\162\151\143\141\156\040\120\157\163\164\040\117\146\146\151  
\143\145\040\114\151\155\151\164\145\144\061\032\060\030\006\003  
\125\004\013\023\021\123\101\120\117\040\124\162\165\163\164\040  
\103\145\156\164\162\145\061\035\060\033\006\003\125\004\003\023  
\024\123\101\120\117\040\103\154\141\163\163\040\064\040\122\157  
\157\164\040\103\101\061\051\060\047\006\011\052\206\110\206\367  
\015\001\011\001\026\032\160\153\151\141\144\155\151\156\100\164  
\162\165\163\164\143\145\156\164\162\145\056\143\157\056\172\141  
\060\036\027\015\061\060\060\071\061\065\060\060\060\060\060\060  
\132\027\015\063\060\060\071\061\064\060\060\060\060\060\060\132  
\060\201\316\061\013\060\011\006\003\125\004\006\023\002\132\101  
\061\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145



\162\156\040\103\141\160\145\061\026\060\024\006\003\125\004\007  
\023\015\123\157\155\145\162\163\145\164\040\127\145\163\164\061  
\052\060\050\006\003\125\004\012\023\041\123\157\165\164\150\040  
\101\146\162\151\143\141\156\040\120\157\163\164\040\117\146\146  
\151\143\145\040\114\151\155\151\164\145\144\061\032\060\030\006  
\003\125\004\013\023\021\123\101\120\117\040\124\162\165\163\164  
\040\103\145\156\164\162\145\061\035\060\033\006\003\125\004\003  
\023\024\123\101\120\117\040\103\154\141\163\163\040\064\040\122  
\157\157\164\040\103\101\061\051\060\047\006\011\052\206\110\206  
\367\015\001\011\001\026\032\160\153\151\141\144\155\151\156\100  
\164\162\165\163\164\143\145\156\164\162\145\056\143\157\056\172  
\141\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001  
\001\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002  
\001\000\333\334\355\110\232\240\243\237\340\021\216\331\310\222  
\165\072\125\301\121\042\312\013\172\244\065\015\305\346\127\055  
\203\360\052\157\042\070\067\061\155\174\205\044\242\006\057\103  
\202\075\105\060\100\045\034\356\130\107\101\346\360\236\000\036  
\370\364\057\021\273\222\262\230\105\055\323\037\200\311\166\024  
\023\303\314\100\346\255\353\071\140\374\317\310\337\052\375\214  
\022\121\357\317\014\144\306\127\350\043\121\135\347\146\122\352  
\146\275\223\177\235\172\050\361\031\160\156\204\237\060\107\267  
\260\071\153\023\054\353\113\115\056\257\077\277\375\002\023\112  
\071\347\076\063\305\020\221\121\276\017\107\235\115\122\374\054  
\363\343\023\242\000\202\341\024\014\315\322\236\263\362\340\201  
\332\276\231\222\123\343\175\231\167\103\341\341\110\051\201\236  
\326\005\127\072\161\334\076\230\255\130\160\157\106\273\176\062  
\003\342\203\233\131\127\367\370\263\315\124\026\354\266\255\241  
\034\032\222\321\324\051\236\217\315\263\350\175\120\361\302\202  
\254\272\275\264\165\126\240\365\105\135\030\175\054\214\361\173  
\101\314\206\261\232\204\113\012\052\135\233\226\341\315\372\253  
\026\047\101\347\225\065\246\313\212\247\226\363\245\314\121\371  
\055\175\036\103\373\334\155\265\271\070\275\005\373\130\372\056  
\323\354\136\144\055\257\130\001\112\174\042\106\323\101\313\075  
\344\226\136\111\103\070\273\211\353\364\234\151\071\022\003\134  
\204\273\345\214\036\352\340\146\273\300\277\214\376\236\012\115  
\075\150\077\100\166\326\062\251\352\105\270\152\007\122\216\315  
\121\361\135\050\143\014\323\131\070\374\311\375\202\311\105\040  
\274\346\350\314\242\014\313\173\144\071\111\106\105\365\163\034  
\152\227\040\353\041\102\367\264\040\122\267\112\375\165\274\313  
\017\014\147\021\127\037\367\060\361\253\220\314\135\074\226\005  
\142\323\312\125\001\113\106\305\200\207\034\162\320\163\124\041  
\352\327\243\234\323\256\177\324\123\331\050\374\127\336\345\077  
\122\112\273\310\046\044\107\123\034\163\272\317\306\264\060\315  
\136\161\307\126\274\111\070\045\346\305\020\011\170\331\324\035  
\134\315\156\355\333\221\134\241\123\024\126\252\215\047\251\246  
\216\033\002\003\001\000\001\243\077\060\075\060\016\006\003\125  
\035\017\001\001\377\004\004\003\002\001\006\060\014\006\003\125  
\035\023\004\005\060\003\001\001\377\060\035\006\003\125\035\016

\004\026\004\024\026\204\055\373\033\347\264\036\150\230\323\102  
\040\032\156\176\117\221\127\002\060\015\006\011\052\206\110\206  
\367\015\001\001\005\005\000\003\202\002\001\000\173\343\015\143  
\072\144\040\155\314\374\054\270\351\326\253\333\327\253\046\051  
\107\242\014\126\355\165\314\225\231\122\066\313\040\373\021\064  
\027\102\116\165\005\260\330\344\270\260\204\057\230\031\271\373  
\320\071\154\162\006\030\311\134\212\172\164\010\067\110\151\375  
\042\241\135\305\327\170\023\360\050\102\101\303\311\303\071\011  
\007\324\241\370\067\042\151\344\337\062\125\157\302\174\271\223  
\361\262\067\165\314\256\322\063\226\214\066\367\001\355\343\144  
\351\013\150\133\020\252\001\066\231\174\317\232\224\135\375\032  
\131\141\242\145\025\175\236\027\144\324\237\123\230\001\375\161  
\127\320\135\100\021\026\077\077\104\322\257\311\374\010\062\175  
\166\370\325\103\350\334\066\150\007\303\116\303\226\227\127\306  
\175\066\136\333\160\255\376\256\324\210\235\265\244\140\326\243  
\142\276\174\371\064\036\374\273\364\112\162\305\203\036\106\150  
\303\016\227\203\030\075\323\016\012\021\065\174\151\225\305\253  
\052\365\310\071\020\115\014\211\060\051\211\111\033\104\227\221  
\364\352\145\041\033\077\012\103\162\202\034\155\021\135\340\042  
\105\137\141\114\242\246\372\337\243\106\272\341\201\140\154\062  
\264\374\344\334\066\005\344\063\367\353\217\167\111\252\215\012  
\357\110\212\346\101\227\176\073\253\103\207\362\010\140\013\157  
\327\131\146\375\053\273\057\316\063\117\162\340\266\327\263\123  
\127\211\360\073\274\156\342\020\277\163\076\142\217\245\010\351  
\123\147\301\116\301\056\102\103\247\262\244\371\026\213\102\356  
\334\064\177\110\263\220\333\044\342\310\344\123\065\123\234\352  
\067\205\317\277\230\006\065\107\046\327\256\155\335\204\251\143  
\130\046\101\365\165\062\056\141\236\117\223\122\122\366\132\043  
\353\301\240\163\046\045\042\102\221\221\221\200\117\377\210\316  
\136\163\347\226\302\355\011\022\367\166\226\251\171\142\220\111  
\201\203\237\014\062\062\342\133\312\335\110\064\254\207\216\161  
\225\256\114\344\174\170\035\247\121\303\275\021\372\002\321\225  
\211\163\010\106\042\211\151\000\317\117\200\301\115\133\224\304  
\312\231\121\230\057\015\275\175\124\144\324\012\332\047\131\247  
\067\273\126\014\320\006\242\162\271\022\271\133

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "SAPO Class 4 Root CA"

# Issuer: 1.2.840.113549.1.9.1=pkiaadmin@trustcentre.co.za,CN=SAPO Class 4 Root CA,OU=SAPO Trust  
Centre,O=South African Post Office Limited,L=Somerset West,ST=Western Cape,C=ZA

# Serial Number: 3 (0x3)

# Subject: 1.2.840.113549.1.9.1=pkiaadmin@trustcentre.co.za,CN=SAPO Class 4 Root CA,OU=SAPO Trust  
Centre,O=South African Post Office Limited,L=Somerset West,ST=Western Cape,C=ZA

# Not Valid Before: Wed Sep 15 00:00:00 2010

```

Not Valid After: Sat Sep 14 00:00:00 2030
Fingerprint (MD5): f8:a7:f6:89:94:8c:61:f7:43:98:36:df:22:82:9b:3b
Fingerprint (SHA1): 20:a8:f5:ff:c4:3a:f4:a9:bc:89:88:1e:bf:99:20:ff:91:e9:fd:0a
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SAPO Class 4 Root CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\040\250\365\377\304\072\364\251\274\211\210\036\277\231\040\377
\221\351\375\012
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\370\247\366\211\224\214\141\367\103\230\066\337\042\202\233\073
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\316\061\013\060\011\006\003\125\004\006\023\002\132\101
\061\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145
\162\156\040\103\141\160\145\061\026\060\024\006\003\125\004\007
\023\015\123\157\155\145\162\163\145\164\040\127\145\163\164\061
\052\060\050\006\003\125\004\012\023\041\123\157\165\164\150\040
\101\146\162\151\143\141\156\040\120\157\163\164\040\117\146\146
\151\143\145\040\114\151\155\151\164\145\144\061\032\060\030\006
\003\125\004\013\023\021\123\101\120\117\040\124\162\165\163\164
\040\103\145\156\164\162\145\061\035\060\033\006\003\125\004\003
\023\024\123\101\120\117\040\103\154\141\163\163\040\064\040\122
\157\157\164\040\103\101\061\051\060\047\006\011\052\206\110\206
\367\015\001\011\001\026\032\160\153\151\141\144\155\151\156\100
\164\162\165\163\164\143\145\156\164\162\145\056\143\157\056\172
\141
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\003
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "CA Disig Root R1"
Issuer: CN=CA Disig Root R1,O=Disig a.s.,L=Bratislava,C=SK
Serial Number:c3:03:9a:ee:50:90:6e:28
Subject: CN=CA Disig Root R1,O=Disig a.s.,L=Bratislava,C=SK
Not Valid Before: Thu Jul 19 09:06:56 2012
Not Valid After: Sat Jul 19 09:06:56 2042
Fingerprint (MD5): be:ec:11:93:9a:f5:69:21:bc:d7:c1:c0:67:89:cc:2a
Fingerprint (SHA1): 8e:1c:74:f8:a6:20:b9:e5:8a:f4:61:fa:ec:2b:47:56:51:1a:52:c6

```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "CA Disig Root R1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\122\061\013\060\011\006\003\125\004\006\023\002\123\113\061
\023\060\021\006\003\125\004\007\023\012\102\162\141\164\151\163
\154\141\166\141\061\023\060\021\006\003\125\004\012\023\012\104
\151\163\151\147\040\141\056\163\056\061\031\060\027\006\003\125
\004\003\023\020\103\101\040\104\151\163\151\147\040\122\157\157
\164\040\122\061
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\122\061\013\060\011\006\003\125\004\006\023\002\123\113\061
\023\060\021\006\003\125\004\007\023\012\102\162\141\164\151\163
\154\141\166\141\061\023\060\021\006\003\125\004\012\023\012\104
\151\163\151\147\040\141\056\163\056\061\031\060\027\006\003\125
\004\003\023\020\103\101\040\104\151\163\151\147\040\122\157\157
\164\040\122\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\011\000\303\003\232\356\120\220\156\050
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\151\060\202\003\121\240\003\002\001\002\002\011\000
\303\003\232\356\120\220\156\050\060\015\006\011\052\206\110\206
\367\015\001\001\005\005\000\060\122\061\013\060\011\006\003\125
\004\006\023\002\123\113\061\023\060\021\006\003\125\004\007\023
\012\102\162\141\164\151\163\154\141\166\141\061\023\060\021\006
\003\125\004\012\023\012\104\151\163\151\147\040\141\056\163\056
\061\031\060\027\006\003\125\004\003\023\020\103\101\040\104\151
\163\151\147\040\122\157\157\164\040\122\061\060\036\027\015\061
\062\060\067\061\071\060\071\060\066\065\066\132\027\015\064\062
\060\067\061\071\060\071\060\066\065\066\132\060\122\061\013\060
\011\006\003\125\004\006\023\002\123\113\061\023\060\021\006\003
\125\004\007\023\012\102\162\141\164\151\163\154\141\166\141\061
\023\060\021\006\003\125\004\012\023\012\104\151\163\151\147\040
\141\056\163\056\061\031\060\027\006\003\125\004\003\023\020\103
\101\040\104\151\163\151\147\040\122\157\157\164\040\122\061\060
\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001\001
\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001\000
\252\303\170\367\334\230\243\247\132\136\167\030\262\335\004\144
\017\143\375\233\226\011\200\325\350\252\245\342\234\046\224\072
\350\231\163\214\235\337\327\337\203\363\170\117\100\341\177\322
\247\322\345\312\023\223\347\355\306\167\137\066\265\224\257\350
```

\070\216\333\233\345\174\273\314\215\353\165\163\341\044\315\346  
\247\055\031\056\330\326\212\153\024\353\010\142\012\330\334\263  
\000\115\303\043\174\137\103\010\043\062\022\334\355\014\255\300  
\175\017\245\172\102\331\132\160\331\277\247\327\001\034\366\233  
\253\216\267\112\206\170\240\036\126\061\256\357\202\012\200\101  
\367\033\311\256\253\062\046\324\054\153\355\175\153\344\342\136  
\042\012\105\313\204\061\115\254\376\333\321\107\272\371\140\227  
\071\261\145\307\336\373\231\344\012\042\261\055\115\345\110\046  
\151\253\342\252\363\373\374\222\051\062\351\263\076\115\037\047  
\241\315\216\271\027\373\045\076\311\156\363\167\332\015\022\366  
\135\307\273\066\020\325\124\326\363\340\342\107\110\346\336\024  
\332\141\122\257\046\264\365\161\117\311\327\322\006\337\143\312  
\377\041\350\131\006\340\010\325\204\025\123\367\103\345\174\305  
\240\211\230\153\163\306\150\316\145\336\275\177\005\367\261\356  
\366\127\241\140\225\305\314\352\223\072\276\231\256\233\002\243  
\255\311\026\265\316\335\136\231\170\176\032\071\176\262\300\005  
\244\300\202\245\243\107\236\214\352\134\266\274\147\333\346\052  
\115\322\004\334\243\256\105\367\274\213\234\034\247\326\325\003  
\334\010\313\056\026\312\134\100\063\350\147\303\056\347\246\104  
\352\021\105\034\065\145\055\036\105\141\044\033\202\056\245\235  
\063\135\145\370\101\371\056\313\224\077\037\243\014\061\044\104  
\355\307\136\255\120\272\306\101\233\254\360\027\145\300\370\135  
\157\133\240\012\064\074\356\327\352\210\237\230\371\257\116\044  
\372\227\262\144\166\332\253\364\355\343\303\140\357\325\371\002  
\310\055\237\203\257\147\151\006\247\061\125\325\317\113\157\377  
\004\005\307\130\254\137\026\033\345\322\243\353\061\333\037\063  
\025\115\320\362\245\123\365\313\341\075\116\150\055\330\022\335  
\252\362\346\115\233\111\345\305\050\241\272\260\132\306\240\265  
\002\003\001\000\001\243\102\060\100\060\017\006\003\125\035\023  
\001\001\377\004\005\060\003\001\001\377\060\016\006\003\125\035  
\017\001\001\377\004\004\003\002\001\006\060\035\006\003\125\035  
\016\004\026\004\024\211\012\264\070\223\032\346\253\356\233\221  
\030\371\365\074\076\065\320\323\202\060\015\006\011\052\206\110  
\206\367\015\001\001\005\005\000\003\202\002\001\000\062\213\366  
\235\112\311\276\024\345\214\254\070\312\072\011\324\033\316\206  
\263\335\353\324\272\050\276\022\256\105\054\004\164\254\023\121  
\305\130\030\146\115\202\332\325\334\223\300\047\341\276\174\237  
\122\236\022\126\366\325\234\251\364\165\234\372\067\022\217\034  
\223\354\127\376\007\017\253\325\022\367\017\256\141\136\126\200  
\111\365\374\060\365\233\117\037\101\057\034\204\323\211\307\342  
\332\002\166\355\011\317\154\301\270\034\203\034\026\372\224\315  
\175\240\310\030\322\310\235\156\365\275\151\324\155\075\065\350  
\036\242\117\140\327\007\051\374\262\243\244\235\156\025\222\126  
\031\114\012\260\351\174\322\031\115\102\106\354\275\375\366\127  
\133\335\230\176\244\115\314\162\003\203\130\135\357\223\072\101  
\172\143\252\174\072\250\365\254\244\321\335\242\055\266\052\374  
\237\001\216\342\020\261\304\312\344\147\333\125\045\031\077\375  
\350\066\176\263\341\341\201\257\021\026\213\120\227\140\031\202

```
\000\300\153\115\163\270\321\023\007\076\352\266\061\117\360\102
\232\155\342\021\164\345\224\254\215\204\225\074\041\257\305\332
\107\310\337\071\142\142\313\133\120\013\327\201\100\005\234\233
\355\272\266\213\036\004\157\226\040\071\355\244\175\051\333\110
\316\202\334\324\002\215\035\004\061\132\307\113\360\154\141\122
\327\264\121\302\201\154\315\341\373\247\241\322\222\166\317\261
\017\067\130\244\362\122\161\147\077\014\210\170\200\211\301\310
\265\037\222\143\276\247\172\212\126\054\032\250\246\234\265\135
\263\143\320\023\040\241\353\221\154\320\215\175\257\337\013\344
\027\271\206\236\070\261\224\014\130\214\340\125\252\073\143\155
\232\211\140\270\144\052\222\306\067\364\176\103\103\267\163\350
\001\347\177\227\017\327\362\173\031\375\032\327\217\311\372\205
\153\172\235\236\211\266\246\050\231\223\210\100\367\076\315\121
\243\312\352\357\171\107\041\265\376\062\342\307\303\121\157\276
\200\164\360\244\303\072\362\117\351\137\337\031\012\362\073\023
\103\254\061\244\263\347\353\374\030\326\001\251\363\052\217\066
\016\353\264\261\274\267\114\311\153\277\241\363\331\364\355\342
\360\343\355\144\236\075\057\226\122\117\200\123\213
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
Trust for "CA Disig Root R1"
Issuer: CN=CA Disig Root R1,O=Disig a.s.,L=Bratislava,C=SK
Serial Number:c3:03:9a:ee:50:90:6e:28
Subject: CN=CA Disig Root R1,O=Disig a.s.,L=Bratislava,C=SK
Not Valid Before: Thu Jul 19 09:06:56 2012
Not Valid After: Sat Jul 19 09:06:56 2042
Fingerprint (MD5): be:ec:11:93:9a:f5:69:21:bc:d7:c1:c0:67:89:cc:2a
Fingerprint (SHA1): 8e:1c:74:f8:a6:20:b9:e5:8a:f4:61:fa:ec:2b:47:56:51:1a:52:c6
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "CA Disig Root R1"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\216\034\164\370\246\040\271\345\212\364\141\372\354\053\107\126
\121\032\122\306
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\276\354\021\223\232\365\151\041\274\327\301\300\147\211\314\052
```

END

```
CKA_ISSUER MULTILINE_OCTAL
\060\122\061\013\060\011\006\003\125\004\006\023\002\123\113\061
\023\060\021\006\003\125\004\007\023\012\102\162\141\164\151\163
\154\141\166\141\061\023\060\021\006\003\125\004\012\023\012\104
```

```
\151\163\151\147\040\141\056\163\056\061\031\060\027\006\003\125
\004\003\023\020\103\101\040\104\151\163\151\147\040\122\157\157
\164\040\122\061
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\011\000\303\003\232\356\120\220\156\050
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "Autoridad Certificadora Raíz Nacional de Uruguay"

# Issuer: C=UY,O=AGESIC,CN=Autoridad Certificadora Raíz Nacional de Uruguay

# Serial Number:02:ee:00:9b:66:d8:6a:1d:67:fe:da:8a:25:6f:21:5a:75:1b

# Subject: C=UY,O=AGESIC,CN=Autoridad Certificadora Raíz Nacional de Uruguay

# Not Valid Before: Thu Nov 03 15:02:49 2011

# Not Valid After: Wed Oct 29 15:02:49 2031

# Fingerprint (MD5): 7b:b7:e7:2e:64:18:e4:11:0c:f7:42:78:3e:65:a2:ae

# Fingerprint (SHA1): 7a:1c:dd:e3:d2:19:7e:71:37:43:3d:3f:99:c0:b3:69:f7:06:c7:49

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Autoridad Certificadora Raíz Nacional de Uruguay"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

```
\060\132\061\072\060\070\006\003\125\004\003\014\061\101\165\164
\157\162\151\144\141\144\040\103\145\162\164\151\146\151\143\141
\144\157\162\141\040\122\141\303\255\172\040\116\141\143\151\157
\156\141\154\040\144\145\040\125\162\165\147\165\141\171\061\017
\060\015\006\003\125\004\012\023\006\101\107\105\123\111\103\061
\013\060\011\006\003\125\004\006\023\002\125\131
```

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\132\061\072\060\070\006\003\125\004\003\014\061\101\165\164
\157\162\151\144\141\144\040\103\145\162\164\151\146\151\143\141
\144\157\162\141\040\122\141\303\255\172\040\116\141\143\151\157
\156\141\154\040\144\145\040\125\162\165\147\165\141\171\061\017
\060\015\006\003\125\004\012\023\006\101\107\105\123\111\103\061
\013\060\011\006\003\125\004\006\023\002\125\131
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\022\002\356\000\233\146\330\152\035\147\376\332\212\045\157
\041\132\165\033
```

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\006\235\060\202\004\205\240\003\002\001\002\002\022\002  
\356\000\233\146\330\152\035\147\376\332\212\045\157\041\132\165  
\033\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000  
\060\132\061\072\060\070\006\003\125\004\003\014\061\101\165\164  
\157\162\151\144\141\144\040\103\145\162\164\151\146\151\143\141  
\144\157\162\141\040\122\141\303\255\172\040\116\141\143\151\157  
\156\141\154\040\144\145\040\125\162\165\147\165\141\171\061\017  
\060\015\006\003\125\004\012\023\006\101\107\105\123\111\103\061  
\013\060\011\006\003\125\004\006\023\002\125\131\060\036\027\015  
\061\061\061\061\060\063\061\065\060\062\064\071\132\027\015\063  
\061\061\060\062\071\061\065\060\062\064\071\132\060\132\061\072  
\060\070\006\003\125\004\003\014\061\101\165\164\157\162\151\144  
\141\144\040\103\145\162\164\151\146\151\143\141\144\157\162\141  
\040\122\141\303\255\172\040\116\141\143\151\157\156\141\154\040  
\144\145\040\125\162\165\147\165\141\171\061\017\060\015\006\003  
\125\004\012\023\006\101\107\105\123\111\103\061\013\060\011\006  
\003\125\004\006\023\002\125\131\060\202\002\040\060\015\006\011  
\052\206\110\206\367\015\001\001\001\005\000\003\202\002\015\000  
\060\202\002\010\002\202\002\001\000\227\304\037\052\104\241\201  
\113\110\221\165\335\353\332\217\312\033\213\362\264\074\054\306  
\345\364\301\036\321\270\060\023\157\134\237\345\121\226\177\032  
\244\026\376\322\324\035\045\366\320\346\067\140\137\000\243\031  
\251\354\047\277\120\055\005\240\134\136\223\353\343\150\375\233  
\075\271\024\066\055\347\045\025\020\220\032\222\311\021\261\051  
\227\223\126\125\142\255\107\254\177\325\014\167\226\322\223\150  
\152\061\335\124\357\223\362\012\117\240\137\002\132\357\266\104  
\076\347\231\262\216\105\336\240\367\300\350\110\260\107\354\336  
\102\024\333\065\173\240\151\374\036\300\001\051\026\332\063\241  
\041\241\062\062\020\166\175\250\307\300\056\163\203\144\374\132  
\367\233\066\214\151\355\040\125\043\171\315\363\363\154\153\140  
\134\170\215\374\075\205\054\274\251\367\160\350\245\312\115\330  
\174\230\357\206\166\030\204\325\100\051\020\047\062\347\357\003  
\104\013\117\311\052\361\266\264\053\240\325\003\224\204\041\323  
\164\363\051\155\170\360\005\152\256\001\017\141\037\306\245\360  
\307\202\025\331\073\373\335\213\164\151\356\344\307\307\364\021  
\334\024\121\301\204\032\045\126\023\153\133\316\137\054\375\213  
\033\055\017\310\300\125\252\030\117\230\234\317\242\167\010\264  
\065\225\330\271\213\234\111\016\264\020\013\374\374\107\115\324  
\232\127\371\237\172\275\351\127\273\264\017\137\025\220\330\150  
\154\325\205\045\203\055\206\014\107\142\227\263\171\115\271\145  
\010\167\122\157\112\343\156\200\300\254\243\325\274\352\111\342  
\145\342\114\131\152\202\336\053\365\252\076\376\145\350\121\160  
\115\067\204\006\004\077\222\203\324\126\050\343\045\325\124\312  
\205\356\126\300\056\316\371\160\020\022\137\135\236\306\274\113  
\020\035\126\155\312\162\301\123\011\052\023\075\330\265\371\034  
\073\105\306\207\024\320\070\176\236\041\137\374\166\035\377\013  
\051\102\333\241\304\171\071\341\115\325\206\120\343\362\340\263



\327\131\233\336\077\036\032\003\363\324\151\206\113\107\034\062  
\177\074\007\011\023\020\247\233\007\060\167\063\274\151\021\321  
\064\075\174\020\052\270\036\216\275\107\336\371\262\171\125\146  
\041\002\007\373\071\054\012\027\241\002\001\003\243\202\001\135  
\060\202\001\131\060\016\006\003\125\035\017\001\001\377\004\004  
\003\002\001\006\060\017\006\003\125\035\023\001\001\377\004\005  
\060\003\001\001\377\060\142\006\003\125\035\037\004\133\060\131  
\060\054\240\052\240\050\206\046\150\164\164\160\072\057\057\167  
\167\167\056\141\147\145\163\151\143\056\147\165\142\056\165\171  
\057\141\143\162\156\057\141\143\162\156\056\143\162\154\060\051  
\240\047\240\045\206\043\150\164\164\160\072\057\057\167\167\167  
\056\165\143\145\056\147\165\142\056\165\171\057\141\143\162\156  
\057\141\143\162\156\056\143\162\154\060\201\262\006\003\125\035  
\040\004\201\252\060\201\247\060\134\006\013\140\206\132\204\342  
\256\035\204\210\005\000\060\115\060\113\006\010\053\006\001\005  
\005\007\002\001\026\077\150\164\164\160\072\057\057\167\167\167  
\056\165\143\145\056\147\165\142\056\165\171\057\151\156\146\157  
\162\155\141\143\151\157\156\055\164\145\143\156\151\143\141\057  
\160\157\154\151\164\151\143\141\163\057\143\160\137\141\143\162  
\156\056\160\144\146\060\107\006\013\140\206\132\204\342\256\035  
\204\210\005\001\060\070\060\066\006\010\053\006\001\005\005\007  
\002\001\026\052\150\164\164\160\072\057\057\167\167\167\056\141  
\147\145\163\151\143\056\147\165\142\056\165\171\057\141\143\162  
\156\057\143\160\163\137\141\143\162\156\056\160\144\146\060\035  
\006\003\125\035\016\004\026\004\024\222\236\221\270\125\050\075  
\167\102\054\063\245\230\137\320\311\254\215\265\243\060\015\006  
\011\052\206\110\206\367\015\001\001\013\005\000\003\202\002\001  
\000\135\347\253\131\352\111\334\277\106\103\375\224\273\230\160  
\224\024\372\316\003\135\361\175\061\023\222\116\205\044\060\024  
\153\154\323\347\316\346\171\325\333\116\125\116\027\053\327\223  
\105\337\023\014\047\147\035\307\102\220\124\060\306\361\250\151  
\050\264\116\246\155\245\065\246\120\226\150\111\243\356\057\013  
\253\374\003\002\120\150\361\225\051\076\161\054\334\332\345\055  
\331\166\056\356\126\063\176\027\241\047\002\341\241\047\050\041  
\212\277\001\347\142\307\273\262\045\004\332\033\246\043\214\174  
\223\272\311\213\353\012\371\067\267\224\071\375\115\217\176\242  
\334\201\157\033\255\024\017\133\040\003\170\101\163\147\236\322  
\227\027\220\052\212\124\113\247\171\177\044\022\221\237\073\054  
\307\067\244\014\134\162\152\023\236\062\011\047\353\103\062\165  
\137\327\107\303\052\105\123\025\126\166\117\273\011\350\204\140  
\021\357\163\325\347\120\156\151\050\375\353\306\313\312\116\023  
\143\015\016\067\054\061\037\333\247\130\240\262\375\015\027\207  
\263\222\256\033\050\200\037\266\222\176\206\021\341\366\114\230  
\177\146\213\037\023\111\003\102\374\373\230\234\356\206\226\251  
\056\005\176\160\034\301\167\310\351\135\202\270\016\316\133\144  
\005\143\356\077\006\055\066\014\351\037\162\133\036\254\335\046  
\365\034\070\156\375\214\075\115\206\353\047\313\312\003\215\100  
\363\052\321\212\330\064\016\302\255\265\210\355\207\232\212\205

```
\242\207\357\351\271\070\347\150\226\243\001\317\202\075\034\113
\050\235\047\365\371\231\226\173\110\375\254\320\360\062\367\070
\004\335\115\231\256\016\222\202\303\372\074\033\023\307\150\267
\135\340\223\106\270\270\270\244\014\304\033\306\272\106\226\335
\236\125\017\107\235\366\201\245\254\145\131\330\335\256\006\154
\340\103\202\306\147\330\160\002\065\365\066\004\343\112\071\251
\165\002\036\346\077\106\317\234\054\036\204\210\027\252\046\251
\246\103\200\340\300\133\243\144\203\233\232\355\153\001\145\266
\301\075\030\354\223\031\146\224\250\323\021\120\231\172\210\175
\257\076\177\224\220\073\012\303\152\267\215\137\322\247\121\321
\062\037\271\362\062\175\167\223\155\103\354\101\151\253\317\311
\141
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
```

```
Trust for "Autoridad Certificadora Raíz Nacional de Uruguay"
```

```
Issuer: C=UY,O=AGESIC,CN=Autoridad Certificadora Raíz Nacional de Uruguay
```

```
Serial Number:02:ee:00:9b:66:d8:6a:1d:67:fe:da:8a:25:6f:21:5a:75:1b
```

```
Subject: C=UY,O=AGESIC,CN=Autoridad Certificadora Raíz Nacional de Uruguay
```

```
Not Valid Before: Thu Nov 03 15:02:49 2011
```

```
Not Valid After: Wed Oct 29 15:02:49 2031
```

```
Fingerprint (MD5): 7b:b7:e7:2e:64:18:e4:11:0c:f7:42:78:3e:65:a2:ae
```

```
Fingerprint (SHA1): 7a:1c:dd:e3:d2:19:7e:71:37:43:3d:3f:99:c0:b3:69:f7:06:c7:49
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "Autoridad Certificadora Raíz Nacional de Uruguay"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\172\034\335\343\322\031\176\161\067\103\075\077\231\300\263\151
\367\006\307\111
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\173\267\347\056\144\030\344\021\014\367\102\170\076\145\242\256
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\132\061\072\060\070\006\003\125\004\003\014\061\101\165\164
\157\162\151\144\141\144\040\103\145\162\164\151\146\151\143\141
\144\157\162\141\040\122\141\303\255\172\040\116\141\143\151\157
\156\141\154\040\144\145\040\125\162\165\147\165\141\171\061\017
\060\015\006\003\125\004\012\023\006\101\107\105\123\111\103\061
\013\060\011\006\003\125\004\006\023\002\125\131
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\022\002\356\000\233\146\330\152\035\147\376\332\212\045\157
```

```
\041\132\165\033
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
Certificate "ApplicationCA2 Root"
Issuer: CN=ApplicationCA2 Root,OU=GPKI,O=Japanese Government,C=JP
Serial Number:31:32:35:33:37:32:38:32:38:32:38
Subject: CN=ApplicationCA2 Root,OU=GPKI,O=Japanese Government,C=JP
Not Valid Before: Tue Mar 12 15:00:00 2013
Not Valid After: Sat Mar 12 15:00:00 2033
Fingerprint (MD5): 7b:4c:15:74:3b:54:96:07:aa:95:3b:60:10:23:cf:f3
Fingerprint (SHA1): f0:0f:c3:7d:6a:1c:92:61:fb:6b:c1:c2:18:49:8c:5a:a4:dc:51:fb
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ApplicationCA2 Root"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\130\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\034\060\032\006\003\125\004\012\023\023\112\141\160\141\156\145
\163\145\040\107\157\166\145\162\156\155\145\156\164\061\015\060
\013\006\003\125\004\013\023\004\107\120\113\111\061\034\060\032
\006\003\125\004\003\023\023\101\160\160\154\151\143\141\164\151
\157\156\103\101\062\040\122\157\157\164
```

```
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\130\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\034\060\032\006\003\125\004\012\023\023\112\141\160\141\156\145
\163\145\040\107\157\166\145\162\156\155\145\156\164\061\015\060
\013\006\003\125\004\013\023\004\107\120\113\111\061\034\060\032
\006\003\125\004\003\023\023\101\160\160\154\151\143\141\164\151
\157\156\103\101\062\040\122\157\157\164
```

```
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\013\061\062\065\063\067\062\070\062\070\062\070
```

```
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\367\060\202\002\337\240\003\002\001\002\002\013\061
\062\065\063\067\062\070\062\070\062\070\060\015\006\011\052\206
\110\206\367\015\001\001\013\005\000\060\130\061\013\060\011\006
\003\125\004\006\023\002\112\120\061\034\060\032\006\003\125\004
\012\023\023\112\141\160\141\156\145\163\145\040\107\157\166\145
```

\162\156\155\145\156\164\061\015\060\013\006\003\125\004\013\023  
\004\107\120\113\111\061\034\060\032\006\003\125\004\003\023\023  
\101\160\160\154\151\143\141\164\151\157\156\103\101\062\040\122  
\157\157\164\060\036\027\015\061\063\060\063\061\062\061\065\060  
\060\060\060\132\027\015\063\063\060\063\061\062\061\065\060\060  
\060\060\132\060\130\061\013\060\011\006\003\125\004\006\023\002  
\112\120\061\034\060\032\006\003\125\004\012\023\023\112\141\160  
\141\156\145\163\145\040\107\157\166\145\162\156\155\145\156\164  
\061\015\060\013\006\003\125\004\013\023\004\107\120\113\111\061  
\034\060\032\006\003\125\004\003\023\023\101\160\160\154\151\143  
\141\164\151\157\156\103\101\062\040\122\157\157\164\060\202\001  
\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000  
\003\202\001\017\000\060\202\001\012\002\202\001\001\000\246\252  
\255\045\145\326\000\021\326\350\172\166\252\364\346\264\113\363  
\314\303\122\264\215\254\246\117\265\222\161\157\106\265\325\255  
\213\022\042\027\045\316\105\350\024\172\205\232\344\043\020\250  
\372\261\147\120\345\155\107\340\152\211\023\343\256\256\065\361  
\364\102\305\005\367\115\227\176\074\050\374\260\046\221\036\214  
\036\070\032\226\334\130\104\227\142\343\062\310\321\025\101\115  
\165\230\170\276\253\150\251\136\355\107\276\244\272\216\241\002  
\227\336\223\164\231\155\147\264\005\045\356\224\310\355\252\244  
\272\062\154\102\021\353\276\313\027\006\220\341\223\205\310\144  
\050\316\037\107\307\300\135\140\356\166\066\334\063\073\121\353  
\173\317\162\330\017\170\250\031\202\010\220\076\032\230\215\216  
\264\317\025\066\246\156\335\267\342\115\100\040\123\331\166\052  
\320\170\254\211\360\117\213\062\155\104\352\056\272\260\251\353  
\211\335\267\157\171\017\253\201\156\270\346\213\051\013\131\257  
\266\111\015\121\054\251\375\235\050\143\146\270\160\225\163\232  
\330\372\073\063\274\102\102\033\062\254\261\062\373\075\002\003  
\001\000\001\243\201\301\060\201\276\060\035\006\003\125\035\016  
\004\026\004\024\126\247\254\252\002\035\262\254\075\220\016\240  
\157\056\101\306\166\347\173\332\060\016\006\003\125\035\017\001  
\001\377\004\004\003\002\001\006\060\174\006\003\125\035\021\004  
\165\060\163\244\161\060\157\061\013\060\011\006\003\125\004\006  
\023\002\112\120\061\030\060\026\006\003\125\004\012\014\017\346  
\227\245\346\234\254\345\233\275\346\224\277\345\272\234\061\033  
\060\031\006\003\125\004\013\014\022\346\224\277\345\272\234\350  
\252\215\350\250\274\345\237\272\347\233\244\061\051\060\047\006  
\003\125\004\003\014\040\343\202\242\343\203\227\343\203\252\343  
\202\261\343\203\274\343\202\267\343\203\247\343\203\263\103\101  
\062\040\122\157\157\164\060\017\006\003\125\035\023\001\001\377  
\004\005\060\003\001\001\377\060\015\006\011\052\206\110\206\367  
\015\001\001\013\005\000\003\202\001\001\000\177\232\011\165\254  
\007\321\162\164\056\167\127\060\302\004\234\324\200\246\203\347  
\245\240\033\237\376\253\363\200\275\325\112\243\241\217\266\114  
\140\021\347\312\341\140\201\327\110\301\040\131\245\141\062\213  
\235\236\227\323\146\203\332\145\056\130\076\333\345\057\245\315  
\214\163\246\121\276\130\050\240\171\134\151\057\103\337\143\262

```
\211\107\312\273\336\271\064\021\143\240\016\045\027\345\207\364
\035\260\260\245\317\101\250\164\306\350\123\325\102\364\202\055
\123\011\021\150\046\161\224\165\023\115\252\166\210\074\164\261
\326\343\114\117\142\303\111\114\116\155\361\160\176\303\177\246
\005\314\170\233\351\201\333\250\310\307\134\236\374\222\222\055
\246\227\362\070\265\156\163\225\014\300\077\316\246\224\060\265
\372\005\267\336\236\040\252\374\023\144\311\212\272\144\357\342
\143\344\330\230\256\153\265\076\246\125\270\063\076\054\162\373
\054\021\000\373\133\026\057\204\322\023\236\372\005\305\301\313
\162\116\042\335\204\312\113\274\322\055\206\032\004\166\131\037
\111\102\142\073\023\037\026\350\272\327\375
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
Trust for "ApplicationCA2 Root"
Issuer: CN=ApplicationCA2 Root,OU=GPKI,O=Japanese Government,C=JP
Serial Number:31:32:35:33:37:32:38:32:38:32:38
Subject: CN=ApplicationCA2 Root,OU=GPKI,O=Japanese Government,C=JP
Not Valid Before: Tue Mar 12 15:00:00 2013
Not Valid After: Sat Mar 12 15:00:00 2033
Fingerprint (MD5): 7b:4c:15:74:3b:54:96:07:aa:95:3b:60:10:23:cf:f3
Fingerprint (SHA1): f0:0f:c3:7d:6a:1c:92:61:fb:6b:c1:c2:18:49:8c:5a:a4:dc:51:fb
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ApplicationCA2 Root"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\360\017\303\175\152\034\222\141\373\153\301\302\030\111\214\132
\244\334\121\373
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\173\114\025\164\073\124\226\007\252\225\073\140\020\043\317\363
END
```

```
CKA_ISSUER MULTILINE_OCTAL
\060\130\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\034\060\032\006\003\125\004\012\023\023\112\141\160\141\156\145
\163\145\040\107\157\166\145\162\156\155\145\156\164\061\015\060
\013\006\003\125\004\013\023\004\107\120\113\111\061\034\060\032
\006\003\125\004\003\023\023\101\160\160\154\151\143\141\164\151
\157\156\103\101\062\040\122\157\157\164
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\013\061\062\065\063\067\062\070\062\070\062\070
END
```

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "GlobalSign"

# Issuer: CN=GlobalSign,O=GlobalSign,OU=GlobalSign ECC Root CA - R4

# Serial Number:2a:38:a4:1c:96:0a:04:de:42:b2:28:a5:0b:e8:34:98:02

# Subject: CN=GlobalSign,O=GlobalSign,OU=GlobalSign ECC Root CA - R4

# Not Valid Before: Tue Nov 13 00:00:00 2012

# Not Valid After: Tue Jan 19 03:14:07 2038

# Fingerprint (MD5): 20:f0:27:68:d1:7e:a0:9d:0e:e6:2a:ca:df:5c:89:8e

# Fingerprint (SHA1): 69:69:56:2e:40:80:f4:24:a1:e7:19:9f:14:ba:f3:ee:58:ab:6a:bb

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "GlobalSign"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\120\061\044\060\042\006\003\125\004\013\023\033\107\154\157  
\142\141\154\123\151\147\156\040\105\103\103\040\122\157\157\164  
\040\103\101\040\055\040\122\064\061\023\060\021\006\003\125\004  
\012\023\012\107\154\157\142\141\154\123\151\147\156\061\023\060  
\021\006\003\125\004\003\023\012\107\154\157\142\141\154\123\151  
\147\156

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\120\061\044\060\042\006\003\125\004\013\023\033\107\154\157  
\142\141\154\123\151\147\156\040\105\103\103\040\122\157\157\164  
\040\103\101\040\055\040\122\064\061\023\060\021\006\003\125\004  
\012\023\012\107\154\157\142\141\154\123\151\147\156\061\023\060  
\021\006\003\125\004\003\023\012\107\154\157\142\141\154\123\151  
\147\156

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\021\052\070\244\034\226\012\004\336\102\262\050\245\013\350  
\064\230\002

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\001\341\060\202\001\207\240\003\002\001\002\002\021\052  
\070\244\034\226\012\004\336\102\262\050\245\013\350\064\230\002  
\060\012\006\010\052\206\110\316\075\004\003\002\060\120\061\044  
\060\042\006\003\125\004\013\023\033\107\154\157\142\141\154\123  
\151\147\156\040\105\103\103\040\122\157\157\164\040\103\101\040  
\055\040\122\064\061\023\060\021\006\003\125\004\012\023\012\107

```
\154\157\142\141\154\123\151\147\156\061\023\060\021\006\003\125
\004\003\023\012\107\154\157\142\141\154\123\151\147\156\060\036
\027\015\061\062\061\061\061\063\060\060\060\060\060\132\027
\015\063\070\060\061\061\071\060\063\061\064\060\067\132\060\120
\061\044\060\042\006\003\125\004\013\023\033\107\154\157\142\141
\154\123\151\147\156\040\105\103\103\040\122\157\157\164\040\103
\101\040\055\040\122\064\061\023\060\021\006\003\125\004\012\023
\012\107\154\157\142\141\154\123\151\147\156\061\023\060\021\006
\003\125\004\003\023\012\107\154\157\142\141\154\123\151\147\156
\060\131\060\023\006\007\052\206\110\316\075\002\001\006\010\052
\206\110\316\075\003\001\007\003\102\000\004\270\306\171\323\217
\154\045\016\237\056\071\031\034\003\244\256\232\345\071\007\011
\026\312\143\261\271\206\370\212\127\301\127\316\102\372\163\241
\367\145\102\377\036\301\000\262\156\163\016\377\307\041\345\030
\244\252\331\161\077\250\324\271\316\214\035\243\102\060\100\060
\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060
\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377
\060\035\006\003\125\035\016\004\026\004\024\124\260\173\255\105
\270\342\100\177\373\012\156\373\276\063\311\074\243\204\325\060
\012\006\010\052\206\110\316\075\004\003\002\003\110\000\060\105
\002\041\000\334\222\241\240\023\246\317\003\260\346\304\041\227
\220\372\024\127\055\003\354\356\074\323\156\312\250\154\166\274
\242\336\273\002\040\047\250\205\047\065\233\126\306\243\362\107
\322\267\156\033\002\000\027\252\147\246\025\221\336\372\224\354
\173\013\370\237\204
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
Trust for "GlobalSign"
Issuer: CN=GlobalSign,O=GlobalSign,OU=GlobalSign ECC Root CA - R4
Serial Number:2a:38:a4:1c:96:0a:04:de:42:b2:28:a5:0b:e8:34:98:02
Subject: CN=GlobalSign,O=GlobalSign,OU=GlobalSign ECC Root CA - R4
Not Valid Before: Tue Nov 13 00:00:00 2012
Not Valid After: Tue Jan 19 03:14:07 2038
Fingerprint (MD5): 20:f0:27:68:d1:7e:a0:9d:0e:e6:2a:ca:df:5c:89:8e
Fingerprint (SHA1): 69:69:56:2e:40:80:f4:24:a1:e7:19:9f:14:ba:f3:ee:58:ab:6a:bb
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GlobalSign"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\151\151\126\056\100\200\364\044\241\347\031\237\024\272\363\356
\130\253\152\273
END
```

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL  
\040\360\047\150\321\176\240\235\016\346\052\312\337\134\211\216  
END

CKA\_ISSUER MULTILINE\_OCTAL  
\060\120\061\044\060\042\006\003\125\004\013\023\033\107\154\157  
\142\141\154\123\151\147\156\040\105\103\103\040\122\157\157\164  
\040\103\101\040\055\040\122\064\061\023\060\021\006\003\125\004  
\012\023\012\107\154\157\142\141\154\123\151\147\156\061\023\060  
\021\006\003\125\004\003\023\012\107\154\157\142\141\154\123\151  
\147\156  
END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL  
\002\021\052\070\244\034\226\012\004\336\102\262\050\245\013\350  
\064\230\002  
END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Certificate "Symantec Class 3 Public Primary Certification Authority - G6"  
# Issuer: CN=Symantec Class 3 Public Primary Certification Authority - G6,OU=Symantec Trust  
Network,O=Symantec Corporation,C=US  
# Serial Number:65:63:71:85:d3:6f:45:c6:8f:7f:31:f9:09:87:92:82  
# Subject: CN=Symantec Class 3 Public Primary Certification Authority - G6,OU=Symantec Trust  
Network,O=Symantec Corporation,C=US  
# Not Valid Before: Thu Oct 18 00:00:00 2012  
# Not Valid After: Tue Dec 01 23:59:59 2037  
# Fingerprint (MD5): 8d:d1:96:24:c4:4c:8f:5d:26:f4:6c:8d:52:41:1a:c6  
# Fingerprint (SHA1): 26:a1:6c:23:5a:24:72:22:9b:23:62:80:25:bc:80:97:c8:85:24:a1

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "Symantec Class 3 Public Primary Certification Authority - G6"  
CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509  
CKA\_SUBJECT MULTILINE\_OCTAL

\060\201\224\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\035\060\033\006\003\125\004\012\023\024\123\171\155\141\156  
\164\145\143\040\103\157\162\160\157\162\141\164\151\157\156\061  
\037\060\035\006\003\125\004\013\023\026\123\171\155\141\156\164  
\145\143\040\124\162\165\163\164\040\116\145\164\167\157\162\153  
\061\105\060\103\006\003\125\004\003\023\074\123\171\155\141\156  
\164\145\143\040\103\154\141\163\163\040\063\040\120\165\142\154  
\151\143\040\120\162\151\155\141\162\171\040\103\145\162\164\151  
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151  
\164\171\040\055\040\107\066



END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\224\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\035\060\033\006\003\125\004\012\023\024\123\171\155\141\156  
\164\145\143\040\103\157\162\160\157\162\141\164\151\157\156\061  
\037\060\035\006\003\125\004\013\023\026\123\171\155\141\156\164  
\145\143\040\124\162\165\163\164\040\116\145\164\167\157\162\153  
\061\105\060\103\006\003\125\004\003\023\074\123\171\155\141\156  
\164\145\143\040\103\154\141\163\163\040\063\040\120\165\142\154  
\151\143\040\120\162\151\155\141\162\171\040\103\145\162\164\151  
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151  
\164\171\040\055\040\107\066

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\145\143\161\205\323\157\105\306\217\177\061\371\011\207  
\222\202

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\366\060\202\003\336\240\003\002\001\002\002\020\145  
\143\161\205\323\157\105\306\217\177\061\371\011\207\222\202\060  
\015\006\011\052\206\110\206\367\015\001\001\014\005\000\060\201  
\224\061\013\060\011\006\003\125\004\006\023\002\125\123\061\035  
\060\033\006\003\125\004\012\023\024\123\171\155\141\156\164\145  
\143\040\103\157\162\160\157\162\141\164\151\157\156\061\037\060  
\035\006\003\125\004\013\023\026\123\171\155\141\156\164\145\143  
\040\124\162\165\163\164\040\116\145\164\167\157\162\153\061\105  
\060\103\006\003\125\004\003\023\074\123\171\155\141\156\164\145  
\143\040\103\154\141\163\163\040\063\040\120\165\142\154\151\143  
\040\120\162\151\155\141\162\171\040\103\145\162\164\151\146\151  
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171  
\040\055\040\107\066\060\036\027\015\061\062\061\060\061\070\060  
\060\060\060\060\060\132\027\015\063\067\061\062\060\061\062\063  
\065\071\065\071\132\060\201\224\061\013\060\011\006\003\125\004  
\006\023\002\125\123\061\035\060\033\006\003\125\004\012\023\024  
\123\171\155\141\156\164\145\143\040\103\157\162\160\157\162\141  
\164\151\157\156\061\037\060\035\006\003\125\004\013\023\026\123  
\171\155\141\156\164\145\143\040\124\162\165\163\164\040\116\145  
\164\167\157\162\153\061\105\060\103\006\003\125\004\003\023\074  
\123\171\155\141\156\164\145\143\040\103\154\141\163\163\040\063  
\040\120\165\142\154\151\143\040\120\162\151\155\141\162\171\040  
\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165  
\164\150\157\162\151\164\171\040\055\040\107\066\060\202\002\042  
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003  
\202\002\017\000\060\202\002\012\002\202\002\001\000\267\016\262  
\372\115\274\232\162\025\373\167\133\333\375\103\017\313\013\367  
\140\056\263\053\176\014\273\123\362\314\116\145\363\031\273\377  
\065\035\367\323\251\273\100\055\265\335\170\324\246\371\067\352

\205\005\173\155\267\346\023\113\006\174\373\166\143\217\040\035  
\055\070\053\004\205\362\350\260\321\137\115\112\041\311\152\330  
\224\352\036\002\120\246\252\220\007\240\107\041\352\146\371\004  
\240\346\203\360\304\365\136\226\342\047\115\141\303\263\301\214  
\042\266\146\241\000\321\126\051\373\355\301\177\044\312\075\372  
\132\224\260\204\303\307\272\103\034\375\144\016\361\050\373\107  
\131\362\046\341\061\271\104\371\253\335\373\276\276\054\067\343  
\254\013\030\323\374\001\242\361\244\012\065\202\107\114\253\275  
\212\136\337\023\205\374\040\314\110\131\257\257\101\157\313\043  
\315\312\223\247\335\325\137\310\144\073\377\001\003\240\012\117  
\055\156\075\204\276\257\310\062\262\123\051\220\025\367\260\005  
\232\012\074\366\271\006\220\311\245\341\135\240\073\260\376\250  
\266\277\365\211\050\127\044\072\041\206\161\344\334\212\213\101  
\125\354\036\060\044\131\321\300\131\270\170\257\252\132\164\336  
\045\200\060\230\355\060\104\157\041\160\034\333\022\123\016\326  
\246\050\146\223\054\037\314\117\074\033\201\305\271\366\170\157  
\320\062\072\010\162\333\153\016\106\027\205\224\363\274\357\274  
\367\244\136\216\351\351\265\144\345\267\113\105\022\054\114\067  
\267\140\103\012\115\161\006\000\224\046\065\164\037\273\172\071  
\134\116\073\346\270\003\342\307\223\213\204\054\045\111\105\335  
\177\043\224\140\037\313\351\315\366\253\227\367\141\347\373\177  
\142\201\310\334\012\060\134\030\174\346\316\357\307\156\036\207  
\174\263\351\312\310\173\152\364\150\374\203\245\014\126\264\272  
\262\215\112\012\307\227\227\305\210\060\025\075\020\010\124\025  
\162\162\147\063\063\364\174\267\316\000\047\123\145\316\044\361  
\132\144\347\066\057\362\056\002\302\227\337\162\350\002\036\240  
\367\075\265\373\150\140\003\372\063\251\346\022\155\006\341\251  
\250\135\116\074\376\331\347\000\145\254\266\031\115\173\203\177  
\064\107\352\341\030\155\261\213\034\171\253\347\235\002\003\001  
\000\001\243\102\060\100\060\016\006\003\125\035\017\001\001\377  
\004\004\003\002\001\006\060\017\006\003\125\035\023\001\001\377  
\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026  
\004\024\071\161\010\000\076\336\310\206\347\220\377\344\375\041  
\017\316\044\031\026\366\060\015\006\011\052\206\110\206\367\015  
\001\001\014\005\000\003\202\002\001\000\120\153\210\115\140\110  
\316\132\343\042\316\147\174\204\247\315\034\375\351\014\003\214  
\066\257\012\207\016\152\256\127\256\001\320\066\273\362\375\271  
\163\301\137\265\250\256\114\242\372\111\313\007\106\026\066\275  
\343\310\127\070\176\070\344\277\045\063\140\306\334\067\234\143  
\273\136\230\036\032\262\202\360\256\246\167\021\200\104\107\241  
\051\305\360\263\072\316\230\360\270\354\323\016\200\006\167\043  
\060\114\377\171\144\143\042\133\167\223\103\113\165\263\333\073  
\156\073\112\335\361\310\256\265\067\212\225\210\072\020\150\160  
\070\271\133\160\176\325\103\311\374\137\117\345\346\173\066\356  
\360\040\355\107\127\023\046\020\136\024\006\015\173\166\007\302  
\306\055\026\364\256\247\154\017\274\210\017\117\054\002\266\243  
\327\042\346\231\107\065\330\215\245\117\201\022\072\021\175\263  
\314\013\165\363\036\160\243\033\003\352\372\232\350\346\056\066

\071\314\231\316\072\077\014\267\256\370\103\231\260\223\156\157  
\252\331\017\152\061\221\273\234\323\264\050\373\203\114\172\163  
\202\120\147\322\016\254\355\140\305\262\135\065\230\317\207\176  
\036\131\035\044\274\126\272\332\244\132\330\314\346\274\036\020  
\217\033\214\216\363\301\333\267\276\324\260\133\145\217\026\150  
\363\126\305\052\031\026\115\017\270\145\207\155\044\203\270\142  
\334\340\107\141\032\210\173\316\116\177\375\334\306\015\132\232  
\244\363\265\114\366\335\061\246\350\035\021\041\063\060\004\141  
\175\034\340\076\117\215\077\265\213\022\000\132\175\251\241\000  
\324\203\353\160\273\030\370\244\322\034\201\055\267\010\021\310  
\046\173\266\324\345\017\003\106\162\324\045\100\036\276\111\135  
\155\223\361\134\262\073\165\124\151\072\240\356\114\042\272\254  
\232\342\010\255\105\143\005\112\122\065\166\304\064\365\136\007  
\062\255\334\174\046\321\133\217\255\344\346\252\033\165\237\353  
\135\264\350\300\251\025\174\116\112\007\162\337\106\311\324\221  
\222\165\126\260\341\356\067\066\145\050\305\025\310\053\166\314  
\155\157\031\203\364\375\332\025\342\101\347\063\171\106\203\127  
\371\361\245\266\155\323\274\327\123\347\356\161\155\170\251\227  
\247\356\040\234\031\025\162\025\075\004

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "Symantec Class 3 Public Primary Certification Authority - G6"  
# Issuer: CN=Symantec Class 3 Public Primary Certification Authority - G6,OU=Symantec Trust  
Network,O=Symantec Corporation,C=US  
# Serial Number:65:63:71:85:d3:6f:45:c6:8f:7f:31:f9:09:87:92:82  
# Subject: CN=Symantec Class 3 Public Primary Certification Authority - G6,OU=Symantec Trust  
Network,O=Symantec Corporation,C=US  
# Not Valid Before: Thu Oct 18 00:00:00 2012  
# Not Valid After: Tue Dec 01 23:59:59 2037  
# Fingerprint (MD5): 8d:d1:96:24:c4:4c:8f:5d:26:f4:6c:8d:52:41:1a:c6  
# Fingerprint (SHA1): 26:a1:6c:23:5a:24:72:22:9b:23:62:80:25:bc:80:97:c8:85:24:a1

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "Symantec Class 3 Public Primary Certification Authority - G6"  
CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL  
\046\241\154\043\132\044\162\042\233\043\142\200\045\274\200\227  
\310\205\044\241

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL  
\215\321\226\044\304\114\217\135\046\364\154\215\122\101\032\306

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\201\224\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\035\060\033\006\003\125\004\012\023\024\123\171\155\141\156
\164\145\143\040\103\157\162\160\157\162\141\164\151\157\156\061
\037\060\035\006\003\125\004\013\023\026\123\171\155\141\156\164
\145\143\040\124\162\165\163\164\040\116\145\164\167\157\162\153
\061\105\060\103\006\003\125\004\003\023\074\123\171\155\141\156
\164\145\143\040\103\154\141\163\163\040\063\040\120\165\142\154
\151\143\040\120\162\151\155\141\162\171\040\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\171\040\055\040\107\066
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\020\145\143\161\205\323\157\105\306\217\177\061\371\011\207
\222\202
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "Symantec Class 3 Public Primary Certification Authority - G4"

# Issuer: CN=Symantec Class 3 Public Primary Certification Authority - G4,OU=Symantec Trust  
Network,O=Symantec Corporation,C=US

# Serial Number:4c:79:b5:9a:28:9c:76:31:64:f5:89:44:d0:91:02:de

# Subject: CN=Symantec Class 3 Public Primary Certification Authority - G4,OU=Symantec Trust  
Network,O=Symantec Corporation,C=US

# Not Valid Before: Thu Oct 18 00:00:00 2012

# Not Valid After: Tue Dec 01 23:59:59 2037

# Fingerprint (MD5): 36:c9:b7:4b:6c:b0:21:4c:c7:11:17:b1:18:fe:2b:4d

# Fingerprint (SHA1): 58:d5:2d:b9:33:01:a4:fd:29:1a:8c:96:45:a0:8f:ee:7f:52:92:82

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Symantec Class 3 Public Primary Certification Authority - G4"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

```
\060\201\224\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\035\060\033\006\003\125\004\012\023\024\123\171\155\141\156
\164\145\143\040\103\157\162\160\157\162\141\164\151\157\156\061
\037\060\035\006\003\125\004\013\023\026\123\171\155\141\156\164
\145\143\040\124\162\165\163\164\040\116\145\164\167\157\162\153
\061\105\060\103\006\003\125\004\003\023\074\123\171\155\141\156
\164\145\143\040\103\154\141\163\163\040\063\040\120\165\142\154
\151\143\040\120\162\151\155\141\162\171\040\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\171\040\055\040\107\064
```

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\224\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\035\060\033\006\003\125\004\012\023\024\123\171\155\141\156  
\164\145\143\040\103\157\162\160\157\162\141\164\151\157\156\061  
\037\060\035\006\003\125\004\013\023\026\123\171\155\141\156\164  
\145\143\040\124\162\165\163\164\040\116\145\164\167\157\162\153  
\061\105\060\103\006\003\125\004\003\023\074\123\171\155\141\156  
\164\145\143\040\103\154\141\163\163\040\063\040\120\165\142\154  
\151\143\040\120\162\151\155\141\162\171\040\103\145\162\164\151  
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151  
\164\171\040\055\040\107\064

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\114\171\265\232\050\234\166\061\144\365\211\104\320\221  
\002\336

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\002\247\060\202\002\055\240\003\002\001\002\002\020\114  
\171\265\232\050\234\166\061\144\365\211\104\320\221\002\336\060  
\012\006\010\052\206\110\316\075\004\003\003\060\201\224\061\013  
\060\011\006\003\125\004\006\023\002\125\123\061\035\060\033\006  
\003\125\004\012\023\024\123\171\155\141\156\164\145\143\040\103  
\157\162\160\157\162\141\164\151\157\156\061\037\060\035\006\003  
\125\004\013\023\026\123\171\155\141\156\164\145\143\040\124\162  
\165\163\164\040\116\145\164\167\157\162\153\061\105\060\103\006  
\003\125\004\003\023\074\123\171\155\141\156\164\145\143\040\103  
\154\141\163\163\040\063\040\120\165\142\154\151\143\040\120\162  
\151\155\141\162\171\040\103\145\162\164\151\146\151\143\141\164  
\151\157\156\040\101\165\164\150\157\162\151\164\171\040\055\040  
\107\064\060\036\027\015\061\062\061\060\061\070\060\060\060\060  
\060\060\132\027\015\063\067\061\062\060\061\062\063\065\071\065  
\071\132\060\201\224\061\013\060\011\006\003\125\004\006\023\002  
\125\123\061\035\060\033\006\003\125\004\012\023\024\123\171\155  
\141\156\164\145\143\040\103\157\162\160\157\162\141\164\151\157  
\156\061\037\060\035\006\003\125\004\013\023\026\123\171\155\141  
\156\164\145\143\040\124\162\165\163\164\040\116\145\164\167\157  
\162\153\061\105\060\103\006\003\125\004\003\023\074\123\171\155  
\141\156\164\145\143\040\103\154\141\163\163\040\063\040\120\165  
\142\154\151\143\040\120\162\151\155\141\162\171\040\103\145\162  
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157  
\162\151\164\171\040\055\040\107\064\060\166\060\020\006\007\052  
\206\110\316\075\002\001\006\005\053\201\004\000\042\003\142\000  
\004\127\317\352\263\071\115\077\241\041\340\156\057\070\162\306  
\207\227\363\205\013\107\347\017\121\310\321\364\231\233\312\131  
\145\377\114\371\352\013\267\045\325\322\366\354\061\055\062\142  
\022\327\166\206\247\372\070\311\145\324\376\163\342\204\071\370

```
\114\111\142\023\335\272\325\210\240\137\075\310\117\260\077\217
\241\120\021\344\223\106\255\303\137\313\361\244\152\225\126\350
\300\243\102\060\100\060\016\006\003\125\035\017\001\001\377\004
\004\003\002\001\006\060\017\006\003\125\035\023\001\001\377\004
\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026\004
\024\044\235\274\322\161\367\035\302\045\276\042\361\211\245\054
\025\073\064\036\136\060\012\006\010\052\206\110\316\075\004\003
\003\003\150\000\060\145\002\061\000\271\146\150\145\333\005\320
\070\175\016\363\310\165\141\270\320\050\304\261\112\063\121\130
\373\362\074\020\310\256\107\170\166\312\146\044\027\206\076\120
\126\156\245\055\231\210\270\275\044\002\060\003\352\247\347\250
\074\352\235\142\306\137\124\332\230\364\167\275\117\217\030\234
\221\134\107\153\100\115\020\035\263\341\211\312\013\042\310\032
\305\305\376\213\335\301\337\157\170\237\221
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
Trust for "Symantec Class 3 Public Primary Certification Authority - G4"
Issuer: CN=Symantec Class 3 Public Primary Certification Authority - G4,OU=Symantec Trust
Network,O=Symantec Corporation,C=US
Serial Number:4c:79:b5:9a:28:9c:76:31:64:f5:89:44:d0:91:02:de
Subject: CN=Symantec Class 3 Public Primary Certification Authority - G4,OU=Symantec Trust
Network,O=Symantec Corporation,C=US
Not Valid Before: Thu Oct 18 00:00:00 2012
Not Valid After: Tue Dec 01 23:59:59 2037
Fingerprint (MD5): 36:c9:b7:4b:6c:b0:21:4c:c7:11:17:b1:18:fe:2b:4d
Fingerprint (SHA1): 58:d5:2d:b9:33:01:a4:fd:29:1a:8c:96:45:a0:8f:ee:7f:52:92:82
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Symantec Class 3 Public Primary Certification Authority - G4"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\130\325\055\271\063\001\244\375\051\032\214\226\105\240\217\356
\177\122\222\202
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\066\311\267\113\154\260\041\114\307\021\027\261\030\376\053\115
```

```
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\224\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\035\060\033\006\003\125\004\012\023\024\123\171\155\141\156
\164\145\143\040\103\157\162\160\157\162\141\164\151\157\156\061
\037\060\035\006\003\125\004\013\023\026\123\171\155\141\156\164
\145\143\040\124\162\165\163\164\040\116\145\164\167\157\162\153
```

```
\061\105\060\103\006\003\125\004\003\023\074\123\171\155\141\156
\164\145\143\040\103\154\141\163\163\040\063\040\120\165\142\154
\151\143\040\120\162\151\155\141\162\171\040\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\171\040\055\040\107\064
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\020\114\171\265\232\050\234\166\061\144\365\211\104\320\221
\002\336
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "Halcom Root CA"

# Issuer: CN=Halcom Root CA,O=Halcom,C=SI

# Serial Number: 504275 (0x7b1d3)

# Subject: CN=Halcom Root CA,O=Halcom,C=SI

# Not Valid Before: Wed Feb 08 09:55:41 2012

# Not Valid After: Sun Feb 08 09:55:41 2032

# Fingerprint (MD5): c3:8b:d2:53:ac:00:ec:d1:db:97:61:a5:38:d9:7d:87

# Fingerprint (SHA1): 53:5b:00:16:72:ab:bf:7b:6c:c2:54:05:ae:4d:24:fe:03:3f:d1:cc

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Halcom Root CA"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

```
\060\067\061\013\060\011\006\003\125\004\006\023\002\123\111\061
\017\060\015\006\003\125\004\012\023\006\110\141\154\143\157\155
\061\027\060\025\006\003\125\004\003\023\016\110\141\154\143\157
\155\040\122\157\157\164\040\103\101
```

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\067\061\013\060\011\006\003\125\004\006\023\002\123\111\061
\017\060\015\006\003\125\004\012\023\006\110\141\154\143\157\155
\061\027\060\025\006\003\125\004\003\023\016\110\141\154\143\157
\155\040\122\157\157\164\040\103\101
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\003\007\261\323
```

END

CKA\_VALUE MULTILINE\_OCTAL

```
\060\202\003\036\060\202\002\006\240\003\002\001\002\002\003\007
```

\261\323\060\015\006\011\052\206\110\206\367\015\001\001\015\005  
\000\060\067\061\013\060\011\006\003\125\004\006\023\002\123\111  
\061\017\060\015\006\003\125\004\012\023\006\110\141\154\143\157  
\155\061\027\060\025\006\003\125\004\003\023\016\110\141\154\143  
\157\155\040\122\157\157\164\040\103\101\060\036\027\015\061\062  
\060\062\060\070\060\071\065\065\064\061\132\027\015\063\062\060  
\062\060\070\060\071\065\065\064\061\132\060\067\061\013\060\011  
\006\003\125\004\006\023\002\123\111\061\017\060\015\006\003\125  
\004\012\023\006\110\141\154\143\157\155\061\027\060\025\006\003  
\125\004\003\023\016\110\141\154\143\157\155\040\122\157\157\164  
\040\103\101\060\202\001\042\060\015\006\011\052\206\110\206\367  
\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002  
\202\001\001\000\211\271\205\312\376\364\165\175\177\354\235\102  
\067\272\272\215\274\354\075\027\003\375\331\105\145\326\315\311  
\116\137\214\110\134\227\010\127\024\213\055\234\074\220\111\231  
\317\151\257\111\215\333\034\001\260\156\351\364\352\221\147\135  
\312\263\151\117\330\314\301\015\075\356\252\003\166\340\311\160  
\242\237\376\353\233\320\266\311\226\323\360\373\133\320\360\007  
\253\114\136\115\244\342\107\136\005\150\164\246\216\042\107\356  
\176\323\147\204\124\067\222\107\016\363\243\354\025\032\363\155  
\173\277\031\065\041\217\202\113\254\124\234\011\315\156\266\301  
\127\275\320\111\075\157\237\163\216\261\154\176\275\376\326\273  
\075\003\350\346\114\032\264\356\257\264\203\116\062\220\124\366  
\116\033\341\057\316\245\064\032\216\243\040\371\331\076\042\153  
\157\156\343\372\331\063\134\010\240\367\025\000\075\234\020\222  
\112\125\315\200\262\006\252\375\327\217\267\132\222\047\044\017  
\063\074\050\272\361\037\150\265\167\051\136\256\302\332\215\066  
\160\342\172\062\033\043\246\336\305\141\015\232\245\022\040\265  
\363\226\131\265\002\003\001\000\001\243\063\060\061\060\017\006  
\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060\021  
\006\003\125\035\016\004\012\004\010\116\224\330\212\143\302\317  
\171\060\013\006\003\125\035\017\004\004\003\002\001\006\060\015  
\006\011\052\206\110\206\367\015\001\001\015\005\000\003\202\001  
\001\000\051\276\347\261\344\372\003\242\017\257\166\131\235\370  
\116\123\115\074\004\203\237\241\342\214\366\224\331\264\256\150  
\052\126\153\062\123\050\203\007\162\114\260\116\250\035\201\203  
\041\147\003\067\321\214\306\301\116\204\351\064\073\323\365\365  
\047\266\215\043\005\122\270\114\062\362\056\332\321\052\175\076  
\203\003\052\322\261\343\232\351\212\203\102\360\054\012\241\123  
\017\300\053\342\217\032\116\225\271\105\274\113\147\072\275\062  
\363\255\245\217\217\303\056\352\366\364\173\142\320\156\156\305  
\141\061\023\146\346\147\111\231\073\057\200\117\172\174\163\212  
\003\015\137\365\263\062\050\012\212\300\341\371\270\243\046\356  
\334\033\127\317\166\032\117\123\276\366\112\213\127\027\053\057  
\231\206\252\336\214\332\266\250\154\337\150\066\326\141\213\156  
\300\163\116\267\071\105\364\175\316\111\304\363\035\371\251\167  
\154\357\357\222\025\023\047\231\106\350\237\251\212\033\237\051  
\057\242\035\076\326\053\307\344\125\020\072\030\367\263\173\117



\056\307\000\042\355\344\061\320\347\270\344\124\117\301\200\105  
\045\156

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Halcom Root CA"

# Issuer: CN=Halcom Root CA,O=Halcom,C=SI

# Serial Number: 504275 (0x7b1d3)

# Subject: CN=Halcom Root CA,O=Halcom,C=SI

# Not Valid Before: Wed Feb 08 09:55:41 2012

# Not Valid After: Sun Feb 08 09:55:41 2032

# Fingerprint (MD5): c3:8b:d2:53:ac:00:ec:d1:db:97:61:a5:38:d9:7d:87

# Fingerprint (SHA1): 53:5b:00:16:72:ab:bf:7b:6c:c2:54:05:ae:4d:24:fe:03:3f:d1:cc

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Halcom Root CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\123\133\000\026\162\253\277\173\154\302\124\005\256\115\044\376  
\003\077\321\314

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\303\213\322\123\254\000\354\321\333\227\141\245\070\331\175\207

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\067\061\013\060\011\006\003\125\004\006\023\002\123\111\061  
\017\060\015\006\003\125\004\012\023\006\110\141\154\143\157\155  
\061\027\060\025\006\003\125\004\003\023\016\110\141\154\143\157  
\155\040\122\157\157\164\040\103\101

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\003\007\261\323

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "Swisscom Root EV CA 2"

# Issuer: CN=Swisscom Root EV CA 2,OU=Digital Certificate Services,O=Swisscom,C=ch

# Serial Number:f2:fa:64:e2:74:63:d3:8d:fd:10:1d:04:1f:76:ca:58

# Subject: CN=Swisscom Root EV CA 2,OU=Digital Certificate Services,O=Swisscom,C=ch

# Not Valid Before: Fri Jun 24 09:45:08 2011

```
Not Valid After: Wed Jun 25 08:45:08 2031
Fingerprint (MD5): 7b:30:34:9f:dd:0a:4b:6b:35:ca:31:51:28:5d:ae:ec
Fingerprint (SHA1): e7:a1:90:29:d3:d5:52:dc:0d:0f:c6:92:d3:ea:88:0d:15:2e:1a:6b
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Swisscom Root EV CA 2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\147\061\013\060\011\006\003\125\004\006\023\002\143\150\061
\021\060\017\006\003\125\004\012\023\010\123\167\151\163\163\143
\157\155\061\045\060\043\006\003\125\004\013\023\034\104\151\147
\151\164\141\154\040\103\145\162\164\151\146\151\143\141\164\145
\040\123\145\162\166\151\143\145\163\061\036\060\034\006\003\125
\004\003\023\025\123\167\151\163\163\143\157\155\040\122\157\157
\164\040\105\126\040\103\101\040\062
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\147\061\013\060\011\006\003\125\004\006\023\002\143\150\061
\021\060\017\006\003\125\004\012\023\010\123\167\151\163\163\143
\157\155\061\045\060\043\006\003\125\004\013\023\034\104\151\147
\151\164\141\154\040\103\145\162\164\151\146\151\143\141\164\145
\040\123\145\162\166\151\143\145\163\061\036\060\034\006\003\125
\004\003\023\025\123\167\151\163\163\143\157\155\040\122\157\157
\164\040\105\126\040\103\101\040\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\021\000\362\372\144\342\164\143\323\215\375\020\035\004\037
\166\312\130
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\340\060\202\003\310\240\003\002\001\002\002\021\000
\362\372\144\342\164\143\323\215\375\020\035\004\037\166\312\130
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060
\147\061\013\060\011\006\003\125\004\006\023\002\143\150\061\021
\060\017\006\003\125\004\012\023\010\123\167\151\163\163\143\157
\155\061\045\060\043\006\003\125\004\013\023\034\104\151\147\151
\164\141\154\040\103\145\162\164\151\146\151\143\141\164\145\040
\123\145\162\166\151\143\145\163\061\036\060\034\006\003\125\004
\003\023\025\123\167\151\163\163\143\157\155\040\122\157\157\164
\040\105\126\040\103\101\040\062\060\036\027\015\061\061\060\066
\062\064\060\071\064\065\060\070\132\027\015\063\061\060\066\062
\065\060\070\064\065\060\070\132\060\147\061\013\060\011\006\003
\125\004\006\023\002\143\150\061\021\060\017\006\003\125\004\012
\023\010\123\167\151\163\163\143\157\155\061\045\060\043\006\003
\125\004\013\023\034\104\151\147\151\164\141\154\040\103\145\162
```

\164\151\146\151\143\141\164\145\040\123\145\162\166\151\143\145  
\163\061\036\060\034\006\003\125\004\003\023\025\123\167\151\163  
\163\143\157\155\040\122\157\157\164\040\105\126\040\103\101\040  
\062\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001  
\001\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002  
\001\000\304\367\035\057\127\352\127\154\367\160\135\143\260\161  
\122\011\140\104\050\063\243\172\116\012\372\330\352\154\213\121  
\026\032\125\256\124\046\304\314\105\007\101\117\020\171\177\161  
\322\172\116\077\070\116\263\000\306\225\312\133\315\301\052\203  
\327\047\037\061\016\043\026\267\045\313\034\264\271\200\062\136  
\032\235\223\361\350\074\140\054\247\136\127\031\130\121\136\274  
\054\126\013\270\330\357\213\202\264\074\270\302\044\250\023\307  
\240\041\066\033\172\127\051\050\247\056\277\161\045\220\363\104  
\203\151\120\244\344\341\033\142\031\224\011\243\363\303\274\357  
\364\275\354\333\023\235\317\235\110\011\122\147\300\067\051\021  
\036\373\322\021\247\205\030\164\171\344\117\205\024\353\122\067  
\342\261\105\330\314\015\103\177\256\023\322\153\053\077\247\302  
\342\250\155\166\133\103\237\276\264\235\263\046\206\073\037\177  
\345\362\350\146\050\026\045\320\113\227\070\247\344\317\011\321  
\066\303\013\276\332\073\104\130\215\276\361\236\011\153\076\363  
\062\307\053\207\306\354\136\234\366\207\145\255\063\051\304\057  
\211\331\271\313\311\003\235\373\154\224\121\227\020\033\206\013  
\032\033\077\366\002\176\173\324\305\121\144\050\235\365\323\254  
\203\201\210\323\164\264\131\235\301\353\141\063\132\105\321\313  
\071\320\006\152\123\140\035\257\366\373\151\274\152\334\001\317  
\275\371\217\331\275\133\301\072\137\216\332\017\113\251\233\235  
\052\050\153\032\012\174\074\253\042\013\345\167\055\161\366\202  
\065\201\256\370\173\201\346\352\376\254\364\032\233\164\134\350  
\217\044\366\135\235\106\304\054\322\036\053\041\152\203\047\147  
\125\112\244\343\310\062\227\146\220\162\332\343\324\144\056\137  
\343\241\152\366\140\324\347\065\315\312\304\150\215\327\161\310  
\323\044\063\163\261\154\371\152\341\050\333\137\306\075\350\276  
\125\346\067\033\355\044\331\017\031\217\137\143\030\130\120\201  
\121\145\157\362\237\176\152\004\347\064\044\161\272\166\113\130  
\036\031\275\025\140\105\252\014\022\100\001\235\020\342\307\070  
\007\162\012\145\300\266\273\045\051\332\026\236\213\065\213\141  
\355\345\161\127\203\265\074\161\237\343\117\277\176\036\201\237  
\101\227\002\003\001\000\001\243\201\206\060\201\203\060\016\006  
\003\125\035\017\001\001\377\004\004\003\002\001\206\060\035\006  
\003\125\035\041\004\026\060\024\060\022\006\007\140\205\164\001  
\123\002\002\006\007\140\205\164\001\123\002\002\060\022\006\003  
\125\035\023\001\001\377\004\010\060\006\001\001\377\002\001\003  
\060\035\006\003\125\035\016\004\026\004\024\105\331\245\201\156  
\075\210\115\215\161\322\106\301\156\105\036\363\304\200\235\060  
\037\006\003\125\035\043\004\030\060\026\200\024\105\331\245\201  
\156\075\210\115\215\161\322\106\301\156\105\036\363\304\200\235  
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\003  
\202\002\001\000\224\072\163\006\237\122\113\060\134\324\376\261

\134\045\371\327\216\157\365\207\144\237\355\024\216\270\004\216  
\050\113\217\252\173\216\071\264\331\130\366\173\241\065\012\241  
\235\212\367\143\345\353\275\071\202\324\343\172\055\157\337\023  
\074\272\376\176\126\230\013\363\124\237\315\104\116\156\074\341  
\076\025\277\006\046\235\344\360\220\266\324\302\236\060\056\037  
\357\307\172\304\120\307\352\173\332\120\313\172\046\313\000\264  
\132\253\265\223\037\200\211\204\004\225\215\215\177\011\223\277  
\324\250\250\344\143\155\331\144\344\270\051\132\010\277\120\341  
\204\017\125\173\137\010\042\033\365\275\231\036\024\366\316\364  
\130\020\202\263\012\075\031\301\277\133\253\252\231\330\362\061  
\275\345\070\146\334\130\005\307\355\143\032\056\012\227\174\207  
\223\053\262\212\343\361\354\030\345\165\266\051\207\347\334\213  
\032\176\264\330\311\323\212\027\154\175\051\104\276\212\252\365  
\176\072\056\150\061\223\271\152\332\232\340\333\351\056\245\204  
\315\034\012\270\112\010\371\234\361\141\046\230\223\267\173\146  
\354\221\136\335\121\077\333\163\017\255\004\130\011\335\004\002  
\225\012\076\323\166\337\246\020\036\200\075\350\315\244\144\321  
\063\307\222\307\342\116\104\343\011\311\116\302\135\207\016\022  
\236\277\017\311\005\020\336\172\243\261\074\362\077\245\252\047  
\171\255\061\175\037\375\374\031\151\305\335\271\077\174\315\306  
\264\302\060\036\176\156\222\327\177\141\166\132\217\353\225\115  
\274\021\156\041\174\131\067\231\320\006\274\371\006\155\062\026  
\245\331\151\250\341\334\074\200\036\140\121\334\327\124\041\036  
\312\142\167\117\372\330\217\263\053\072\015\170\162\311\150\101  
\132\107\112\302\243\353\032\327\012\253\074\062\125\310\012\021  
\234\337\164\326\360\100\025\035\310\271\217\265\066\305\257\370  
\042\270\312\035\363\326\266\031\017\237\141\145\152\352\164\310  
\174\217\303\117\135\145\202\037\331\015\211\332\165\162\373\357  
\361\107\147\023\263\310\321\031\210\047\046\232\231\171\177\036  
\344\054\077\173\356\361\336\115\213\226\227\303\325\077\174\033  
\043\355\244\263\035\026\162\103\113\040\341\131\176\302\350\255  
\046\277\242\367

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "Swisscom Root EV CA 2"  
# Issuer: CN=Swisscom Root EV CA 2,OU=Digital Certificate Services,O=Swisscom,C=ch  
# Serial Number:f2:fa:64:e2:74:63:d3:8d:fd:10:1d:04:1f:76:ca:58  
# Subject: CN=Swisscom Root EV CA 2,OU=Digital Certificate Services,O=Swisscom,C=ch  
# Not Valid Before: Fri Jun 24 09:45:08 2011  
# Not Valid After: Wed Jun 25 08:45:08 2031  
# Fingerprint (MD5): 7b:30:34:9f:dd:0a:4b:6b:35:ca:31:51:28:5d:ae:ec  
# Fingerprint (SHA1): e7:a1:90:29:d3:d5:52:dc:0d:0f:c6:92:d3:ea:88:0d:15:2e:1a:6b  
CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST  
CKA\_TOKEN CK\_BBOOL CK\_TRUE

```

CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Swisscom Root EV CA 2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\347\241\220\051\323\325\122\334\015\017\306\222\323\352\210\015
\025\056\032\153
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\173\060\064\237\335\012\113\153\065\312\061\121\050\135\256\354
END
CKA_ISSUER MULTILINE_OCTAL
\060\147\061\013\060\011\006\003\125\004\006\023\002\143\150\061
\021\060\017\006\003\125\004\012\023\010\123\167\151\163\163\143
\157\155\061\045\060\043\006\003\125\004\013\023\034\104\151\147
\151\164\141\154\040\103\145\162\164\151\146\151\143\141\164\145
\040\123\145\162\166\151\143\145\163\061\036\060\034\006\003\125
\004\003\023\025\123\167\151\163\163\143\157\155\040\122\157\157
\164\040\105\126\040\103\101\040\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\021\000\362\372\144\342\164\143\323\215\375\020\035\004\037
\166\312\130
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "CFCA GT CA"
Issuer: O=CFCA GT CA,C=CN
Serial Number:19:99:3c:3f
Subject: O=CFCA GT CA,C=CN
Not Valid Before: Mon Jun 13 08:15:09 2011
Not Valid After: Tue Jun 09 08:15:09 2026
Fingerprint (MD5): 2c:cd:f3:c5:59:a6:84:64:a0:67:50:ff:4b:4c:d6:14
Fingerprint (SHA1): ea:bd:a2:40:44:0a:bb:d6:94:93:0a:01:d0:97:64:c6:c2:d7:79:66
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "CFCA GT CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\042\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\023\060\021\006\003\125\004\012\023\012\103\106\103\101\040\107
\124\040\103\101
END

```

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\042\061\013\060\011\006\003\125\004\006\023\002\103\116\061  
\023\060\021\006\003\125\004\012\023\012\103\106\103\101\040\107  
\124\040\103\101

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\004\031\231\074\077

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\037\060\202\002\007\240\003\002\001\002\002\004\031  
\231\074\077\060\015\006\011\052\206\110\206\367\015\001\001\005  
\005\000\060\042\061\013\060\011\006\003\125\004\006\023\002\103  
\116\061\023\060\021\006\003\125\004\012\023\012\103\106\103\101  
\040\107\124\040\103\101\060\036\027\015\061\061\060\066\061\063  
\060\070\061\065\060\071\132\027\015\062\066\060\066\060\071\060  
\070\061\065\060\071\132\060\042\061\013\060\011\006\003\125\004  
\006\023\002\103\116\061\023\060\021\006\003\125\004\012\023\012  
\103\106\103\101\040\107\124\040\103\101\060\202\001\042\060\015  
\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001  
\017\000\060\202\001\012\002\202\001\001\000\277\163\306\132\053  
\214\170\366\130\267\374\322\027\220\245\053\164\354\201\054\223  
\315\122\314\156\344\052\313\044\241\061\344\255\060\156\343\230  
\042\061\327\041\233\237\325\017\067\057\132\273\070\242\267\171  
\046\147\326\015\305\027\052\234\271\124\004\341\015\165\206\156  
\330\314\305\200\147\033\310\214\055\000\046\206\074\172\171\076  
\266\251\302\116\040\260\067\227\306\205\166\022\202\012\347\124  
\273\213\376\075\256\343\354\153\130\103\366\245\067\353\130\242  
\275\220\304\345\373\312\153\312\060\154\267\173\211\366\061\322  
\214\377\117\302\226\045\103\251\161\065\045\013\030\341\254\310  
\243\044\266\161\223\214\361\135\374\234\020\005\173\377\300\133  
\340\261\227\255\037\330\376\105\365\300\037\235\133\107\071\034  
\006\372\333\146\205\333\044\043\352\173\322\071\040\370\353\052  
\262\032\121\363\224\132\050\002\116\247\134\107\156\317\374\331  
\350\346\141\132\026\047\307\025\015\230\331\350\323\003\065\220  
\051\337\262\057\215\020\167\043\310\270\172\323\021\141\152\363  
\377\201\222\245\354\102\113\150\116\200\327\002\003\001\000\001  
\243\135\060\133\060\037\006\003\125\035\043\004\030\060\026\200  
\024\214\166\120\316\045\323\171\053\074\364\155\235\232\341\236  
\005\117\350\075\045\060\014\006\003\125\035\023\004\005\060\003  
\001\001\377\060\013\006\003\125\035\017\004\004\003\002\001\306  
\060\035\006\003\125\035\016\004\026\004\024\214\166\120\316\045  
\323\171\053\074\364\155\235\232\341\236\005\117\350\075\045\060  
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003\202  
\001\001\000\276\273\226\130\324\335\211\211\017\054\315\372\143  
\105\166\015\071\200\232\215\372\250\105\141\075\041\125\350\316  
\150\307\031\351\302\261\007\302\213\073\057\317\141\205\220\247  
\122\027\062\072\257\012\005\025\310\306\316\335\216\224\046\006

\370\320\140\356\263\156\324\015\272\132\335\253\240\174\120\162  
\246\325\220\223\126\327\131\071\333\350\177\263\225\170\123\201  
\122\122\137\364\222\201\002\301\373\042\271\321\003\127\247\176  
\313\373\300\106\274\023\164\114\050\053\166\222\151\037\301\120  
\221\021\305\114\336\013\224\214\027\203\214\257\067\207\264\352  
\153\157\242\132\065\101\141\205\057\234\027\300\373\271\016\242  
\141\006\107\166\274\220\011\230\164\015\322\010\057\275\344\015  
\162\361\246\137\303\174\300\175\352\274\323\253\040\221\313\134  
\005\214\235\250\065\372\066\126\273\011\363\204\135\326\361\342  
\054\236\331\176\361\202\240\341\267\057\176\355\371\173\240\000  
\270\262\336\035\171\341\201\363\122\131\232\024\135\347\302\021  
\363\232\303\072\170\043\276\116\146\336\244\071\151\362\230\072  
\054\012\000

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "CFCA GT CA"

# Issuer: O=CFCA GT CA,C=CN

# Serial Number:19:99:3c:3f

# Subject: O=CFCA GT CA,C=CN

# Not Valid Before: Mon Jun 13 08:15:09 2011

# Not Valid After: Tue Jun 09 08:15:09 2026

# Fingerprint (MD5): 2c:cd:f3:c5:59:a6:84:64:a0:67:50:ff:4b:4c:d6:14

# Fingerprint (SHA1): ea:bd:a2:40:44:0a:bb:d6:94:93:0a:01:d0:97:64:c6:c2:d7:79:66

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "CFCA GT CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\352\275\242\100\104\012\273\326\224\223\012\001\320\227\144\306  
\302\327\171\146

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\054\315\363\305\131\246\204\144\240\147\120\377\113\114\326\024  
END

CKA\_ISSUER MULTILINE\_OCTAL

\060\042\061\013\060\011\006\003\125\004\006\023\002\103\116\061  
\023\060\021\006\003\125\004\012\023\012\103\106\103\101\040\107  
\124\040\103\101

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\004\031\231\074\077

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "Digidentity L3 Root CA - G2"

# Issuer: CN=Digidentity L3 Root CA - G2,O=Digidentity B.V.,C=NL

# Serial Number: 1 (0x1)

# Subject: CN=Digidentity L3 Root CA - G2,O=Digidentity B.V.,C=NL

# Not Valid Before: Fri Apr 29 10:44:19 2011

# Not Valid After: Mon Nov 10 10:44:19 2031

# Fingerprint (MD5): 26:8f:5b:c8:b6:3f:88:8c:4c:49:08:2e:18:c1:02:10

# Fingerprint (SHA1): f1:38:a3:30:a4:ea:98:6b:eb:52:0b:b1:10:35:87:6e:fb:9d:7f:1c

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Digidentity L3 Root CA - G2"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\116\061\013\060\011\006\003\125\004\006\023\002\116\114\061  
\031\060\027\006\003\125\004\012\023\020\104\151\147\151\144\145  
\156\164\151\164\171\040\102\056\126\056\061\044\060\042\006\003  
\125\004\003\023\033\104\151\147\151\144\145\156\164\151\164\171  
\040\114\063\040\122\157\157\164\040\103\101\040\055\040\107\062

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\116\061\013\060\011\006\003\125\004\006\023\002\116\114\061  
\031\060\027\006\003\125\004\012\023\020\104\151\147\151\144\145  
\156\164\151\164\171\040\102\056\126\056\061\044\060\042\006\003  
\125\004\003\023\033\104\151\147\151\144\145\156\164\151\164\171  
\040\114\063\040\122\157\157\164\040\103\101\040\055\040\107\062

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\001

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\241\060\202\003\211\240\003\002\001\002\002\001\001  
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060  
\116\061\013\060\011\006\003\125\004\006\023\002\116\114\061\031  
\060\027\006\003\125\004\012\023\020\104\151\147\151\144\145\156  
\164\151\164\171\040\102\056\126\056\061\044\060\042\006\003\125  
\004\003\023\033\104\151\147\151\144\145\156\164\151\164\171\040  
\114\063\040\122\157\157\164\040\103\101\040\055\040\107\062\060  
\036\027\015\061\061\060\064\062\071\061\060\064\064\061\071\132  
\027\015\063\061\061\061\061\060\061\060\064\064\061\071\132\060  
\116\061\013\060\011\006\003\125\004\006\023\002\116\114\061\031



\060\027\006\003\125\004\012\023\020\104\151\147\151\144\145\156  
\164\151\164\171\040\102\056\126\056\061\044\060\042\006\003\125  
\004\003\023\033\104\151\147\151\144\145\156\164\151\164\171\040  
\114\063\040\122\157\157\164\040\103\101\040\055\040\107\062\060  
\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001\001  
\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001\000  
\270\021\243\105\336\001\107\126\015\142\270\216\272\130\146\134  
\372\062\306\153\200\156\270\177\370\123\337\176\337\142\250\301  
\127\117\232\105\045\310\112\105\055\123\070\044\263\040\254\117  
\352\255\377\232\020\257\177\342\016\312\264\016\044\045\221\316  
\166\216\020\251\057\231\123\247\220\113\004\213\155\172\271\101  
\033\323\001\171\214\237\101\153\271\220\327\201\022\032\007\226  
\320\011\257\351\344\152\041\123\200\270\206\236\142\150\103\255  
\263\152\025\372\366\155\003\062\152\065\261\120\023\110\307\172  
\265\041\023\234\004\234\332\223\371\152\053\301\247\030\375\366  
\300\176\131\366\373\347\016\021\265\334\043\352\034\357\147\005  
\127\316\027\351\361\173\261\321\062\044\214\317\145\347\324\274  
\066\031\160\174\242\047\041\326\200\322\055\025\117\112\265\340  
\125\220\225\121\223\041\200\363\234\104\037\377\035\125\125\344  
\342\020\021\224\026\123\320\376\257\363\357\227\272\106\342\167  
\133\313\326\242\131\021\210\246\347\125\101\303\222\145\035\043  
\024\142\024\177\045\162\040\366\244\207\051\157\007\374\376\340  
\320\030\322\227\371\024\216\066\306\350\014\030\227\361\166\034  
\364\044\332\343\112\371\267\114\022\031\147\363\360\341\123\373  
\135\344\300\164\143\137\045\221\012\331\076\364\063\254\344\013  
\165\137\316\346\230\274\124\015\235\242\061\305\025\124\135\042  
\034\213\072\124\246\015\321\327\043\072\254\076\252\112\027\144  
\166\055\015\373\124\345\353\202\074\071\101\103\235\341\256\171  
\140\317\146\356\307\161\203\173\014\153\011\333\236\242\115\116  
\106\223\150\267\372\147\341\332\277\337\221\200\332\243\242\211  
\255\136\154\314\113\167\165\144\157\215\044\343\210\210\013\343  
\077\351\277\247\345\126\142\015\203\177\275\152\141\310\220\211  
\170\133\014\257\022\052\342\223\255\144\347\331\105\056\366\260  
\310\253\105\356\160\070\157\273\065\076\026\376\253\236\303\146  
\057\363\276\011\140\325\157\200\275\115\333\257\215\376\014\140  
\063\153\017\350\235\153\304\060\167\237\054\120\070\320\230\151  
\354\067\350\236\017\344\142\352\372\377\021\104\124\331\357\315  
\223\165\221\114\341\211\145\246\224\271\123\371\371\111\143\305  
\002\003\001\000\001\243\201\211\060\201\206\060\017\006\003\125  
\035\023\001\001\377\004\005\060\003\001\001\377\060\016\006\003  
\125\035\017\001\001\377\004\004\003\002\001\006\060\035\006\003  
\125\035\016\004\026\004\024\053\043\040\140\275\055\212\210\107  
\254\255\053\276\002\071\272\230\324\354\230\060\104\006\003\125  
\035\040\004\075\060\073\060\071\006\004\125\035\040\000\060\061  
\060\057\006\010\053\006\001\005\005\007\002\001\026\043\150\164  
\164\160\072\057\057\160\153\151\056\144\151\147\151\144\145\156  
\164\151\164\171\056\145\165\057\166\141\154\151\144\141\164\151  
\145\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000

\003\202\002\001\000\251\375\357\272\217\033\176\062\022\147\035  
\101\015\055\246\213\317\362\364\255\126\170\176\012\230\330\233  
\250\321\264\113\054\046\254\344\322\177\147\067\275\011\215\345  
\271\163\021\072\156\011\307\127\144\007\041\064\370\016\135\052  
\330\221\174\361\124\121\274\234\360\014\152\102\364\074\001\116  
\223\105\101\075\254\363\230\113\036\161\036\063\131\062\377\174  
\060\360\134\344\341\276\055\056\265\352\335\142\041\016\075\264  
\015\225\374\311\270\331\272\240\367\142\247\355\303\003\256\010  
\054\101\325\357\103\161\070\267\024\162\256\077\364\024\164\107  
\330\336\214\121\171\316\357\261\124\254\160\107\226\176\055\056  
\335\233\356\241\001\056\031\357\276\130\140\161\055\255\227\133  
\132\140\060\313\062\202\142\116\126\345\147\152\264\322\061\124  
\162\077\002\320\274\060\071\217\267\103\011\052\037\046\073\014  
\307\174\035\233\200\140\204\016\351\056\322\371\025\273\133\340  
\212\244\000\351\343\051\373\050\133\275\066\105\140\041\103\061  
\377\160\241\137\134\203\133\227\174\015\267\123\131\354\230\265  
\116\342\051\261\324\174\106\343\350\343\103\352\072\226\065\037  
\123\361\004\026\045\343\054\363\150\241\246\221\337\025\373\275  
\237\346\116\236\302\124\153\176\042\127\343\244\234\134\042\045  
\037\201\257\231\310\337\021\025\110\103\370\263\063\251\043\177  
\016\063\217\274\106\035\103\264\073\140\365\227\205\031\242\026  
\260\125\334\032\160\051\145\332\331\176\011\027\064\353\211\272  
\351\141\222\330\336\064\143\074\112\125\152\277\332\206\355\316  
\063\336\273\123\157\317\034\332\224\117\166\124\254\145\125\020  
\123\232\310\270\153\334\006\346\272\345\121\325\101\177\037\304  
\300\101\241\140\221\064\363\023\202\321\241\167\323\367\114\344  
\031\377\327\104\232\260\265\274\334\312\136\217\334\316\361\240  
\151\066\340\104\222\056\231\372\274\257\263\307\170\072\125\146  
\307\153\245\344\151\046\351\064\035\037\052\227\012\351\167\251  
\167\133\163\110\062\201\277\377\321\354\203\305\160\203\151\236  
\230\033\303\127\337\221\225\034\200\374\215\350\226\203\005\323  
\237\172\210\173\372\350\127\361\301\204\050\275\315\326\034\314  
\245\342\111\012\163

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "Digidentity L3 Root CA - G2"  
# Issuer: CN=Digidentity L3 Root CA - G2,O=Digidentity B.V.,C=NL  
# Serial Number: 1 (0x1)  
# Subject: CN=Digidentity L3 Root CA - G2,O=Digidentity B.V.,C=NL  
# Not Valid Before: Fri Apr 29 10:44:19 2011  
# Not Valid After: Mon Nov 10 10:44:19 2031  
# Fingerprint (MD5): 26:8f:5b:c8:b6:3f:88:8c:4c:49:08:2e:18:c1:02:10  
# Fingerprint (SHA1): f1:38:a3:30:a4:ea:98:6b:eb:52:0b:b1:10:35:87:6e:fb:9d:7f:1c  
CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

```

CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Digidentity L3 Root CA - G2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\361\070\243\060\244\352\230\153\353\122\013\261\020\065\207\156
\373\235\177\034
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\046\217\133\310\266\077\210\214\114\111\010\056\030\301\002\020
END
CKA_ISSUER MULTILINE_OCTAL
\060\116\061\013\060\011\006\003\125\004\006\023\002\116\114\061
\031\060\027\006\003\125\004\012\023\020\104\151\147\151\144\145
\156\164\151\164\171\040\102\056\126\056\061\044\060\042\006\003
\125\004\003\023\033\104\151\147\151\144\145\156\164\151\164\171
\040\114\063\040\122\157\157\164\040\103\101\040\055\040\107\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

```

```

Microsoft Code Signing Only Certificate
Certificate "SITHS Root CA v1"
Issuer: CN=SITHS Root CA v1,O=Inera AB,C=SE
Serial Number:90:66:61:a8:62:3d:65:44:77:04:3f:71:9a:c3:97:0c
Subject: CN=SITHS Root CA v1,O=Inera AB,C=SE
Not Valid Before: Thu Mar 29 07:54:49 2012
Not Valid After: Mon Mar 29 07:54:49 2032
Fingerprint (MD5): 7f:7b:02:6c:68:9f:32:03:c7:af:04:9d:ec:23:df:f3
Fingerprint (SHA1): 58:5f:78:75:be:e7:43:3e:b0:79:ea:ab:7d:05:bb:0f:7a:f2:bc:cc

```

```

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SITHS Root CA v1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\073\061\013\060\011\006\003\125\004\006\023\002\123\105\061
\021\060\017\006\003\125\004\012\014\010\111\156\145\162\141\040
\101\102\061\031\060\027\006\003\125\004\003\014\020\123\111\124
\110\123\040\122\157\157\164\040\103\101\040\166\061
END
CKA_ID UTF8 "0"

```

CKA\_ISSUER MULTILINE\_OCTAL

\060\073\061\013\060\011\006\003\125\004\006\023\002\123\105\061  
\021\060\017\006\003\125\004\012\014\010\111\156\145\162\141\040  
\101\102\061\031\060\027\006\003\125\004\003\014\020\123\111\124  
\110\123\040\122\157\157\164\040\103\101\040\166\061

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\021\000\220\146\141\250\142\075\145\104\167\004\077\161\232  
\303\227\014

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\223\060\202\003\173\240\003\002\001\002\002\021\000  
\220\146\141\250\142\075\145\104\167\004\077\161\232\303\227\014  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060  
\073\061\013\060\011\006\003\125\004\006\023\002\123\105\061\021  
\060\017\006\003\125\004\012\014\010\111\156\145\162\141\040\101  
\102\061\031\060\027\006\003\125\004\003\014\020\123\111\124\110  
\123\040\122\157\157\164\040\103\101\040\166\061\060\036\027\015  
\061\062\060\063\062\071\060\067\065\064\064\071\132\027\015\063  
\062\060\063\062\071\060\067\065\064\064\071\132\060\073\061\013  
\060\011\006\003\125\004\006\023\002\123\105\061\021\060\017\006  
\003\125\004\012\014\010\111\156\145\162\141\040\101\102\061\031  
\060\027\006\003\125\004\003\014\020\123\111\124\110\123\040\122  
\157\157\164\040\103\101\040\166\061\060\202\002\042\060\015\006  
\011\052\206\110\206\367\015\001\001\001\005\000\003\202\002\017  
\000\060\202\002\012\002\202\002\001\000\300\355\346\236\250\254  
\250\377\330\065\271\374\373\360\225\117\077\075\107\043\321\222  
\311\311\370\360\342\037\206\255\210\077\340\000\317\117\021\225  
\141\075\245\326\040\031\321\210\322\302\126\011\105\040\241\052  
\352\042\303\352\272\314\102\151\236\270\205\237\160\300\154\247  
\276\157\243\134\335\103\210\007\315\312\051\337\151\172\037\055  
\237\126\152\033\142\040\041\141\306\120\113\145\165\111\106\277  
\134\327\051\036\302\036\205\102\341\016\070\115\303\066\161\102  
\104\121\072\321\130\314\311\264\252\154\100\307\203\361\307\011  
\237\112\363\153\363\007\026\065\364\202\216\136\213\204\334\161  
\171\271\373\156\127\105\267\305\160\072\377\102\002\321\064\277  
\205\160\155\117\217\347\037\031\041\367\325\064\274\356\131\346  
\056\042\363\161\202\142\031\237\005\144\174\073\042\161\030\245  
\055\301\170\130\231\321\257\336\224\100\006\031\166\023\120\207  
\043\313\107\127\256\154\305\023\352\232\205\122\303\312\127\046  
\037\336\026\155\255\161\176\362\330\141\375\346\066\116\161\032  
\235\323\040\065\255\022\041\130\165\066\213\211\026\244\067\050  
\317\240\203\072\100\243\312\021\357\264\345\220\033\343\145\222  
\147\230\157\016\051\345\147\030\327\210\372\215\266\307\172\245  
\240\177\221\036\253\266\371\164\230\166\122\140\057\132\067\231  
\250\333\321\076\326\204\152\157\122\323\264\332\032\307\270\262  
\321\224\021\037\305\210\211\351\133\251\243\224\346\242\175\115  
\247\062\211\241\336\046\153\315\325\243\362\062\033\332\065\023

\211\021\111\115\277\106\061\273\351\055\023\370\016\000\245\376  
\003\365\126\106\074\217\023\053\340\345\307\036\003\337\212\352  
\106\205\105\206\331\355\136\013\270\144\223\364\320\130\056\051  
\215\105\127\115\211\165\220\145\314\152\073\301\234\200\271\264  
\200\065\003\216\337\156\052\223\276\246\276\012\001\104\157\100  
\163\252\052\202\034\204\166\177\151\335\261\273\222\130\350\100  
\121\162\134\367\076\071\104\372\245\231\240\177\215\213\260\101  
\130\167\255\042\305\240\300\272\375\061\231\065\152\331\311\040  
\032\136\363\275\274\010\177\335\111\055\057\235\221\020\015\133  
\250\077\317\264\127\163\073\133\340\147\002\003\001\000\001\243  
\201\221\060\201\216\060\017\006\003\125\035\023\001\001\377\004  
\005\060\003\001\001\377\060\114\006\003\125\035\040\004\105\060  
\103\060\101\006\011\052\205\160\112\010\001\002\001\001\060\064  
\060\062\006\010\053\006\001\005\005\007\002\001\026\046\150\164  
\164\160\072\057\057\143\160\163\056\163\151\164\150\163\056\163  
\145\057\163\151\164\150\163\162\157\157\164\143\141\166\061\056  
\150\164\155\154\060\016\006\003\125\035\017\001\001\377\004\004  
\003\002\001\006\060\035\006\003\125\035\016\004\026\004\024\062  
\371\235\117\151\351\230\215\240\326\214\175\371\035\316\243\074  
\272\166\025\060\015\006\011\052\206\110\206\367\015\001\001\005  
\005\000\003\202\002\001\000\037\077\343\170\130\310\012\312\064  
\042\011\330\262\005\213\321\145\234\341\327\327\175\012\300\034  
\230\245\044\122\070\063\332\144\042\043\200\256\376\075\200\276  
\117\217\335\203\366\015\114\063\132\325\243\073\120\212\122\132  
\046\024\163\121\224\344\122\227\143\333\267\006\250\357\217\255  
\342\355\336\243\277\040\321\106\333\055\170\350\054\047\104\234  
\074\354\267\027\374\211\227\363\243\242\136\302\131\123\340\317  
\344\265\001\073\143\123\050\323\257\146\113\064\071\257\141\016  
\076\233\356\263\211\326\223\240\073\001\304\263\043\124\020\074  
\115\327\252\260\332\331\154\312\060\104\055\335\262\050\142\212  
\101\140\362\100\023\154\260\174\076\101\340\213\246\064\361\347  
\256\121\207\003\216\231\177\331\150\242\366\234\015\171\202\262  
\237\337\044\310\146\140\350\266\110\104\047\310\153\126\267\104  
\205\316\002\267\323\212\161\134\127\121\127\041\214\352\302\121  
\017\120\077\200\253\004\115\311\122\335\344\245\362\056\037\155  
\165\272\207\035\220\013\356\030\204\200\163\273\213\225\204\212  
\141\015\116\135\142\237\343\146\014\373\066\016\047\323\110\370  
\006\210\006\245\137\356\176\134\335\255\012\035\075\034\252\100  
\171\230\171\270\120\214\066\215\013\012\066\013\325\076\347\135  
\201\335\154\334\155\261\157\015\164\236\054\057\302\005\362\104  
\021\262\063\372\201\305\112\155\076\105\326\054\342\153\137\056  
\344\103\225\121\033\231\061\005\337\045\033\163\321\173\234\304  
\163\111\373\142\140\331\151\143\335\321\076\145\155\107\372\144  
\114\003\130\120\331\246\276\345\052\150\353\077\213\020\361\346  
\273\042\006\050\232\240\244\230\151\157\066\264\324\015\016\014  
\175\300\051\061\273\054\003\047\341\147\247\275\321\213\056\266  
\207\304\012\340\011\013\202\241\346\117\130\235\373\330\370\141  
\341\312\227\304\270\267\120\071\314\061\116\375\055\034\032\366

```
\107\343\154\354\033\005\350\177\027\065\020\204\332\063\347\064
\346\265\244\353\304\042\007\112\366\233\130\330\017\234\100\373
\261\213\137\242\375\231\352\242\173\131\142\321\136\256\321\112
\162\030\053\113\066\071\162\007\232\132\360\143\072\317\033\371
\317\335\110\163\131\160\344
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

# Microsoft Code Signing Only Certificate

# Trust for "SITHS Root CA v1"

# Issuer: CN=SITHS Root CA v1,O=Inera AB,C=SE

# Serial Number:90:66:61:a8:62:3d:65:44:77:04:3f:71:9a:c3:97:0c

# Subject: CN=SITHS Root CA v1,O=Inera AB,C=SE

# Not Valid Before: Thu Mar 29 07:54:49 2012

# Not Valid After: Mon Mar 29 07:54:49 2032

# Fingerprint (MD5): 7f:7b:02:6c:68:9f:32:03:c7:af:04:9d:ec:23:df:f3

# Fingerprint (SHA1): 58:5f:78:75:be:e7:43:3e:b0:79:ea:ab:7d:05:bb:0f:7a:f2:bc:cc

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "SITHS Root CA v1"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\130\137\170\165\276\347\103\076\260\171\352\253\175\005\273\017
\172\362\274\314
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\177\173\002\154\150\237\062\003\307\257\004\235\354\043\337\363
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\073\061\013\060\011\006\003\125\004\006\023\002\123\105\061
\021\060\017\006\003\125\004\012\014\010\111\156\145\162\141\040
\101\102\061\031\060\027\006\003\125\004\003\014\020\123\111\124
\110\123\040\122\157\157\164\040\103\101\040\166\061
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\021\000\220\146\141\250\142\075\145\104\167\004\077\161\232
\303\227\014
```

END

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

```
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

```
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

```
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

# Microsoft Code Signing Only Certificate

# Certificate "Macao Post eSignTrust Root Certification Authority (G02)"

```
Issuer: CN=Macao Post eSignTrust Root Certification Authority (G02),O=Macao Post,C=MO
Serial Number:52:ac:be:07:11:49:97:bb:1f:bf:87:1b:25:17:bf:a4
Subject: CN=Macao Post eSignTrust Root Certification Authority (G02),O=Macao Post,C=MO
Not Valid Before: Wed Jan 06 00:00:00 2010
Not Valid After: Sun Jan 05 23:59:59 2020
Fingerprint (MD5): a1:2d:ed:eb:8a:3b:88:2f:fa:38:f3:86:a4:fb:bc:f2
Fingerprint (SHA1): 06:14:31:51:e0:2b:45:dd:ba:dd:5d:8e:56:53:0d:aa:e3:28:cf:90
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Macao Post eSignTrust Root Certification Authority (G02)"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\145\061\013\060\011\006\003\125\004\006\023\002\115\117\061
\023\060\021\006\003\125\004\012\023\012\115\141\143\141\157\040
\120\157\163\164\061\101\060\077\006\003\125\004\003\023\070\115
\141\143\141\157\040\120\157\163\164\040\145\123\151\147\156\124
\162\165\163\164\040\122\157\157\164\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164
\171\040\050\107\060\062\051
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\145\061\013\060\011\006\003\125\004\006\023\002\115\117\061
\023\060\021\006\003\125\004\012\023\012\115\141\143\141\157\040
\120\157\163\164\061\101\060\077\006\003\125\004\003\023\070\115
\141\143\141\157\040\120\157\163\164\040\145\123\151\147\156\124
\162\165\163\164\040\122\157\157\164\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164
\171\040\050\107\060\062\051
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\122\254\276\007\021\111\227\273\037\277\207\033\045\027
\277\244
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\226\060\202\003\176\240\003\002\001\002\002\020\122
\254\276\007\021\111\227\273\037\277\207\033\045\027\277\244\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\145
\061\013\060\011\006\003\125\004\006\023\002\115\117\061\023\060
\021\006\003\125\004\012\023\012\115\141\143\141\157\040\120\157
\163\164\061\101\060\077\006\003\125\004\003\023\070\115\141\143
\141\157\040\120\157\163\164\040\145\123\151\147\156\124\162\165
\163\164\040\122\157\157\164\040\103\145\162\164\151\146\151\143
\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171\040
\050\107\060\062\051\060\036\027\015\061\060\060\061\060\066\060
\060\060\060\060\060\132\027\015\062\060\060\061\060\065\062\063
```

\065\071\065\071\132\060\145\061\013\060\011\006\003\125\004\006  
\023\002\115\117\061\023\060\021\006\003\125\004\012\023\012\115  
\141\143\141\157\040\120\157\163\164\061\101\060\077\006\003\125  
\004\003\023\070\115\141\143\141\157\040\120\157\163\164\040\145  
\123\151\147\156\124\162\165\163\164\040\122\157\157\164\040\103  
\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164  
\150\157\162\151\164\171\040\050\107\060\062\051\060\202\002\042  
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003  
\202\002\017\000\060\202\002\012\002\202\002\001\000\266\370\207  
\247\164\314\135\043\136\256\253\226\334\327\044\050\035\244\024  
\146\327\240\150\214\136\235\105\324\324\051\323\263\013\353\255  
\026\352\235\122\021\311\244\341\160\345\335\276\016\034\021\167  
\353\237\243\160\170\027\217\271\076\027\123\151\251\353\365\125  
\371\225\227\351\337\071\166\236\037\122\027\264\033\000\022\320  
\315\074\343\252\111\321\236\101\067\066\365\141\315\043\017\127  
\261\366\115\323\333\015\102\123\002\210\364\360\251\206\213\127  
\317\162\012\325\224\113\132\332\067\345\075\107\131\147\276\323  
\216\126\325\127\071\320\047\333\237\111\117\250\026\124\277\170  
\137\317\034\235\136\241\013\214\203\003\263\014\024\311\132\251  
\273\377\306\256\131\317\365\145\037\043\211\001\123\212\325\133  
\027\235\233\377\230\121\017\103\111\367\252\054\355\345\351\206  
\072\063\120\163\334\122\245\153\143\204\351\023\242\174\307\167  
\032\363\252\251\015\013\116\116\035\104\303\162\073\231\131\347  
\101\042\073\054\124\136\022\061\226\150\101\031\325\355\165\247  
\271\127\133\021\366\232\244\111\057\142\363\013\230\121\033\263  
\063\102\322\314\324\141\031\303\323\334\233\373\223\262\142\315  
\066\373\214\351\032\156\032\261\071\044\216\135\331\076\073\206  
\174\210\346\267\047\003\370\225\121\260\277\120\067\376\370\116  
\023\001\033\047\055\233\222\320\162\127\327\243\232\126\350\153  
\243\367\125\336\100\135\342\010\037\134\273\121\246\236\264\335  
\016\246\032\131\142\147\206\163\020\225\235\225\315\272\277\330  
\234\052\016\213\166\231\223\324\113\260\350\124\077\015\330\212  
\371\200\317\101\375\001\172\105\174\175\326\075\116\371\142\117  
\101\045\174\252\155\130\126\033\007\264\163\252\037\021\037\074  
\272\123\043\340\355\112\315\226\211\334\110\320\115\142\313\223  
\007\366\240\256\123\027\174\137\134\007\034\005\114\253\114\152  
\252\302\017\240\031\153\171\171\302\174\263\251\375\075\373\314  
\174\161\305\273\276\045\155\041\247\373\326\276\140\363\265\251  
\251\154\164\030\077\250\236\102\140\101\362\071\055\035\302\015  
\163\362\340\261\266\112\032\030\275\167\151\031\327\322\172\261  
\334\226\065\232\330\046\205\203\266\023\051\302\343\002\003\001  
\000\001\243\102\060\100\060\017\006\003\125\035\023\001\001\377  
\004\005\060\003\001\001\377\060\016\006\003\125\035\017\001\001  
\377\004\004\003\002\001\006\060\035\006\003\125\035\016\004\026  
\004\024\002\201\267\266\146\370\222\105\155\302\161\322\237\354  
\057\323\272\037\271\377\060\015\006\011\052\206\110\206\367\015  
\001\001\005\005\000\003\202\002\001\000\130\123\213\276\317\101  
\262\117\266\325\336\112\150\315\145\317\306\100\212\254\113\232



\133\143\155\275\361\077\131\120\102\320\337\232\343\137\126\221  
\263\133\233\331\105\006\103\357\223\033\375\063\167\035\006\124  
\070\110\361\124\214\072\123\153\073\161\065\011\166\145\351\127  
\017\103\366\221\232\336\020\273\272\150\222\052\045\313\147\104  
\011\153\277\235\227\146\313\251\105\266\276\067\231\035\165\045  
\276\075\074\143\154\277\251\023\107\307\162\214\313\303\317\364  
\366\207\005\231\211\027\250\064\040\361\337\241\047\147\323\247  
\043\357\253\131\203\075\032\330\052\315\302\255\112\060\014\006  
\072\040\213\244\370\332\106\067\103\056\264\211\035\204\163\212  
\140\276\144\061\047\102\300\353\162\141\155\314\336\174\163\053  
\350\277\071\102\136\171\221\354\200\033\252\066\166\116\041\350  
\206\004\227\011\050\313\107\347\100\324\054\136\032\136\110\372  
\256\307\351\004\352\107\044\233\276\361\107\236\325\325\172\321  
\136\324\205\362\013\043\004\230\324\053\232\126\162\106\114\101  
\232\063\360\222\264\277\101\324\275\233\260\263\361\365\023\326  
\257\133\324\362\321\101\360\107\135\172\274\172\131\361\175\140  
\150\224\016\112\117\201\222\042\252\037\304\074\276\034\072\072  
\114\360\160\241\177\273\237\334\322\305\244\361\046\156\341\363  
\046\251\160\373\361\211\226\142\025\134\131\240\265\043\372\226  
\152\262\032\222\075\015\044\112\053\270\010\376\157\337\334\302  
\356\226\377\316\277\173\270\371\204\357\101\073\344\115\271\207  
\221\272\306\137\310\355\360\313\213\323\017\221\366\040\336\221  
\230\306\347\110\144\321\316\123\022\356\304\025\155\334\200\120  
\033\023\140\117\171\133\374\032\234\376\242\237\240\021\063\221  
\311\113\155\072\146\226\055\323\070\370\331\231\201\264\104\046  
\177\261\347\236\160\155\035\155\365\042\011\344\254\031\066\373  
\047\005\330\172\233\331\274\236\033\332\031\067\330\361\335\025  
\230\144\033\217\123\360\050\235\254\024\272\137\151\317\226\043  
\356\126\254\231\315\072\217\325\136\031\346\142\023\072\137\353  
\213\137\026\300\073\341\321\223\217\126\141\067\005\320\171\033  
\375\250\274\017\171\322\263\346\323\146

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "Macao Post eSignTrust Root Certification Authority (G02)"  
# Issuer: CN=Macao Post eSignTrust Root Certification Authority (G02),O=Macao Post,C=MO  
# Serial Number:52:ac:be:07:11:49:97:bb:1f:bf:87:1b:25:17:bf:a4  
# Subject: CN=Macao Post eSignTrust Root Certification Authority (G02),O=Macao Post,C=MO  
# Not Valid Before: Wed Jan 06 00:00:00 2010  
# Not Valid After: Sun Jan 05 23:59:59 2020  
# Fingerprint (MD5): a1:2d:ed:eb:8a:3b:88:2f:fa:38:f3:86:a4:fb:bc:f2  
# Fingerprint (SHA1): 06:14:31:51:e0:2b:45:dd:ba:dd:5d:8e:56:53:0d:aa:e3:28:cf:90  
CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE

```

CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Macao Post eSignTrust Root Certification Authority (G02)"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\006\024\061\121\340\053\105\335\272\335\135\216\126\123\015\252
\343\050\317\220
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\241\055\355\353\212\073\210\057\372\070\363\206\244\373\274\362
END
CKA_ISSUER MULTILINE_OCTAL
\060\145\061\013\060\011\006\003\125\004\006\023\002\115\117\061
\023\060\021\006\003\125\004\012\023\012\115\141\143\141\157\040
\120\157\163\164\061\101\060\077\006\003\125\004\003\023\070\115
\141\143\141\157\040\120\157\163\164\040\145\123\151\147\156\124
\162\165\163\164\040\122\157\157\164\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164
\171\040\050\107\060\062\051
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\122\254\276\007\021\111\227\273\037\277\207\033\045\027
\277\244
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

```

```
Microsoft Code Signing Only Certificate
```

```
Certificate "Autoridade Certificadora Raiz Brasileira v2"
```

```
Issuer: CN=Autoridade Certificadora Raiz Brasileira v2,OU=Instituto Nacional de Tecnologia da Informacao - ITI,O=ICP-Brasil,C=BR
```

```
Serial Number: 1 (0x1)
```

```
Subject: CN=Autoridade Certificadora Raiz Brasileira v2,OU=Instituto Nacional de Tecnologia da Informacao - ITI,O=ICP-Brasil,C=BR
```

```
Not Valid Before: Mon Jun 21 19:04:57 2010
```

```
Not Valid After: Wed Jun 21 19:04:57 2023
```

```
Fingerprint (MD5): 00:11:ae:73:15:fb:2d:6d:88:d8:43:bd:b4:b6:4c:5f
```

```
Fingerprint (SHA1): a9:82:2e:6c:69:33:c6:3c:14:8c:2d:ca:a4:4a:5c:f1:aa:d2:c4:2e
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "Autoridade Certificadora Raiz Brasileira v2"
```

```
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
```

```
CKA_SUBJECT MULTILINE_OCTAL
```

```
\060\201\227\061\013\060\011\006\003\125\004\006\023\002\102\122
```

```
\061\023\060\021\006\003\125\004\012\023\012\111\103\120\055\102
```

```
\162\141\163\151\154\061\075\060\073\006\003\125\004\013\023\064
```

\111\156\163\164\151\164\165\164\157\040\116\141\143\151\157\156  
\141\154\040\144\145\040\124\145\143\156\157\154\157\147\151\141  
\040\144\141\040\111\156\146\157\162\155\141\143\141\157\040\055  
\040\111\124\111\061\064\060\062\006\003\125\004\003\023\053\101  
\165\164\157\162\151\144\141\144\145\040\103\145\162\164\151\146  
\151\143\141\144\157\162\141\040\122\141\151\172\040\102\162\141  
\163\151\154\145\151\162\141\040\166\062

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\227\061\013\060\011\006\003\125\004\006\023\002\102\122  
\061\023\060\021\006\003\125\004\012\023\012\111\103\120\055\102  
\162\141\163\151\154\061\075\060\073\006\003\125\004\013\023\064  
\111\156\163\164\151\164\165\164\157\040\116\141\143\151\157\156  
\141\154\040\144\145\040\124\145\143\156\157\154\157\147\151\141  
\040\144\141\040\111\156\146\157\162\155\141\143\141\157\040\055  
\040\111\124\111\061\064\060\062\006\003\125\004\003\023\053\101  
\165\164\157\162\151\144\141\144\145\040\103\145\162\164\151\146  
\151\143\141\144\157\162\141\040\122\141\151\172\040\102\162\141  
\163\151\154\145\151\162\141\040\166\062

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\001

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\006\241\060\202\004\211\240\003\002\001\002\002\001\001  
\060\015\006\011\052\206\110\206\367\015\001\001\015\005\000\060  
\201\227\061\013\060\011\006\003\125\004\006\023\002\102\122\061  
\023\060\021\006\003\125\004\012\023\012\111\103\120\055\102\162  
\141\163\151\154\061\075\060\073\006\003\125\004\013\023\064\111  
\156\163\164\151\164\165\164\157\040\116\141\143\151\157\156\141  
\154\040\144\145\040\124\145\143\156\157\154\157\147\151\141\040  
\144\141\040\111\156\146\157\162\155\141\143\141\157\040\055\040  
\111\124\111\061\064\060\062\006\003\125\004\003\023\053\101\165  
\164\157\162\151\144\141\144\145\040\103\145\162\164\151\146\151  
\143\141\144\157\162\141\040\122\141\151\172\040\102\162\141\163  
\151\154\145\151\162\141\040\166\062\060\036\027\015\061\060\060  
\066\062\061\061\071\060\064\065\067\132\027\015\062\063\060\066  
\062\061\061\071\060\064\065\067\132\060\201\227\061\013\060\011  
\006\003\125\004\006\023\002\102\122\061\023\060\021\006\003\125  
\004\012\023\012\111\103\120\055\102\162\141\163\151\154\061\075  
\060\073\006\003\125\004\013\023\064\111\156\163\164\151\164\165  
\164\157\040\116\141\143\151\157\156\141\154\040\144\145\040\124  
\145\143\156\157\154\157\147\151\141\040\144\141\040\111\156\146  
\157\162\155\141\143\141\157\040\055\040\111\124\111\061\064\060  
\062\006\003\125\004\003\023\053\101\165\164\157\162\151\144\141  
\144\145\040\103\145\162\164\151\146\151\143\141\144\157\162\141  
\040\122\141\151\172\040\102\162\141\163\151\154\145\151\162\141

\040\166\062\060\202\002\042\060\015\006\011\052\206\110\206\367  
\015\001\001\001\005\000\003\202\002\017\000\060\202\002\012\002  
\202\002\001\000\272\106\244\016\335\347\100\362\265\240\174\122  
\225\127\105\374\155\204\363\206\001\311\205\003\255\230\253\322  
\362\136\005\231\311\273\157\142\147\375\167\104\271\003\007\074  
\322\033\000\142\324\160\054\102\203\171\146\253\231\126\256\201  
\274\152\111\275\363\164\017\142\267\353\133\007\146\224\102\044  
\235\106\254\232\102\030\060\360\044\250\121\101\352\253\225\361  
\250\053\002\170\151\265\051\047\136\234\056\163\306\376\043\245  
\343\246\316\375\154\033\153\000\124\353\000\255\117\072\114\074  
\347\012\210\133\332\136\232\013\126\344\265\124\070\035\362\012  
\223\144\116\303\101\222\123\040\052\317\374\164\156\324\333\063  
\070\142\344\376\216\114\130\034\367\217\052\115\377\305\222\331  
\011\122\275\317\160\000\235\151\232\063\152\210\207\105\041\231  
\026\121\015\064\337\202\275\264\151\250\174\174\324\335\323\362  
\025\134\113\305\130\020\352\205\031\313\066\042\130\052\162\014  
\232\226\336\312\317\010\121\141\277\264\005\051\006\053\206\220  
\376\351\115\303\004\005\107\313\317\166\331\177\161\246\207\173  
\025\100\344\063\200\170\007\035\244\362\216\233\100\073\311\162  
\120\337\151\276\360\054\226\037\220\265\325\256\164\343\145\264  
\214\032\351\152\033\373\162\134\305\202\124\352\340\123\007\304  
\314\022\351\367\336\327\057\324\110\057\107\077\046\141\004\261  
\022\232\063\153\265\206\113\023\053\320\206\235\107\355\151\373  
\374\204\022\146\370\126\345\016\212\154\166\304\153\032\172\302  
\240\132\022\321\043\211\130\001\174\010\130\332\025\216\025\331  
\176\175\067\266\244\105\365\003\205\314\107\372\213\171\105\270  
\146\142\063\323\046\112\336\034\351\324\177\346\155\046\271\074  
\175\315\017\050\012\051\017\233\335\143\253\271\246\107\032\204  
\327\205\244\003\145\006\004\113\122\215\203\064\102\177\061\216  
\021\056\346\263\147\225\100\176\227\172\100\000\371\021\154\203  
\070\130\255\003\063\133\246\304\301\305\260\254\015\251\006\360  
\246\151\001\064\266\351\370\224\110\117\076\246\165\011\354\112  
\305\073\340\311\136\260\062\377\237\151\131\317\074\060\157\015  
\316\047\127\354\132\033\150\377\354\117\157\170\062\076\171\305  
\264\135\225\177\002\003\001\000\001\243\201\365\060\201\362\060  
\116\006\003\125\035\040\004\107\060\105\060\103\006\005\140\114  
\001\001\000\060\072\060\070\006\010\053\006\001\005\005\007\002  
\001\026\054\150\164\164\160\072\057\057\141\143\162\141\151\172  
\056\151\143\160\142\162\141\163\151\154\056\147\157\166\056\142  
\162\057\104\120\103\141\143\162\141\151\172\056\160\144\146\060  
\077\006\003\125\035\037\004\070\060\066\060\064\240\062\240\060  
\206\056\150\164\164\160\072\057\057\141\143\162\141\151\172\056  
\151\143\160\142\162\141\163\151\154\056\147\157\166\056\142\162  
\057\114\103\122\141\143\162\141\151\172\166\062\056\143\162\154  
\060\037\006\003\125\035\043\004\030\060\026\200\024\014\071\040  
\072\267\001\037\313\327\050\175\101\240\307\372\112\255\062\044  
\276\060\035\006\003\125\035\016\004\026\004\024\014\071\040\072  
\267\001\037\313\327\050\175\101\240\307\372\112\255\062\044\276

\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001  
\377\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001  
\006\060\015\006\011\052\206\110\206\367\015\001\001\015\005\000  
\003\202\002\001\000\131\232\024\151\030\155\175\051\103\160\175  
\166\233\141\337\167\216\032\166\344\251\326\313\166\244\026\014  
\114\224\022\306\220\321\201\003\305\255\006\331\055\104\274\262  
\011\166\011\200\071\147\000\030\064\155\006\012\346\265\020\131  
\110\272\165\140\374\077\216\035\030\125\160\053\236\113\225\254  
\211\253\012\167\044\173\141\304\307\221\046\216\106\023\121\067  
\266\214\047\012\323\015\360\232\053\042\203\203\263\275\203\065  
\255\233\074\274\170\203\051\065\141\066\370\021\161\063\040\124  
\143\123\105\001\330\023\132\204\073\327\146\023\044\267\304\106  
\305\042\330\163\044\356\034\023\027\226\310\045\350\033\036\317  
\337\205\120\155\074\352\367\120\236\033\227\336\247\153\333\326  
\163\322\317\174\120\300\260\214\345\123\022\172\206\071\254\065  
\133\147\307\352\324\373\321\302\135\352\016\227\163\230\256\051  
\277\344\072\363\004\066\120\054\355\336\036\333\205\350\035\204  
\011\356\363\246\203\063\133\157\107\171\117\110\265\374\270\046  
\023\253\252\263\364\141\021\373\105\147\363\035\076\156\376\052  
\113\046\104\032\237\261\242\340\074\332\340\344\005\072\170\254  
\373\250\241\115\277\135\054\167\051\220\315\023\035\357\006\050  
\330\267\024\363\133\310\311\236\247\176\061\022\212\170\142\304  
\321\005\274\006\002\143\004\053\015\211\335\344\134\133\062\200  
\104\324\102\354\052\363\362\100\207\061\325\076\342\012\062\014  
\024\215\325\162\155\013\346\375\215\344\250\363\005\215\165\027  
\167\233\012\271\372\220\222\231\145\210\062\147\103\005\216\055  
\013\025\273\065\361\141\350\331\147\167\355\026\345\350\001\055  
\153\064\077\216\203\263\367\352\017\112\036\076\065\204\235\214  
\200\064\077\251\225\350\303\255\304\315\236\312\024\026\054\031  
\236\344\066\213\271\271\243\102\045\007\076\303\345\325\150\117  
\240\146\034\246\263\266\163\034\220\032\077\100\271\032\126\102  
\160\207\377\157\055\017\021\375\036\377\367\205\060\025\016\343  
\027\061\356\047\225\314\311\351\231\036\227\307\155\133\007\265  
\005\152\075\362\105\337\272\202\171\044\160\056\233\202\037\146  
\251\245\155\047\314\366\052\242\321\137\205\157\340\106\235\252  
\322\245\116\125\016

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Autoridade Certificadora Raiz Brasileira v2"

# Issuer: CN=Autoridade Certificadora Raiz Brasileira v2,OU=Instituto Nacional de Tecnologia da Informacao - ITI,O=ICP-Brasil,C=BR

# Serial Number: 1 (0x1)

# Subject: CN=Autoridade Certificadora Raiz Brasileira v2,OU=Instituto Nacional de Tecnologia da Informacao - ITI,O=ICP-Brasil,C=BR

```

Not Valid Before: Mon Jun 21 19:04:57 2010
Not Valid After: Wed Jun 21 19:04:57 2023
Fingerprint (MD5): 00:11:ae:73:15:fb:2d:6d:88:d8:43:bd:b4:b6:4c:5f
Fingerprint (SHA1): a9:82:2e:6c:69:33:c6:3c:14:8c:2d:ca:a4:4a:5c:f1:aa:d2:c4:2e
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Autoridade Certificadora Raiz Brasileira v2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\251\202\056\154\151\063\306\074\024\214\055\312\244\112\134\361
\252\322\304\056
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\000\021\256\163\025\373\055\155\210\330\103\275\264\266\114\137
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\227\061\013\060\011\006\003\125\004\006\023\002\102\122
\061\023\060\021\006\003\125\004\012\023\012\111\103\120\055\102
\162\141\163\151\154\061\075\060\073\006\003\125\004\013\023\064
\111\156\163\164\151\164\165\164\157\040\116\141\143\151\157\156
\141\154\040\144\145\040\124\145\143\156\157\154\157\147\151\141
\040\144\141\040\111\156\146\157\162\155\141\143\141\157\040\055
\040\111\124\111\061\064\060\062\006\003\125\004\003\023\053\101
\165\164\157\162\151\144\141\144\145\040\103\145\162\164\151\146
\151\143\141\144\157\162\141\040\122\141\151\172\040\102\162\141
\163\151\154\145\151\162\141\040\166\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "Swisscom Root CA 2"
Issuer: CN=Swisscom Root CA 2,OU=Digital Certificate Services,O=Swisscom,C=ch
Serial Number: 1e:9e:28:e8:48:f2:e5:ef:c3:7c:4a:1e:5a:18:67:b6
Subject: CN=Swisscom Root CA 2,OU=Digital Certificate Services,O=Swisscom,C=ch
Not Valid Before: Fri Jun 24 08:38:14 2011
Not Valid After: Wed Jun 25 07:38:14 2031
Fingerprint (MD5): 5b:04:69:ec:a5:83:94:63:18:a7:86:d0:e4:f2:6e:19
Fingerprint (SHA1): 77:47:4f:c6:30:e4:0f:4c:47:64:3f:84:ba:b8:c6:95:4a:8a:41:ec
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE

```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Swisscom Root CA 2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\144\061\013\060\011\006\003\125\004\006\023\002\143\150\061
\021\060\017\006\003\125\004\012\023\010\123\167\151\163\163\143
\157\155\061\045\060\043\006\003\125\004\013\023\034\104\151\147
\151\164\141\154\040\103\145\162\164\151\146\151\143\141\164\145
\040\123\145\162\166\151\143\145\163\061\033\060\031\006\003\125
\004\003\023\022\123\167\151\163\163\143\157\155\040\122\157\157
\164\040\103\101\040\062
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\144\061\013\060\011\006\003\125\004\006\023\002\143\150\061
\021\060\017\006\003\125\004\012\023\010\123\167\151\163\163\143
\157\155\061\045\060\043\006\003\125\004\013\023\034\104\151\147
\151\164\141\154\040\103\145\162\164\151\146\151\143\141\164\145
\040\123\145\162\166\151\143\145\163\061\033\060\031\006\003\125
\004\003\023\022\123\167\151\163\163\143\157\155\040\122\157\157
\164\040\103\101\040\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\036\236\050\350\110\362\345\357\303\174\112\036\132\030
\147\266
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\331\060\202\003\301\240\003\002\001\002\002\020\036
\236\050\350\110\362\345\357\303\174\112\036\132\030\147\266\060
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\144
\061\013\060\011\006\003\125\004\006\023\002\143\150\061\021\060
\017\006\003\125\004\012\023\010\123\167\151\163\163\143\157\155
\061\045\060\043\006\003\125\004\013\023\034\104\151\147\151\164
\141\154\040\103\145\162\164\151\146\151\143\141\164\145\040\123
\145\162\166\151\143\145\163\061\033\060\031\006\003\125\004\003
\023\022\123\167\151\163\163\143\157\155\040\122\157\157\164\040
\103\101\040\062\060\036\027\015\061\061\060\066\062\064\060\070
\063\070\061\064\132\027\015\063\061\060\066\062\065\060\067\063
\070\061\064\132\060\144\061\013\060\011\006\003\125\004\006\023
\002\143\150\061\021\060\017\006\003\125\004\012\023\010\123\167
\151\163\163\143\157\155\061\045\060\043\006\003\125\004\013\023
\034\104\151\147\151\164\141\154\040\103\145\162\164\151\146\151
\143\141\164\145\040\123\145\162\166\151\143\145\163\061\033\060
\031\006\003\125\004\003\023\022\123\167\151\163\163\143\157\155
\040\122\157\157\164\040\103\101\040\062\060\202\002\042\060\015
\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202\002
\017\000\060\202\002\012\002\202\002\001\000\225\102\116\204\235
\121\346\323\011\350\162\132\043\151\333\170\160\216\026\361\053
```

\217\015\003\316\223\314\056\000\010\173\253\063\214\364\351\100  
\346\027\114\253\236\270\107\024\062\167\062\335\050\014\336\030  
\113\137\166\237\370\071\073\374\116\211\330\174\305\147\357\253  
\322\271\064\137\153\072\363\144\066\316\302\260\317\023\150\312  
\310\313\353\265\342\075\056\041\337\352\054\324\340\371\160\226  
\114\377\152\130\230\267\027\344\033\122\345\176\007\000\035\137  
\332\346\076\225\004\267\151\210\071\241\101\140\045\141\113\225  
\071\150\142\034\261\013\005\211\300\066\202\024\041\077\256\333  
\241\375\274\157\034\140\206\266\123\224\111\271\053\106\305\117  
\000\053\277\241\273\313\077\340\307\127\034\127\350\326\151\370  
\301\044\122\235\210\125\335\302\207\056\164\043\320\024\375\052  
\107\132\273\246\235\375\224\344\321\212\245\137\206\143\166\205  
\313\257\377\111\050\374\200\355\114\171\322\273\344\300\357\001  
\356\120\101\010\065\043\160\053\251\026\264\214\156\205\351\266  
\021\317\061\335\123\046\033\337\055\132\112\002\100\374\304\300  
\266\351\061\032\010\050\345\140\303\037\304\220\216\020\142\140  
\104\015\354\012\276\125\030\161\054\245\364\262\274\025\142\377  
\034\343\276\035\332\036\127\263\074\176\315\202\035\221\343\113  
\353\054\122\064\260\212\375\022\116\226\260\353\160\177\236\071  
\367\146\102\261\253\254\122\332\166\100\127\173\052\275\350\156  
\003\262\013\200\205\210\235\014\307\302\167\260\232\232\127\364  
\270\372\023\134\150\223\072\147\244\227\320\033\231\267\206\062  
\113\140\330\316\357\320\014\177\225\237\157\207\117\207\212\216  
\137\010\174\252\133\374\132\276\241\221\237\125\175\116\260\013  
\151\314\260\224\250\247\207\362\323\112\120\334\137\162\260\026  
\165\036\313\264\030\142\232\260\247\071\252\233\237\146\330\215  
\246\154\226\025\343\346\362\370\361\203\142\154\273\125\351\141  
\223\243\075\365\261\127\213\117\043\260\233\345\224\152\057\337  
\214\337\225\121\051\140\241\013\051\344\134\125\130\267\250\374  
\231\356\045\115\114\016\263\323\114\217\204\350\051\017\375\020  
\124\002\205\310\371\345\303\213\317\347\017\002\003\001\000\001  
\243\201\206\060\201\203\060\016\006\003\125\035\017\001\001\377  
\004\004\003\002\001\206\060\035\006\003\125\035\041\004\026\060  
\024\060\022\006\007\140\205\164\001\123\002\001\006\007\140\205  
\164\001\123\002\001\060\022\006\003\125\035\023\001\001\377\004  
\010\060\006\001\001\377\002\001\007\060\035\006\003\125\035\016  
\004\026\004\024\115\046\040\042\211\113\323\325\244\012\241\157  
\336\342\022\201\305\361\074\056\060\037\006\003\125\035\043\004  
\030\060\026\200\024\115\046\040\042\211\113\323\325\244\012\241  
\157\336\342\022\201\305\361\074\056\060\015\006\011\052\206\110  
\206\367\015\001\001\013\005\000\003\202\002\001\000\062\012\262  
\244\033\313\175\276\202\127\211\271\152\177\363\364\301\056\021  
\175\270\031\076\171\267\250\250\162\067\146\233\032\355\254\023  
\073\016\277\142\360\234\337\236\173\241\123\110\016\101\172\312  
\040\247\027\033\266\170\354\100\221\363\102\255\020\303\134\357  
\377\140\131\177\315\205\243\213\075\110\034\045\002\074\147\175  
\365\062\351\057\060\345\175\245\172\070\320\363\146\052\146\036  
\215\063\203\212\157\174\156\250\132\165\232\270\327\332\130\110



\104\107\250\114\372\114\111\012\112\302\022\067\250\100\014\303  
\310\341\320\127\015\227\062\225\307\072\237\227\323\127\370\013  
\336\345\162\363\243\333\377\265\330\131\262\163\335\115\052\161  
\262\272\111\365\313\034\325\365\171\310\231\263\374\301\114\164  
\343\264\275\051\067\025\004\050\036\336\105\106\160\354\257\272  
\170\016\212\052\316\000\171\334\300\137\031\147\054\153\113\357  
\150\150\013\103\343\254\301\142\011\357\246\335\145\141\240\257  
\204\125\110\221\122\034\306\045\221\052\320\301\042\043\141\131  
\257\105\021\205\035\001\044\064\217\317\263\377\027\162\040\023  
\302\200\252\041\054\161\071\016\320\217\134\301\323\321\216\042  
\162\106\114\035\226\256\117\161\261\341\005\051\226\131\364\273  
\236\165\075\317\015\067\015\142\333\046\214\143\251\043\337\147  
\006\074\174\072\332\064\102\341\146\264\106\004\336\306\226\230  
\017\113\110\172\044\062\165\221\237\254\367\150\351\052\271\125  
\145\316\135\141\323\047\160\330\067\376\237\271\257\240\056\126  
\267\243\145\121\355\073\253\024\277\114\121\003\350\137\212\005  
\233\356\212\156\234\357\277\150\372\310\332\013\343\102\311\320  
\027\024\234\267\112\340\257\223\047\041\125\046\265\144\057\215  
\361\377\246\100\005\205\005\134\312\007\031\134\013\023\050\114  
\130\177\302\245\357\105\332\140\323\256\145\141\235\123\203\164  
\302\256\362\134\302\026\355\222\076\204\076\163\140\210\274\166  
\364\054\317\320\175\175\323\270\136\321\221\022\020\351\315\335  
\312\045\343\325\355\231\057\276\165\201\113\044\371\105\106\224  
\311\051\041\123\234\046\105\252\023\027\344\347\315\170\342\071  
\301\053\022\236\246\236\033\305\346\016\331\061\331

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Swisscom Root CA 2"

# Issuer: CN=Swisscom Root CA 2,OU=Digital Certificate Services,O=Swisscom,C=ch

# Serial Number: 1e:9e:28:e8:48:f2:e5:ef:c3:7c:4a:1e:5a:18:67:b6

# Subject: CN=Swisscom Root CA 2,OU=Digital Certificate Services,O=Swisscom,C=ch

# Not Valid Before: Fri Jun 24 08:38:14 2011

# Not Valid After: Wed Jun 25 07:38:14 2031

# Fingerprint (MD5): 5b:04:69:ec:a5:83:94:63:18:a7:86:d0:e4:f2:6e:19

# Fingerprint (SHA1): 77:47:4f:c6:30:e4:0f:4c:47:64:3f:84:ba:b8:c6:95:4a:8a:41:ec

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Swisscom Root CA 2"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\167\107\117\306\060\344\017\114\107\144\077\204\272\270\306\225  
\112\212\101\354

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL  
\133\004\151\354\245\203\224\143\030\247\206\320\344\362\156\031  
END

CKA\_ISSUER MULTILINE\_OCTAL  
\060\144\061\013\060\011\006\003\125\004\006\023\002\143\150\061  
\021\060\017\006\003\125\004\012\023\010\123\167\151\163\163\143  
\157\155\061\045\060\043\006\003\125\004\013\023\034\104\151\147  
\151\164\141\154\040\103\145\162\164\151\146\151\143\141\164\145  
\040\123\145\162\166\151\143\145\163\061\033\060\031\006\003\125  
\004\003\023\022\123\167\151\163\163\143\157\155\040\122\157\157  
\164\040\103\101\040\062  
END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL  
\002\020\036\236\050\350\110\362\345\357\303\174\112\036\132\030  
\147\266  
END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Certificate "IGC/A AC racine Etat francais"  
# Issuer: CN=IGC/A AC racine Etat francais,OU=0002 130007669,O=ANSSI,C=FR  
# Serial Number:11:21:85:0c:b3:9c:6a:32:fa:be:67:1b:81:3f:a4:86:15:8f  
# Subject: CN=IGC/A AC racine Etat francais,OU=0002 130007669,O=ANSSI,C=FR  
# Not Valid Before: Fri Jul 08 09:00:00 2011  
# Not Valid After: Sat Apr 15 09:00:00 2028  
# Fingerprint (MD5): f4:f5:81:33:de:2e:15:b5:70:3a:57:3c:26:0a:72:8d  
# Fingerprint (SHA1): 1a:c9:2f:09:ea:89:e2:8b:12:6d:fa:c5:1e:3a:f7:ea:90:95:a3:ee

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "IGC/A AC racine Etat francais"  
CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509  
CKA\_SUBJECT MULTILINE\_OCTAL  
\060\136\061\013\060\011\006\003\125\004\006\023\002\106\122\061  
\016\060\014\006\003\125\004\012\023\005\101\116\123\123\111\061  
\027\060\025\006\003\125\004\013\023\016\060\060\060\062\040\061  
\063\060\060\060\067\066\066\071\061\046\060\044\006\003\125\004  
\003\023\035\111\107\103\057\101\040\101\103\040\162\141\143\151  
\156\145\040\105\164\141\164\040\146\162\141\156\143\141\151\163  
END

CKA\_ID UTF8 "0"  
CKA\_ISSUER MULTILINE\_OCTAL  
\060\136\061\013\060\011\006\003\125\004\006\023\002\106\122\061  
\016\060\014\006\003\125\004\012\023\005\101\116\123\123\111\061

\027\060\025\006\003\125\004\013\023\016\060\060\060\062\040\061  
\063\060\060\060\067\066\066\071\061\046\060\044\006\003\125\004  
\003\023\035\111\107\103\057\101\040\101\103\040\162\141\143\151  
\156\145\040\105\164\141\164\040\146\162\141\156\143\141\151\163  
END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\022\021\041\205\014\263\234\152\062\372\276\147\033\201\077  
\244\206\025\217

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\303\060\202\003\253\240\003\002\001\002\002\022\021  
\041\205\014\263\234\152\062\372\276\147\033\201\077\244\206\025  
\217\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000  
\060\136\061\013\060\011\006\003\125\004\006\023\002\106\122\061  
\016\060\014\006\003\125\004\012\023\005\101\116\123\123\111\061  
\027\060\025\006\003\125\004\013\023\016\060\060\060\062\040\061  
\063\060\060\060\067\066\066\071\061\046\060\044\006\003\125\004  
\003\023\035\111\107\103\057\101\040\101\103\040\162\141\143\151  
\156\145\040\105\164\141\164\040\146\162\141\156\143\141\151\163  
\060\036\027\015\061\061\060\067\060\070\060\071\060\060\060\060  
\132\027\015\062\070\060\064\061\065\060\071\060\060\060\060\132  
\060\136\061\013\060\011\006\003\125\004\006\023\002\106\122\061  
\016\060\014\006\003\125\004\012\023\005\101\116\123\123\111\061  
\027\060\025\006\003\125\004\013\023\016\060\060\060\062\040\061  
\063\060\060\060\067\066\066\071\061\046\060\044\006\003\125\004  
\003\023\035\111\107\103\057\101\040\101\103\040\162\141\143\151  
\156\145\040\105\164\141\164\040\146\162\141\156\143\141\151\163  
\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001  
\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001  
\000\252\174\050\237\021\060\230\315\157\156\054\205\022\046\073  
\010\006\312\101\375\122\117\103\275\300\046\047\161\166\032\131  
\226\330\011\353\007\252\046\116\117\076\113\241\343\227\207\205  
\146\201\161\311\271\025\166\157\167\120\030\223\020\055\067\210  
\115\027\267\363\105\275\042\056\267\047\230\133\307\005\375\275  
\063\355\242\365\123\035\050\043\145\277\100\065\156\316\152\013  
\303\251\365\045\014\253\042\360\270\300\304\175\067\014\243\142  
\174\356\264\333\075\041\071\247\234\211\343\233\242\020\370\212  
\266\112\057\056\230\151\053\152\240\206\332\361\010\345\276\114  
\147\026\055\045\141\363\325\015\013\027\104\107\011\324\106\005  
\235\017\300\210\115\141\344\044\304\307\150\011\257\254\322\257  
\271\225\046\157\200\004\374\166\254\252\307\043\266\344\006\221  
\125\104\354\144\333\231\201\034\322\126\164\375\326\062\050\273  
\313\311\067\015\373\151\154\157\272\243\153\006\214\152\100\056  
\027\072\071\352\320\014\337\132\034\272\157\244\062\260\270\314  
\076\167\033\323\213\037\206\372\377\076\076\157\134\210\106\347  
\343\017\372\253\035\363\175\113\370\124\156\116\314\334\062\132  
\143\170\242\062\257\063\170\352\103\341\114\172\115\327\224\006  
\055\346\117\245\102\222\257\050\212\117\303\025\354\251\153\251

\337\340\335\023\002\274\314\175\377\055\346\007\251\276\165\226  
\352\102\136\133\032\336\242\063\263\143\275\253\005\371\213\346  
\275\115\321\155\126\232\353\211\074\237\300\170\344\276\045\160  
\006\305\021\163\240\310\312\024\313\072\324\362\234\052\074\332  
\137\027\063\331\166\024\067\252\111\207\145\331\364\331\056\031  
\137\371\240\315\250\271\101\062\155\161\246\244\313\367\143\042  
\320\051\344\272\201\032\152\051\035\232\245\244\134\106\124\044  
\105\324\310\355\172\171\205\354\204\167\156\147\115\144\017\103  
\336\172\203\244\247\330\333\265\123\114\376\142\310\023\303\142  
\066\245\050\061\062\233\264\226\207\342\231\306\037\126\277\106  
\243\251\144\061\345\325\261\113\250\146\314\133\241\377\026\374  
\012\070\052\150\217\167\045\046\255\221\164\205\150\310\177\032  
\345\132\024\270\175\016\267\043\061\300\144\267\005\057\101\130  
\125\002\003\001\000\001\243\173\060\171\060\017\006\003\125\035  
\023\001\001\377\004\005\060\003\001\001\377\060\016\006\003\125  
\035\017\001\001\377\004\004\003\002\001\006\060\026\006\003\125  
\035\040\004\017\060\015\060\013\006\011\052\201\172\001\201\137  
\001\001\002\060\035\006\003\125\035\016\004\026\004\024\237\252  
\323\051\226\337\000\345\103\340\361\143\254\336\022\216\302\047  
\170\372\060\037\006\003\125\035\043\004\030\060\026\200\024\237  
\252\323\051\226\337\000\345\103\340\361\143\254\336\022\216\302  
\047\170\372\060\015\006\011\052\206\110\206\367\015\001\001\013  
\005\000\003\202\002\001\000\165\265\165\321\216\066\146\234\110  
\367\205\015\116\005\273\115\232\234\264\016\050\242\004\274\120  
\060\273\364\224\114\230\220\205\253\340\122\144\117\322\322\056  
\142\223\220\260\205\015\210\124\373\306\124\154\236\353\225\171  
\200\136\242\227\026\037\362\147\164\101\234\125\364\267\152\233  
\112\026\206\275\005\037\146\200\160\176\311\321\365\055\041\161  
\120\071\245\255\210\246\046\034\213\327\045\034\072\326\343\364  
\302\014\237\127\301\144\310\127\121\043\026\043\215\017\043\152  
\126\113\377\372\306\237\065\223\306\042\300\145\361\257\336\251  
\154\030\276\127\145\131\315\364\043\125\144\041\330\355\225\141  
\151\063\162\152\121\366\237\345\225\155\216\336\153\163\047\023  
\224\136\176\227\110\300\062\026\276\075\067\355\326\334\216\274  
\134\055\374\142\250\317\366\220\367\261\213\011\353\072\044\143  
\015\310\226\105\324\057\167\110\102\365\055\142\347\047\013\340  
\021\206\031\335\247\020\367\143\006\221\060\151\132\165\364\254  
\371\241\215\227\306\240\357\072\037\223\045\110\126\072\032\210  
\041\031\223\303\225\040\111\010\125\111\115\242\123\234\231\234  
\163\151\056\247\365\312\267\016\045\357\067\043\137\220\330\103  
\176\356\204\027\152\047\136\177\322\055\077\254\076\257\060\247  
\215\221\304\364\217\011\035\363\367\221\016\343\030\272\334\104  
\311\175\005\123\003\267\156\240\363\171\327\321\032\117\320\270  
\154\210\166\301\200\230\125\205\123\141\317\104\127\114\336\116  
\015\026\121\361\075\211\201\256\175\013\255\212\265\356\126\304  
\306\314\021\013\030\324\374\375\171\373\376\004\021\234\043\357  
\166\162\307\215\276\271\036\170\166\362\232\034\255\143\102\307  
\330\355\155\141\220\302\041\052\017\010\024\055\040\103\045\174

```
\030\265\267\240\244\175\271\245\014\031\376\311\253\075\347\133
\336\257\372\127\031\047\205\347\043\016\364\315\015\031\060\076
\212\344\306\021\036\360\264\175\151\143\233\016\226\206\220\340
\373\003\157\133\131\076\035\041\365\127\147\126\046\362\207\031
\007\204\272\054\220\072\303\050\244\005\132\040\315\251\133\225
\165\071\177\042\120\012\116\177\027\367\263\254\323\007\246\276
\055\122\012\060\114\170\020
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE
```

# Microsoft Code Signing Only Certificate

# Trust for "IGC/A AC racine Etat francais"

# Issuer: CN=IGC/A AC racine Etat francais,OU=0002 130007669,O=ANSSI,C=FR

# Serial Number:11:21:85:0c:b3:9c:6a:32:fa:be:67:1b:81:3f:a4:86:15:8f

# Subject: CN=IGC/A AC racine Etat francais,OU=0002 130007669,O=ANSSI,C=FR

# Not Valid Before: Fri Jul 08 09:00:00 2011

# Not Valid After: Sat Apr 15 09:00:00 2028

# Fingerprint (MD5): f4:f5:81:33:de:2e:15:b5:70:3a:57:3c:26:0a:72:8d

# Fingerprint (SHA1): 1a:c9:2f:09:ea:89:e2:8b:12:6d:fa:c5:1e:3a:f7:ea:90:95:a3:ee

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "IGC/A AC racine Etat francais"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\032\311\057\011\352\211\342\213\022\155\372\305\036\072\367\352
\220\225\243\356
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\364\365\201\063\336\056\025\265\160\072\127\074\046\012\162\215
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\136\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\016\060\014\006\003\125\004\012\023\005\101\116\123\123\111\061
\027\060\025\006\003\125\004\013\023\016\060\060\060\062\040\061
\063\060\060\060\067\066\066\071\061\046\060\044\006\003\125\004
\003\023\035\111\107\103\057\101\040\101\103\040\162\141\143\151
\156\145\040\105\164\141\164\040\146\162\141\156\143\141\151\163
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\022\021\041\205\014\263\234\152\062\372\276\147\033\201\077
\244\206\025\217
```

END

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

```
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

```
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "PersonalID Trustworthy RootCA 2011"

# Issuer: CN=PersonalID Trustworthy RootCA 2011,OU=Certificate Services,O=PersonalID Ltd.,C=IL

# Serial Number:58:cb:f9:64:96:71:74:95:40:f4:ad:08:ac:64:e4:e3

# Subject: CN=PersonalID Trustworthy RootCA 2011,OU=Certificate Services,O=PersonalID Ltd.,C=IL

# Not Valid Before: Thu Sep 01 08:35:21 2011

# Not Valid After: Sun Sep 01 08:45:16 2041

# Fingerprint (MD5): 20:3c:23:dc:f6:7a:97:14:0e:5f:48:b4:7d:ad:ac:c8

# Fingerprint (SHA1): 43:94:ce:31:26:ff:1a:22:4c:dd:4d:ee:b4:f4:ec:1d:a3:68:ef:6a

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "PersonalID Trustworthy RootCA 2011"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\163\061\013\060\011\006\003\125\004\006\023\002\111\114\061  
\030\060\026\006\003\125\004\012\014\017\120\145\162\163\157\156  
\141\154\111\104\040\114\164\144\056\061\035\060\033\006\003\125  
\004\013\014\024\103\145\162\164\151\146\151\143\141\164\145\040  
\123\145\162\166\151\143\145\163\061\053\060\051\006\003\125\004  
\003\014\042\120\145\162\163\157\156\141\154\111\104\040\124\162  
\165\163\164\167\157\162\164\150\171\040\122\157\157\164\103\101  
\040\062\060\061\061

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\163\061\013\060\011\006\003\125\004\006\023\002\111\114\061  
\030\060\026\006\003\125\004\012\014\017\120\145\162\163\157\156  
\141\154\111\104\040\114\164\144\056\061\035\060\033\006\003\125  
\004\013\014\024\103\145\162\164\151\146\151\143\141\164\145\040  
\123\145\162\166\151\143\145\163\061\053\060\051\006\003\125\004  
\003\014\042\120\145\162\163\157\156\141\154\111\104\040\124\162  
\165\163\164\167\157\162\164\150\171\040\122\157\157\164\103\101  
\040\062\060\061\061

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\130\313\371\144\226\161\164\225\100\364\255\010\254\144  
\344\343

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\006\062\060\202\004\032\240\003\002\001\002\002\020\130  
\313\371\144\226\161\164\225\100\364\255\010\254\144\344\343\060  
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\163  
\061\013\060\011\006\003\125\004\006\023\002\111\114\061\030\060  
\026\006\003\125\004\012\014\017\120\145\162\163\157\156\141\154

\111\104\040\114\164\144\056\061\035\060\033\006\003\125\004\013  
\014\024\103\145\162\164\151\146\151\143\141\164\145\040\123\145  
\162\166\151\143\145\163\061\053\060\051\006\003\125\004\003\014  
\042\120\145\162\163\157\156\141\154\111\104\040\124\162\165\163  
\164\167\157\162\164\150\171\040\122\157\157\164\103\101\040\062  
\060\061\061\060\036\027\015\061\061\060\071\060\061\060\070\063  
\065\062\061\132\027\015\064\061\060\071\060\061\060\070\064\065  
\061\066\132\060\163\061\013\060\011\006\003\125\004\006\023\002  
\111\114\061\030\060\026\006\003\125\004\012\014\017\120\145\162  
\163\157\156\141\154\111\104\040\114\164\144\056\061\035\060\033  
\006\003\125\004\013\014\024\103\145\162\164\151\146\151\143\141  
\164\145\040\123\145\162\166\151\143\145\163\061\053\060\051\006  
\003\125\004\003\014\042\120\145\162\163\157\156\141\154\111\104  
\040\124\162\165\163\164\167\157\162\164\150\171\040\122\157\157  
\164\103\101\040\062\060\061\061\060\202\002\042\060\015\006\011  
\052\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000  
\060\202\002\012\002\202\002\001\000\260\225\214\140\376\005\016  
\152\063\355\367\213\343\362\325\362\174\323\126\102\124\367\053  
\362\210\245\365\347\267\154\207\001\053\151\276\005\111\104\330  
\333\041\172\052\327\212\061\241\041\020\236\323\342\156\143\202  
\205\124\204\115\050\046\033\342\023\367\121\373\057\353\022\325  
\075\071\214\144\237\244\023\207\303\330\311\372\051\043\216\011  
\217\111\106\304\324\311\127\130\151\237\027\317\163\164\245\356  
\312\030\271\307\301\060\315\117\072\065\010\123\370\354\032\373  
\157\060\355\366\237\011\360\360\320\304\216\073\171\116\056\205  
\042\134\324\175\160\321\377\222\272\037\324\125\123\147\272\050  
\130\055\367\023\214\374\245\013\234\070\246\106\034\016\350\252  
\170\053\365\012\060\323\073\140\206\310\177\245\233\242\143\001  
\057\320\323\022\045\205\176\226\315\061\261\344\233\216\352\054  
\223\244\142\250\067\325\366\217\337\041\232\323\076\035\341\120  
\021\160\124\233\004\027\235\115\253\141\316\217\052\054\357\171  
\346\167\105\131\326\150\325\266\113\232\253\221\113\016\141\027  
\271\130\302\236\146\241\217\211\301\103\040\102\260\177\200\234  
\112\052\267\172\040\101\306\115\304\222\157\172\176\135\133\271  
\243\311\116\312\345\120\145\274\000\000\171\107\360\105\004\260  
\042\373\016\230\252\141\035\117\140\143\162\217\265\260\004\224  
\177\020\254\031\077\047\142\151\326\034\127\335\071\117\070\352  
\000\232\375\050\235\100\046\300\100\235\304\240\111\310\101\265  
\147\075\240\113\224\051\022\251\130\047\131\004\177\217\321\214  
\176\014\263\010\027\064\254\217\271\134\275\351\160\241\176\302  
\245\145\141\351\266\020\120\217\334\344\164\141\361\137\162\173  
\177\134\057\055\174\253\326\103\061\020\034\131\167\312\110\112  
\030\242\144\013\000\131\147\307\324\312\303\233\032\010\122\025  
\276\327\305\306\267\057\346\142\234\246\307\330\336\360\025\373  
\256\071\125\055\157\120\165\056\375\240\007\264\137\172\176\004  
\213\366\231\242\165\355\311\073\325\075\317\147\122\075\076\357  
\037\160\232\030\074\247\040\006\111\014\261\145\254\063\273\324  
\177\107\151\210\366\212\201\356\235\324\264\307\057\003\350\256

\032\311\126\005\147\151\250\310\201\002\003\001\000\001\243\201  
\301\060\201\276\060\013\006\003\125\035\017\004\004\003\002\001  
\206\060\022\006\003\125\035\023\001\001\377\004\010\060\006\001  
\001\377\002\001\002\060\035\006\003\125\035\016\004\026\004\024  
\307\177\013\310\057\127\216\051\362\366\001\213\353\047\245\126  
\216\375\244\036\060\020\006\011\053\006\001\004\001\202\067\025  
\001\004\003\002\001\000\060\152\006\003\125\035\040\004\143\060  
\141\060\137\006\010\053\006\001\004\001\341\030\001\060\123\060  
\121\006\010\053\006\001\005\005\007\002\001\026\105\150\164\164  
\160\072\057\057\167\167\167\056\151\143\141\056\143\157\056\151  
\154\057\162\145\160\157\163\151\164\157\162\171\057\143\160\163  
\057\120\145\162\163\157\156\141\154\111\104\137\120\162\141\143  
\164\151\143\145\137\123\164\141\164\145\155\145\156\164\056\160  
\144\146\060\015\006\011\052\206\110\206\367\015\001\001\013\005  
\000\003\202\002\001\000\102\145\213\044\372\222\025\064\032\034  
\372\310\316\115\172\057\173\337\320\003\101\034\324\244\341\373  
\350\314\255\011\335\035\244\010\331\250\040\175\227\237\014\111  
\361\245\302\346\325\167\106\227\176\244\220\242\171\351\275\032  
\136\064\202\146\011\122\374\120\321\217\320\253\034\242\377\377  
\075\356\376\043\370\277\043\263\315\276\341\367\317\344\330\022  
\343\224\310\116\314\327\173\260\067\233\167\352\355\134\201\310  
\314\217\316\071\343\344\145\135\336\202\330\217\043\151\341\121  
\257\137\267\117\220\151\244\231\145\123\272\346\375\257\170\147  
\224\112\310\303\177\214\002\117\112\346\207\230\366\070\267\110  
\370\155\050\177\367\306\154\045\124\375\056\326\352\332\006\342  
\261\375\007\150\360\257\200\214\264\302\351\164\025\244\032\277  
\271\312\103\133\022\347\205\107\136\122\003\360\221\340\351\120  
\161\324\041\002\054\173\206\221\160\066\306\234\266\164\371\052  
\125\367\041\373\157\240\006\135\327\060\022\362\121\361\311\070  
\066\217\310\146\141\101\331\307\113\202\150\122\243\365\211\014  
\025\274\116\052\225\254\061\151\247\033\342\324\327\110\364\221  
\365\003\174\171\026\076\054\015\151\341\212\067\036\237\174\030  
\125\101\057\137\347\244\162\233\125\363\343\001\260\002\245\204  
\022\152\100\246\253\344\241\254\353\003\331\274\137\044\126\047  
\255\040\340\146\065\105\075\107\011\360\005\261\157\161\176\100  
\260\320\025\136\053\254\122\201\250\373\203\365\054\127\104\206  
\064\344\024\152\343\317\175\232\167\330\154\110\134\313\232\341  
\246\373\277\021\242\006\345\037\161\275\064\265\317\275\304\102  
\026\305\051\370\324\300\114\212\262\336\305\224\202\206\233\314  
\340\251\006\104\061\044\044\115\372\355\341\102\045\146\242\301  
\327\200\027\357\172\225\145\103\076\146\323\005\361\001\344\102  
\126\104\000\170\153\235\066\040\373\145\377\100\134\350\150\065  
\037\341\046\240\202\003\166\003\313\160\106\021\044\256\337\057  
\140\375\361\047\000\003\275\113\047\333\274\234\227\067\121\053  
\345\170\264\301\066\220\020\214\377\075\000\324\272\110\237\110  
\312\207\061\232\355\304\232\123\322\335\163\024\077\011\202\241  
\135\145\116\115\046\342

END



CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "PersonalID Trustworthy RootCA 2011"

# Issuer: CN=PersonalID Trustworthy RootCA 2011,OU=Certificate Services,O=PersonalID Ltd.,C=IL

# Serial Number:58:cb:f9:64:96:71:74:95:40:f4:ad:08:ac:64:e4:e3

# Subject: CN=PersonalID Trustworthy RootCA 2011,OU=Certificate Services,O=PersonalID Ltd.,C=IL

# Not Valid Before: Thu Sep 01 08:35:21 2011

# Not Valid After: Sun Sep 01 08:45:16 2041

# Fingerprint (MD5): 20:3c:23:dc:f6:7a:97:14:0e:5f:48:b4:7d:ad:ac:c8

# Fingerprint (SHA1): 43:94:ce:31:26:ff:1a:22:4c:dd:4d:ee:b4:f4:ec:1d:a3:68:ef:6a

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "PersonalID Trustworthy RootCA 2011"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\103\224\316\061\046\377\032\042\114\335\115\356\264\364\354\035  
\243\150\357\152

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\040\074\043\334\366\172\227\024\016\137\110\264\175\255\254\310

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\163\061\013\060\011\006\003\125\004\006\023\002\111\114\061  
\030\060\026\006\003\125\004\012\014\017\120\145\162\163\157\156  
\141\154\111\104\040\114\164\144\056\061\035\060\033\006\003\125  
\004\013\014\024\103\145\162\164\151\146\151\143\141\164\145\040  
\123\145\162\166\151\143\145\163\061\053\060\051\006\003\125\004  
\003\014\042\120\145\162\163\157\156\141\154\111\104\040\124\162  
\165\163\164\167\157\162\164\150\171\040\122\157\157\164\103\101  
\040\062\060\061\061

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\130\313\371\144\226\161\164\225\100\364\255\010\254\144  
\344\343

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "Swedish Government Root Authority v1"

# Issuer: CN=Swedish Government Root Authority v1,O=Swedish Social Insurance Agency,C=SE

# Serial Number:3e:bd:43:96:a3:65:42:a8:49:b6:91:a8:12:51:26:cf

# Subject: CN=Swedish Government Root Authority v1,O=Swedish Social Insurance Agency,C=SE

# Not Valid Before: Wed Apr 14 13:33:23 2010

# Not Valid After: Sun Apr 14 13:43:19 2030

# Fingerprint (MD5): 8f:a9:d7:45:06:57:d0:80:00:cf:96:04:55:8e:64:c4

# Fingerprint (SHA1): 11:e1:9b:bc:74:7b:1a:ed:0d:b8:33:c9:4c:ac:6c:3f:85:bd:eb:db

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Swedish Government Root Authority v1"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\146\061\013\060\011\006\003\125\004\006\023\002\123\105\061  
\050\060\046\006\003\125\004\012\023\037\123\167\145\144\151\163  
\150\040\123\157\143\151\141\154\040\111\156\163\165\162\141\156  
\143\145\040\101\147\145\156\143\171\061\055\060\053\006\003\125  
\004\003\023\044\123\167\145\144\151\163\150\040\107\157\166\145  
\162\156\155\145\156\164\040\122\157\157\164\040\101\165\164\150  
\157\162\151\164\171\040\166\061

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\146\061\013\060\011\006\003\125\004\006\023\002\123\105\061  
\050\060\046\006\003\125\004\012\023\037\123\167\145\144\151\163  
\150\040\123\157\143\151\141\154\040\111\156\163\165\162\141\156  
\143\145\040\101\147\145\156\143\171\061\055\060\053\006\003\125  
\004\003\023\044\123\167\145\144\151\163\150\040\107\157\166\145  
\162\156\155\145\156\164\040\122\157\157\164\040\101\165\164\150  
\157\162\151\164\171\040\166\061

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\076\275\103\226\243\145\102\250\111\266\221\250\022\121  
\046\317

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\255\060\202\002\225\240\003\002\001\002\002\020\076  
\275\103\226\243\145\102\250\111\266\221\250\022\121\046\317\060  
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\146  
\061\013\060\011\006\003\125\004\006\023\002\123\105\061\050\060  
\046\006\003\125\004\012\023\037\123\167\145\144\151\163\150\040  
\123\157\143\151\141\154\040\111\156\163\165\162\141\156\143\145  
\040\101\147\145\156\143\171\061\055\060\053\006\003\125\004\003  
\023\044\123\167\145\144\151\163\150\040\107\157\166\145\162\156  
\155\145\156\164\040\122\157\157\164\040\101\165\164\150\157\162  
\151\164\171\040\166\061\060\036\027\015\061\060\060\064\061\064  
\061\063\063\063\062\063\132\027\015\063\060\060\064\061\064\061  
\063\064\063\061\071\132\060\146\061\013\060\011\006\003\125\004  
\006\023\002\123\105\061\050\060\046\006\003\125\004\012\023\037

\123\167\145\144\151\163\150\040\123\157\143\151\141\154\040\111  
\156\163\165\162\141\156\143\145\040\101\147\145\156\143\171\061  
\055\060\053\006\003\125\004\003\023\044\123\167\145\144\151\163  
\150\040\107\157\166\145\162\156\155\145\156\164\040\122\157\157  
\164\040\101\165\164\150\157\162\151\164\171\040\166\061\060\202  
\001\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005  
\000\003\202\001\017\000\060\202\001\012\002\202\001\001\000\312  
\034\117\164\025\367\325\136\311\300\130\204\062\347\334\374\121  
\221\220\316\021\042\341\045\160\203\102\160\373\160\334\033\013  
\157\302\055\320\212\333\135\126\051\252\267\136\205\265\167\347  
\301\132\040\142\310\227\102\141\302\103\160\333\130\154\165\340  
\013\266\062\212\340\244\055\105\276\347\133\073\213\172\261\375  
\005\314\063\177\237\360\133\355\162\216\315\063\323\311\022\213  
\300\223\100\243\217\206\156\337\215\210\363\346\152\114\157\245  
\106\372\150\246\133\020\226\203\056\127\240\117\217\025\131\066  
\245\156\150\204\105\036\020\207\266\342\125\325\270\277\253\267  
\256\145\277\127\107\214\304\343\344\002\215\363\334\063\333\357  
\047\107\370\354\313\362\074\347\011\363\371\345\371\213\307\351  
\132\340\055\223\253\252\051\066\057\176\306\310\366\360\346\200  
\105\061\026\064\152\360\350\111\071\104\141\000\363\233\346\276  
\012\145\033\062\043\171\142\167\254\042\177\033\244\135\172\260  
\347\254\330\340\166\003\057\175\357\153\367\067\357\243\242\144  
\034\314\327\175\332\202\242\316\265\001\115\370\011\054\065\002  
\003\001\000\001\243\127\060\125\060\016\006\003\125\035\017\001  
\001\377\004\004\003\002\001\006\060\022\006\003\125\035\023\001  
\001\377\004\010\060\006\001\001\377\002\001\001\060\035\006\003  
\125\035\016\004\026\004\024\135\007\272\367\215\135\111\360\134  
\225\220\011\363\136\352\254\320\366\103\266\060\020\006\011\053  
\006\001\004\001\202\067\025\001\004\003\002\001\000\060\015\006  
\011\052\206\110\206\367\015\001\001\005\005\000\003\202\001\001  
\000\060\337\244\234\350\224\163\051\153\256\037\014\160\272\114  
\376\144\175\254\117\257\111\017\162\213\244\262\000\110\151\116  
\325\362\204\063\013\215\163\333\316\151\016\267\142\277\261\221  
\344\152\341\022\111\174\106\107\233\204\330\230\051\054\007\203  
\044\360\036\353\161\235\221\150\172\367\133\103\255\202\004\017  
\103\337\046\275\202\135\266\221\274\142\276\103\132\243\124\157  
\176\121\061\055\371\067\234\266\037\250\373\347\021\233\026\013  
\356\141\022\124\325\245\204\331\377\237\222\047\235\123\367\266  
\013\063\027\306\353\262\352\202\362\366\103\166\034\274\061\223  
\060\235\351\110\142\016\076\103\073\254\051\314\224\340\053\154  
\232\277\027\336\361\312\360\346\035\205\322\017\253\275\207\235  
\202\115\206\060\065\264\011\323\100\250\273\267\042\376\170\250  
\333\321\120\151\200\063\140\055\175\217\204\271\354\207\322\230  
\351\013\314\333\171\030\161\023\130\240\371\153\326\316\344\106  
\114\000\167\212\057\134\235\256\211\005\353\352\034\340\232\143  
\371\273\106\243\271\112\275\235\032\175\312\204\315\376\220\361  
\272  
END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "Swedish Government Root Authority v1"  
# Issuer: CN=Swedish Government Root Authority v1,O=Swedish Social Insurance Agency,C=SE  
# Serial Number:3e:bd:43:96:a3:65:42:a8:49:b6:91:a8:12:51:26:cf  
# Subject: CN=Swedish Government Root Authority v1,O=Swedish Social Insurance Agency,C=SE  
# Not Valid Before: Wed Apr 14 13:33:23 2010  
# Not Valid After: Sun Apr 14 13:43:19 2030  
# Fingerprint (MD5): 8f:a9:d7:45:06:57:d0:80:00:cf:96:04:55:8e:64:c4  
# Fingerprint (SHA1): 11:e1:9b:bc:74:7b:1a:ed:0d:b8:33:c9:4c:ac:6c:3f:85:bd:eb:db

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "Swedish Government Root Authority v1"  
CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL  
\021\341\233\274\164\173\032\355\015\270\063\311\114\254\154\077  
\205\275\353\333

END  
CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL  
\217\251\327\105\006\127\320\200\000\317\226\004\125\216\144\304  
END

CKA\_ISSUER MULTILINE\_OCTAL  
\060\146\061\013\060\011\006\003\125\004\006\023\002\123\105\061  
\050\060\046\006\003\125\004\012\023\037\123\167\145\144\151\163  
\150\040\123\157\143\151\141\154\040\111\156\163\165\162\141\156  
\143\145\040\101\147\145\156\143\171\061\055\060\053\006\003\125  
\004\003\023\044\123\167\145\144\151\163\150\040\107\157\166\145  
\162\156\155\145\156\164\040\122\157\157\164\040\101\165\164\150  
\157\162\151\164\171\040\166\061

END  
CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL  
\002\020\076\275\103\226\243\145\102\250\111\266\221\250\022\121  
\046\317

END  
CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Certificate "Swiss Government Root CA II"  
# Issuer: CN=Swiss Government Root CA II,OU=Certification Authorities,OU=Services,O=The Federal Authorities  
of the Swiss Confederation,C=CH  
# Serial Number:0e:9f:17:99:a5:b1:3d:9c:cb:ec:06:eb:a3:f0:0e:69

```
Subject: CN=Swiss Government Root CA II,OU=Certification Authorities,OU=Services,O=The Federal
Authorities of the Swiss Confederation,C=CH
Not Valid Before: Wed Feb 16 09:00:00 2011
Not Valid After: Fri Feb 16 08:59:59 2035
Fingerprint (MD5): 30:b0:e4:cf:bf:f5:89:dc:bf:52:2d:88:1c:cb:aa:b3
Fingerprint (SHA1): c7:f7:cb:e2:02:36:66:f9:86:02:5d:4a:3e:31:3f:29:eb:0c:5b:38
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Swiss Government Root CA II"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\247\061\013\060\011\006\003\125\004\006\023\002\103\110
\061\073\060\071\006\003\125\004\012\023\062\124\150\145\040\106
\145\144\145\162\141\154\040\101\165\164\150\157\162\151\164\151
\145\163\040\157\146\040\164\150\145\040\123\167\151\163\163\040
\103\157\156\146\145\144\145\162\141\164\151\157\156\061\021\060
\017\006\003\125\004\013\023\010\123\145\162\166\151\143\145\163
\061\042\060\040\006\003\125\004\013\023\031\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\151\145\163\061\044\060\042\006\003\125\004\003\023\033\123
\167\151\163\163\040\107\157\166\145\162\156\155\145\156\164\040
\122\157\157\164\040\103\101\040\111\111
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\247\061\013\060\011\006\003\125\004\006\023\002\103\110
\061\073\060\071\006\003\125\004\012\023\062\124\150\145\040\106
\145\144\145\162\141\154\040\101\165\164\150\157\162\151\164\151
\145\163\040\157\146\040\164\150\145\040\123\167\151\163\163\040
\103\157\156\146\145\144\145\162\141\164\151\157\156\061\021\060
\017\006\003\125\004\013\023\010\123\145\162\166\151\143\145\163
\061\042\060\040\006\003\125\004\013\023\031\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\151\145\163\061\044\060\042\006\003\125\004\003\023\033\123
\167\151\163\163\040\107\157\166\145\162\156\155\145\156\164\040
\122\157\157\164\040\103\101\040\111\111
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\016\237\027\231\245\261\075\234\313\354\006\353\243\360
\016\151
END
CKA_VALUE MULTILINE_OCTAL
\060\202\010\070\060\202\006\040\240\003\002\001\002\002\020\016
\237\027\231\245\261\075\234\313\354\006\353\243\360\016\151\060
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\201
\247\061\013\060\011\006\003\125\004\006\023\002\103\110\061\073
```

\060\071\006\003\125\004\012\023\062\124\150\145\040\106\145\144  
\145\162\141\154\040\101\165\164\150\157\162\151\164\151\145\163  
\040\157\146\040\164\150\145\040\123\167\151\163\163\040\103\157  
\156\146\145\144\145\162\141\164\151\157\156\061\021\060\017\006  
\003\125\004\013\023\010\123\145\162\166\151\143\145\163\061\042  
\060\040\006\003\125\004\013\023\031\103\145\162\164\151\146\151  
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\151  
\145\163\061\044\060\042\006\003\125\004\003\023\033\123\167\151  
\163\163\040\107\157\166\145\162\156\155\145\156\164\040\122\157  
\157\164\040\103\101\040\111\111\060\036\027\015\061\061\060\062  
\061\066\060\071\060\060\060\060\132\027\015\063\065\060\062\061  
\066\060\070\065\071\065\071\132\060\201\247\061\013\060\011\006  
\003\125\004\006\023\002\103\110\061\073\060\071\006\003\125\004  
\012\023\062\124\150\145\040\106\145\144\145\162\141\154\040\101  
\165\164\150\157\162\151\164\151\145\163\040\157\146\040\164\150  
\145\040\123\167\151\163\163\040\103\157\156\146\145\144\145\162  
\141\164\151\157\156\061\021\060\017\006\003\125\004\013\023\010  
\123\145\162\166\151\143\145\163\061\042\060\040\006\003\125\004  
\013\023\031\103\145\162\164\151\146\151\143\141\164\151\157\156  
\040\101\165\164\150\157\162\151\164\151\145\163\061\044\060\042  
\006\003\125\004\003\023\033\123\167\151\163\163\040\107\157\166  
\145\162\156\155\145\156\164\040\122\157\157\164\040\103\101\040  
\111\111\060\202\002\042\060\015\006\011\052\206\110\206\367\015  
\001\001\001\005\000\003\202\002\017\000\060\202\002\012\002\202  
\002\001\000\251\054\022\355\277\300\042\351\206\350\034\067\202  
\203\233\150\005\157\026\343\210\250\001\017\313\161\236\177\107  
\220\113\314\045\167\310\360\327\151\056\221\150\127\041\262\262  
\007\041\063\356\114\244\067\045\230\114\264\106\062\116\326\371  
\153\213\121\212\357\054\067\362\230\325\365\324\264\267\347\000  
\312\357\301\023\136\224\253\156\273\234\275\372\153\217\253\370  
\036\066\126\151\070\146\072\320\364\063\015\000\071\002\250\305  
\034\013\041\267\134\040\014\141\320\255\256\316\216\136\331\072  
\351\336\377\107\174\170\127\016\034\161\364\140\034\335\333\232  
\030\051\257\331\200\243\237\205\204\143\063\221\357\275\164\356  
\335\003\172\310\372\340\204\346\331\275\116\176\372\156\117\166  
\321\135\076\250\350\207\105\220\171\363\255\256\365\302\135\021  
\115\051\367\210\023\311\325\223\163\001\253\335\355\375\257\167  
\373\151\116\357\217\122\034\317\365\054\132\154\354\376\202\233  
\333\174\071\253\165\043\176\070\220\117\224\216\055\142\130\236  
\367\347\162\374\224\133\162\126\305\235\243\256\253\265\266\300  
\327\166\120\000\074\077\107\210\222\132\140\324\277\062\033\246  
\224\100\015\166\171\351\074\316\344\263\035\307\214\365\350\206  
\061\271\330\053\120\112\200\022\211\327\054\120\200\346\147\057  
\266\223\234\255\254\005\122\042\123\040\231\016\275\227\306\341  
\332\163\251\035\211\362\304\131\346\207\346\126\053\016\225\002  
\032\207\306\171\376\231\152\351\164\354\360\022\371\024\050\040  
\225\226\072\057\135\127\265\157\377\223\274\266\050\152\054\244  
\050\170\106\141\257\101\044\244\363\372\004\216\361\212\031\242

\221\163\342\167\217\264\247\371\234\377\156\121\354\275\037\226  
\023\350\143\221\136\207\150\157\353\330\174\056\020\117\120\030  
\220\307\267\164\357\063\300\201\337\063\343\032\223\053\125\004  
\054\174\322\053\267\143\014\376\255\173\275\266\072\227\271\075  
\003\043\164\163\003\246\054\131\000\154\325\325\350\354\257\102  
\314\323\177\160\213\140\140\347\262\240\266\212\122\114\376\012  
\226\313\317\072\260\130\010\356\034\102\311\206\167\102\156\077  
\264\254\220\000\130\102\034\100\304\156\270\105\310\274\063\066  
\337\275\047\002\003\001\000\001\243\202\002\134\060\202\002\130  
\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001  
\377\060\201\235\006\003\125\035\040\004\201\225\060\201\222\060  
\201\217\006\010\140\205\164\001\021\003\025\001\060\201\202\060  
\104\006\010\053\006\001\005\005\007\002\001\026\070\150\164\164  
\160\072\057\057\167\167\167\056\160\153\151\056\141\144\155\151  
\156\056\143\150\057\143\160\163\057\103\120\123\137\062\137\061  
\066\137\067\065\066\137\061\137\061\067\137\063\137\062\061\137  
\061\056\160\144\146\060\072\006\010\053\006\001\005\005\007\002  
\002\060\056\032\054\124\150\151\163\040\151\163\040\164\150\145  
\040\123\167\151\163\163\040\107\157\166\145\162\156\155\145\156  
\164\040\122\157\157\164\040\103\101\040\111\111\040\103\120\123  
\056\060\201\217\006\003\125\035\037\004\201\207\060\201\204\060  
\201\201\240\177\240\175\206\173\154\144\141\160\072\057\057\141  
\144\155\151\156\144\151\162\056\141\144\155\151\156\056\143\150  
\072\063\070\071\057\143\156\075\123\167\151\163\163\045\062\060  
\107\157\166\145\162\156\155\145\156\164\045\062\060\122\157\157  
\164\045\062\060\103\101\045\062\060\111\111\054\157\165\075\103  
\145\162\164\151\146\151\143\141\164\151\157\156\045\062\060\101  
\165\164\150\157\162\151\164\151\145\163\054\157\165\075\123\145  
\162\166\151\143\145\163\054\157\075\101\144\155\151\156\054\143  
\075\103\110\060\035\006\003\125\035\016\004\026\004\024\345\204  
\157\211\151\075\166\000\027\177\301\253\275\256\137\301\175\272  
\341\142\060\016\006\003\125\035\017\001\001\377\004\004\003\002  
\001\006\060\201\343\006\003\125\035\043\004\201\333\060\201\330  
\200\024\345\204\157\211\151\075\166\000\027\177\301\253\275\256  
\137\301\175\272\341\142\241\201\255\244\201\252\060\201\247\061  
\013\060\011\006\003\125\004\006\023\002\103\110\061\073\060\071  
\006\003\125\004\012\023\062\124\150\145\040\106\145\144\145\162  
\141\154\040\101\165\164\150\157\162\151\164\151\145\163\040\157  
\146\040\164\150\145\040\123\167\151\163\163\040\103\157\156\146  
\145\144\145\162\141\164\151\157\156\061\021\060\017\006\003\125  
\004\013\023\010\123\145\162\166\151\143\145\163\061\042\060\040  
\006\003\125\004\013\023\031\103\145\162\164\151\146\151\143\141  
\164\151\157\156\040\101\165\164\150\157\162\151\164\151\145\163  
\061\044\060\042\006\003\125\004\003\023\033\123\167\151\163\163  
\040\107\157\166\145\162\156\155\145\156\164\040\122\157\157\164  
\040\103\101\040\111\111\202\020\016\237\027\231\245\261\075\234  
\313\354\006\353\243\360\016\151\060\015\006\011\052\206\110\206  
\367\015\001\001\013\005\000\003\202\002\001\000\203\067\127\165

\311\070\120\277\101\006\226\160\302\331\307\327\260\132\000\315  
\243\100\117\323\322\371\212\207\221\262\211\313\135\244\274\157  
\117\076\124\366\312\074\263\304\114\213\307\076\364\331\304\142  
\335\307\125\236\321\371\322\104\347\036\117\317\350\356\053\034  
\250\001\360\063\007\373\341\073\024\323\317\120\221\136\330\352  
\102\306\171\130\205\252\373\334\333\160\312\225\371\364\016\142  
\002\160\151\104\055\150\117\321\160\352\050\122\146\267\161\336  
\045\350\241\247\157\260\241\046\307\327\312\040\144\334\300\163  
\074\020\242\024\036\364\255\301\076\024\220\071\066\143\210\157  
\050\340\140\245\221\367\142\344\232\317\322\265\161\236\135\073  
\366\231\054\355\221\072\010\234\264\204\205\111\343\341\272\246  
\266\150\263\266\266\117\113\134\123\012\127\154\241\007\222\366  
\142\236\250\372\212\326\363\153\247\017\262\053\146\275\257\102  
\107\010\117\350\327\174\237\206\017\372\132\203\276\055\157\000  
\004\265\166\207\026\257\335\117\072\226\264\064\127\267\342\377  
\101\377\336\102\034\146\305\205\353\302\162\037\270\034\116\356  
\027\362\142\357\012\004\254\233\253\241\362\356\356\242\100\044  
\034\107\336\102\213\030\264\251\127\263\117\074\142\062\034\255  
\154\104\255\274\325\034\143\070\075\311\063\246\373\274\050\067  
\104\106\343\172\142\372\200\110\065\342\236\033\210\031\114\263  
\101\375\356\167\340\131\200\032\141\036\065\244\101\172\263\301  
\215\104\351\305\041\131\351\254\323\104\312\166\205\066\024\106  
\012\036\026\064\246\304\064\167\303\202\070\110\041\002\376\022  
\154\332\327\352\260\354\366\315\054\314\363\233\012\143\200\323  
\365\013\175\004\055\204\015\302\331\114\053\227\361\325\124\367  
\217\263\012\342\275\130\074\231\362\257\071\033\220\371\073\347  
\267\105\347\132\152\175\301\237\024\157\060\127\230\031\240\007  
\103\353\356\321\010\206\327\111\234\022\012\000\073\017\247\101  
\261\112\253\220\263\324\275\011\347\210\017\236\044\016\053\373  
\141\075\125\231\323\130\344\270\307\175\364\025\115\145\016\030  
\171\101\311\273\351\232\301\131\030\104\064\142\325\350\070\173  
\312\205\030\230\206\171\315\175\272\107\333\225

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Swiss Government Root CA II"

# Issuer: CN=Swiss Government Root CA II,OU=Certification Authorities,OU=Services,O=The Federal Authorities  
of the Swiss Confederation,C=CH

# Serial Number:0e:9f:17:99:a5:b1:3d:9c:cb:ec:06:eb:a3:f0:0e:69

# Subject: CN=Swiss Government Root CA II,OU=Certification Authorities,OU=Services,O=The Federal  
Authorities of the Swiss Confederation,C=CH

# Not Valid Before: Wed Feb 16 09:00:00 2011

# Not Valid After: Fri Feb 16 08:59:59 2035

# Fingerprint (MD5): 30:b0:e4:cf:bf:f5:89:dc:bf:52:2d:88:1c:cb:aa:b3

# Fingerprint (SHA1): c7:f7:cb:e2:02:36:66:f9:86:02:5d:4a:3e:31:3f:29:eb:0c:5b:38



```

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Swiss Government Root CA II"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\307\367\313\342\002\066\146\371\206\002\135\112\076\061\077\051
\353\014\133\070
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\060\260\344\317\277\365\211\334\277\122\055\210\034\313\252\263
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\247\061\013\060\011\006\003\125\004\006\023\002\103\110
\061\073\060\071\006\003\125\004\012\023\062\124\150\145\040\106
\145\144\145\162\141\154\040\101\165\164\150\157\162\151\164\151
\145\163\040\157\146\040\164\150\145\040\123\167\151\163\163\040
\103\157\156\146\145\144\145\162\141\164\151\157\156\061\021\060
\017\006\003\125\004\013\023\010\123\145\162\166\151\143\145\163
\061\042\060\040\006\003\125\004\013\023\031\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\151\145\163\061\044\060\042\006\003\125\004\003\023\033\123
\167\151\163\163\040\107\157\166\145\162\156\155\145\156\164\040
\122\157\157\164\040\103\101\040\111\111
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\016\237\027\231\245\261\075\234\313\354\006\353\243\360
\016\151
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

```

```

Microsoft Code Signing Only Certificate
Certificate "Swiss Government Root CA I"
Issuer: CN=Swiss Government Root CA I,OU=Certification Authorities,OU=Services,O=The Federal Authorities
of the Swiss Confederation,C=CH
Serial Number:fd:75:04:8d:7a:60:86:93:69:4c:aa:00:3c:65:d3:3d
Subject: CN=Swiss Government Root CA I,OU=Certification Authorities,OU=Services,O=The Federal
Authorities of the Swiss Confederation,C=CH
Not Valid Before: Tue Feb 15 09:00:00 2011
Not Valid After: Thu Feb 15 08:59:59 2035
Fingerprint (MD5): c7:c9:da:9b:76:e1:ac:86:6b:34:bd:03:3f:e3:cf:d2
Fingerprint (SHA1): a1:58:51:87:15:65:86:ce:f9:c4:54:e2:2a:b1:5c:58:74:56:07:b4
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE

```

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "Swiss Government Root CA I"  
CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509  
CKA\_SUBJECT MULTILINE\_OCTAL  
\060\201\246\061\013\060\011\006\003\125\004\006\023\002\103\110  
\061\073\060\071\006\003\125\004\012\023\062\124\150\145\040\106  
\145\144\145\162\141\154\040\101\165\164\150\157\162\151\164\151  
\145\163\040\157\146\040\164\150\145\040\123\167\151\163\163\040  
\103\157\156\146\145\144\145\162\141\164\151\157\156\061\021\060  
\017\006\003\125\004\013\023\010\123\145\162\166\151\143\145\163  
\061\042\060\040\006\003\125\004\013\023\031\103\145\162\164\151  
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151  
\164\151\145\163\061\043\060\041\006\003\125\004\003\023\032\123  
\167\151\163\163\040\107\157\166\145\162\156\155\145\156\164\040  
\122\157\157\164\040\103\101\040\111

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL  
\060\201\246\061\013\060\011\006\003\125\004\006\023\002\103\110  
\061\073\060\071\006\003\125\004\012\023\062\124\150\145\040\106  
\145\144\145\162\141\154\040\101\165\164\150\157\162\151\164\151  
\145\163\040\157\146\040\164\150\145\040\123\167\151\163\163\040  
\103\157\156\146\145\144\145\162\141\164\151\157\156\061\021\060  
\017\006\003\125\004\013\023\010\123\145\162\166\151\143\145\163  
\061\042\060\040\006\003\125\004\013\023\031\103\145\162\164\151  
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151  
\164\151\145\163\061\043\060\041\006\003\125\004\003\023\032\123  
\167\151\163\163\040\107\157\166\145\162\156\155\145\156\164\040  
\122\157\157\164\040\103\101\040\111

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL  
\002\021\000\375\165\004\215\172\140\206\223\151\114\252\000\074  
\145\323\075

END

CKA\_VALUE MULTILINE\_OCTAL  
\060\202\010\064\060\202\006\034\240\003\002\001\002\002\021\000  
\375\165\004\215\172\140\206\223\151\114\252\000\074\145\323\075  
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060  
\201\246\061\013\060\011\006\003\125\004\006\023\002\103\110\061  
\073\060\071\006\003\125\004\012\023\062\124\150\145\040\106\145  
\144\145\162\141\154\040\101\165\164\150\157\162\151\164\151\145  
\163\040\157\146\040\164\150\145\040\123\167\151\163\163\040\103  
\157\156\146\145\144\145\162\141\164\151\157\156\061\021\060\017  
\006\003\125\004\013\023\010\123\145\162\166\151\143\145\163\061  
\042\060\040\006\003\125\004\013\023\031\103\145\162\164\151\146  
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164  
\151\145\163\061\043\060\041\006\003\125\004\003\023\032\123\167  
\151\163\163\040\107\157\166\145\162\156\155\145\156\164\040\122

\157\157\164\040\103\101\040\111\060\036\027\015\061\061\060\062  
\061\065\060\071\060\060\060\060\132\027\015\063\065\060\062\061  
\065\060\070\065\071\065\071\132\060\201\246\061\013\060\011\006  
\003\125\004\006\023\002\103\110\061\073\060\071\006\003\125\004  
\012\023\062\124\150\145\040\106\145\144\145\162\141\154\040\101  
\165\164\150\157\162\151\164\151\145\163\040\157\146\040\164\150  
\145\040\123\167\151\163\163\040\103\157\156\146\145\144\145\162  
\141\164\151\157\156\061\021\060\017\006\003\125\004\013\023\010  
\123\145\162\166\151\143\145\163\061\042\060\040\006\003\125\004  
\013\023\031\103\145\162\164\151\146\151\143\141\164\151\157\156  
\040\101\165\164\150\157\162\151\164\151\145\163\061\043\060\041  
\006\003\125\004\003\023\032\123\167\151\163\163\040\107\157\166  
\145\162\156\155\145\156\164\040\122\157\157\164\040\103\101\040  
\111\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001  
\001\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002  
\001\000\310\016\162\364\001\057\206\173\013\302\143\260\215\150  
\355\037\075\336\271\203\233\134\241\135\272\017\066\047\021\004  
\255\006\124\040\267\036\240\346\316\276\360\231\151\162\031\065  
\144\146\061\215\054\275\216\102\012\237\306\312\251\220\054\332  
\274\205\060\003\331\062\226\226\360\276\240\042\015\044\154\324  
\306\177\132\114\121\044\055\124\162\010\174\063\351\314\050\307  
\146\145\043\151\153\225\264\353\276\343\207\347\143\327\344\373  
\007\255\022\222\353\347\344\012\103\262\251\337\307\220\274\046  
\133\221\371\243\267\207\234\224\271\020\215\210\305\130\134\062  
\274\026\354\016\127\117\376\247\223\170\217\340\305\071\273\007  
\210\140\301\124\145\353\207\276\237\061\227\161\074\372\213\310  
\203\154\122\226\340\254\300\357\313\151\010\225\133\340\340\273  
\257\047\244\302\027\361\121\237\204\166\141\330\044\342\376\141  
\155\144\065\111\352\071\304\041\142\275\314\342\002\377\110\153  
\070\257\151\307\271\222\055\202\021\215\275\013\211\205\052\352  
\267\264\262\315\113\353\321\372\252\360\340\114\011\074\115\337  
\366\061\035\206\060\250\101\210\127\160\054\047\121\336\317\213  
\116\077\002\362\120\245\027\340\147\033\162\014\101\061\037\001  
\242\226\076\074\333\002\266\235\224\346\002\116\363\360\031\202  
\262\010\043\023\353\221\315\121\323\252\106\302\163\230\230\077  
\272\303\356\232\374\372\315\257\162\012\067\023\217\371\240\120  
\263\352\373\077\054\274\372\143\125\065\364\322\274\270\161\322  
\221\353\351\312\312\134\354\121\146\250\236\131\005\042\057\243  
\032\333\117\340\105\142\043\074\135\125\373\060\225\053\064\242  
\317\247\264\113\300\063\311\064\121\235\323\263\053\337\305\352  
\054\054\307\337\104\037\266\215\271\376\363\134\315\067\057\260  
\154\234\112\010\275\350\365\326\372\160\345\151\062\067\134\137  
\013\313\077\344\210\002\314\312\263\170\057\175\277\110\263\041  
\260\037\210\171\233\132\212\161\330\041\204\051\017\112\004\061  
\052\275\015\041\104\316\164\235\046\323\111\035\370\206\250\345  
\022\167\305\300\163\014\120\203\152\220\153\241\312\370\320\225  
\331\065\206\307\021\243\073\024\307\313\206\130\126\015\373\203  
\367\001\002\003\001\000\001\243\202\002\131\060\202\002\125\060

\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377  
\060\201\233\006\003\125\035\040\004\201\223\060\201\220\060\201  
\215\006\010\140\205\164\001\021\003\001\000\060\201\200\060\103  
\006\010\053\006\001\005\005\007\002\001\026\067\150\164\164\160  
\072\057\057\167\167\167\056\160\153\151\056\141\144\155\151\156  
\056\143\150\057\143\160\163\057\103\120\123\137\062\137\061\066  
\137\067\065\066\137\061\137\061\067\137\063\137\061\137\060\056  
\160\144\146\060\071\006\010\053\006\001\005\005\007\002\002\060  
\055\032\053\124\150\151\163\040\151\163\040\164\150\145\040\123  
\167\151\163\163\040\107\157\166\145\162\156\155\145\156\164\040  
\122\157\157\164\040\103\101\040\111\040\103\120\123\056\060\201  
\216\006\003\125\035\037\004\201\206\060\201\203\060\201\200\240  
\176\240\174\206\172\154\144\141\160\072\057\057\141\144\155\151  
\156\144\151\162\056\141\144\155\151\156\056\143\150\072\063\070  
\071\057\143\156\075\123\167\151\163\163\045\062\060\107\157\166  
\145\162\156\155\145\156\164\045\062\060\122\157\157\164\045\062  
\060\103\101\045\062\060\111\054\157\165\075\103\145\162\164\151  
\146\151\143\141\164\151\157\156\045\062\060\101\165\164\150\157  
\162\151\164\151\145\163\054\157\165\075\123\145\162\166\151\143  
\145\163\054\157\075\101\144\155\151\156\054\143\075\103\110\060  
\035\006\003\125\035\016\004\026\004\024\265\033\203\273\073\117  
\262\322\373\345\003\216\324\141\135\321\032\216\260\242\060\016  
\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060\201  
\343\006\003\125\035\043\004\201\333\060\201\330\200\024\265\033  
\203\273\073\117\262\322\373\345\003\216\324\141\135\321\032\216  
\260\242\241\201\254\244\201\251\060\201\246\061\013\060\011\006  
\003\125\004\006\023\002\103\110\061\073\060\071\006\003\125\004  
\012\023\062\124\150\145\040\106\145\144\145\162\141\154\040\101  
\165\164\150\157\162\151\164\151\145\163\040\157\146\040\164\150  
\145\040\123\167\151\163\163\040\103\157\156\146\145\144\145\162  
\141\164\151\157\156\061\021\060\017\006\003\125\004\013\023\010  
\123\145\162\166\151\143\145\163\061\042\060\040\006\003\125\004  
\013\023\031\103\145\162\164\151\146\151\143\141\164\151\157\156  
\040\101\165\164\150\157\162\151\164\151\145\163\061\043\060\041  
\006\003\125\004\003\023\032\123\167\151\163\163\040\107\157\166  
\145\162\156\155\145\156\164\040\122\157\157\164\040\103\101\040  
\111\202\021\000\375\165\004\215\172\140\206\223\151\114\252\000  
\074\145\323\075\060\015\006\011\052\206\110\206\367\015\001\001  
\013\005\000\003\202\002\001\000\045\332\337\170\260\046\334\237  
\231\353\063\234\311\105\272\134\143\122\215\156\003\163\252\164  
\110\305\015\013\322\027\014\054\013\322\306\045\203\324\124\315  
\007\201\124\057\147\166\045\247\351\327\177\226\107\167\244\035  
\233\105\377\361\330\366\236\107\016\164\214\023\304\362\276\326  
\007\050\030\074\230\165\301\333\353\222\210\046\346\006\144\216  
\371\322\375\342\231\065\201\321\330\165\027\265\163\352\335\350  
\030\042\225\026\031\012\131\052\042\334\206\132\103\117\045\150  
\066\251\330\223\000\217\136\305\303\141\206\360\322\024\011\225  
\121\304\176\330\122\356\260\215\212\210\161\245\327\050\247\364

\334\006\130\045\136\304\125\030\010\225\164\174\270\001\347\116  
\330\326\366\174\040\103\110\015\243\340\336\124\304\250\137\000  
\111\103\323\105\073\202\145\156\356\213\243\001\042\126\232\361  
\316\051\345\014\304\153\355\347\116\370\261\125\201\255\161\377  
\204\373\010\127\346\107\312\255\207\370\106\370\372\360\065\204  
\355\264\330\210\227\042\167\244\217\026\310\074\147\321\341\156  
\004\254\173\217\066\315\336\245\010\254\052\215\365\247\035\237  
\307\303\221\041\102\243\206\201\271\052\330\261\351\070\035\124  
\010\230\071\012\021\312\062\016\063\315\364\114\352\250\112\006  
\351\030\076\101\306\317\240\366\340\053\153\040\216\247\040\002  
\353\060\101\201\260\350\344\256\244\030\211\053\337\024\360\022  
\051\155\170\372\115\104\373\262\064\345\257\363\216\065\367\303  
\316\054\013\030\264\320\171\217\023\277\003\213\146\270\265\141  
\324\254\016\375\170\075\011\255\265\322\054\117\126\101\231\210  
\104\014\176\147\343\144\237\372\132\052\130\167\121\151\261\315  
\054\232\247\064\020\005\164\372\156\105\143\313\213\122\255\107  
\221\242\022\310\242\046\004\305\320\042\036\003\263\262\222\067  
\124\127\375\211\203\165\003\155\055\073\263\361\244\242\020\174  
\234\223\215\243\120\204\071\213\225\131\101\366\002\166\006\212  
\274\016\220\347\331\072\353\255\046\136\127\123\321\157\310\165  
\340\253\221\173\153\241\177\371\033\120\250\334\376\115\006\341  
\025\212\244\020\353\036\006\317\124\110\025\226\050\266\043\037  
\032\343\174\245\217\372\067\127

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "Swiss Government Root CA I"  
# Issuer: CN=Swiss Government Root CA I,OU=Certification Authorities,OU=Services,O=The Federal Authorities  
of the Swiss Confederation,C=CH  
# Serial Number:fd:75:04:8d:7a:60:86:93:69:4c:aa:00:3c:65:d3:3d  
# Subject: CN=Swiss Government Root CA I,OU=Certification Authorities,OU=Services,O=The Federal  
Authorities of the Swiss Confederation,C=CH  
# Not Valid Before: Tue Feb 15 09:00:00 2011  
# Not Valid After: Thu Feb 15 08:59:59 2035  
# Fingerprint (MD5): c7:c9:da:9b:76:e1:ac:86:6b:34:bd:03:3f:e3:cf:d2  
# Fingerprint (SHA1): a1:58:51:87:15:65:86:ce:f9:c4:54:e2:2a:b1:5c:58:74:56:07:b4  
CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "Swiss Government Root CA I"  
CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL  
\241\130\121\207\025\145\206\316\371\304\124\342\052\261\134\130  
\164\126\007\264  
END

```

CKA_CERT_MD5_HASH MULTILINE_OCTAL
\307\311\332\233\166\341\254\206\153\064\275\003\077\343\317\322
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\246\061\013\060\011\006\003\125\004\006\023\002\103\110
\061\073\060\071\006\003\125\004\012\023\062\124\150\145\040\106
\145\144\145\162\141\154\040\101\165\164\150\157\162\151\164\151
\145\163\040\157\146\040\164\150\145\040\123\167\151\163\163\040
\103\157\156\146\145\144\145\162\141\164\151\157\156\061\021\060
\017\006\003\125\004\013\023\010\123\145\162\166\151\143\145\163
\061\042\060\040\006\003\125\004\013\023\031\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\151\145\163\061\043\060\041\006\003\125\004\003\023\032\123
\167\151\163\163\040\107\157\166\145\162\156\155\145\156\164\040
\122\157\157\164\040\103\101\040\111
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\021\000\375\165\004\215\172\140\206\223\151\114\252\000\074
\145\323\075
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "LuxTrust Global Root"
Issuer: CN=LuxTrust Global Root,O=LuxTrust s.a.,C=LU
Serial Number: 3000 (0xbb8)
Subject: CN=LuxTrust Global Root,O=LuxTrust s.a.,C=LU
Not Valid Before: Thu Mar 17 09:51:37 2011
Not Valid After: Wed Mar 17 09:51:37 2021
Fingerprint (MD5): 42:a5:21:7a:4c:af:c7:bf:fd:a7:f5:b2:10:4c:3e:be
Fingerprint (SHA1): c9:3c:34:ea:90:d9:13:0c:0f:03:00:4b:98:bd:8b:35:70:91:56:11
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "LuxTrust Global Root"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\104\061\013\060\011\006\003\125\004\006\023\002\114\125\061
\026\060\024\006\003\125\004\012\023\015\114\165\170\124\162\165
\163\164\040\163\056\141\056\061\035\060\033\006\003\125\004\003
\023\024\114\165\170\124\162\165\163\164\040\107\154\157\142\141
\154\040\122\157\157\164
END
CKA_ID UTF8 "0"

```

CKA\_ISSUER MULTILINE\_OCTAL

\060\104\061\013\060\011\006\003\125\004\006\023\002\114\125\061  
\026\060\024\006\003\125\004\012\023\015\114\165\170\124\162\165  
\163\164\040\163\056\141\056\061\035\060\033\006\003\125\004\003  
\023\024\114\165\170\124\162\165\163\164\040\107\154\157\142\141  
\154\040\122\157\157\164

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\002\013\270

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\144\060\202\002\114\240\003\002\001\002\002\002\013  
\270\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000  
\060\104\061\013\060\011\006\003\125\004\006\023\002\114\125\061  
\026\060\024\006\003\125\004\012\023\015\114\165\170\124\162\165  
\163\164\040\163\056\141\056\061\035\060\033\006\003\125\004\003  
\023\024\114\165\170\124\162\165\163\164\040\107\154\157\142\141  
\154\040\122\157\157\164\060\036\027\015\061\061\060\063\061\067  
\060\071\065\061\063\067\132\027\015\062\061\060\063\061\067\060  
\071\065\061\063\067\132\060\104\061\013\060\011\006\003\125\004  
\006\023\002\114\125\061\026\060\024\006\003\125\004\012\023\015  
\114\165\170\124\162\165\163\164\040\163\056\141\056\061\035\060  
\033\006\003\125\004\003\023\024\114\165\170\124\162\165\163\164  
\040\107\154\157\142\141\154\040\122\157\157\164\060\202\001\042  
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003  
\202\001\017\000\060\202\001\012\002\202\001\001\000\262\177\247  
\100\360\042\312\014\366\353\261\361\313\016\225\127\100\165\257  
\240\077\076\316\354\252\062\127\346\031\261\147\103\230\132\153  
\174\263\270\372\170\234\252\246\204\262\140\033\200\101\316\143  
\315\037\027\010\231\244\365\357\076\022\307\114\260\127\232\134  
\170\100\170\374\105\215\332\221\147\334\072\121\271\155\163\346  
\267\071\216\166\072\264\037\005\365\151\125\371\223\317\170\210  
\112\276\252\233\327\173\107\133\106\004\114\202\026\246\065\366  
\374\164\337\326\264\257\330\342\265\047\021\164\131\242\302\146  
\054\150\012\341\230\210\210\074\212\005\165\024\343\270\256\363  
\010\204\233\152\301\077\061\030\257\047\245\113\233\244\375\171  
\061\336\230\075\016\141\312\207\230\301\370\212\060\234\372\076  
\063\325\245\304\003\007\341\367\226\164\030\000\047\070\047\321  
\053\252\252\341\101\105\213\157\361\045\302\334\242\227\225\307  
\102\024\063\135\171\204\043\152\347\145\300\127\240\330\135\251  
\143\001\347\260\344\213\350\370\305\143\270\345\154\164\220\075  
\307\167\374\053\272\171\351\244\306\022\170\247\377\002\003\001  
\000\001\243\140\060\136\060\014\006\003\125\035\023\004\005\060  
\003\001\001\377\060\016\006\003\125\035\017\001\001\377\004\004  
\003\002\001\006\060\037\006\003\125\035\043\004\030\060\026\200  
\024\027\025\205\211\011\057\044\207\157\077\035\033\344\362\226  
\171\203\110\023\316\060\035\006\003\125\035\016\004\026\004\024  
\027\025\205\211\011\057\044\207\157\077\035\033\344\362\226\171

```
\203\110\023\316\060\015\006\011\052\206\110\206\367\015\001\001
\013\005\000\003\202\001\001\000\132\360\034\320\324\120\317\101
\176\346\270\235\175\303\160\320\136\066\377\156\216\172\057\336
\110\021\325\064\056\074\267\105\302\124\045\247\341\301\036\067
\203\266\224\256\266\105\110\003\352\225\276\353\234\152\264\067
\134\037\056\323\153\202\201\103\133\012\077\021\125\143\254\372
\174\010\002\067\240\074\071\004\063\376\227\062\310\122\345\331
\045\115\260\306\356\150\037\160\252\163\316\127\003\334\175\012
\015\063\362\322\132\337\012\154\073\314\021\121\227\032\244\041
\242\205\065\002\327\200\042\322\204\262\370\300\252\150\277\325
\353\252\303\013\253\241\174\053\367\365\073\207\341\124\127\354
\005\044\357\171\102\116\363\213\150\237\344\156\313\202\231\311
\314\052\334\123\302\037\160\203\253\041\017\126\264\110\377\337
\007\042\263\214\371\035\246\004\337\055\003\066\271\335\157\376
\061\210\146\377\154\155\104\064\257\010\167\076\046\322\162\364
\273\107\126\223\074\230\143\341\063\273\231\043\222\265\203\171
\350\035\237\147\255\142\326\211\326\366\374\047\336\062\047\313
\204\332\167\205\041\241\022\041
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
Trust for "LuxTrust Global Root"
Issuer: CN=LuxTrust Global Root,O=LuxTrust s.a.,C=LU
Serial Number: 3000 (0xbb8)
Subject: CN=LuxTrust Global Root,O=LuxTrust s.a.,C=LU
Not Valid Before: Thu Mar 17 09:51:37 2011
Not Valid After: Wed Mar 17 09:51:37 2021
Fingerprint (MD5): 42:a5:21:7a:4c:af:c7:bf:fd:a7:f5:b2:10:4c:3e:be
Fingerprint (SHA1): c9:3c:34:ea:90:d9:13:0c:0f:03:00:4b:98:bd:8b:35:70:91:56:11
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "LuxTrust Global Root"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\311\074\064\352\220\331\023\014\017\003\000\113\230\275\213\065
\160\221\126\021
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\102\245\041\172\114\257\307\277\375\247\365\262\020\114\076\276
```

END

```
CKA_ISSUER MULTILINE_OCTAL
\060\104\061\013\060\011\006\003\125\004\006\023\002\114\125\061
\026\060\024\006\003\125\004\012\023\015\114\165\170\124\162\165
\163\164\040\163\056\141\056\061\035\060\033\006\003\125\004\003
```



\023\024\114\165\170\124\162\165\163\164\040\107\154\157\142\141  
\154\040\122\157\157\164

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\002\013\270

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "AC1 RAIZ MTIN"

# Issuer: C=ES,L=MADRID,O=MINISTERIO DE TRABAJO E INMIGRACION,OU=SUBDIRECCION  
GENERAL DE PROCESO DE DATOS,OU=PRESTADOR DE SERVICIOS DE CERTIFICACION  
MTIN,2.5.4.5=S2819001E,CN=AC1 RAIZ MTIN

# Serial Number:05:0b:41:5e:82:7b

# Subject: C=ES,L=MADRID,O=MINISTERIO DE TRABAJO E INMIGRACION,OU=SUBDIRECCION  
GENERAL DE PROCESO DE DATOS,OU=PRESTADOR DE SERVICIOS DE CERTIFICACION  
MTIN,2.5.4.5=S2819001E,CN=AC1 RAIZ MTIN

# Not Valid Before: Thu Nov 05 16:17:45 2009

# Not Valid After: Sun Nov 03 16:17:45 2019

# Fingerprint (MD5): 27:13:d5:2c:70:06:3e:15:7b:d3:62:59:32:ea:01:05

# Fingerprint (SHA1): 6a:d2:3b:9d:c4:8e:37:5f:85:9a:d9:ca:b5:85:32:5c:23:89:40:71

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "AC1 RAIZ MTIN"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\201\342\061\026\060\024\006\003\125\004\003\023\015\101\103  
\061\040\122\101\111\132\040\115\124\111\116\061\022\060\020\006  
\003\125\004\005\023\011\123\062\070\061\071\060\060\061\105\061  
\065\060\063\006\003\125\004\013\023\054\120\122\105\123\124\101  
\104\117\122\040\104\105\040\123\105\122\126\111\103\111\117\123  
\040\104\105\040\103\105\122\124\111\106\111\103\101\103\111\117  
\116\040\115\124\111\116\061\061\060\057\006\003\125\004\013\023  
\050\123\125\102\104\111\122\105\103\103\111\117\116\040\107\105  
\116\105\122\101\114\040\104\105\040\120\122\117\103\105\123\117  
\040\104\105\040\104\101\124\117\123\061\054\060\052\006\003\125  
\004\012\023\043\115\111\116\111\123\124\105\122\111\117\040\104  
\105\040\124\122\101\102\101\112\117\040\105\040\111\116\115\111  
\107\122\101\103\111\117\116\061\017\060\015\006\003\125\004\007  
\023\006\115\101\104\122\111\104\061\013\060\011\006\003\125\004  
\006\023\002\105\123

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\342\061\026\060\024\006\003\125\004\003\023\015\101\103  
\061\040\122\101\111\132\040\115\124\111\116\061\022\060\020\006  
\003\125\004\005\023\011\123\062\070\061\071\060\060\061\105\061  
\065\060\063\006\003\125\004\013\023\054\120\122\105\123\124\101  
\104\117\122\040\104\105\040\123\105\122\126\111\103\111\117\123  
\040\104\105\040\103\105\122\124\111\106\111\103\101\103\111\117  
\116\040\115\124\111\116\061\061\060\057\006\003\125\004\013\023  
\050\123\125\102\104\111\122\105\103\103\111\117\116\040\107\105  
\116\105\122\101\114\040\104\105\040\120\122\117\103\105\123\117  
\040\104\105\040\104\101\124\117\123\061\054\060\052\006\003\125  
\004\012\023\043\115\111\116\111\123\124\105\122\111\117\040\104  
\105\040\124\122\101\102\101\112\117\040\105\040\111\116\115\111  
\107\122\101\103\111\117\116\061\017\060\015\006\003\125\004\007  
\023\006\115\101\104\122\111\104\061\013\060\011\006\003\125\004  
\006\023\002\105\123

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\006\005\013\101\136\202\173

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\011\111\060\202\007\061\240\003\002\001\002\002\006\005  
\013\101\136\202\173\060\015\006\011\052\206\110\206\367\015\001  
\001\005\005\000\060\201\342\061\026\060\024\006\003\125\004\003  
\023\015\101\103\061\040\122\101\111\132\040\115\124\111\116\061  
\022\060\020\006\003\125\004\005\023\011\123\062\070\061\071\060  
\060\061\105\061\065\060\063\006\003\125\004\013\023\054\120\122  
\105\123\124\101\104\117\122\040\104\105\040\123\105\122\126\111  
\103\111\117\123\040\104\105\040\103\105\122\124\111\106\111\103  
\101\103\111\117\116\040\115\124\111\116\061\061\060\057\006\003  
\125\004\013\023\050\123\125\102\104\111\122\105\103\103\111\117  
\116\040\107\105\116\105\122\101\114\040\104\105\040\120\122\117  
\103\105\123\117\040\104\105\040\104\101\124\117\123\061\054\060  
\052\006\003\125\004\012\023\043\115\111\116\111\123\124\105\122  
\111\117\040\104\105\040\124\122\101\102\101\112\117\040\105\040  
\111\116\115\111\107\122\101\103\111\117\116\061\017\060\015\006  
\003\125\004\007\023\006\115\101\104\122\111\104\061\013\060\011  
\006\003\125\004\006\023\002\105\123\060\036\027\015\060\071\061  
\061\060\065\061\066\061\067\064\065\132\027\015\061\071\061\061  
\060\063\061\066\061\067\064\065\132\060\201\342\061\026\060\024  
\006\003\125\004\003\023\015\101\103\061\040\122\101\111\132\040  
\115\124\111\116\061\022\060\020\006\003\125\004\005\023\011\123  
\062\070\061\071\060\060\061\105\061\065\060\063\006\003\125\004  
\013\023\054\120\122\105\123\124\101\104\117\122\040\104\105\040  
\123\105\122\126\111\103\111\117\123\040\104\105\040\103\105\122  
\124\111\106\111\103\101\103\111\117\116\040\115\124\111\116\061  
\061\060\057\006\003\125\004\013\023\050\123\125\102\104\111\122  
\105\103\103\111\117\116\040\107\105\116\105\122\101\114\040\104

\105\040\120\122\117\103\105\123\117\040\104\105\040\104\101\124  
\117\123\061\054\060\052\006\003\125\004\012\023\043\115\111\116  
\111\123\124\105\122\111\117\040\104\105\040\124\122\101\102\101  
\112\117\040\105\040\111\116\115\111\107\122\101\103\111\117\116  
\061\017\060\015\006\003\125\004\007\023\006\115\101\104\122\111  
\104\061\013\060\011\006\003\125\004\006\023\002\105\123\060\202  
\002\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005  
\000\003\202\002\017\000\060\202\002\012\002\202\002\001\000\334  
\315\315\261\277\336\045\365\377\034\063\163\231\074\033\241\155  
\365\240\304\175\233\070\146\215\011\337\003\154\127\065\264\023  
\101\376\343\137\346\042\004\130\030\271\116\151\063\004\077\225  
\307\331\116\377\063\064\247\062\100\062\223\127\376\201\257\045  
\103\134\035\375\173\127\013\142\010\147\147\142\264\343\345\130  
\045\200\346\252\206\142\100\347\117\020\141\051\111\046\253\115  
\174\241\253\133\141\061\201\006\152\144\224\115\047\370\113\036  
\321\325\103\342\327\261\155\366\366\377\264\160\125\366\010\231  
\267\164\001\340\363\236\265\174\344\004\210\010\120\131\170\037  
\032\224\333\357\310\311\211\323\067\270\363\075\206\321\031\313  
\203\132\020\007\010\117\231\164\002\007\360\062\121\310\373\346  
\320\074\046\166\175\162\176\254\166\067\301\212\165\040\134\100  
\334\204\077\320\111\174\115\147\256\071\357\344\316\200\341\312  
\235\346\055\253\056\346\022\225\332\371\373\337\343\342\214\075  
\207\373\105\156\104\253\366\170\222\047\024\241\135\153\117\160  
\173\127\163\357\371\135\250\017\165\237\357\021\140\031\204\260  
\144\100\356\330\251\206\372\245\327\105\364\021\157\361\206\310  
\064\133\210\110\316\272\335\315\233\335\210\343\001\066\350\254  
\152\350\022\013\260\340\173\220\036\205\013\111\211\001\366\377  
\202\337\130\145\042\203\110\326\007\320\034\146\374\146\050\072  
\304\303\345\370\231\145\047\122\130\363\153\361\157\002\104\204  
\165\320\244\343\150\123\141\162\357\366\057\251\263\254\365\364  
\366\320\134\334\151\114\314\171\322\244\033\310\163\006\064\164  
\264\361\152\312\051\050\307\064\204\133\043\330\272\000\214\314  
\011\301\307\157\135\004\253\267\117\046\167\251\065\317\040\326  
\263\377\061\151\320\064\373\045\354\150\226\012\242\335\203\037  
\312\074\217\164\066\045\124\357\365\030\173\302\044\061\321\373  
\202\004\256\004\202\326\365\002\051\161\341\222\161\164\216\333  
\252\161\035\304\073\306\142\046\154\206\074\043\125\353\051\321  
\037\253\312\036\143\347\263\163\264\247\270\052\072\366\037\373  
\207\145\210\374\363\237\376\277\353\325\035\266\250\003\351\145  
\203\031\214\340\030\355\027\330\034\015\075\234\212\130\177\002  
\003\001\000\001\243\202\003\001\060\202\002\375\060\067\006\010  
\053\006\001\005\005\007\001\001\004\053\060\051\060\047\006\010  
\053\006\001\005\005\007\060\001\206\033\150\164\164\160\072\057  
\057\143\141\056\155\164\151\156\056\145\163\057\155\164\151\156  
\057\157\143\163\160\060\016\006\003\125\035\017\001\001\377\004  
\004\003\002\001\006\060\033\006\003\125\035\021\004\024\060\022  
\201\020\141\144\155\151\156\137\143\141\100\155\164\151\156\056  
\145\163\060\033\006\003\125\035\022\004\024\060\022\201\020\141

\144\155\151\156\137\143\141\100\155\164\151\156\056\145\163\060  
\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377  
\060\162\006\003\125\035\037\004\153\060\151\060\062\240\060\240  
\056\206\054\150\164\164\160\072\057\057\143\141\056\155\164\151  
\156\056\145\163\057\155\164\151\156\057\143\162\154\057\115\124  
\111\116\101\165\164\157\162\151\144\141\144\122\141\151\172\060  
\063\240\061\240\057\206\055\150\164\164\160\072\057\057\143\141  
\062\056\155\164\151\156\056\145\163\057\155\164\151\156\057\143  
\162\154\057\115\124\111\116\101\165\164\157\162\151\144\141\144  
\122\141\151\172\060\201\271\006\003\125\035\040\004\201\261\060  
\201\256\060\201\253\006\013\053\006\001\004\001\201\331\005\002  
\004\001\060\201\233\060\060\006\010\053\006\001\005\005\007\002  
\001\026\044\150\164\164\160\072\057\057\143\141\056\155\164\151  
\156\056\145\163\057\155\164\151\156\057\104\120\103\171\120\157  
\154\151\164\151\143\141\163\060\147\006\010\053\006\001\005\005  
\007\002\002\060\133\032\131\103\145\162\164\151\146\151\143\141  
\144\157\040\162\141\355\172\056\040\103\157\156\163\165\154\164  
\145\040\154\141\163\040\143\157\156\144\151\143\151\157\156\145  
\163\040\144\145\040\165\163\157\040\145\156\040\150\164\164\160  
\072\057\057\143\141\056\155\164\151\156\056\145\163\057\155\164  
\151\156\057\104\120\103\171\120\157\154\151\164\151\143\141\163  
\060\035\006\003\125\035\016\004\026\004\024\063\103\030\263\304  
\113\035\313\037\371\360\116\374\337\112\344\025\140\310\203\060  
\202\001\026\006\003\125\035\043\004\202\001\015\060\202\001\011  
\200\024\063\103\030\263\304\113\035\313\037\371\360\116\374\337  
\112\344\025\140\310\203\241\201\350\244\201\345\060\201\342\061  
\026\060\024\006\003\125\004\003\023\015\101\103\061\040\122\101  
\111\132\040\115\124\111\116\061\022\060\020\006\003\125\004\005  
\023\011\123\062\070\061\071\060\060\061\105\061\065\060\063\006  
\003\125\004\013\023\054\120\122\105\123\124\101\104\117\122\040  
\104\105\040\123\105\122\126\111\103\111\117\123\040\104\105\040  
\103\105\122\124\111\106\111\103\101\103\111\117\116\040\115\124  
\111\116\061\061\060\057\006\003\125\004\013\023\050\123\125\102  
\104\111\122\105\103\103\111\117\116\040\107\105\116\105\122\101  
\114\040\104\105\040\120\122\117\103\105\123\117\040\104\105\040  
\104\101\124\117\123\061\054\060\052\006\003\125\004\012\023\043  
\115\111\116\111\123\124\105\122\111\117\040\104\105\040\124\122  
\101\102\101\112\117\040\105\040\111\116\115\111\107\122\101\103  
\111\117\116\061\017\060\015\006\003\125\004\007\023\006\115\101  
\104\122\111\104\061\013\060\011\006\003\125\004\006\023\002\105  
\123\202\006\005\013\101\136\202\173\060\015\006\011\052\206\110  
\206\367\015\001\001\005\005\000\003\202\002\001\000\231\343\252  
\016\221\323\222\251\352\377\104\147\323\240\055\040\147\363\020  
\017\032\067\167\135\122\106\346\152\270\367\210\363\202\303\052  
\364\141\015\054\237\057\206\055\141\351\140\131\275\267\117\257  
\223\011\034\371\063\167\100\234\241\174\145\334\136\220\225\251  
\364\276\202\364\374\202\035\036\305\075\340\134\256\336\055\325  
\143\166\253\361\354\044\247\040\370\036\350\317\161\202\003\335

\216\166\142\052\265\051\210\023\044\255\134\364\240\112\270\352  
\023\212\126\215\152\057\150\071\162\206\130\304\244\253\165\174  
\104\347\032\204\014\215\021\334\031\271\034\066\356\363\377\121  
\233\263\103\310\045\176\347\016\110\243\344\117\006\055\025\036  
\240\246\107\220\127\073\370\057\055\333\043\272\353\043\223\260  
\270\122\033\140\034\324\031\260\155\170\217\113\235\247\013\050  
\147\112\335\170\110\275\261\076\230\324\273\025\376\263\137\155  
\035\165\310\036\317\017\256\112\032\135\207\054\006\164\154\012  
\205\123\044\136\172\311\240\174\161\233\222\135\157\110\177\266  
\130\161\262\114\246\032\011\043\064\120\161\025\153\107\333\373  
\276\032\155\302\214\224\057\007\147\040\042\147\143\267\253\306  
\031\234\226\015\142\352\010\244\032\160\357\251\271\357\116\305  
\100\274\342\207\127\363\003\312\050\231\032\300\125\140\165\173  
\143\276\144\077\226\116\113\217\375\055\246\164\300\337\111\072  
\354\125\176\146\323\272\375\357\223\261\143\362\133\077\355\166  
\241\331\323\014\376\056\157\012\246\123\113\357\321\363\107\255  
\271\036\354\114\037\276\320\203\123\303\233\025\105\377\056\007  
\321\332\152\222\105\346\154\127\133\044\056\121\151\311\060\317  
\327\373\244\001\065\132\315\247\353\024\157\264\267\140\042\010  
\305\161\310\223\342\276\045\137\365\014\372\130\121\075\173\310  
\057\067\371\223\034\052\011\340\147\375\226\211\102\312\353\066  
\260\326\033\246\120\017\132\235\166\377\244\117\306\354\015\304  
\341\320\347\130\076\326\171\300\167\115\014\325\263\344\230\115  
\335\106\056\122\260\342\017\015\102\066\245\020\044\122\050\276  
\142\065\102\071\311\172\226\037\356\346\113\131\077\044\163\213  
\277\042\113\146\362\333\017\065\361\067\235\240\044

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "AC1 RAIZ MTIN"

# Issuer: C=ES,L=MADRID,O=MINISTERIO DE TRABAJO E INMIGRACION,OU=SUBDIRECCION  
GENERAL DE PROCESO DE DATOS,OU=PRESTADOR DE SERVICIOS DE CERTIFICACION  
MTIN,2.5.4.5=S2819001E,CN=AC1 RAIZ MTIN

# Serial Number:05:0b:41:5e:82:7b

# Subject: C=ES,L=MADRID,O=MINISTERIO DE TRABAJO E INMIGRACION,OU=SUBDIRECCION  
GENERAL DE PROCESO DE DATOS,OU=PRESTADOR DE SERVICIOS DE CERTIFICACION  
MTIN,2.5.4.5=S2819001E,CN=AC1 RAIZ MTIN

# Not Valid Before: Thu Nov 05 16:17:45 2009

# Not Valid After: Sun Nov 03 16:17:45 2019

# Fingerprint (MD5): 27:13:d5:2c:70:06:3e:15:7b:d3:62:59:32:ea:01:05

# Fingerprint (SHA1): 6a:d2:3b:9d:c4:8e:37:5f:85:9a:d9:ca:b5:85:32:5c:23:89:40:71

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

```

CKA_LABEL UTF8 "AC1 RAIZ MTIN"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\152\322\073\235\304\216\067\137\205\232\331\312\265\205\062\134
\043\211\100\161
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\047\023\325\054\160\006\076\025\173\323\142\131\062\352\001\005
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\342\061\026\060\024\006\003\125\004\003\023\015\101\103
\061\040\122\101\111\132\040\115\124\111\116\061\022\060\020\006
\003\125\004\005\023\011\123\062\070\061\071\060\060\061\105\061
\065\060\063\006\003\125\004\013\023\054\120\122\105\123\124\101
\104\117\122\040\104\105\040\123\105\122\126\111\103\111\117\123
\040\104\105\040\103\105\122\124\111\106\111\103\101\103\111\117
\116\040\115\124\111\116\061\061\060\057\006\003\125\004\013\023
\050\123\125\102\104\111\122\105\103\103\111\117\116\040\107\105
\116\105\122\101\114\040\104\105\040\120\122\117\103\105\123\117
\040\104\105\040\104\101\124\117\123\061\054\060\052\006\003\125
\004\012\023\043\115\111\116\111\123\124\105\122\111\117\040\104
\105\040\124\122\101\102\101\112\117\040\105\040\111\116\115\111
\107\122\101\103\111\117\116\061\017\060\015\006\003\125\004\007
\023\006\115\101\104\122\111\104\061\013\060\011\006\003\125\004
\006\023\002\105\123
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\006\005\013\101\136\202\173
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "Microsoft Root Certificate Authority 2011"
Issuer: CN=Microsoft Root Certificate Authority 2011,O=Microsoft
Corporation,L=Redmond,ST=Washington,C=US
Serial Number:3f:8b:c8:b5:fc:9f:b2:96:43:b5:69:d6:6c:42:e1:44
Subject: CN=Microsoft Root Certificate Authority 2011,O=Microsoft
Corporation,L=Redmond,ST=Washington,C=US
Not Valid Before: Tue Mar 22 22:05:28 2011
Not Valid After: Sat Mar 22 22:13:04 2036
Fingerprint (MD5): ce:04:90:d5:e5:6c:34:a5:ae:0b:e9:8b:e5:81:18:5d
Fingerprint (SHA1): 8f:43:28:8a:d2:72:f3:10:3b:6f:b1:42:84:85:ea:30:14:c0:bc:fe
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE

```

```
CKA_LABEL UTF8 "Microsoft Root Certificate Authority 2011"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\210\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\023\060\021\006\003\125\004\010\023\012\127\141\163\150\151
\156\147\164\157\156\061\020\060\016\006\003\125\004\007\023\007
\122\145\144\155\157\156\144\061\036\060\034\006\003\125\004\012
\023\025\115\151\143\162\157\163\157\146\164\040\103\157\162\160
\157\162\141\164\151\157\156\061\062\060\060\006\003\125\004\003
\023\051\115\151\143\162\157\163\157\146\164\040\122\157\157\164
\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164
\150\157\162\151\164\171\040\062\060\061\061
END
```

```
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\210\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\023\060\021\006\003\125\004\010\023\012\127\141\163\150\151
\156\147\164\157\156\061\020\060\016\006\003\125\004\007\023\007
\122\145\144\155\157\156\144\061\036\060\034\006\003\125\004\012
\023\025\115\151\143\162\157\163\157\146\164\040\103\157\162\160
\157\162\141\164\151\157\156\061\062\060\060\006\003\125\004\003
\023\051\115\151\143\162\157\163\157\146\164\040\122\157\157\164
\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164
\150\157\162\151\164\171\040\062\060\061\061
END
```

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\077\213\310\265\374\237\262\226\103\265\151\326\154\102
\341\104
END
```

```
CKA_VALUE MULTILINE_OCTAL
\060\202\005\355\060\202\003\325\240\003\002\001\002\002\020\077
\213\310\265\374\237\262\226\103\265\151\326\154\102\341\104\060
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\201
\210\061\013\060\011\006\003\125\004\006\023\002\125\123\061\023
\060\021\006\003\125\004\010\023\012\127\141\163\150\151\156\147
\164\157\156\061\020\060\016\006\003\125\004\007\023\007\122\145
\144\155\157\156\144\061\036\060\034\006\003\125\004\012\023\025
\115\151\143\162\157\163\157\146\164\040\103\157\162\160\157\162
\141\164\151\157\156\061\062\060\060\006\003\125\004\003\023\051
\115\151\143\162\157\163\157\146\164\040\122\157\157\164\040\103
\145\162\164\151\146\151\143\141\164\145\040\101\165\164\150\157
\162\151\164\171\040\062\060\061\061\060\036\027\015\061\061\060
\063\062\062\062\062\060\065\062\070\132\027\015\063\066\060\063
\062\062\062\062\061\063\060\064\132\060\201\210\061\013\060\011
\006\003\125\004\006\023\002\125\123\061\023\060\021\006\003\125
\004\010\023\012\127\141\163\150\151\156\147\164\157\156\061\020
\060\016\006\003\125\004\007\023\007\122\145\144\155\157\156\144
\061\036\060\034\006\003\125\004\012\023\025\115\151\143\162\157
```

\163\157\146\164\040\103\157\162\160\157\162\141\164\151\157\156  
\061\062\060\060\006\003\125\004\003\023\051\115\151\143\162\157  
\163\157\146\164\040\122\157\157\164\040\103\145\162\164\151\146  
\151\143\141\164\145\040\101\165\164\150\157\162\151\164\171\040  
\062\060\061\061\060\202\002\042\060\015\006\011\052\206\110\206  
\367\015\001\001\001\005\000\003\202\002\017\000\060\202\002\012  
\002\202\002\001\000\262\200\101\252\065\070\115\023\162\062\150  
\042\115\270\262\361\377\325\122\274\154\307\365\322\112\214\066  
\356\321\302\134\176\214\212\256\257\023\050\157\300\163\343\072  
\316\320\045\250\132\072\155\357\250\270\131\253\023\043\150\315  
\014\051\207\321\157\200\134\217\104\177\135\220\001\122\130\254  
\121\305\137\052\207\334\334\330\012\035\301\003\271\173\260\126  
\350\243\336\144\141\302\236\370\363\174\271\354\015\265\124\376  
\114\266\145\117\210\360\234\110\231\014\102\013\011\174\061\131  
\027\171\006\170\050\215\211\072\114\003\045\276\161\152\134\013  
\347\204\140\244\231\042\343\322\257\204\244\247\373\321\230\355  
\014\251\336\224\211\341\016\240\334\300\316\231\075\352\010\122  
\273\126\171\344\037\204\272\036\270\264\304\111\134\117\061\113  
\207\335\335\005\147\046\231\200\340\161\021\243\270\245\101\342  
\244\123\271\367\062\051\203\014\023\277\066\136\004\263\113\103  
\107\057\153\342\221\036\323\230\117\335\102\007\310\350\035\022  
\374\231\251\153\076\222\176\310\326\151\072\374\144\275\266\011  
\235\312\375\014\013\242\233\167\140\113\003\224\244\060\151\022  
\326\102\055\301\101\114\312\334\252\375\217\133\203\106\232\331  
\374\261\321\343\263\311\177\110\172\315\044\360\101\217\134\164  
\320\254\260\020\040\006\111\267\307\055\041\310\127\343\320\206  
\363\003\150\373\320\316\161\301\211\231\112\144\001\154\375\354  
\060\221\317\101\074\222\307\345\272\206\035\141\204\307\137\203  
\071\142\256\264\222\057\107\363\013\370\125\353\240\037\131\320  
\273\164\233\036\320\166\346\362\351\006\327\020\350\372\144\336  
\151\306\065\226\210\002\360\106\270\077\047\231\157\313\161\211  
\051\065\367\110\026\002\065\217\325\171\174\115\002\317\137\353  
\212\203\117\105\161\210\371\251\015\116\162\351\302\234\007\317  
\111\033\116\004\016\143\121\214\136\330\000\301\125\054\266\306  
\340\302\145\116\311\064\071\365\234\263\304\176\350\141\156\023  
\137\025\304\137\331\176\355\035\316\356\104\354\313\056\206\261  
\354\070\366\160\355\253\134\023\301\331\017\015\307\200\262\125  
\355\064\367\254\233\344\303\332\347\107\074\246\265\217\061\337  
\305\113\257\353\361\002\003\001\000\001\243\121\060\117\060\013  
\006\003\125\035\017\004\004\003\002\001\206\060\017\006\003\125  
\035\023\001\001\377\004\005\060\003\001\001\377\060\035\006\003  
\125\035\016\004\026\004\024\162\055\072\002\061\220\103\271\024  
\005\116\341\352\247\307\061\321\043\211\064\060\020\006\011\053  
\006\001\004\001\202\067\025\001\004\003\002\001\000\060\015\006  
\011\052\206\110\206\367\015\001\001\013\005\000\003\202\002\001  
\000\177\162\317\017\267\305\025\333\233\300\111\312\046\133\376  
\236\023\346\323\360\322\333\227\137\362\113\077\115\263\256\031  
\256\355\327\227\240\254\357\251\072\243\302\101\260\345\270\221



\236\023\201\044\003\346\011\375\077\127\100\071\041\044\126\321  
\020\057\113\100\251\066\206\113\264\123\127\232\373\361\176\211  
\217\021\376\030\154\121\252\350\355\011\225\265\345\161\311\241  
\351\207\165\246\025\177\311\176\067\124\136\164\223\305\303\147  
\314\015\117\153\250\027\014\155\010\222\176\213\335\201\252\055  
\160\041\303\075\006\024\273\277\044\136\247\204\327\077\017\041  
\042\275\113\000\006\333\227\034\330\136\324\305\013\134\207\156  
\120\244\350\303\070\244\373\313\054\305\222\146\233\205\136\313  
\172\154\223\174\200\051\130\133\127\265\100\151\272\010\171\246  
\144\142\025\235\207\226\105\265\146\043\040\003\213\034\163\240  
\323\242\171\063\340\120\131\206\333\057\345\002\045\352\163\052  
\237\000\024\310\066\307\222\073\351\116\000\354\330\126\011\271  
\063\111\022\322\124\013\001\253\254\107\266\221\051\175\114\264  
\165\200\122\001\350\312\202\366\237\314\254\234\217\027\352\057  
\046\260\253\162\254\013\376\236\121\036\307\103\125\147\117\121  
\263\127\326\266\354\356\122\267\072\351\116\341\327\201\210\274  
\117\216\165\273\113\250\360\065\252\046\324\147\147\111\262\160  
\114\073\223\334\035\337\170\220\206\162\262\070\244\321\334\222  
\115\311\130\353\053\022\134\324\073\256\214\153\260\203\345\001  
\077\370\011\062\366\223\065\064\042\257\335\067\015\167\011\200  
\053\315\110\000\361\214\231\031\107\005\001\351\321\277\321\116  
\320\346\050\103\067\231\244\012\112\010\331\232\161\163\322\252  
\315\061\023\143\166\241\067\157\222\070\036\175\022\074\146\062  
\347\313\155\341\374\122\211\335\312\326\146\005\232\226\141\276  
\242\050\307\034\243\247\066\120\074\072\244\337\112\156\346\207  
\073\316\353\360\340\201\067\235\023\074\122\216\275\271\035\064  
\306\035\325\012\152\075\230\051\160\214\211\052\321\253\202\020  
\110\037\334\364\357\245\305\273\125\032\070\143\204\116\267\154  
\255\225\124\354\145\042\020\111\027\270\300\036\307\017\254\124  
\107

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "Microsoft Root Certificate Authority 2011"  
# Issuer: CN=Microsoft Root Certificate Authority 2011,O=Microsoft  
Corporation,L=Redmond,ST=Washington,C=US  
# Serial Number:3f:8b:c8:b5:fc:9f:b2:96:43:b5:69:d6:6c:42:e1:44  
# Subject: CN=Microsoft Root Certificate Authority 2011,O=Microsoft  
Corporation,L=Redmond,ST=Washington,C=US  
# Not Valid Before: Tue Mar 22 22:05:28 2011  
# Not Valid After: Sat Mar 22 22:13:04 2036  
# Fingerprint (MD5): ce:04:90:d5:e5:6c:34:a5:ae:0b:e9:8b:e5:81:18:5d  
# Fingerprint (SHA1): 8f:43:28:8a:d2:72:f3:10:3b:6f:b1:42:84:85:ea:30:14:c0:bc:fe  
CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST  
CKA\_TOKEN CK\_BBOOL CK\_TRUE

```

CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Microsoft Root Certificate Authority 2011"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\217\103\050\212\322\162\363\020\073\157\261\102\204\205\352\060
\024\300\274\376
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\316\004\220\325\345\154\064\245\256\013\351\213\345\201\030\135
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\210\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\023\060\021\006\003\125\004\010\023\012\127\141\163\150\151
\156\147\164\157\156\061\020\060\016\006\003\125\004\007\023\007
\122\145\144\155\157\156\144\061\036\060\034\006\003\125\004\012
\023\025\115\151\143\162\157\163\157\146\164\040\103\157\162\160
\157\162\141\164\151\157\156\061\062\060\060\006\003\125\004\003
\023\051\115\151\143\162\157\163\157\146\164\040\122\157\157\164
\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164
\150\157\162\151\164\171\040\062\060\061\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\077\213\310\265\374\237\262\226\103\265\151\326\154\102
\341\104
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

```

```

Microsoft Code Signing Only Certificate
Certificate "CCA India 2011"
Issuer: CN=CCA India 2011,O=India PKI,C=IN
Serial Number: 10126 (0x278e)
Subject: CN=CCA India 2011,O=India PKI,C=IN
Not Valid Before: Fri Mar 11 06:48:52 2011
Not Valid After: Fri Mar 11 06:48:52 2016
Fingerprint (MD5): 6e:3e:bc:f1:11:03:dc:4f:58:d5:2c:b0:74:f4:18:c8
Fingerprint (SHA1): be:d5:25:d1:ac:63:a7:fc:6a:66:0b:a7:a8:95:81:8d:5e:8d:d5:64

```

```

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "CCA India 2011"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\072\061\013\060\011\006\003\125\004\006\023\002\111\116\061
\022\060\020\006\003\125\004\012\023\011\111\156\144\151\141\040

```

\120\113\111\061\027\060\025\006\003\125\004\003\023\016\103\103  
\101\040\111\156\144\151\141\040\062\060\061\061  
END  
CKA\_ID UTF8 "0"  
CKA\_ISSUER MULTILINE\_OCTAL  
\060\072\061\013\060\011\006\003\125\004\006\023\002\111\116\061  
\022\060\020\006\003\125\004\012\023\011\111\156\144\151\141\040  
\120\113\111\061\027\060\025\006\003\125\004\003\023\016\103\103  
\101\040\111\156\144\151\141\040\062\060\061\061  
END  
CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL  
\002\002\047\216  
END  
CKA\_VALUE MULTILINE\_OCTAL  
\060\202\003\043\060\202\002\013\240\003\002\001\002\002\002\047  
\216\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000  
\060\072\061\013\060\011\006\003\125\004\006\023\002\111\116\061  
\022\060\020\006\003\125\004\012\023\011\111\156\144\151\141\040  
\120\113\111\061\027\060\025\006\003\125\004\003\023\016\103\103  
\101\040\111\156\144\151\141\040\062\060\061\061\060\036\027\015  
\061\061\060\063\061\061\060\066\064\070\065\062\132\027\015\061  
\066\060\063\061\061\060\066\064\070\065\062\132\060\072\061\013  
\060\011\006\003\125\004\006\023\002\111\116\061\022\060\020\006  
\003\125\004\012\023\011\111\156\144\151\141\040\120\113\111\061  
\027\060\025\006\003\125\004\003\023\016\103\103\101\040\111\156  
\144\151\141\040\062\060\061\061\060\202\001\042\060\015\006\011  
\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017\000  
\060\202\001\012\002\202\001\001\000\207\012\036\016\271\240\250  
\040\230\032\270\172\025\366\107\361\277\322\306\047\344\022\152  
\226\004\147\165\315\214\306\343\364\335\312\325\304\034\065\356  
\115\351\344\042\324\227\070\327\254\143\151\110\300\174\171\142  
\277\307\042\111\133\106\301\361\030\024\116\030\035\054\245\132  
\222\270\205\025\257\027\126\023\216\237\026\016\042\226\201\204  
\171\043\102\354\117\336\257\366\277\211\117\000\136\346\327\010  
\322\225\224\232\023\054\004\021\203\357\221\217\010\125\254\172  
\126\104\233\305\364\324\027\353\344\167\115\224\341\101\130\021  
\351\242\252\011\206\055\046\041\040\365\300\314\303\025\314\114  
\011\273\335\334\365\122\003\171\140\217\074\171\072\045\064\043  
\207\110\165\362\101\160\115\032\060\010\206\165\316\130\031\250  
\327\025\176\043\362\347\111\276\377\376\127\122\170\102\363\046  
\167\335\172\367\142\345\313\135\226\063\224\223\273\304\032\026  
\257\010\127\353\234\345\367\043\164\215\351\035\013\261\212\224  
\163\231\021\221\305\150\240\361\212\015\201\255\264\121\150\156  
\111\206\000\006\122\116\051\103\347\002\003\001\000\001\243\063  
\060\061\060\017\006\003\125\035\023\001\001\377\004\005\060\003  
\001\001\377\060\021\006\003\125\035\016\004\012\004\010\115\007  
\250\143\362\333\034\337\060\013\006\003\125\035\017\004\004\003  
\002\001\006\060\015\006\011\052\206\110\206\367\015\001\001\013

```
\005\000\003\202\001\001\000\156\024\332\040\362\110\153\144\377
\052\164\315\126\265\305\071\017\176\141\037\065\131\033\035\050
\155\043\164\235\170\277\253\255\211\000\271\160\205\365\350\024
\076\344\354\237\226\144\134\322\261\042\040\243\010\234\350\014
\113\150\050\216\125\005\277\076\340\116\332\330\234\320\156\040
\354\376\172\073\302\066\107\227\330\053\010\263\256\302\321\346
\010\077\112\350\072\077\126\365\340\345\077\362\151\266\171\022
\340\360\071\267\030\354\322\351\204\016\030\070\026\212\111\073
\157\127\325\071\073\277\023\360\300\247\315\362\075\036\154\221
\247\167\143\274\253\331\126\070\017\112\271\031\300\053\214\373
\227\037\306\247\354\206\316\323\215\343\321\373\165\321\361\367
\246\143\304\317\350\261\244\222\105\150\362\350\214\261\255\176
\055\040\373\270\245\124\355\312\015\217\062\035\150\246\061\156
\260\310\236\325\372\277\006\233\157\051\175\172\003\111\277\053
\173\131\223\024\305\352\313\361\114\051\202\016\051\356\212\124
\174\074\315\125\202\045\162\016\161\116\045\170\115\323\116\131
\100\312\316\363\231\321\242
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
```

```
Trust for "CCA India 2011"
```

```
Issuer: CN=CCA India 2011,O=India PKI,C=IN
```

```
Serial Number: 10126 (0x278e)
```

```
Subject: CN=CCA India 2011,O=India PKI,C=IN
```

```
Not Valid Before: Fri Mar 11 06:48:52 2011
```

```
Not Valid After: Fri Mar 11 06:48:52 2016
```

```
Fingerprint (MD5): 6e:3e:bc:f1:11:03:dc:4f:58:d5:2c:b0:74:f4:18:c8
```

```
Fingerprint (SHA1): be:d5:25:d1:ac:63:a7:fc:6a:66:0b:a7:a8:95:81:8d:5e:8d:d5:64
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "CCA India 2011"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\276\325\045\321\254\143\247\374\152\146\013\247\250\225\201\215
\136\215\325\144
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\156\076\274\361\021\003\334\117\130\325\054\260\164\364\030\310
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\072\061\013\060\011\006\003\125\004\006\023\002\111\116\061
\022\060\020\006\003\125\004\012\023\011\111\156\144\151\141\040
\120\113\111\061\027\060\025\006\003\125\004\003\023\016\103\103
\101\040\111\156\144\151\141\040\062\060\061\061
```

```

END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\002\047\216
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "ANCERT Certificados Notariales V2"
Issuer: CN=ANCERT Certificados Notariales V2,O=Agencia Notarial de Certificacion S.L.U. - CIF
B83395988,C=ES
Serial Number:09:bd:56:05:2a:13:16:f4:68:4f:74:0e:a9:7d:1c:48
Subject: CN=ANCERT Certificados Notariales V2,O=Agencia Notarial de Certificacion S.L.U. - CIF
B83395988,C=ES
Not Valid Before: Tue May 25 16:56:14 2010
Not Valid After: Sat May 25 16:56:14 2030
Fingerprint (MD5): 75:70:cb:6e:6b:d6:9b:7d:90:bb:69:5e:59:f0:62:b4
Fingerprint (SHA1): 6f:62:de:b8:6c:85:58:5a:e4:2e:47:8d:b4:d7:6d:b3:67:58:5a:e6
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ANCERT Certificados Notariales V2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\174\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\101\060\077\006\003\125\004\012\023\070\101\147\145\156\143\151
\141\040\116\157\164\141\162\151\141\154\040\144\145\040\103\145
\162\164\151\146\151\143\141\143\151\157\156\040\123\056\114\056
\125\056\040\055\040\103\111\106\040\102\070\063\063\071\065\071
\070\070\061\052\060\050\006\003\125\004\003\023\041\101\116\103
\105\122\124\040\103\145\162\164\151\146\151\143\141\144\157\163
\040\116\157\164\141\162\151\141\154\145\163\040\126\062
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\174\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\101\060\077\006\003\125\004\012\023\070\101\147\145\156\143\151
\141\040\116\157\164\141\162\151\141\154\040\144\145\040\103\145
\162\164\151\146\151\143\141\143\151\157\156\040\123\056\114\056
\125\056\040\055\040\103\111\106\040\102\070\063\063\071\065\071
\070\070\061\052\060\050\006\003\125\004\003\023\041\101\116\103
\105\122\124\040\103\145\162\164\151\146\151\143\141\144\157\163
\040\116\157\164\141\162\151\141\154\145\163\040\126\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL

```

\002\020\011\275\126\005\052\023\026\364\150\117\164\016\251\175  
\034\110

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\007\022\060\202\004\372\240\003\002\001\002\002\020\011  
\275\126\005\052\023\026\364\150\117\164\016\251\175\034\110\060  
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\174  
\061\013\060\011\006\003\125\004\006\023\002\105\123\061\101\060  
\077\006\003\125\004\012\023\070\101\147\145\156\143\151\141\040  
\116\157\164\141\162\151\141\154\040\144\145\040\103\145\162\164  
\151\146\151\143\141\143\151\157\156\040\123\056\114\056\125\056  
\040\055\040\103\111\106\040\102\070\063\063\071\065\071\070\070  
\061\052\060\050\006\003\125\004\003\023\041\101\116\103\105\122  
\124\040\103\145\162\164\151\146\151\143\141\144\157\163\040\116  
\157\164\141\162\151\141\154\145\163\040\126\062\060\036\027\015  
\061\060\060\065\062\065\061\066\065\066\061\064\132\027\015\063  
\060\060\065\062\065\061\066\065\066\061\064\132\060\174\061\013  
\060\011\006\003\125\004\006\023\002\105\123\061\101\060\077\006  
\003\125\004\012\023\070\101\147\145\156\143\151\141\040\116\157  
\164\141\162\151\141\154\040\144\145\040\103\145\162\164\151\146  
\151\143\141\143\151\157\156\040\123\056\114\056\125\056\040\055  
\040\103\111\106\040\102\070\063\063\071\065\071\070\070\061\052  
\060\050\006\003\125\004\003\023\041\101\116\103\105\122\124\040  
\103\145\162\164\151\146\151\143\141\144\157\163\040\116\157\164  
\141\162\151\141\154\145\163\040\126\062\060\202\002\042\060\015  
\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202\002  
\017\000\060\202\002\012\002\202\002\001\000\262\346\271\306\035  
\152\052\055\111\305\374\374\324\144\100\320\340\024\056\367\240  
\302\377\222\363\101\246\264\077\332\276\031\024\221\224\166\323  
\025\314\136\177\170\120\172\333\332\305\105\252\313\034\043\171  
\163\220\250\273\147\001\163\216\316\100\371\032\251\252\207\344  
\223\222\017\134\150\134\136\360\006\140\053\130\334\074\155\074  
\307\172\060\153\005\252\222\206\163\052\322\362\032\210\304\333  
\345\132\146\216\165\311\102\077\233\210\050\100\036\365\251\134  
\036\372\310\101\241\060\253\013\234\356\026\242\301\055\245\205  
\372\355\240\014\350\177\226\112\173\275\217\232\242\030\166\322  
\257\335\267\075\020\253\122\020\210\256\035\353\270\062\164\226  
\364\267\252\047\367\245\007\015\343\224\127\152\124\040\167\315  
\035\274\171\055\344\234\264\336\121\210\376\126\326\075\213\241  
\317\372\122\036\214\005\163\167\326\005\317\143\000\121\207\141  
\343\120\276\231\227\341\374\036\021\171\153\116\152\317\234\205  
\012\034\226\052\300\040\066\024\305\011\027\142\073\364\255\352  
\325\327\375\320\071\052\170\323\320\242\317\310\163\060\011\107  
\305\116\031\375\270\060\324\017\200\230\210\206\301\114\101\172  
\043\305\103\375\136\022\270\076\017\261\267\201\142\014\176\157  
\343\173\232\302\302\107\021\041\037\317\236\321\060\316\203\301  
\020\115\100\167\327\265\302\113\062\100\102\372\233\260\254\317  
\353\041\330\031\353\144\305\153\335\125\055\200\207\104\174\114

\074\253\015\330\022\277\064\202\214\261\252\304\270\153\350\016  
\106\167\322\213\006\035\102\373\254\275\311\347\063\263\042\157  
\176\325\056\003\305\137\005\026\206\174\355\343\236\321\026\167  
\032\106\330\311\320\214\344\134\134\041\005\221\361\144\344\254  
\305\067\256\265\275\147\023\256\051\345\263\102\304\160\011\243  
\135\114\353\067\040\343\360\365\163\063\073\302\374\216\121\205  
\066\052\313\201\333\016\211\043\331\342\341\150\272\054\104\167  
\076\034\100\272\360\147\216\030\207\360\075\327\351\077\107\133  
\065\102\315\247\004\316\110\162\051\005\032\264\321\242\347\015  
\171\212\226\155\147\122\055\073\043\346\371\202\234\326\263\171  
\136\024\336\145\110\063\374\035\102\350\055\002\003\001\000\001  
\243\202\001\216\060\202\001\212\060\017\006\003\125\035\023\001  
\001\377\004\005\060\003\001\001\377\060\202\001\045\006\003\125  
\035\040\004\202\001\034\060\202\001\030\060\202\001\024\006\011  
\053\006\001\004\001\201\223\150\001\060\202\001\005\060\045\006  
\010\053\006\001\005\005\007\002\001\026\031\150\164\164\160\072  
\057\057\167\167\167\056\141\156\143\145\162\164\056\143\157\155  
\057\143\160\163\060\201\333\006\010\053\006\001\005\005\007\002  
\002\060\201\316\060\015\026\006\101\116\103\105\122\124\060\003  
\002\001\001\036\201\274\000\101\000\147\000\145\000\156\000\143  
\000\151\000\141\000\040\000\116\000\157\000\164\000\141\000\162  
\000\151\000\141\000\154\000\040\000\144\000\145\000\040\000\103  
\000\145\000\162\000\164\000\151\000\146\000\151\000\143\000\141  
\000\143\000\151\000\157\000\156\000\056\000\040\000\120\000\141  
\000\163\000\145\000\157\000\040\000\144\000\145\000\154\000\240  
\000\107\000\145\000\156\000\145\000\162\000\141\000\154\000\040  
\000\115\000\141\000\162\000\164\000\151\000\156\000\145\000\172  
\000\040\000\103\000\141\000\155\000\160\000\157\000\163\000\040  
\000\064\000\066\000\040\000\066\000\141\000\040\000\160\000\154  
\000\141\000\156\000\164\000\141\000\040\000\062\000\070\000\060  
\000\061\000\060\000\040\000\115\000\141\000\144\000\162\000\151  
\000\144\060\016\006\003\125\035\017\001\001\377\004\004\003\002  
\001\206\060\035\006\003\125\035\016\004\026\004\024\366\022\072  
\253\173\130\301\215\103\157\166\201\322\362\270\323\357\027\352  
\013\060\037\006\003\125\035\043\004\030\060\026\200\024\366\022  
\072\253\173\130\301\215\103\157\166\201\322\362\270\323\357\027  
\352\013\060\015\006\011\052\206\110\206\367\015\001\001\013\005  
\000\003\202\002\001\000\124\065\323\242\145\311\331\066\305\123  
\321\264\215\162\064\211\272\247\010\237\351\065\020\271\270\014  
\006\371\144\252\225\226\050\250\310\243\200\334\126\300\277\162  
\115\126\277\177\135\004\325\255\050\133\115\275\363\303\017\025  
\260\161\332\126\215\100\125\127\246\175\142\242\255\023\151\121  
\252\224\120\272\275\000\060\120\365\335\244\116\011\172\224\061  
\153\333\163\003\275\363\332\032\017\214\057\262\311\067\274\124  
\325\013\043\067\365\344\133\067\146\211\117\264\307\005\244\145  
\334\131\060\246\023\053\176\025\355\354\020\027\211\122\311\235  
\337\242\114\355\366\017\036\246\111\260\015\121\263\061\261\121  
\231\313\264\321\043\170\322\113\250\264\035\026\246\240\320\076

\007\176\145\077\045\316\144\116\033\056\113\115\202\205\032\145  
\333\356\342\003\360\131\044\005\217\231\357\171\202\337\356\052  
\067\150\303\152\120\001\131\137\237\150\334\054\121\140\053\135  
\340\122\074\073\160\270\000\323\067\250\076\133\036\166\010\132  
\324\273\166\060\256\371\310\362\216\244\217\012\165\175\032\230  
\341\277\320\066\224\057\074\301\122\323\151\352\032\140\067\214  
\200\333\115\155\306\232\135\215\240\141\121\273\075\015\346\022  
\240\237\157\131\126\164\062\147\012\374\067\006\301\072\344\053  
\216\204\037\332\041\014\111\210\103\323\245\365\202\015\166\206  
\303\054\314\220\273\263\270\253\306\313\256\300\027\121\236\323  
\200\367\044\332\034\354\316\022\203\316\116\066\060\071\165\370  
\164\166\220\202\236\076\100\114\014\024\271\032\036\110\152\260  
\061\352\210\177\200\101\100\123\173\070\113\207\220\140\172\113  
\316\147\106\150\165\167\216\000\135\040\260\344\223\067\155\003  
\337\130\071\350\232\305\244\353\354\141\063\010\205\044\153\117  
\006\351\255\220\245\066\142\154\343\335\175\011\037\063\277\267  
\273\367\311\165\005\367\133\253\372\207\131\257\032\147\020\176  
\204\334\214\160\326\104\351\020\301\330\233\056\321\306\100\152  
\352\346\132\017\020\175\154\373\125\207\272\115\265\161\003\236  
\027\217\170\332\125\075\127\136\042\012\152\230\360\215\010\315  
\335\226\102\132\033\315\272\157\047\270\164\047\250\077\345\240  
\326\163\307\136\057\041

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "ANCERT Certificados Notariales V2"

# Issuer: CN=ANCERT Certificados Notariales V2,O=Agencia Notarial de Certificacion S.L.U. - CIF  
B83395988,C=ES

# Serial Number:09:bd:56:05:2a:13:16:f4:68:4f:74:0e:a9:7d:1c:48

# Subject: CN=ANCERT Certificados Notariales V2,O=Agencia Notarial de Certificacion S.L.U. - CIF  
B83395988,C=ES

# Not Valid Before: Tue May 25 16:56:14 2010

# Not Valid After: Sat May 25 16:56:14 2030

# Fingerprint (MD5): 75:70:cb:6e:6b:d6:9b:7d:90:bb:69:5e:59:f0:62:b4

# Fingerprint (SHA1): 6f:62:de:b8:6c:85:58:5a:e4:2e:47:8d:b4:d7:6d:b3:67:58:5a:e6

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "ANCERT Certificados Notariales V2"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\157\142\336\270\154\205\130\132\344\056\107\215\264\327\155\263  
\147\130\132\346

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL



\165\160\313\156\153\326\233\175\220\273\151\136\131\360\142\264

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\174\061\013\060\011\006\003\125\004\006\023\002\105\123\061  
\101\060\077\006\003\125\004\012\023\070\101\147\145\156\143\151  
\141\040\116\157\164\141\162\151\141\154\040\144\145\040\103\145  
\162\164\151\146\151\143\141\143\151\157\156\040\123\056\114\056  
\125\056\040\055\040\103\111\106\040\102\070\063\063\071\065\071  
\070\070\061\052\060\050\006\003\125\004\003\023\041\101\116\103  
\105\122\124\040\103\145\162\164\151\146\151\143\141\144\157\163  
\040\116\157\164\141\162\151\141\154\145\163\040\126\062

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\011\275\126\005\052\023\026\364\150\117\164\016\251\175  
\034\110

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "ANCERT Certificados CGN V2"

# Issuer: CN=ANCERT Certificados CGN V2,O=Agencia Notarial de Certificacion S.L.U. - CIF B83395988,C=ES

# Serial Number:0f:38:8c:70:fe:a6:95:5d:e9:5d:9c:87:af:79:04:99

# Subject: CN=ANCERT Certificados CGN V2,O=Agencia Notarial de Certificacion S.L.U. - CIF  
B83395988,C=ES

# Not Valid Before: Tue May 25 16:31:22 2010

# Not Valid After: Sat May 25 16:31:23 2030

# Fingerprint (MD5): 92:45:af:c3:89:71:e6:87:1d:8e:5a:20:a6:33:0e:93

# Fingerprint (SHA1): 7e:b1:a0:42:9b:e5:f4:28:ac:2b:93:97:1d:7c:84:48:a5:36:07:0c

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "ANCERT Certificados CGN V2"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\165\061\013\060\011\006\003\125\004\006\023\002\105\123\061  
\101\060\077\006\003\125\004\012\023\070\101\147\145\156\143\151  
\141\040\116\157\164\141\162\151\141\154\040\144\145\040\103\145  
\162\164\151\146\151\143\141\143\151\157\156\040\123\056\114\056  
\125\056\040\055\040\103\111\106\040\102\070\063\063\071\065\071  
\070\070\061\043\060\041\006\003\125\004\003\023\032\101\116\103  
\105\122\124\040\103\145\162\164\151\146\151\143\141\144\157\163  
\040\103\107\116\040\126\062

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\165\061\013\060\011\006\003\125\004\006\023\002\105\123\061  
\101\060\077\006\003\125\004\012\023\070\101\147\145\156\143\151  
\141\040\116\157\164\141\162\151\141\154\040\144\145\040\103\145  
\162\164\151\146\151\143\141\143\151\157\156\040\123\056\114\056  
\125\056\040\055\040\103\111\106\040\102\070\063\063\071\065\071  
\070\070\061\043\060\041\006\003\125\004\003\023\032\101\116\103  
\105\122\124\040\103\145\162\164\151\146\151\143\141\144\157\163  
\040\103\107\116\040\126\062

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\017\070\214\160\376\246\225\135\351\135\234\207\257\171  
\004\231

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\007\004\060\202\004\354\240\003\002\001\002\002\020\017  
\070\214\160\376\246\225\135\351\135\234\207\257\171\004\231\060  
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\165  
\061\013\060\011\006\003\125\004\006\023\002\105\123\061\101\060  
\077\006\003\125\004\012\023\070\101\147\145\156\143\151\141\040  
\116\157\164\141\162\151\141\154\040\144\145\040\103\145\162\164  
\151\146\151\143\141\143\151\157\156\040\123\056\114\056\125\056  
\040\055\040\103\111\106\040\102\070\063\063\071\065\071\070\070  
\061\043\060\041\006\003\125\004\003\023\032\101\116\103\105\122  
\124\040\103\145\162\164\151\146\151\143\141\144\157\163\040\103  
\107\116\040\126\062\060\036\027\015\061\060\060\065\062\065\061\066  
\066\063\061\062\062\132\027\015\063\060\060\065\062\065\061\066  
\063\061\062\063\132\060\165\061\013\060\011\006\003\125\004\006  
\023\002\105\123\061\101\060\077\006\003\125\004\012\023\070\101  
\147\145\156\143\151\141\040\116\157\164\141\162\151\141\154\040  
\144\145\040\103\145\162\164\151\146\151\143\141\143\151\157\156  
\040\123\056\114\056\125\056\040\055\040\103\111\106\040\102\070  
\063\063\071\065\071\070\070\061\043\060\041\006\003\125\004\003  
\023\032\101\116\103\105\122\124\040\103\145\162\164\151\146\151  
\143\141\144\157\163\040\103\107\116\040\126\062\060\202\002\042  
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003  
\202\002\017\000\060\202\002\012\002\202\002\001\000\235\122\160  
\351\047\030\203\312\352\304\231\330\246\341\056\024\257\156\036  
\016\144\312\201\067\125\047\034\027\167\130\147\037\214\311\371  
\302\212\142\145\050\164\233\342\321\276\125\007\166\166\356\174  
\155\116\143\133\036\112\045\165\340\007\241\320\322\202\247\316  
\017\063\353\272\024\300\145\262\112\056\345\145\274\042\322\257  
\032\016\312\313\363\144\145\053\054\231\243\227\213\213\165\060  
\376\146\372\301\117\113\067\120\214\077\363\336\231\172\116\207  
\234\040\106\162\227\376\126\033\146\116\240\202\123\243\134\330  
\050\106\014\005\027\157\070\326\134\237\016\045\042\301\206\343  
\134\032\124\333\256\235\145\175\000\222\337\250\041\041\305\133  
\020\046\164\341\261\163\127\144\174\175\027\003\014\352\367\024

\227\017\371\305\356\135\165\260\305\306\012\013\264\076\111\343  
\031\306\233\104\223\374\132\025\144\012\262\203\377\200\136\210  
\011\320\312\040\243\133\373\333\315\341\032\167\043\030\160\032  
\213\355\104\077\326\032\250\066\070\341\235\057\247\167\304\172  
\263\300\162\262\162\315\036\077\020\136\032\210\164\215\360\022  
\305\367\257\111\334\225\257\053\115\264\220\312\371\356\357\014  
\343\277\026\067\043\123\343\051\372\364\164\151\150\075\127\155  
\024\140\212\144\151\050\144\115\372\066\107\375\270\022\316\303  
\206\252\134\334\146\071\007\117\073\343\343\305\150\256\316\340  
\071\134\040\203\077\022\012\070\263\000\301\134\023\227\042\136  
\072\113\065\231\370\304\036\336\371\210\021\216\204\311\213\062  
\362\322\327\277\042\007\077\140\170\056\165\034\242\272\043\022  
\323\360\117\120\071\354\311\167\047\307\132\052\216\323\271\265  
\164\004\231\025\057\056\206\137\217\006\301\312\352\342\250\037  
\115\175\063\204\221\244\222\303\320\246\110\135\146\032\167\204  
\040\120\234\352\004\013\014\043\226\317\261\234\374\271\272\037  
\227\250\323\253\003\145\057\175\256\124\307\171\342\034\066\335  
\155\322\006\230\001\375\316\374\077\113\303\322\256\377\211\330  
\071\061\003\330\261\144\167\003\306\370\243\215\374\052\171\347  
\020\275\271\155\221\034\076\235\313\274\125\177\042\376\141\204  
\370\330\324\247\041\172\071\136\162\062\353\114\165\002\003\001  
\000\001\243\202\001\216\060\202\001\212\060\017\006\003\125\035  
\023\001\001\377\004\005\060\003\001\001\377\060\202\001\045\006  
\003\125\035\040\004\202\001\034\060\202\001\030\060\202\001\024  
\006\011\053\006\001\004\001\201\223\150\004\060\202\001\005\060  
\045\006\010\053\006\001\005\005\007\002\001\026\031\150\164\164  
\160\072\057\057\167\167\167\056\141\156\143\145\162\164\056\143  
\157\155\057\143\160\163\060\201\333\006\010\053\006\001\005\005  
\007\002\002\060\201\316\060\015\026\006\101\116\103\105\122\124  
\060\003\002\001\001\036\201\274\000\101\000\147\000\145\000\156  
\000\143\000\151\000\141\000\040\000\116\000\157\000\164\000\141  
\000\162\000\151\000\141\000\154\000\040\000\144\000\145\000\040  
\000\103\000\145\000\162\000\164\000\151\000\146\000\151\000\143  
\000\141\000\143\000\151\000\157\000\156\000\056\000\040\000\120  
\000\141\000\163\000\145\000\157\000\040\000\144\000\145\000\154  
\000\240\000\107\000\145\000\156\000\145\000\162\000\141\000\154  
\000\040\000\115\000\141\000\162\000\164\000\151\000\156\000\145  
\000\172\000\040\000\103\000\141\000\155\000\160\000\157\000\163  
\000\040\000\064\000\066\000\040\000\066\000\141\000\040\000\160  
\000\154\000\141\000\156\000\164\000\141\000\040\000\062\000\070  
\000\060\000\061\000\060\000\040\000\115\000\141\000\144\000\162  
\000\151\000\144\060\016\006\003\125\035\017\001\001\377\004\004  
\003\002\001\206\060\035\006\003\125\035\016\004\026\004\024\005  
\156\341\241\232\356\007\257\316\365\264\323\145\075\004\120\342  
\320\233\104\060\037\006\003\125\035\043\004\030\060\026\200\024  
\005\156\341\241\232\356\007\257\316\365\264\323\145\075\004\120  
\342\320\233\104\060\015\006\011\052\206\110\206\367\015\001\001  
\013\005\000\003\202\002\001\000\177\124\100\031\044\312\114\023

\366\023\371\134\142\225\060\325\270\340\223\200\154\324\025\106  
\324\047\076\222\122\252\334\201\143\206\100\333\325\045\257\237  
\223\154\012\365\115\241\376\124\226\135\207\257\021\223\017\213  
\362\343\360\037\112\237\374\251\321\311\120\167\137\230\010\010  
\055\172\213\201\020\314\073\002\124\130\345\306\247\364\367\312  
\350\366\067\006\176\347\021\327\154\205\143\367\250\243\016\342  
\045\142\004\244\362\142\123\234\107\264\247\144\273\201\345\326  
\136\126\021\276\105\021\141\302\146\351\364\015\164\250\253\371  
\133\277\202\262\221\246\120\373\207\176\157\273\310\353\005\242  
\271\020\327\033\102\007\125\317\211\346\277\373\271\360\152\071  
\127\123\160\214\275\113\243\151\277\037\213\246\134\115\145\212  
\271\000\011\350\150\277\011\047\007\115\136\332\122\011\214\345  
\161\223\212\314\205\216\322\067\136\123\334\202\155\013\126\112  
\204\171\012\364\020\045\104\365\157\135\032\146\265\315\325\020  
\113\207\132\116\324\177\344\161\254\356\150\237\274\372\056\130  
\301\304\236\177\244\131\205\340\122\016\362\307\107\165\025\055  
\054\166\214\017\105\005\065\140\370\173\073\167\062\177\050\200  
\011\332\061\274\161\175\341\254\221\315\140\012\171\040\354\156  
\073\267\204\340\162\363\251\112\320\057\344\133\343\322\032\324  
\112\274\365\166\371\177\052\031\110\353\335\016\317\231\126\105  
\270\175\326\011\216\016\316\263\204\150\111\204\124\065\113\344  
\231\033\257\363\250\024\363\124\230\012\200\176\117\274\362\146  
\055\046\377\060\215\247\366\275\333\232\217\345\341\337\273\267  
\062\016\371\222\157\151\343\344\166\323\000\066\361\055\136\307  
\023\137\325\331\152\055\350\321\033\153\166\313\030\156\016\005  
\020\365\132\362\111\033\131\264\205\352\312\031\164\314\273\122  
\342\067\214\302\152\002\045\302\322\161\244\222\333\216\311\326  
\251\156\320\205\050\155\134\155\010\170\002\260\171\014\127\157  
\013\132\001\343\204\204\002\366\317\362\253\143\353\002\152\271  
\313\112\030\325\071\042\074\126\112\252\225\210\346\060\000\037  
\215\041\041\311\127\356\271\267\104\051\210\117\266\053\247\024  
\356\216\356\157\276\026\320\023

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "ANCERT Certificados CGN V2"  
# Issuer: CN=ANCERT Certificados CGN V2,O=Agencia Notarial de Certificacion S.L.U. - CIF B83395988,C=ES  
# Serial Number:0f:38:8c:70:fe:a6:95:5d:e9:5d:9c:87:af:79:04:99  
# Subject: CN=ANCERT Certificados CGN V2,O=Agencia Notarial de Certificacion S.L.U. - CIF  
B83395988,C=ES  
# Not Valid Before: Tue May 25 16:31:22 2010  
# Not Valid After: Sat May 25 16:31:23 2030  
# Fingerprint (MD5): 92:45:af:c3:89:71:e6:87:1d:8e:5a:20:a6:33:0e:93  
# Fingerprint (SHA1): 7e:b1:a0:42:9b:e5:f4:28:ac:2b:93:97:1d:7c:84:48:a5:36:07:0c  
CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

```

CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ANCERT Certificados CGN V2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\176\261\240\102\233\345\364\050\254\053\223\227\035\174\204\110
\245\066\007\014
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\222\105\257\303\211\161\346\207\035\216\132\040\246\063\016\223
END
CKA_ISSUER MULTILINE_OCTAL
\060\165\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\101\060\077\006\003\125\004\012\023\070\101\147\145\156\143\151
\141\040\116\157\164\141\162\151\141\154\040\144\145\040\103\145
\162\164\151\146\151\143\141\143\151\157\156\040\123\056\114\056
\125\056\040\055\040\103\111\106\040\102\070\063\063\071\065\071
\070\070\061\043\060\041\006\003\125\004\003\023\032\101\116\103
\105\122\124\040\103\145\162\164\151\146\151\143\141\144\157\163
\040\103\107\116\040\126\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\017\070\214\160\376\246\225\135\351\135\234\207\257\171
\004\231
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "EE Certification Centre Root CA"
Issuer: 1.2.840.113549.1.9.1=pki@sk.ee,CN=EE Certification Centre Root CA,O=AS
Sertifitseerimiskeskus,C=EE
Serial Number:54:80:f9:a0:73:ed:3f:00:4c:ca:89:d8:e3:71:e6:4a
Subject: 1.2.840.113549.1.9.1=pki@sk.ee,CN=EE Certification Centre Root CA,O=AS
Sertifitseerimiskeskus,C=EE
Not Valid Before: Sat Oct 30 10:10:30 2010
Not Valid After: Tue Dec 17 23:59:59 2030
Fingerprint (MD5): 43:5e:88:d4:7d:1a:4a:7e:fd:84:2e:52:eb:01:d4:6f
Fingerprint (SHA1): c9:a8:b9:e7:55:80:5e:58:e3:53:77:a7:25:eb:af:c3:7b:27:cc:d7
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "EE Certification Centre Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL

```

\060\165\061\013\060\011\006\003\125\004\006\023\002\105\105\061  
\042\060\040\006\003\125\004\012\014\031\101\123\040\123\145\162  
\164\151\146\151\164\163\145\145\162\151\155\151\163\153\145\163  
\153\165\163\061\050\060\046\006\003\125\004\003\014\037\105\105  
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\103  
\145\156\164\162\145\040\122\157\157\164\040\103\101\061\030\060  
\026\006\011\052\206\110\206\367\015\001\011\001\026\011\160\153  
\151\100\163\153\056\145\145

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\165\061\013\060\011\006\003\125\004\006\023\002\105\105\061  
\042\060\040\006\003\125\004\012\014\031\101\123\040\123\145\162  
\164\151\146\151\164\163\145\145\162\151\155\151\163\153\145\163  
\153\165\163\061\050\060\046\006\003\125\004\003\014\037\105\105  
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\103  
\145\156\164\162\145\040\122\157\157\164\040\103\101\061\030\060  
\026\006\011\052\206\110\206\367\015\001\011\001\026\011\160\153  
\151\100\163\153\056\145\145

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\124\200\371\240\163\355\077\000\114\312\211\330\343\161  
\346\112

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\003\060\202\002\353\240\003\002\001\002\002\020\124  
\200\371\240\163\355\077\000\114\312\211\330\343\161\346\112\060  
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\165  
\061\013\060\011\006\003\125\004\006\023\002\105\105\061\042\060  
\040\006\003\125\004\012\014\031\101\123\040\123\145\162\164\151  
\146\151\164\163\145\145\162\151\155\151\163\153\145\163\153\165  
\163\061\050\060\046\006\003\125\004\003\014\037\105\105\040\103  
\145\162\164\151\146\151\143\141\164\151\157\156\040\103\145\156  
\164\162\145\040\122\157\157\164\040\103\101\061\030\060\026\006  
\011\052\206\110\206\367\015\001\011\001\026\011\160\153\151\100  
\163\153\056\145\145\060\042\030\017\062\060\061\060\061\060\063  
\060\061\060\061\060\063\060\132\030\017\062\060\063\060\061\062  
\061\067\062\063\065\071\065\071\132\060\165\061\013\060\011\006  
\003\125\004\006\023\002\105\105\061\042\060\040\006\003\125\004  
\012\014\031\101\123\040\123\145\162\164\151\146\151\164\163\145  
\145\162\151\155\151\163\153\145\163\153\165\163\061\050\060\046  
\006\003\125\004\003\014\037\105\105\040\103\145\162\164\151\146  
\151\143\141\164\151\157\156\040\103\145\156\164\162\145\040\122  
\157\157\164\040\103\101\061\030\060\026\006\011\052\206\110\206  
\367\015\001\011\001\026\011\160\153\151\100\163\153\056\145\145  
\060\202\001\042\060\015\006\011\052\206\110\206\367\015\001\001  
\001\005\000\003\202\001\017\000\060\202\001\012\002\202\001\001  
\000\310\040\300\354\340\305\113\253\007\170\225\363\104\356\373

\013\014\377\164\216\141\273\261\142\352\043\330\253\241\145\062  
\172\353\216\027\117\226\330\012\173\221\242\143\154\307\214\114  
\056\171\277\251\005\374\151\134\225\215\142\371\271\160\355\303  
\121\175\320\223\346\154\353\060\113\341\274\175\277\122\233\316  
\156\173\145\362\070\261\300\242\062\357\142\262\150\340\141\123  
\301\066\225\377\354\224\272\066\256\234\034\247\062\017\345\174  
\264\306\157\164\375\173\030\350\254\127\355\006\040\113\062\060  
\130\133\375\315\250\346\241\374\160\274\216\222\163\333\227\247  
\174\041\256\075\301\365\110\207\154\047\275\237\045\164\201\125  
\260\367\165\366\075\244\144\153\326\117\347\316\100\255\017\335  
\062\323\274\212\022\123\230\311\211\373\020\035\115\176\315\176  
\037\126\015\041\160\205\366\040\203\037\366\272\037\004\217\352  
\167\210\065\304\377\352\116\241\213\115\077\143\033\104\303\104  
\324\045\166\312\267\215\327\036\112\146\144\315\134\305\234\203  
\341\302\010\210\232\354\116\243\361\076\034\054\331\154\035\241  
\113\002\003\001\000\001\243\201\212\060\201\207\060\017\006\003  
\125\035\023\001\001\377\004\005\060\003\001\001\377\060\016\006  
\003\125\035\017\001\001\377\004\004\003\002\001\006\060\035\006  
\003\125\035\016\004\026\004\024\022\362\132\076\352\126\034\277  
\315\006\254\361\361\045\311\251\113\324\024\231\060\105\006\003  
\125\035\045\004\076\060\074\006\010\053\006\001\005\005\007\003  
\002\006\010\053\006\001\005\005\007\003\001\006\010\053\006\001  
\005\005\007\003\003\006\010\053\006\001\005\005\007\003\004\006  
\010\053\006\001\005\005\007\003\010\006\010\053\006\001\005\005  
\007\003\011\060\015\006\011\052\206\110\206\367\015\001\001\005  
\005\000\003\202\001\001\000\173\366\344\300\015\252\031\107\267  
\115\127\243\376\255\273\261\152\325\017\236\333\344\143\305\216  
\241\120\126\223\226\270\070\300\044\042\146\274\123\024\141\225  
\277\320\307\052\226\071\077\175\050\263\020\100\041\152\304\257  
\260\122\167\030\341\226\330\126\135\343\335\066\136\035\247\120  
\124\240\305\052\344\252\214\224\212\117\235\065\377\166\244\006  
\023\221\242\242\175\000\104\077\125\323\202\074\032\325\133\274  
\126\114\042\056\106\103\212\044\100\055\363\022\270\073\160\032  
\244\226\271\032\257\207\101\032\152\030\015\006\117\307\076\156  
\271\051\115\015\111\211\021\207\062\133\346\113\004\310\344\134  
\346\164\163\224\135\026\230\023\225\376\373\333\261\104\345\072  
\160\254\067\153\346\263\063\162\050\311\263\127\240\366\002\026  
\210\006\013\266\246\113\040\050\324\336\075\213\255\067\005\123  
\164\376\156\314\274\103\027\161\136\371\305\314\032\251\141\356  
\367\166\014\363\162\364\162\255\317\162\002\066\007\107\317\357  
\031\120\211\140\314\351\044\225\017\302\313\035\362\157\166\220  
\307\314\165\301\226\305\235

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

```
Trust for "EE Certification Centre Root CA"
Issuer: 1.2.840.113549.1.9.1=pki@sk.ee,CN=EE Certification Centre Root CA,O=AS
Sertifitseerimiskeskus,C=EE
Serial Number:54:80:f9:a0:73:ed:3f:00:4c:ca:89:d8:e3:71:e6:4a
Subject: 1.2.840.113549.1.9.1=pki@sk.ee,CN=EE Certification Centre Root CA,O=AS
Sertifitseerimiskeskus,C=EE
Not Valid Before: Sat Oct 30 10:10:30 2010
Not Valid After: Tue Dec 17 23:59:59 2030
Fingerprint (MD5): 43:5e:88:d4:7d:1a:4a:7e:fd:84:2e:52:eb:01:d4:6f
Fingerprint (SHA1): c9:a8:b9:e7:55:80:5e:58:e3:53:77:a7:25:eb:af:c3:7b:27:cc:d7
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "EE Certification Centre Root CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\311\250\271\347\125\200\136\130\343\123\167\247\045\353\257\303
\173\047\314\327
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\103\136\210\324\175\032\112\176\375\204\056\122\353\001\324\157
END
CKA_ISSUER MULTILINE_OCTAL
\060\165\061\013\060\011\006\003\125\004\006\023\002\105\105\061
\042\060\040\006\003\125\004\012\014\031\101\123\040\123\145\162
\164\151\146\151\164\163\145\145\162\151\155\151\163\153\145\163
\153\165\163\061\050\060\046\006\003\125\004\003\014\037\105\105
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\103
\145\156\164\162\145\040\122\157\157\164\040\103\101\061\030\060
\026\006\011\052\206\110\206\367\015\001\011\001\026\011\160\153
\151\100\163\153\056\145\145
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\124\200\371\240\163\355\077\000\114\312\211\330\343\161
\346\112
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
Certificate "DigiNotar Root CA G2"
Issuer: 1.2.840.113549.1.9.1=info@diginotar.nl,CN=DigiNotar Root CA G2,O=DigiNotar,C=NL
Serial Number:0a:82:bd:1e:14:4e:88:14:d7:5b:1a:55:27:be:bf:3e
Subject: 1.2.840.113549.1.9.1=info@diginotar.nl,CN=DigiNotar Root CA G2,O=DigiNotar,C=NL
Not Valid Before: Fri Jul 03 13:59:02 2009
Not Valid After: Tue Jul 03 13:59:02 2029
```



```
Fingerprint (MD5): c2:96:e0:e4:97:2c:aa:61:c4:9b:9b:77:18:38:5c:9e
Fingerprint (SHA1): 43:d9:bc:b5:68:e0:39:d0:73:a7:4a:71:d8:51:1f:74:76:08:9c:c3
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "DigiNotar Root CA G2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\142\061\013\060\011\006\003\125\004\006\023\002\116\114\061
\022\060\020\006\003\125\004\012\023\011\104\151\147\151\116\157
\164\141\162\061\035\060\033\006\003\125\004\003\023\024\104\151
\147\151\116\157\164\141\162\040\122\157\157\164\040\103\101\040
\107\062\061\040\060\036\006\011\052\206\110\206\367\015\001\011
\001\026\021\151\156\146\157\100\144\151\147\151\156\157\164\141
\162\056\156\154
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\142\061\013\060\011\006\003\125\004\006\023\002\116\114\061
\022\060\020\006\003\125\004\012\023\011\104\151\147\151\116\157
\164\141\162\061\035\060\033\006\003\125\004\003\023\024\104\151
\147\151\116\157\164\141\162\040\122\157\157\164\040\103\101\040
\107\062\061\040\060\036\006\011\052\206\110\206\367\015\001\011
\001\026\021\151\156\146\157\100\144\151\147\151\156\157\164\141
\162\056\156\154
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\012\202\275\036\024\116\210\024\327\133\032\125\047\276
\277\076
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\220\060\202\003\170\240\003\002\001\002\002\020\012
\202\275\036\024\116\210\024\327\133\032\125\047\276\277\076\060
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\142
\061\013\060\011\006\003\125\004\006\023\002\116\114\061\022\060
\020\006\003\125\004\012\023\011\104\151\147\151\116\157\164\141
\162\061\035\060\033\006\003\125\004\003\023\024\104\151\147\151
\116\157\164\141\162\040\122\157\157\164\040\103\101\040\107\062
\061\040\060\036\006\011\052\206\110\206\367\015\001\011\001\026
\021\151\156\146\157\100\144\151\147\151\156\157\164\141\162\056
\156\154\060\036\027\015\060\071\060\067\060\063\061\063\065\071
\060\062\132\027\015\062\071\060\067\060\063\061\063\065\071\060
\062\132\060\142\061\013\060\011\006\003\125\004\006\023\002\116
\114\061\022\060\020\006\003\125\004\012\023\011\104\151\147\151
\116\157\164\141\162\061\035\060\033\006\003\125\004\003\023\024
\104\151\147\151\116\157\164\141\162\040\122\157\157\164\040\103
\101\040\107\062\061\040\060\036\006\011\052\206\110\206\367\015
```

\001\011\001\026\021\151\156\146\157\100\144\151\147\151\156\157  
\164\141\162\056\156\154\060\202\002\042\060\015\006\011\052\206  
\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060\202  
\002\012\002\202\002\001\000\277\256\020\001\373\114\076\266\254  
\003\365\230\317\043\222\050\244\023\075\032\332\240\117\213\145  
\345\056\344\340\246\216\070\165\073\345\263\130\025\334\062\145  
\376\176\166\030\005\331\202\251\266\241\366\375\304\273\153\154  
\173\044\264\201\365\054\075\207\251\300\103\327\334\070\054\340  
\115\022\204\027\274\015\114\323\161\113\063\270\102\004\061\161  
\307\044\036\105\027\320\374\151\052\132\041\225\215\004\207\214  
\300\167\023\142\215\275\344\310\217\212\020\025\175\165\305\240  
\166\145\260\216\001\066\016\210\011\174\240\243\071\045\253\150  
\222\255\346\064\171\357\224\027\322\153\057\040\060\005\251\221  
\071\254\014\134\001\307\245\162\260\217\017\030\215\242\071\332  
\334\064\224\104\245\220\100\105\270\356\347\344\153\364\151\067  
\330\325\242\200\057\325\371\366\115\046\353\123\240\241\205\137  
\320\275\312\055\034\046\256\160\230\075\032\274\161\143\043\231  
\103\211\256\074\073\131\147\123\066\066\102\015\341\145\020\010  
\232\123\271\350\176\341\260\272\043\332\233\042\107\055\263\133  
\175\304\177\002\372\062\116\026\376\372\212\253\131\032\266\142  
\072\275\310\240\133\257\343\223\271\134\206\264\215\347\040\013  
\156\004\004\375\322\245\246\356\375\264\051\031\041\357\102\221  
\043\204\112\053\372\016\112\064\315\260\260\225\172\004\015\250  
\060\136\075\040\173\077\152\003\105\333\005\005\224\220\307\326  
\116\146\204\002\073\200\314\337\342\207\154\144\322\160\137\117  
\160\273\154\103\030\032\351\154\340\200\126\305\305\346\000\255  
\337\115\355\121\215\306\352\011\361\011\012\242\332\123\107\117  
\233\230\323\340\311\276\330\207\134\245\123\243\215\253\323\274  
\056\013\172\277\106\021\143\244\130\025\252\034\156\376\111\006  
\123\002\112\363\323\362\101\315\127\137\225\045\270\341\207\363  
\140\227\177\354\041\211\312\323\166\154\335\121\221\106\063\100  
\330\110\224\055\352\005\162\273\264\034\241\124\267\307\346\351  
\112\176\053\262\327\041\031\137\000\344\232\134\215\241\070\257  
\071\052\354\140\065\110\130\057\171\242\312\114\052\344\176\250  
\021\210\121\355\277\017\073\156\005\261\200\107\071\344\147\342  
\207\141\304\216\254\207\311\002\003\001\000\001\243\102\060\100  
\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001  
\377\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001  
\006\060\035\006\003\125\035\016\004\026\004\024\051\015\333\077  
\007\122\345\013\324\041\150\056\044\112\336\133\132\226\362\041  
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\003  
\202\002\001\000\042\357\356\300\123\343\244\145\343\317\040\256  
\023\342\242\336\327\067\053\124\017\016\233\215\137\230\347\151  
\052\036\073\245\265\131\274\254\176\152\346\226\060\336\227\001  
\375\164\366\137\045\000\367\243\143\212\264\261\015\302\031\030  
\003\316\345\060\041\022\221\060\161\342\221\213\363\334\153\303  
\005\255\314\055\142\230\066\047\135\243\340\025\233\202\075\032  
\150\165\225\335\172\150\052\017\042\151\066\063\267\153\242\050

\206\120\221\125\021\132\022\000\214\235\121\334\340\262\126\275  
\120\105\164\377\224\173\321\327\360\073\344\115\341\104\351\337  
\153\204\342\042\114\225\170\264\224\314\127\011\236\041\207\254  
\226\241\023\033\013\305\231\147\134\035\361\025\265\064\334\274  
\370\036\354\253\077\224\047\262\211\231\374\325\130\076\245\244  
\006\323\103\371\034\066\015\217\002\020\134\365\005\000\167\372  
\247\354\231\126\316\230\005\370\162\246\271\005\033\043\016\016  
\100\147\265\171\112\144\073\201\265\241\212\021\133\237\207\031  
\174\360\224\116\063\243\121\020\325\273\275\121\213\150\030\007  
\256\032\127\377\104\033\307\337\133\323\263\315\371\260\157\115  
\302\313\202\345\213\156\051\320\131\201\234\154\116\375\173\020  
\327\166\020\237\054\105\201\376\135\160\254\274\200\313\362\041  
\302\303\142\042\333\030\116\020\217\105\260\033\232\042\043\244  
\324\034\367\152\242\063\337\371\314\005\250\125\350\275\227\205  
\250\336\263\145\335\116\004\022\170\235\351\312\223\066\052\001  
\112\174\315\340\020\303\224\110\220\241\235\207\350\165\324\040  
\317\207\021\065\352\360\300\167\047\302\122\366\055\157\207\231  
\047\265\371\200\376\356\106\252\377\366\075\305\277\140\252\064  
\141\065\053\363\002\001\212\112\234\012\042\141\376\231\013\005  
\131\362\204\205\252\254\220\067\037\367\237\024\350\323\176\275  
\004\106\077\155\366\340\334\102\116\201\374\135\340\232\126\161  
\230\142\117\343\136\374\171\371\313\314\305\270\134\005\061\310  
\142\366\251\157\377\153\343\360\166\323\352\276\347\101\001\367  
\014\247\104\123\051\340\335\357\331\153\054\130\310\327\230\342  
\035\344\051\263\213\345\154\166\311\143\203\155\032\171\156\163  
\114\340\300\313

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "DigiNotar Root CA G2"  
# Issuer: 1.2.840.113549.1.9.1=info@diginotar.nl,CN=DigiNotar Root CA G2,O=DigiNotar,C=NL  
# Serial Number:0a:82:bd:1e:14:4e:88:14:d7:5b:1a:55:27:be:bf:3e  
# Subject: 1.2.840.113549.1.9.1=info@diginotar.nl,CN=DigiNotar Root CA G2,O=DigiNotar,C=NL  
# Not Valid Before: Fri Jul 03 13:59:02 2009  
# Not Valid After: Tue Jul 03 13:59:02 2029  
# Fingerprint (MD5): c2:96:e0:e4:97:2c:aa:61:c4:9b:9b:77:18:38:5c:9e  
# Fingerprint (SHA1): 43:d9:bc:b5:68:e0:39:d0:73:a7:4a:71:d8:51:1f:74:76:08:9c:c3  
CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "DigiNotar Root CA G2"  
CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL  
\103\331\274\265\150\340\071\320\163\247\112\161\330\121\037\164  
\166\010\234\303

```

END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\302\226\340\344\227\054\252\141\304\233\233\167\030\070\134\236
END
CKA_ISSUER MULTILINE_OCTAL
\060\142\061\013\060\011\006\003\125\004\006\023\002\116\114\061
\022\060\020\006\003\125\004\012\023\011\104\151\147\151\116\157
\164\141\162\061\035\060\033\006\003\125\004\003\023\024\104\151
\147\151\116\157\164\141\162\040\122\157\157\164\040\103\101\040
\107\062\061\040\060\036\006\011\052\206\110\206\367\015\001\011
\001\026\021\151\156\146\157\100\144\151\147\151\156\157\164\141
\162\056\156\154
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\012\202\275\036\024\116\210\024\327\133\032\125\047\276
\277\076
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "Federal Common Policy CA"
Issuer: CN=Federal Common Policy CA,OU=FPKI,O=U.S. Government,C=US
Serial Number: 304 (0x130)
Subject: CN=Federal Common Policy CA,OU=FPKI,O=U.S. Government,C=US
Not Valid Before: Wed Dec 01 16:45:27 2010
Not Valid After: Sun Dec 01 16:45:27 2030
Fingerprint (MD5): 8c:42:b6:36:0d:d0:24:ce:4c:b1:ba:06:d2:6a:6b:c9
Fingerprint (SHA1): 90:5f:94:2f:d9:f2:8f:67:9b:37:81:80:fd:4f:84:63:47:f6:45:c1
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Federal Common Policy CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\131\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\030\060\026\006\003\125\004\012\023\017\125\056\123\056\040\107
\157\166\145\162\156\155\145\156\164\061\015\060\013\006\003\125
\004\013\023\004\106\120\113\111\061\041\060\037\006\003\125\004
\003\023\030\106\145\144\145\162\141\154\040\103\157\155\155\157
\156\040\120\157\154\151\143\171\040\103\101
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\131\061\013\060\011\006\003\125\004\006\023\002\125\123\061

```

\030\060\026\006\003\125\004\012\023\017\125\056\123\056\040\107  
\157\166\145\162\156\155\145\156\164\061\015\060\013\006\003\125  
\004\013\023\004\106\120\113\111\061\041\060\037\006\003\125\004  
\003\023\030\106\145\144\145\162\141\154\040\103\157\155\155\157  
\156\040\120\157\154\151\143\171\040\103\101

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\002\001\060

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\140\060\202\003\110\240\003\002\001\002\002\002\001  
\060\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000  
\060\131\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\030\060\026\006\003\125\004\012\023\017\125\056\123\056\040\107  
\157\166\145\162\156\155\145\156\164\061\015\060\013\006\003\125  
\004\013\023\004\106\120\113\111\061\041\060\037\006\003\125\004  
\003\023\030\106\145\144\145\162\141\154\040\103\157\155\155\157  
\156\040\120\157\154\151\143\171\040\103\101\060\036\027\015\061  
\060\061\062\060\061\061\066\064\065\062\067\132\027\015\063\060  
\061\062\060\061\061\066\064\065\062\067\132\060\131\061\013\060  
\011\006\003\125\004\006\023\002\125\123\061\030\060\026\006\003  
\125\004\012\023\017\125\056\123\056\040\107\157\166\145\162\156  
\155\145\156\164\061\015\060\013\006\003\125\004\013\023\004\106  
\120\113\111\061\041\060\037\006\003\125\004\003\023\030\106\145  
\144\145\162\141\154\040\103\157\155\155\157\156\040\120\157\154  
\151\143\171\040\103\101\060\202\001\042\060\015\006\011\052\206  
\110\206\367\015\001\001\001\005\000\003\202\001\017\000\060\202  
\001\012\002\202\001\001\000\330\165\373\065\026\064\132\101\277  
\132\257\134\060\004\024\034\255\170\104\265\352\046\352\165\141  
\307\315\066\171\370\174\330\275\051\121\146\131\041\343\171\253  
\324\170\276\260\055\260\241\325\262\065\026\043\320\314\036\276  
\016\350\253\334\303\311\326\022\327\247\162\150\030\061\270\027  
\042\262\076\176\272\010\155\306\375\321\130\054\151\240\003\360  
\052\243\366\077\041\045\075\337\267\062\305\216\047\263\043\245  
\340\122\263\135\226\351\260\270\305\305\237\273\305\240\156\202  
\100\273\305\047\005\066\111\326\046\047\151\014\064\217\317\047  
\172\052\012\243\101\137\215\035\003\206\203\025\340\125\301\305  
\230\054\236\354\032\162\334\110\301\076\371\204\322\204\202\301  
\033\303\164\066\267\271\307\066\062\172\370\062\266\320\066\256  
\042\030\061\214\120\163\041\236\376\203\073\060\210\044\343\351  
\301\176\336\355\230\307\037\222\020\212\237\133\142\057\235\244  
\274\325\205\157\072\375\311\123\247\040\113\252\333\040\253\041  
\116\035\015\116\346\230\205\345\253\021\107\135\235\077\304\043  
\300\343\024\006\156\376\235\002\003\001\000\001\243\202\001\060  
\060\202\001\054\060\017\006\003\125\035\023\001\001\377\004\005  
\060\003\001\001\377\060\201\351\006\010\053\006\001\005\005\007  
\001\013\004\201\334\060\201\331\060\077\006\010\053\006\001\005  
\005\007\060\005\206\063\150\164\164\160\072\057\057\150\164\164

\160\056\146\160\153\151\056\147\157\166\057\146\143\160\143\141  
\057\143\141\103\145\162\164\163\111\163\163\165\145\144\102\171  
\146\143\160\143\141\056\160\067\143\060\201\225\006\010\053\006  
\001\005\005\007\060\005\206\201\210\154\144\141\160\072\057\057  
\154\144\141\160\056\146\160\153\151\056\147\157\166\057\143\156  
\075\106\145\144\145\162\141\154\045\062\060\103\157\155\155\157  
\156\045\062\060\120\157\154\151\143\171\045\062\060\103\101\054  
\157\165\075\106\120\113\111\054\157\075\125\056\123\056\045\062  
\060\107\157\166\145\162\156\155\145\156\164\054\143\075\125\123  
\077\143\101\103\145\162\164\151\146\151\143\141\164\145\073\142  
\151\156\141\162\171\054\143\162\157\163\163\103\145\162\164\151  
\146\151\143\141\164\145\120\141\151\162\073\142\151\156\141\162  
\171\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001  
\006\060\035\006\003\125\035\016\004\026\004\024\255\014\172\165  
\134\345\363\230\304\171\230\016\254\050\375\227\364\347\002\374  
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\003  
\202\001\001\000\217\163\332\341\177\200\261\207\366\354\054\317  
\321\204\143\036\366\361\210\267\232\362\021\265\357\124\255\212  
\156\030\067\050\357\134\033\344\357\120\267\154\046\030\043\042  
\115\035\046\107\040\351\011\234\342\160\142\161\253\021\317\221  
\211\350\263\365\052\240\107\300\024\313\116\102\301\335\014\016  
\033\360\207\133\354\345\167\327\252\340\124\327\105\364\205\076  
\354\264\035\336\174\212\177\133\115\234\226\212\320\242\062\237  
\332\154\061\014\370\244\357\176\163\350\221\334\010\172\160\132  
\240\257\142\201\131\370\000\164\242\310\335\124\312\101\126\107  
\275\351\300\117\355\040\335\343\245\011\337\256\050\302\374\321  
\310\027\330\022\307\157\336\056\351\275\232\221\362\074\132\224  
\056\221\042\200\211\241\214\130\314\203\172\046\031\165\002\245  
\016\175\012\046\163\121\352\206\313\007\250\310\375\143\132\065  
\233\322\257\277\117\061\110\301\204\160\333\065\173\232\031\017  
\345\217\364\152\014\157\063\331\353\034\160\242\015\343\271\120  
\003\141\002\377\112\354\222\244\334\055\356\052\064\223\007\267  
\054\347\030\217

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "Federal Common Policy CA"  
# Issuer: CN=Federal Common Policy CA,OU=FPKI,O=U.S. Government,C=US  
# Serial Number: 304 (0x130)  
# Subject: CN=Federal Common Policy CA,OU=FPKI,O=U.S. Government,C=US  
# Not Valid Before: Wed Dec 01 16:45:27 2010  
# Not Valid After: Sun Dec 01 16:45:27 2030  
# Fingerprint (MD5): 8c:42:b6:36:0d:d0:24:ce:4c:b1:ba:06:d2:6a:6b:c9  
# Fingerprint (SHA1): 90:5f:94:2f:d9:f2:8f:67:9b:37:81:80:fd:4f:84:63:47:f6:45:c1  
CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

```

CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Federal Common Policy CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\220\137\224\057\331\362\217\147\233\067\201\200\375\117\204\143
\107\366\105\301
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\214\102\266\066\015\320\044\316\114\261\272\006\322\152\153\311
END
CKA_ISSUER MULTILINE_OCTAL
\060\131\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\030\060\026\006\003\125\004\012\023\017\125\056\123\056\040\107
\157\166\145\162\156\155\145\156\164\061\015\060\013\006\003\125
\004\013\023\004\106\120\113\111\061\041\060\037\006\003\125\004
\003\023\030\106\145\144\145\162\141\154\040\103\157\155\155\157
\156\040\120\157\154\151\143\171\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\002\001\060
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

```

# Microsoft Code Signing Only Certificate

# Certificate "Autoridad de Certificacion Raiz del Estado Venezolano"

# Issuer: 1.2.840.113549.1.9.1=acraiz@suscerte.gob.ve,OU=Superintendencia de Servicios de Certificacion Electronica,O=Sistema Nacional de Certificacion Electronica,ST=Distrito Capital,L=Caracas,C=VE,CN=Autoridad de Certificacion Raiz del Estado Venezolano

# Serial Number: 10 (0xa)

# Subject: 1.2.840.113549.1.9.1=acraiz@suscerte.gob.ve,OU=Superintendencia de Servicios de Certificacion Electronica,O=Sistema Nacional de Certificacion Electronica,ST=Distrito Capital,L=Caracas,C=VE,CN=Autoridad de Certificacion Raiz del Estado Venezolano

# Not Valid Before: Tue Dec 28 16:41:36 2010

# Not Valid After: Mon Dec 23 23:59:59 2030

# Fingerprint (MD5): 96:14:69:08:a8:36:59:d7:a0:35:14:89:58:50:5b:ab

# Fingerprint (SHA1): 39:8e:be:9c:0f:46:c0:79:c3:c7:af:e0:7a:2f:dd:9f:ae:5f:8a:5c

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "Autoridad de Certificacion Raiz del Estado Venezolano"
```

```
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
```

```
CKA_SUBJECT MULTILINE_OCTAL
```

```
\060\202\001\036\061\076\060\074\006\003\125\004\003\023\065\101
```

\165\164\157\162\151\144\141\144\040\144\145\040\103\145\162\164  
\151\146\151\143\141\143\151\157\156\040\122\141\151\172\040\144  
\145\154\040\105\163\164\141\144\157\040\126\145\156\145\172\157  
\154\141\156\157\061\013\060\011\006\003\125\004\006\023\002\126  
\105\061\020\060\016\006\003\125\004\007\023\007\103\141\162\141  
\143\141\163\061\031\060\027\006\003\125\004\010\023\020\104\151  
\163\164\162\151\164\157\040\103\141\160\151\164\141\154\061\066  
\060\064\006\003\125\004\012\023\055\123\151\163\164\145\155\141  
\040\116\141\143\151\157\156\141\154\040\144\145\040\103\145\162  
\164\151\146\151\143\141\143\151\157\156\040\105\154\145\143\164  
\162\157\156\151\143\141\061\103\060\101\006\003\125\004\013\023  
\072\123\165\160\145\162\151\156\164\145\156\144\145\156\143\151  
\141\040\144\145\040\123\145\162\166\151\143\151\157\163\040\144  
\145\040\103\145\162\164\151\146\151\143\141\143\151\157\156\040  
\105\154\145\143\164\162\157\156\151\143\141\061\045\060\043\006  
\011\052\206\110\206\367\015\001\011\001\026\026\141\143\162\141  
\151\172\100\163\165\163\143\145\162\164\145\056\147\157\142\056  
\166\145

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\202\001\036\061\076\060\074\006\003\125\004\003\023\065\101  
\165\164\157\162\151\144\141\144\040\144\145\040\103\145\162\164  
\151\146\151\143\141\143\151\157\156\040\122\141\151\172\040\144  
\145\154\040\105\163\164\141\144\157\040\126\145\156\145\172\157  
\154\141\156\157\061\013\060\011\006\003\125\004\006\023\002\126  
\105\061\020\060\016\006\003\125\004\007\023\007\103\141\162\141  
\143\141\163\061\031\060\027\006\003\125\004\010\023\020\104\151  
\163\164\162\151\164\157\040\103\141\160\151\164\141\154\061\066  
\060\064\006\003\125\004\012\023\055\123\151\163\164\145\155\141  
\040\116\141\143\151\157\156\141\154\040\144\145\040\103\145\162  
\164\151\146\151\143\141\143\151\157\156\040\105\154\145\143\164  
\162\157\156\151\143\141\061\103\060\101\006\003\125\004\013\023  
\072\123\165\160\145\162\151\156\164\145\156\144\145\156\143\151  
\141\040\144\145\040\123\145\162\166\151\143\151\157\163\040\144  
\145\040\103\145\162\164\151\146\151\143\141\143\151\157\156\040  
\105\154\145\143\164\162\157\156\151\143\141\061\045\060\043\006  
\011\052\206\110\206\367\015\001\011\001\026\026\141\143\162\141  
\151\172\100\163\165\163\143\145\162\164\145\056\147\157\142\056  
\166\145

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\012

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\011\230\060\202\007\200\240\003\002\001\002\002\001\012  
\060\015\006\011\052\206\110\206\367\015\001\001\014\005\000\060  
\202\001\036\061\076\060\074\006\003\125\004\003\023\065\101\165



\164\157\162\151\144\141\144\040\144\145\040\103\145\162\164\151  
\146\151\143\141\143\151\157\156\040\122\141\151\172\040\144\145  
\154\040\105\163\164\141\144\157\040\126\145\156\145\172\157\154  
\141\156\157\061\013\060\011\006\003\125\004\006\023\002\126\105  
\061\020\060\016\006\003\125\004\007\023\007\103\141\162\141\143  
\141\163\061\031\060\027\006\003\125\004\010\023\020\104\151\163  
\164\162\151\164\157\040\103\141\160\151\164\141\154\061\066\060  
\064\006\003\125\004\012\023\055\123\151\163\164\145\155\141\040  
\116\141\143\151\157\156\141\154\040\144\145\040\103\145\162\164  
\151\146\151\143\141\143\151\157\156\040\105\154\145\143\164\162  
\157\156\151\143\141\061\103\060\101\006\003\125\004\013\023\072  
\123\165\160\145\162\151\156\164\145\156\144\145\156\143\151\141  
\040\144\145\040\123\145\162\166\151\143\151\157\163\040\144\145  
\040\103\145\162\164\151\146\151\143\141\143\151\157\156\040\105  
\154\145\143\164\162\157\156\151\143\141\061\045\060\043\006\011  
\052\206\110\206\367\015\001\011\001\026\026\141\143\162\141\151  
\172\100\163\165\163\143\145\162\164\145\056\147\157\142\056\166  
\145\060\036\027\015\061\060\061\062\062\070\061\066\064\061\063  
\066\132\027\015\063\060\061\062\062\063\062\063\065\071\065\071  
\132\060\202\001\036\061\076\060\074\006\003\125\004\003\023\065  
\101\165\164\157\162\151\144\141\144\040\144\145\040\103\145\162  
\164\151\146\151\143\141\143\151\157\156\040\122\141\151\172\040  
\144\145\154\040\105\163\164\141\144\157\040\126\145\156\145\172  
\157\154\141\156\157\061\013\060\011\006\003\125\004\006\023\002  
\126\105\061\020\060\016\006\003\125\004\007\023\007\103\141\162  
\141\143\141\163\061\031\060\027\006\003\125\004\010\023\020\104  
\151\163\164\162\151\164\157\040\103\141\160\151\164\141\154\061  
\066\060\064\006\003\125\004\012\023\055\123\151\163\164\145\155  
\141\040\116\141\143\151\157\156\141\154\040\144\145\040\103\145  
\162\164\151\146\151\143\141\143\151\157\156\040\105\154\145\143  
\164\162\157\156\151\143\141\061\103\060\101\006\003\125\004\013  
\023\072\123\165\160\145\162\151\156\164\145\156\144\145\156\143  
\151\141\040\144\145\040\123\145\162\166\151\143\151\157\163\040  
\144\145\040\103\145\162\164\151\146\151\143\141\143\151\157\156  
\040\105\154\145\143\164\162\157\156\151\143\141\061\045\060\043  
\006\011\052\206\110\206\367\015\001\011\001\026\026\141\143\162  
\141\151\172\100\163\165\163\143\145\162\164\145\056\147\157\142  
\056\166\145\060\202\002\042\060\015\006\011\052\206\110\206\367  
\015\001\001\001\005\000\003\202\002\017\000\060\202\002\012\002  
\202\002\001\000\301\073\357\023\122\361\231\126\343\264\154\005  
\341\032\151\026\141\046\206\170\257\016\374\345\100\005\012\343  
\331\070\005\114\250\324\265\300\306\052\317\057\171\253\241\244  
\120\357\065\021\037\356\202\044\027\374\243\034\253\376\007\006  
\177\067\177\007\130\133\023\331\177\000\137\053\260\117\332\237  
\311\260\130\063\141\341\117\320\025\316\056\153\350\044\214\345  
\045\276\205\133\355\114\077\001\201\216\346\231\030\122\046\131  
\233\022\230\145\034\225\276\165\231\026\014\144\104\341\367\362  
\171\010\264\341\107\127\261\112\334\107\102\233\160\113\072\332

\314\321\151\221\006\077\316\150\373\371\206\115\003\334\203\242  
\272\025\026\376\254\311\266\016\147\263\261\064\072\073\316\104  
\213\243\216\110\356\003\060\267\032\226\147\305\144\045\231\002  
\363\352\164\165\176\246\222\025\023\321\000\025\353\206\134\364  
\173\031\210\177\350\056\021\044\136\070\153\201\235\274\160\136  
\367\061\162\052\057\035\137\310\316\044\074\175\162\070\230\277  
\107\275\247\063\002\373\017\344\235\352\146\140\043\115\371\117  
\033\207\135\315\277\270\354\027\174\252\353\116\066\211\017\077  
\011\247\240\335\172\313\016\223\022\040\220\245\321\214\377\205  
\053\174\336\336\176\015\120\204\106\204\144\155\312\361\043\053  
\336\177\332\015\066\267\243\336\142\046\025\032\352\372\256\344  
\270\366\175\021\001\244\222\323\362\311\157\245\363\150\000\036  
\322\151\216\331\353\347\022\254\110\053\014\266\231\224\115\075  
\360\025\133\131\167\300\051\326\211\114\053\310\025\072\072\306  
\305\160\121\153\102\157\264\323\003\242\161\173\316\114\160\114  
\152\040\225\001\126\123\157\324\122\057\050\276\054\235\145\227  
\062\131\073\172\152\334\204\142\210\030\367\360\332\050\243\355  
\231\065\263\004\162\044\240\232\050\073\141\166\224\162\153\235  
\111\124\057\055\042\376\143\017\222\251\254\062\173\074\031\270  
\004\233\247\267\177\322\273\255\103\237\135\363\134\345\154\313  
\167\047\274\201\347\256\353\117\142\052\043\047\120\362\240\126  
\223\347\346\137\070\041\137\357\305\211\326\054\207\366\212\373  
\066\173\133\056\274\220\241\356\314\114\065\126\251\032\267\220  
\306\263\345\163\002\003\001\000\001\243\202\002\333\060\202\002  
\327\060\022\006\003\125\035\023\001\001\377\004\010\060\006\001  
\001\377\002\001\002\060\067\006\003\125\035\022\004\060\060\056  
\202\017\163\165\163\143\145\162\164\145\056\147\157\142\056\166  
\145\240\033\006\005\140\206\136\002\002\240\022\014\020\122\111  
\106\055\107\055\062\060\060\060\064\060\063\066\055\060\060\035  
\006\003\125\035\016\004\026\004\024\255\273\042\035\306\340\322  
\001\250\375\166\120\122\223\355\230\301\115\256\323\060\202\001  
\120\006\003\125\035\043\004\202\001\107\060\202\001\103\200\024  
\255\273\042\035\306\340\322\001\250\375\166\120\122\223\355\230  
\301\115\256\323\241\202\001\046\244\202\001\042\060\202\001\036  
\061\076\060\074\006\003\125\004\003\023\065\101\165\164\157\162  
\151\144\141\144\040\144\145\040\103\145\162\164\151\146\151\143  
\141\143\151\157\156\040\122\141\151\172\040\144\145\154\040\105  
\163\164\141\144\157\040\126\145\156\145\172\157\154\141\156\157  
\061\013\060\011\006\003\125\004\006\023\002\126\105\061\020\060  
\016\006\003\125\004\007\023\007\103\141\162\141\143\141\163\061  
\031\060\027\006\003\125\004\010\023\020\104\151\163\164\162\151  
\164\157\040\103\141\160\151\164\141\154\061\066\060\064\006\003  
\125\004\012\023\055\123\151\163\164\145\155\141\040\116\141\143  
\151\157\156\141\154\040\144\145\040\103\145\162\164\151\146\151  
\143\141\143\151\157\156\040\105\154\145\143\164\162\157\156\151  
\143\141\061\103\060\101\006\003\125\004\013\023\072\123\165\160  
\145\162\151\156\164\145\156\144\145\156\143\151\141\040\144\145  
\040\123\145\162\166\151\143\151\157\163\040\144\145\040\103\145

\162\164\151\146\151\143\141\143\151\157\156\040\105\154\145\143  
\164\162\157\156\151\143\141\061\045\060\043\006\011\052\206\110  
\206\367\015\001\011\001\026\026\141\143\162\141\151\172\100\163  
\165\163\143\145\162\164\145\056\147\157\142\056\166\145\202\001  
\012\060\013\006\003\125\035\017\004\004\003\002\001\006\060\067  
\006\003\125\035\021\004\060\060\056\202\017\163\165\163\143\145  
\162\164\145\056\147\157\142\056\166\145\240\033\006\005\140\206  
\136\002\002\240\022\014\020\122\111\106\055\107\055\062\060\060  
\060\064\060\063\066\055\060\060\124\006\003\125\035\037\004\115  
\060\113\060\044\240\042\240\040\206\036\150\164\164\160\072\057  
\057\167\167\167\056\163\165\163\143\145\162\164\145\056\147\157  
\142\056\166\145\057\154\143\162\060\043\240\041\240\037\206\035  
\154\144\141\160\072\057\057\141\143\162\141\151\172\056\163\165  
\163\143\145\162\164\145\056\147\157\142\056\166\145\060\067\006  
\010\053\006\001\005\005\007\001\001\004\053\060\051\060\047\006  
\010\053\006\001\005\005\007\060\001\206\033\150\164\164\160\072  
\057\057\157\143\163\160\056\163\165\163\143\145\162\164\145\056  
\147\157\142\056\166\145\060\100\006\003\125\035\040\004\071\060  
\067\060\065\006\005\140\206\136\001\002\060\054\060\052\006\010  
\053\006\001\005\005\007\002\001\026\036\150\164\164\160\072\057  
\057\167\167\167\056\163\165\163\143\145\162\164\145\056\147\157  
\142\056\166\145\057\144\160\143\060\015\006\011\052\206\110\206  
\367\015\001\001\014\005\000\003\202\002\001\000\034\131\020\345  
\136\244\121\301\107\273\145\262\013\125\342\057\251\243\047\274  
\341\074\212\307\154\003\126\243\251\051\242\233\212\225\330\037  
\367\266\022\140\026\276\172\364\375\003\201\117\375\201\201\252  
\117\201\160\036\056\357\300\222\022\173\273\017\205\210\304\371  
\035\101\265\272\044\052\303\050\046\023\312\371\000\373\327\303  
\134\371\150\351\033\301\030\042\311\242\154\144\303\370\071\303  
\116\041\335\326\302\336\345\266\054\311\134\070\360\336\136\152  
\344\047\364\270\063\304\313\141\222\063\123\250\314\374\235\315  
\123\373\050\013\357\355\177\260\217\164\042\266\065\127\200\250  
\256\005\256\051\012\073\262\244\375\075\343\324\301\220\366\077  
\316\274\344\104\376\321\301\176\050\057\375\000\044\062\040\210  
\304\157\030\173\221\016\110\220\274\226\142\140\201\155\024\000  
\032\121\272\265\135\151\215\141\107\034\054\254\116\105\040\251  
\110\105\243\207\111\243\170\220\335\066\102\177\330\166\157\375  
\155\203\001\306\371\177\230\040\177\226\056\042\140\253\242\047  
\300\260\065\044\320\311\277\063\231\042\123\016\156\037\142\114  
\046\374\044\063\312\301\003\314\251\027\141\143\063\044\314\150  
\100\357\257\242\342\205\303\210\060\323\105\033\356\126\352\126  
\012\017\012\107\233\060\131\330\111\321\060\220\014\047\052\046  
\010\050\134\062\037\047\327\255\013\111\345\027\121\143\317\346  
\015\073\140\121\032\275\103\011\120\346\221\265\143\346\144\227  
\252\013\227\023\001\006\206\134\245\037\225\276\120\216\013\262  
\322\144\177\333\253\114\346\103\306\344\205\215\152\376\215\376  
\273\224\125\036\221\123\047\010\323\272\147\075\072\241\311\301  
\305\024\272\371\103\134\305\216\041\214\202\242\375\052\062\045

```
\325\026\214\025\126\300\230\374\056\262\216\031\244\026\161\303
\113\335\161\376\161\354\042\035\360\301\214\230\201\207\264\277
\002\270\304\060\061\107\302\300\260\257\173\063\143\012\335\254
\105\233\301\314\200\207\364\331\230\136\234\206\376\232\004\377
\146\112\374\173\141\124\276\127\143\005\007\306\247\001\165\131
\344\156\071\073\000\364\252\235\363\237\210\277\317\321\045\053
\337\177\163\355\026\206\251\220\145\017\160\051
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE
```

# Microsoft Code Signing Only Certificate

# Trust for "Autoridad de Certificacion Raiz del Estado Venezolano"

# Issuer: 1.2.840.113549.1.9.1=acraiz@suscerte.gob.ve,OU=Superintendencia de Servicios de Certificacion Electronica,O=Sistema Nacional de Certificacion Electronica,ST=Distrito Capital,L=Caracas,C=VE,CN=Autoridad de Certificacion Raiz del Estado Venezolano

# Serial Number: 10 (0xa)

# Subject: 1.2.840.113549.1.9.1=acraiz@suscerte.gob.ve,OU=Superintendencia de Servicios de Certificacion Electronica,O=Sistema Nacional de Certificacion Electronica,ST=Distrito Capital,L=Caracas,C=VE,CN=Autoridad de Certificacion Raiz del Estado Venezolano

# Not Valid Before: Tue Dec 28 16:41:36 2010

# Not Valid After: Mon Dec 23 23:59:59 2030

# Fingerprint (MD5): 96:14:69:08:a8:36:59:d7:a0:35:14:89:58:50:5b:ab

# Fingerprint (SHA1): 39:8e:be:9c:0f:46:c0:79:c3:c7:af:e0:7a:2f:dd:9f:ae:5f:8a:5c

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "Autoridad de Certificacion Raiz del Estado Venezolano"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\071\216\276\234\017\106\300\171\303\307\257\340\172\057\335\237
\256\137\212\134
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\226\024\151\010\250\066\131\327\240\065\024\211\130\120\133\253
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\202\001\036\061\076\060\074\006\003\125\004\003\023\065\101
\165\164\157\162\151\144\141\144\040\144\145\040\103\145\162\164
\151\146\151\143\141\143\151\157\156\040\122\141\151\172\040\144
\145\154\040\105\163\164\141\144\157\040\126\145\156\145\172\157
\154\141\156\157\061\013\060\011\006\003\125\004\006\023\002\126
\105\061\020\060\016\006\003\125\004\007\023\007\103\141\162\141
\143\141\163\061\031\060\027\006\003\125\004\010\023\020\104\151
\163\164\162\151\164\157\040\103\141\160\151\164\141\154\061\066
\060\064\006\003\125\004\012\023\055\123\151\163\164\145\155\141
\040\116\141\143\151\157\156\141\154\040\144\145\040\103\145\162
```

```
\164\151\146\151\143\141\143\151\157\156\040\105\154\145\143\164
\162\157\156\151\143\141\061\103\060\101\006\003\125\004\013\023
\072\123\165\160\145\162\151\156\164\145\156\144\145\156\143\151
\141\040\144\145\040\123\145\162\166\151\143\151\157\163\040\144
\145\040\103\145\162\164\151\146\151\143\141\143\151\157\156\040
\105\154\145\143\164\162\157\156\151\143\141\061\045\060\043\006
\011\052\206\110\206\367\015\001\011\001\026\026\141\143\162\141
\151\172\100\163\165\163\143\145\162\164\145\056\147\157\142\056
\166\145
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\001\012
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "China Internet Network Information Center EV Certificates Root"

# Issuer: CN=China Internet Network Information Center EV Certificates Root,O=China Internet Network Information Center,C=CN

# Serial Number:48:9f:00:01

# Subject: CN=China Internet Network Information Center EV Certificates Root,O=China Internet Network Information Center,C=CN

# Not Valid Before: Tue Aug 31 07:11:25 2010

# Not Valid After: Sat Aug 31 07:11:25 2030

# Fingerprint (MD5): 55:5d:63:00:97:bd:6a:97:f5:67:ab:4b:fb:6e:63:15

# Fingerprint (SHA1): 4f:99:aa:93:fb:2b:d1:37:26:a1:99:4a:ce:7f:f0:05:f2:93:5d:1e

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "China Internet Network Information Center EV Certificates Root"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

```
\060\201\212\061\013\060\011\006\003\125\004\006\023\002\103\116
\061\062\060\060\006\003\125\004\012\014\051\103\150\151\156\141
\040\111\156\164\145\162\156\145\164\040\116\145\164\167\157\162
\153\040\111\156\146\157\162\155\141\164\151\157\156\040\103\145
\156\164\145\162\061\107\060\105\006\003\125\004\003\014\076\103
\150\151\156\141\040\111\156\164\145\162\156\145\164\040\116\145
\164\167\157\162\153\040\111\156\146\157\162\155\141\164\151\157
\156\040\103\145\156\164\145\162\040\105\126\040\103\145\162\164
\151\146\151\143\141\164\145\163\040\122\157\157\164
```

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\212\061\013\060\011\006\003\125\004\006\023\002\103\116  
\061\062\060\060\006\003\125\004\012\014\051\103\150\151\156\141  
\040\111\156\164\145\162\156\145\164\040\116\145\164\167\157\162  
\153\040\111\156\146\157\162\155\141\164\151\157\156\040\103\145  
\156\164\145\162\061\107\060\105\006\003\125\004\003\014\076\103  
\150\151\156\141\040\111\156\164\145\162\156\145\164\040\116\145  
\164\167\157\162\153\040\111\156\146\157\162\155\141\164\151\157  
\156\040\103\145\156\164\145\162\040\105\126\040\103\145\162\164  
\151\146\151\143\141\164\145\163\040\122\157\157\164

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\004\110\237\000\001

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\367\060\202\002\337\240\003\002\001\002\002\004\110  
\237\000\001\060\015\006\011\052\206\110\206\367\015\001\001\005  
\005\000\060\201\212\061\013\060\011\006\003\125\004\006\023\002  
\103\116\061\062\060\060\006\003\125\004\012\014\051\103\150\151  
\156\141\040\111\156\164\145\162\156\145\164\040\116\145\164\167  
\157\162\153\040\111\156\146\157\162\155\141\164\151\157\156\040  
\103\145\156\164\145\162\061\107\060\105\006\003\125\004\003\014  
\076\103\150\151\156\141\040\111\156\164\145\162\156\145\164\040  
\116\145\164\167\157\162\153\040\111\156\146\157\162\155\141\164  
\151\157\156\040\103\145\156\164\145\162\040\105\126\040\103\145  
\162\164\151\146\151\143\141\164\145\163\040\122\157\157\164\060  
\036\027\015\061\060\060\070\063\061\060\067\061\061\062\065\132\060  
\027\015\063\060\060\070\063\061\060\067\061\061\062\065\132\060  
\201\212\061\013\060\011\006\003\125\004\006\023\002\103\116\061  
\062\060\060\006\003\125\004\012\014\051\103\150\151\156\141\040  
\111\156\164\145\162\156\145\164\040\116\145\164\167\157\162\153  
\040\111\156\146\157\162\155\141\164\151\157\156\040\103\145\156  
\164\145\162\061\107\060\105\006\003\125\004\003\014\076\103\150  
\151\156\141\040\111\156\164\145\162\156\145\164\040\116\145\164  
\167\157\162\153\040\111\156\146\157\162\155\141\164\151\157\156  
\040\103\145\156\164\145\162\040\105\126\040\103\145\162\164\151  
\146\151\143\141\164\145\163\040\122\157\157\164\060\202\001\042  
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003  
\202\001\017\000\060\202\001\012\002\202\001\001\000\233\176\163  
\356\275\073\170\252\144\103\101\365\120\337\224\362\056\262\215  
\112\216\106\124\322\041\022\310\071\062\102\006\351\203\325\237  
\122\355\345\147\003\073\124\301\214\231\231\314\351\300\017\377  
\015\331\204\021\262\270\321\313\133\334\036\371\150\061\144\341  
\233\372\164\353\150\271\040\225\367\306\017\215\107\254\132\006  
\335\141\253\342\354\330\237\027\055\234\312\074\065\227\125\161  
\315\103\205\261\107\026\365\054\123\200\166\317\323\000\144\275  
\100\231\335\314\330\333\304\237\326\023\137\101\203\213\371\015  
\207\222\126\064\154\032\020\013\027\325\132\034\227\130\204\074  
\204\032\056\134\221\064\156\031\137\177\027\151\305\145\357\153

\041\306\325\120\072\277\141\271\005\215\357\157\064\072\262\157  
\024\143\277\026\073\233\251\052\375\267\053\070\146\006\305\054  
\342\252\147\036\105\247\215\004\146\102\366\217\053\357\210\040  
\151\217\062\214\024\163\332\053\206\221\143\042\232\362\247\333  
\316\211\213\253\135\307\024\301\133\060\152\037\261\267\236\056  
\201\001\002\355\317\226\136\143\333\250\346\070\267\002\003\001  
\000\001\243\143\060\141\060\037\006\003\125\035\043\004\030\060  
\026\200\024\174\162\113\071\307\300\333\142\245\117\233\252\030  
\064\222\242\312\203\202\131\060\017\006\003\125\035\023\001\001  
\377\004\005\060\003\001\001\377\060\016\006\003\125\035\017\001  
\001\377\004\004\003\002\001\006\060\035\006\003\125\035\016\004  
\026\004\024\174\162\113\071\307\300\333\142\245\117\233\252\030  
\064\222\242\312\203\202\131\060\015\006\011\052\206\110\206\367  
\015\001\001\005\005\000\003\202\001\001\000\052\303\307\103\067  
\217\335\255\244\262\014\356\334\024\155\217\050\244\230\111\313  
\014\200\352\363\355\043\146\165\175\305\323\041\147\171\321\163  
\305\265\003\267\130\254\014\124\057\306\126\023\017\061\332\006  
\347\145\073\035\157\066\333\310\035\371\375\200\006\312\243\075  
\146\026\250\235\114\026\175\300\225\106\265\121\344\342\037\327  
\352\006\115\143\215\226\214\357\347\063\127\102\072\353\214\301  
\171\310\115\166\175\336\366\261\267\201\340\240\371\241\170\106  
\027\032\126\230\360\116\075\253\034\355\354\071\334\007\110\367  
\143\376\006\256\302\244\134\152\133\062\210\305\307\063\205\254  
\146\102\107\302\130\044\231\341\345\076\345\165\054\216\103\326  
\135\074\170\036\250\225\202\051\120\321\321\026\272\357\301\276  
\172\331\264\330\314\036\114\106\341\167\261\061\253\275\052\310  
\316\217\156\241\135\177\003\165\064\344\255\211\105\124\136\276  
\256\050\245\273\077\170\171\353\163\263\012\015\375\276\311\367  
\126\254\366\267\355\057\233\041\051\307\070\266\225\304\004\362  
\303\055\375\024\052\220\231\271\007\314\237

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "China Internet Network Information Center EV Certificates Root"

# Issuer: CN=China Internet Network Information Center EV Certificates Root,O=China Internet Network  
Information Center,C=CN

# Serial Number:48:9f:00:01

# Subject: CN=China Internet Network Information Center EV Certificates Root,O=China Internet Network  
Information Center,C=CN

# Not Valid Before: Tue Aug 31 07:11:25 2010

# Not Valid After: Sat Aug 31 07:11:25 2030

# Fingerprint (MD5): 55:5d:63:00:97:bd:6a:97:f5:67:ab:4b:fb:6e:63:15

# Fingerprint (SHA1): 4f:99:aa:93:fb:2b:d1:37:26:a1:99:4a:ce:7f:f0:05:f2:93:5d:1e

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

```

CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "China Internet Network Information Center EV Certificates Root"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\117\231\252\223\373\053\321\067\046\241\231\112\316\177\360\005
\362\223\135\036
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\125\135\143\000\227\275\152\227\365\147\253\113\373\156\143\025
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\212\061\013\060\011\006\003\125\004\006\023\002\103\116
\061\062\060\060\006\003\125\004\012\014\051\103\150\151\156\141
\040\111\156\164\145\162\156\145\164\040\116\145\164\167\157\162
\153\040\111\156\146\157\162\155\141\164\151\157\156\040\103\145
\156\164\145\162\061\107\060\105\006\003\125\004\003\014\076\103
\150\151\156\141\040\111\156\164\145\162\156\145\164\040\116\145
\164\167\157\162\153\040\111\156\146\157\162\155\141\164\151\157
\156\040\103\145\156\164\145\162\040\105\126\040\103\145\162\164
\151\146\151\143\141\164\145\163\040\122\157\157\164
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\004\110\237\000\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

```

```

Microsoft Code Signing Only Certificate
Certificate "Verizon Global Root CA"
Issuer: CN=Verizon Global Root CA,OU=OmniRoot,O=Verizon Business,C=US
Serial Number: 1 (0x1)
Subject: CN=Verizon Global Root CA,OU=OmniRoot,O=Verizon Business,C=US
Not Valid Before: Thu Jul 30 14:27:04 2009
Not Valid After: Sun Jul 30 14:27:04 2034
Fingerprint (MD5): f4:c3:f3:e9:53:c2:94:65:27:3d:52:89:f1:8e:5b:1c
Fingerprint (SHA1): 91:21:98:ee:f2:3d:ca:c4:09:39:31:2f:ee:97:dd:56:0b:ae:49:b1
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Verizon Global Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\134\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\031\060\027\006\003\125\004\012\014\020\126\145\162\151\172\157
\156\040\102\165\163\151\156\145\163\163\061\021\060\017\006\003

```



\125\004\013\014\010\117\155\156\151\122\157\157\164\061\037\060  
\035\006\003\125\004\003\014\026\126\145\162\151\172\157\156\040  
\107\154\157\142\141\154\040\122\157\157\164\040\103\101

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\134\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\031\060\027\006\003\125\004\012\014\020\126\145\162\151\172\157  
\156\040\102\165\163\151\156\145\163\163\061\021\060\017\006\003  
\125\004\013\014\010\117\155\156\151\122\157\157\164\061\037\060  
\035\006\003\125\004\003\014\026\126\145\162\151\172\157\156\040  
\107\154\157\142\141\154\040\122\157\157\164\040\103\101

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\001

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\165\060\202\002\135\240\003\002\001\002\002\001\001  
\060\015\006\011\052\206\110\206\367\015\001\001\001\013\005\000\060  
\134\061\013\060\011\006\003\125\004\006\023\002\125\123\061\031  
\060\027\006\003\125\004\012\014\020\126\145\162\151\172\157\156  
\040\102\165\163\151\156\145\163\163\061\021\060\017\006\003\125  
\004\013\014\010\117\155\156\151\122\157\157\164\061\037\060\035  
\006\003\125\004\003\014\026\126\145\162\151\172\157\156\040\107  
\154\157\142\141\154\040\122\157\157\164\040\103\101\060\036\027  
\015\060\071\060\067\063\060\061\064\062\067\060\064\132\027\015  
\063\064\060\067\063\060\061\064\062\067\060\064\132\060\134\061  
\013\060\011\006\003\125\004\006\023\002\125\123\061\031\060\027  
\006\003\125\004\012\014\020\126\145\162\151\172\157\156\040\102  
\165\163\151\156\145\163\163\061\021\060\017\006\003\125\004\013  
\014\010\117\155\156\151\122\157\157\164\061\037\060\035\006\003  
\125\004\003\014\026\126\145\162\151\172\157\156\040\107\154\157  
\142\141\154\040\122\157\157\164\040\103\101\060\202\001\042\060  
\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202  
\001\017\000\060\202\001\012\002\202\001\001\000\212\000\014\160  
\035\277\353\064\206\303\231\105\065\036\177\103\367\253\157\044  
\055\315\031\302\020\273\260\312\051\133\251\040\253\253\162\054  
\304\342\002\071\155\202\270\305\021\352\370\373\263\236\142\370  
\063\036\260\037\311\343\366\067\333\004\310\073\143\117\066\342  
\205\244\045\035\307\151\037\004\275\150\105\023\226\007\037\224  
\120\365\076\305\047\124\236\300\111\127\104\216\007\143\324\246  
\256\355\042\231\314\115\226\151\004\023\156\166\211\237\164\026  
\224\371\035\124\275\242\271\322\203\001\042\014\115\104\200\252  
\376\065\211\047\045\247\206\211\306\325\032\222\343\217\305\225  
\240\024\162\232\350\126\305\002\125\034\227\371\040\056\320\365  
\074\023\031\132\366\341\371\013\003\202\151\247\214\267\326\157  
\234\126\076\235\350\052\011\140\155\113\346\373\213\231\024\367  
\064\117\145\131\200\215\271\127\310\242\065\041\330\210\161\126

\135\356\202\127\055\046\220\030\237\232\234\234\217\357\324\305  
\143\247\124\175\107\221\207\175\032\022\250\033\030\157\251\157  
\261\047\272\344\004\164\316\067\036\177\146\305\002\003\001\000  
\001\243\102\060\100\060\017\006\003\125\035\023\001\001\377\004  
\005\060\003\001\001\377\060\016\006\003\125\035\017\001\001\377  
\004\004\003\002\001\006\060\035\006\003\125\035\016\004\026\004  
\024\114\070\021\270\230\000\133\132\053\160\076\252\170\344\325  
\147\147\147\247\176\060\015\006\011\052\206\110\206\367\015\001  
\001\013\005\000\003\202\001\001\000\001\137\240\261\006\001\364  
\171\327\145\030\140\076\317\171\240\272\302\043\117\043\337\207  
\226\137\201\016\070\025\056\134\310\002\150\051\040\374\213\356  
\245\212\030\201\144\134\230\065\176\071\060\202\244\202\212\120  
\265\272\303\350\132\326\250\236\342\303\027\333\333\304\353\260  
\012\040\015\351\236\343\377\140\124\107\361\073\235\324\050\074  
\242\256\243\373\252\213\202\042\052\065\207\220\270\034\131\107  
\220\325\235\056\372\111\343\145\250\066\353\307\344\034\150\334  
\263\061\154\253\116\316\044\200\025\310\020\131\020\021\162\115  
\172\234\230\234\304\374\141\340\263\262\235\116\240\306\302\131  
\253\030\326\242\125\105\354\051\252\045\067\326\116\112\075\013  
\100\301\344\223\344\374\315\221\013\370\346\253\314\263\166\304  
\142\277\031\355\206\266\171\303\051\124\124\274\231\175\106\127  
\317\246\317\364\124\052\232\003\145\107\001\241\102\052\313\045  
\107\156\174\136\000\113\221\331\371\033\020\006\160\371\102\025  
\246\137\252\327\100\036\375\311\110\235\227\201\352\134\150\302  
\240\347\211\241\123\115\277\307\343

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "Verizon Global Root CA"  
# Issuer: CN=Verizon Global Root CA,OU=OmniRoot,O=Verizon Business,C=US  
# Serial Number: 1 (0x1)  
# Subject: CN=Verizon Global Root CA,OU=OmniRoot,O=Verizon Business,C=US  
# Not Valid Before: Thu Jul 30 14:27:04 2009  
# Not Valid After: Sun Jul 30 14:27:04 2034  
# Fingerprint (MD5): f4:c3:f3:e9:53:c2:94:65:27:3d:52:89:f1:8e:5b:1c  
# Fingerprint (SHA1): 91:21:98:ee:f2:3d:ca:c4:09:39:31:2f:ee:97:dd:56:0b:ae:49:b1  
CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "Verizon Global Root CA"  
CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL  
\221\041\230\356\362\075\312\304\011\071\061\057\356\227\335\126  
\013\256\111\261  
END

```

CKA_CERT_MD5_HASH MULTILINE_OCTAL
\364\303\363\351\123\302\224\145\047\075\122\211\361\216\133\034
END
CKA_ISSUER MULTILINE_OCTAL
\060\134\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\031\060\027\006\003\125\004\012\014\020\126\145\162\151\172\157
\156\040\102\165\163\151\156\145\163\163\061\021\060\017\006\003
\125\004\013\014\010\117\155\156\151\122\157\157\164\061\037\060
\035\006\003\125\004\003\014\026\126\145\162\151\172\157\156\040
\107\154\157\142\141\154\040\122\157\157\164\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "SwissSign Silver Root CA - G3"
Issuer: CN=SwissSign Silver Root CA - G3,O=SwissSign AG,C=CH
Serial Number:aa:88:b0:5a:0b:b1:76:9b
Subject: CN=SwissSign Silver Root CA - G3,O=SwissSign AG,C=CH
Not Valid Before: Tue Aug 04 13:19:14 2009
Not Valid After: Tue Aug 04 13:19:14 2037
Fingerprint (MD5): 40:e4:e0:25:6e:96:e0:01:a1:c8:4c:43:4c:f9:dc:33
Fingerprint (SHA1): 8d:08:fc:43:c0:77:0c:a8:4f:4d:cc:b2:d4:1a:5d:95:6d:78:6d:c4
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SwissSign Silver Root CA - G3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\114\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123
\151\147\156\040\101\107\061\046\060\044\006\003\125\004\003\023
\035\123\167\151\163\163\123\151\147\156\040\123\151\154\166\145
\162\040\122\157\157\164\040\103\101\040\055\040\107\063
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\114\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123
\151\147\156\040\101\107\061\046\060\044\006\003\125\004\003\023
\035\123\167\151\163\163\123\151\147\156\040\123\151\154\166\145
\162\040\122\157\157\164\040\103\101\040\055\040\107\063

```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\011\000\252\210\260\132\013\261\166\233

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\176\060\202\003\146\240\003\002\001\002\002\011\000  
\252\210\260\132\013\261\166\233\060\015\006\011\052\206\110\206  
\367\015\001\001\013\005\000\060\114\061\013\060\011\006\003\125  
\004\006\023\002\103\110\061\025\060\023\006\003\125\004\012\023  
\014\123\167\151\163\163\123\151\147\156\040\101\107\061\046\060  
\044\006\003\125\004\003\023\035\123\167\151\163\163\123\151\147  
\156\040\123\151\154\166\145\162\040\122\157\157\164\040\103\101  
\040\055\040\107\063\060\036\027\015\060\071\060\070\060\064\061  
\063\061\071\061\064\132\027\015\063\067\060\070\060\064\061\063  
\061\071\061\064\132\060\114\061\013\060\011\006\003\125\004\006  
\023\002\103\110\061\025\060\023\006\003\125\004\012\023\014\123  
\167\151\163\163\123\151\147\156\040\101\107\061\046\060\044\006  
\003\125\004\003\023\035\123\167\151\163\163\123\151\147\156\040  
\123\151\154\166\145\162\040\122\157\157\164\040\103\101\040\055  
\040\107\063\060\202\002\042\060\015\006\011\052\206\110\206\367  
\015\001\001\001\005\000\003\202\002\017\000\060\202\002\012\002  
\202\002\001\000\276\207\233\005\346\161\174\122\157\155\354\067  
\251\351\263\334\314\137\177\323\120\352\041\233\004\360\075\277  
\276\216\311\245\024\026\062\020\317\231\374\354\160\255\110\066  
\147\044\014\027\062\326\051\345\112\071\261\067\353\246\170\014  
\154\157\031\312\116\367\121\332\032\350\372\041\070\154\225\234  
\057\326\213\314\073\002\233\277\046\233\021\105\266\270\064\132  
\035\246\124\110\122\310\235\170\161\316\110\112\314\247\170\203  
\334\150\253\146\036\167\007\323\066\030\010\327\324\155\140\370  
\360\171\323\063\066\011\222\143\267\004\232\365\247\226\332\105  
\257\164\032\374\202\343\250\133\016\072\077\122\127\230\176\274  
\234\214\301\300\262\132\337\304\176\376\014\246\124\166\203\176  
\272\335\347\052\364\112\066\117\207\145\056\245\272\071\215\131  
\141\051\363\323\216\044\160\214\123\233\021\245\107\007\262\165  
\005\134\015\204\331\104\331\315\311\046\104\127\156\002\175\225  
\001\324\253\044\206\356\075\160\373\127\372\260\051\024\320\235  
\362\305\227\313\011\312\361\362\075\347\330\113\226\351\210\057  
\236\107\121\212\124\145\230\110\322\022\344\124\167\014\007\346  
\276\133\234\361\335\003\176\215\204\374\276\311\142\325\374\311  
\072\350\211\265\137\302\005\122\141\360\234\076\354\056\115\214  
\162\221\216\310\103\301\242\050\136\365\200\044\334\342\057\207  
\073\123\000\345\313\360\262\174\215\171\031\240\210\315\170\370  
\305\212\132\167\345\006\254\335\112\336\346\160\156\276\257\276  
\365\261\253\016\010\260\333\240\077\224\305\276\022\271\274\173  
\047\171\265\062\051\135\256\305\040\043\222\003\173\124\071\260  
\211\042\124\155\022\343\303\170\352\072\100\375\244\223\254\351  
\055\210\074\333\246\107\146\114\337\330\027\355\026\336\032\326  
\327\101\146\277\035\200\361\244\340\144\021\051\136\014\047\005

\142\353\345\304\004\142\321\304\237\014\152\125\326\130\070\234  
\146\017\235\373\253\124\200\231\234\354\111\326\202\237\332\105  
\326\077\123\006\003\267\375\037\354\206\175\164\340\244\264\350  
\062\266\252\007\043\370\357\044\101\236\143\060\170\364\124\335  
\216\360\132\070\216\022\177\170\307\157\002\126\041\063\316\270  
\270\255\151\125\002\003\001\000\001\243\143\060\141\060\016\006  
\003\125\035\017\001\001\377\004\004\003\002\001\006\060\017\006  
\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060\035  
\006\003\125\035\016\004\026\004\024\241\214\105\223\012\022\143  
\013\247\127\137\062\112\175\341\041\347\267\076\146\060\037\006  
\003\125\035\043\004\030\060\026\200\024\241\214\105\223\012\022  
\143\013\247\127\137\062\112\175\341\041\347\267\076\146\060\015  
\006\011\052\206\110\206\367\015\001\001\013\005\000\003\202\002  
\001\000\207\256\141\155\110\070\052\306\034\334\112\056\204\170  
\111\300\043\052\105\270\065\115\321\005\372\271\005\063\304\144  
\275\333\255\124\026\052\260\076\015\132\050\332\246\032\200\163  
\014\304\101\157\257\270\064\266\167\324\133\216\035\013\213\106  
\220\104\265\263\356\111\030\211\301\113\064\263\207\065\164\242  
\236\105\147\355\105\161\146\266\271\241\045\163\327\302\254\210  
\373\322\035\247\153\332\300\132\346\330\131\144\064\227\145\040  
\061\063\003\117\316\255\011\236\256\351\302\076\030\165\264\063  
\045\022\273\005\354\120\272\161\100\342\275\336\210\106\005\041  
\204\213\243\053\036\353\060\060\211\277\021\365\134\104\370\221  
\213\113\131\105\013\060\015\312\014\117\157\143\276\004\376\301  
\355\340\207\376\310\315\126\277\345\334\216\172\324\326\051\116  
\200\333\253\233\077\216\145\007\042\367\104\315\226\037\055\307  
\365\011\266\230\160\377\070\334\120\025\021\204\073\177\251\360  
\330\044\124\310\027\214\053\023\111\326\231\177\105\321\017\216  
\277\151\162\067\123\007\364\346\256\375\133\076\171\271\006\315  
\270\201\170\264\115\240\320\065\272\344\256\377\323\111\274\065  
\355\143\306\263\374\343\253\141\132\005\266\013\344\377\251\052  
\276\337\124\116\302\113\134\150\332\243\062\242\311\115\127\030  
\123\064\131\074\146\231\327\074\002\170\247\114\161\320\277\333  
\361\304\074\347\001\346\004\362\104\366\110\046\060\063\311\261  
\001\031\353\002\361\314\041\372\072\002\060\027\235\310\137\200  
\077\335\045\254\002\233\343\027\336\275\312\222\024\322\122\201  
\123\346\352\374\060\147\062\251\142\366\223\027\025\007\061\136  
\017\033\151\365\364\251\267\174\055\263\355\204\104\062\107\050  
\007\073\206\151\105\251\307\066\226\220\162\164\330\022\246\163  
\043\321\116\271\266\172\072\304\051\241\120\006\021\271\331\364  
\046\156\142\010\022\040\026\360\001\127\027\324\005\066\147\227  
\353\121\371\377\063\044\014\005\017\126\277\357\075\034\122\216  
\212\336\151\017\132\037\360\325\003\061\104\263\222\306\352\165  
\250\256\273\307\140\003\210\230\377\307\004\204\122\220\206\341  
\264\223\251\120\057\350\353\322\066\254\060\140\247\320\003\023  
\265\012

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "SwissSign Silver Root CA - G3"

# Issuer: CN=SwissSign Silver Root CA - G3,O=SwissSign AG,C=CH

# Serial Number:aa:88:b0:5a:0b:b1:76:9b

# Subject: CN=SwissSign Silver Root CA - G3,O=SwissSign AG,C=CH

# Not Valid Before: Tue Aug 04 13:19:14 2009

# Not Valid After: Tue Aug 04 13:19:14 2037

# Fingerprint (MD5): 40:e4:e0:25:6e:96:e0:01:a1:c8:4c:43:4c:f9:dc:33

# Fingerprint (SHA1): 8d:08:fc:43:c0:77:0c:a8:4f:4d:cc:b2:d4:1a:5d:95:6d:78:6d:c4

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "SwissSign Silver Root CA - G3"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\215\010\374\103\300\167\014\250\117\115\314\262\324\032\135\225

\155\170\155\304

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\100\344\340\045\156\226\340\001\241\310\114\103\114\371\334\063

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\114\061\013\060\011\006\003\125\004\006\023\002\103\110\061

\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123

\151\147\156\040\101\107\061\046\060\044\006\003\125\004\003\023

\035\123\167\151\163\163\123\151\147\156\040\123\151\154\166\145

\162\040\122\157\157\164\040\103\101\040\055\040\107\063

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\011\000\252\210\260\132\013\261\166\233

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "SwissSign Platinum Root CA - G3"

# Issuer: CN=SwissSign Platinum Root CA - G3,O=SwissSign AG,C=CH

# Serial Number:22:3f:a9:17:20:de:81:94

# Subject: CN=SwissSign Platinum Root CA - G3,O=SwissSign AG,C=CH

# Not Valid Before: Tue Aug 04 13:34:04 2009

# Not Valid After: Tue Aug 04 13:34:04 2037

# Fingerprint (MD5): 20:de:12:0b:a8:6e:d9:34:a8:4e:b2:0d:1e:a6:43:39

# Fingerprint (SHA1): a1:e7:c6:00:aa:41:70:e5:b7:4b:c9:4f:9b:97:03:ed:c2:61:b4:b9

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SwissSign Platinum Root CA - G3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\116\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123
\151\147\156\040\101\107\061\050\060\046\006\003\125\004\003\023
\037\123\167\151\163\163\123\151\147\156\040\120\154\141\164\151
\156\165\155\040\122\157\157\164\040\103\101\040\055\040\107\063
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\116\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123
\151\147\156\040\101\107\061\050\060\046\006\003\125\004\003\023
\037\123\167\151\163\163\123\151\147\156\040\120\154\141\164\151
\156\165\155\040\122\157\157\164\040\103\101\040\055\040\107\063
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\042\077\251\027\040\336\201\224
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\201\060\202\003\151\240\003\002\001\002\002\010\042
\077\251\027\040\336\201\224\060\015\006\011\052\206\110\206\367
\015\001\001\013\005\000\060\116\061\013\060\011\006\003\125\004
\006\023\002\103\110\061\025\060\023\006\003\125\004\012\023\014
\123\167\151\163\163\123\151\147\156\040\101\107\061\050\060\046
\006\003\125\004\003\023\037\123\167\151\163\163\123\151\147\156
\040\120\154\141\164\151\156\165\155\040\122\157\157\164\040\103
\101\040\055\040\107\063\060\036\027\015\060\071\060\070\060\064
\061\063\063\064\060\064\132\027\015\063\067\060\070\060\064\061
\063\063\064\060\064\132\060\116\061\013\060\011\006\003\125\004
\006\023\002\103\110\061\025\060\023\006\003\125\004\012\023\014
\123\167\151\163\163\123\151\147\156\040\101\107\061\050\060\046
\006\003\125\004\003\023\037\123\167\151\163\163\123\151\147\156
\040\120\154\141\164\151\156\165\155\040\122\157\157\164\040\103
\101\040\055\040\107\063\060\202\002\042\060\015\006\011\052\206
\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060\202
\002\012\002\202\002\001\000\224\240\357\023\033\237\104\040\033
\315\305\252\042\273\331\362\122\076\172\132\130\167\346\215\241
\053\311\334\244\363\344\263\023\224\000\142\233\034\362\103\120
\103\201\176\257\060\066\111\254\030\211\014\030\105\270\076\307
\124\155\343\330\232\131\153\212\032\045\251\266\265\015\267\175
\043\360\137\175\250\007\251\367\076\206\056\310\001\115\334\346
\066\355\035\345\067\007\151\022\113\343\203\321\004\034\044\360
```

\037\160\161\347\031\355\163\110\156\225\053\025\266\126\346\002  
\337\126\351\233\372\352\246\356\340\302\303\272\340\314\306\310  
\173\327\157\072\225\233\072\217\276\133\054\322\251\240\070\076  
\326\210\341\261\142\023\216\334\253\060\147\315\250\152\246\143  
\053\202\260\313\307\075\116\355\162\366\175\253\062\116\145\002  
\353\017\231\164\370\034\032\050\214\016\105\000\223\054\024\237  
\155\307\033\236\366\212\334\173\170\343\264\224\107\035\115\005  
\155\204\172\220\124\262\236\213\165\302\200\337\207\071\077\237  
\373\110\124\007\215\240\051\365\371\140\137\132\162\350\273\233  
\240\102\340\010\000\064\243\025\074\023\343\326\032\153\002\262  
\224\041\243\235\101\274\052\153\116\063\073\246\224\070\374\075  
\307\053\063\263\056\053\006\164\254\233\020\157\305\116\105\367  
\135\241\126\003\054\015\137\172\275\036\336\035\167\220\153\332  
\245\055\212\114\351\337\101\364\347\113\354\175\225\102\237\114  
\251\011\017\103\210\077\075\223\347\053\364\172\110\332\150\304  
\335\022\200\061\032\135\044\124\046\246\044\041\263\114\255\332  
\027\010\066\002\127\306\234\206\160\311\165\311\236\174\141\330  
\170\346\271\350\024\151\371\034\020\050\022\135\113\165\120\272  
\074\320\147\160\125\125\126\113\373\075\034\330\333\171\115\227  
\337\270\236\333\027\054\325\065\007\270\120\251\367\216\367\126  
\377\172\147\103\117\040\331\312\146\326\070\140\113\356\224\061  
\326\015\242\110\233\377\064\151\224\306\065\365\226\210\357\252  
\146\314\201\246\353\114\123\377\062\164\247\266\235\230\127\264  
\272\046\251\361\063\063\142\176\072\260\003\021\127\377\334\157  
\021\043\255\076\306\012\320\314\124\267\055\302\223\035\345\302  
\246\214\307\330\357\123\367\002\003\001\000\001\243\143\060\141  
\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006  
\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001  
\377\060\035\006\003\125\035\016\004\026\004\024\126\052\077\220  
\130\364\027\132\024\262\327\010\033\205\133\124\152\124\032\050  
\060\037\006\003\125\035\043\004\030\060\026\200\024\126\052\077  
\220\130\364\027\132\024\262\327\010\033\205\133\124\152\124\032  
\050\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000  
\003\202\002\001\000\154\355\212\347\103\250\171\047\233\270\317  
\207\076\144\070\030\214\021\102\222\206\067\340\130\303\033\356  
\004\056\367\204\354\203\020\150\014\177\170\055\234\302\227\216  
\066\116\026\330\016\352\153\110\255\117\236\135\015\314\015\251  
\076\030\205\176\314\150\231\071\065\326\330\237\206\301\062\373  
\115\145\263\042\024\113\310\205\146\332\027\377\161\221\254\234  
\126\127\336\161\054\126\102\277\370\315\016\360\242\323\377\322  
\042\025\373\320\170\012\176\341\260\132\316\216\067\333\251\236  
\347\225\317\143\362\054\015\322\372\157\363\310\325\373\000\267  
\367\065\147\020\323\173\122\354\020\062\370\277\335\136\311\246  
\202\244\361\260\277\035\056\335\045\344\275\115\360\065\251\221  
\001\107\370\020\002\224\133\353\076\353\015\272\325\035\143\054  
\245\056\253\347\343\036\243\356\113\252\137\261\146\001\264\202  
\132\371\106\113\307\361\370\337\054\276\375\165\335\226\070\232  
\067\072\156\245\346\062\025\156\263\220\300\071\212\164\245\225



```
\240\276\015\056\211\171\315\051\126\216\303\136\127\121\304\005
\157\004\125\217\201\351\114\275\131\106\313\052\274\115\311\035
\362\306\117\005\344\310\004\015\367\156\117\332\303\072\234\322
\302\365\351\306\044\172\024\076\034\102\060\250\002\105\061\251
\374\120\251\334\334\206\070\017\133\223\077\177\010\116\152\015
\047\072\020\171\126\303\025\270\076\006\206\366\331\160\147\257
\165\172\213\342\130\314\306\165\117\062\125\305\154\024\011\050
\073\362\225\344\152\336\054\050\007\255\240\175\007\050\335\324
\132\243\351\246\174\023\214\231\013\122\170\333\331\321\337\076
\132\103\166\177\106\140\123\302\315\347\166\107\174\125\315\264
\071\144\020\133\225\113\065\135\104\203\044\325\340\056\044\014
\301\200\156\151\000\200\006\167\012\146\202\020\014\121\157\067
\211\127\333\363\114\345\270\271\356\043\146\227\140\267\122\335
\331\226\373\272\212\073\240\115\316\136\360\104\114\220\314\041
\117\033\072\230\153\216\061\203\371\203\010\122\313\031\301\065
\153\356\241\025\133\210\077\155\254\362\064\222\123\246\060\052
\023\327\346\206\250\135\331\102\322\307\235\251\172\213\313\337
\356\242\061\302\345
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
Trust for "SwissSign Platinum Root CA - G3"
Issuer: CN=SwissSign Platinum Root CA - G3,O=SwissSign AG,C=CH
Serial Number:22:3f:a9:17:20:de:81:94
Subject: CN=SwissSign Platinum Root CA - G3,O=SwissSign AG,C=CH
Not Valid Before: Tue Aug 04 13:34:04 2009
Not Valid After: Tue Aug 04 13:34:04 2037
Fingerprint (MD5): 20:de:12:0b:a8:6e:d9:34:a8:4e:b2:0d:1e:a6:43:39
Fingerprint (SHA1): a1:e7:c6:00:aa:41:70:e5:b7:4b:c9:4f:9b:97:03:ed:c2:61:b4:b9
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SwissSign Platinum Root CA - G3"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\241\347\306\000\252\101\160\345\267\113\311\117\233\227\003\355
\302\141\264\271
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\040\336\022\013\250\156\331\064\250\116\262\015\036\246\103\071
```

END

```
CKA_ISSUER MULTILINE_OCTAL
\060\116\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123
\151\147\156\040\101\107\061\050\060\046\006\003\125\004\003\023
```

```
\037\123\167\151\163\163\123\151\147\156\040\120\154\141\164\151
\156\165\155\040\122\157\157\164\040\103\101\040\055\040\107\063
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\010\042\077\251\027\040\336\201\224
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "SwissSign Gold Root CA - G3"

# Issuer: CN=SwissSign Gold Root CA - G3,O=SwissSign AG,C=CH

# Serial Number:de:c4:f2:44:f3:1d:a6:fc

# Subject: CN=SwissSign Gold Root CA - G3,O=SwissSign AG,C=CH

# Not Valid Before: Tue Aug 04 13:31:47 2009

# Not Valid After: Tue Aug 04 13:31:47 2037

# Fingerprint (MD5): c2:64:4c:e2:7d:eb:6c:7b:ec:36:e0:39:df:68:9c:67

# Fingerprint (SHA1): 0b:71:99:a1:c7:f3:ad:df:7b:a7:ea:b8:eb:57:4a:e8:0d:60:dd:de

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "SwissSign Gold Root CA - G3"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

```
\060\112\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123
\151\147\156\040\101\107\061\044\060\042\006\003\125\004\003\023
\033\123\167\151\163\163\123\151\147\156\040\107\157\154\144\040
\122\157\157\164\040\103\101\040\055\040\107\063
```

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\112\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123
\151\147\156\040\101\107\061\044\060\042\006\003\125\004\003\023
\033\123\167\151\163\163\123\151\147\156\040\107\157\154\144\040
\122\157\157\164\040\103\101\040\055\040\107\063
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\011\000\336\304\362\104\363\035\246\374
```

END

CKA\_VALUE MULTILINE\_OCTAL

```
\060\202\005\172\060\202\003\142\240\003\002\001\002\002\011\000
\336\304\362\104\363\035\246\374\060\015\006\011\052\206\110\206
\367\015\001\001\013\005\000\060\112\061\013\060\011\006\003\125
```

\004\006\023\002\103\110\061\025\060\023\006\003\125\004\012\023  
\014\123\167\151\163\163\123\151\147\156\040\101\107\061\044\060  
\042\006\003\125\004\003\023\033\123\167\151\163\163\123\151\147  
\156\040\107\157\154\144\040\122\157\157\164\040\103\101\040\055  
\040\107\063\060\036\027\015\060\071\060\070\060\064\061\063\063  
\061\064\067\132\027\015\063\067\060\070\060\064\061\063\063\061  
\064\067\132\060\112\061\013\060\011\006\003\125\004\006\023\002  
\103\110\061\025\060\023\006\003\125\004\012\023\014\123\167\151  
\163\163\123\151\147\156\040\101\107\061\044\060\042\006\003\125  
\004\003\023\033\123\167\151\163\163\123\151\147\156\040\107\157  
\154\144\040\122\157\157\164\040\103\101\040\055\040\107\063\060  
\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001\001  
\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001\000  
\303\350\237\310\145\132\235\147\033\301\105\227\264\264\207\103  
\133\141\140\200\236\362\177\136\371\147\104\335\104\372\253\265  
\253\167\377\052\031\114\316\157\304\217\101\237\340\342\315\162  
\340\321\324\122\141\101\011\012\277\012\160\373\340\203\151\141  
\051\312\333\042\232\133\245\346\335\027\225\260\157\204\216\072  
\076\144\132\101\373\033\130\374\375\053\076\262\244\346\254\311  
\202\274\316\366\225\370\227\167\355\046\366\130\256\236\047\342  
\017\203\354\305\066\130\310\173\317\325\207\241\251\207\032\023  
\147\141\001\155\246\151\234\342\220\361\053\150\145\363\350\260  
\174\374\202\075\336\255\330\012\000\011\104\171\023\234\360\376  
\156\165\173\302\274\263\131\001\013\174\305\325\055\360\277\377  
\155\127\322\111\201\353\264\263\120\254\133\371\013\025\025\214  
\151\377\243\071\001\355\374\334\334\047\227\216\173\213\325\152  
\246\326\340\035\137\315\001\221\346\365\042\230\272\056\011\030  
\070\157\023\250\201\322\373\041\067\347\055\264\142\347\201\220  
\260\306\171\131\267\147\165\376\276\217\073\372\066\354\257\255  
\322\117\164\066\001\345\127\253\043\004\314\112\136\227\317\176  
\306\357\214\314\225\043\151\215\313\070\307\031\366\326\212\000  
\024\036\064\075\157\332\014\013\303\272\227\374\021\113\122\141  
\076\277\063\147\123\020\277\170\033\011\302\107\272\036\257\130  
\365\165\201\177\275\126\361\353\126\327\331\151\014\007\351\067  
\061\260\022\034\062\357\126\331\276\172\053\174\275\323\075\274  
\152\063\115\072\074\120\020\207\047\307\172\012\147\123\333\177  
\200\233\350\236\043\372\371\010\072\213\241\216\064\132\110\063  
\137\144\323\227\206\007\031\175\210\224\316\052\174\305\152\337  
\257\274\251\237\315\072\246\272\273\124\371\177\217\337\317\016  
\132\304\255\232\274\263\072\167\163\203\114\223\074\220\150\265  
\174\120\225\021\310\202\136\224\161\320\101\030\373\311\306\145  
\354\316\211\266\316\042\263\021\133\077\340\235\076\033\030\150  
\015\252\003\241\147\131\277\153\235\274\370\362\145\057\232\101  
\072\105\330\136\320\066\154\157\073\036\143\264\216\230\114\023  
\333\041\016\237\173\355\352\240\252\161\303\353\243\240\322\045  
\002\003\001\000\001\243\143\060\141\060\016\006\003\125\035\017  
\001\001\377\004\004\003\002\001\006\060\017\006\003\125\035\023  
\001\001\377\004\005\060\003\001\001\377\060\035\006\003\125\035

\016\004\026\004\024\134\227\006\106\064\253\337\060\305\174\305  
\015\125\161\146\060\265\140\217\236\060\037\006\003\125\035\043  
\004\030\060\026\200\024\134\227\006\106\064\253\337\060\305\174  
\305\015\125\161\146\060\265\140\217\236\060\015\006\011\052\206  
\110\206\367\015\001\001\013\005\000\003\202\002\001\000\167\113  
\115\336\352\205\112\253\054\047\326\105\307\361\137\040\301\133  
\140\355\007\313\242\063\334\066\317\307\224\361\006\307\325\332  
\317\315\255\204\076\377\022\110\177\101\350\245\146\127\060\304  
\035\344\247\032\057\055\102\301\357\106\163\262\325\365\132\375  
\016\172\153\322\310\061\243\015\110\226\127\145\143\125\030\300  
\374\344\212\314\230\206\133\253\014\212\047\067\372\043\150\131  
\134\046\327\241\301\302\271\116\054\377\051\136\346\224\013\276  
\315\162\117\225\350\217\366\367\270\076\136\316\317\236\021\311  
\254\003\051\110\212\251\266\246\064\271\254\100\377\304\266\163  
\067\261\307\177\251\121\333\113\052\107\137\100\044\007\210\006  
\267\044\263\373\177\367\260\213\063\372\277\043\165\243\134\376  
\252\145\032\302\276\361\175\201\167\003\201\261\215\327\225\015  
\172\074\102\230\267\217\251\175\120\341\337\122\006\232\240\122  
\124\170\203\007\141\122\011\067\136\212\234\247\306\121\321\134  
\143\321\204\334\302\333\322\372\133\030\066\175\146\274\324\050  
\227\057\165\226\034\204\007\254\213\216\123\021\276\044\041\252  
\147\362\301\255\210\234\323\260\170\147\170\365\323\130\003\040  
\012\135\040\361\265\347\145\314\016\040\343\325\337\346\057\031  
\053\205\150\301\004\046\317\217\355\005\123\241\335\007\016\353  
\101\046\307\264\251\054\133\343\151\075\146\300\142\033\300\252  
\206\300\067\303\061\004\206\160\071\276\153\137\041\100\101\240  
\177\345\331\017\070\113\160\137\111\370\205\270\053\056\252\037  
\223\101\103\370\373\262\164\074\037\113\127\133\267\324\121\241  
\222\112\316\276\020\242\356\330\024\042\173\271\101\275\215\351  
\210\251\321\217\003\032\140\377\077\207\211\240\231\047\042\146  
\260\076\150\236\162\210\121\070\235\023\076\105\155\005\345\106  
\265\163\355\103\206\261\024\012\036\274\332\015\277\036\044\134  
\146\217\016\276\241\375\306\353\151\274\103\171\327\003\166\371  
\334\207\231\270\230\304\315\177\155\020\371\020\276\054\102\376  
\234\051\115\203\153\012\275\265\216\304\110\212\375\041\007\246  
\200\175\037\233\351\253\275\202\141\104\012\161\047\137\155\233  
\220\236\256\377\066\044\263\150\003\326\225\214\153\163

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "SwissSign Gold Root CA - G3"  
# Issuer: CN=SwissSign Gold Root CA - G3,O=SwissSign AG,C=CH  
# Serial Number:de:c4:f2:44:f3:1d:a6:fc  
# Subject: CN=SwissSign Gold Root CA - G3,O=SwissSign AG,C=CH  
# Not Valid Before: Tue Aug 04 13:31:47 2009

```

Not Valid After: Tue Aug 04 13:31:47 2037
Fingerprint (MD5): c2:64:4c:e2:7d:eb:6c:7b:ec:36:e0:39:df:68:9c:67
Fingerprint (SHA1): 0b:71:99:a1:c7:f3:ad:df:7b:a7:ea:b8:eb:57:4a:e8:0d:60:dd:de
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SwissSign Gold Root CA - G3"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\013\161\231\241\307\363\255\337\173\247\352\270\353\127\112\350
\015\140\335\336
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\302\144\114\342\175\353\154\173\354\066\340\071\337\150\234\147
END
CKA_ISSUER MULTILINE_OCTAL
\060\112\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123
\151\147\156\040\101\107\061\044\060\042\006\003\125\004\003\023
\033\123\167\151\163\163\123\151\147\156\040\107\157\154\144\040
\122\157\157\164\040\103\101\040\055\040\107\063
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\011\000\336\304\362\104\363\035\246\374
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

```

```

Microsoft Code Signing Only Certificate
Certificate "SITHS CA v3"
Issuer: CN=SITHS CA v3,O=Carelink,C=SE
Serial Number: 1b:d4:0e:d4:34:d1:da:15:a6:00:30:15:02:4d:a4:6c
Subject: CN=SITHS CA v3,O=Carelink,C=SE
Not Valid Before: Mon Nov 28 10:27:50 2005
Not Valid After: Sat Nov 28 06:02:38 2015
Fingerprint (MD5): 51:c6:bb:37:df:2c:7b:55:0f:84:d4:f3:68:5a:be:eb
Fingerprint (SHA1): 16:d8:66:35:af:13:41:cd:34:79:94:45:eb:60:3e:27:37:02:96:5d
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SITHS CA v3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\066\061\013\060\011\006\003\125\004\006\023\002\123\105\061
\021\060\017\006\003\125\004\012\014\010\103\141\162\145\154\151

```

\156\153\061\024\060\022\006\003\125\004\003\014\013\123\111\124  
\110\123\040\103\101\040\166\063  
END  
CKA\_ID UTF8 "0"  
CKA\_ISSUER MULTILINE\_OCTAL  
\060\066\061\013\060\011\006\003\125\004\006\023\002\123\105\061  
\021\060\017\006\003\125\004\012\014\010\103\141\162\145\154\151  
\156\153\061\024\060\022\006\003\125\004\003\014\013\123\111\124  
\110\123\040\103\101\040\166\063  
END  
CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL  
\002\020\033\324\016\324\064\321\332\025\246\000\060\025\002\115  
\244\154  
END  
CKA\_VALUE MULTILINE\_OCTAL  
\060\202\003\141\060\202\002\111\240\003\002\001\002\002\020\033  
\324\016\324\064\321\332\025\246\000\060\025\002\115\244\154\060  
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\066  
\061\013\060\011\006\003\125\004\006\023\002\123\105\061\021\060  
\017\006\003\125\004\012\014\010\103\141\162\145\154\151\156\153  
\061\024\060\022\006\003\125\004\003\014\013\123\111\124\110\123  
\040\103\101\040\166\063\060\036\027\015\060\065\061\061\062\070  
\061\060\062\067\065\060\132\027\015\061\065\061\061\062\070\060  
\066\060\062\063\070\132\060\066\061\013\060\011\006\003\125\004  
\006\023\002\123\105\061\021\060\017\006\003\125\004\012\014\010  
\103\141\162\145\154\151\156\153\061\024\060\022\006\003\125\004  
\003\014\013\123\111\124\110\123\040\103\101\040\166\063\060\202  
\001\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005  
\000\003\202\001\017\000\060\202\001\012\002\202\001\001\000\305  
\331\133\321\324\053\177\100\147\356\241\133\135\321\332\152\271  
\031\061\362\360\046\111\001\145\374\101\124\361\226\221\354\052  
\356\004\104\044\036\100\234\347\027\120\077\352\034\174\356\270  
\067\071\374\307\323\257\233\156\135\337\076\276\005\374\352\312  
\331\371\105\126\341\225\234\261\320\132\217\376\310\052\246\327  
\152\154\340\155\135\354\134\166\376\341\231\107\232\251\173\247  
\352\346\157\124\002\047\115\121\116\050\075\254\006\072\201\202  
\246\034\275\113\244\355\122\022\334\212\052\353\047\364\301\042  
\112\020\204\132\165\265\200\042\126\145\353\314\200\362\245\341  
\144\276\174\336\017\275\047\007\114\051\133\252\261\357\264\173  
\377\207\064\350\243\223\102\313\075\140\273\167\323\302\057\136  
\024\370\163\157\244\177\240\234\001\325\325\251\273\014\127\217  
\314\300\073\221\170\236\222\071\171\062\114\104\177\307\013\175  
\336\372\314\176\332\314\336\015\324\146\266\142\246\063\277\154  
\371\325\335\107\122\160\224\313\145\340\105\267\015\327\257\225  
\110\327\101\243\073\040\120\015\074\024\125\223\314\352\015\002  
\003\001\000\001\243\153\060\151\060\022\006\003\125\035\023\001  
\001\377\004\010\060\006\001\001\377\002\001\000\060\021\006\011  
\140\206\110\001\206\370\102\001\001\004\004\003\002\002\004\060

```
\024\006\003\125\035\040\004\015\060\013\060\011\006\007\052\205
\160\112\001\001\003\060\013\006\003\125\035\017\004\004\003\002
\001\006\060\035\006\003\125\035\016\004\026\004\024\174\056\071
\043\062\104\350\017\116\146\362\015\050\376\100\276\302\266\342
\240\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000
\003\202\001\001\000\010\123\132\210\051\015\365\124\330\253\261
\203\271\047\151\132\252\137\053\130\111\324\271\337\157\353\307
\006\353\375\207\232\277\312\022\337\172\236\001\042\045\143\122
\205\157\247\057\016\227\164\140\214\340\110\200\163\335\102\215
\041\355\017\162\177\164\006\156\120\126\073\055\207\354\201\130
\213\066\307\312\000\373\244\004\266\057\070\130\216\167\361\006
\304\055\054\047\055\030\202\013\212\137\042\224\024\025\143\070
\306\245\261\272\340\254\276\076\046\077\221\273\034\203\374\016
\312\311\067\276\067\327\360\173\363\214\330\274\220\013\364\000
\277\124\274\152\112\130\347\312\133\014\031\123\102\007\225\127
\065\270\117\226\123\232\250\230\335\116\175\125\264\234\343\272
\300\066\271\267\334\002\230\370\366\345\060\276\054\167\262\363
\311\342\002\243\346\367\104\174\326\152\177\320\170\276\071\163
\370\013\302\037\122\000\016\115\173\306\012\356\142\313\011\325
\017\012\060\207\202\223\274\312\021\244\037\011\372\372\067\120
\354\073\342\074\044\240\200\050\314\373\246\335\357\067\232\251
\061\335\337\352\121
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
```

```
Trust for "SITHS CA v3"
```

```
Issuer: CN=SITHS CA v3,O=Carelink,C=SE
```

```
Serial Number:1b:d4:0e:d4:34:d1:da:15:a6:00:30:15:02:4d:a4:6c
```

```
Subject: CN=SITHS CA v3,O=Carelink,C=SE
```

```
Not Valid Before: Mon Nov 28 10:27:50 2005
```

```
Not Valid After: Sat Nov 28 06:02:38 2015
```

```
Fingerprint (MD5): 51:c6:bb:37:df:2c:7b:55:0f:84:d4:f3:68:5a:be:eb
```

```
Fingerprint (SHA1): 16:d8:66:35:af:13:41:cd:34:79:94:45:eb:60:3e:27:37:02:96:5d
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "SITHS CA v3"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\026\330\146\065\257\023\101\315\064\171\224\105\353\140\076\047
\067\002\226\135
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\121\306\273\067\337\054\173\125\017\204\324\363\150\132\276\353
```

END

```
CKA_ISSUER MULTILINE_OCTAL
\060\066\061\013\060\011\006\003\125\004\006\023\002\123\105\061
\021\060\017\006\003\125\004\012\014\010\103\141\162\145\154\151
\156\153\061\024\060\022\006\003\125\004\003\014\013\123\111\124
\110\123\040\103\101\040\166\063
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\033\324\016\324\064\321\332\025\246\000\060\025\002\115
\244\154
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
Certificate "Certinomis - Autorité Racine"
Issuer: CN=Certinomis - Autorité Racine,OU=0002 433998903,O=Certinomis,C=FR
Serial Number: 1 (0x1)
Subject: CN=Certinomis - Autorité Racine,OU=0002 433998903,O=Certinomis,C=FR
Not Valid Before: Wed Sep 17 08:28:59 2008
Not Valid After: Sun Sep 17 08:28:59 2028
Fingerprint (MD5): 7f:30:78:8c:03:e3:ca:c9:0a:e2:c9:ea:1e:aa:55:1a
Fingerprint (SHA1): 2e:14:da:ec:28:f0:fa:1e:8e:38:9a:4e:ab:eb:26:c0:0a:d3:83:c3
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certinomis - Autorité Racine"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
```

```
CKA_SUBJECT MULTILINE_OCTAL
\060\143\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\023\060\021\006\003\125\004\012\023\012\103\145\162\164\151\156
\157\155\151\163\061\027\060\025\006\003\125\004\013\023\016\060
\060\060\062\040\064\063\063\071\071\070\071\060\063\061\046\060
\044\006\003\125\004\003\014\035\103\145\162\164\151\156\157\155
\151\163\040\055\040\101\165\164\157\162\151\164\303\251\040\122
\141\143\151\156\145
```

END

```
CKA_ID UTF8 "0"
```

```
CKA_ISSUER MULTILINE_OCTAL
\060\143\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\023\060\021\006\003\125\004\012\023\012\103\145\162\164\151\156
\157\155\151\163\061\027\060\025\006\003\125\004\013\023\016\060
\060\060\062\040\064\063\063\071\071\070\071\060\063\061\046\060
\044\006\003\125\004\003\014\035\103\145\162\164\151\156\157\155
\151\163\040\055\040\101\165\164\157\162\151\164\303\251\040\122
\141\143\151\156\145
```



END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\001

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\234\060\202\003\204\240\003\002\001\002\002\001\001  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060  
\143\061\013\060\011\006\003\125\004\006\023\002\106\122\061\023  
\060\021\006\003\125\004\012\023\012\103\145\162\164\151\156\157  
\155\151\163\061\027\060\025\006\003\125\004\013\023\016\060\060  
\060\062\040\064\063\063\071\071\070\071\060\063\061\046\060\044  
\006\003\125\004\003\014\035\103\145\162\164\151\156\157\155\151  
\163\040\055\040\101\165\164\157\162\151\164\303\251\040\122\141  
\143\151\156\145\060\036\027\015\060\070\060\071\061\067\060\070  
\062\070\065\071\132\027\015\062\070\060\071\061\067\060\070\062  
\070\065\071\132\060\143\061\013\060\011\006\003\125\004\006\023  
\002\106\122\061\023\060\021\006\003\125\004\012\023\012\103\145  
\162\164\151\156\157\155\151\163\061\027\060\025\006\003\125\004  
\013\023\016\060\060\060\062\040\064\063\063\071\071\070\071\060  
\063\061\046\060\044\006\003\125\004\003\014\035\103\145\162\164  
\151\156\157\155\151\163\040\055\040\101\165\164\157\162\151\164  
\303\251\040\122\141\143\151\156\145\060\202\002\042\060\015\006  
\011\052\206\110\206\367\015\001\001\001\005\000\003\202\002\017  
\000\060\202\002\012\002\202\002\001\000\235\205\237\206\323\343  
\257\307\262\153\156\063\340\236\267\102\064\125\235\371\201\276  
\143\330\043\166\016\227\124\315\231\114\032\361\071\307\210\330  
\027\120\014\236\141\332\300\116\125\336\347\132\270\172\116\167  
\207\015\345\270\353\372\236\136\173\036\304\317\050\164\307\223  
\365\024\306\042\050\004\371\221\303\253\047\163\152\016\056\115  
\363\056\050\037\160\337\125\057\116\355\307\161\157\011\162\056  
\355\325\062\227\320\361\130\167\321\140\274\116\136\333\232\204  
\366\107\141\105\053\366\120\246\177\152\161\047\110\204\065\236  
\254\376\151\251\236\172\136\065\045\372\264\247\111\065\167\226  
\247\066\133\341\315\337\043\160\330\135\114\245\010\203\361\246  
\044\070\023\250\354\057\250\241\147\307\246\055\206\107\356\212  
\374\354\233\016\164\364\053\111\002\173\220\165\214\374\231\071  
\001\071\326\112\211\345\236\166\253\076\226\050\070\046\213\335  
\215\214\300\366\001\036\157\245\061\022\070\175\225\302\161\356  
\355\164\256\344\066\242\103\165\325\361\000\233\342\344\327\314  
\102\003\113\170\172\345\175\273\270\256\056\040\223\323\344\141  
\337\161\341\166\147\227\077\266\337\152\163\132\144\042\345\102  
\333\317\201\003\223\330\364\343\020\340\162\366\000\160\254\360  
\301\172\017\005\177\317\064\151\105\265\223\344\031\333\122\026  
\043\005\211\016\215\110\344\045\157\263\170\277\142\365\007\372  
\225\044\302\226\262\350\243\043\302\135\003\374\303\323\345\174  
\311\165\043\327\364\365\274\336\344\337\315\200\277\221\210\175  
\247\023\264\071\272\054\272\275\321\153\314\363\245\050\355\104  
\236\175\122\243\157\226\056\031\176\034\363\133\307\026\216\273

\140\175\167\146\107\124\202\000\021\140\154\062\301\250\070\033  
\353\156\230\023\326\356\070\365\360\237\016\357\376\061\201\301  
\322\044\225\057\123\172\151\242\360\017\206\105\216\130\202\053  
\114\042\324\136\240\347\175\046\047\110\337\045\106\215\112\050  
\174\206\236\371\233\032\131\271\145\277\005\335\266\102\135\075  
\346\000\110\202\136\040\367\021\202\336\312\330\237\346\067\107  
\046\036\353\170\367\141\303\101\144\130\002\101\371\332\340\321  
\370\371\350\375\122\070\266\365\211\337\002\003\001\000\001\243  
\133\060\131\060\017\006\003\125\035\023\001\001\377\004\005\060  
\003\001\001\377\060\016\006\003\125\035\017\001\001\377\004\004  
\003\002\001\006\060\035\006\003\125\035\016\004\026\004\024\015  
\214\266\141\332\104\270\321\024\175\303\276\175\136\110\360\316  
\312\152\260\060\027\006\003\125\035\040\004\020\060\016\060\014  
\006\012\052\201\172\001\126\002\002\000\001\001\060\015\006\011  
\052\206\110\206\367\015\001\001\005\005\000\003\202\002\001\000  
\044\076\140\006\176\035\357\072\076\333\352\257\034\232\054\001  
\013\364\305\265\331\111\061\364\135\101\215\211\014\116\377\154  
\242\375\377\342\006\310\071\237\361\132\251\335\042\130\025\250  
\212\323\261\346\062\011\202\003\154\327\077\010\307\370\271\272  
\000\155\271\326\374\122\062\135\244\177\244\061\224\273\266\114  
\070\177\050\060\065\377\237\043\123\267\266\356\024\160\000\100  
\053\332\107\253\064\176\136\247\126\060\141\053\213\103\254\375  
\266\210\050\365\153\266\076\140\112\272\102\220\064\147\215\352  
\353\137\105\124\073\027\254\213\344\306\145\017\356\320\214\135  
\146\071\316\062\247\330\020\227\300\176\064\234\237\224\363\366  
\206\037\317\033\163\255\224\171\207\150\160\303\063\245\160\347  
\330\325\070\224\157\143\171\353\277\012\016\010\347\305\057\017  
\102\240\053\024\100\377\041\340\005\305\047\341\204\021\023\272  
\326\206\035\101\013\023\043\211\323\311\013\350\212\272\172\243  
\243\163\067\065\200\175\022\270\063\167\100\070\300\372\136\060  
\322\362\266\243\261\326\242\225\227\201\233\122\355\151\114\377  
\200\344\123\333\124\133\003\155\124\137\261\270\357\044\275\157  
\237\021\303\307\144\302\017\050\142\205\146\136\032\173\262\267  
\357\256\065\311\031\063\250\270\047\333\063\125\277\150\341\165  
\110\104\126\373\315\323\110\273\107\211\072\254\151\365\200\306  
\344\104\120\057\124\304\252\103\305\061\061\130\275\226\305\352  
\165\154\232\165\261\115\370\367\227\377\226\026\362\227\115\350  
\366\363\021\371\072\175\212\070\156\004\313\341\323\105\025\252  
\245\321\035\235\135\143\350\044\346\066\024\342\207\255\033\131  
\365\104\233\373\327\167\174\037\001\160\142\241\040\032\242\305  
\032\050\364\041\003\356\056\331\301\200\352\271\331\202\326\133  
\166\302\313\073\265\322\000\360\243\016\341\255\156\100\367\333  
\240\264\320\106\256\025\327\104\302\115\065\371\322\013\362\027  
\366\254\146\325\044\262\117\321\034\231\300\156\365\175\353\164  
\004\270\371\115\167\011\327\264\317\007\060\011\361\270\000\126  
\331\027\026\026\012\053\206\337\217\001\031\032\345\273\202\143  
\377\276\013\166\026\136\067\067\346\330\164\227\242\231\105\171  
END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "Certinomis - Autorité Racine"  
# Issuer: CN=Certinomis - Autorité Racine,OU=0002 433998903,O=Certinomis,C=FR  
# Serial Number: 1 (0x1)  
# Subject: CN=Certinomis - Autorité Racine,OU=0002 433998903,O=Certinomis,C=FR  
# Not Valid Before: Wed Sep 17 08:28:59 2008  
# Not Valid After: Sun Sep 17 08:28:59 2028  
# Fingerprint (MD5): 7f:30:78:8c:03:e3:ca:c9:0a:e2:c9:ea:1e:aa:55:1a  
# Fingerprint (SHA1): 2e:14:da:ec:28:f0:fa:1e:8e:38:9a:4e:ab:eb:26:c0:0a:d3:83:c3

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "Certinomis - Autorité Racine"  
CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL  
\056\024\332\354\050\360\372\036\216\070\232\116\253\353\046\300  
\012\323\203\303  
END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL  
\177\060\170\214\003\343\312\311\012\342\311\352\036\252\125\032  
END

CKA\_ISSUER MULTILINE\_OCTAL  
\060\143\061\013\060\011\006\003\125\004\006\023\002\106\122\061  
\023\060\021\006\003\125\004\012\023\012\103\145\162\164\151\156  
\157\155\151\163\061\027\060\025\006\003\125\004\013\023\016\060  
\060\060\062\040\064\063\063\071\071\070\071\060\063\061\046\060  
\044\006\003\125\004\003\014\035\103\145\162\164\151\156\157\155  
\151\163\040\055\040\101\165\164\157\162\151\164\303\251\040\122  
\141\143\151\156\145  
END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL  
\002\001\001  
END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Certificate "ANF Server CA"  
# Issuer: CN=ANF Server CA,2.5.4.5=G63287510,OU=ANF Clase 1 CA,O=ANF Autoridad de  
Certificación,L=Barcelona (see current address at <https://www.anf.es/address/>),ST=Barcelona,C=ES  
# Serial Number: 78923 (0x1344b)  
# Subject: CN=ANF Server CA,2.5.4.5=G63287510,OU=ANF Clase 1 CA,O=ANF Autoridad de

Certificación,L=Barcelona (see current address at <https://www.anf.es/address/>),ST=Barcelona,C=ES

# Not Valid Before: Mon Nov 30 23:00:00 2009

# Not Valid After: Tue Nov 30 23:00:00 2021

# Fingerprint (MD5): 8c:18:ed:28:bf:45:19:e6:49:98:e1:35:22:2f:54:c6

# Fingerprint (SHA1): ce:a9:89:0d:85:d8:07:53:a6:26:28:6c:da:d7:8c:b5:66:d7:0c:f2

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "ANF Server CA"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\201\331\061\013\060\011\006\003\125\004\006\023\002\105\123  
\061\022\060\020\006\003\125\004\010\014\011\102\141\162\143\145  
\154\157\156\141\061\107\060\105\006\003\125\004\007\014\076\102  
\141\162\143\145\154\157\156\141\040\050\163\145\145\040\143\165  
\162\162\145\156\164\040\141\144\144\162\145\163\163\040\141\164  
\040\150\164\164\160\163\072\057\057\167\167\167\056\141\156\146  
\056\145\163\057\141\144\144\162\145\163\163\057\051\061\050\060  
\046\006\003\125\004\012\014\037\101\116\106\040\101\165\164\157  
\162\151\144\141\144\040\144\145\040\103\145\162\164\151\146\151  
\143\141\143\151\303\263\156\061\027\060\025\006\003\125\004\013  
\014\016\101\116\106\040\103\154\141\163\145\040\061\040\103\101  
\061\022\060\020\006\003\125\004\005\023\011\107\066\063\062\070  
\067\065\061\060\061\026\060\024\006\003\125\004\003\014\015\101  
\116\106\040\123\145\162\166\145\162\040\103\101

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\331\061\013\060\011\006\003\125\004\006\023\002\105\123  
\061\022\060\020\006\003\125\004\010\014\011\102\141\162\143\145  
\154\157\156\141\061\107\060\105\006\003\125\004\007\014\076\102  
\141\162\143\145\154\157\156\141\040\050\163\145\145\040\143\165  
\162\162\145\156\164\040\141\144\144\162\145\163\163\040\141\164  
\040\150\164\164\160\163\072\057\057\167\167\167\056\141\156\146  
\056\145\163\057\141\144\144\162\145\163\163\057\051\061\050\060  
\046\006\003\125\004\012\014\037\101\116\106\040\101\165\164\157  
\162\151\144\141\144\040\144\145\040\103\145\162\164\151\146\151  
\143\141\143\151\303\263\156\061\027\060\025\006\003\125\004\013  
\014\016\101\116\106\040\103\154\141\163\145\040\061\040\103\101  
\061\022\060\020\006\003\125\004\005\023\011\107\066\063\062\070  
\067\065\061\060\061\026\060\024\006\003\125\004\003\014\015\101  
\116\106\040\123\145\162\166\145\162\040\103\101

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\003\001\064\113

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\006\235\060\202\005\205\240\003\002\001\002\002\003\001  
\064\113\060\015\006\011\052\206\110\206\367\015\001\001\005\005  
\000\060\201\331\061\013\060\011\006\003\125\004\006\023\002\105  
\123\061\022\060\020\006\003\125\004\010\014\011\102\141\162\143  
\145\154\157\156\141\061\107\060\105\006\003\125\004\007\014\076  
\102\141\162\143\145\154\157\156\141\040\050\163\145\145\040\143  
\165\162\162\145\156\164\040\141\144\144\162\145\163\163\040\141  
\164\040\150\164\164\160\163\072\057\057\167\167\167\056\141\156  
\146\056\145\163\057\141\144\144\162\145\163\163\057\051\061\050  
\060\046\006\003\125\004\012\014\037\101\116\106\040\101\165\164  
\157\162\151\144\141\144\040\144\145\040\103\145\162\164\151\146  
\151\143\141\143\151\303\263\156\061\027\060\025\006\003\125\004  
\013\014\016\101\116\106\040\103\154\141\163\145\040\061\040\103  
\101\061\022\060\020\006\003\125\004\005\023\011\107\066\063\062  
\070\067\065\061\060\061\026\060\024\006\003\125\004\003\014\015  
\101\116\106\040\123\145\162\166\145\162\040\103\101\060\036\027  
\015\060\071\061\061\063\060\062\063\060\060\060\060\132\027\015  
\062\061\061\061\063\060\062\063\060\060\060\060\132\060\201\331  
\061\013\060\011\006\003\125\004\006\023\002\105\123\061\022\060  
\020\006\003\125\004\010\014\011\102\141\162\143\145\154\157\156  
\141\061\107\060\105\006\003\125\004\007\014\076\102\141\162\143  
\145\154\157\156\141\040\050\163\145\145\040\143\165\162\162\145  
\156\164\040\141\144\144\162\145\163\163\040\141\164\040\150\164  
\164\160\163\072\057\057\167\167\167\056\141\156\146\056\145\163  
\057\141\144\144\162\145\163\163\057\051\061\050\060\046\006\003  
\125\004\012\014\037\101\116\106\040\101\165\164\157\162\151\144  
\141\144\040\144\145\040\103\145\162\164\151\146\151\143\141\143  
\151\303\263\156\061\027\060\025\006\003\125\004\013\014\016\101  
\116\106\040\103\154\141\163\145\040\061\040\103\101\061\022\060  
\020\006\003\125\004\005\023\011\107\066\063\062\070\067\065\061  
\060\061\026\060\024\006\003\125\004\003\014\015\101\116\106\040  
\123\145\162\166\145\162\040\103\101\060\202\001\042\060\015\006  
\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017  
\000\060\202\001\012\002\202\001\001\000\277\352\110\247\232\210  
\071\153\054\110\100\007\004\223\174\367\270\055\176\245\067\342  
\141\326\041\374\220\067\313\151\076\136\213\067\337\133\157\073  
\330\266\303\210\100\220\364\235\014\134\020\122\261\263\345\137  
\221\020\346\375\250\200\024\137\323\213\275\134\275\017\043\222  
\011\067\343\162\322\146\224\013\134\164\224\057\136\362\116\330  
\003\306\263\316\126\245\034\331\173\375\117\007\114\324\267\332  
\137\051\115\165\362\037\125\317\062\043\034\106\011\047\035\105  
\354\361\214\064\211\336\173\026\247\103\136\212\053\351\224\103  
\036\327\076\223\155\157\211\075\274\356\261\310\267\377\311\175  
\343\137\015\157\167\170\365\052\056\215\304\213\230\227\060\261  
\106\132\013\143\160\324\170\307\206\263\177\377\047\102\252\237  
\212\156\155\241\224\312\354\207\002\034\326\124\113\375\274\211  
\233\246\143\070\146\214\026\211\211\227\303\120\350\366\102\001  
\247\167\175\020\031\222\003\350\135\105\310\025\305\207\033\015

\221\362\306\071\234\173\363\300\012\231\370\356\203\157\176\102  
\167\021\216\303\037\034\162\057\075\033\002\003\001\000\001\243  
\202\002\152\060\202\002\146\060\035\006\003\125\035\016\004\026  
\004\024\276\073\366\264\061\267\163\044\110\071\305\127\023\224  
\165\252\237\201\077\054\060\202\001\011\006\003\125\035\043\004  
\202\001\000\060\201\375\200\024\276\073\366\264\061\267\163\044  
\110\071\305\127\023\224\165\252\237\201\077\054\241\201\337\244  
\201\334\060\201\331\061\013\060\011\006\003\125\004\006\023\002  
\105\123\061\022\060\020\006\003\125\004\010\014\011\102\141\162  
\143\145\154\157\156\141\061\107\060\105\006\003\125\004\007\014  
\076\102\141\162\143\145\154\157\156\141\040\050\163\145\145\040  
\143\165\162\162\145\156\164\040\141\144\144\162\145\163\163\040  
\141\164\040\150\164\164\160\163\072\057\057\167\167\167\056\141  
\156\146\056\145\163\057\141\144\144\162\145\163\163\057\051\061  
\050\060\046\006\003\125\004\012\014\037\101\116\106\040\101\165  
\164\157\162\151\144\141\144\040\144\145\040\103\145\162\164\151  
\146\151\143\141\143\151\303\263\156\061\027\060\025\006\003\125  
\004\013\014\016\101\116\106\040\103\154\141\163\145\040\061\040  
\103\101\061\022\060\020\006\003\125\004\005\023\011\107\066\063  
\062\070\067\065\061\060\061\026\060\024\006\003\125\004\003\014  
\015\101\116\106\040\123\145\162\166\145\162\040\103\101\202\003  
\001\064\113\060\014\006\003\125\035\023\004\005\060\003\001\001  
\377\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001  
\006\060\061\006\012\053\006\001\004\001\201\217\034\052\006\004  
\043\033\041\150\164\164\160\163\072\057\057\167\167\167\056\141  
\156\146\056\145\163\057\101\103\057\101\103\124\101\123\057\067  
\070\071\062\063\060\030\006\012\053\006\001\004\001\201\217\034  
\023\001\004\012\033\010\070\060\061\055\063\064\060\060\060\070  
\006\010\053\006\001\005\005\007\001\001\004\054\060\052\060\050  
\006\010\053\006\001\005\005\007\060\001\206\034\150\164\164\160  
\072\057\057\167\167\167\056\141\156\146\056\145\163\057\101\103  
\057\122\103\057\157\143\163\160\060\143\006\003\125\035\037\004  
\134\060\132\060\053\240\051\240\047\206\045\150\164\164\160\163  
\072\057\057\167\167\167\056\141\156\146\056\145\163\057\101\103  
\057\101\116\106\123\145\162\166\145\162\103\101\056\143\162\154  
\060\053\240\051\240\047\206\045\150\164\164\160\163\072\057\057  
\143\162\154\056\141\156\146\056\145\163\057\101\103\057\101\116  
\106\123\145\162\166\145\162\103\101\056\143\162\154\060\026\006  
\003\125\035\022\004\017\060\015\201\013\151\156\146\157\100\141  
\156\146\056\145\163\060\026\006\003\125\035\021\004\017\060\015  
\201\013\151\156\146\157\100\141\156\146\056\145\163\060\015\006  
\011\052\206\110\206\367\015\001\001\005\005\000\003\202\001\001  
\000\265\306\307\274\106\372\102\134\023\301\224\165\063\126\277  
\057\247\007\163\354\067\343\103\164\352\371\146\117\136\215\177  
\360\346\171\303\115\365\331\070\245\314\312\103\364\123\200\206  
\277\274\320\021\135\220\304\302\100\107\353\305\207\223\301\266  
\170\136\232\256\207\365\142\020\131\114\114\155\006\276\231\023  
\025\263\263\372\034\162\176\340\042\041\001\130\065\070\150\242

```
\344\370\341\360\360\066\120\221\340\264\167\334\143\204\063\222
\140\270\313\026\362\322\143\073\114\134\065\072\347\254\002\123
\305\034\201\001\167\307\034\021\037\124\060\357\124\217\045\372
\211\047\224\064\243\017\024\117\157\351\163\331\030\142\347\356
\010\350\311\203\173\310\063\233\174\104\232\174\032\220\265\322
\161\211\337\075\364\034\117\116\121\340\311\153\266\252\013\036
\331\060\017\323\143\325\355\160\364\301\203\355\006\105\232\250
\352\264\211\067\375\132\067\107\357\221\171\247\065\377\360\334
\060\355\015\024\147\333\174\132\340\217\155\063\376\074\236\025
\063\303\303\055\016\135\252\174\015\216\061\226\115\213\377\005
\325
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
```

```
Trust for "ANF Server CA"
```

```
Issuer: CN=ANF Server CA,2.5.4.5=G63287510,OU=ANF Clase 1 CA,O=ANF Autoridad de
Certificación,L=Barcelona (see current address at https://www.anf.es/address/),ST=Barcelona,C=ES
```

```
Serial Number: 78923 (0x1344b)
```

```
Subject: CN=ANF Server CA,2.5.4.5=G63287510,OU=ANF Clase 1 CA,O=ANF Autoridad de
Certificación,L=Barcelona (see current address at https://www.anf.es/address/),ST=Barcelona,C=ES
```

```
Not Valid Before: Mon Nov 30 23:00:00 2009
```

```
Not Valid After: Tue Nov 30 23:00:00 2021
```

```
Fingerprint (MD5): 8c:18:ed:28:bf:45:19:e6:49:98:e1:35:22:2f:54:c6
```

```
Fingerprint (SHA1): ce:a9:89:0d:85:d8:07:53:a6:26:28:6c:da:d7:8c:b5:66:d7:0c:f2
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "ANF Server CA"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\316\251\211\015\205\330\007\123\246\046\050\154\332\327\214\265
\146\327\014\362
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\214\030\355\050\277\105\031\346\111\230\341\065\042\057\124\306
END
```

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\201\331\061\013\060\011\006\003\125\004\006\023\002\105\123
\061\022\060\020\006\003\125\004\010\014\011\102\141\162\143\145
\154\157\156\141\061\107\060\105\006\003\125\004\007\014\076\102
\141\162\143\145\154\157\156\141\040\050\163\145\145\040\143\165
\162\162\145\156\164\040\141\144\144\162\145\163\163\040\141\164
\040\150\164\164\160\163\072\057\057\167\167\167\056\141\156\146
\056\145\163\057\141\144\144\162\145\163\163\057\051\061\050\060
\046\006\003\125\004\012\014\037\101\116\106\040\101\165\164\157
```

```
\162\151\144\141\144\040\144\145\040\103\145\162\164\151\146\151
\143\141\143\151\303\263\156\061\027\060\025\006\003\125\004\013
\014\016\101\116\106\040\103\154\141\163\145\040\061\040\103\101
\061\022\060\020\006\003\125\004\005\023\011\107\066\063\062\070
\067\065\061\060\061\026\060\024\006\003\125\004\003\014\015\101
\116\106\040\123\145\162\166\145\162\040\103\101
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\003\001\064\113
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "Thawte Premium Server CA"

# Issuer: 1.2.840.113549.1.9.1=premium-server@thawte.com,CN=Thawte Premium Server CA,OU=Certification  
Services Division,O=Thawte Consulting cc,L=Cape Town,ST=Western Cape,C=ZA

# Serial Number:36:12:22:96:c5:e3:38:a5:20:a1:d2:5f:4c:d7:09:54

# Subject: 1.2.840.113549.1.9.1=premium-server@thawte.com,CN=Thawte Premium Server CA,OU=Certification  
Services Division,O=Thawte Consulting cc,L=Cape Town,ST=Western Cape,C=ZA

# Not Valid Before: Thu Aug 01 00:00:00 1996

# Not Valid After: Fri Jan 01 23:59:59 2021

# Fingerprint (MD5): a6:6b:60:90:23:9b:3f:2d:bb:98:6f:d6:a7:19:0d:46

# Fingerprint (SHA1): e0:ab:05:94:20:72:54:93:05:60:62:02:36:70:f7:cd:2e:fc:66:66

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Thawte Premium Server CA"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

```
\060\201\316\061\013\060\011\006\003\125\004\006\023\002\132\101
\061\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145
\162\156\040\103\141\160\145\061\022\060\020\006\003\125\004\007
\023\011\103\141\160\145\040\124\157\167\156\061\035\060\033\006
\003\125\004\012\023\024\124\150\141\167\164\145\040\103\157\156
\163\165\154\164\151\156\147\040\143\143\061\050\060\046\006\003
\125\004\013\023\037\103\145\162\164\151\146\151\143\141\164\151
\157\156\040\123\145\162\166\151\143\145\163\040\104\151\166\151
\163\151\157\156\061\041\060\037\006\003\125\004\003\023\030\124
\150\141\167\164\145\040\120\162\145\155\151\165\155\040\123\145
\162\166\145\162\040\103\101\061\050\060\046\006\011\052\206\110
\206\367\015\001\011\001\026\031\160\162\145\155\151\165\155\055
\163\145\162\166\145\162\100\164\150\141\167\164\145\056\143\157
\155
```

END



CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\316\061\013\060\011\006\003\125\004\006\023\002\132\101  
\061\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145  
\162\156\040\103\141\160\145\061\022\060\020\006\003\125\004\007  
\023\011\103\141\160\145\040\124\157\167\156\061\035\060\033\006  
\003\125\004\012\023\024\124\150\141\167\164\145\040\103\157\156  
\163\165\154\164\151\156\147\040\143\143\061\050\060\046\006\003  
\125\004\013\023\037\103\145\162\164\151\146\151\143\141\164\151  
\157\156\040\123\145\162\166\151\143\145\163\040\104\151\166\151  
\163\151\157\156\061\041\060\037\006\003\125\004\003\023\030\124  
\150\141\167\164\145\040\120\162\145\155\151\165\155\040\123\145  
\162\166\145\162\040\103\101\061\050\060\046\006\011\052\206\110  
\206\367\015\001\011\001\026\031\160\162\145\155\151\165\155\055  
\163\145\162\166\145\162\100\164\150\141\167\164\145\056\143\157  
\155

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\066\022\042\226\305\343\070\245\040\241\322\137\114\327  
\011\124

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\066\060\202\002\237\240\003\002\001\002\002\020\066  
\022\042\226\305\343\070\245\040\241\322\137\114\327\011\124\060  
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\201  
\316\061\013\060\011\006\003\125\004\006\023\002\132\101\061\025  
\060\023\006\003\125\004\010\023\014\127\145\163\164\145\162\156  
\040\103\141\160\145\061\022\060\020\006\003\125\004\007\023\011  
\103\141\160\145\040\124\157\167\156\061\035\060\033\006\003\125  
\004\012\023\024\124\150\141\167\164\145\040\103\157\156\163\165  
\154\164\151\156\147\040\143\143\061\050\060\046\006\003\125\004  
\013\023\037\103\145\162\164\151\146\151\143\141\164\151\157\156  
\040\123\145\162\166\151\143\145\163\040\104\151\166\151\163\151  
\157\156\061\041\060\037\006\003\125\004\003\023\030\124\150\141  
\167\164\145\040\120\162\145\155\151\165\155\040\123\145\162\166  
\145\162\040\103\101\061\050\060\046\006\011\052\206\110\206\367  
\015\001\011\001\026\031\160\162\145\155\151\165\155\055\163\145  
\162\166\145\162\100\164\150\141\167\164\145\056\143\157\155\060  
\036\027\015\071\066\060\070\060\061\060\060\060\060\060\060\132  
\027\015\062\061\060\061\060\061\062\063\065\071\065\071\132\060  
\201\316\061\013\060\011\006\003\125\004\006\023\002\132\101\061  
\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145\162  
\156\040\103\141\160\145\061\022\060\020\006\003\125\004\007\023  
\011\103\141\160\145\040\124\157\167\156\061\035\060\033\006\003  
\125\004\012\023\024\124\150\141\167\164\145\040\103\157\156\163  
\165\154\164\151\156\147\040\143\143\061\050\060\046\006\003\125  
\004\013\023\037\103\145\162\164\151\146\151\143\141\164\151\157  
\156\040\123\145\162\166\151\143\145\163\040\104\151\166\151\163

\151\157\156\061\041\060\037\006\003\125\004\003\023\030\124\150  
\141\167\164\145\040\120\162\145\155\151\165\155\040\123\145\162  
\166\145\162\040\103\101\061\050\060\046\006\011\052\206\110\206  
\367\015\001\011\001\026\031\160\162\145\155\151\165\155\055\163  
\145\162\166\145\162\100\164\150\141\167\164\145\056\143\157\155  
\060\201\237\060\015\006\011\052\206\110\206\367\015\001\001\001  
\005\000\003\201\215\000\060\201\211\002\201\201\000\322\066\066  
\152\213\327\302\133\236\332\201\101\142\217\070\356\111\004\125  
\326\320\357\034\033\225\026\107\357\030\110\065\072\122\364\053  
\152\006\217\073\057\352\126\343\257\206\215\236\027\367\236\264  
\145\165\002\115\357\313\011\242\041\121\330\233\320\147\320\272  
\015\222\006\024\163\324\223\313\227\052\000\234\134\116\014\274  
\372\025\122\374\362\104\156\332\021\112\156\010\237\057\055\343  
\371\252\072\206\163\266\106\123\130\310\211\005\275\203\021\270  
\163\077\252\007\215\364\102\115\347\100\235\034\067\002\003\001  
\000\001\243\023\060\021\060\017\006\003\125\035\023\001\001\377  
\004\005\060\003\001\001\377\060\015\006\011\052\206\110\206\367  
\015\001\001\005\005\000\003\201\201\000\145\220\254\210\017\126  
\331\346\060\064\324\046\307\320\120\361\222\336\153\324\071\210  
\011\042\306\246\143\203\003\367\231\167\330\262\345\030\270\135  
\143\363\324\163\373\154\234\231\170\361\113\170\175\031\044\303  
\053\002\204\370\274\042\331\212\042\327\240\374\161\354\221\207  
\040\361\270\354\261\345\125\200\254\075\122\310\071\016\302\360  
\300\005\117\326\202\165\214\275\137\322\334\166\232\005\022\311  
\257\162\303\334\045\176\244\115\216\027\245\340\207\177\341\232  
\132\341\140\334\144\043\074\102\056\115

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Thawte Premium Server CA"

# Issuer: 1.2.840.113549.1.9.1=premium-server@thawte.com,CN=Thawte Premium Server CA,OU=Certification  
Services Division,O=Thawte Consulting cc,L=Cape Town,ST=Western Cape,C=ZA

# Serial Number:36:12:22:96:c5:e3:38:a5:20:a1:d2:5f:4c:d7:09:54

# Subject: 1.2.840.113549.1.9.1=premium-server@thawte.com,CN=Thawte Premium Server CA,OU=Certification  
Services Division,O=Thawte Consulting cc,L=Cape Town,ST=Western Cape,C=ZA

# Not Valid Before: Thu Aug 01 00:00:00 1996

# Not Valid After: Fri Jan 01 23:59:59 2021

# Fingerprint (MD5): a6:6b:60:90:23:9b:3f:2d:bb:98:6f:d6:a7:19:0d:46

# Fingerprint (SHA1): e0:ab:05:94:20:72:54:93:05:60:62:02:36:70:f7:cd:2e:fc:66:66

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Thawte Premium Server CA"

CKA\_CERT\_SHA1\_HASH MULTILINE OCTAL

\340\253\005\224\040\162\124\223\005\140\142\002\066\160\367\315

\056\374\146\146

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\246\153\140\220\043\233\077\055\273\230\157\326\247\031\015\106

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\316\061\013\060\011\006\003\125\004\006\023\002\132\101

\061\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145

\162\156\040\103\141\160\145\061\022\060\020\006\003\125\004\007

\023\011\103\141\160\145\040\124\157\167\156\061\035\060\033\006

\003\125\004\012\023\024\124\150\141\167\164\145\040\103\157\156

\163\165\154\164\151\156\147\040\143\143\061\050\060\046\006\003

\125\004\013\023\037\103\145\162\164\151\146\151\143\141\164\151

\157\156\040\123\145\162\166\151\143\145\163\040\104\151\166\151

\163\151\157\156\061\041\060\037\006\003\125\004\003\023\030\124

\150\141\167\164\145\040\120\162\145\155\151\165\155\040\123\145

\162\166\145\162\040\103\101\061\050\060\046\006\011\052\206\110

\206\367\015\001\011\001\026\031\160\162\145\155\151\165\155\055

\163\145\162\166\145\162\100\164\150\141\167\164\145\056\143\157

\155

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\066\022\042\226\305\343\070\245\040\241\322\137\114\327

\011\124

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "Thawte Server CA"

# Issuer: 1.2.840.113549.1.9.1=server-certs@thawte.com,CN=Thawte Server CA,OU=Certification Services  
Division,O=Thawte Consulting cc,L=Cape Town,ST=Western Cape,C=ZA

# Serial Number:34:a4:ff:f6:30:af:4c:a5:3c:33:17:42:a1:94:66:75

# Subject: 1.2.840.113549.1.9.1=server-certs@thawte.com,CN=Thawte Server CA,OU=Certification Services  
Division,O=Thawte Consulting cc,L=Cape Town,ST=Western Cape,C=ZA

# Not Valid Before: Thu Aug 01 00:00:00 1996

# Not Valid After: Fri Jan 01 23:59:59 2021

# Fingerprint (MD5): ee:fe:61:69:65:6e:f8:9c:c6:2a:f4:d7:2b:63:ef:a2

# Fingerprint (SHA1): 9f:ad:91:a6:ce:6a:c6:c5:00:47:c4:4e:c9:d4:a5:0d:92:d8:49:79

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Thawte Server CA"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\201\304\061\013\060\011\006\003\125\004\006\023\002\132\101  
\061\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145  
\162\156\040\103\141\160\145\061\022\060\020\006\003\125\004\007  
\023\011\103\141\160\145\040\124\157\167\156\061\035\060\033\006  
\003\125\004\012\023\024\124\150\141\167\164\145\040\103\157\156  
\163\165\154\164\151\156\147\040\143\143\061\050\060\046\006\003  
\125\004\013\023\037\103\145\162\164\151\146\151\143\141\164\151  
\157\156\040\123\145\162\166\151\143\145\163\040\104\151\166\151  
\163\151\157\156\061\031\060\027\006\003\125\004\003\023\020\124  
\150\141\167\164\145\040\123\145\162\166\145\162\040\103\101\061  
\046\060\044\006\011\052\206\110\206\367\015\001\011\001\026\027  
\163\145\162\166\145\162\055\143\145\162\164\163\100\164\150\141  
\167\164\145\056\143\157\155

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\304\061\013\060\011\006\003\125\004\006\023\002\132\101  
\061\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145  
\162\156\040\103\141\160\145\061\022\060\020\006\003\125\004\007  
\023\011\103\141\160\145\040\124\157\167\156\061\035\060\033\006  
\003\125\004\012\023\024\124\150\141\167\164\145\040\103\157\156  
\163\165\154\164\151\156\147\040\143\143\061\050\060\046\006\003  
\125\004\013\023\037\103\145\162\164\151\146\151\143\141\164\151  
\157\156\040\123\145\162\166\151\143\145\163\040\104\151\166\151  
\163\151\157\156\061\031\060\027\006\003\125\004\003\023\020\124  
\150\141\167\164\145\040\123\145\162\166\145\162\040\103\101\061  
\046\060\044\006\011\052\206\110\206\367\015\001\011\001\026\027  
\163\145\162\166\145\162\055\143\145\162\164\163\100\164\150\141  
\167\164\145\056\143\157\155

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\064\244\377\366\060\257\114\245\074\063\027\102\241\224  
\146\165

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\042\060\202\002\213\240\003\002\001\002\002\020\064  
\244\377\366\060\257\114\245\074\063\027\102\241\224\146\165\060  
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\201  
\304\061\013\060\011\006\003\125\004\006\023\002\132\101\061\025  
\060\023\006\003\125\004\010\023\014\127\145\163\164\145\162\156  
\040\103\141\160\145\061\022\060\020\006\003\125\004\007\023\011  
\103\141\160\145\040\124\157\167\156\061\035\060\033\006\003\125  
\004\012\023\024\124\150\141\167\164\145\040\103\157\156\163\165  
\154\164\151\156\147\040\143\143\061\050\060\046\006\003\125\004  
\013\023\037\103\145\162\164\151\146\151\143\141\164\151\157\156  
\040\123\145\162\166\151\143\145\163\040\104\151\166\151\163\151  
\157\156\061\031\060\027\006\003\125\004\003\023\020\124\150\141

\167\164\145\040\123\145\162\166\145\162\040\103\101\061\046\060  
\044\006\011\052\206\110\206\367\015\001\011\001\026\027\163\145  
\162\166\145\162\055\143\145\162\164\163\100\164\150\141\167\164  
\145\056\143\157\155\060\036\027\015\071\066\060\070\060\061\060  
\060\060\060\060\060\132\027\015\062\061\060\061\060\061\062\063  
\065\071\065\071\132\060\201\304\061\013\060\011\006\003\125\004  
\006\023\002\132\101\061\025\060\023\006\003\125\004\010\023\014  
\127\145\163\164\145\162\156\040\103\141\160\145\061\022\060\020  
\006\003\125\004\007\023\011\103\141\160\145\040\124\157\167\156  
\061\035\060\033\006\003\125\004\012\023\024\124\150\141\167\164  
\145\040\103\157\156\163\165\154\164\151\156\147\040\143\143\061  
\050\060\046\006\003\125\004\013\023\037\103\145\162\164\151\146  
\151\143\141\164\151\157\156\040\123\145\162\166\151\143\145\163  
\040\104\151\166\151\163\151\157\156\061\031\060\027\006\003\125  
\004\003\023\020\124\150\141\167\164\145\040\123\145\162\166\145  
\162\040\103\101\061\046\060\044\006\011\052\206\110\206\367\015  
\001\011\001\026\027\163\145\162\166\145\162\055\143\145\162\164  
\163\100\164\150\141\167\164\145\056\143\157\155\060\201\237\060  
\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003\201  
\215\000\060\201\211\002\201\201\000\323\244\120\156\310\377\126  
\153\346\317\135\266\352\014\150\165\107\242\252\302\332\204\045  
\374\250\364\107\121\332\205\265\040\164\224\206\036\017\165\311  
\351\010\141\365\006\155\060\156\025\031\002\351\122\300\142\333  
\115\231\236\342\152\014\104\070\315\376\276\343\144\011\160\305  
\376\261\153\051\266\057\111\310\073\324\047\004\045\020\227\057  
\347\220\155\300\050\102\231\327\114\103\336\303\365\041\155\124  
\237\135\303\130\341\300\344\331\133\260\270\334\264\173\337\066  
\072\302\265\146\042\022\326\207\015\002\003\001\000\001\243\023  
\060\021\060\017\006\003\125\035\023\001\001\377\004\005\060\003  
\001\001\377\060\015\006\011\052\206\110\206\367\015\001\001\005  
\005\000\003\201\201\000\276\100\151\101\157\306\333\301\247\277  
\007\300\105\344\320\265\103\036\114\225\063\065\351\136\302\076  
\050\366\250\015\120\325\377\342\014\017\374\120\002\216\256\221  
\271\255\064\212\215\237\047\161\252\031\314\113\350\004\312\324  
\027\153\022\032\326\306\137\326\315\136\377\211\166\277\330\110  
\330\131\275\010\212\211\035\127\315\105\036\122\272\022\232\204  
\372\030\211\137\350\371\060\065\152\001\140\271\231\200\203\205  
\012\156\332\364\311\217\136\163\055\061\112\143\240\164\362\037  
\213\042\322\051\076\353

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Thawte Server CA"

# Issuer: 1.2.840.113549.1.9.1=server-certs@thawte.com,CN=Thawte Server CA,OU=Certification Services  
Division,O=Thawte Consulting cc,L=Cape Town,ST=Western Cape,C=ZA

```

Serial Number:34:a4:ff:f6:30:af:4c:a5:3c:33:17:42:a1:94:66:75
Subject: 1.2.840.113549.1.9.1=server-certs@thawte.com,CN=Thawte Server CA,OU=Certification Services
Division,O=Thawte Consulting cc,L=Cape Town,ST=Western Cape,C=ZA
Not Valid Before: Thu Aug 01 00:00:00 1996
Not Valid After: Fri Jan 01 23:59:59 2021
Fingerprint (MD5): ee:fe:61:69:65:6e:f8:9c:c6:2a:f4:d7:2b:63:ef:a2
Fingerprint (SHA1): 9f:ad:91:a6:ce:6a:c6:c5:00:47:c4:4e:c9:d4:a5:0d:92:d8:49:79
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Thawte Server CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\237\255\221\246\316\152\306\305\000\107\304\116\311\324\245\015
\222\330\111\171
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\356\376\141\151\145\156\370\234\306\052\364\327\053\143\357\242
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\304\061\013\060\011\006\003\125\004\006\023\002\132\101
\061\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145
\162\156\040\103\141\160\145\061\022\060\020\006\003\125\004\007
\023\011\103\141\160\145\040\124\157\167\156\061\035\060\033\006
\003\125\004\012\023\024\124\150\141\167\164\145\040\103\157\156
\163\165\154\164\151\156\147\040\143\143\061\050\060\046\006\003
\125\004\013\023\037\103\145\162\164\151\146\151\143\141\164\151
\157\156\040\123\145\162\166\151\143\145\163\040\104\151\166\151
\163\151\157\156\061\031\060\027\006\003\125\004\003\023\020\124
\150\141\167\164\145\040\123\145\162\166\145\162\040\103\101\061
\046\060\044\006\011\052\206\110\206\367\015\001\011\001\026\027
\163\145\162\166\145\162\055\143\145\162\164\163\100\164\150\141
\167\164\145\056\143\157\155
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\064\244\377\366\060\257\114\245\074\063\027\102\241\224
\146\165
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "TC TrustCenter Universal CA III"
Issuer: CN=TC TrustCenter Universal CA III,OU=TC TrustCenter Universal CA,O=TC TrustCenter
GmbH,C=DE
Serial Number:63:25:00:01:00:02:14:8d:33:15:02:e4:6c:f4

```

```
Subject: CN=TC TrustCenter Universal CA III,OU=TC TrustCenter Universal CA,O=TC TrustCenter
GmbH,C=DE
Not Valid Before: Wed Sep 09 08:15:27 2009
Not Valid After: Mon Dec 31 23:59:59 2029
Fingerprint (MD5): 9f:dd:db:ab:ff:8e:ff:45:21:5f:f0:6c:9d:8f:fe:2b
Fingerprint (SHA1): 96:56:cd:7b:57:96:98:95:d0:e1:41:46:68:06:fb:b8:c6:11:06:87
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "TC TrustCenter Universal CA III"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\173\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\034\060\032\006\003\125\004\012\023\023\124\103\040\124\162\165
\163\164\103\145\156\164\145\162\040\107\155\142\110\061\044\060
\042\006\003\125\004\013\023\033\124\103\040\124\162\165\163\164
\103\145\156\164\145\162\040\125\156\151\166\145\162\163\141\154
\040\103\101\061\050\060\046\006\003\125\004\003\023\037\124\103
\040\124\162\165\163\164\103\145\156\164\145\162\040\125\156\151
\166\145\162\163\141\154\040\103\101\040\111\111\111
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\173\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\034\060\032\006\003\125\004\012\023\023\124\103\040\124\162\165
\163\164\103\145\156\164\145\162\040\107\155\142\110\061\044\060
\042\006\003\125\004\013\023\033\124\103\040\124\162\165\163\164
\103\145\156\164\145\162\040\125\156\151\166\145\162\163\141\154
\040\103\101\061\050\060\046\006\003\125\004\003\023\037\124\103
\040\124\162\165\163\164\103\145\156\164\145\162\040\125\156\151
\166\145\162\163\141\154\040\103\101\040\111\111\111
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\016\143\045\000\001\000\002\024\215\063\025\002\344\154\364
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\341\060\202\002\311\240\003\002\001\002\002\016\143
\045\000\001\000\002\024\215\063\025\002\344\154\364\060\015\006
\011\052\206\110\206\367\015\001\001\005\005\000\060\173\061\013
\060\011\006\003\125\004\006\023\002\104\105\061\034\060\032\006
\003\125\004\012\023\023\124\103\040\124\162\165\163\164\103\145
\156\164\145\162\040\107\155\142\110\061\044\060\042\006\003\125
\004\013\023\033\124\103\040\124\162\165\163\164\103\145\156\164
\145\162\040\125\156\151\166\145\162\163\141\154\040\103\101\061
\050\060\046\006\003\125\004\003\023\037\124\103\040\124\162\165
\163\164\103\145\156\164\145\162\040\125\156\151\166\145\162\163
\141\154\040\103\101\040\111\111\111\060\036\027\015\060\071\060
```

\071\060\071\060\070\061\065\062\067\132\027\015\062\071\061\062  
\063\061\062\063\065\071\065\071\132\060\173\061\013\060\011\006  
\003\125\004\006\023\002\104\105\061\034\060\032\006\003\125\004  
\012\023\023\124\103\040\124\162\165\163\164\103\145\156\164\145  
\162\040\107\155\142\110\061\044\060\042\006\003\125\004\013\023  
\033\124\103\040\124\162\165\163\164\103\145\156\164\145\162\040  
\125\156\151\166\145\162\163\141\154\040\103\101\061\050\060\046  
\006\003\125\004\003\023\037\124\103\040\124\162\165\163\164\103  
\145\156\164\145\162\040\125\156\151\166\145\162\163\141\154\040  
\103\101\040\111\111\111\060\202\001\042\060\015\006\011\052\206  
\110\206\367\015\001\001\001\005\000\003\202\001\017\000\060\202  
\001\012\002\202\001\001\000\302\332\234\142\260\271\161\022\260  
\013\310\032\127\262\256\203\024\231\263\064\113\233\220\242\305  
\347\347\057\002\240\115\055\244\372\205\332\233\045\205\055\100  
\050\040\155\352\340\275\261\110\203\042\051\104\237\116\203\356  
\065\121\023\163\164\325\274\362\060\146\224\123\300\100\066\057  
\014\204\145\316\017\156\302\130\223\350\054\013\072\351\301\216  
\373\362\153\312\074\342\234\116\216\344\371\175\323\047\237\033  
\325\147\170\207\055\177\013\107\263\307\350\311\110\174\257\057  
\314\012\331\101\357\237\376\232\341\262\256\371\123\265\345\351  
\106\237\140\343\337\215\323\177\373\226\176\263\265\162\370\113  
\255\010\171\315\151\211\100\047\365\052\301\255\103\354\244\123  
\310\141\266\367\322\171\052\147\030\166\110\155\133\045\001\321  
\046\305\267\127\151\043\025\133\141\212\255\360\033\055\331\257  
\134\361\046\220\151\251\325\014\100\365\063\200\103\217\234\243  
\166\052\105\264\257\277\177\076\207\077\166\305\315\052\336\040  
\305\026\130\313\371\033\365\017\313\015\021\122\144\270\322\166  
\142\167\203\361\130\237\377\002\003\001\000\001\243\143\060\141  
\060\037\006\003\125\035\043\004\030\060\026\200\024\126\347\341  
\133\045\103\200\340\366\214\341\161\274\216\345\200\057\304\110  
\342\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001  
\001\377\060\016\006\003\125\035\017\001\001\377\004\004\003\002  
\001\006\060\035\006\003\125\035\016\004\026\004\024\126\347\341  
\133\045\103\200\340\366\214\341\161\274\216\345\200\057\304\110  
\342\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000  
\003\202\001\001\000\203\307\257\352\177\115\012\074\071\261\150  
\276\173\155\211\056\351\263\011\347\030\127\215\205\232\027\363  
\166\102\120\023\017\307\220\157\063\255\305\111\140\053\154\111  
\130\031\324\342\276\267\277\253\111\274\224\310\253\276\050\154  
\026\150\340\310\227\106\040\240\150\147\140\210\071\040\121\330  
\150\001\021\316\247\366\021\007\366\354\354\254\032\037\262\146  
\156\126\147\140\172\164\136\300\155\227\066\256\265\015\135\146  
\163\300\045\062\105\330\112\006\007\217\304\267\007\261\115\006  
\015\341\245\353\364\165\312\272\234\320\275\263\323\062\044\114  
\356\176\342\166\004\113\111\123\330\362\351\124\063\374\345\161  
\037\075\024\134\226\113\361\072\362\000\273\154\264\372\226\125  
\010\210\011\301\314\221\031\051\260\040\055\377\313\070\244\100  
\341\027\276\171\141\200\377\007\003\206\114\116\173\006\237\021



```
\206\215\211\356\047\304\333\342\274\031\216\013\303\303\023\307
\055\003\143\073\323\350\344\242\052\302\202\010\224\026\124\360
\357\037\047\220\045\270\015\016\050\033\107\167\107\275\034\250
\045\361\224\264\146
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

# Microsoft Code Signing Only Certificate

# Trust for "TC TrustCenter Universal CA III"

# Issuer: CN=TC TrustCenter Universal CA III,OU=TC TrustCenter Universal CA,O=TC TrustCenter GmbH,C=DE

# Serial Number:63:25:00:01:00:02:14:8d:33:15:02:e4:6c:f4

# Subject: CN=TC TrustCenter Universal CA III,OU=TC TrustCenter Universal CA,O=TC TrustCenter GmbH,C=DE

# Not Valid Before: Wed Sep 09 08:15:27 2009

# Not Valid After: Mon Dec 31 23:59:59 2029

# Fingerprint (MD5): 9f:dd:db:ab:ff:8e:ff:45:21:5f:f0:6c:9d:8f:fe:2b

# Fingerprint (SHA1): 96:56:cd:7b:57:96:98:95:d0:e1:41:46:68:06:fb:b8:c6:11:06:87

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "TC TrustCenter Universal CA III"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\226\126\315\173\127\226\230\225\320\341\101\106\150\006\373\270
\306\021\006\207
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\237\335\333\253\377\216\377\105\041\137\360\154\235\217\376\053
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\173\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\034\060\032\006\003\125\004\012\023\023\124\103\040\124\162\165
\163\164\103\145\156\164\145\162\040\107\155\142\110\061\044\060
\042\006\003\125\004\013\023\033\124\103\040\124\162\165\163\164
\103\145\156\164\145\162\040\125\156\151\166\145\162\163\141\154
\040\103\101\061\050\060\046\006\003\125\004\003\023\037\124\103
\040\124\162\165\163\164\103\145\156\164\145\162\040\125\156\151
\166\145\162\163\141\154\040\103\101\040\111\111\111
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\016\143\045\000\001\000\002\024\215\063\025\002\344\154\364
```

END

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

```
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

```
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "KEYNECTIS ROOT CA"

# Issuer: CN=KEYNECTIS ROOT CA,OU=ROOT,O=KEYNECTIS,C=FR

# Serial Number:11:21:bc:27:6c:55:47:af:58:4e:ef:d4:ce:d6:29:b2:a2:85

# Subject: CN=KEYNECTIS ROOT CA,OU=ROOT,O=KEYNECTIS,C=FR

# Not Valid Before: Tue May 26 00:00:00 2009

# Not Valid After: Tue May 26 00:00:00 2020

# Fingerprint (MD5): cc:4d:ae:fb:30:6b:d8:38:fe:50:eb:86:61:4b:d2:26

# Fingerprint (SHA1): 9c:61:5c:4d:4d:85:10:3a:53:26:c2:4d:ba:ea:e4:a2:d2:d5:cc:97

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "KEYNECTIS ROOT CA"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\114\061\013\060\011\006\003\125\004\006\023\002\106\122\061  
\022\060\020\006\003\125\004\012\023\011\113\105\131\116\105\103  
\124\111\123\061\015\060\013\006\003\125\004\013\023\004\122\117  
\117\124\061\032\060\030\006\003\125\004\003\023\021\113\105\131  
\116\105\103\124\111\123\040\122\117\117\124\040\103\101

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\114\061\013\060\011\006\003\125\004\006\023\002\106\122\061  
\022\060\020\006\003\125\004\012\023\011\113\105\131\116\105\103  
\124\111\123\061\015\060\013\006\003\125\004\013\023\004\122\117  
\117\124\061\032\060\030\006\003\125\004\003\023\021\113\105\131  
\116\105\103\124\111\123\040\122\117\117\124\040\103\101

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\022\021\041\274\047\154\125\107\257\130\116\357\324\316\326  
\051\262\242\205

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\345\060\202\002\315\240\003\002\001\002\002\022\021  
\041\274\047\154\125\107\257\130\116\357\324\316\326\051\262\242  
\205\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000  
\060\114\061\013\060\011\006\003\125\004\006\023\002\106\122\061  
\022\060\020\006\003\125\004\012\023\011\113\105\131\116\105\103  
\124\111\123\061\015\060\013\006\003\125\004\013\023\004\122\117  
\117\124\061\032\060\030\006\003\125\004\003\023\021\113\105\131  
\116\105\103\124\111\123\040\122\117\117\124\040\103\101\060\036  
\027\015\060\071\060\065\062\066\060\060\060\060\060\060\132\027  
\015\062\060\060\065\062\066\060\060\060\060\060\060\132\060\114  
\061\013\060\011\006\003\125\004\006\023\002\106\122\061\022\060

\020\006\003\125\004\012\023\011\113\105\131\116\105\103\124\111  
\123\061\015\060\013\006\003\125\004\013\023\004\122\117\117\124  
\061\032\060\030\006\003\125\004\003\023\021\113\105\131\116\105  
\103\124\111\123\040\122\117\117\124\040\103\101\060\202\001\042  
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003  
\202\001\017\000\060\202\001\012\002\202\001\001\000\306\375\263  
\027\205\241\255\046\033\225\151\065\041\075\244\210\372\336\333  
\140\066\100\027\151\302\024\143\373\270\331\302\164\025\067\056  
\234\320\040\315\151\215\204\062\242\205\114\024\264\233\362\045  
\263\124\052\203\077\055\276\017\363\073\144\321\377\240\120\357  
\167\117\073\116\341\077\013\144\205\232\272\130\176\322\303\142  
\323\144\045\242\324\262\227\074\167\135\143\052\063\222\374\315  
\202\015\233\124\225\207\365\265\353\214\315\133\321\312\060\057  
\311\210\106\265\315\015\021\264\030\217\356\321\241\076\135\025  
\350\050\317\337\303\220\233\154\314\321\014\105\167\263\072\353  
\212\220\035\351\257\144\152\211\173\251\075\103\164\372\344\147  
\042\241\373\334\115\304\365\142\311\312\045\264\311\200\140\063  
\251\335\173\240\002\277\226\045\012\136\311\137\051\173\264\027  
\201\213\155\201\031\320\331\203\134\005\217\101\151\032\151\103  
\200\237\250\257\340\351\214\221\213\047\053\242\046\140\315\017  
\362\244\243\002\203\216\030\201\302\027\212\103\025\371\155\363  
\035\020\244\132\234\104\141\043\041\172\330\373\321\002\003\001  
\000\001\243\201\300\060\201\275\060\022\006\003\125\035\023\001  
\001\377\004\010\060\006\001\001\377\002\001\004\060\016\006\003  
\125\035\017\001\001\377\004\004\003\002\001\006\060\127\006\003  
\125\035\037\004\120\060\116\060\114\240\112\240\110\206\106\150  
\164\164\160\072\057\057\164\162\165\163\164\143\145\156\164\145  
\162\055\143\162\154\056\143\145\162\164\151\146\151\143\141\164  
\062\056\143\157\155\057\113\145\171\156\145\143\164\151\163\057  
\113\105\131\116\105\103\124\111\123\137\122\117\117\124\137\103  
\101\056\143\162\154\060\035\006\003\125\035\016\004\026\004\024  
\357\267\043\227\320\250\221\177\246\317\246\041\300\064\237\314  
\167\101\341\320\060\037\006\003\125\035\043\004\030\060\026\200  
\024\357\267\043\227\320\250\221\177\246\317\246\041\300\064\237  
\314\167\101\341\320\060\015\006\011\052\206\110\206\367\015\001  
\001\013\005\000\003\202\001\001\000\032\061\151\231\102\302\345  
\100\205\242\237\222\303\143\324\217\041\071\250\031\041\376\172  
\374\303\115\100\363\053\350\113\254\133\114\131\223\306\334\176  
\013\257\174\137\225\205\153\275\307\157\272\301\276\370\306\072  
\147\113\223\306\005\151\076\044\055\360\033\221\306\076\077\354  
\102\030\223\154\003\044\212\156\371\040\147\053\174\155\253\064  
\311\052\042\063\015\327\175\217\356\322\066\144\102\310\065\232  
\156\031\141\313\215\147\360\150\247\320\044\005\346\303\027\272  
\105\256\174\103\265\200\170\003\115\040\163\005\374\103\020\235  
\065\151\102\165\224\045\202\053\246\073\220\030\336\301\251\257  
\363\055\225\277\225\247\317\030\227\341\131\342\242\257\032\026  
\141\015\367\023\161\123\223\067\375\074\257\000\035\154\213\024  
\257\106\226\214\266\122\174\314\055\116\315\341\351\113\012\356

```
\232\376\172\230\347\051\272\033\332\034\272\334\153\315\004\016
\046\100\251\353\163\074\376\120\250\021\047\125\275\333\216\113
\357\117\030\355\025\377\275\206\230\146\356\232\045\161\064\154
\120\361\262\121\313\146\235\115\051
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

# Microsoft Code Signing Only Certificate

# Trust for "KEYNECTIS ROOT CA"

# Issuer: CN=KEYNECTIS ROOT CA,OU=ROOT,O=KEYNECTIS,C=FR

# Serial Number:11:21:bc:27:6c:55:47:af:58:4e:ef:d4:ce:d6:29:b2:a2:85

# Subject: CN=KEYNECTIS ROOT CA,OU=ROOT,O=KEYNECTIS,C=FR

# Not Valid Before: Tue May 26 00:00:00 2009

# Not Valid After: Tue May 26 00:00:00 2020

# Fingerprint (MD5): cc:4d:ae:fb:30:6b:d8:38:fe:50:eb:86:61:4b:d2:26

# Fingerprint (SHA1): 9c:61:5c:4d:4d:85:10:3a:53:26:c2:4d:ba:ea:e4:a2:d2:d5:cc:97

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "KEYNECTIS ROOT CA"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\234\141\134\115\115\205\020\072\123\046\302\115\272\352\344\242
\322\325\314\227
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\314\115\256\373\060\153\330\070\376\120\353\206\141\113\322\046
END
```

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\114\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\022\060\020\006\003\125\004\012\023\011\113\105\131\116\105\103
\124\111\123\061\015\060\013\006\003\125\004\013\023\004\122\117
\117\124\061\032\060\030\006\003\125\004\003\023\021\113\105\131
\116\105\103\124\111\123\040\122\117\117\124\040\103\101
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\022\021\041\274\047\154\125\107\257\130\116\357\324\316\326
\051\262\242\205
```

END

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

```
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

```
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

```
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

# Microsoft Code Signing Only Certificate

# Certificate "I.CA - Standard Certification Authority, 09/2009"

```
Issuer: OU=I.CA - Provider of Certification Services,O=První certifikační autorita\, a.s.,CN=I.CA - Standard
Certification Authority\, 09/2009,C=CZ
Serial Number:16:e3:60
Subject: OU=I.CA - Provider of Certification Services,O=První certifikační autorita\, a.s.,CN=I.CA - Standard
Certification Authority\, 09/2009,C=CZ
Not Valid Before: Tue Sep 01 00:00:00 2009
Not Valid After: Sun Sep 01 00:00:00 2019
Fingerprint (MD5): 86:ef:8e:31:9d:9f:85:69:a2:a4:1a:12:71:68:ba:1b
Fingerprint (SHA1): 90:de:ce:77:f8:c8:25:34:0e:62:eb:d6:35:e1:be:20:cf:73:27:dd
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "I.CA - Standard Certification Authority, 09/2009"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\253\061\013\060\011\006\003\125\004\006\023\002\103\132
\061\071\060\067\006\003\125\004\003\014\060\111\056\103\101\040
\055\040\123\164\141\156\144\141\162\144\040\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\171\054\040\060\071\057\062\060\060\071\061\055\060\053\006
\003\125\004\012\014\044\120\162\166\156\303\255\040\143\145\162
\164\151\146\151\153\141\304\215\156\303\255\040\141\165\164\157
\162\151\164\141\054\040\141\056\163\056\061\062\060\060\006\003
\125\004\013\014\051\111\056\103\101\040\055\040\120\162\157\166
\151\144\145\162\040\157\146\040\103\145\162\164\151\146\151\143
\141\164\151\157\156\040\123\145\162\166\151\143\145\163
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\253\061\013\060\011\006\003\125\004\006\023\002\103\132
\061\071\060\067\006\003\125\004\003\014\060\111\056\103\101\040
\055\040\123\164\141\156\144\141\162\144\040\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\171\054\040\060\071\057\062\060\060\071\061\055\060\053\006
\003\125\004\012\014\044\120\162\166\156\303\255\040\143\145\162
\164\151\146\151\153\141\304\215\156\303\255\040\141\165\164\157
\162\151\164\141\054\040\141\056\163\056\061\062\060\060\006\003
\125\004\013\014\051\111\056\103\101\040\055\040\120\162\157\166
\151\144\145\162\040\157\146\040\103\145\162\164\151\146\151\143
\141\164\151\157\156\040\123\145\162\166\151\143\145\163
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\003\026\343\140
END
CKA_VALUE MULTILINE_OCTAL
\060\202\004\052\060\202\003\022\240\003\002\001\002\002\003\026
\343\140\060\015\006\011\052\206\110\206\367\015\001\001\013\005
```

\000\060\201\253\061\013\060\011\006\003\125\004\006\023\002\103  
\132\061\071\060\067\006\003\125\004\003\014\060\111\056\103\101  
\040\055\040\123\164\141\156\144\141\162\144\040\103\145\162\164  
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162  
\151\164\171\054\040\060\071\057\062\060\060\071\061\055\060\053  
\006\003\125\004\012\014\044\120\162\166\156\303\255\040\143\145  
\162\164\151\146\151\153\141\304\215\156\303\255\040\141\165\164  
\157\162\151\164\141\054\040\141\056\163\056\061\062\060\060\006  
\003\125\004\013\014\051\111\056\103\101\040\055\040\120\162\157  
\166\151\144\145\162\040\157\146\040\103\145\162\164\151\146\151  
\143\141\164\151\157\156\040\123\145\162\166\151\143\145\163\060  
\036\027\015\060\071\060\071\060\061\060\060\060\060\060\060\132  
\027\015\061\071\060\071\060\061\060\060\060\060\060\132\060  
\201\253\061\013\060\011\006\003\125\004\006\023\002\103\132\061  
\071\060\067\006\003\125\004\003\014\060\111\056\103\101\040\055  
\040\123\164\141\156\144\141\162\144\040\103\145\162\164\151\146  
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164  
\171\054\040\060\071\057\062\060\060\071\061\055\060\053\006\003  
\125\004\012\014\044\120\162\166\156\303\255\040\143\145\162\164  
\151\146\151\153\141\304\215\156\303\255\040\141\165\164\157\162  
\151\164\141\054\040\141\056\163\056\061\062\060\060\006\003\125  
\004\013\014\051\111\056\103\101\040\055\040\120\162\157\166\151  
\144\145\162\040\157\146\040\103\145\162\164\151\146\151\143\141  
\164\151\157\156\040\123\145\162\166\151\143\145\163\060\202\001  
\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000  
\003\202\001\017\000\060\202\001\012\002\202\001\001\000\250\010  
\126\022\077\373\224\203\251\140\166\275\105\203\176\226\064\074  
\317\111\116\326\317\374\040\341\341\261\002\024\155\255\312\176  
\120\162\051\251\375\234\167\046\070\144\367\103\101\077\024\202  
\004\242\101\220\002\347\231\367\203\142\170\104\205\350\235\005  
\160\324\376\170\241\164\064\307\254\073\205\002\335\356\121\133  
\106\073\123\063\326\147\354\354\024\056\343\304\345\263\164\203  
\000\314\306\226\346\034\203\332\334\030\120\151\372\335\103\321  
\216\100\375\026\244\267\214\145\207\340\276\254\227\037\260\161  
\353\000\145\127\026\316\154\207\257\227\210\360\135\367\207\115  
\072\021\012\242\302\104\024\300\026\362\117\365\333\225\102\257  
\051\263\051\240\203\121\156\376\074\121\127\223\060\045\046\272  
\073\152\206\310\366\013\321\161\077\234\267\072\310\316\147\011  
\214\372\100\033\172\154\336\310\034\240\306\134\273\141\030\210  
\077\056\131\035\126\374\172\105\234\246\331\070\331\305\140\314  
\271\101\125\267\312\274\115\356\264\247\304\366\240\016\274\211  
\305\001\225\261\134\337\117\360\314\302\315\102\273\137\002\003  
\001\000\001\243\125\060\123\060\017\006\003\125\035\023\001\001  
\377\004\005\060\003\001\001\377\060\016\006\003\125\035\017\001  
\001\377\004\004\003\002\001\006\060\021\006\003\125\035\040\004  
\012\060\010\060\006\006\004\125\035\040\000\060\035\006\003\125  
\035\016\004\026\004\024\301\114\070\224\325\200\206\110\331\042  
\220\054\323\356\031\020\333\147\107\207\060\015\006\011\052\206

```
\110\206\367\015\001\001\013\005\000\003\202\001\001\000\243\313
\321\175\164\373\065\170\007\222\350\356\150\351\344\122\136\360
\330\143\221\224\237\150\373\276\133\272\251\341\143\167\253\120
\166\306\351\126\107\124\120\231\264\045\213\350\301\031\162\066
\132\011\276\347\326\372\302\266\062\075\107\303\120\116\231\156
\223\066\305\212\121\167\143\340\111\063\253\074\037\212\351\073
\331\206\265\050\307\302\165\161\133\146\152\215\130\016\363\165
\220\265\255\054\201\030\315\234\330\303\315\117\361\373\151\040
\227\300\110\317\023\105\022\265\034\366\076\203\342\116\136\335
\131\306\153\112\340\110\316\331\052\235\145\072\275\057\360\360
\114\274\011\172\313\067\000\244\077\073\014\043\335\343\373\306
\102\242\264\266\346\322\162\205\114\337\263\336\026\247\176\035
\347\324\317\255\253\263\120\344\160\214\337\260\160\220\311\206
\236\356\174\204\213\144\034\153\341\150\025\176\311\245\164\340
\116\367\132\352\335\022\061\253\221\100\205\161\013\316\051\050
\371\156\070\024\134\035\376\354\021\277\115\103\176\236\137\070
\277\327\352\236\223\057\320\035\164\265\005\011\323\042
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

# Microsoft Code Signing Only Certificate

# Trust for "I.CA - Standard Certification Authority, 09/2009"

# Issuer: OU=I.CA - Provider of Certification Services,O=První certifikační autorita, a.s.,CN=I.CA - Standard Certification Authority, 09/2009,C=CZ

# Serial Number:16:e3:60

# Subject: OU=I.CA - Provider of Certification Services,O=První certifikační autorita, a.s.,CN=I.CA - Standard Certification Authority, 09/2009,C=CZ

# Not Valid Before: Tue Sep 01 00:00:00 2009

# Not Valid After: Sun Sep 01 00:00:00 2019

# Fingerprint (MD5): 86:ef:8e:31:9d:9f:85:69:a2:a4:1a:12:71:68:ba:1b

# Fingerprint (SHA1): 90:de:ce:77:f8:c8:25:34:0e:62:eb:d6:35:e1:be:20:cf:73:27:dd

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "I.CA - Standard Certification Authority, 09/2009"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\220\336\316\167\370\310\045\064\016\142\353\326\065\341\276\040
\317\163\047\335
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\206\357\216\061\235\237\205\151\242\244\032\022\161\150\272\033
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\201\253\061\013\060\011\006\003\125\004\006\023\002\103\132
\061\071\060\067\006\003\125\004\003\014\060\111\056\103\101\040
```

```
\055\040\123\164\141\156\144\141\162\144\040\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\171\054\040\060\071\057\062\060\060\071\061\055\060\053\006
\003\125\004\012\014\044\120\162\166\156\303\255\040\143\145\162
\164\151\146\151\153\141\304\215\156\303\255\040\141\165\164\157
\162\151\164\141\054\040\141\056\163\056\061\062\060\060\006\003
\125\004\013\014\051\111\056\103\101\040\055\040\120\162\157\166
\151\144\145\162\040\157\146\040\103\145\162\164\151\146\151\143
\141\164\151\157\156\040\123\145\162\166\151\143\145\163
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\003\026\343\140
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "I.CA - Qualified Certification Authority, 09/2009"

# Issuer: OU=I.CA - Accredited Provider of Certification Services,O=První certifikační autorita, a.s.,CN=I.CA - Qualified Certification Authority, 09/2009,C=CZ

# Serial Number:a0:37:a0

# Subject: OU=I.CA - Accredited Provider of Certification Services,O=První certifikační autorita, a.s.,CN=I.CA - Qualified Certification Authority, 09/2009,C=CZ

# Not Valid Before: Tue Sep 01 00:00:00 2009

# Not Valid After: Sun Sep 01 00:00:00 2019

# Fingerprint (MD5): 8d:63:9b:56:c1:14:e4:ee:9a:12:85:86:11:90:82:a3

# Fingerprint (SHA1): d2:44:1a:a8:c2:03:ae:ca:a9:6e:50:1f:12:4d:52:b6:8f:e4:c3:75

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "I.CA - Qualified Certification Authority, 09/2009"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

```
\060\201\267\061\013\060\011\006\003\125\004\006\023\002\103\132
\061\072\060\070\006\003\125\004\003\014\061\111\056\103\101\040
\055\040\121\165\141\154\151\146\151\145\144\040\103\145\162\164
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162
\151\164\171\054\040\060\071\057\062\060\060\071\061\055\060\053
\006\003\125\004\012\014\044\120\162\166\156\303\255\040\143\145
\162\164\151\146\151\153\141\304\215\156\303\255\040\141\165\164
\157\162\151\164\141\054\040\141\056\163\056\061\075\060\073\006
\003\125\004\013\014\064\111\056\103\101\040\055\040\101\143\143
\162\145\144\151\164\145\144\040\120\162\157\166\151\144\145\162
\040\157\146\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\123\145\162\166\151\143\145\163
```



END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\267\061\013\060\011\006\003\125\004\006\023\002\103\132  
\061\072\060\070\006\003\125\004\003\014\061\111\056\103\101\040  
\055\040\121\165\141\154\151\146\151\145\144\040\103\145\162\164  
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162  
\151\164\171\054\040\060\071\057\062\060\060\071\061\055\060\053  
\006\003\125\004\012\014\044\120\162\166\156\303\255\040\143\145  
\162\164\151\146\151\153\141\304\215\156\303\255\040\141\165\164  
\157\162\151\164\141\054\040\141\056\163\056\061\075\060\073\006  
\003\125\004\013\014\064\111\056\103\101\040\055\040\101\143\143  
\162\145\144\151\164\145\144\040\120\162\157\166\151\144\145\162  
\040\157\146\040\103\145\162\164\151\146\151\143\141\164\151\157  
\156\040\123\145\162\166\151\143\145\163

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\004\000\240\067\240

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\036\060\202\004\006\240\003\002\001\002\002\004\000  
\240\067\240\060\015\006\011\052\206\110\206\367\015\001\001\013  
\005\000\060\201\267\061\013\060\011\006\003\125\004\006\023\002  
\103\132\061\072\060\070\006\003\125\004\003\014\061\111\056\103  
\101\040\055\040\121\165\141\154\151\146\151\145\144\040\103\145  
\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150  
\157\162\151\164\171\054\040\060\071\057\062\060\060\071\061\055  
\060\053\006\003\125\004\012\014\044\120\162\166\156\303\255\040  
\143\145\162\164\151\146\151\153\141\304\215\156\303\255\040\141  
\165\164\157\162\151\164\141\054\040\141\056\163\056\061\075\060  
\073\006\003\125\004\013\014\064\111\056\103\101\040\055\040\101  
\143\143\162\145\144\151\164\145\144\040\120\162\157\166\151\144  
\145\162\040\157\146\040\103\145\162\164\151\146\151\143\141\164  
\151\157\156\040\123\145\162\166\151\143\145\163\060\036\027\015  
\060\071\060\071\060\061\060\060\060\060\060\132\027\015\061  
\071\060\071\060\061\060\060\060\060\060\132\060\201\267\061  
\013\060\011\006\003\125\004\006\023\002\103\132\061\072\060\070  
\006\003\125\004\003\014\061\111\056\103\101\040\055\040\121\165  
\141\154\151\146\151\145\144\040\103\145\162\164\151\146\151\143  
\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171\054  
\040\060\071\057\062\060\060\071\061\055\060\053\006\003\125\004  
\012\014\044\120\162\166\156\303\255\040\143\145\162\164\151\146  
\151\153\141\304\215\156\303\255\040\141\165\164\157\162\151\164  
\141\054\040\141\056\163\056\061\075\060\073\006\003\125\004\013  
\014\064\111\056\103\101\040\055\040\101\143\143\162\145\144\151  
\164\145\144\040\120\162\157\166\151\144\145\162\040\157\146\040  
\103\145\162\164\151\146\151\143\141\164\151\157\156\040\123\145  
\162\166\151\143\145\163\060\202\001\042\060\015\006\011\052\206

\110\206\367\015\001\001\001\005\000\003\202\001\017\000\060\202  
\001\012\002\202\001\001\000\265\066\204\313\102\202\360\317\145  
\342\124\232\130\163\054\343\353\025\127\122\360\317\042\130\210  
\204\015\170\052\357\324\161\346\375\212\106\041\326\077\147\256  
\064\161\346\247\222\064\057\041\176\346\333\160\112\340\344\202  
\350\243\274\221\226\000\337\072\051\073\076\206\024\043\212\127  
\143\357\056\351\033\163\347\066\212\141\172\220\261\304\277\252  
\215\003\305\261\204\366\321\337\022\260\224\160\360\007\154\241  
\133\072\073\127\164\025\200\064\106\363\173\056\202\244\047\264  
\246\002\334\271\345\114\146\311\244\323\376\003\076\366\202\223  
\275\000\165\047\374\200\141\026\116\044\261\317\045\141\055\213  
\364\140\262\364\053\046\164\244\201\077\277\051\367\017\013\307  
\273\303\056\251\003\202\335\177\314\032\334\121\151\222\111\276  
\300\023\360\117\021\343\053\311\005\165\041\322\072\236\121\247  
\006\025\244\134\346\037\350\144\235\153\042\160\363\246\355\273  
\020\273\276\040\312\066\266\351\343\201\343\101\026\222\306\172  
\172\073\167\255\243\134\170\015\370\230\167\017\330\154\221\136  
\354\110\344\305\044\001\313\002\003\001\000\001\243\202\001\056  
\060\202\001\052\060\017\006\003\125\035\023\001\001\377\004\005  
\060\003\001\001\377\060\016\006\003\125\035\017\001\001\377\004  
\004\003\002\001\006\060\201\347\006\003\125\035\040\004\201\337  
\060\201\334\060\201\331\006\004\125\035\040\000\060\201\320\060  
\201\315\006\010\053\006\001\005\005\007\002\002\060\201\300\032  
\201\275\124\145\156\164\157\040\143\145\162\164\151\146\151\153  
\141\164\040\152\145\040\166\171\144\141\156\040\152\141\153\157  
\040\153\166\141\154\151\146\151\153\157\166\141\156\171\040\163  
\171\163\164\145\155\157\166\171\040\143\145\162\164\151\146\151  
\153\141\164\040\160\157\144\154\145\040\172\141\153\157\156\141  
\040\143\056\040\062\062\067\057\062\060\060\060\040\123\142\056  
\040\166\040\160\154\141\164\156\145\155\040\172\156\145\156\151  
\057\124\150\151\163\040\151\163\040\161\165\141\154\151\146\151  
\145\144\040\163\171\163\164\145\155\040\143\145\162\164\151\146  
\151\143\141\164\145\040\141\143\143\157\162\144\151\156\147\040  
\164\157\040\103\172\145\143\150\040\101\143\164\040\116\157\056  
\040\062\062\067\057\062\060\060\060\040\103\157\154\154\056\060  
\035\006\003\125\035\016\004\026\004\024\171\313\320\043\351\072  
\147\160\221\164\117\323\121\342\340\040\375\341\050\373\060\015  
\006\011\052\206\110\206\367\015\001\001\013\005\000\003\202\001  
\001\000\175\225\245\066\327\210\130\150\021\317\145\373\133\015  
\057\366\164\201\213\131\331\235\111\270\365\071\226\311\360\262  
\017\004\314\130\214\372\004\062\254\300\107\276\055\303\336\223  
\213\246\226\105\256\126\164\345\232\113\242\077\252\046\304\050  
\126\141\044\005\127\137\231\244\307\147\260\030\122\311\373\101  
\250\371\344\361\236\062\316\236\025\105\331\135\254\373\236\333  
\233\307\074\217\257\333\113\242\043\350\073\051\160\161\030\245  
\370\343\207\256\041\023\152\364\151\052\131\016\061\263\050\123  
\072\142\232\254\010\223\174\251\207\266\137\132\246\030\302\320  
\302\363\135\214\157\247\077\060\211\070\353\224\023\052\110\132

```
\336\171\345\220\313\136\244\271\027\266\143\006\071\137\310\066
\143\021\364\266\022\317\110\166\211\074\152\127\371\353\163\042
\367\372\076\005\256\072\300\306\016\222\115\317\324\211\124\321
\032\202\152\067\133\226\050\250\000\042\203\316\320\052\271\263
\215\123\130\056\145\134\325\362\333\214\001\045\163\154\227\213
\374\140\001\354\100\223\301\355\121\270\252\313\142\330\045\060
\242\075
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

# Microsoft Code Signing Only Certificate

# Trust for "I.CA - Qualified Certification Authority, 09/2009"

# Issuer: OU=I.CA - Accredited Provider of Certification Services,O=První certifikační autorita, a.s.,CN=I.CA - Qualified Certification Authority, 09/2009,C=CZ

# Serial Number:a0:37:a0

# Subject: OU=I.CA - Accredited Provider of Certification Services,O=První certifikační autorita, a.s.,CN=I.CA - Qualified Certification Authority, 09/2009,C=CZ

# Not Valid Before: Tue Sep 01 00:00:00 2009

# Not Valid After: Sun Sep 01 00:00:00 2019

# Fingerprint (MD5): 8d:63:9b:56:c1:14:e4:ee:9a:12:85:86:11:90:82:a3

# Fingerprint (SHA1): d2:44:1a:a8:c2:03:ae:ca:a9:6e:50:1f:12:4d:52:b6:8f:e4:c3:75

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "I.CA - Qualified Certification Authority, 09/2009"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\322\104\032\250\302\003\256\312\251\156\120\037\022\115\122\266
\217\344\303\165
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\215\143\233\126\301\024\344\356\232\022\205\206\021\220\202\243
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\201\267\061\013\060\011\006\003\125\004\006\023\002\103\132
\061\072\060\070\006\003\125\004\003\014\061\111\056\103\101\040
\055\040\121\165\141\154\151\146\151\145\144\040\103\145\162\164
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162
\151\164\171\054\040\060\071\057\062\060\060\071\061\055\060\053
\006\003\125\004\012\014\044\120\162\166\156\303\255\040\143\145
\162\164\151\146\151\153\141\304\215\156\303\255\040\141\165\164
\157\162\151\164\141\054\040\141\056\163\056\061\075\060\073\006
\003\125\004\013\014\064\111\056\103\101\040\055\040\101\143\143
\162\145\144\151\164\145\144\040\120\162\157\166\151\144\145\162
\040\157\146\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\123\145\162\166\151\143\145\163
```

```

END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\004\000\240\067\240
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "VI Registru Centras RCSC (RootCA)"
Issuer: CN=VI Registru Centras RCSC (RootCA),OU=Registru Centro Sertifikavimo Centras,O=VI Registru
Centras - I.k. 124110246,C=LT
Serial Number:03:a3:a4:57:b5:f0:f3:86:4a:11:63:e8:98:ff:16:9c
Subject: CN=VI Registru Centras RCSC (RootCA),OU=Registru Centro Sertifikavimo Centras,O=VI Registru
Centras - I.k. 124110246,C=LT
Not Valid Before: Mon Jul 21 11:47:46 2008
Not Valid After: Sun Jul 21 11:47:46 2024
Fingerprint (MD5): 41:5b:95:78:0d:d1:c3:a7:dc:d9:ba:fe:e7:27:b6:14
Fingerprint (SHA1): 97:1d:34:86:fc:1e:8e:63:15:f7:c6:f2:e1:29:67:c7:24:34:22:14
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "VI Registru Centras RCSC (RootCA)"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\230\061\013\060\011\006\003\125\004\006\023\002\114\124
\061\055\060\053\006\003\125\004\012\023\044\126\111\040\122\145
\147\151\163\164\162\165\040\103\145\156\164\162\141\163\040\055
\040\111\056\153\056\040\061\062\064\061\061\060\062\064\066\061
\056\060\054\006\003\125\004\013\023\045\122\145\147\151\163\164
\162\165\040\103\145\156\164\162\157\040\123\145\162\164\151\146
\151\153\141\166\151\155\157\040\103\145\156\164\162\141\163\061
\052\060\050\006\003\125\004\003\023\041\126\111\040\122\145\147
\151\163\164\162\165\040\103\145\156\164\162\141\163\040\122\103
\123\103\040\050\122\157\157\164\103\101\051
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\230\061\013\060\011\006\003\125\004\006\023\002\114\124
\061\055\060\053\006\003\125\004\012\023\044\126\111\040\122\145
\147\151\163\164\162\165\040\103\145\156\164\162\141\163\040\055
\040\111\056\153\056\040\061\062\064\061\061\060\062\064\066\061
\056\060\054\006\003\125\004\013\023\045\122\145\147\151\163\164
\162\165\040\103\145\156\164\162\157\040\123\145\162\164\151\146
\151\153\141\166\151\155\157\040\103\145\156\164\162\141\163\061
\052\060\050\006\003\125\004\003\023\041\126\111\040\122\145\147

```

\151\163\164\162\165\040\103\145\156\164\162\141\163\040\122\103  
\123\103\040\050\122\157\157\164\103\101\051  
END  
CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL  
\002\020\003\243\244\127\265\360\363\206\112\021\143\350\230\377  
\026\234  
END  
CKA\_VALUE MULTILINE\_OCTAL  
\060\202\006\212\060\202\004\162\240\003\002\001\002\002\020\003  
\243\244\127\265\360\363\206\112\021\143\350\230\377\026\234\060  
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\201  
\230\061\013\060\011\006\003\125\004\006\023\002\114\124\061\055  
\060\053\006\003\125\004\012\023\044\126\111\040\122\145\147\151  
\163\164\162\165\040\103\145\156\164\162\141\163\040\055\040\111  
\056\153\056\040\061\062\064\061\061\060\062\064\066\061\056\060  
\054\006\003\125\004\013\023\045\122\145\147\151\163\164\162\165  
\040\103\145\156\164\162\157\040\123\145\162\164\151\146\151\153  
\141\166\151\155\157\040\103\145\156\164\162\141\163\061\052\060  
\050\006\003\125\004\003\023\041\126\111\040\122\145\147\151\163  
\164\162\165\040\103\145\156\164\162\141\163\040\122\103\123\103  
\040\050\122\157\157\164\103\101\051\060\036\027\015\060\070\060  
\067\062\061\061\061\064\067\064\066\132\027\015\062\064\060\067  
\062\061\061\061\064\067\064\066\132\060\201\230\061\013\060\011  
\006\003\125\004\006\023\002\114\124\061\055\060\053\006\003\125  
\004\012\023\044\126\111\040\122\145\147\151\163\164\162\165\040  
\103\145\156\164\162\141\163\040\055\040\111\056\153\056\040\061  
\062\064\061\061\060\062\064\066\061\056\060\054\006\003\125\004  
\013\023\045\122\145\147\151\163\164\162\165\040\103\145\156\164  
\162\157\040\123\145\162\164\151\146\151\153\141\166\151\155\157  
\040\103\145\156\164\162\141\163\061\052\060\050\006\003\125\004  
\003\023\041\126\111\040\122\145\147\151\163\164\162\165\040\103  
\145\156\164\162\141\163\040\122\103\123\103\040\050\122\157\157  
\164\103\101\051\060\202\002\042\060\015\006\011\052\206\110\206  
\367\015\001\001\001\005\000\003\202\002\017\000\060\202\002\012  
\002\202\002\001\000\310\231\362\042\307\263\207\025\056\247\313  
\115\106\253\147\227\317\017\163\167\003\367\144\174\166\110\062  
\040\364\243\330\131\235\024\251\037\240\036\221\016\015\255\365  
\376\147\222\221\023\040\041\115\012\125\156\161\372\254\027\313  
\000\375\016\120\002\063\333\251\330\275\141\032\375\340\020\127  
\261\125\171\140\031\264\124\171\236\373\200\060\342\310\102\311  
\122\002\010\330\254\057\303\161\101\124\002\365\201\212\022\343  
\151\002\245\207\241\160\175\005\276\245\142\277\005\260\010\226  
\107\157\177\223\212\255\340\254\323\102\336\275\346\217\024\345  
\163\050\240\003\233\101\372\345\076\367\071\164\056\144\364\237  
\113\300\365\170\231\124\153\345\025\040\374\351\062\162\100\253  
\145\165\274\074\106\064\322\370\020\141\307\014\170\307\174\300  
\021\121\321\005\066\373\370\234\377\055\270\345\161\055\111\360  
\127\110\263\223\216\234\373\072\311\113\155\061\327\122\325\126

\351\204\056\221\324\002\035\262\200\005\201\305\200\312\051\301  
\064\147\271\257\004\060\103\366\257\102\107\336\374\001\056\350  
\102\234\276\262\013\024\344\064\334\335\255\123\204\172\330\003  
\126\321\302\014\324\227\051\370\114\362\265\034\337\235\203\256  
\137\132\045\113\242\260\050\345\277\132\013\320\234\250\234\160  
\052\155\016\056\341\047\277\255\013\157\021\323\370\106\055\364  
\227\104\113\312\260\310\346\066\157\042\272\216\344\122\225\026  
\354\104\152\324\120\036\230\050\371\150\244\272\336\236\060\355  
\242\311\122\241\311\065\212\100\341\215\233\233\375\361\106\213  
\244\307\117\160\140\121\215\362\222\251\316\272\214\057\111\122  
\022\147\320\365\253\004\045\100\164\003\342\330\255\241\164\130  
\141\267\265\016\363\177\045\054\021\143\257\361\022\303\364\244  
\163\232\144\254\356\246\006\217\362\274\234\254\050\251\134\025  
\323\063\255\320\066\310\041\160\153\274\052\037\325\253\270\001  
\130\166\374\073\021\115\373\362\034\110\044\021\375\115\217\031  
\051\256\153\350\155\136\262\241\015\170\316\322\143\203\164\264  
\315\051\114\277\233\160\210\117\022\015\105\347\276\017\145\304  
\326\070\044\344\112\025\213\321\152\352\273\066\241\241\220\245  
\123\310\245\326\145\002\003\001\000\001\243\201\315\060\201\312  
\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006  
\060\057\006\010\053\006\001\005\005\007\001\003\004\043\060\041  
\060\010\006\006\004\000\216\106\001\001\060\013\006\006\004\000  
\216\106\001\003\002\001\012\060\010\006\006\004\000\216\106\001  
\004\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001  
\001\377\060\035\006\003\125\035\016\004\026\004\024\274\163\076  
\057\234\221\014\273\217\315\167\231\076\314\205\344\314\130\150  
\021\060\020\006\011\053\006\001\004\001\202\067\025\001\004\003  
\002\001\000\060\105\006\003\125\035\040\004\076\060\074\060\072  
\006\013\053\006\001\004\001\201\361\067\001\001\001\060\053\060  
\051\006\010\053\006\001\005\005\007\002\001\026\035\150\164\164  
\160\072\057\057\167\167\167\056\162\143\163\143\056\154\164\057  
\162\145\160\157\163\151\164\157\162\171\060\015\006\011\052\206  
\110\206\367\015\001\001\005\005\000\003\202\002\001\000\031\170  
\054\121\023\137\274\231\116\134\247\001\374\336\266\376\251\035  
\206\061\021\173\172\231\212\263\210\222\245\140\322\004\143\071  
\274\257\216\330\361\053\105\162\062\051\074\055\342\331\330\075  
\164\372\107\065\207\334\020\000\066\101\075\355\252\176\262\314  
\304\032\351\061\264\365\221\321\204\112\347\365\334\317\106\147  
\002\231\257\270\167\372\176\355\041\157\226\043\024\161\077\320  
\130\276\252\333\103\054\067\240\035\006\151\064\360\117\217\165  
\356\263\322\001\273\354\034\351\217\251\211\357\370\324\033\101  
\002\231\276\360\137\272\216\054\302\041\160\336\121\201\330\367  
\274\270\303\063\203\303\227\312\011\163\304\351\167\310\162\364  
\134\255\017\015\212\352\355\322\012\001\316\353\127\235\025\360  
\051\025\357\131\234\257\254\222\202\160\014\230\330\042\235\057  
\230\065\251\321\212\211\274\325\235\125\302\056\236\007\045\106  
\366\222\115\120\372\075\211\362\337\223\277\223\224\320\331\257  
\127\243\363\146\346\216\361\350\240\033\030\006\223\132\054\211

```
\015\066\304\372\040\263\334\050\365\152\356\217\061\233\131\070
\330\116\152\240\043\041\344\206\253\345\373\140\243\321\315\132
\054\102\111\246\016\125\044\045\065\375\322\072\257\153\130\246
\221\106\137\151\313\275\176\046\233\336\010\275\036\354\236\246
\370\234\165\244\100\066\225\113\042\117\306\266\175\162\121\274
\343\302\150\315\315\345\213\276\300\302\117\233\156\145\316\026
\267\010\210\307\207\336\377\062\214\313\353\102\101\254\373\327
\317\001\103\370\157\300\326\013\360\367\222\351\313\105\135\144
\261\367\312\074\273\211\010\226\311\332\016\341\161\052\017\354
\244\102\055\343\152\017\107\107\260\123\246\326\205\120\227\060
\327\214\056\137\106\042\320\254\316\074\136\234\036\162\203\375
\014\247\370\027\062\273\141\336\343\117\057\030\216\202\265\207
\033\164\005\060\112\277\152\036\110\074\124\050\261\135\235\222
\137\233\020\343\056\042\212\257\335\066\144\177\023\166\107\203
\065\225\032\224\217\365\304\123\155\071\275\325\213\365\312\317
\030\103\005\001\223\244\066\336\060\322\024\363\260\144\265\312
\316\225\367\272\164\354\212\163\076\122\323\136\123\000
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

# Microsoft Code Signing Only Certificate

# Trust for "VI Registru Centras RCSC (RootCA)"

# Issuer: CN=VI Registru Centras RCSC (RootCA),OU=Registru Centro Sertifikavimo Centras,O=VI Registru Centras - I.k. 124110246,C=LT

# Serial Number:03:a3:a4:57:b5:f0:f3:86:4a:11:63:e8:98:ff:16:9c

# Subject: CN=VI Registru Centras RCSC (RootCA),OU=Registru Centro Sertifikavimo Centras,O=VI Registru Centras - I.k. 124110246,C=LT

# Not Valid Before: Mon Jul 21 11:47:46 2008

# Not Valid After: Sun Jul 21 11:47:46 2024

# Fingerprint (MD5): 41:5b:95:78:0d:d1:c3:a7:dc:d9:ba:fe:e7:27:b6:14

# Fingerprint (SHA1): 97:1d:34:86:fc:1e:8e:63:15:f7:c6:f2:e1:29:67:c7:24:34:22:14

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "VI Registru Centras RCSC (RootCA)"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\227\035\064\206\374\036\216\143\025\367\306\362\341\051\147\307
\044\064\042\024
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\101\133\225\170\015\321\303\247\334\331\272\376\347\047\266\024
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\201\230\061\013\060\011\006\003\125\004\006\023\002\114\124
\061\055\060\053\006\003\125\004\012\023\044\126\111\040\122\145
```

```
\147\151\163\164\162\165\040\103\145\156\164\162\141\163\040\055
\040\111\056\153\056\040\061\062\064\061\061\060\062\064\066\061
\056\060\054\006\003\125\004\013\023\045\122\145\147\151\163\164
\162\165\040\103\145\156\164\162\157\040\123\145\162\164\151\146
\151\153\141\166\151\155\157\040\103\145\156\164\162\141\163\061
\052\060\050\006\003\125\004\003\023\041\126\111\040\122\145\147
\151\163\164\162\165\040\103\145\156\164\162\141\163\040\122\103
\123\103\040\050\122\157\157\164\103\101\051
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\020\003\243\244\127\265\360\363\206\112\021\143\350\230\377
\026\234
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "CCA India 2007"

# Issuer: CN=CCA India 2007,O=India PKI,C=IN

# Serial Number: 10112 (0x2780)

# Subject: CN=CCA India 2007,O=India PKI,C=IN

# Not Valid Before: Wed Jun 13 07:02:48 2007

# Not Valid After: Sat Jul 04 07:02:48 2015

# Fingerprint (MD5): 69:60:ec:be:8c:94:d7:6e:6f:2e:c4:78:2f:55:f0:83

# Fingerprint (SHA1): 97:22:6a:ae:4a:7a:64:a5:9b:d1:67:87:f2:7f:84:1c:0a:00:1f:d0

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "CCA India 2007"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

```
\060\072\061\013\060\011\006\003\125\004\006\023\002\111\116\061
\022\060\020\006\003\125\004\012\023\011\111\156\144\151\141\040
\120\113\111\061\027\060\025\006\003\125\004\003\023\016\103\103
\101\040\111\156\144\151\141\040\062\060\060\067
```

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\072\061\013\060\011\006\003\125\004\006\023\002\111\116\061
\022\060\020\006\003\125\004\012\023\011\111\156\144\151\141\040
\120\113\111\061\027\060\025\006\003\125\004\003\023\016\103\103
\101\040\111\156\144\151\141\040\062\060\060\067
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\002\047\200
```



END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\043\060\202\002\013\240\003\002\001\002\002\002\047  
\200\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000  
\060\072\061\013\060\011\006\003\125\004\006\023\002\111\116\061  
\022\060\020\006\003\125\004\012\023\011\111\156\144\151\141\040  
\120\113\111\061\027\060\025\006\003\125\004\003\023\016\103\103  
\101\040\111\156\144\151\141\040\062\060\060\067\060\036\027\015  
\060\067\060\066\061\063\060\067\060\062\064\070\132\027\015\061  
\065\060\067\060\064\060\067\060\062\064\070\132\060\072\061\013  
\060\011\006\003\125\004\006\023\002\111\116\061\022\060\020\006  
\003\125\004\012\023\011\111\156\144\151\141\040\120\113\111\061  
\027\060\025\006\003\125\004\003\023\016\103\103\101\040\111\156  
\144\151\141\040\062\060\060\067\060\202\001\042\060\015\006\011  
\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017\000  
\060\202\001\012\002\202\001\001\000\337\217\307\312\112\234\322  
\107\342\216\062\202\236\121\351\010\011\167\374\267\176\047\173  
\116\135\153\370\210\157\350\013\343\300\066\233\200\351\345\060  
\260\124\367\246\060\376\067\152\130\113\324\170\137\124\236\261  
\076\171\075\017\023\127\342\106\225\072\035\134\141\065\202\355  
\365\303\264\260\122\150\250\370\006\053\236\121\113\302\130\005  
\364\313\231\147\254\232\041\055\071\320\370\317\230\210\233\037  
\175\365\261\266\300\103\120\203\203\255\253\375\326\326\372\374  
\365\017\306\115\247\112\005\225\236\270\132\131\061\124\015\270  
\311\274\067\102\222\073\003\323\364\072\334\057\115\370\056\106  
\031\255\007\032\045\153\143\125\346\366\135\315\106\333\225\111  
\225\271\147\215\104\356\311\370\155\312\214\311\015\232\366\056  
\147\337\171\223\307\102\070\144\052\307\121\071\244\005\226\333  
\276\245\010\017\324\020\265\357\301\307\212\014\322\322\234\377  
\311\061\345\121\131\015\053\100\342\211\047\366\225\333\261\344  
\241\053\320\265\103\104\330\336\237\226\332\231\255\232\330\174  
\334\043\220\264\005\046\322\214\355\002\003\001\000\001\243\063  
\060\061\060\017\006\003\125\035\023\001\001\377\004\005\060\003  
\001\001\377\060\021\006\003\125\035\016\004\012\004\010\117\036  
\300\130\047\330\270\344\060\013\006\003\125\035\017\004\004\003  
\002\001\006\060\015\006\011\052\206\110\206\367\015\001\001\005  
\005\000\003\202\001\001\000\162\206\117\110\202\350\305\360\331  
\270\260\107\063\031\357\313\006\201\250\266\254\207\303\271\111  
\225\222\052\201\130\327\053\216\242\270\047\240\114\023\120\235  
\034\265\161\114\142\121\210\226\014\162\377\013\140\304\065\341  
\370\045\156\271\301\341\247\126\072\376\206\343\115\300\253\332  
\324\052\160\233\255\132\235\330\045\321\272\205\337\302\033\353  
\064\326\010\167\003\060\144\177\326\366\021\011\215\255\176\236  
\171\177\233\233\243\224\104\340\164\267\267\211\312\354\004\137  
\213\317\342\353\343\106\333\066\367\235\061\256\206\164\251\235  
\355\334\160\117\323\063\134\060\206\040\256\062\301\054\217\047  
\064\266\167\136\000\032\222\212\276\210\331\070\133\324\303\132  
\270\017\223\044\326\052\256\060\110\101\366\143\045\317\115\207

```
\051\236\263\253\364\364\254\107\204\131\052\317\375\355\257\224
\015\120\000\047\063\163\356\167\346\343\111\270\247\114\046\301
\316\221\152\027\262\322\101\265\251\232\335\330\115\325\343\020
\265\322\075\305\364\321\014\335\274\254\227\322\227\130\350\130
\026\005\232\306\255\275\152
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

# Microsoft Code Signing Only Certificate

# Trust for "CCA India 2007"

# Issuer: CN=CCA India 2007,O=India PKI,C=IN

# Serial Number: 10112 (0x2780)

# Subject: CN=CCA India 2007,O=India PKI,C=IN

# Not Valid Before: Wed Jun 13 07:02:48 2007

# Not Valid After: Sat Jul 04 07:02:48 2015

# Fingerprint (MD5): 69:60:ec:be:8c:94:d7:6e:6f:2e:c4:78:2f:55:f0:83

# Fingerprint (SHA1): 97:22:6a:ae:4a:7a:64:a5:9b:d1:67:87:f2:7f:84:1c:0a:00:1f:d0

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "CCA India 2007"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\227\042\152\256\112\172\144\245\233\321\147\207\362\177\204\034
\012\000\037\320
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\151\140\354\276\214\224\327\156\157\056\304\170\057\125\360\203
END
```

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\072\061\013\060\011\006\003\125\004\006\023\002\111\116\061
\022\060\020\006\003\125\004\012\023\011\111\156\144\151\141\040
\120\113\111\061\027\060\025\006\003\125\004\003\023\016\103\103
\101\040\111\156\144\151\141\040\062\060\060\067
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\002\047\200
```

END

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

```
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

```
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

```
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

# Microsoft Code Signing Only Certificate

# Certificate "Autoridade Certificadora Raiz Brasileira v1"

# Issuer: CN=Autoridade Certificadora Raiz Brasileira v1,OU=Instituto Nacional de Tecnologia da Informacao -

```
ITI,O=ICP-Brasil,C=BR
Serial Number: 1 (0x1)
Subject: CN=Autoridade Certificadora Raiz Brasileira v1,OU=Instituto Nacional de Tecnologia da Informacao -
ITI,O=ICP-Brasil,C=BR
Not Valid Before: Tue Jul 29 19:17:10 2008
Not Valid After: Thu Jul 29 19:17:10 2021
Fingerprint (MD5): 93:f1:ad:34:0b:2b:e7:a8:54:60:e2:73:8c:a4:94:31
Fingerprint (SHA1): 70:5d:2b:45:65:c7:04:7a:54:06:94:a7:9a:f7:ab:b8:42:bd:c1:61
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Autoridade Certificadora Raiz Brasileira v1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\227\061\013\060\011\006\003\125\004\006\023\002\102\122
\061\023\060\021\006\003\125\004\012\023\012\111\103\120\055\102
\162\141\163\151\154\061\075\060\073\006\003\125\004\013\023\064
\111\156\163\164\151\164\165\164\157\040\116\141\143\151\157\156
\141\154\040\144\145\040\124\145\143\156\157\154\157\147\151\141
\040\144\141\040\111\156\146\157\162\155\141\143\141\157\040\055
\040\111\124\111\061\064\060\062\006\003\125\004\003\023\053\101
\165\164\157\162\151\144\141\144\145\040\103\145\162\164\151\146
\151\143\141\144\157\162\141\040\122\141\151\172\040\102\162\141
\163\151\154\145\151\162\141\040\166\061
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\227\061\013\060\011\006\003\125\004\006\023\002\102\122
\061\023\060\021\006\003\125\004\012\023\012\111\103\120\055\102
\162\141\163\151\154\061\075\060\073\006\003\125\004\013\023\064
\111\156\163\164\151\164\165\164\157\040\116\141\143\151\157\156
\141\154\040\144\145\040\124\145\143\156\157\154\157\147\151\141
\040\144\141\040\111\156\146\157\162\155\141\143\141\157\040\055
\040\111\124\111\061\064\060\062\006\003\125\004\003\023\053\101
\165\164\157\162\151\144\141\144\145\040\103\145\162\164\151\146
\151\143\141\144\157\162\141\040\122\141\151\172\040\102\162\141
\163\151\154\145\151\162\141\040\166\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\001
END
CKA_VALUE MULTILINE_OCTAL
\060\202\004\200\060\202\003\150\240\003\002\001\002\002\001\001
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\201\227\061\013\060\011\006\003\125\004\006\023\002\102\122\061
\023\060\021\006\003\125\004\012\023\012\111\103\120\055\102\162
\141\163\151\154\061\075\060\073\006\003\125\004\013\023\064\111
```

\156\163\164\151\164\165\164\157\040\116\141\143\151\157\156\141  
\154\040\144\145\040\124\145\143\156\157\154\157\147\151\141\040  
\144\141\040\111\156\146\157\162\155\141\143\141\157\040\055\040  
\111\124\111\061\064\060\062\006\003\125\004\003\023\053\101\165  
\164\157\162\151\144\141\144\145\040\103\145\162\164\151\146\151  
\143\141\144\157\162\141\040\122\141\151\172\040\102\162\141\163  
\151\154\145\151\162\141\040\166\061\060\036\027\015\060\070\060  
\067\062\071\061\071\061\067\061\060\132\027\015\062\061\060\067  
\062\071\061\071\061\067\061\060\132\060\201\227\061\013\060\011  
\006\003\125\004\006\023\002\102\122\061\023\060\021\006\003\125  
\004\012\023\012\111\103\120\055\102\162\141\163\151\154\061\075  
\060\073\006\003\125\004\013\023\064\111\156\163\164\151\164\165  
\164\157\040\116\141\143\151\157\156\141\154\040\144\145\040\124  
\145\143\156\157\154\157\147\151\141\040\144\141\040\111\156\146  
\157\162\155\141\143\141\157\040\055\040\111\124\111\061\064\060  
\062\006\003\125\004\003\023\053\101\165\164\157\162\151\144\141  
\144\145\040\103\145\162\164\151\146\151\143\141\144\157\162\141  
\040\122\141\151\172\040\102\162\141\163\151\154\145\151\162\141  
\040\166\061\060\202\001\042\060\015\006\011\052\206\110\206\367  
\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002  
\202\001\001\000\316\034\350\276\223\064\316\311\261\344\124\356  
\011\366\354\244\010\205\240\077\306\212\306\160\060\247\200\214  
\355\076\001\124\007\214\031\043\073\237\273\307\264\213\040\261  
\342\367\101\026\055\136\207\146\272\260\007\335\157\321\077\074  
\332\310\131\063\235\025\260\237\222\310\126\124\130\212\072\047  
\242\064\036\233\170\265\267\315\345\233\351\300\056\022\236\160  
\170\007\372\216\362\114\300\370\345\162\174\036\251\251\140\003  
\127\046\107\333\203\166\303\316\310\022\273\321\377\357\256\263  
\142\175\232\240\344\274\156\175\001\056\064\140\334\207\340\137  
\177\005\160\134\060\025\054\302\165\243\077\120\003\146\043\146  
\054\347\164\167\170\333\146\027\337\371\037\015\202\150\217\165  
\207\367\351\061\172\123\117\317\130\142\273\100\242\064\317\300  
\160\204\120\227\025\332\040\113\351\373\114\102\255\053\150\216  
\243\331\255\005\142\376\010\164\304\350\301\314\205\023\316\255  
\050\060\120\335\336\300\201\301\111\260\136\056\046\070\351\143  
\004\063\167\265\200\166\315\052\177\362\074\254\135\223\102\071  
\364\242\163\105\002\003\001\000\001\243\201\324\060\201\321\060  
\116\006\003\125\035\040\004\107\060\105\060\103\006\005\140\114  
\001\001\000\060\072\060\070\006\010\053\006\001\005\005\007\002  
\001\026\054\150\164\164\160\072\057\057\141\143\162\141\151\172  
\056\151\143\160\142\162\141\163\151\154\056\147\157\166\056\142  
\162\057\104\120\103\141\143\162\141\151\172\056\160\144\146\060  
\077\006\003\125\035\037\004\070\060\066\060\064\240\062\240\060  
\206\056\150\164\164\160\072\057\057\141\143\162\141\151\172\056  
\151\143\160\142\162\141\163\151\154\056\147\157\166\056\142\162  
\057\114\103\122\141\143\162\141\151\172\166\061\056\143\162\154  
\060\035\006\003\125\035\016\004\026\004\024\102\262\054\134\164  
\001\007\276\233\377\125\063\073\356\051\273\135\221\277\006\060

```
\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377
\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003
\202\001\001\000\131\154\212\166\351\031\161\127\203\376\247\364
\172\017\236\201\320\317\007\034\014\043\351\044\015\121\313\063
\350\052\011\303\172\377\016\243\200\206\140\301\160\227\340\300
\012\125\335\244\145\114\217\247\107\260\127\267\363\253\304\303
\031\343\230\354\015\260\033\121\221\311\331\011\326\351\152\263
\347\014\260\262\222\207\373\216\115\025\354\022\024\031\170\014
\142\352\024\071\030\012\305\125\333\123\205\334\173\050\372\025
\161\243\312\164\045\202\017\147\047\064\327\256\122\023\002\373
\305\357\232\200\045\245\122\236\071\016\355\072\364\170\007\137
\325\050\172\012\112\365\320\303\147\367\214\130\027\157\012\000
\243\046\020\264\140\042\072\112\110\245\332\340\251\204\336\103
\333\237\103\247\077\050\004\107\222\057\367\347\144\165\041\322
\117\201\316\252\076\144\016\343\016\255\125\232\176\224\233\064
\301\320\256\151\116\036\243\331\263\207\127\332\160\302\132\175
\207\315\371\277\067\336\355\126\065\367\267\042\016\117\222\270
\077\010\337\234\236\230\136\362\157\271\372\233\054\370\315\105
\330\162\262\040
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

# Microsoft Code Signing Only Certificate

# Trust for "Autoridade Certificadora Raiz Brasileira v1"

# Issuer: CN=Autoridade Certificadora Raiz Brasileira v1,OU=Instituto Nacional de Tecnologia da Informacao - ITI,O=ICP-Brasil,C=BR

# Serial Number: 1 (0x1)

# Subject: CN=Autoridade Certificadora Raiz Brasileira v1,OU=Instituto Nacional de Tecnologia da Informacao - ITI,O=ICP-Brasil,C=BR

# Not Valid Before: Tue Jul 29 19:17:10 2008

# Not Valid After: Thu Jul 29 19:17:10 2021

# Fingerprint (MD5): 93:f1:ad:34:0b:2b:e7:a8:54:60:e2:73:8c:a4:94:31

# Fingerprint (SHA1): 70:5d:2b:45:65:c7:04:7a:54:06:94:a7:9a:f7:ab:b8:42:bd:c1:61

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "Autoridade Certificadora Raiz Brasileira v1"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\160\135\053\105\145\307\004\172\124\006\224\247\232\367\253\270
\102\275\301\141
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\223\361\255\064\013\053\347\250\124\140\342\163\214\244\224\061
```

END

```
CKA_ISSUER MULTILINE_OCTAL
\060\201\227\061\013\060\011\006\003\125\004\006\023\002\102\122
\061\023\060\021\006\003\125\004\012\023\012\111\103\120\055\102
\162\141\163\151\154\061\075\060\073\006\003\125\004\013\023\064
\111\156\163\164\151\164\165\164\157\040\116\141\143\151\157\156
\141\154\040\144\145\040\124\145\143\156\157\154\157\147\151\141
\040\144\141\040\111\156\146\157\162\155\141\143\141\157\040\055
\040\111\124\111\061\064\060\062\006\003\125\004\003\023\053\101
\165\164\157\162\151\144\141\144\145\040\103\145\162\164\151\146
\151\143\141\144\157\162\141\040\122\141\151\172\040\102\162\141
\163\151\154\145\151\162\141\040\166\061
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\001\001
```

END

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

```
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

```
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

```
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
```

```
Certificate "ipsCA Global CA Root"
```

```
Issuer: 1.2.840.113549.1.9.1=global01@ipsca.com,CN=ipsCA Global CA Root,OU=ipsCA,O=IPS Certification
Authority s.l. ipsCA,L=Madrid,ST=Madrid,C=ES
```

```
Serial Number: 0 (0x0)
```

```
Subject: 1.2.840.113549.1.9.1=global01@ipsca.com,CN=ipsCA Global CA Root,OU=ipsCA,O=IPS Certification
Authority s.l. ipsCA,L=Madrid,ST=Madrid,C=ES
```

```
Not Valid Before: Mon Sep 07 14:38:44 2009
```

```
Not Valid After: Tue Dec 25 14:38:44 2029
```

```
Fingerprint (MD5): 25:2a:c6:c5:89:68:39:f9:55:72:02:16:5e:a3:9e:d2
```

```
Fingerprint (SHA1): 3c:71:d7:0e:35:a5:da:a8:b2:e3:81:2d:c3:67:74:17:f5:99:0d:f3
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "ipsCA Global CA Root"
```

```
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
```

```
CKA_SUBJECT MULTILINE_OCTAL
```

```
\060\201\262\061\013\060\011\006\003\125\004\006\023\002\105\123
\061\017\060\015\006\003\125\004\010\023\006\115\141\144\162\151
\144\061\017\060\015\006\003\125\004\007\023\006\115\141\144\162
\151\144\061\057\060\055\006\003\125\004\012\023\046\111\120\123
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101
\165\164\150\157\162\151\164\171\040\163\056\154\056\040\151\160
\163\103\101\061\016\060\014\006\003\125\004\013\023\005\151\160
\163\103\101\061\035\060\033\006\003\125\004\003\023\024\151\160
\163\103\101\040\107\154\157\142\141\154\040\103\101\040\122\157
\157\164\061\041\060\037\006\011\052\206\110\206\367\015\001\011
```

\001\026\022\147\154\157\142\141\154\060\061\100\151\160\163\143  
\141\056\143\157\155

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\262\061\013\060\011\006\003\125\004\006\023\002\105\123  
\061\017\060\015\006\003\125\004\010\023\006\115\141\144\162\151  
\144\061\017\060\015\006\003\125\004\007\023\006\115\141\144\162  
\151\144\061\057\060\055\006\003\125\004\012\023\046\111\120\123  
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101  
\165\164\150\157\162\151\164\171\040\163\056\154\056\040\151\160  
\163\103\101\061\016\060\014\006\003\125\004\013\023\005\151\160  
\163\103\101\061\035\060\033\006\003\125\004\003\023\024\151\160  
\163\103\101\040\107\154\157\142\141\154\040\103\101\040\122\157  
\157\164\061\041\060\037\006\011\052\206\110\206\367\015\001\011  
\001\026\022\147\154\157\142\141\154\060\061\100\151\160\163\143  
\141\056\143\157\155

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\000

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\006\007\060\202\004\357\240\003\002\001\002\002\001\000  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060  
\201\262\061\013\060\011\006\003\125\004\006\023\002\105\123\061  
\017\060\015\006\003\125\004\010\023\006\115\141\144\162\151\144  
\061\017\060\015\006\003\125\004\007\023\006\115\141\144\162\151  
\144\061\057\060\055\006\003\125\004\012\023\046\111\120\123\040  
\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165  
\164\150\157\162\151\164\171\040\163\056\154\056\040\151\160\163  
\103\101\061\016\060\014\006\003\125\004\013\023\005\151\160\163  
\103\101\061\035\060\033\006\003\125\004\003\023\024\151\160\163  
\103\101\040\107\154\157\142\141\154\040\103\101\040\122\157\157  
\164\061\041\060\037\006\011\052\206\110\206\367\015\001\011\001  
\026\022\147\154\157\142\141\154\060\061\100\151\160\163\143\141  
\056\143\157\155\060\036\027\015\060\071\060\071\060\067\061\064  
\063\070\064\064\132\027\015\062\071\061\062\062\065\061\064\063  
\070\064\064\132\060\201\262\061\013\060\011\006\003\125\004\006  
\023\002\105\123\061\017\060\015\006\003\125\004\010\023\006\115  
\141\144\162\151\144\061\017\060\015\006\003\125\004\007\023\006  
\115\141\144\162\151\144\061\057\060\055\006\003\125\004\012\023  
\046\111\120\123\040\103\145\162\164\151\146\151\143\141\164\151  
\157\156\040\101\165\164\150\157\162\151\164\171\040\163\056\154  
\056\040\151\160\163\103\101\061\016\060\014\006\003\125\004\013  
\023\005\151\160\163\103\101\061\035\060\033\006\003\125\004\003  
\023\024\151\160\163\103\101\040\107\154\157\142\141\154\040\103  
\101\040\122\157\157\164\061\041\060\037\006\011\052\206\110\206  
\367\015\001\011\001\026\022\147\154\157\142\141\154\060\061\100

\151\160\163\143\141\056\143\157\155\060\202\001\042\060\015\006  
\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017  
\000\060\202\001\012\002\202\001\001\000\247\357\314\200\060\260  
\221\044\117\260\150\370\303\312\055\025\070\125\130\202\342\070  
\143\260\367\243\222\157\203\270\260\136\260\214\254\124\261\167  
\320\120\340\227\263\220\255\212\263\037\071\053\105\126\367\252  
\342\337\174\262\354\157\123\057\232\313\320\346\146\313\311\023  
\350\162\342\264\315\061\127\207\022\265\223\350\372\162\316\352  
\107\362\214\264\260\143\327\004\000\267\144\066\071\227\350\225  
\361\210\371\161\015\003\047\214\141\317\010\203\226\117\203\305  
\116\350\134\370\006\160\361\002\252\034\036\251\310\252\176\347  
\135\315\215\074\024\157\147\320\033\251\043\110\213\041\050\072  
\212\114\346\021\061\371\041\056\262\147\146\306\051\156\224\223  
\317\100\226\374\260\075\277\262\264\223\277\126\161\266\245\101  
\207\260\130\265\131\043\050\111\270\230\371\120\036\055\025\050  
\013\114\254\111\321\204\251\233\232\347\162\124\267\070\320\333  
\311\376\251\163\325\155\020\315\216\165\353\376\227\375\200\074  
\374\264\330\110\364\231\106\013\210\024\244\266\056\333\114\140  
\364\041\301\154\200\225\024\325\257\325\002\003\001\000\001\243  
\202\002\044\060\202\002\040\060\035\006\003\125\035\016\004\026  
\004\024\025\246\226\200\261\025\113\061\303\302\234\366\347\023  
\013\113\363\030\315\206\060\201\337\006\003\125\035\043\004\201  
\327\060\201\324\200\024\025\246\226\200\261\025\113\061\303\302  
\234\366\347\023\013\113\363\030\315\206\241\201\270\244\201\265  
\060\201\262\061\013\060\011\006\003\125\004\006\023\002\105\123  
\061\017\060\015\006\003\125\004\010\023\006\115\141\144\162\151  
\144\061\017\060\015\006\003\125\004\007\023\006\115\141\144\162  
\151\144\061\057\060\055\006\003\125\004\012\023\046\111\120\123  
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101  
\165\164\150\157\162\151\164\171\040\163\056\154\056\040\151\160  
\163\103\101\061\016\060\014\006\003\125\004\013\023\005\151\160  
\163\103\101\061\035\060\033\006\003\125\004\003\023\024\151\160  
\163\103\101\040\107\154\157\142\141\154\040\103\101\040\122\157  
\157\164\061\041\060\037\006\011\052\206\110\206\367\015\001\011  
\001\026\022\147\154\157\142\141\154\060\061\100\151\160\163\143  
\141\056\143\157\155\202\001\000\060\014\006\003\125\035\023\004  
\005\060\003\001\001\377\060\013\006\003\125\035\017\004\004\003  
\002\001\006\060\107\006\003\125\035\045\004\100\060\076\006\010  
\053\006\001\005\005\007\003\001\006\010\053\006\001\005\005\007  
\003\002\006\010\053\006\001\005\005\007\003\003\006\010\053\006  
\001\005\005\007\003\004\006\010\053\006\001\005\005\007\003\010  
\006\012\053\006\001\004\001\202\067\012\003\004\060\035\006\003  
\125\035\021\004\026\060\024\201\022\147\154\157\142\141\154\060  
\061\100\151\160\163\143\141\056\143\157\155\060\035\006\003\125  
\035\022\004\026\060\024\201\022\147\154\157\142\141\154\060\061  
\100\151\160\163\143\141\056\143\157\155\060\101\006\003\125\035  
\037\004\072\060\070\060\066\240\064\240\062\206\060\150\164\164  
\160\072\057\057\143\162\154\147\154\157\142\141\154\060\061\056



\151\160\163\143\141\056\143\157\155\057\143\162\154\057\143\162  
\154\147\154\157\142\141\154\060\061\056\143\162\154\060\070\006  
\010\053\006\001\005\005\007\001\001\004\054\060\052\060\050\006  
\010\053\006\001\005\005\007\060\001\206\034\150\164\164\160\072  
\057\057\143\162\154\147\154\157\142\141\154\060\061\056\151\160  
\163\143\141\056\143\157\155\060\015\006\011\052\206\110\206\367  
\015\001\001\005\005\000\003\202\001\001\000\030\364\256\376\200  
\017\216\301\167\157\242\132\107\110\237\043\125\241\123\153\371  
\135\247\060\245\044\276\103\057\370\301\321\127\371\076\054\200  
\045\314\106\251\066\363\111\133\035\366\174\327\143\263\115\076  
\170\366\247\264\002\167\370\171\015\076\152\313\030\140\270\375  
\000\257\014\335\124\343\124\217\042\075\363\020\157\021\015\265  
\036\172\215\047\314\010\270\133\303\270\032\137\053\247\140\077  
\000\034\367\017\134\102\146\144\236\207\022\200\160\211\340\372  
\127\050\016\116\037\020\057\331\005\200\266\200\057\034\151\360  
\366\266\145\064\005\157\312\331\076\370\324\135\067\062\307\270  
\053\314\377\163\223\000\161\340\001\310\252\103\275\251\361\316  
\372\200\371\361\103\022\221\246\145\345\140\007\115\107\272\053  
\057\004\366\112\205\051\210\145\020\311\262\123\142\234\154\233  
\140\134\032\033\323\256\305\035\162\231\006\377\005\314\206\046  
\163\264\324\124\005\335\036\153\000\073\267\211\350\343\221\002  
\040\022\353\357\351\376\012\051\043\201\043\243\000\332\160\314  
\222\137\067\043\320\034\173\065\134\003\172

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "ipsCA Global CA Root"

# Issuer: 1.2.840.113549.1.9.1=global01@ipsca.com,CN=ipsCA Global CA Root,OU=ipsCA,O=IPS Certification  
Authority s.l. ipsCA,L=Madrid,ST=Madrid,C=ES

# Serial Number: 0 (0x0)

# Subject: 1.2.840.113549.1.9.1=global01@ipsca.com,CN=ipsCA Global CA Root,OU=ipsCA,O=IPS Certification  
Authority s.l. ipsCA,L=Madrid,ST=Madrid,C=ES

# Not Valid Before: Mon Sep 07 14:38:44 2009

# Not Valid After: Tue Dec 25 14:38:44 2029

# Fingerprint (MD5): 25:2a:c6:c5:89:68:39:f9:55:72:02:16:5e:a3:9e:d2

# Fingerprint (SHA1): 3c:71:d7:0e:35:a5:da:a8:b2:e3:81:2d:c3:67:74:17:f5:99:0d:f3

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "ipsCA Global CA Root"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\074\161\327\016\065\245\332\250\262\343\201\055\303\147\164\027  
\365\231\015\363

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL  
\045\052\306\305\211\150\071\371\125\162\002\026\136\243\236\322  
END

CKA\_ISSUER MULTILINE\_OCTAL  
\060\201\262\061\013\060\011\006\003\125\004\006\023\002\105\123  
\061\017\060\015\006\003\125\004\010\023\006\115\141\144\162\151  
\144\061\017\060\015\006\003\125\004\007\023\006\115\141\144\162  
\151\144\061\057\060\055\006\003\125\004\012\023\046\111\120\123  
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101  
\165\164\150\157\162\151\164\171\040\163\056\154\056\040\151\160  
\163\103\101\061\016\060\014\006\003\125\004\013\023\005\151\160  
\163\103\101\061\035\060\033\006\003\125\004\003\023\024\151\160  
\163\103\101\040\107\154\157\142\141\154\040\103\101\040\122\157  
\157\164\061\041\060\037\006\011\052\206\110\206\367\015\001\011  
\001\026\022\147\154\157\142\141\154\060\061\100\151\160\163\143  
\141\056\143\157\155  
END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL  
\002\001\000  
END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Certificate "ipsCA Main CA Root"  
# Issuer: 1.2.840.113549.1.9.1=main01@ipsca.com,CN=ipsCA Main CA Root,OU=ipsCA,O=IPS Certification  
Authority s.l. ipsCA,L=Madrid,ST=Madrid,C=ES  
# Serial Number: 0 (0x0)  
# Subject: 1.2.840.113549.1.9.1=main01@ipsca.com,CN=ipsCA Main CA Root,OU=ipsCA,O=IPS Certification  
Authority s.l. ipsCA,L=Madrid,ST=Madrid,C=ES  
# Not Valid Before: Mon Sep 07 14:54:36 2009  
# Not Valid After: Tue Dec 25 14:54:36 2029  
# Fingerprint (MD5): 30:c9:08:dd:d7:3e:63:a4:09:28:14:c7:4e:b9:7e:2c  
# Fingerprint (SHA1): cf:e4:31:3d:ba:05:b8:a7:c3:00:63:99:5a:9e:b7:c2:47:ad:8f:d5

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "ipsCA Main CA Root"  
CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509  
CKA\_SUBJECT MULTILINE\_OCTAL  
\060\201\256\061\013\060\011\006\003\125\004\006\023\002\105\123  
\061\017\060\015\006\003\125\004\010\023\006\115\141\144\162\151  
\144\061\017\060\015\006\003\125\004\007\023\006\115\141\144\162  
\151\144\061\057\060\055\006\003\125\004\012\023\046\111\120\123  
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101

\165\164\150\157\162\151\164\171\040\163\056\154\056\040\151\160  
\163\103\101\061\016\060\014\006\003\125\004\013\023\005\151\160  
\163\103\101\061\033\060\031\006\003\125\004\003\023\022\151\160  
\163\103\101\040\115\141\151\156\040\103\101\040\122\157\157\164  
\061\037\060\035\006\011\052\206\110\206\367\015\001\011\001\026  
\020\155\141\151\156\060\061\100\151\160\163\143\141\056\143\157  
\155

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\256\061\013\060\011\006\003\125\004\006\023\002\105\123  
\061\017\060\015\006\003\125\004\010\023\006\115\141\144\162\151  
\144\061\017\060\015\006\003\125\004\007\023\006\115\141\144\162  
\151\144\061\057\060\055\006\003\125\004\012\023\046\111\120\123  
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101  
\165\164\150\157\162\151\164\171\040\163\056\154\056\040\151\160  
\163\103\101\061\016\060\014\006\003\125\004\013\023\005\151\160  
\163\103\101\061\033\060\031\006\003\125\004\003\023\022\151\160  
\163\103\101\040\115\141\151\156\040\103\101\040\122\157\157\164  
\061\037\060\035\006\011\052\206\110\206\367\015\001\011\001\026  
\020\155\141\151\156\060\061\100\151\160\163\143\141\056\143\157  
\155

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\000

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\356\060\202\004\326\240\003\002\001\002\002\001\000  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060  
\201\256\061\013\060\011\006\003\125\004\006\023\002\105\123\061  
\017\060\015\006\003\125\004\010\023\006\115\141\144\162\151\144  
\061\017\060\015\006\003\125\004\007\023\006\115\141\144\162\151  
\144\061\057\060\055\006\003\125\004\012\023\046\111\120\123\040  
\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165  
\164\150\157\162\151\164\171\040\163\056\154\056\040\151\160\163  
\103\101\061\016\060\014\006\003\125\004\013\023\005\151\160\163  
\103\101\061\033\060\031\006\003\125\004\003\023\022\151\160\163  
\103\101\040\115\141\151\156\040\103\101\040\122\157\157\164\061  
\037\060\035\006\011\052\206\110\206\367\015\001\011\001\026\020  
\155\141\151\156\060\061\100\151\160\163\143\141\056\143\157\155  
\060\036\027\015\060\071\060\071\060\067\061\064\065\064\063\066  
\132\027\015\062\071\061\062\062\065\061\064\065\064\063\066\132  
\060\201\256\061\013\060\011\006\003\125\004\006\023\002\105\123  
\061\017\060\015\006\003\125\004\010\023\006\115\141\144\162\151  
\144\061\017\060\015\006\003\125\004\007\023\006\115\141\144\162  
\151\144\061\057\060\055\006\003\125\004\012\023\046\111\120\123  
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101  
\165\164\150\157\162\151\164\171\040\163\056\154\056\040\151\160

\163\103\101\061\016\060\014\006\003\125\004\013\023\005\151\160  
\163\103\101\061\033\060\031\006\003\125\004\003\023\022\151\160  
\163\103\101\040\115\141\151\156\040\103\101\040\122\157\157\164  
\061\037\060\035\006\011\052\206\110\206\367\015\001\011\001\026  
\020\155\141\151\156\060\061\100\151\160\163\143\141\056\143\157  
\155\060\202\001\042\060\015\006\011\052\206\110\206\367\015\001  
\001\001\005\000\003\202\001\017\000\060\202\001\012\002\202\001  
\001\000\225\060\045\262\175\042\114\332\077\026\302\147\337\145  
\314\353\105\222\107\145\236\254\166\317\154\152\311\316\003\315  
\243\303\070\162\343\155\245\153\245\122\207\346\142\245\373\001  
\175\357\147\104\313\266\101\357\013\140\175\112\375\042\355\241  
\343\364\235\262\102\140\316\066\015\051\131\171\356\142\007\172  
\271\023\115\304\143\065\227\266\246\365\006\214\355\031\145\077  
\214\046\064\177\356\350\051\226\213\253\174\166\200\024\304\047  
\121\234\143\277\052\224\206\030\217\220\236\205\375\032\331\164  
\160\320\177\354\035\244\054\172\121\305\201\024\253\125\263\142  
\225\203\017\203\110\150\206\267\357\077\006\213\216\245\150\302  
\243\131\246\231\120\113\015\274\134\162\025\340\262\105\213\036  
\131\311\052\117\133\326\242\277\301\177\275\250\246\242\175\174  
\051\004\341\033\272\102\301\154\316\331\273\272\124\060\075\047  
\207\301\234\270\017\262\333\137\104\200\232\152\103\115\026\323  
\334\304\160\250\216\230\150\034\342\062\303\261\107\040\213\013  
\152\212\237\377\125\301\217\275\166\171\056\170\233\060\010\160  
\056\157\002\003\001\000\001\243\202\002\023\060\202\002\017\060  
\035\006\003\125\035\016\004\026\004\024\141\355\071\215\153\074  
\341\066\306\317\333\101\374\033\103\121\127\313\115\153\060\201  
\333\006\003\125\035\043\004\201\323\060\201\320\200\024\141\355  
\071\215\153\074\341\066\306\317\333\101\374\033\103\121\127\313  
\115\153\241\201\264\244\201\261\060\201\256\061\013\060\011\006  
\003\125\004\006\023\002\105\123\061\017\060\015\006\003\125\004  
\010\023\006\115\141\144\162\151\144\061\017\060\015\006\003\125  
\004\007\023\006\115\141\144\162\151\144\061\057\060\055\006\003  
\125\004\012\023\046\111\120\123\040\103\145\162\164\151\146\151  
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171  
\040\163\056\154\056\040\151\160\163\103\101\061\016\060\014\006  
\003\125\004\013\023\005\151\160\163\103\101\061\033\060\031\006  
\003\125\004\003\023\022\151\160\163\103\101\040\115\141\151\156  
\040\103\101\040\122\157\157\164\061\037\060\035\006\011\052\206  
\110\206\367\015\001\011\001\026\020\155\141\151\156\060\061\100  
\151\160\163\143\141\056\143\157\155\202\001\000\060\014\006\003  
\125\035\023\004\005\060\003\001\001\377\060\013\006\003\125\035  
\017\004\004\003\002\001\006\060\107\006\003\125\035\045\004\100  
\060\076\006\010\053\006\001\005\005\007\003\001\006\010\053\006  
\001\005\005\007\003\002\006\010\053\006\001\005\005\007\003\003  
\006\010\053\006\001\005\005\007\003\004\006\010\053\006\001\005  
\005\007\003\010\006\012\053\006\001\004\001\202\067\012\003\004  
\060\033\006\003\125\035\021\004\024\060\022\201\020\155\141\151  
\156\060\061\100\151\160\163\143\141\056\143\157\155\060\033\006

\003\125\035\022\004\024\060\022\201\020\155\141\151\156\060\061  
\100\151\160\163\143\141\056\143\157\155\060\072\006\003\125\035  
\037\004\063\060\061\060\057\240\055\240\053\206\051\150\164\164  
\160\072\057\057\143\162\154\155\141\151\156\060\061\056\151\160  
\163\143\141\056\143\157\155\057\143\162\154\057\155\141\151\156  
\060\061\056\143\162\154\060\066\006\010\053\006\001\005\005\007  
\001\001\004\052\060\050\060\046\006\010\053\006\001\005\005\007  
\060\001\206\032\150\164\164\160\072\057\057\143\162\154\155\141  
\151\156\060\061\056\151\160\163\143\141\056\143\157\155\060\015  
\006\011\052\206\110\206\367\015\001\001\005\005\000\003\202\001  
\001\000\106\234\017\142\266\332\075\034\151\076\276\042\301\351  
\176\040\357\311\356\372\306\020\236\145\135\117\270\104\263\324  
\041\151\126\117\162\176\142\336\233\111\207\235\343\310\140\255  
\157\260\006\067\035\100\341\175\072\320\023\326\227\342\207\166  
\367\037\115\323\203\055\012\271\210\131\322\041\317\346\300\166  
\217\265\111\153\371\074\315\136\053\251\351\244\051\023\317\012  
\372\235\223\055\333\070\341\162\052\015\073\057\160\227\275\331  
\263\004\261\242\156\372\157\204\317\140\161\073\232\343\205\330  
\177\270\015\062\033\240\372\005\144\026\150\044\073\233\370\314  
\052\000\021\177\300\052\334\075\351\051\224\161\002\243\030\156  
\054\014\060\005\316\230\226\115\032\366\121\143\241\106\364\057  
\217\121\037\075\256\207\122\375\300\073\223\310\214\162\321\161  
\310\231\352\175\244\014\214\237\061\207\172\367\333\225\360\277  
\157\105\317\254\205\337\321\106\136\145\102\223\112\020\027\164  
\030\005\002\132\114\222\067\341\342\055\103\012\272\232\252\104  
\114\207\315\304\224\334\157\033\152\307\022\222\144\267\000\370  
\045\115

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "ipsCA Main CA Root"

# Issuer: 1.2.840.113549.1.9.1=main01@ipsca.com,CN=ipsCA Main CA Root,OU=ipsCA,O=IPS Certification  
Authority s.l. ipsCA,L=Madrid,ST=Madrid,C=ES

# Serial Number: 0 (0x0)

# Subject: 1.2.840.113549.1.9.1=main01@ipsca.com,CN=ipsCA Main CA Root,OU=ipsCA,O=IPS Certification  
Authority s.l. ipsCA,L=Madrid,ST=Madrid,C=ES

# Not Valid Before: Mon Sep 07 14:54:36 2009

# Not Valid After: Tue Dec 25 14:54:36 2029

# Fingerprint (MD5): 30:c9:08:dd:d7:3e:63:a4:09:28:14:c7:4e:b9:7e:2c

# Fingerprint (SHA1): cf:e4:31:3d:ba:05:b8:a7:c3:00:63:99:5a:9e:b7:c2:47:ad:8f:d5

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "ipsCA Main CA Root"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL  
\317\344\061\075\272\005\270\247\303\000\143\231\132\236\267\302  
\107\255\217\325

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL  
\060\311\010\335\327\076\143\244\011\050\024\307\116\271\176\054

END

CKA\_ISSUER MULTILINE\_OCTAL  
\060\201\256\061\013\060\011\006\003\125\004\006\023\002\105\123  
\061\017\060\015\006\003\125\004\010\023\006\115\141\144\162\151  
\144\061\017\060\015\006\003\125\004\007\023\006\115\141\144\162  
\151\144\061\057\060\055\006\003\125\004\012\023\046\111\120\123  
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101  
\165\164\150\157\162\151\164\171\040\163\056\154\056\040\151\160  
\163\103\101\061\016\060\014\006\003\125\004\013\023\005\151\160  
\163\103\101\061\033\060\031\006\003\125\004\003\023\022\151\160  
\163\103\101\040\115\141\151\156\040\103\101\040\122\157\157\164  
\061\037\060\035\006\011\052\206\110\206\367\015\001\011\001\026  
\020\155\141\151\156\060\061\100\151\160\163\143\141\056\143\157  
\155

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL  
\002\001\000

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Certificate "Actalis Authentication CA G1"  
# Issuer: CN=Actalis Authentication CA G1,O=Actalis S.p.A./03358520967,L=Milano,C=IT  
# Serial Number: 1 (0x1)  
# Subject: CN=Actalis Authentication CA G1,O=Actalis S.p.A./03358520967,L=Milano,C=IT  
# Not Valid Before: Tue Jun 23 14:06:00 2009  
# Not Valid After: Sat Jun 25 14:06:00 2022  
# Fingerprint (MD5): c2:2a:59:ab:cf:15:2f:4c:f7:e6:31:a3:16:ae:84:0c  
# Fingerprint (SHA1): 91:58:c5:ef:98:73:01:a8:90:3c:fd:ab:03:d7:2d:a1:d8:89:09:c9

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "Actalis Authentication CA G1"  
CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509  
CKA\_SUBJECT MULTILINE\_OCTAL  
\060\152\061\013\060\011\006\003\125\004\006\023\002\111\124\061  
\017\060\015\006\003\125\004\007\014\006\115\151\154\141\156\157  
\061\043\060\041\006\003\125\004\012\014\032\101\143\164\141\154

\151\163\040\123\056\160\056\101\056\057\060\063\063\065\070\065  
\062\060\071\066\067\061\045\060\043\006\003\125\004\003\014\034  
\101\143\164\141\154\151\163\040\101\165\164\150\145\156\164\151  
\143\141\164\151\157\156\040\103\101\040\107\061

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\152\061\013\060\011\006\003\125\004\006\023\002\111\124\061  
\017\060\015\006\003\125\004\007\014\006\115\151\154\141\156\157  
\061\043\060\041\006\003\125\004\012\014\032\101\143\164\141\154  
\151\163\040\123\056\160\056\101\056\057\060\063\063\065\070\065  
\062\060\071\066\067\061\045\060\043\006\003\125\004\003\014\034  
\101\143\164\141\154\151\163\040\101\165\164\150\145\156\164\151  
\143\141\164\151\157\156\040\103\101\040\107\061

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\001

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\224\060\202\002\174\240\003\002\001\002\002\001\001  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060  
\152\061\013\060\011\006\003\125\004\006\023\002\111\124\061\017  
\060\015\006\003\125\004\007\014\006\115\151\154\141\156\157\061  
\043\060\041\006\003\125\004\012\014\032\101\143\164\141\154\151  
\163\040\123\056\160\056\101\056\057\060\063\063\065\070\065\062  
\060\071\066\067\061\045\060\043\006\003\125\004\003\014\034\101  
\143\164\141\154\151\163\040\101\165\164\150\145\156\164\151\143  
\141\164\151\157\156\040\103\101\040\107\061\060\036\027\015\060  
\071\060\066\062\063\061\064\060\066\060\060\132\027\015\062\062  
\060\066\062\065\061\064\060\066\060\060\132\060\152\061\013\060  
\011\006\003\125\004\006\023\002\111\124\061\017\060\015\006\003  
\125\004\007\014\006\115\151\154\141\156\157\061\043\060\041\006  
\003\125\004\012\014\032\101\143\164\141\154\151\163\040\123\056  
\160\056\101\056\057\060\063\063\065\070\065\062\060\071\066\067  
\061\045\060\043\006\003\125\004\003\014\034\101\143\164\141\154  
\151\163\040\101\165\164\150\145\156\164\151\143\141\164\151\157  
\156\040\103\101\040\107\061\060\202\001\042\060\015\006\011\052  
\206\110\206\367\015\001\001\001\005\000\003\202\001\017\000\060  
\202\001\012\002\202\001\001\000\303\034\206\064\077\047\122\102  
\140\272\053\140\320\041\053\311\327\351\100\165\072\154\130\017  
\043\073\317\206\076\324\144\253\156\332\352\310\052\330\225\105  
\337\311\034\322\045\222\236\020\230\132\213\161\151\300\225\351  
\366\153\150\334\367\266\304\015\376\156\365\160\073\301\244\250  
\117\040\242\047\013\237\361\022\165\174\317\256\177\136\313\170  
\002\130\050\327\057\252\333\240\256\164\075\176\253\366\351\162  
\241\052\317\326\220\140\337\340\240\065\312\300\333\004\304\007  
\126\374\146\165\214\216\172\023\241\074\006\153\032\346\177\071  
\234\210\344\204\157\242\342\177\153\237\354\001\252\322\304\313

\262\354\232\075\270\027\030\254\037\140\231\063\346\353\005\335  
\314\362\151\147\260\016\276\050\044\103\313\055\271\107\204\031  
\371\352\344\361\365\150\364\237\307\173\120\121\257\242\374\157  
\167\210\061\277\222\333\177\234\305\265\254\241\010\230\347\152  
\063\376\321\273\000\341\267\005\010\257\363\246\126\210\066\075  
\343\212\112\342\015\235\200\206\146\237\324\302\243\120\272\034  
\022\327\207\212\061\112\270\025\002\003\001\000\001\243\105\060  
\103\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001  
\006\060\022\006\003\125\035\023\001\001\377\004\010\060\006\001  
\001\377\002\001\000\060\035\006\003\125\035\016\004\026\004\024  
\001\273\326\233\126\264\176\346\305\130\335\054\230\364\312\162  
\366\137\063\206\060\015\006\011\052\206\110\206\367\015\001\001  
\005\005\000\003\202\001\001\000\241\040\326\313\242\064\155\074  
\156\341\125\322\112\320\331\272\262\067\121\210\167\047\356\002  
\110\223\105\101\342\165\121\362\031\224\011\240\363\270\175\272  
\003\200\043\240\045\357\001\031\265\331\032\172\055\343\102\212  
\261\206\061\017\226\354\146\204\362\316\043\022\106\226\153\061  
\136\006\272\257\243\122\252\102\040\250\321\256\252\233\337\304  
\027\236\123\160\001\264\251\032\332\150\310\143\017\266\132\163  
\123\321\151\021\006\023\122\347\153\250\005\061\267\260\374\207  
\106\305\165\210\201\361\137\170\002\347\237\255\234\273\124\355  
\137\231\152\067\325\353\125\263\052\300\103\140\121\334\264\161  
\222\046\243\017\314\172\075\334\300\102\211\027\051\010\147\124  
\144\305\371\250\104\274\204\161\130\226\075\147\127\177\273\254  
\220\263\161\042\277\076\272\254\146\046\105\020\263\360\037\072  
\072\150\245\120\065\312\264\027\221\006\001\054\367\015\260\160  
\262\133\126\165\271\167\231\300\331\225\205\002\055\163\146\007  
\311\117\231\021\356\133\053\250\343\150\043\005\250\363\004\017  
\006\273\037\011\216\306\133\035

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "Actalis Authentication CA G1"  
# Issuer: CN=Actalis Authentication CA G1,O=Actalis S.p.A./03358520967,L=Milano,C=IT  
# Serial Number: 1 (0x1)  
# Subject: CN=Actalis Authentication CA G1,O=Actalis S.p.A./03358520967,L=Milano,C=IT  
# Not Valid Before: Tue Jun 23 14:06:00 2009  
# Not Valid After: Sat Jun 25 14:06:00 2022  
# Fingerprint (MD5): c2:2a:59:ab:cf:15:2f:4c:f7:e6:31:a3:16:ae:84:0c  
# Fingerprint (SHA1): 91:58:c5:ef:98:73:01:a8:90:3c:fd:ab:03:d7:2d:a1:d8:89:09:c9  
CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "Actalis Authentication CA G1"



```

CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\221\130\305\357\230\163\001\250\220\074\375\253\003\327\055\241
\330\211\011\311
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\302\052\131\253\317\025\057\114\367\346\061\243\026\256\204\014
END
CKA_ISSUER MULTILINE_OCTAL
\060\152\061\013\060\011\006\003\125\004\006\023\002\111\124\061
\017\060\015\006\003\125\004\007\014\006\115\151\154\141\156\157
\061\043\060\041\006\003\125\004\012\014\032\101\143\164\141\154
\151\163\040\123\056\160\056\101\056\057\060\063\063\065\070\065
\062\060\071\066\067\061\045\060\043\006\003\125\004\003\014\034
\101\143\164\141\154\151\163\040\101\165\164\150\145\156\164\151
\143\141\164\151\157\156\040\103\101\040\107\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "A-Trust-Qual-03"
Issuer: CN=A-Trust-Qual-03,OU=A-Trust-Qual-03,O=A-Trust Ges. f. Sicherheitssysteme im elektr. Datenverkehr
GmbH,C=AT
Serial Number: 255636 (0x3e694)
Subject: CN=A-Trust-Qual-03,OU=A-Trust-Qual-03,O=A-Trust Ges. f. Sicherheitssysteme im elektr.
Datenverkehr GmbH,C=AT
Not Valid Before: Thu Apr 24 22:00:00 2008
Not Valid After: Tue Apr 24 22:00:00 2018
Fingerprint (MD5): d8:7e:32:ef:69:f8:bf:72:03:1d:40:82:e8:a7:75:af
Fingerprint (SHA1): 42:ef:dd:e6:bf:f3:5e:d0:ba:e6:ac:dd:20:4c:50:ae:86:c4:f4:fa
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "A-Trust-Qual-03"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\213\061\013\060\011\006\003\125\004\006\023\002\101\124
\061\110\060\106\006\003\125\004\012\014\077\101\055\124\162\165
\163\164\040\107\145\163\056\040\146\056\040\123\151\143\150\145
\162\150\145\151\164\163\163\171\163\164\145\155\145\040\151\155
\040\145\154\145\153\164\162\056\040\104\141\164\145\156\166\145
\162\153\145\150\162\040\107\155\142\110\061\030\060\026\006\003

```

\125\004\013\014\017\101\055\124\162\165\163\164\055\121\165\141  
\154\055\060\063\061\030\060\026\006\003\125\004\003\014\017\101  
\055\124\162\165\163\164\055\121\165\141\154\055\060\063

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\213\061\013\060\011\006\003\125\004\006\023\002\101\124  
\061\110\060\106\006\003\125\004\012\014\077\101\055\124\162\165  
\163\164\040\107\145\163\056\040\146\056\040\123\151\143\150\145  
\162\150\145\151\164\163\163\171\163\164\145\155\145\040\151\155  
\040\145\154\145\153\164\162\056\040\104\141\164\145\156\166\145  
\162\153\145\150\162\040\107\155\142\110\061\030\060\026\006\003  
\125\004\013\014\017\101\055\124\162\165\163\164\055\121\165\141  
\154\055\060\063\061\030\060\026\006\003\125\004\003\014\017\101  
\055\124\162\165\163\164\055\121\165\141\154\055\060\063

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\003\003\346\224

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\313\060\202\002\263\240\003\002\001\002\002\003\003  
\346\224\060\015\006\011\052\206\110\206\367\015\001\001\005\005  
\000\060\201\213\061\013\060\011\006\003\125\004\006\023\002\101  
\124\061\110\060\106\006\003\125\004\012\014\077\101\055\124\162  
\165\163\164\040\107\145\163\056\040\146\056\040\123\151\143\150  
\145\162\150\145\151\164\163\163\171\163\164\145\155\145\040\151  
\155\040\145\154\145\153\164\162\056\040\104\141\164\145\156\166  
\145\162\153\145\150\162\040\107\155\142\110\061\030\060\026\006  
\003\125\004\013\014\017\101\055\124\162\165\163\164\055\121\165  
\141\154\055\060\063\061\030\060\026\006\003\125\004\003\014\017  
\101\055\124\162\165\163\164\055\121\165\141\154\055\060\063\060  
\036\027\015\060\070\060\064\062\064\062\062\060\060\060\060\132  
\027\015\061\070\060\064\062\064\062\062\060\060\060\060\132\060  
\201\213\061\013\060\011\006\003\125\004\006\023\002\101\124\061  
\110\060\106\006\003\125\004\012\014\077\101\055\124\162\165\163  
\164\040\107\145\163\056\040\146\056\040\123\151\143\150\145\162  
\150\145\151\164\163\163\171\163\164\145\155\145\040\151\155\040  
\145\154\145\153\164\162\056\040\104\141\164\145\156\166\145\162  
\153\145\150\162\040\107\155\142\110\061\030\060\026\006\003\125  
\004\013\014\017\101\055\124\162\165\163\164\055\121\165\141\154  
\055\060\063\061\030\060\026\006\003\125\004\003\014\017\101\055  
\124\162\165\163\164\055\121\165\141\154\055\060\063\060\202\001  
\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000  
\003\202\001\017\000\060\202\001\012\002\202\001\001\000\263\236  
\044\210\034\322\317\100\003\110\152\252\245\240\053\275\226\365  
\174\012\237\237\253\120\220\333\101\316\126\200\171\052\300\375  
\223\123\172\234\133\363\131\141\044\210\143\243\325\030\356\233  
\204\164\204\234\354\214\075\332\301\206\172\157\066\056\046\353

\176\075\311\076\255\347\256\113\164\167\050\053\044\040\377\052  
\056\302\225\144\020\366\176\173\303\267\332\021\175\236\253\355  
\057\214\031\242\034\235\214\314\063\160\165\011\007\376\136\373  
\100\244\045\214\057\375\265\121\147\072\250\053\114\237\326\150  
\235\140\233\244\305\143\260\356\160\315\050\077\112\164\352\131  
\371\165\305\000\006\156\037\260\143\301\052\252\023\135\374\313  
\322\145\033\071\061\042\132\302\171\042\135\031\361\113\302\276  
\316\034\210\001\164\361\046\101\167\062\071\306\214\120\150\317  
\123\205\103\212\017\240\217\356\216\013\222\243\000\100\276\300  
\242\131\136\054\241\104\270\376\037\042\323\014\272\320\350\357  
\051\344\162\067\112\213\370\026\354\042\062\007\052\043\054\363  
\243\327\315\312\251\247\117\162\277\274\021\216\250\033\002\003  
\001\000\001\243\066\060\064\060\017\006\003\125\035\023\001\001  
\377\004\005\060\003\001\001\377\060\021\006\003\125\035\016\004  
\012\004\010\106\006\337\067\362\302\067\020\060\016\006\003\125  
\035\017\001\001\377\004\004\003\002\001\006\060\015\006\011\052  
\206\110\206\367\015\001\001\005\005\000\003\202\001\001\000\161  
\010\324\046\104\276\200\342\153\102\265\052\120\375\135\350\214  
\140\363\234\266\222\201\162\070\262\157\251\076\201\362\303\064  
\044\123\241\121\122\310\245\211\323\274\334\333\022\271\333\251  
\260\130\357\300\010\146\062\142\343\341\363\243\130\243\167\156  
\356\344\241\273\127\021\150\167\063\010\364\315\131\270\352\135  
\033\011\306\254\314\215\013\272\315\337\326\232\276\253\166\000  
\255\175\026\113\144\134\337\230\076\153\155\136\054\174\071\025  
\131\102\067\040\074\237\303\334\177\365\123\066\267\342\307\244  
\042\214\172\276\161\275\115\263\150\310\270\251\211\377\161\060  
\213\317\221\155\362\205\056\245\112\042\176\162\336\324\256\261  
\355\014\357\374\105\175\055\334\044\255\355\171\007\345\255\117  
\262\351\122\164\111\270\214\122\372\275\022\344\031\303\374\121  
\215\026\343\153\150\156\071\232\337\051\071\245\273\261\241\027  
\301\027\343\165\152\374\175\261\162\074\337\301\352\345\243\034  
\324\235\131\033\032\164\037\151\052\203\124\044\030\323\356\345  
\340\203\127\276\033\342\320\037\255\154\065\276\215\272\137

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "A-Trust-Qual-03"

# Issuer: CN=A-Trust-Qual-03,OU=A-Trust-Qual-03,O=A-Trust Ges. f. Sicherheitssysteme im elektr. Datenverkehr GmbH,C=AT

# Serial Number: 255636 (0x3e694)

# Subject: CN=A-Trust-Qual-03,OU=A-Trust-Qual-03,O=A-Trust Ges. f. Sicherheitssysteme im elektr. Datenverkehr GmbH,C=AT

# Not Valid Before: Thu Apr 24 22:00:00 2008

# Not Valid After: Tue Apr 24 22:00:00 2018

# Fingerprint (MD5): d8:7e:32:ef:69:f8:bf:72:03:1d:40:82:e8:a7:75:af

```

Fingerprint (SHA1): 42:ef:dd:e6:bf:f3:5e:d0:ba:e6:ac:dd:20:4c:50:ae:86:c4:f4:fa
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "A-Trust-Qual-03"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\102\357\335\346\277\363\136\320\272\346\254\335\040\114\120\256
\206\304\364\372
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\330\176\062\357\151\370\277\162\003\035\100\202\350\247\165\257
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\213\061\013\060\011\006\003\125\004\006\023\002\101\124
\061\110\060\106\006\003\125\004\012\014\077\101\055\124\162\165
\163\164\040\107\145\163\056\040\146\056\040\123\151\143\150\145
\162\150\145\151\164\163\163\171\163\164\145\155\145\040\151\155
\040\145\154\145\153\164\162\056\040\104\141\164\145\156\166\145
\162\153\145\150\162\040\107\155\142\110\061\030\060\026\006\003
\125\004\013\014\017\101\055\124\162\165\163\164\055\121\165\141
\154\055\060\063\061\030\060\026\006\003\125\004\003\014\017\101
\055\124\162\165\163\164\055\121\165\141\154\055\060\063
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\003\003\346\224
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "AddTrust External CA Root"
Issuer: CN=AddTrust External CA Root,OU=AddTrust External TTP Network,O=AddTrust AB,C=SE
Serial Number: 1 (0x1)
Subject: CN=AddTrust External CA Root,OU=AddTrust External TTP Network,O=AddTrust AB,C=SE
Not Valid Before: Tue May 30 10:48:38 2000
Not Valid After: Sat May 30 10:48:38 2020
Fingerprint (MD5): 1d:35:54:04:85:78:b0:3f:42:42:4d:bf:20:73:0a:3f
Fingerprint (SHA1): 02:fa:f3:e2:91:43:54:68:60:78:57:69:4d:f5:e4:5b:68:85:18:68
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "AddTrust External CA Root"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL

```

\060\157\061\013\060\011\006\003\125\004\006\023\002\123\105\061  
\024\060\022\006\003\125\004\012\023\013\101\144\144\124\162\165  
\163\164\040\101\102\061\046\060\044\006\003\125\004\013\023\035  
\101\144\144\124\162\165\163\164\040\105\170\164\145\162\156\141  
\154\040\124\124\120\040\116\145\164\167\157\162\153\061\042\060  
\040\006\003\125\004\003\023\031\101\144\144\124\162\165\163\164  
\040\105\170\164\145\162\156\141\154\040\103\101\040\122\157\157  
\164

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\157\061\013\060\011\006\003\125\004\006\023\002\123\105\061  
\024\060\022\006\003\125\004\012\023\013\101\144\144\124\162\165  
\163\164\040\101\102\061\046\060\044\006\003\125\004\013\023\035  
\101\144\144\124\162\165\163\164\040\105\170\164\145\162\156\141  
\154\040\124\124\120\040\116\145\164\167\157\162\153\061\042\060  
\040\006\003\125\004\003\023\031\101\144\144\124\162\165\163\164  
\040\105\170\164\145\162\156\141\154\040\103\101\040\122\157\157  
\164

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\001

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\066\060\202\003\036\240\003\002\001\002\002\001\001  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060  
\157\061\013\060\011\006\003\125\004\006\023\002\123\105\061\024  
\060\022\006\003\125\004\012\023\013\101\144\144\124\162\165\163  
\164\040\101\102\061\046\060\044\006\003\125\004\013\023\035\101  
\144\144\124\162\165\163\164\040\105\170\164\145\162\156\141\154  
\040\124\124\120\040\116\145\164\167\157\162\153\061\042\060\040  
\006\003\125\004\003\023\031\101\144\144\124\162\165\163\164\040  
\105\170\164\145\162\156\141\154\040\103\101\040\122\157\157\164  
\060\036\027\015\060\060\060\065\063\060\061\060\064\070\063\070  
\132\027\015\062\060\060\065\063\060\061\060\064\070\063\070\132  
\060\157\061\013\060\011\006\003\125\004\006\023\002\123\105\061  
\024\060\022\006\003\125\004\012\023\013\101\144\144\124\162\165  
\163\164\040\101\102\061\046\060\044\006\003\125\004\013\023\035  
\101\144\144\124\162\165\163\164\040\105\170\164\145\162\156\141  
\154\040\124\124\120\040\116\145\164\167\157\162\153\061\042\060  
\040\006\003\125\004\003\023\031\101\144\144\124\162\165\163\164  
\040\105\170\164\145\162\156\141\154\040\103\101\040\122\157\157  
\164\060\202\001\042\060\015\006\011\052\206\110\206\367\015\001  
\001\001\005\000\003\202\001\017\000\060\202\001\012\002\202\001  
\001\000\267\367\032\063\346\362\000\004\055\071\340\116\133\355  
\037\274\154\017\315\265\372\043\266\316\336\233\021\063\227\244  
\051\114\175\223\237\275\112\274\223\355\003\032\343\217\317\345  
\155\120\132\326\227\051\224\132\200\260\111\172\333\056\225\375

\270\312\277\067\070\055\036\076\221\101\255\160\126\307\360\117  
\077\350\062\236\164\312\310\220\124\351\306\137\017\170\235\232  
\100\074\016\254\141\252\136\024\217\236\207\241\152\120\334\327  
\232\116\257\005\263\246\161\224\234\161\263\120\140\012\307\023  
\235\070\007\206\002\250\351\250\151\046\030\220\253\114\260\117  
\043\253\072\117\204\330\337\316\237\341\151\157\273\327\102\327  
\153\104\344\307\255\356\155\101\137\162\132\161\010\067\263\171  
\145\244\131\240\224\067\367\000\057\015\302\222\162\332\320\070  
\162\333\024\250\105\304\135\052\175\267\264\326\304\356\254\315  
\023\104\267\311\053\335\103\000\045\372\141\271\151\152\130\043  
\021\267\247\063\217\126\165\131\365\315\051\327\106\267\012\053  
\145\266\323\102\157\025\262\270\173\373\357\351\135\123\325\064  
\132\047\002\003\001\000\001\243\201\334\060\201\331\060\035\006  
\003\125\035\016\004\026\004\024\255\275\230\172\064\264\046\367  
\372\304\046\124\357\003\275\340\044\313\124\032\060\013\006\003  
\125\035\017\004\004\003\002\001\006\060\017\006\003\125\035\023  
\001\001\377\004\005\060\003\001\001\377\060\201\231\006\003\125  
\035\043\004\201\221\060\201\216\200\024\255\275\230\172\064\264  
\046\367\372\304\046\124\357\003\275\340\044\313\124\032\241\163  
\244\161\060\157\061\013\060\011\006\003\125\004\006\023\002\123  
\105\061\024\060\022\006\003\125\004\012\023\013\101\144\144\124  
\162\165\163\164\040\101\102\061\046\060\044\006\003\125\004\013  
\023\035\101\144\144\124\162\165\163\164\040\105\170\164\145\162  
\156\141\154\040\124\124\120\040\116\145\164\167\157\162\153\061  
\042\060\040\006\003\125\004\003\023\031\101\144\144\124\162\165  
\163\164\040\105\170\164\145\162\156\141\154\040\103\101\040\122  
\157\157\164\202\001\001\060\015\006\011\052\206\110\206\367\015  
\001\001\005\005\000\003\202\001\001\000\260\233\340\205\045\302  
\326\043\342\017\226\006\222\235\101\230\234\331\204\171\201\331  
\036\133\024\007\043\066\145\217\260\330\167\273\254\101\154\107  
\140\203\121\260\371\062\075\347\374\366\046\023\307\200\026\245  
\277\132\374\207\317\170\171\211\041\232\342\114\007\012\206\065  
\274\362\336\121\304\322\226\267\334\176\116\356\160\375\034\071  
\353\014\002\121\024\055\216\275\026\340\301\337\106\165\347\044  
\255\354\364\102\264\205\223\160\020\147\272\235\006\065\112\030  
\323\053\172\314\121\102\241\172\143\321\346\273\241\305\053\302  
\066\276\023\015\346\275\143\176\171\173\247\011\015\100\253\152  
\335\217\212\303\366\366\214\032\102\005\121\324\105\365\237\247  
\142\041\150\025\040\103\074\231\347\174\275\044\330\251\221\027  
\163\210\077\126\033\061\070\030\264\161\017\232\315\310\016\236  
\216\056\033\341\214\230\203\313\037\061\361\104\114\306\004\163  
\111\166\140\017\307\370\275\027\200\153\056\351\314\114\016\132  
\232\171\017\040\012\056\325\236\143\046\036\125\222\224\330\202  
\027\132\173\320\274\307\217\116\206\004

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

```

Microsoft Code Signing Only Certificate
Trust for "AddTrust External CA Root"
Issuer: CN=AddTrust External CA Root,OU=AddTrust External TTP Network,O=AddTrust AB,C=SE
Serial Number: 1 (0x1)
Subject: CN=AddTrust External CA Root,OU=AddTrust External TTP Network,O=AddTrust AB,C=SE
Not Valid Before: Tue May 30 10:48:38 2000
Not Valid After: Sat May 30 10:48:38 2020
Fingerprint (MD5): 1d:35:54:04:85:78:b0:3f:42:42:4d:bf:20:73:0a:3f
Fingerprint (SHA1): 02:fa:f3:e2:91:43:54:68:60:78:57:69:4d:f5:e4:5b:68:85:18:68
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "AddTrust External CA Root"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\002\372\363\342\221\103\124\150\140\170\127\151\115\365\344\133
\150\205\030\150
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\035\065\124\004\205\170\260\077\102\102\115\277\040\163\012\077
END
CKA_ISSUER MULTILINE_OCTAL
\060\157\061\013\060\011\006\003\125\004\006\023\002\123\105\061
\024\060\022\006\003\125\004\012\023\013\101\144\144\124\162\165
\163\164\040\101\102\061\046\060\044\006\003\125\004\013\023\035
\101\144\144\124\162\165\163\164\040\105\170\164\145\162\156\141
\154\040\124\124\120\040\116\145\164\167\157\162\153\061\042\060
\040\006\003\125\004\003\023\031\101\144\144\124\162\165\163\164
\040\105\170\164\145\162\156\141\154\040\103\101\040\122\157\157
\164
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

```

```

Microsoft Code Signing Only Certificate
Certificate "ECRaizEstado"
Issuer: CN=ECRaizEstado,O=SCEE,C=PT
Serial Number:42:ea:5b:0a:51:11:26:7c:d8:27:74:b7:df:7f:71
Subject: CN=ECRaizEstado,O=SCEE,C=PT
Not Valid Before: Fri Jun 23 13:41:27 2006
Not Valid After: Sun Jun 23 13:41:27 2030
Fingerprint (MD5): c2:db:ab:8e:96:52:c5:ee:ae:f2:55:00:89:6d:55:95

```

# Fingerprint (SHA1): 39:13:85:3e:45:c4:39:a2:da:71:8c:df:b6:f3:e0:33:e0:4f:ee:71

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ECRaizEstado"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\063\061\013\060\011\006\003\125\004\006\023\002\120\124\061
\015\060\013\006\003\125\004\012\014\004\123\103\105\105\061\025
\060\023\006\003\125\004\003\014\014\105\103\122\141\151\172\105
\163\164\141\144\157
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\063\061\013\060\011\006\003\125\004\006\023\002\120\124\061
\015\060\013\006\003\125\004\012\014\004\123\103\105\105\061\025
\060\023\006\003\125\004\003\014\014\105\103\122\141\151\172\105
\163\164\141\144\157
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\017\102\352\133\012\121\021\046\174\330\047\164\267\337\177
\161
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\156\060\202\003\126\240\003\002\001\002\002\017\102
\352\133\012\121\021\046\174\330\047\164\267\337\177\161\060\015
\006\011\052\206\110\206\367\015\001\001\005\005\000\060\063\061
\013\060\011\006\003\125\004\006\023\002\120\124\061\015\060\013
\006\003\125\004\012\014\004\123\103\105\105\061\025\060\023\006
\003\125\004\003\014\014\105\103\122\141\151\172\105\163\164\141
\144\157\060\036\027\015\060\066\060\066\062\063\061\063\064\061
\062\067\132\027\015\063\060\060\066\062\063\061\063\064\061\062
\067\132\060\063\061\013\060\011\006\003\125\004\006\023\002\120
\124\061\015\060\013\006\003\125\004\012\014\004\123\103\105\105
\061\025\060\023\006\003\125\004\003\014\014\105\103\122\141\151
\172\105\163\164\141\144\157\060\202\002\042\060\015\006\011\052
\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060
\202\002\012\002\202\002\001\000\333\357\242\103\156\310\251\375
\156\327\337\254\242\222\204\241\310\131\240\014\232\123\376\357
\256\314\031\015\162\212\244\302\063\043\357\347\006\162\352\155
\113\072\101\122\017\311\110\016\055\347\272\144\356\242\072\114
\143\134\146\051\213\337\251\210\305\275\350\361\367\216\113\374
\001\074\104\022\071\052\160\242\300\333\305\242\337\137\307\113
\306\250\334\075\141\174\112\130\301\104\062\223\336\160\231\241
\043\046\126\077\243\341\352\137\060\106\330\170\365\060\243\226
\011\211\260\075\361\206\223\005\266\022\152\030\215\360\245\144
\073\053\207\144\136\075\027\216\013\156\346\230\314\227\070\070
```



\040\214\160\132\151\053\275\145\215\315\067\131\134\154\321\162  
\164\131\006\116\310\267\001\327\167\277\360\110\206\250\263\032  
\135\101\324\067\027\021\020\137\112\156\215\165\305\003\100\175  
\041\256\000\360\333\374\237\154\072\146\244\337\367\312\337\200  
\146\132\331\330\177\024\242\046\031\364\256\013\041\340\312\076  
\005\335\026\330\176\131\332\241\260\151\303\235\064\023\372\145  
\111\071\207\356\166\057\215\275\074\047\031\003\116\255\016\013  
\053\054\306\056\161\023\065\051\127\351\160\334\033\121\352\315  
\227\361\225\215\262\206\372\046\006\057\200\032\225\361\230\073  
\356\366\345\206\245\316\033\001\345\364\351\063\312\017\125\104  
\137\150\212\054\307\133\146\050\335\226\113\203\235\136\035\176  
\030\325\376\262\140\373\232\121\150\303\226\214\037\150\113\120  
\122\013\066\346\061\047\344\327\051\014\033\332\033\057\341\004  
\123\270\324\171\111\260\073\201\136\010\210\042\167\342\051\300  
\256\162\252\253\264\162\122\275\154\273\365\272\170\331\234\270  
\040\157\060\215\112\235\062\371\364\001\346\142\171\230\102\100  
\005\172\157\034\052\077\265\373\337\315\030\100\216\345\020\304  
\071\133\126\361\074\127\005\253\322\071\115\077\370\213\043\307  
\153\271\100\261\342\376\377\263\034\012\151\037\233\214\017\264  
\037\340\012\336\110\375\215\137\217\231\365\001\166\005\066\135  
\216\334\063\216\121\156\021\342\101\375\314\267\215\052\137\076  
\222\345\362\261\340\244\043\342\242\267\306\215\030\233\051\112  
\321\106\177\364\144\040\030\335\002\003\001\000\001\243\177\060  
\175\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001  
\001\377\060\016\006\003\125\035\017\001\001\377\004\004\003\002  
\001\006\060\035\006\003\125\035\016\004\026\004\024\161\177\065  
\336\365\167\161\155\035\022\234\341\220\244\272\360\251\203\217  
\200\060\073\006\003\125\035\040\004\064\060\062\060\060\006\004  
\125\035\040\000\060\050\060\046\006\010\053\006\001\005\005\007  
\002\001\026\032\150\164\164\160\072\057\057\167\167\167\056\145  
\143\145\145\056\147\157\166\056\160\164\057\144\160\143\060\015  
\006\011\052\206\110\206\367\015\001\001\005\005\000\003\202\002  
\001\000\214\255\234\162\245\265\147\166\147\070\207\351\072\214  
\376\235\131\065\276\220\361\003\000\240\130\330\230\321\277\374  
\374\363\120\334\264\145\325\332\272\360\214\056\174\015\346\011  
\221\137\115\243\366\135\170\234\130\135\152\160\224\243\257\333  
\057\000\311\003\100\153\337\121\003\026\031\214\053\274\231\066  
\366\300\255\222\030\023\214\247\355\035\322\337\003\220\005\354  
\260\223\230\233\367\115\132\023\370\347\233\367\066\166\336\174  
\046\370\021\070\117\111\116\263\163\037\137\047\133\341\236\062  
\036\366\300\230\033\331\040\054\134\226\215\206\311\013\105\327  
\222\255\212\275\352\127\242\243\126\266\040\074\354\262\307\071  
\176\260\200\376\275\121\053\052\264\303\162\151\303\371\107\056  
\156\377\234\207\355\334\165\313\020\210\340\264\316\056\016\123  
\035\013\350\156\036\102\114\320\276\071\170\165\311\024\336\047  
\221\163\252\354\152\200\360\360\027\226\142\117\276\004\313\342  
\247\345\135\017\223\105\313\131\110\046\023\336\335\261\365\012  
\332\026\261\250\035\217\176\130\033\267\325\011\336\210\153\316

\204\076\250\276\122\142\312\322\241\241\307\313\074\026\340\166  
\126\060\077\346\017\153\006\167\376\144\235\132\152\163\174\356  
\336\041\351\232\111\227\067\266\204\177\242\221\076\105\373\327  
\132\006\305\207\065\334\272\110\114\206\001\010\107\066\266\070  
\120\225\021\231\163\321\067\111\012\372\102\117\057\020\124\323  
\101\220\372\310\334\273\021\334\015\314\175\174\233\334\016\221  
\161\206\115\270\362\025\232\053\070\027\021\241\362\236\250\154  
\234\343\316\256\342\346\113\213\362\212\006\073\007\167\002\021  
\356\203\352\235\146\206\312\360\142\251\325\127\203\244\025\361  
\105\024\376\032\165\177\245\017\334\122\164\131\165\012\370\373  
\125\101\251\134\215\061\104\335\315\224\116\063\321\033\101\252  
\333\327\241\074\360\305\110\155\105\101\065\265\171\203\346\371  
\115\361\126\070\327\277\100\042\373\040\200\343\034\302\131\106  
\007\143\002\141\000\073\233\120\273\103\303\260\351\012\232\270  
\166\364\107\141\125\144\160\117\067\331\234\021\243\023\262\341  
\335\100\102\273\230\327\240\006\213\346\150\127\113\016\070\150  
\177\272

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "ECRaizEstado"  
# Issuer: CN=ECRaizEstado,O=SCEE,C=PT  
# Serial Number:42:ea:5b:0a:51:11:26:7c:d8:27:74:b7:df:7f:71  
# Subject: CN=ECRaizEstado,O=SCEE,C=PT  
# Not Valid Before: Fri Jun 23 13:41:27 2006  
# Not Valid After: Sun Jun 23 13:41:27 2030  
# Fingerprint (MD5): c2:db:ab:8e:96:52:c5:ee:ae:f2:55:00:89:6d:55:95  
# Fingerprint (SHA1): 39:13:85:3e:45:c4:39:a2:da:71:8c:df:b6:f3:e0:33:e0:4f:ee:71  
CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "ECRaizEstado"  
CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL  
\071\023\205\076\105\304\071\242\332\161\214\337\266\363\340\063  
\340\117\356\161  
END  
CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL  
\302\333\253\216\226\122\305\356\256\362\125\000\211\155\125\225  
END  
CKA\_ISSUER MULTILINE\_OCTAL  
\060\063\061\013\060\011\006\003\125\004\006\023\002\120\124\061  
\015\060\013\006\003\125\004\012\014\004\123\103\105\105\061\025  
\060\023\006\003\125\004\003\014\014\105\103\122\141\151\172\105  
\163\164\141\144\157

```
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\017\102\352\133\012\121\021\046\174\330\047\164\267\337\177
\161
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
Certificate "Configuration"
Issuer: CN=Posta CA Root,CN=AIA,CN=Public Key
Services,CN=Services,CN=Configuration,DC=ca,DC=posta,DC=rs
Serial Number:48:fc:7e:f5
Subject: CN=Posta CA Root,CN=AIA,CN=Public Key
Services,CN=Services,CN=Configuration,DC=ca,DC=posta,DC=rs
Not Valid Before: Mon Oct 20 12:22:08 2008
Not Valid After: Fri Oct 20 12:52:08 2028
Fingerprint (MD5): 18:02:b0:01:27:03:6a:19:1b:32:3b:83:de:9a:a9:85
Fingerprint (SHA1): d6:bf:79:94:f4:2b:e5:fa:29:da:0b:d7:58:7b:59:1f:47:a4:4f:22
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Configuration"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\256\061\022\060\020\006\012\011\222\046\211\223\362\054
\144\001\031\026\002\162\163\061\025\060\023\006\012\011\222\046
\211\223\362\054\144\001\031\026\005\160\157\163\164\141\061\022
\060\020\006\012\011\222\046\211\223\362\054\144\001\031\026\002
\143\141\061\026\060\024\006\003\125\004\003\023\015\103\157\156
\146\151\147\165\162\141\164\151\157\156\061\021\060\017\006\003
\125\004\003\023\010\123\145\162\166\151\143\145\163\061\034\060
\032\006\003\125\004\003\023\023\120\165\142\154\151\143\040\113
\145\171\040\123\145\162\166\151\143\145\163\061\014\060\012\006
\003\125\004\003\023\003\101\111\101\061\026\060\024\006\003\125
\004\003\023\015\120\157\163\164\141\040\103\101\040\122\157\157
\164
```

```
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\256\061\022\060\020\006\012\011\222\046\211\223\362\054
\144\001\031\026\002\162\163\061\025\060\023\006\012\011\222\046
\211\223\362\054\144\001\031\026\005\160\157\163\164\141\061\022
\060\020\006\012\011\222\046\211\223\362\054\144\001\031\026\002
\143\141\061\026\060\024\006\003\125\004\003\023\015\103\157\156
```

\146\151\147\165\162\141\164\151\157\156\061\021\060\017\006\003  
\125\004\003\023\010\123\145\162\166\151\143\145\163\061\034\060  
\032\006\003\125\004\003\023\023\120\165\142\154\151\143\040\113  
\145\171\040\123\145\162\166\151\143\145\163\061\014\060\012\006  
\003\125\004\003\023\003\101\111\101\061\026\060\024\006\003\125  
\004\003\023\015\120\157\163\164\141\040\103\101\040\122\157\157  
\164

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\004\110\374\176\365

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\007\037\060\202\006\007\240\003\002\001\002\002\004\110  
\374\176\365\060\015\006\011\052\206\110\206\367\015\001\001\005  
\005\000\060\201\256\061\022\060\020\006\012\011\222\046\211\223  
\362\054\144\001\031\026\002\162\163\061\025\060\023\006\012\011  
\222\046\211\223\362\054\144\001\031\026\005\160\157\163\164\141  
\061\022\060\020\006\012\011\222\046\211\223\362\054\144\001\031  
\026\002\143\141\061\026\060\024\006\003\125\004\003\023\015\103  
\157\156\146\151\147\165\162\141\164\151\157\156\061\021\060\017  
\006\003\125\004\003\023\010\123\145\162\166\151\143\145\163\061  
\034\060\032\006\003\125\004\003\023\023\120\165\142\154\151\143  
\040\113\145\171\040\123\145\162\166\151\143\145\163\061\014\060  
\012\006\003\125\004\003\023\003\101\111\101\061\026\060\024\006  
\003\125\004\003\023\015\120\157\163\164\141\040\103\101\040\122  
\157\157\164\060\036\027\015\060\070\061\060\062\060\061\062\062  
\062\060\070\132\027\015\062\070\061\060\062\060\061\062\065\062  
\060\070\132\060\201\256\061\022\060\020\006\012\011\222\046\211  
\223\362\054\144\001\031\026\002\162\163\061\025\060\023\006\012  
\011\222\046\211\223\362\054\144\001\031\026\005\160\157\163\164  
\141\061\022\060\020\006\012\011\222\046\211\223\362\054\144\001  
\031\026\002\143\141\061\026\060\024\006\003\125\004\003\023\015  
\103\157\156\146\151\147\165\162\141\164\151\157\156\061\021\060  
\017\006\003\125\004\003\023\010\123\145\162\166\151\143\145\163  
\061\034\060\032\006\003\125\004\003\023\023\120\165\142\154\151  
\143\040\113\145\171\040\123\145\162\166\151\143\145\163\061\014  
\060\012\006\003\125\004\003\023\003\101\111\101\061\026\060\024  
\006\003\125\004\003\023\015\120\157\163\164\141\040\103\101\040  
\122\157\157\164\060\202\001\042\060\015\006\011\052\206\110\206  
\367\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012  
\002\202\001\001\000\250\362\275\210\276\300\257\104\276\233\112  
\242\143\034\326\126\253\035\051\262\034\252\025\036\105\321\254  
\235\240\141\325\065\371\344\132\203\066\143\103\336\070\127\025  
\374\360\224\142\364\007\200\127\203\127\250\263\025\274\373\115  
\043\170\137\332\366\307\201\026\276\253\337\347\334\203\123\163  
\053\266\335\143\210\215\105\363\015\335\175\277\350\210\260\146  
\301\103\135\067\322\155\241\234\232\106\303\263\077\320\302\240  
\212\224\056\203\246\074\303\140\275\054\314\036\213\143\202\166

\101\050\344\025\153\134\014\141\071\125\070\101\312\310\146\350  
\307\270\227\122\020\046\160\267\007\267\011\036\246\023\136\256  
\231\132\046\157\144\075\354\304\323\245\271\134\166\144\255\143  
\175\210\203\342\113\314\015\336\324\306\323\010\102\365\133\027  
\365\161\341\221\055\003\237\236\034\334\213\162\244\350\107\144  
\020\207\144\060\163\330\362\264\361\127\046\223\127\313\266\307  
\015\210\213\035\317\005\060\135\004\326\166\067\350\040\062\127  
\277\017\234\063\306\010\214\366\264\302\251\006\260\133\060\241  
\036\055\022\272\077\002\003\001\000\001\243\202\003\101\060\202  
\003\075\060\017\006\003\125\035\023\001\001\377\004\005\060\003  
\001\001\377\060\016\006\003\125\035\017\001\001\377\004\004\003  
\002\001\006\060\201\272\006\003\125\035\040\004\201\262\060\201  
\257\060\201\254\006\013\053\006\001\004\001\372\070\012\012\001  
\001\060\201\234\060\060\006\010\053\006\001\005\005\007\002\001  
\026\044\150\164\164\160\072\057\057\167\167\167\056\143\141\056  
\160\157\163\164\141\056\162\163\057\144\157\153\165\155\145\156  
\164\141\143\151\152\141\060\150\006\010\053\006\001\005\005\007  
\002\002\060\134\032\132\117\166\157\040\152\145\040\145\154\145  
\153\164\162\157\156\163\153\151\040\163\145\162\164\151\146\151  
\153\141\164\040\122\117\117\124\040\103\101\040\163\145\162\166  
\145\162\141\040\123\145\162\164\151\146\151\153\141\143\151\157  
\156\157\147\040\164\145\154\141\040\120\157\163\164\145\072\040  
\042\120\157\163\164\141\040\103\101\040\122\157\157\164\042\056  
\060\021\006\011\140\206\110\001\206\370\102\001\001\004\004\003  
\002\000\007\060\202\001\274\006\003\125\035\037\004\202\001\263  
\060\202\001\257\060\201\311\240\201\306\240\201\303\244\201\300  
\060\201\275\061\022\060\020\006\012\011\222\046\211\223\362\054  
\144\001\031\026\002\162\163\061\025\060\023\006\012\011\222\046  
\211\223\362\054\144\001\031\026\005\160\157\163\164\141\061\022  
\060\020\006\012\011\222\046\211\223\362\054\144\001\031\026\002  
\143\141\061\026\060\024\006\003\125\004\003\023\015\103\157\156  
\146\151\147\165\162\141\164\151\157\156\061\021\060\017\006\003  
\125\004\003\023\010\123\145\162\166\151\143\145\163\061\034\060  
\032\006\003\125\004\003\023\023\120\165\142\154\151\143\040\113  
\145\171\040\123\145\162\166\151\143\145\163\061\014\060\012\006  
\003\125\004\003\023\003\101\111\101\061\026\060\024\006\003\125  
\004\003\023\015\120\157\163\164\141\040\103\101\040\122\157\157  
\164\061\015\060\013\006\003\125\004\003\023\004\103\122\114\061  
\060\201\340\240\201\335\240\201\332\206\201\243\154\144\141\160  
\072\057\057\154\144\141\160\056\143\141\056\160\157\163\164\141  
\056\162\163\057\143\156\075\120\157\163\164\141\045\062\060\103  
\101\045\062\060\122\157\157\164\054\143\156\075\101\111\101\054  
\143\156\075\120\165\142\154\151\143\045\062\060\113\145\171\045  
\062\060\123\145\162\166\151\143\145\163\054\143\156\075\123\145  
\162\166\151\143\145\163\054\143\156\075\103\157\156\146\151\147  
\165\162\141\164\151\157\156\054\144\143\075\143\141\054\144\143  
\075\160\157\163\164\141\054\144\143\075\162\163\077\143\145\162  
\164\151\146\151\143\141\164\145\122\145\166\157\143\141\164\151

\157\156\114\151\163\164\045\063\102\142\151\156\141\162\171\206  
\062\150\164\164\160\072\057\057\163\145\162\164\151\146\151\153  
\141\164\151\056\143\141\056\160\157\163\164\141\056\162\163\057  
\143\162\154\057\120\157\163\164\141\103\101\122\157\157\164\056  
\143\162\154\060\053\006\003\125\035\020\004\044\060\042\200\017  
\062\060\060\070\061\060\062\060\061\062\062\062\060\070\132\201  
\017\062\060\062\070\061\060\062\060\061\062\065\062\060\070\132  
\060\037\006\003\125\035\043\004\030\060\026\200\024\362\313\215  
\342\065\357\020\103\304\332\173\312\372\353\211\003\241\042\257  
\270\060\035\006\003\125\035\016\004\026\004\024\362\313\215\342  
\065\357\020\103\304\332\173\312\372\353\211\003\241\042\257\270  
\060\035\006\011\052\206\110\206\366\175\007\101\000\004\020\060  
\016\033\010\126\067\056\061\072\064\056\060\003\002\004\220\060  
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003\202  
\001\001\000\160\106\241\310\344\027\005\146\017\235\342\103\061  
\110\035\222\220\031\304\205\001\205\026\156\370\222\316\173\256  
\122\026\304\227\215\012\050\175\325\313\154\343\325\345\016\062  
\117\310\150\055\064\010\075\163\250\223\102\051\063\106\014\104  
\147\361\320\232\234\151\001\345\221\361\015\311\151\074\063\113  
\116\031\223\143\063\005\051\041\241\330\377\076\124\253\236\366  
\241\172\002\327\334\377\245\076\124\170\371\323\301\312\022\225  
\371\211\236\024\342\362\241\104\262\313\351\055\165\065\314\226  
\125\273\070\013\210\046\332\326\254\357\323\122\242\013\113\072  
\123\332\113\042\123\314\312\052\044\232\142\252\304\062\232\176  
\334\314\301\262\154\315\217\331\264\300\317\365\002\300\214\053  
\204\133\033\100\274\020\320\120\341\141\326\146\126\232\004\221  
\245\343\325\275\240\056\042\201\261\331\070\332\344\250\207\137  
\074\106\004\226\336\311\232\073\277\255\170\154\035\111\111\264  
\151\271\160\017\005\222\126\266\375\257\256\370\040\055\107\043  
\317\266\034\315\304\233\200\116\371\277\061\300\124\276\273\061  
\177\363\076

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "Configuration"  
# Issuer: CN=Posta CA Root,CN=AIA,CN=Public Key  
Services,CN=Services,CN=Configuration,DC=ca,DC=posta,DC=rs  
# Serial Number:48:fc:7e:f5  
# Subject: CN=Posta CA Root,CN=AIA,CN=Public Key  
Services,CN=Services,CN=Configuration,DC=ca,DC=posta,DC=rs  
# Not Valid Before: Mon Oct 20 12:22:08 2008  
# Not Valid After: Fri Oct 20 12:52:08 2028  
# Fingerprint (MD5): 18:02:b0:01:27:03:6a:19:1b:32:3b:83:de:9a:a9:85  
# Fingerprint (SHA1): d6:bf:79:94:f4:2b:e5:fa:29:da:0b:d7:58:7b:59:1f:47:a4:4f:22  
CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

```

CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Configuration"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\326\277\171\224\364\053\345\372\051\332\013\327\130\173\131\037
\107\244\117\042
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\030\002\260\001\047\003\152\031\033\062\073\203\336\232\251\205
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\256\061\022\060\020\006\012\011\222\046\211\223\362\054
\144\001\031\026\002\162\163\061\025\060\023\006\012\011\222\046
\211\223\362\054\144\001\031\026\005\160\157\163\164\141\061\022
\060\020\006\012\011\222\046\211\223\362\054\144\001\031\026\002
\143\141\061\026\060\024\006\003\125\004\003\023\015\103\157\156
\146\151\147\165\162\141\164\151\157\156\061\021\060\017\006\003
\125\004\003\023\010\123\145\162\166\151\143\145\163\061\034\060
\032\006\003\125\004\003\023\023\120\165\142\154\151\143\040\113
\145\171\040\123\145\162\166\151\143\145\163\061\014\060\012\006
\003\125\004\003\023\003\101\111\101\061\026\060\024\006\003\125
\004\003\023\015\120\157\163\164\141\040\103\101\040\122\157\157
\164
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\004\110\374\176\365
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "FNMT-RCM"
Issuer: OU=AC RAIZ FNMT-RCM,O=FNMT-RCM,C=ES
Serial Number:81:bb:dd:6b:24:1f:da:b4:be:8f:1b:da:08:55:c4
Subject: OU=AC RAIZ FNMT-RCM,O=FNMT-RCM,C=ES
Not Valid Before: Wed Oct 29 15:59:55 2008
Not Valid After: Tue Jan 01 00:00:00 2030
Fingerprint (MD5): 0c:5a:dd:5a:ae:29:f7:a7:76:79:fa:41:51:fe:f0:35
Fingerprint (SHA1): b8:65:13:0b:ed:ca:38:d2:7f:69:92:94:20:77:0b:ed:86:ef:bc:10
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "FNMT-RCM"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

```

CKA\_SUBJECT MULTILINE\_OCTAL

\060\073\061\013\060\011\006\003\125\004\006\023\002\105\123\061  
\021\060\017\006\003\125\004\012\014\010\106\116\115\124\055\122  
\103\115\061\031\060\027\006\003\125\004\013\014\020\101\103\040  
\122\101\111\132\040\106\116\115\124\055\122\103\115

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\073\061\013\060\011\006\003\125\004\006\023\002\105\123\061  
\021\060\017\006\003\125\004\012\014\010\106\116\115\124\055\122  
\103\115\061\031\060\027\006\003\125\004\013\014\020\101\103\040  
\122\101\111\132\040\106\116\115\124\055\122\103\115

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\000\201\273\335\153\044\037\332\264\276\217\033\332\010  
\125\304

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\204\060\202\003\154\240\003\002\001\002\002\020\000  
\201\273\335\153\044\037\332\264\276\217\033\332\010\125\304\060  
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\073  
\061\013\060\011\006\003\125\004\006\023\002\105\123\061\021\060  
\017\006\003\125\004\012\014\010\106\116\115\124\055\122\103\115  
\061\031\060\027\006\003\125\004\013\014\020\101\103\040\122\101  
\111\132\040\106\116\115\124\055\122\103\115\060\036\027\015\060  
\070\061\060\062\071\061\065\065\071\065\065\132\027\015\063\060  
\060\061\060\061\060\060\060\060\060\060\132\060\073\061\013\060  
\011\006\003\125\004\006\023\002\105\123\061\021\060\017\006\003  
\125\004\012\014\010\106\116\115\124\055\122\103\115\061\031\060  
\027\006\003\125\004\013\014\020\101\103\040\122\101\111\132\040  
\106\116\115\124\055\122\103\115\060\202\002\042\060\015\006\011  
\052\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000  
\060\202\002\012\002\202\002\001\000\272\161\200\172\114\206\156  
\177\310\023\155\300\306\175\034\000\227\217\054\014\043\273\020  
\232\100\251\032\267\207\210\370\233\126\152\373\346\173\216\213  
\222\216\247\045\135\131\021\333\066\056\267\121\027\037\251\010  
\037\004\027\044\130\252\067\112\030\337\345\071\324\127\375\327  
\301\054\221\001\221\342\042\324\003\300\130\374\167\107\354\217  
\076\164\103\272\254\064\215\115\070\166\147\216\260\310\157\060  
\063\130\161\134\264\365\153\156\324\001\120\270\023\176\154\112  
\243\111\321\040\031\356\274\300\051\030\145\247\336\376\357\335  
\012\220\041\347\032\147\222\102\020\230\137\117\060\274\076\034  
\105\264\020\327\150\100\024\300\100\372\347\167\027\172\346\013  
\217\145\133\074\331\232\122\333\265\275\236\106\317\075\353\221  
\005\002\300\226\262\166\114\115\020\226\073\222\372\234\177\017  
\231\337\276\043\065\105\036\002\134\376\265\250\233\231\045\332  
\136\363\042\303\071\365\344\052\056\323\306\037\304\154\252\305  
\034\152\001\005\112\057\322\305\301\250\064\046\135\146\245\322



\002\041\371\030\267\006\365\116\231\157\250\253\114\121\350\317  
\120\030\305\167\310\071\011\054\111\222\062\231\250\273\027\027  
\171\260\132\305\346\243\304\131\145\107\065\203\136\251\350\065  
\013\231\273\344\315\040\306\233\112\006\071\265\150\374\042\272  
\356\125\214\053\116\352\363\261\343\374\266\231\232\325\102\372  
\161\115\010\317\207\036\152\161\175\371\323\264\351\245\161\201  
\173\302\116\107\226\245\366\166\205\243\050\217\351\200\156\201  
\123\245\155\137\270\110\371\302\371\066\246\056\111\377\270\226  
\302\214\007\263\233\210\130\374\353\033\034\336\055\160\342\227  
\222\060\241\211\343\274\125\250\047\326\113\355\220\255\213\372  
\143\045\131\055\250\065\335\312\227\063\274\345\315\307\235\321  
\354\357\136\016\112\220\006\046\143\255\271\331\065\055\007\272  
\166\145\054\254\127\217\175\364\007\224\327\201\002\226\135\243  
\007\111\325\172\320\127\371\033\347\123\106\165\252\260\171\102  
\313\150\161\010\351\140\275\071\151\316\364\257\303\126\100\307  
\255\122\242\011\344\157\206\107\212\037\353\050\047\135\203\040  
\257\004\311\154\126\232\213\106\365\002\003\001\000\001\243\201  
\203\060\201\200\060\017\006\003\125\035\023\001\001\377\004\005  
\060\003\001\001\377\060\016\006\003\125\035\017\001\001\377\004  
\004\003\002\001\006\060\035\006\003\125\035\016\004\026\004\024  
\367\175\305\375\304\350\232\033\167\144\247\365\035\240\314\277  
\207\140\232\155\060\076\006\003\125\035\040\004\067\060\065\060  
\063\006\004\125\035\040\000\060\053\060\051\006\010\053\006\001  
\005\005\007\002\001\026\035\150\164\164\160\072\057\057\167\167  
\167\056\143\145\162\164\056\146\156\155\164\056\145\163\057\144  
\160\143\163\057\060\015\006\011\052\206\110\206\367\015\001\001  
\005\005\000\003\202\002\001\000\166\271\046\327\274\140\174\073  
\303\307\204\121\222\131\171\266\215\277\123\340\274\210\240\265  
\331\114\351\255\365\146\116\357\240\140\310\013\270\221\355\063  
\216\202\361\206\225\376\306\323\032\211\253\117\073\331\063\037  
\320\013\307\261\365\117\244\113\273\003\014\043\134\154\260\336  
\254\162\372\151\336\000\020\315\361\326\317\066\122\276\177\374  
\046\101\363\362\374\060\342\061\306\333\020\076\251\164\272\117  
\354\355\040\231\311\260\342\242\243\251\102\231\063\313\177\367  
\252\002\351\044\226\052\370\344\316\135\101\240\006\011\125\132  
\332\337\032\117\353\071\374\137\340\251\251\104\327\030\352\225  
\261\104\173\332\352\070\011\164\036\147\050\077\340\213\071\054  
\123\372\014\340\071\367\053\032\016\061\001\324\146\171\210\164  
\235\110\110\216\264\223\141\346\277\051\011\357\276\006\251\032  
\154\010\160\004\012\277\156\011\166\244\144\103\316\037\127\235  
\227\236\154\370\164\027\034\121\003\372\140\123\324\126\106\226  
\320\120\237\306\235\063\363\103\261\250\327\242\311\260\311\203  
\261\175\307\334\254\201\166\327\211\355\103\046\326\377\242\134  
\242\055\240\044\107\252\106\232\151\061\011\301\375\020\171\260  
\205\354\160\040\346\075\101\124\242\112\142\057\326\336\114\303  
\234\217\275\313\246\125\224\034\335\275\101\317\050\145\215\320  
\115\327\207\321\114\323\103\163\041\354\327\056\027\147\062\207  
\266\320\033\164\252\151\307\344\154\207\327\175\031\232\354\075

\104\361\252\202\131\162\315\105\333\332\146\102\341\070\154\066  
\137\124\335\046\126\127\242\331\076\244\012\362\357\374\031\200  
\037\333\272\252\200\274\330\121\315\124\152\325\177\330\157\265  
\334\026\373\100\342\125\124\220\303\335\207\063\321\377\036\245  
\142\213\066\104\254\250\277\300\326\304\224\167\263\275\304\165  
\044\151\351\377\071\224\253\374\121\147\044\352\100\036\353\211  
\055\023\006\175\256\007\241\303\014\365\324\132\262\116\267\041  
\035\027\305\345\271\362\037\343\206\001\135\013\006\171\135\311  
\312\077\026\176\201\036\115\176\360\232\074\045\305\316\164\171  
\236\112\341\361\351\365\045\106\366\304\336\344\104\144\163\035  
\306\071\076\172\346\205\173\030

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "FNMT-RCM"

# Issuer: OU=AC RAIZ FNMT-RCM,O=FNMT-RCM,C=ES

# Serial Number:81:bb:dd:6b:24:1f:da:b4:be:8f:1b:da:08:55:c4

# Subject: OU=AC RAIZ FNMT-RCM,O=FNMT-RCM,C=ES

# Not Valid Before: Wed Oct 29 15:59:55 2008

# Not Valid After: Tue Jan 01 00:00:00 2030

# Fingerprint (MD5): 0c:5a:dd:5a:ae:29:f7:a7:76:79:fa:41:51:fe:f0:35

# Fingerprint (SHA1): b8:65:13:0b:ed:ca:38:d2:7f:69:92:94:20:77:0b:ed:86:ef:bc:10

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "FNMT-RCM"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\270\145\023\013\355\312\070\322\177\151\222\224\040\167\013\355  
\206\357\274\020

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\014\132\335\132\256\051\367\247\166\171\372\101\121\376\360\065

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\073\061\013\060\011\006\003\125\004\006\023\002\105\123\061  
\021\060\017\006\003\125\004\012\014\010\106\116\115\124\055\122  
\103\115\061\031\060\027\006\003\125\004\013\014\020\101\103\040  
\122\101\111\132\040\106\116\115\124\055\122\103\115

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\000\201\273\335\153\044\037\332\264\276\217\033\332\010  
\125\304

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Certificate "StartCom Certification Authority"  
# Issuer: CN=StartCom Certification Authority,OU=Secure Digital Certificate Signing,O=StartCom Ltd.,C=IL  
# Serial Number: 1 (0x1)  
# Subject: CN=StartCom Certification Authority,OU=Secure Digital Certificate Signing,O=StartCom Ltd.,C=IL  
# Not Valid Before: Sun Sep 17 19:46:36 2006  
# Not Valid After: Wed Sep 17 19:46:36 2036  
# Fingerprint (MD5): 22:4d:8f:8a:fc:f7:35:c2:bb:57:34:90:7b:8b:22:16  
# Fingerprint (SHA1): 3e:2b:f7:f2:03:1b:96:f3:8c:e6:c4:d8:a8:5d:3e:2d:58:47:6a:0f

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "StartCom Certification Authority"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509  
CKA\_SUBJECT MULTILINE\_OCTAL  
\060\175\061\013\060\011\006\003\125\004\006\023\002\111\114\061  
\026\060\024\006\003\125\004\012\023\015\123\164\141\162\164\103  
\157\155\040\114\164\144\056\061\053\060\051\006\003\125\004\013  
\023\042\123\145\143\165\162\145\040\104\151\147\151\164\141\154  
\040\103\145\162\164\151\146\151\143\141\164\145\040\123\151\147  
\156\151\156\147\061\051\060\047\006\003\125\004\003\023\040\123  
\164\141\162\164\103\157\155\040\103\145\162\164\151\146\151\143  
\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL  
\060\175\061\013\060\011\006\003\125\004\006\023\002\111\114\061  
\026\060\024\006\003\125\004\012\023\015\123\164\141\162\164\103  
\157\155\040\114\164\144\056\061\053\060\051\006\003\125\004\013  
\023\042\123\145\143\165\162\145\040\104\151\147\151\164\141\154  
\040\103\145\162\164\151\146\151\143\141\164\145\040\123\151\147  
\156\151\156\147\061\051\060\047\006\003\125\004\003\023\040\123  
\164\141\162\164\103\157\155\040\103\145\162\164\151\146\151\143  
\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\001

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\007\311\060\202\005\261\240\003\002\001\002\002\001\001  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060  
\175\061\013\060\011\006\003\125\004\006\023\002\111\114\061\026  
\060\024\006\003\125\004\012\023\015\123\164\141\162\164\103\157

\155\040\114\164\144\056\061\053\060\051\006\003\125\004\013\023  
\042\123\145\143\165\162\145\040\104\151\147\151\164\141\154\040  
\103\145\162\164\151\146\151\143\141\164\145\040\123\151\147\156  
\151\156\147\061\051\060\047\006\003\125\004\003\023\040\123\164  
\141\162\164\103\157\155\040\103\145\162\164\151\146\151\143\141  
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\060\036  
\027\015\060\066\060\071\061\067\061\071\064\066\063\066\132\027  
\015\063\066\060\071\061\067\061\071\064\066\063\066\132\060\175  
\061\013\060\011\006\003\125\004\006\023\002\111\114\061\026\060  
\024\006\003\125\004\012\023\015\123\164\141\162\164\103\157\155  
\040\114\164\144\056\061\053\060\051\006\003\125\004\013\023\042  
\123\145\143\165\162\145\040\104\151\147\151\164\141\154\040\103  
\145\162\164\151\146\151\143\141\164\145\040\123\151\147\156\151  
\156\147\061\051\060\047\006\003\125\004\003\023\040\123\164\141  
\162\164\103\157\155\040\103\145\162\164\151\146\151\143\141\164  
\151\157\156\040\101\165\164\150\157\162\151\164\171\060\202\002  
\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000  
\003\202\002\017\000\060\202\002\012\002\202\002\001\000\301\210  
\333\011\274\154\106\174\170\237\225\173\265\063\220\362\162\142  
\326\301\066\040\042\044\136\316\351\167\362\103\012\242\006\144  
\244\314\216\066\370\070\346\043\360\156\155\261\074\335\162\243  
\205\034\241\323\075\264\063\053\323\057\257\376\352\260\101\131  
\147\266\304\006\175\012\236\164\205\326\171\114\200\067\172\337  
\071\005\122\131\367\364\033\106\103\244\322\205\205\322\303\161  
\363\165\142\064\272\054\212\177\036\217\356\355\064\320\021\307  
\226\315\122\075\272\063\326\335\115\336\013\073\112\113\237\302  
\046\057\372\265\026\034\162\065\167\312\074\135\346\312\341\046  
\213\032\066\166\134\001\333\164\024\045\376\355\265\240\210\017  
\335\170\312\055\037\007\227\060\001\055\162\171\372\106\326\023  
\052\250\271\246\253\203\111\035\345\362\357\335\344\001\216\030  
\012\217\143\123\026\205\142\251\016\031\072\314\265\146\246\302  
\153\164\007\344\053\341\166\076\264\155\330\366\104\341\163\142  
\037\073\304\276\240\123\126\045\154\121\011\367\252\253\312\277  
\166\375\155\233\363\235\333\277\075\146\274\014\126\252\257\230  
\110\225\072\113\337\247\130\120\331\070\165\251\133\352\103\014  
\002\377\231\353\350\154\115\160\133\051\145\234\335\252\135\314  
\257\001\061\354\014\353\322\215\350\352\234\173\346\156\367\047  
\146\014\032\110\327\156\102\343\077\336\041\076\173\341\015\160  
\373\143\252\250\154\032\124\264\134\045\172\311\242\311\213\026  
\246\273\054\176\027\136\005\115\130\156\022\035\001\356\022\020  
\015\306\062\177\030\377\374\364\372\315\156\221\350\066\111\276  
\032\110\151\213\302\226\115\032\022\262\151\027\301\012\220\326  
\372\171\042\110\277\272\173\151\370\160\307\372\172\067\330\330  
\015\322\166\117\127\377\220\267\343\221\322\335\357\302\140\267  
\147\072\335\376\252\234\360\324\213\177\162\042\316\306\237\227  
\266\370\257\212\240\020\250\331\373\030\306\266\265\134\122\074  
\211\266\031\052\163\001\012\017\003\263\022\140\362\172\057\201  
\333\243\156\377\046\060\227\365\213\335\211\127\266\255\075\263

\257\053\305\267\166\002\360\245\326\053\232\206\024\052\162\366  
\343\063\214\135\011\113\023\337\273\214\164\023\122\113\002\003  
\001\000\001\243\202\002\122\060\202\002\116\060\014\006\003\125  
\035\023\004\005\060\003\001\001\377\060\013\006\003\125\035\017  
\004\004\003\002\001\256\060\035\006\003\125\035\016\004\026\004  
\024\116\013\357\032\244\100\133\245\027\151\207\060\312\064\150  
\103\320\101\256\362\060\144\006\003\125\035\037\004\135\060\133  
\060\054\240\052\240\050\206\046\150\164\164\160\072\057\057\143  
\145\162\164\056\163\164\141\162\164\143\157\155\056\157\162\147  
\057\163\146\163\143\141\055\143\162\154\056\143\162\154\060\053  
\240\051\240\047\206\045\150\164\164\160\072\057\057\143\162\154  
\056\163\164\141\162\164\143\157\155\056\157\162\147\057\163\146  
\163\143\141\055\143\162\154\056\143\162\154\060\202\001\135\006  
\003\125\035\040\004\202\001\124\060\202\001\120\060\202\001\114  
\006\013\053\006\001\004\001\201\265\067\001\001\001\060\202\001  
\073\060\057\006\010\053\006\001\005\005\007\002\001\026\043\150  
\164\164\160\072\057\057\143\145\162\164\056\163\164\141\162\164  
\143\157\155\056\157\162\147\057\160\157\154\151\143\171\056\160  
\144\146\060\065\006\010\053\006\001\005\005\007\002\001\026\051  
\150\164\164\160\072\057\057\143\145\162\164\056\163\164\141\162  
\164\143\157\155\056\157\162\147\057\151\156\164\145\162\155\145  
\144\151\141\164\145\056\160\144\146\060\201\320\006\010\053\006  
\001\005\005\007\002\002\060\201\303\060\047\026\040\123\164\141  
\162\164\040\103\157\155\155\145\162\143\151\141\154\040\050\123  
\164\141\162\164\103\157\155\051\040\114\164\144\056\060\003\002  
\001\001\032\201\227\114\151\155\151\164\145\144\040\114\151\141  
\142\151\154\151\164\171\054\040\162\145\141\144\040\164\150\145  
\040\163\145\143\164\151\157\156\040\052\114\145\147\141\154\040  
\114\151\155\151\164\141\164\151\157\156\163\052\040\157\146\040  
\164\150\145\040\123\164\141\162\164\103\157\155\040\103\145\162  
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157  
\162\151\164\171\040\120\157\154\151\143\171\040\141\166\141\151  
\154\141\142\154\145\040\141\164\040\150\164\164\160\072\057\057  
\143\145\162\164\056\163\164\141\162\164\143\157\155\056\157\162  
\147\057\160\157\154\151\143\171\056\160\144\146\060\021\006\011  
\140\206\110\001\206\370\102\001\001\004\004\003\002\000\007\060  
\070\006\011\140\206\110\001\206\370\102\001\015\004\053\026\051  
\123\164\141\162\164\103\157\155\040\106\162\145\145\040\123\123  
\114\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040  
\101\165\164\150\157\162\151\164\171\060\015\006\011\052\206\110  
\206\367\015\001\001\005\005\000\003\202\002\001\000\026\154\231  
\364\146\014\064\365\320\205\136\175\012\354\332\020\116\070\034  
\136\337\246\045\005\113\221\062\301\350\073\361\075\335\104\011  
\133\007\111\212\051\313\146\002\267\261\232\367\045\230\011\074  
\216\033\341\335\066\207\053\113\273\150\323\071\146\075\240\046  
\307\362\071\221\035\121\253\202\173\176\325\316\132\344\342\003  
\127\160\151\227\010\371\136\130\246\012\337\214\006\232\105\026  
\026\070\012\136\127\366\142\307\172\002\005\346\274\036\265\362

```
\236\364\251\051\203\370\262\024\343\156\050\207\104\303\220\032
\336\070\251\074\254\103\115\144\105\316\335\050\251\134\362\163
\173\004\370\027\350\253\261\363\056\134\144\156\163\061\072\022
\270\274\263\021\344\175\217\201\121\232\073\215\211\364\115\223
\146\173\074\003\355\323\232\035\232\363\145\120\365\240\320\165
\237\057\257\360\352\202\103\230\370\151\234\211\171\304\103\216
\106\162\343\144\066\022\257\367\045\036\070\211\220\167\176\303
\153\152\271\303\313\104\113\254\170\220\213\347\307\054\036\113
\021\104\310\064\122\047\315\012\135\237\205\301\211\325\032\170
\362\225\020\123\062\335\200\204\146\165\331\265\150\050\373\141
\056\276\204\250\070\300\231\022\206\245\036\147\144\255\006\056
\057\251\160\205\307\226\017\174\211\145\365\216\103\124\016\253
\335\245\200\071\224\140\300\064\311\226\160\054\243\022\365\037
\110\173\275\034\176\153\267\235\220\364\042\073\256\370\374\052
\312\372\202\122\240\357\257\113\125\223\353\301\265\360\042\213
\254\064\116\046\042\004\241\207\054\165\112\267\345\175\023\327
\270\014\144\300\066\322\311\057\206\022\214\043\011\301\033\202
\073\163\111\243\152\127\207\224\345\326\170\305\231\103\143\343
\115\340\167\055\341\145\231\162\151\004\032\107\011\346\017\001
\126\044\373\037\277\016\171\251\130\056\271\304\011\001\176\225
\272\155\000\006\076\262\352\112\020\071\330\320\053\365\277\354
\165\277\227\002\305\011\033\010\334\125\067\342\201\373\067\204
\103\142\040\312\347\126\113\145\352\376\154\301\044\223\044\241
\064\353\005\377\232\042\256\233\175\077\361\145\121\012\246\060
\152\263\364\210\034\200\015\374\162\212\350\203\136
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

# Microsoft Code Signing Only Certificate

# Trust for "StartCom Certification Authority"

# Issuer: CN=StartCom Certification Authority,OU=Secure Digital Certificate Signing,O=StartCom Ltd.,C=IL

# Serial Number: 1 (0x1)

# Subject: CN=StartCom Certification Authority,OU=Secure Digital Certificate Signing,O=StartCom Ltd.,C=IL

# Not Valid Before: Sun Sep 17 19:46:36 2006

# Not Valid After: Wed Sep 17 19:46:36 2036

# Fingerprint (MD5): 22:4d:8f:8a:fc:f7:35:c2:bb:57:34:90:7b:8b:22:16

# Fingerprint (SHA1): 3e:2b:f7:f2:03:1b:96:f3:8c:e6:c4:d8:a8:5d:3e:2d:58:47:6a:0f

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "StartCom Certification Authority"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\076\053\367\362\003\033\226\363\214\346\304\330\250\135\076\055
\130\107\152\017
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL  
\042\115\217\212\374\367\065\302\273\127\064\220\173\213\042\026  
END

CKA\_ISSUER MULTILINE\_OCTAL  
\060\175\061\013\060\011\006\003\125\004\006\023\002\111\114\061  
\026\060\024\006\003\125\004\012\023\015\123\164\141\162\164\103  
\157\155\040\114\164\144\056\061\053\060\051\006\003\125\004\013  
\023\042\123\145\143\165\162\145\040\104\151\147\151\164\141\154  
\040\103\145\162\164\151\146\151\143\141\164\145\040\123\151\147  
\156\151\156\147\061\051\060\047\006\003\125\004\003\023\040\123  
\164\141\162\164\103\157\155\040\103\145\162\164\151\146\151\143  
\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171  
END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL  
\002\001\001  
END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Certificate "VeriSign Class 3 Public Primary Certification Authority - G4"  
# Issuer: CN=VeriSign Class 3 Public Primary Certification Authority - G4,OU=(c) 2007 VeriSign\, Inc. - For  
authorized use only,OU=VeriSign Trust Network,O=VeriSign\, Inc.,C=US  
# Serial Number:2f:80:fe:23:8c:0e:22:0f:48:67:12:28:91:87:ac:b3  
# Subject: CN=VeriSign Class 3 Public Primary Certification Authority - G4,OU=(c) 2007 VeriSign\, Inc. - For  
authorized use only,OU=VeriSign Trust Network,O=VeriSign\, Inc.,C=US  
# Not Valid Before: Mon Nov 05 00:00:00 2007  
# Not Valid After: Mon Jan 18 23:59:59 2038  
# Fingerprint (MD5): 3a:52:e1:e7:fd:6f:3a:e3:6f:f3:6f:99:1b:f9:22:41  
# Fingerprint (SHA1): 22:d5:d8:df:8f:02:31:d1:8d:f7:9d:b7:cf:8a:2d:64:c9:3f:6c:3a

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "VeriSign Class 3 Public Primary Certification Authority - G4"  
CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509  
CKA\_SUBJECT MULTILINE\_OCTAL  
\060\201\312\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\027\060\025\006\003\125\004\012\023\016\126\145\162\151\123  
\151\147\156\054\040\111\156\143\056\061\037\060\035\006\003\125  
\004\013\023\026\126\145\162\151\123\151\147\156\040\124\162\165  
\163\164\040\116\145\164\167\157\162\153\061\072\060\070\006\003  
\125\004\013\023\061\050\143\051\040\062\060\060\067\040\126\145  
\162\151\123\151\147\156\054\040\111\156\143\056\040\055\040\106  
\157\162\040\141\165\164\150\157\162\151\172\145\144\040\165\163  
\145\040\157\156\154\171\061\105\060\103\006\003\125\004\003\023

\074\126\145\162\151\123\151\147\156\040\103\154\141\163\163\040  
\063\040\120\165\142\154\151\143\040\120\162\151\155\141\162\171  
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101  
\165\164\150\157\162\151\164\171\040\055\040\107\064

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\312\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\027\060\025\006\003\125\004\012\023\016\126\145\162\151\123  
\151\147\156\054\040\111\156\143\056\061\037\060\035\006\003\125  
\004\013\023\026\126\145\162\151\123\151\147\156\040\124\162\165  
\163\164\040\116\145\164\167\157\162\153\061\072\060\070\006\003  
\125\004\013\023\061\050\143\051\040\062\060\060\067\040\126\145  
\162\151\123\151\147\156\054\040\111\156\143\056\040\055\040\106  
\157\162\040\141\165\164\150\157\162\151\172\145\144\040\165\163  
\145\040\157\156\154\171\061\105\060\103\006\003\125\004\003\023  
\074\126\145\162\151\123\151\147\156\040\103\154\141\163\163\040  
\063\040\120\165\142\154\151\143\040\120\162\151\155\141\162\171  
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101  
\165\164\150\157\162\151\164\171\040\055\040\107\064

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\057\200\376\043\214\016\042\017\110\147\022\050\221\207  
\254\263

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\204\060\202\003\012\240\003\002\001\002\002\020\057  
\200\376\043\214\016\042\017\110\147\022\050\221\207\254\263\060  
\012\006\010\052\206\110\316\075\004\003\003\060\201\312\061\013  
\060\011\006\003\125\004\006\023\002\125\123\061\027\060\025\006  
\003\125\004\012\023\016\126\145\162\151\123\151\147\156\054\040  
\111\156\143\056\061\037\060\035\006\003\125\004\013\023\026\126  
\145\162\151\123\151\147\156\040\124\162\165\163\164\040\116\145  
\164\167\157\162\153\061\072\060\070\006\003\125\004\013\023\061  
\050\143\051\040\062\060\060\067\040\126\145\162\151\123\151\147  
\156\054\040\111\156\143\056\040\055\040\106\157\162\040\141\165  
\164\150\157\162\151\172\145\144\040\165\163\145\040\157\156\154  
\171\061\105\060\103\006\003\125\004\003\023\074\126\145\162\151  
\123\151\147\156\040\103\154\141\163\163\040\063\040\120\165\142  
\154\151\143\040\120\162\151\155\141\162\171\040\103\145\162\164  
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162  
\151\164\171\040\055\040\107\064\060\036\027\015\060\067\061\061  
\060\065\060\060\060\060\060\132\027\015\063\070\060\061\061  
\070\062\063\065\071\065\071\132\060\201\312\061\013\060\011\006  
\003\125\004\006\023\002\125\123\061\027\060\025\006\003\125\004  
\012\023\016\126\145\162\151\123\151\147\156\054\040\111\156\143  
\056\061\037\060\035\006\003\125\004\013\023\026\126\145\162\151  
\123\151\147\156\040\124\162\165\163\164\040\116\145\164\167\157



\162\153\061\072\060\070\006\003\125\004\013\023\061\050\143\051  
\040\062\060\060\067\040\126\145\162\151\123\151\147\156\054\040  
\111\156\143\056\040\055\040\106\157\162\040\141\165\164\150\157  
\162\151\172\145\144\040\165\163\145\040\157\156\154\171\061\105  
\060\103\006\003\125\004\003\023\074\126\145\162\151\123\151\147  
\156\040\103\154\141\163\163\040\063\040\120\165\142\154\151\143  
\040\120\162\151\155\141\162\171\040\103\145\162\164\151\146\151  
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171  
\040\055\040\107\064\060\166\060\020\006\007\052\206\110\316\075  
\002\001\006\005\053\201\004\000\042\003\142\000\004\247\126\172  
\174\122\332\144\233\016\055\134\330\136\254\222\075\376\001\346  
\031\112\075\024\003\113\372\140\047\040\331\203\211\151\372\124  
\306\232\030\136\125\052\144\336\006\366\215\112\073\255\020\074  
\145\075\220\210\004\211\340\060\141\263\256\135\001\247\173\336  
\174\262\276\312\145\141\000\206\256\332\217\173\320\211\255\115  
\035\131\232\101\261\274\107\200\334\236\142\303\371\243\201\262  
\060\201\257\060\017\006\003\125\035\023\001\001\377\004\005\060  
\003\001\001\377\060\016\006\003\125\035\017\001\001\377\004\004  
\003\002\001\006\060\155\006\010\053\006\001\005\005\007\001\014  
\004\141\060\137\241\135\240\133\060\131\060\127\060\125\026\011  
\151\155\141\147\145\057\147\151\146\060\041\060\037\060\007\006  
\005\053\016\003\002\032\004\024\217\345\323\032\206\254\215\216  
\153\303\317\200\152\324\110\030\054\173\031\056\060\045\026\043  
\150\164\164\160\072\057\057\154\157\147\157\056\166\145\162\151  
\163\151\147\156\056\143\157\155\057\166\163\154\157\147\157\056  
\147\151\146\060\035\006\003\125\035\016\004\026\004\024\263\026  
\221\375\356\246\156\344\265\056\111\217\207\170\201\200\354\345  
\261\265\060\012\006\010\052\206\110\316\075\004\003\003\003\150  
\000\060\145\002\060\146\041\014\030\046\140\132\070\173\126\102  
\340\247\374\066\204\121\221\040\054\166\115\103\075\304\035\204  
\043\320\254\326\174\065\006\316\315\151\275\220\015\333\154\110  
\102\035\016\252\102\002\061\000\234\075\110\071\043\071\130\032  
\025\022\131\152\236\357\325\131\262\035\122\054\231\161\315\307  
\051\337\033\052\141\173\161\321\336\363\300\345\015\072\112\252  
\055\247\330\206\052\335\056\020

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "VeriSign Class 3 Public Primary Certification Authority - G4"

# Issuer: CN=VeriSign Class 3 Public Primary Certification Authority - G4,OU=(c) 2007 VeriSign\, Inc. - For  
authorized use only,OU=VeriSign Trust Network,O=VeriSign\, Inc.,C=US

# Serial Number:2f:80:fe:23:8c:0e:22:0f:48:67:12:28:91:87:ac:b3

# Subject: CN=VeriSign Class 3 Public Primary Certification Authority - G4,OU=(c) 2007 VeriSign\, Inc. - For  
authorized use only,OU=VeriSign Trust Network,O=VeriSign\, Inc.,C=US

# Not Valid Before: Mon Nov 05 00:00:00 2007

```

Not Valid After: Mon Jan 18 23:59:59 2038
Fingerprint (MD5): 3a:52:e1:e7:fd:6f:3a:e3:6f:f3:6f:99:1b:f9:22:41
Fingerprint (SHA1): 22:d5:d8:df:8f:02:31:d1:8d:f7:9d:b7:cf:8a:2d:64:c9:3f:6c:3a
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "VeriSign Class 3 Public Primary Certification Authority - G4"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\042\325\330\337\217\002\061\321\215\367\235\267\317\212\055\144
\311\077\154\072
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\072\122\341\347\375\157\072\343\157\363\157\231\033\371\042\101
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\312\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\027\060\025\006\003\125\004\012\023\016\126\145\162\151\123
\151\147\156\054\040\111\156\143\056\061\037\060\035\006\003\125
\004\013\023\026\126\145\162\151\123\151\147\156\040\124\162\165
\163\164\040\116\145\164\167\157\162\153\061\072\060\070\006\003
\125\004\013\023\061\050\143\051\040\062\060\060\067\040\126\145
\162\151\123\151\147\156\054\040\111\156\143\056\040\055\040\106
\157\162\040\141\165\164\150\157\162\151\172\145\144\040\165\163
\145\040\157\156\154\171\061\105\060\103\006\003\125\004\003\023
\074\126\145\162\151\123\151\147\156\040\103\154\141\163\163\040
\063\040\120\165\142\154\151\143\040\120\162\151\155\141\162\171
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101
\165\164\150\157\162\151\164\171\040\055\040\107\064
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\057\200\376\043\214\016\042\017\110\147\022\050\221\207
\254\263
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

```

```

Microsoft Code Signing Only Certificate
Certificate "thawte Primary Root CA - G2"
Issuer: CN=thawte Primary Root CA - G2,OU=(c) 2007 thawte\, Inc. - For authorized use only,O=thawte\,
Inc.,C=US
Serial Number:35:fc:26:5c:d9:84:4f:c9:3d:26:3d:57:9b:ae:d7:56
Subject: CN=thawte Primary Root CA - G2,OU=(c) 2007 thawte\, Inc. - For authorized use only,O=thawte\,
Inc.,C=US
Not Valid Before: Mon Nov 05 00:00:00 2007
Not Valid After: Mon Jan 18 23:59:59 2038

```

```
Fingerprint (MD5): 74:9d:ea:60:24:c4:fd:22:53:3e:cc:3a:72:d9:29:4f
Fingerprint (SHA1): aa:db:bc:22:23:8f:c4:01:a1:27:bb:38:dd:f4:1d:db:08:9e:f0:12
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "thawte Primary Root CA - G2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\204\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\025\060\023\006\003\125\004\012\023\014\164\150\141\167\164
\145\054\040\111\156\143\056\061\070\060\066\006\003\125\004\013
\023\057\050\143\051\040\062\060\060\067\040\164\150\141\167\164
\145\054\040\111\156\143\056\040\055\040\106\157\162\040\141\165
\164\150\157\162\151\172\145\144\040\165\163\145\040\157\156\154
\171\061\044\060\042\006\003\125\004\003\023\033\164\150\141\167
\164\145\040\120\162\151\155\141\162\171\040\122\157\157\164\040
\103\101\040\055\040\107\062
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\204\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\025\060\023\006\003\125\004\012\023\014\164\150\141\167\164
\145\054\040\111\156\143\056\061\070\060\066\006\003\125\004\013
\023\057\050\143\051\040\062\060\060\067\040\164\150\141\167\164
\145\054\040\111\156\143\056\040\055\040\106\157\162\040\141\165
\164\150\157\162\151\172\145\144\040\165\163\145\040\157\156\154
\171\061\044\060\042\006\003\125\004\003\023\033\164\150\141\167
\164\145\040\120\162\151\155\141\162\171\040\122\157\157\164\040
\103\101\040\055\040\107\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\065\374\046\134\331\204\117\311\075\046\075\127\233\256
\327\126
END
CKA_VALUE MULTILINE_OCTAL
\060\202\002\210\060\202\002\015\240\003\002\001\002\002\020\065
\374\046\134\331\204\117\311\075\046\075\127\233\256\327\126\060
\012\006\010\052\206\110\316\075\004\003\003\060\201\204\061\013
\060\011\006\003\125\004\006\023\002\125\123\061\025\060\023\006
\003\125\004\012\023\014\164\150\141\167\164\145\054\040\111\156
\143\056\061\070\060\066\006\003\125\004\013\023\057\050\143\051
\040\062\060\060\067\040\164\150\141\167\164\145\054\040\111\156
\143\056\040\055\040\106\157\162\040\141\165\164\150\157\162\151
\172\145\144\040\165\163\145\040\157\156\154\171\061\044\060\042
\006\003\125\004\003\023\033\164\150\141\167\164\145\040\120\162
\151\155\141\162\171\040\122\157\157\164\040\103\101\040\055\040
\107\062\060\036\027\015\060\067\061\061\060\065\060\060\060\060
```

\060\060\132\027\015\063\070\060\061\061\070\062\063\065\071\065  
\071\132\060\201\204\061\013\060\011\006\003\125\004\006\023\002  
\125\123\061\025\060\023\006\003\125\004\012\023\014\164\150\141  
\167\164\145\054\040\111\156\143\056\061\070\060\066\006\003\125  
\004\013\023\057\050\143\051\040\062\060\060\067\040\164\150\141  
\167\164\145\054\040\111\156\143\056\040\055\040\106\157\162\040  
\141\165\164\150\157\162\151\172\145\144\040\165\163\145\040\157  
\156\154\171\061\044\060\042\006\003\125\004\003\023\033\164\150  
\141\167\164\145\040\120\162\151\155\141\162\171\040\122\157\157  
\164\040\103\101\040\055\040\107\062\060\166\060\020\006\007\052  
\206\110\316\075\002\001\006\005\053\201\004\000\042\003\142\000  
\004\242\325\234\202\173\225\235\361\122\170\207\376\212\026\277  
\005\346\337\243\002\117\015\007\306\000\121\272\014\002\122\055  
\042\244\102\071\304\376\217\352\311\301\276\324\115\377\237\172  
\236\342\261\174\232\255\247\206\011\163\207\321\347\232\343\172  
\245\252\156\373\272\263\160\300\147\210\242\065\324\243\232\261  
\375\255\302\357\061\372\250\271\363\373\010\306\221\321\373\051  
\225\243\102\060\100\060\017\006\003\125\035\023\001\001\377\004  
\005\060\003\001\001\377\060\016\006\003\125\035\017\001\001\377  
\004\004\003\002\001\006\060\035\006\003\125\035\016\004\026\004  
\024\232\330\000\060\000\347\153\177\205\030\356\213\266\316\212  
\014\370\021\341\273\060\012\006\010\052\206\110\316\075\004\003  
\003\003\151\000\060\146\002\061\000\335\370\340\127\107\133\247  
\346\012\303\275\365\200\212\227\065\015\033\211\074\124\206\167  
\050\312\241\364\171\336\265\346\070\260\360\145\160\214\177\002  
\124\302\277\377\330\241\076\331\317\002\061\000\304\215\224\374  
\334\123\322\334\235\170\026\037\025\063\043\123\122\343\132\061  
\135\235\312\256\275\023\051\104\015\047\133\250\347\150\234\022  
\367\130\077\056\162\002\127\243\217\241\024\056

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "thawte Primary Root CA - G2"

# Issuer: CN=thawte Primary Root CA - G2,OU=(c) 2007 thawte\, Inc. - For authorized use only,O=thawte\, Inc.,C=US

# Serial Number:35:fc:26:5c:d9:84:4f:c9:3d:26:3d:57:9b:ae:d7:56

# Subject: CN=thawte Primary Root CA - G2,OU=(c) 2007 thawte\, Inc. - For authorized use only,O=thawte\, Inc.,C=US

# Not Valid Before: Mon Nov 05 00:00:00 2007

# Not Valid After: Mon Jan 18 23:59:59 2038

# Fingerprint (MD5): 74:9d:ea:60:24:c4:fd:22:53:3e:cc:3a:72:d9:29:4f

# Fingerprint (SHA1): aa:db:bc:22:23:8f:c4:01:a1:27:bb:38:dd:f4:1d:db:08:9e:f0:12

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "thawte Primary Root CA - G2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\252\333\274\042\043\217\304\001\241\047\273\070\335\364\035\333
\010\236\360\022
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\164\235\352\140\044\304\375\042\123\076\314\072\162\331\051\117
```

END

```
CKA_ISSUER MULTILINE_OCTAL
\060\201\204\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\025\060\023\006\003\125\004\012\023\014\164\150\141\167\164
\145\054\040\111\156\143\056\061\070\060\066\006\003\125\004\013
\023\057\050\143\051\040\062\060\060\067\040\164\150\141\167\164
\145\054\040\111\156\143\056\040\055\040\106\157\162\040\141\165
\164\150\157\162\151\172\145\144\040\165\163\145\040\157\156\154
\171\061\044\060\042\006\003\125\004\003\023\033\164\150\141\167
\164\145\040\120\162\151\155\141\162\171\040\122\157\157\164\040
\103\101\040\055\040\107\062
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\065\374\046\134\331\204\117\311\075\046\075\127\233\256
\327\126
```

END

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

# Microsoft Code Signing Only Certificate

# Certificate "GeoTrust Primary Certification Authority - G2"

# Issuer: CN=GeoTrust Primary Certification Authority - G2,OU=(c) 2007 GeoTrust Inc. - For authorized use only,O=GeoTrust Inc.,C=US

# Serial Number:3c:b2:f4:48:0a:00:e2:fe:eb:24:3b:5e:60:3e:c3:6b

# Subject: CN=GeoTrust Primary Certification Authority - G2,OU=(c) 2007 GeoTrust Inc. - For authorized use only,O=GeoTrust Inc.,C=US

# Not Valid Before: Mon Nov 05 00:00:00 2007

# Not Valid After: Mon Jan 18 23:59:59 2038

# Fingerprint (MD5): 01:5e:d8:6b:bd:6f:3d:8e:a1:31:f8:12:e0:98:73:6a

# Fingerprint (SHA1): 8d:17:84:d5:37:f3:03:7d:ec:70:fe:57:8b:51:9a:99:e6:10:d7:b0

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "GeoTrust Primary Certification Authority - G2"
```

```
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
```

```
CKA_SUBJECT MULTILINE_OCTAL
```

```
\060\201\230\061\013\060\011\006\003\125\004\006\023\002\125\123
```

\061\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162  
\165\163\164\040\111\156\143\056\061\071\060\067\006\003\125\004  
\013\023\060\050\143\051\040\062\060\060\067\040\107\145\157\124  
\162\165\163\164\040\111\156\143\056\040\055\040\106\157\162\040  
\141\165\164\150\157\162\151\172\145\144\040\165\163\145\040\157  
\156\154\171\061\066\060\064\006\003\125\004\003\023\055\107\145  
\157\124\162\165\163\164\040\120\162\151\155\141\162\171\040\103  
\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164  
\150\157\162\151\164\171\040\055\040\107\062

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\230\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162  
\165\163\164\040\111\156\143\056\061\071\060\067\006\003\125\004  
\013\023\060\050\143\051\040\062\060\060\067\040\107\145\157\124  
\162\165\163\164\040\111\156\143\056\040\055\040\106\157\162\040  
\141\165\164\150\157\162\151\172\145\144\040\165\163\145\040\157  
\156\154\171\061\066\060\064\006\003\125\004\003\023\055\107\145  
\157\124\162\165\163\164\040\120\162\151\155\141\162\171\040\103  
\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164  
\150\157\162\151\164\171\040\055\040\107\062

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\074\262\364\110\012\000\342\376\353\044\073\136\140\076  
\303\153

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\002\256\060\202\002\065\240\003\002\001\002\002\020\074  
\262\364\110\012\000\342\376\353\044\073\136\140\076\303\153\060  
\012\006\010\052\206\110\316\075\004\003\003\060\201\230\061\013  
\060\011\006\003\125\004\006\023\002\125\123\061\026\060\024\006  
\003\125\004\012\023\015\107\145\157\124\162\165\163\164\040\111  
\156\143\056\061\071\060\067\006\003\125\004\013\023\060\050\143  
\051\040\062\060\060\067\040\107\145\157\124\162\165\163\164\040  
\111\156\143\056\040\055\040\106\157\162\040\141\165\164\150\157  
\162\151\172\145\144\040\165\163\145\040\157\156\154\171\061\066  
\060\064\006\003\125\004\003\023\055\107\145\157\124\162\165\163  
\164\040\120\162\151\155\141\162\171\040\103\145\162\164\151\146  
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164  
\171\040\055\040\107\062\060\036\027\015\060\067\061\061\060\065  
\060\060\060\060\060\060\132\027\015\063\070\060\061\061\070\062  
\063\065\071\065\071\132\060\201\230\061\013\060\011\006\003\125  
\004\006\023\002\125\123\061\026\060\024\006\003\125\004\012\023  
\015\107\145\157\124\162\165\163\164\040\111\156\143\056\061\071  
\060\067\006\003\125\004\013\023\060\050\143\051\040\062\060\060  
\067\040\107\145\157\124\162\165\163\164\040\111\156\143\056\040  
\055\040\106\157\162\040\141\165\164\150\157\162\151\172\145\144

\040\165\163\145\040\157\156\154\171\061\066\060\064\006\003\125  
\004\003\023\055\107\145\157\124\162\165\163\164\040\120\162\151  
\155\141\162\171\040\103\145\162\164\151\146\151\143\141\164\151  
\157\156\040\101\165\164\150\157\162\151\164\171\040\055\040\107  
\062\060\166\060\020\006\007\052\206\110\316\075\002\001\006\005  
\053\201\004\000\042\003\142\000\004\025\261\350\375\003\025\103  
\345\254\353\207\067\021\142\357\322\203\066\122\175\105\127\013  
\112\215\173\124\073\072\156\137\025\002\300\120\246\317\045\057  
\175\312\110\270\307\120\143\034\052\041\010\174\232\066\330\013  
\376\321\046\305\130\061\060\050\045\363\135\135\243\270\266\245  
\264\222\355\154\054\237\353\335\103\211\242\074\113\110\221\035  
\120\354\046\337\326\140\056\275\041\243\102\060\100\060\017\006  
\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060\016  
\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060\035  
\006\003\125\035\016\004\026\004\024\025\137\065\127\121\125\373  
\045\262\255\003\151\374\001\243\372\276\021\125\325\060\012\006  
\010\052\206\110\316\075\004\003\003\003\147\000\060\144\002\060  
\144\226\131\246\350\011\336\213\272\372\132\210\210\360\037\221  
\323\106\250\362\112\114\002\143\373\154\137\070\333\056\101\223  
\251\016\346\235\334\061\034\262\240\247\030\034\171\341\307\066  
\002\060\072\126\257\232\164\154\366\373\203\340\063\323\010\137  
\241\234\302\133\237\106\326\266\313\221\006\143\242\006\347\063  
\254\076\250\201\022\320\313\272\320\222\013\266\236\226\252\004  
\017\212

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "GeoTrust Primary Certification Authority - G2"  
# Issuer: CN=GeoTrust Primary Certification Authority - G2,OU=(c) 2007 GeoTrust Inc. - For authorized use  
only,O=GeoTrust Inc.,C=US  
# Serial Number:3c:b2:f4:48:0a:00:e2:fe:eb:24:3b:5e:60:3e:c3:6b  
# Subject: CN=GeoTrust Primary Certification Authority - G2,OU=(c) 2007 GeoTrust Inc. - For authorized use  
only,O=GeoTrust Inc.,C=US  
# Not Valid Before: Mon Nov 05 00:00:00 2007  
# Not Valid After: Mon Jan 18 23:59:59 2038  
# Fingerprint (MD5): 01:5e:d8:6b:bd:6f:3d:8e:a1:31:f8:12:e0:98:73:6a  
# Fingerprint (SHA1): 8d:17:84:d5:37:f3:03:7d:ec:70:fe:57:8b:51:9a:99:e6:10:d7:b0  
CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "GeoTrust Primary Certification Authority - G2"  
CKA\_CERT\_SHA1\_HASH MULTILINE OCTAL  
\215\027\204\325\067\363\003\175\354\160\376\127\213\121\232\231  
\346\020\327\260

```
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\001\136\330\153\275\157\075\216\241\061\370\022\340\230\163\152
END
```

```
CKA_ISSUER MULTILINE_OCTAL
\060\201\230\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162
\165\163\164\040\111\156\143\056\061\071\060\067\006\003\125\004
\013\023\060\050\143\051\040\062\060\060\067\040\107\145\157\124
\162\165\163\164\040\111\156\143\056\040\055\040\106\157\162\040
\141\165\164\150\157\162\151\172\145\144\040\165\163\145\040\157
\156\154\171\061\066\060\064\006\003\125\004\003\023\055\107\145
\157\124\162\165\163\164\040\120\162\151\155\141\162\171\040\103
\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164
\150\157\162\151\164\171\040\055\040\107\062
```

```
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\074\262\364\110\012\000\342\376\353\044\073\136\140\076
\303\153
```

```
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
Certificate "VeriSign Universal Root Certification Authority"
Issuer: CN=VeriSign Universal Root Certification Authority,OU=(c) 2008 VeriSign\, Inc. - For authorized use
only,OU=VeriSign Trust Network,O=VeriSign\, Inc.,C=US
Serial Number:40:1a:c4:64:21:b3:13:21:03:0e:bb:e4:12:1a:c5:1d
Subject: CN=VeriSign Universal Root Certification Authority,OU=(c) 2008 VeriSign\, Inc. - For authorized use
only,OU=VeriSign Trust Network,O=VeriSign\, Inc.,C=US
Not Valid Before: Wed Apr 02 00:00:00 2008
Not Valid After: Tue Dec 01 23:59:59 2037
Fingerprint (MD5): 8e:ad:b5:01:aa:4d:81:e4:8c:1d:d1:e1:14:00:95:19
Fingerprint (SHA1): 36:79:ca:35:66:87:72:30:4d:30:a5:fb:87:3b:0f:a7:7b:b7:0d:54
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "VeriSign Universal Root Certification Authority"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\275\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\027\060\025\006\003\125\004\012\023\016\126\145\162\151\123
\151\147\156\054\040\111\156\143\056\061\037\060\035\006\003\125
\004\013\023\026\126\145\162\151\123\151\147\156\040\124\162\165
\163\164\040\116\145\164\167\157\162\153\061\072\060\070\006\003
```



\125\004\013\023\061\050\143\051\040\062\060\060\070\040\126\145  
\162\151\123\151\147\156\054\040\111\156\143\056\040\055\040\106  
\157\162\040\141\165\164\150\157\162\151\172\145\144\040\165\163  
\145\040\157\156\154\171\061\070\060\066\006\003\125\004\003\023  
\057\126\145\162\151\123\151\147\156\040\125\156\151\166\145\162  
\163\141\154\040\122\157\157\164\040\103\145\162\164\151\146\151  
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171  
END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\275\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\027\060\025\006\003\125\004\012\023\016\126\145\162\151\123  
\151\147\156\054\040\111\156\143\056\061\037\060\035\006\003\125  
\004\013\023\026\126\145\162\151\123\151\147\156\040\124\162\165  
\163\164\040\116\145\164\167\157\162\153\061\072\060\070\006\003  
\125\004\013\023\061\050\143\051\040\062\060\060\070\040\126\145  
\162\151\123\151\147\156\054\040\111\156\143\056\040\055\040\106  
\157\162\040\141\165\164\150\157\162\151\172\145\144\040\165\163  
\145\040\157\156\154\171\061\070\060\066\006\003\125\004\003\023  
\057\126\145\162\151\123\151\147\156\040\125\156\151\166\145\162  
\163\141\154\040\122\157\157\164\040\103\145\162\164\151\146\151  
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171  
END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\100\032\304\144\041\263\023\041\003\016\273\344\022\032  
\305\035  
END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\271\060\202\003\241\240\003\002\001\002\002\020\100  
\032\304\144\041\263\023\041\003\016\273\344\022\032\305\035\060  
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\201  
\275\061\013\060\011\006\003\125\004\006\023\002\125\123\061\027  
\060\025\006\003\125\004\012\023\016\126\145\162\151\123\151\147  
\156\054\040\111\156\143\056\061\037\060\035\006\003\125\004\013  
\023\026\126\145\162\151\123\151\147\156\040\124\162\165\163\164  
\040\116\145\164\167\157\162\153\061\072\060\070\006\003\125\004  
\013\023\061\050\143\051\040\062\060\060\070\040\126\145\162\151  
\123\151\147\156\054\040\111\156\143\056\040\055\040\106\157\162  
\040\141\165\164\150\157\162\151\172\145\144\040\165\163\145\040  
\157\156\154\171\061\070\060\066\006\003\125\004\003\023\057\126  
\145\162\151\123\151\147\156\040\125\156\151\166\145\162\163\141  
\154\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141  
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\060\036  
\027\015\060\070\060\064\060\062\060\060\060\060\060\132\027  
\015\063\067\061\062\060\061\062\063\065\071\065\071\132\060\201  
\275\061\013\060\011\006\003\125\004\006\023\002\125\123\061\027  
\060\025\006\003\125\004\012\023\016\126\145\162\151\123\151\147  
\156\054\040\111\156\143\056\061\037\060\035\006\003\125\004\013

\023\026\126\145\162\151\123\151\147\156\040\124\162\165\163\164  
\040\116\145\164\167\157\162\153\061\072\060\070\006\003\125\004  
\013\023\061\050\143\051\040\062\060\060\070\040\126\145\162\151  
\123\151\147\156\054\040\111\156\143\056\040\055\040\106\157\162  
\040\141\165\164\150\157\162\151\172\145\144\040\165\163\145\040  
\157\156\154\171\061\070\060\066\006\003\125\004\003\023\057\126  
\145\162\151\123\151\147\156\040\125\156\151\166\145\162\163\141  
\154\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141  
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\060\202  
\001\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005  
\000\003\202\001\017\000\060\202\001\012\002\202\001\001\000\307  
\141\067\136\261\001\064\333\142\327\025\233\377\130\132\214\043  
\043\326\140\216\221\327\220\230\203\172\346\130\031\070\214\305  
\366\345\144\205\264\242\161\373\355\275\271\332\315\115\000\264  
\310\055\163\245\307\151\161\225\037\071\074\262\104\007\234\350  
\016\372\115\112\304\041\337\051\141\217\062\042\141\202\305\207  
\037\156\214\174\137\026\040\121\104\321\160\117\127\352\343\034  
\343\314\171\356\130\330\016\302\263\105\223\300\054\347\232\027  
\053\173\000\067\172\101\063\170\341\063\342\363\020\032\177\207  
\054\276\366\365\367\102\342\345\277\207\142\211\137\000\113\337  
\305\335\344\165\104\062\101\072\036\161\156\151\313\013\165\106  
\010\321\312\322\053\225\320\317\373\271\100\153\144\214\127\115  
\374\023\021\171\204\355\136\124\366\064\237\010\001\363\020\045  
\006\027\112\332\361\035\172\146\153\230\140\146\244\331\357\322  
\056\202\361\360\357\011\352\104\311\025\152\342\003\156\063\323  
\254\237\125\000\307\366\010\152\224\271\137\334\340\063\361\204  
\140\371\133\047\021\264\374\026\362\273\126\152\200\045\215\002  
\003\001\000\001\243\201\262\060\201\257\060\017\006\003\125\035  
\023\001\001\377\004\005\060\003\001\001\377\060\016\006\003\125  
\035\017\001\001\377\004\004\003\002\001\006\060\155\006\010\053  
\006\001\005\005\007\001\014\004\141\060\137\241\135\240\133\060  
\131\060\127\060\125\026\011\151\155\141\147\145\057\147\151\146  
\060\041\060\037\060\007\006\005\053\016\003\002\032\004\024\217  
\345\323\032\206\254\215\216\153\303\317\200\152\324\110\030\054  
\173\031\056\060\045\026\043\150\164\164\160\072\057\057\154\157  
\147\157\056\166\145\162\151\163\151\147\156\056\143\157\155\057  
\166\163\154\157\147\157\056\147\151\146\060\035\006\003\125\035  
\016\004\026\004\024\266\167\372\151\110\107\237\123\022\325\302  
\352\007\062\166\007\321\227\007\031\060\015\006\011\052\206\110  
\206\367\015\001\001\013\005\000\003\202\001\001\000\112\370\370  
\260\003\346\054\147\173\344\224\167\143\314\156\114\371\175\016  
\015\334\310\271\065\271\160\117\143\372\044\372\154\203\214\107  
\235\073\143\363\232\371\166\062\225\221\261\167\274\254\232\276  
\261\344\061\041\306\201\225\126\132\016\261\302\324\261\246\131  
\254\361\143\313\270\114\035\131\220\112\357\220\026\050\037\132  
\256\020\373\201\120\070\014\154\314\361\075\303\365\143\343\263  
\343\041\311\044\071\351\375\025\146\106\364\033\021\320\115\163  
\243\175\106\371\075\355\250\137\142\324\361\077\370\340\164\127

```
\053\030\235\201\264\304\050\332\224\227\245\160\353\254\035\276
\007\021\360\325\333\335\345\214\360\325\062\260\203\346\127\342
\217\277\276\241\252\277\075\035\265\324\070\352\327\260\134\072
\117\152\077\217\300\146\154\143\252\351\331\244\026\364\201\321
\225\024\016\175\315\225\064\331\322\217\160\163\201\173\234\176
\275\230\141\330\105\207\230\220\305\353\206\060\306\065\277\360
\377\303\125\210\203\113\357\005\222\006\161\362\270\230\223\267
\354\315\202\141\361\070\346\117\227\230\052\132\215
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

# Microsoft Code Signing Only Certificate

# Trust for "VeriSign Universal Root Certification Authority"

# Issuer: CN=VeriSign Universal Root Certification Authority,OU=(c) 2008 VeriSign\, Inc. - For authorized use only,OU=VeriSign Trust Network,O=VeriSign\, Inc.,C=US

# Serial Number:40:1a:c4:64:21:b3:13:21:03:0e:bb:e4:12:1a:c5:1d

# Subject: CN=VeriSign Universal Root Certification Authority,OU=(c) 2008 VeriSign\, Inc. - For authorized use only,OU=VeriSign Trust Network,O=VeriSign\, Inc.,C=US

# Not Valid Before: Wed Apr 02 00:00:00 2008

# Not Valid After: Tue Dec 01 23:59:59 2037

# Fingerprint (MD5): 8e:ad:b5:01:aa:4d:81:e4:8c:1d:d1:e1:14:00:95:19

# Fingerprint (SHA1): 36:79:ca:35:66:87:72:30:4d:30:a5:fb:87:3b:0f:a7:7b:b7:0d:54

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "VeriSign Universal Root Certification Authority"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\066\171\312\065\146\207\162\060\115\060\245\373\207\073\017\247
\173\267\015\124
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\216\255\265\001\252\115\201\344\214\035\321\341\024\000\225\031
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\201\275\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\027\060\025\006\003\125\004\012\023\016\126\145\162\151\123
\151\147\156\054\040\111\156\143\056\061\037\060\035\006\003\125
\004\013\023\026\126\145\162\151\123\151\147\156\040\124\162\165
\163\164\040\116\145\164\167\157\162\153\061\072\060\070\006\003
\125\004\013\023\061\050\143\051\040\062\060\060\070\040\126\145
\162\151\123\151\147\156\054\040\111\156\143\056\040\055\040\106
\157\162\040\141\165\164\150\157\162\151\172\145\144\040\165\163
\145\040\157\156\154\171\061\070\060\066\006\003\125\004\003\023
\057\126\145\162\151\123\151\147\156\040\125\156\151\166\145\162
\163\141\154\040\122\157\157\164\040\103\145\162\164\151\146\151
```

\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\100\032\304\144\041\263\023\041\003\016\273\344\022\032

\305\035

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "thawte Primary Root CA - G3"

# Issuer: CN=thawte Primary Root CA - G3,OU=(c) 2008 thawte\, Inc. - For authorized use only,OU=Certification Services Division,O=thawte\, Inc.,C=US

# Serial Number:60:01:97:b7:46:a7:ea:b4:b4:9a:d6:4b:2f:f7:90:fb

# Subject: CN=thawte Primary Root CA - G3,OU=(c) 2008 thawte\, Inc. - For authorized use only,OU=Certification Services Division,O=thawte\, Inc.,C=US

# Not Valid Before: Wed Apr 02 00:00:00 2008

# Not Valid After: Tue Dec 01 23:59:59 2037

# Fingerprint (MD5): fb:1b:5d:43:8a:94:cd:44:c6:76:f2:43:4b:47:e7:31

# Fingerprint (SHA1): f1:8b:53:8d:1b:e9:03:b6:a6:f0:56:43:5b:17:15:89:ca:f3:6b:f2

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "thawte Primary Root CA - G3"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\201\256\061\013\060\011\006\003\125\004\006\023\002\125\123

\061\025\060\023\006\003\125\004\012\023\014\164\150\141\167\164

\145\054\040\111\156\143\056\061\050\060\046\006\003\125\004\013

\023\037\103\145\162\164\151\146\151\143\141\164\151\157\156\040

\123\145\162\166\151\143\145\163\040\104\151\166\151\163\151\157

\156\061\070\060\066\006\003\125\004\013\023\057\050\143\051\040

\062\060\060\070\040\164\150\141\167\164\145\054\040\111\156\143

\056\040\055\040\106\157\162\040\141\165\164\150\157\162\151\172

\145\144\040\165\163\145\040\157\156\154\171\061\044\060\042\006

\003\125\004\003\023\033\164\150\141\167\164\145\040\120\162\151

\155\141\162\171\040\122\157\157\164\040\103\101\040\055\040\107

\063

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\256\061\013\060\011\006\003\125\004\006\023\002\125\123

\061\025\060\023\006\003\125\004\012\023\014\164\150\141\167\164

\145\054\040\111\156\143\056\061\050\060\046\006\003\125\004\013

\023\037\103\145\162\164\151\146\151\143\141\164\151\157\156\040

\123\145\162\166\151\143\145\163\040\104\151\166\151\163\151\157  
\156\061\070\060\066\006\003\125\004\013\023\057\050\143\051\040  
\062\060\060\070\040\164\150\141\167\164\145\054\040\111\156\143  
\056\040\055\040\106\157\162\040\141\165\164\150\157\162\151\172  
\145\144\040\165\163\145\040\157\156\154\171\061\044\060\042\006  
\003\125\004\003\023\033\164\150\141\167\164\145\040\120\162\151  
\155\141\162\171\040\122\157\157\164\040\103\101\040\055\040\107  
\063

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\140\001\227\267\106\247\352\264\264\232\326\113\057\367  
\220\373

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\052\060\202\003\022\240\003\002\001\002\002\020\140  
\001\227\267\106\247\352\264\264\232\326\113\057\367\220\373\060  
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\201  
\256\061\013\060\011\006\003\125\004\006\023\002\125\123\061\025  
\060\023\006\003\125\004\012\023\014\164\150\141\167\164\145\054  
\040\111\156\143\056\061\050\060\046\006\003\125\004\013\023\037  
\103\145\162\164\151\146\151\143\141\164\151\157\156\040\123\145  
\162\166\151\143\145\163\040\104\151\166\151\163\151\157\156\061  
\070\060\066\006\003\125\004\013\023\057\050\143\051\040\062\060  
\060\070\040\164\150\141\167\164\145\054\040\111\156\143\056\040  
\055\040\106\157\162\040\141\165\164\150\157\162\151\172\145\144  
\040\165\163\145\040\157\156\154\171\061\044\060\042\006\003\125  
\004\003\023\033\164\150\141\167\164\145\040\120\162\151\155\141  
\162\171\040\122\157\157\164\040\103\101\040\055\040\107\063\060  
\036\027\015\060\070\060\064\060\062\060\060\060\060\060\060\132  
\027\015\063\067\061\062\060\061\062\063\065\071\065\071\132\060  
\201\256\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\025\060\023\006\003\125\004\012\023\014\164\150\141\167\164\145  
\054\040\111\156\143\056\061\050\060\046\006\003\125\004\013\023  
\037\103\145\162\164\151\146\151\143\141\164\151\157\156\040\123  
\145\162\166\151\143\145\163\040\104\151\166\151\163\151\157\156  
\061\070\060\066\006\003\125\004\013\023\057\050\143\051\040\062  
\060\060\070\040\164\150\141\167\164\145\054\040\111\156\143\056  
\040\055\040\106\157\162\040\141\165\164\150\157\162\151\172\145  
\144\040\165\163\145\040\157\156\154\171\061\044\060\042\006\003  
\125\004\003\023\033\164\150\141\167\164\145\040\120\162\151\155  
\141\162\171\040\122\157\157\164\040\103\101\040\055\040\107\063  
\060\202\001\042\060\015\006\011\052\206\110\206\367\015\001\001  
\001\005\000\003\202\001\017\000\060\202\001\012\002\202\001\001  
\000\262\277\047\054\373\333\330\133\335\170\173\033\236\167\146  
\201\313\076\274\174\256\363\246\047\232\064\243\150\061\161\070  
\063\142\344\363\161\146\171\261\251\145\243\245\213\325\217\140  
\055\077\102\314\252\153\062\300\043\313\054\101\335\344\337\374  
\141\234\342\163\262\042\225\021\103\030\137\304\266\037\127\154

\012\005\130\042\310\066\114\072\174\245\321\317\206\257\210\247  
\104\002\023\164\161\163\012\102\131\002\370\033\024\153\102\337  
\157\137\272\153\202\242\235\133\347\112\275\036\001\162\333\113  
\164\350\073\177\177\175\037\004\264\046\233\340\264\132\254\107  
\075\125\270\327\260\046\122\050\001\061\100\146\330\331\044\275  
\366\052\330\354\041\111\134\233\366\172\351\177\125\065\176\226  
\153\215\223\223\047\313\222\273\352\254\100\300\237\302\370\200  
\317\135\364\132\334\316\164\206\246\076\154\013\123\312\275\222  
\316\031\006\162\346\014\134\070\151\307\004\326\274\154\316\133  
\366\367\150\234\334\045\025\110\210\241\351\251\370\230\234\340  
\363\325\061\050\141\021\154\147\226\215\071\231\313\302\105\044  
\071\002\003\001\000\001\243\102\060\100\060\017\006\003\125\035  
\023\001\001\377\004\005\060\003\001\001\377\060\016\006\003\125  
\035\017\001\001\377\004\004\003\002\001\006\060\035\006\003\125  
\035\016\004\026\004\024\255\154\252\224\140\234\355\344\377\372  
\076\012\164\053\143\003\367\266\131\277\060\015\006\011\052\206  
\110\206\367\015\001\001\013\005\000\003\202\001\001\000\032\100  
\330\225\145\254\011\222\211\306\071\364\020\345\251\016\146\123  
\135\170\336\372\044\221\273\347\104\121\337\306\026\064\012\357  
\152\104\121\352\053\007\212\003\172\303\353\077\012\054\122\026  
\240\053\103\271\045\220\077\160\251\063\045\155\105\032\050\073  
\047\317\252\303\051\102\033\337\073\114\300\063\064\133\101\210  
\277\153\053\145\257\050\357\262\365\303\252\146\316\173\126\356  
\267\310\313\147\301\311\234\032\030\270\304\303\111\003\361\140  
\016\120\315\106\305\363\167\171\367\266\025\340\070\333\307\057  
\050\240\014\077\167\046\164\331\045\022\332\061\332\032\036\334  
\051\101\221\042\074\151\247\273\002\362\266\134\047\003\211\364  
\006\352\233\344\162\202\343\241\011\301\351\000\031\323\076\324  
\160\153\272\161\246\252\130\256\364\273\351\154\266\357\207\314  
\233\273\377\071\346\126\141\323\012\247\304\134\114\140\173\005  
\167\046\172\277\330\007\122\054\142\367\160\143\331\071\274\157  
\034\302\171\334\166\051\257\316\305\054\144\004\136\210\066\156  
\061\324\100\032\142\064\066\077\065\001\256\254\143\240

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "thawte Primary Root CA - G3"

# Issuer: CN=thawte Primary Root CA - G3,OU=(c) 2008 thawte\, Inc. - For authorized use only,OU=Certification Services Division,O=thawte\, Inc.,C=US

# Serial Number:60:01:97:b7:46:a7:ea:b4:b4:9a:d6:4b:2f:f7:90:fb

# Subject: CN=thawte Primary Root CA - G3,OU=(c) 2008 thawte\, Inc. - For authorized use only,OU=Certification Services Division,O=thawte\, Inc.,C=US

# Not Valid Before: Wed Apr 02 00:00:00 2008

# Not Valid After: Tue Dec 01 23:59:59 2037

# Fingerprint (MD5): fb:1b:5d:43:8a:94:cd:44:c6:76:f2:43:4b:47:e7:31

```

Fingerprint (SHA1): f1:8b:53:8d:1b:e9:03:b6:a6:f0:56:43:5b:17:15:89:ca:f3:6b:f2
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "thawte Primary Root CA - G3"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\361\213\123\215\033\351\003\266\246\360\126\103\133\027\025\211
\312\363\153\362
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\373\033\135\103\212\224\315\104\306\166\362\103\113\107\347\061
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\256\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\025\060\023\006\003\125\004\012\023\014\164\150\141\167\164
\145\054\040\111\156\143\056\061\050\060\046\006\003\125\004\013
\023\037\103\145\162\164\151\146\151\143\141\164\151\157\156\040
\123\145\162\166\151\143\145\163\040\104\151\166\151\163\151\157
\156\061\070\060\066\006\003\125\004\013\023\057\050\143\051\040
\062\060\060\070\040\164\150\141\167\164\145\054\040\111\156\143
\056\040\055\040\106\157\162\040\141\165\164\150\157\162\151\172
\145\144\040\165\163\145\040\157\156\154\171\061\044\060\042\006
\003\125\004\003\023\033\164\150\141\167\164\145\040\120\162\151
\155\141\162\171\040\122\157\157\164\040\103\101\040\055\040\107
\063
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\140\001\227\267\106\247\352\264\264\232\326\113\057\367
\220\373
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

```

```

Microsoft Code Signing Only Certificate
Certificate "GeoTrust Primary Certification Authority - G3"
Issuer: CN=GeoTrust Primary Certification Authority - G3,OU=(c) 2008 GeoTrust Inc. - For authorized use
only,O=GeoTrust Inc.,C=US
Serial Number:15:ac:6e:94:19:b2:79:4b:41:f6:27:a9:c3:18:0f:1f
Subject: CN=GeoTrust Primary Certification Authority - G3,OU=(c) 2008 GeoTrust Inc. - For authorized use
only,O=GeoTrust Inc.,C=US
Not Valid Before: Wed Apr 02 00:00:00 2008
Not Valid After: Tue Dec 01 23:59:59 2037
Fingerprint (MD5): b5:e8:34:36:c9:10:44:58:48:70:6d:2e:83:d4:b8:05
Fingerprint (SHA1): 03:9e:ed:b8:0b:e7:a0:3c:69:53:89:3b:20:d2:d9:32:3a:4c:2a:fd
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

```

```
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GeoTrust Primary Certification Authority - G3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\230\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162
\165\163\164\040\111\156\143\056\061\071\060\067\006\003\125\004
\013\023\060\050\143\051\040\062\060\060\070\040\107\145\157\124
\162\165\163\164\040\111\156\143\056\040\055\040\106\157\162\040
\141\165\164\150\157\162\151\172\145\144\040\165\163\145\040\157
\156\154\171\061\066\060\064\006\003\125\004\003\023\055\107\145
\157\124\162\165\163\164\040\120\162\151\155\141\162\171\040\103
\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164
\150\157\162\151\164\171\040\055\040\107\063
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\230\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162
\165\163\164\040\111\156\143\056\061\071\060\067\006\003\125\004
\013\023\060\050\143\051\040\062\060\060\070\040\107\145\157\124
\162\165\163\164\040\111\156\143\056\040\055\040\106\157\162\040
\141\165\164\150\157\162\151\172\145\144\040\165\163\145\040\157
\156\154\171\061\066\060\064\006\003\125\004\003\023\055\107\145
\157\124\162\165\163\164\040\120\162\151\155\141\162\171\040\103
\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164
\150\157\162\151\164\171\040\055\040\107\063
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\025\254\156\224\031\262\171\113\101\366\047\251\303\030
\017\037
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\376\060\202\002\346\240\003\002\001\002\002\020\025
\254\156\224\031\262\171\113\101\366\047\251\303\030\017\037\060
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\201
\230\061\013\060\011\006\003\125\004\006\023\002\125\123\061\026
\060\024\006\003\125\004\012\023\015\107\145\157\124\162\165\163
\164\040\111\156\143\056\061\071\060\067\006\003\125\004\013\023
\060\050\143\051\040\062\060\060\070\040\107\145\157\124\162\165
\163\164\040\111\156\143\056\040\055\040\106\157\162\040\141\165
\164\150\157\162\151\172\145\144\040\165\163\145\040\157\156\154
\171\061\066\060\064\006\003\125\004\003\023\055\107\145\157\124
\162\165\163\164\040\120\162\151\155\141\162\171\040\103\145\162
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157
\162\151\164\171\040\055\040\107\063\060\036\027\015\060\070\060
```



\064\060\062\060\060\060\060\060\060\060\060\132\027\015\063\067\061\062  
\060\061\062\063\065\071\065\071\132\060\201\230\061\013\060\011  
\006\003\125\004\006\023\002\125\123\061\026\060\024\006\003\125  
\004\012\023\015\107\145\157\124\162\165\163\164\040\111\156\143  
\056\061\071\060\067\006\003\125\004\013\023\060\050\143\051\040  
\062\060\060\070\040\107\145\157\124\162\165\163\164\040\111\156  
\143\056\040\055\040\106\157\162\040\141\165\164\150\157\162\151  
\172\145\144\040\165\163\145\040\157\156\154\171\061\066\060\064  
\006\003\125\004\003\023\055\107\145\157\124\162\165\163\164\040  
\120\162\151\155\141\162\171\040\103\145\162\164\151\146\151\143  
\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171\040  
\055\040\107\063\060\202\001\042\060\015\006\011\052\206\110\206  
\367\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012  
\002\202\001\001\000\334\342\136\142\130\035\063\127\071\062\063  
\372\353\313\207\214\247\324\112\335\006\210\352\144\216\061\230  
\245\070\220\036\230\317\056\143\053\360\106\274\104\262\211\241  
\300\050\014\111\160\041\225\237\144\300\246\223\022\002\145\046  
\206\306\245\211\360\372\327\204\240\160\257\117\032\227\077\006  
\104\325\311\353\162\020\175\344\061\050\373\034\141\346\050\007  
\104\163\222\042\151\247\003\210\154\235\143\310\122\332\230\047  
\347\010\114\160\076\264\311\022\301\305\147\203\135\063\363\003  
\021\354\152\320\123\342\321\272\066\140\224\200\273\141\143\154  
\133\027\176\337\100\224\036\253\015\302\041\050\160\210\377\326  
\046\154\154\140\004\045\116\125\176\175\357\277\224\110\336\267  
\035\335\160\215\005\137\210\245\233\362\302\356\352\321\100\101  
\155\142\070\035\126\006\305\003\107\121\040\031\374\173\020\013  
\016\142\256\166\125\277\137\167\276\076\111\001\123\075\230\045  
\003\166\044\132\035\264\333\211\352\171\345\266\263\073\077\272  
\114\050\101\177\006\254\152\216\301\320\366\005\035\175\346\102  
\206\343\245\325\107\002\003\001\000\001\243\102\060\100\060\017  
\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060  
\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060  
\035\006\003\125\035\016\004\026\004\024\304\171\312\216\241\116  
\003\035\034\334\153\333\061\133\224\076\077\060\177\055\060\015  
\006\011\052\206\110\206\367\015\001\001\013\005\000\003\202\001  
\001\000\055\305\023\317\126\200\173\172\170\275\237\256\054\231  
\347\357\332\337\224\136\011\151\247\347\156\150\214\275\162\276  
\107\251\016\227\022\270\112\361\144\323\071\337\045\064\324\301  
\315\116\201\360\017\004\304\044\263\064\226\306\246\252\060\337  
\150\141\163\327\371\216\205\211\357\016\136\225\050\112\052\047  
\217\020\216\056\174\206\304\002\236\332\014\167\145\016\104\015  
\222\375\375\263\026\066\372\021\015\035\214\016\007\211\152\051  
\126\367\162\364\335\025\234\167\065\146\127\253\023\123\330\216  
\301\100\305\327\023\026\132\162\307\267\151\001\304\172\261\203  
\001\150\175\215\101\241\224\030\301\045\134\374\360\376\203\002  
\207\174\015\015\317\056\010\134\112\100\015\076\354\201\141\346  
\044\333\312\340\016\055\007\262\076\126\334\215\365\101\205\007  
\110\233\014\013\313\111\077\175\354\267\375\313\215\147\211\032

```
\253\355\273\036\243\000\010\010\027\052\202\134\061\135\106\212
\055\017\206\233\164\331\105\373\324\100\261\172\252\150\055\206
\262\231\042\341\301\053\307\234\370\363\137\250\202\022\353\031
\021\055
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
```

```
Trust for "GeoTrust Primary Certification Authority - G3"
```

```
Issuer: CN=GeoTrust Primary Certification Authority - G3,OU=(c) 2008 GeoTrust Inc. - For authorized use
only,O=GeoTrust Inc.,C=US
```

```
Serial Number:15:ac:6e:94:19:b2:79:4b:41:f6:27:a9:c3:18:0f:1f
```

```
Subject: CN=GeoTrust Primary Certification Authority - G3,OU=(c) 2008 GeoTrust Inc. - For authorized use
only,O=GeoTrust Inc.,C=US
```

```
Not Valid Before: Wed Apr 02 00:00:00 2008
```

```
Not Valid After: Tue Dec 01 23:59:59 2037
```

```
Fingerprint (MD5): b5:e8:34:36:c9:10:44:58:48:70:6d:2e:83:d4:b8:05
```

```
Fingerprint (SHA1): 03:9e:ed:b8:0b:e7:a0:3c:69:53:89:3b:20:d2:d9:32:3a:4c:2a:fd
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "GeoTrust Primary Certification Authority - G3"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\003\236\355\270\013\347\240\074\151\123\211\073\040\322\331\062
\072\114\052\375
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\265\350\064\066\311\020\104\130\110\160\155\056\203\324\270\005
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\201\230\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162
\165\163\164\040\111\156\143\056\061\071\060\067\006\003\125\004
\013\023\060\050\143\051\040\062\060\060\070\040\107\145\157\124
\162\165\163\164\040\111\156\143\056\040\055\040\106\157\162\040
\141\165\164\150\157\162\151\172\145\144\040\165\163\145\040\157
\156\154\171\061\066\060\064\006\003\125\004\003\023\055\107\145
\157\124\162\165\163\164\040\120\162\151\155\141\162\171\040\103
\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164
\150\157\162\151\164\171\040\055\040\107\063
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\020\025\254\156\224\031\262\171\113\101\366\047\251\303\030
\017\037
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

```
Microsoft Code Signing Only Certificate
Certificate "E-ME SSI (RCA)"
Issuer: CN=E-ME SSI (RCA),OU=Sertifikācijas pakalpojumu dala,C=LV
Serial Number:2e:ef:db:fb:d8:89:3d:8f:49:1c:93:72:fe:45:df:ed
Subject: CN=E-ME SSI (RCA),OU=Sertifikācijas pakalpojumu dala,C=LV
Not Valid Before: Tue May 19 08:45:56 2009
Not Valid After: Wed May 19 08:48:15 2027
Fingerprint (MD5): cb:bd:c3:68:2d:b3:cb:18:59:d3:29:52:e8:c6:64:89
Fingerprint (SHA1): c9:32:1d:e6:b5:a8:26:66:cf:69:71:a1:8a:56:f2:d3:a8:67:56:02
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "E-ME SSI (RCA)"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\120\061\013\060\011\006\003\125\004\006\023\002\114\126\061
\050\060\046\006\003\125\004\013\023\037\123\145\162\164\151\146
\151\153\141\143\151\152\141\163\040\160\141\153\141\154\160\157
\152\165\155\165\040\144\141\154\141\061\027\060\025\006\003\125
\004\003\023\016\105\055\115\105\040\123\123\111\040\050\122\103
\101\051
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\120\061\013\060\011\006\003\125\004\006\023\002\114\126\061
\050\060\046\006\003\125\004\013\023\037\123\145\162\164\151\146
\151\153\141\143\151\152\141\163\040\160\141\153\141\154\160\157
\152\165\155\165\040\144\141\154\141\061\027\060\025\006\003\125
\004\003\023\016\105\055\115\105\040\123\123\111\040\050\122\103
\101\051
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\056\357\333\373\330\211\075\217\111\034\223\162\376\105
\337\355
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\340\060\202\003\310\240\003\002\001\002\002\020\056
\357\333\373\330\211\075\217\111\034\223\162\376\105\337\355\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\120
\061\013\060\011\006\003\125\004\006\023\002\114\126\061\050\060
\046\006\003\125\004\013\023\037\123\145\162\164\151\146\151\153
\141\143\151\152\141\163\040\160\141\153\141\154\160\157\152\165
```

\155\165\040\144\141\154\141\061\027\060\025\006\003\125\004\003  
\023\016\105\055\115\105\040\123\123\111\040\050\122\103\101\051  
\060\036\027\015\060\071\060\065\061\071\060\070\064\065\065\066  
\132\027\015\062\067\060\065\061\071\060\070\064\070\061\065\132  
\060\120\061\013\060\011\006\003\125\004\006\023\002\114\126\061  
\050\060\046\006\003\125\004\013\023\037\123\145\162\164\151\146  
\151\153\141\143\151\152\141\163\040\160\141\153\141\154\160\157  
\152\165\155\165\040\144\141\154\141\061\027\060\025\006\003\125  
\004\003\023\016\105\055\115\105\040\123\123\111\040\050\122\103  
\101\051\060\202\002\042\060\015\006\011\052\206\110\206\367\015  
\001\001\001\005\000\003\202\002\017\000\060\202\002\012\002\202  
\002\001\000\304\004\153\000\303\260\340\056\073\350\123\005\005  
\010\276\310\204\047\125\326\035\212\022\342\027\042\132\154\377  
\263\335\266\231\303\312\301\352\371\330\045\265\337\072\235\235  
\077\122\305\351\362\254\277\211\164\212\124\256\116\317\156\362  
\136\256\332\275\022\007\231\225\317\144\253\376\231\221\144\131  
\214\311\276\104\152\061\233\230\352\272\352\321\041\016\050\013  
\071\233\343\326\212\246\367\002\272\077\075\331\131\364\171\231  
\336\323\044\233\213\160\033\052\204\326\345\011\017\046\046\044  
\130\217\045\136\363\305\235\164\211\245\066\305\345\122\262\353  
\350\206\223\107\156\247\051\207\244\176\334\264\243\313\062\126  
\367\105\200\332\134\307\057\240\247\327\357\365\374\265\250\315  
\204\225\142\370\251\053\043\073\155\323\267\222\310\352\301\274  
\024\115\350\153\234\026\172\323\354\007\373\007\045\020\117\024  
\207\173\222\066\316\126\202\145\113\023\046\006\330\243\243\246  
\337\302\172\373\173\065\005\242\023\075\076\166\274\034\127\203  
\003\121\307\064\336\132\365\074\275\066\045\234\026\017\115\316  
\350\015\032\313\135\103\242\024\157\272\174\140\324\002\205\166  
\305\153\052\270\105\261\134\167\107\021\255\240\045\251\146\221  
\214\121\027\155\141\125\012\031\077\233\002\377\304\365\326\322  
\263\351\045\123\341\004\075\217\042\320\242\145\345\256\247\264  
\340\035\221\152\302\206\222\367\072\135\023\247\172\114\102\337  
\132\263\112\210\104\054\357\107\272\251\257\326\317\142\163\212  
\006\042\026\054\302\354\037\006\250\323\107\120\131\062\022\345  
\271\235\142\065\236\312\136\012\264\235\043\210\302\323\117\054  
\054\311\223\350\176\270\011\354\246\331\335\143\341\311\250\152  
\150\334\204\121\254\132\022\347\073\246\265\007\012\261\252\116  
\263\264\242\127\337\067\154\026\116\253\231\062\172\360\234\043  
\045\213\312\232\250\214\340\070\041\264\316\367\154\141\310\342  
\014\022\131\006\201\046\066\132\017\065\163\324\026\105\375\336  
\225\336\326\113\134\237\163\331\276\031\275\347\277\344\125\152  
\310\153\104\367\307\270\063\210\171\031\015\006\144\350\257\013  
\241\165\014\122\145\272\012\043\225\161\367\143\374\176\345\214  
\217\314\321\002\003\001\000\001\243\201\265\060\201\262\060\016  
\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060\030  
\006\010\053\006\001\005\005\007\001\003\004\014\060\012\060\010  
\006\006\004\000\216\106\001\001\060\017\006\003\125\035\023\001  
\001\377\004\005\060\003\001\001\377\060\035\006\003\125\035\016

\004\026\004\024\073\046\003\272\317\343\131\106\102\120\255\024  
\234\277\003\073\357\326\076\061\060\020\006\011\053\006\001\004  
\001\202\067\025\001\004\003\002\001\000\060\104\006\003\125\035  
\040\004\075\060\073\060\071\006\013\053\006\001\004\001\201\372  
\075\001\001\001\060\052\060\050\006\010\053\006\001\005\005\007  
\002\001\026\034\150\164\164\160\072\057\057\167\167\167\056\145  
\155\145\056\154\166\057\162\145\160\157\163\151\164\157\162\171  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003  
\202\002\001\000\205\346\246\224\344\331\106\137\235\277\223\273  
\371\153\166\144\050\256\277\074\105\052\212\223\171\154\323\113  
\210\206\040\153\042\046\070\075\034\023\252\353\141\227\154\056  
\076\127\234\154\103\242\336\155\100\304\061\362\155\272\106\026  
\263\055\306\273\246\334\345\057\261\330\301\325\221\036\021\177  
\373\137\241\334\035\141\370\155\233\141\360\342\077\053\161\325  
\015\313\336\337\145\077\240\157\225\233\172\313\333\065\067\051  
\135\136\235\271\124\261\254\140\022\345\143\331\315\257\122\033  
\005\226\023\174\332\044\165\001\255\324\236\245\313\301\022\105  
\117\127\257\043\277\051\274\352\216\255\170\370\207\043\350\110  
\313\100\250\276\135\063\326\354\306\006\103\302\147\052\350\343  
\205\056\140\236\104\057\053\117\061\261\007\235\225\041\325\052  
\222\257\200\221\323\307\051\275\315\361\025\014\237\001\356\370  
\055\073\244\007\160\111\171\044\355\274\241\323\226\121\202\237  
\302\310\274\336\043\232\307\120\053\232\266\170\122\252\316\225  
\366\140\073\242\231\371\046\146\364\107\054\101\045\274\101\372  
\326\213\177\275\137\202\174\323\105\205\264\114\330\354\263\027  
\357\104\072\365\050\145\357\365\236\161\314\041\336\350\326\121  
\034\020\373\100\374\111\345\134\204\027\257\252\031\136\242\355  
\116\036\242\373\312\107\034\034\144\076\024\221\242\071\031\064  
\210\177\221\313\073\235\031\160\352\050\373\374\120\017\314\275  
\075\136\002\003\153\171\065\104\101\166\356\266\055\164\204\341  
\202\161\323\045\260\323\303\231\104\253\077\342\014\245\356\275  
\246\374\244\021\000\356\234\275\067\321\326\142\304\060\024\055  
\020\012\227\212\210\365\045\074\226\276\106\100\032\212\300\205  
\166\304\240\111\340\111\245\347\031\265\011\363\314\115\355\026  
\136\232\324\323\310\151\320\330\212\067\205\153\116\344\252\007  
\222\134\324\161\161\201\110\323\170\365\126\140\376\314\002\324  
\000\223\037\114\222\100\227\276\162\123\171\056\046\122\276\246  
\243\164\261\224\331\024\143\072\156\133\321\074\222\047\122\220  
\062\132\222\322\017\116\133\013\006\072\142\345\326\047\014\001  
\366\045\002\270\213\020\051\102\251\367\151\312\334\353\012\222  
\113\050\061\206

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "E-ME SSI (RCA)"

```
Issuer: CN=E-ME SSI (RCA),OU=Sertifikācijas pakalpojumu dala,C=LV
Serial Number:2e:ef:db:fb:d8:89:3d:8f:49:1c:93:72:fe:45:df:ed
Subject: CN=E-ME SSI (RCA),OU=Sertifikācijas pakalpojumu dala,C=LV
Not Valid Before: Tue May 19 08:45:56 2009
Not Valid After: Wed May 19 08:48:15 2027
Fingerprint (MD5): cb:bd:c3:68:2d:b3:cb:18:59:d3:29:52:e8:c6:64:89
Fingerprint (SHA1): c9:32:1d:e6:b5:a8:26:66:cf:69:71:a1:8a:56:f2:d3:a8:67:56:02
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "E-ME SSI (RCA)"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\311\062\035\346\265\250\046\146\317\151\161\241\212\126\362\323
\250\147\126\002
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\313\275\303\150\055\263\313\030\131\323\051\122\350\306\144\211
END
CKA_ISSUER MULTILINE_OCTAL
\060\120\061\013\060\011\006\003\125\004\006\023\002\114\126\061
\050\060\046\006\003\125\004\013\023\037\123\145\162\164\151\146
\151\153\141\143\151\152\141\163\040\160\141\153\141\154\160\157
\152\165\155\165\040\144\141\154\141\061\027\060\025\006\003\125
\004\003\023\016\105\055\115\105\040\123\123\111\040\050\122\103
\101\051
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\056\357\333\373\330\211\075\217\111\034\223\162\376\105
\337\355
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
Certificate "ACEDICOM Root"
Issuer: C=ES,O=EDICOM,OU=PKI,CN=ACEDICOM Root
Serial Number:61:8d:c7:86:3b:01:82:05
Subject: C=ES,O=EDICOM,OU=PKI,CN=ACEDICOM Root
Not Valid Before: Fri Apr 18 16:24:22 2008
Not Valid After: Thu Apr 13 16:24:22 2028
Fingerprint (MD5): 42:81:a0:e2:1c:e3:55:10:de:55:89:42:65:96:22:e6
Fingerprint (SHA1): e0:b4:32:2e:b2:f6:a5:68:b6:54:53:84:48:18:4a:50:36:87:43:84
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ACEDICOM Root"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\104\061\026\060\024\006\003\125\004\003\014\015\101\103\105
\104\111\103\117\115\040\122\157\157\164\061\014\060\012\006\003
\125\004\013\014\003\120\113\111\061\017\060\015\006\003\125\004
\012\014\006\105\104\111\103\117\115\061\013\060\011\006\003\125
\004\006\023\002\105\123
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\104\061\026\060\024\006\003\125\004\003\014\015\101\103\105
\104\111\103\117\115\040\122\157\157\164\061\014\060\012\006\003
\125\004\013\014\003\120\113\111\061\017\060\015\006\003\125\004
\012\014\006\105\104\111\103\117\115\061\013\060\011\006\003\125
\004\006\023\002\105\123
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\141\215\307\206\073\001\202\005
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\265\060\202\003\235\240\003\002\001\002\002\010\141
\215\307\206\073\001\202\005\060\015\006\011\052\206\110\206\367
\015\001\001\005\005\000\060\104\061\026\060\024\006\003\125\004
\003\014\015\101\103\105\104\111\103\117\115\040\122\157\157\164
\061\014\060\012\006\003\125\004\013\014\003\120\113\111\061\017
\060\015\006\003\125\004\012\014\006\105\104\111\103\117\115\061
\013\060\011\006\003\125\004\006\023\002\105\123\060\036\027\015
\060\070\060\064\061\070\061\066\062\064\062\062\132\027\015\062
\070\060\064\061\063\061\066\062\064\062\062\132\060\104\061\026
\060\024\006\003\125\004\003\014\015\101\103\105\104\111\103\117
\115\040\122\157\157\164\061\014\060\012\006\003\125\004\013\014
\003\120\113\111\061\017\060\015\006\003\125\004\012\014\006\105
\104\111\103\117\115\061\013\060\011\006\003\125\004\006\023\002
\105\123\060\202\002\042\060\015\006\011\052\206\110\206\367\015
\001\001\001\005\000\003\202\002\017\000\060\202\002\012\002\202
\002\001\000\377\222\225\341\150\006\166\264\054\310\130\110\312
\375\200\124\051\125\143\044\377\220\145\233\020\165\173\303\152
\333\142\002\001\362\030\206\265\174\132\070\261\344\130\271\373
\323\330\055\237\275\062\067\277\054\025\155\276\265\364\041\322
\023\221\331\007\255\001\005\326\363\275\167\316\137\102\201\012
\371\152\343\203\000\250\053\056\125\023\143\201\312\107\034\173
\134\026\127\172\033\203\140\004\072\076\145\303\315\001\336\336
\244\326\014\272\216\336\331\004\356\027\126\042\233\217\143\375
\115\026\013\267\173\167\214\371\045\265\321\155\231\022\056\117
\032\270\346\352\004\222\256\075\021\271\121\102\075\207\260\061
\205\257\171\132\234\376\347\116\136\222\117\103\374\253\072\255
```

\245\022\046\146\271\342\014\327\230\316\324\130\245\225\100\012  
\267\104\235\023\164\053\302\245\353\042\025\230\020\330\213\305  
\004\237\035\217\140\345\006\033\233\317\271\171\240\075\242\043  
\077\102\077\153\372\034\003\173\060\215\316\154\300\277\346\033  
\137\277\147\270\204\031\325\025\357\173\313\220\066\061\142\311  
\274\002\253\106\137\233\376\032\150\224\064\075\220\216\255\366  
\344\035\011\177\112\210\070\077\276\147\375\064\226\365\035\274  
\060\164\313\070\356\325\154\253\324\374\364\000\267\000\133\205  
\062\026\166\063\351\330\243\231\235\005\000\252\026\346\363\201  
\175\157\175\252\206\155\255\025\164\323\304\242\161\252\364\024  
\175\347\062\270\037\274\325\361\116\275\157\027\002\071\327\016  
\225\102\072\307\000\076\351\046\143\021\352\013\321\112\377\030  
\235\262\327\173\057\072\331\226\373\350\036\222\256\023\125\310  
\331\047\366\334\110\033\260\044\301\205\343\167\235\232\244\363  
\014\021\035\015\310\264\024\356\265\202\127\011\277\040\130\177  
\057\042\043\330\160\313\171\154\311\113\362\251\052\310\374\207  
\053\327\032\120\370\047\350\057\103\343\072\275\330\127\161\375  
\316\246\122\133\371\335\115\355\345\366\157\211\355\273\223\234  
\166\041\165\360\222\114\051\367\057\234\001\056\376\120\106\236  
\144\014\024\263\007\133\305\302\163\154\361\007\134\105\044\024  
\065\256\203\361\152\115\211\172\372\263\330\055\146\360\066\207  
\365\053\123\002\003\001\000\001\243\201\252\060\201\247\060\017  
\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060  
\037\006\003\125\035\043\004\030\060\026\200\024\246\263\341\053  
\053\111\266\327\163\241\252\224\365\001\347\163\145\114\254\120  
\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\206  
\060\035\006\003\125\035\016\004\026\004\024\246\263\341\053\053  
\111\266\327\163\241\252\224\365\001\347\163\145\114\254\120\060  
\104\006\003\125\035\040\004\075\060\073\060\071\006\004\125\035  
\040\000\060\061\060\057\006\010\053\006\001\005\005\007\002\001  
\026\043\150\164\164\160\072\057\057\141\143\145\144\151\143\157  
\155\056\145\144\151\143\157\155\147\162\157\165\160\056\143\157  
\155\057\144\157\143\060\015\006\011\052\206\110\206\367\015\001  
\001\005\005\000\003\202\002\001\000\316\054\013\122\121\142\046  
\175\014\047\203\217\305\366\332\240\150\173\117\222\136\352\244  
\163\062\021\123\104\262\104\313\235\354\017\171\102\263\020\246  
\307\015\235\313\266\372\077\072\174\352\277\210\123\033\074\367  
\202\372\005\065\063\341\065\250\127\300\347\375\215\117\077\223  
\062\117\170\146\003\167\007\130\351\225\310\176\076\320\171\000  
\214\362\033\121\063\233\274\224\351\072\173\156\122\055\062\236  
\043\244\105\373\266\056\023\260\213\030\261\335\316\325\035\247  
\102\177\125\276\373\133\273\107\324\374\044\315\004\256\226\005  
\025\326\254\316\060\363\312\013\305\272\342\042\340\246\255\042  
\344\002\356\164\021\177\114\377\170\035\065\332\346\002\064\353  
\030\022\141\167\006\011\026\143\352\030\255\242\207\037\362\307  
\200\011\011\165\116\020\250\217\075\206\270\165\021\300\044\142  
\212\226\173\112\105\351\354\131\305\276\153\203\346\341\350\254  
\265\060\036\376\005\007\200\371\341\043\015\120\217\005\230\377



```
\054\137\350\073\266\255\317\201\265\041\207\312\010\052\043\047
\060\040\053\317\355\224\133\254\262\172\322\307\050\241\212\013
\233\115\112\054\155\205\077\011\162\074\147\342\331\334\007\272
\353\145\173\132\001\143\326\220\133\117\027\146\075\177\013\031
\243\223\143\020\122\052\237\024\026\130\342\334\245\364\241\026
\213\016\221\213\201\312\233\131\372\330\153\221\007\145\125\137
\122\037\257\072\373\220\335\151\245\133\234\155\016\054\266\372
\316\254\245\174\062\112\147\100\334\060\064\043\335\327\004\043
\146\360\374\125\200\247\373\146\031\202\065\147\142\160\071\136
\157\307\352\220\100\104\010\036\270\262\326\333\356\131\247\015
\030\171\064\274\124\030\136\123\312\064\121\355\105\012\346\216
\307\202\066\076\247\070\143\251\060\054\027\020\140\222\237\125
\207\022\131\020\302\017\147\151\021\314\116\036\176\112\232\255
\257\100\250\165\254\126\220\164\270\240\234\245\171\157\334\351
\032\310\151\005\351\272\372\003\263\174\344\340\116\302\316\235
\350\266\106\015\156\176\127\072\147\224\302\313\037\234\167\112
\147\116\151\206\103\223\070\373\266\333\117\203\221\324\140\176
\113\076\053\070\007\125\230\136\244
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
Trust for "ACEDICOM Root"
Issuer: C=ES,O=EDICOM,OU=PKI,CN=ACEDICOM Root
Serial Number:61:8d:c7:86:3b:01:82:05
Subject: C=ES,O=EDICOM,OU=PKI,CN=ACEDICOM Root
Not Valid Before: Fri Apr 18 16:24:22 2008
Not Valid After: Thu Apr 13 16:24:22 2028
Fingerprint (MD5): 42:81:a0:e2:1c:e3:55:10:de:55:89:42:65:96:22:e6
Fingerprint (SHA1): e0:b4:32:2e:b2:f6:a5:68:b6:54:53:84:48:18:4a:50:36:87:43:84
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ACEDICOM Root"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\340\264\062\056\262\366\245\150\266\124\123\204\110\030\112\120
\066\207\103\204
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\102\201\240\342\034\343\125\020\336\125\211\102\145\226\042\346
```

END

```
CKA_ISSUER MULTILINE_OCTAL
\060\104\061\026\060\024\006\003\125\004\003\014\015\101\103\105
\104\111\103\117\115\040\122\157\157\164\061\014\060\012\006\003
\125\004\013\014\003\120\113\111\061\017\060\015\006\003\125\004
```

\012\014\006\105\104\111\103\117\115\061\013\060\011\006\003\125  
\004\006\023\002\105\123

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\010\141\215\307\206\073\001\202\005

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "Autoridad Certificadora Raiz de la Secretaria de Economia"

# Issuer: 1.2.840.113549.1.9.1=acrse@economia.gob.mx,O=Secretaria de Economia,OU=Direccion General de  
Normatividad Mercantil,CN=Autoridad Certificadora Raiz de la Secretaria de Economia,STREET=Insurgentes Sur  
1940,2.5.4.17=01030,C=MX,ST=Distrito Federal,L=Alvaro Obregon

# Serial Number: 1 (0x1)

# Subject: 1.2.840.113549.1.9.1=acrse@economia.gob.mx,O=Secretaria de Economia,OU=Direccion General de  
Normatividad Mercantil,CN=Autoridad Certificadora Raiz de la Secretaria de Economia,STREET=Insurgentes Sur  
1940,2.5.4.17=01030,C=MX,ST=Distrito Federal,L=Alvaro Obregon

# Not Valid Before: Sun May 08 00:00:00 2005

# Not Valid After: Thu May 08 00:00:00 2025

# Fingerprint (MD5): 07:61:92:04:7e:a6:b9:cd:5e:6b:00:7a:e3:bf:1d:04

# Fingerprint (SHA1): 34:d4:99:42:6f:9f:c2:bb:27:b0:75:ba:b6:82:aa:e5:ef:fc:ba:74

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Autoridad Certificadora Raiz de la Secretaria de Economia"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\202\001\061\061\027\060\025\006\003\125\004\007\023\016\101  
\154\166\141\162\157\040\117\142\162\145\147\157\156\061\031\060  
\027\006\003\125\004\010\023\020\104\151\163\164\162\151\164\157  
\040\106\145\144\145\162\141\154\061\013\060\011\006\003\125\004  
\006\023\002\115\130\061\016\060\014\006\003\125\004\021\023\005  
\060\061\060\063\060\061\035\060\033\006\003\125\004\011\023\024  
\111\156\163\165\162\147\145\156\164\145\163\040\123\165\162\040  
\061\071\064\060\061\102\060\100\006\003\125\004\003\023\071\101  
\165\164\157\162\151\144\141\144\040\103\145\162\164\151\146\151  
\143\141\144\157\162\141\040\122\141\151\172\040\144\145\040\154  
\141\040\123\145\143\162\145\164\141\162\151\141\040\144\145\040  
\105\143\157\156\157\155\151\141\061\064\060\062\006\003\125\004  
\013\023\053\104\151\162\145\143\143\151\157\156\040\107\145\156  
\145\162\141\154\040\144\145\040\116\157\162\155\141\164\151\166  
\151\144\141\144\040\115\145\162\143\141\156\164\151\154\061\037  
\060\035\006\003\125\004\012\023\026\123\145\143\162\145\164\141  
\162\151\141\040\144\145\040\105\143\157\156\157\155\151\141\061

\044\060\042\006\011\052\206\110\206\367\015\001\011\001\026\025  
\141\143\162\163\145\100\145\143\157\156\157\155\151\141\056\147  
\157\142\056\155\170

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\202\001\061\061\027\060\025\006\003\125\004\007\023\016\101  
\154\166\141\162\157\040\117\142\162\145\147\157\156\061\031\060  
\027\006\003\125\004\010\023\020\104\151\163\164\162\151\164\157  
\040\106\145\144\145\162\141\154\061\013\060\011\006\003\125\004  
\006\023\002\115\130\061\016\060\014\006\003\125\004\021\023\005  
\060\061\060\063\060\061\035\060\033\006\003\125\004\011\023\024  
\111\156\163\165\162\147\145\156\164\145\163\040\123\165\162\040  
\061\071\064\060\061\102\060\100\006\003\125\004\003\023\071\101  
\165\164\157\162\151\144\141\144\040\103\145\162\164\151\146\151  
\143\141\144\157\162\141\040\122\141\151\172\040\144\145\040\154  
\141\040\123\145\143\162\145\164\141\162\151\141\040\144\145\040  
\105\143\157\156\157\155\151\141\061\064\060\062\006\003\125\004  
\013\023\053\104\151\162\145\143\143\151\157\156\040\107\145\156  
\145\162\141\154\040\144\145\040\116\157\162\155\141\164\151\166  
\151\144\141\144\040\115\145\162\143\141\156\164\151\154\061\037  
\060\035\006\003\125\004\012\023\026\123\145\143\162\145\164\141  
\162\151\141\040\144\145\040\105\143\157\156\157\155\151\141\061  
\044\060\042\006\011\052\206\110\206\367\015\001\011\001\026\025  
\141\143\162\163\145\100\145\143\157\156\157\155\151\141\056\147  
\157\142\056\155\170

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\001

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\224\060\202\004\174\240\003\002\001\002\002\001\001  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060  
\202\001\061\061\027\060\025\006\003\125\004\007\023\016\101\154  
\166\141\162\157\040\117\142\162\145\147\157\156\061\031\060\027  
\006\003\125\004\010\023\020\104\151\163\164\162\151\164\157\040  
\106\145\144\145\162\141\154\061\013\060\011\006\003\125\004\006  
\023\002\115\130\061\016\060\014\006\003\125\004\021\023\005\060  
\061\060\063\060\061\035\060\033\006\003\125\004\011\023\024\111  
\156\163\165\162\147\145\156\164\145\163\040\123\165\162\040\061  
\071\064\060\061\102\060\100\006\003\125\004\003\023\071\101\165  
\164\157\162\151\144\141\144\040\103\145\162\164\151\146\151\143  
\141\144\157\162\141\040\122\141\151\172\040\144\145\040\154\141  
\040\123\145\143\162\145\164\141\162\151\141\040\144\145\040\105  
\143\157\156\157\155\151\141\061\064\060\062\006\003\125\004\013  
\023\053\104\151\162\145\143\143\151\157\156\040\107\145\156\145  
\162\141\154\040\144\145\040\116\157\162\155\141\164\151\166\151  
\144\141\144\040\115\145\162\143\141\156\164\151\154\061\037\060

\035\006\003\125\004\012\023\026\123\145\143\162\145\164\141\162  
\151\141\040\144\145\040\105\143\157\156\157\155\151\141\061\044  
\060\042\006\011\052\206\110\206\367\015\001\011\001\026\025\141  
\143\162\163\145\100\145\143\157\156\157\155\151\141\056\147\157  
\142\056\155\170\060\036\027\015\060\065\060\065\060\070\060\060  
\060\060\060\060\132\027\015\062\065\060\065\060\070\060\060\060  
\060\060\060\132\060\202\001\061\061\027\060\025\006\003\125\004  
\007\023\016\101\154\166\141\162\157\040\117\142\162\145\147\157  
\156\061\031\060\027\006\003\125\004\010\023\020\104\151\163\164  
\162\151\164\157\040\106\145\144\145\162\141\154\061\013\060\011  
\006\003\125\004\006\023\002\115\130\061\016\060\014\006\003\125  
\004\021\023\005\060\061\060\063\060\061\035\060\033\006\003\125  
\004\011\023\024\111\156\163\165\162\147\145\156\164\145\163\040  
\123\165\162\040\061\071\064\060\061\102\060\100\006\003\125\004  
\003\023\071\101\165\164\157\162\151\144\141\144\040\103\145\162  
\164\151\146\151\143\141\144\157\162\141\040\122\141\151\172\040  
\144\145\040\154\141\040\123\145\143\162\145\164\141\162\151\141  
\040\144\145\040\105\143\157\156\157\155\151\141\061\064\060\062  
\006\003\125\004\013\023\053\104\151\162\145\143\143\151\157\156  
\040\107\145\156\145\162\141\154\040\144\145\040\116\157\162\155  
\141\164\151\166\151\144\141\144\040\115\145\162\143\141\156\164  
\151\154\061\037\060\035\006\003\125\004\012\023\026\123\145\143  
\162\145\164\141\162\151\141\040\144\145\040\105\143\157\156\157  
\155\151\141\061\044\060\042\006\011\052\206\110\206\367\015\001  
\011\001\026\025\141\143\162\163\145\100\145\143\157\156\157\155  
\151\141\056\147\157\142\056\155\170\060\202\001\042\060\015\006  
\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017  
\000\060\202\001\012\002\202\001\001\000\301\144\240\364\347\122  
\160\262\352\223\023\364\065\072\037\352\072\034\305\033\213\130  
\341\226\326\002\101\136\216\205\100\377\101\146\100\123\374\230  
\265\321\062\062\227\147\100\200\235\356\040\077\016\124\373\102  
\007\373\167\032\231\330\206\364\034\052\210\045\363\351\104\243  
\116\376\007\276\261\310\357\074\215\207\340\036\312\111\020\073  
\050\357\044\121\241\374\210\027\112\347\034\310\124\147\143\350  
\152\061\346\103\154\366\100\021\206\304\126\356\275\311\035\246  
\106\074\036\106\302\202\215\056\251\350\356\166\012\103\340\162  
\115\214\364\305\006\372\054\001\000\063\140\316\070\160\064\153  
\027\032\353\172\144\141\247\223\244\145\152\327\043\307\166\172  
\224\121\013\354\236\250\317\073\242\120\062\034\102\275\143\341  
\207\313\271\205\110\016\300\325\130\266\366\316\113\362\007\317  
\343\004\325\037\302\326\243\156\243\273\266\267\156\304\361\242  
\037\026\274\266\055\260\357\364\132\233\051\215\274\341\374\007  
\133\036\011\063\202\170\314\100\155\161\263\143\023\057\323\114  
\066\254\071\117\306\301\260\266\365\205\002\003\001\000\001\243  
\201\262\060\201\257\060\063\006\003\125\035\037\004\054\060\052  
\060\050\240\046\240\044\206\042\150\164\164\160\072\057\057\141  
\143\056\145\143\157\156\157\155\151\141\056\147\157\142\056\155  
\170\057\154\141\163\164\056\143\162\154\060\107\006\003\125\035

\040\004\100\060\076\060\074\006\010\140\203\144\145\012\202\074  
\001\060\060\060\056\006\010\053\006\001\005\005\007\002\001\026  
\042\150\164\164\160\072\057\057\141\143\056\145\143\157\156\157  
\155\151\141\056\147\157\142\056\155\170\057\143\160\163\056\150  
\164\155\154\060\017\006\003\125\035\023\001\001\377\004\005\060  
\003\001\001\377\060\013\006\003\125\035\017\004\004\003\002\001  
\006\060\021\006\011\140\206\110\001\206\370\102\001\001\004\004  
\003\002\000\007\060\015\006\011\052\206\110\206\367\015\001\001  
\005\005\000\003\202\001\001\000\114\052\170\123\004\226\163\140  
\253\065\254\300\304\343\347\310\160\245\051\057\207\030\345\250  
\202\336\007\325\010\364\317\236\075\236\374\112\054\026\174\237  
\242\235\145\020\314\301\033\233\152\147\332\262\263\035\377\315  
\144\172\070\143\255\110\375\363\162\341\372\237\273\127\335\277  
\314\302\124\330\225\074\146\327\153\006\272\257\251\340\155\010  
\357\244\266\220\075\014\156\040\027\247\226\247\174\150\112\234  
\230\304\007\157\301\002\142\221\070\233\235\343\212\171\123\235  
\237\044\166\045\366\255\050\126\006\252\357\007\254\272\366\154  
\344\045\061\175\210\200\072\170\106\370\171\341\070\340\023\347  
\141\051\107\363\313\024\000\323\332\342\335\355\163\337\113\362  
\143\344\046\330\165\320\115\103\024\220\026\224\107\001\377\241  
\131\113\344\166\233\131\003\336\326\027\366\173\327\134\370\351  
\343\157\310\116\340\107\046\261\342\234\174\112\061\345\144\021  
\340\260\137\332\221\066\110\037\372\011\212\145\150\365\016\302  
\237\357\270\152\317\167\376\022\355\066\332\021\066\255\031\152  
\302\324\216\122\327\150\357\061

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Autoridad Certificadora Raiz de la Secretaria de Economia"

# Issuer: 1.2.840.113549.1.9.1=acrse@economia.gob.mx,O=Secretaria de Economia,OU=Direccion General de  
Normatividad Mercantil,CN=Autoridad Certificadora Raiz de la Secretaria de Economia,STREET=Insurgentes Sur  
1940,2.5.4.17=01030,C=MX,ST=Distrito Federal,L=Alvaro Obregon

# Serial Number: 1 (0x1)

# Subject: 1.2.840.113549.1.9.1=acrse@economia.gob.mx,O=Secretaria de Economia,OU=Direccion General de  
Normatividad Mercantil,CN=Autoridad Certificadora Raiz de la Secretaria de Economia,STREET=Insurgentes Sur  
1940,2.5.4.17=01030,C=MX,ST=Distrito Federal,L=Alvaro Obregon

# Not Valid Before: Sun May 08 00:00:00 2005

# Not Valid After: Thu May 08 00:00:00 2025

# Fingerprint (MD5): 07:61:92:04:7e:a6:b9:cd:5e:6b:00:7a:e3:bf:1d:04

# Fingerprint (SHA1): 34:d4:99:42:6f:9f:c2:bb:27:b0:75:ba:b6:82:aa:e5:ef:fc:ba:74

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Autoridad Certificadora Raiz de la Secretaria de Economia"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL  
\064\324\231\102\157\237\302\273\047\260\165\272\266\202\252\345  
\357\374\272\164

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL  
\007\141\222\004\176\246\271\315\136\153\000\172\343\277\035\004

END

CKA\_ISSUER MULTILINE\_OCTAL  
\060\202\001\061\061\027\060\025\006\003\125\004\007\023\016\101  
\154\166\141\162\157\040\117\142\162\145\147\157\156\061\031\060  
\027\006\003\125\004\010\023\020\104\151\163\164\162\151\164\157  
\040\106\145\144\145\162\141\154\061\013\060\011\006\003\125\004  
\006\023\002\115\130\061\016\060\014\006\003\125\004\021\023\005  
\060\061\060\063\060\061\035\060\033\006\003\125\004\011\023\024  
\111\156\163\165\162\147\145\156\164\145\163\040\123\165\162\040  
\061\071\064\060\061\102\060\100\006\003\125\004\003\023\071\101  
\165\164\157\162\151\144\141\144\040\103\145\162\164\151\146\151  
\143\141\144\157\162\141\040\122\141\151\172\040\144\145\040\154  
\141\040\123\145\143\162\145\164\141\162\151\141\040\144\145\040  
\105\143\157\156\157\155\151\141\061\064\060\062\006\003\125\004  
\013\023\053\104\151\162\145\143\143\151\157\156\040\107\145\156  
\145\162\141\154\040\144\145\040\116\157\162\155\141\164\151\166  
\151\144\141\144\040\115\145\162\143\141\156\164\151\154\061\037  
\060\035\006\003\125\004\012\023\026\123\145\143\162\145\164\141  
\162\151\141\040\144\145\040\105\143\157\156\157\155\151\141\061  
\044\060\042\006\011\052\206\110\206\367\015\001\011\001\026\025  
\141\143\162\163\145\100\145\143\157\156\157\155\151\141\056\147  
\157\142\056\155\170

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL  
\002\001\001

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Certificate "Correo Uruguayo - Root CA"  
# Issuer: CN=Correo Uruguayo - Root CA,OU=SERVICIOS ELECTRONICOS,O=ADMINISTRACION  
NACIONAL DE CORREOS,C=UY  
# Serial Number:ca:22:79:08:23:2a:f0:f5:82:b8:85:d3:63:dd:f1  
# Subject: CN=Correo Uruguayo - Root CA,OU=SERVICIOS ELECTRONICOS,O=ADMINISTRACION  
NACIONAL DE CORREOS,C=UY  
# Not Valid Before: Mon Jul 14 16:52:15 2008  
# Not Valid After: Tue Dec 31 02:59:59 2030  
# Fingerprint (MD5): 24:6d:ab:d2:f2:ea:4a:66:ae:5b:bc:ae:50:ad:6e:56  
# Fingerprint (SHA1): f9:dd:19:26:6b:20:43:f1:fe:4b:3d:cb:01:90:af:f1:1f:31:a6:9d

```

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Correo Uruguayo - Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\177\061\013\060\011\006\003\125\004\006\023\002\125\131\061
\053\060\051\006\003\125\004\012\014\042\101\104\115\111\116\111
\123\124\122\101\103\111\117\116\040\116\101\103\111\117\116\101
\114\040\104\105\040\103\117\122\122\105\117\123\061\037\060\035
\006\003\125\004\013\014\026\123\105\122\126\111\103\111\117\123
\040\105\114\105\103\124\122\117\116\111\103\117\123\061\042\060
\040\006\003\125\004\003\014\031\103\157\162\162\145\157\040\125
\162\165\147\165\141\171\157\040\055\040\122\157\157\164\040\103
\101
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\177\061\013\060\011\006\003\125\004\006\023\002\125\131\061
\053\060\051\006\003\125\004\012\014\042\101\104\115\111\116\111
\123\124\122\101\103\111\117\116\040\116\101\103\111\117\116\101
\114\040\104\105\040\103\117\122\122\105\117\123\061\037\060\035
\006\003\125\004\013\014\026\123\105\122\126\111\103\111\117\123
\040\105\114\105\103\124\122\117\116\111\103\117\123\061\042\060
\040\006\003\125\004\003\014\031\103\157\162\162\145\157\040\125
\162\165\147\165\141\171\157\040\055\040\122\157\157\164\040\103
\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\000\312\042\171\010\043\052\360\365\202\270\205\323\143
\335\361
END
CKA_VALUE MULTILINE_OCTAL
\060\202\006\032\060\202\004\002\240\003\002\001\002\002\020\000
\312\042\171\010\043\052\360\365\202\270\205\323\143\335\361\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\177
\061\013\060\011\006\003\125\004\006\023\002\125\131\061\053\060
\051\006\003\125\004\012\014\042\101\104\115\111\116\111\123\124
\122\101\103\111\117\116\040\116\101\103\111\117\116\101\114\040
\104\105\040\103\117\122\122\105\117\123\061\037\060\035\006\003
\125\004\013\014\026\123\105\122\126\111\103\111\117\123\040\105
\114\105\103\124\122\117\116\111\103\117\123\061\042\060\040\006
\003\125\004\003\014\031\103\157\162\162\145\157\040\125\162\165
\147\165\141\171\157\040\055\040\122\157\157\164\040\103\101\060
\036\027\015\060\070\060\067\061\064\061\066\065\062\061\065\132
\027\015\063\060\061\062\063\061\060\062\065\071\065\071\132\060
\177\061\013\060\011\006\003\125\004\006\023\002\125\131\061\053

```

\060\051\006\003\125\004\012\014\042\101\104\115\111\116\111\123  
\124\122\101\103\111\117\116\040\116\101\103\111\117\116\101\114  
\040\104\105\040\103\117\122\122\105\117\123\061\037\060\035\006  
\003\125\004\013\014\026\123\105\122\126\111\103\111\117\123\040  
\105\114\105\103\124\122\117\116\111\103\117\123\061\042\060\040  
\006\003\125\004\003\014\031\103\157\162\162\145\157\040\125\162  
\165\147\165\141\171\157\040\055\040\122\157\157\164\040\103\101  
\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001  
\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001  
\000\261\075\322\247\045\160\227\203\170\016\327\062\311\146\016  
\170\043\344\052\033\354\303\357\123\205\203\273\312\317\176\352  
\123\231\155\047\125\310\321\070\041\100\156\111\115\303\075\366  
\011\053\006\031\103\251\230\311\001\116\364\252\200\060\007\125  
\363\365\267\175\231\267\163\205\325\034\145\126\154\015\062\233  
\010\016\064\141\052\100\011\204\067\303\146\355\015\114\234\014  
\170\100\072\354\355\253\314\244\204\362\165\061\225\100\250\252  
\273\223\265\167\230\154\362\310\340\041\132\043\344\102\247\223  
\310\250\035\070\316\244\032\100\100\277\074\223\220\233\137\326  
\224\301\042\133\106\327\305\000\025\325\217\306\367\336\013\257  
\156\213\005\217\133\200\225\016\243\275\223\314\220\362\175\343  
\110\176\262\315\007\075\033\355\024\220\164\363\335\064\037\174  
\344\003\131\361\055\315\340\243\240\073\041\056\134\256\254\010  
\006\120\025\061\065\356\137\371\037\015\064\245\200\156\142\162  
\117\343\041\272\070\100\135\137\333\150\052\134\064\306\010\073  
\366\174\056\250\215\304\267\246\255\331\233\277\031\101\016\110  
\071\011\146\156\015\064\001\305\273\007\021\043\244\332\376\140  
\226\050\107\334\217\147\233\023\257\175\171\016\170\315\300\214  
\057\273\041\054\374\164\026\036\336\300\062\235\372\170\072\206  
\272\076\311\170\012\000\321\344\340\311\022\342\133\334\353\273  
\200\232\062\065\253\360\060\303\016\110\204\057\215\010\012\366  
\054\214\115\062\200\105\125\010\333\315\015\250\277\010\172\270  
\347\150\135\232\224\211\225\274\374\232\216\270\177\072\330\154  
\325\364\030\254\151\342\244\301\013\263\037\243\202\237\363\212  
\074\205\100\070\011\372\302\005\076\341\234\211\372\303\005\154  
\010\217\135\121\364\177\273\304\363\154\001\275\075\117\304\031  
\213\071\331\312\314\351\171\210\004\125\253\155\270\332\026\105  
\145\071\025\005\030\373\013\054\163\001\355\224\122\345\175\014  
\001\073\011\240\115\361\075\010\201\146\064\066\027\104\360\147  
\363\133\362\005\266\041\230\130\331\364\241\067\331\157\346\357  
\126\304\373\277\126\142\002\254\060\060\266\002\326\322\026\374  
\116\352\207\103\232\150\135\210\243\221\106\050\053\277\071\025  
\025\002\003\001\000\001\243\201\221\060\201\216\060\017\006\003  
\125\035\023\001\001\377\004\005\060\003\001\001\377\060\016\006  
\003\125\035\017\001\001\377\004\004\003\002\001\006\060\035\006  
\003\125\035\016\004\026\004\024\175\273\151\353\210\141\341\100  
\317\107\043\144\000\206\242\146\153\334\204\225\060\114\006\003  
\125\035\040\004\105\060\103\060\101\006\004\125\035\040\000\060  
\071\060\067\006\010\053\006\001\005\005\007\002\001\026\053\150



\164\164\160\072\057\057\167\167\167\056\143\157\162\162\145\157  
\056\143\157\155\056\165\171\057\143\157\162\162\145\157\143\145  
\162\164\057\143\160\163\056\160\144\146\060\015\006\011\052\206  
\110\206\367\015\001\001\005\005\000\003\202\002\001\000\126\337  
\023\211\276\142\267\016\201\041\163\244\324\067\312\355\267\057  
\225\164\327\211\370\113\107\201\356\147\355\270\051\337\041\240  
\374\124\147\147\310\127\054\133\241\012\165\170\041\041\312\240  
\250\337\153\234\331\066\002\215\270\001\301\157\216\173\154\311  
\244\262\305\106\251\312\114\002\201\372\243\173\235\075\110\346  
\312\100\146\322\104\235\166\340\125\271\246\234\247\321\103\330  
\365\240\264\235\370\367\345\246\246\102\363\002\062\131\106\162  
\053\024\354\136\145\325\121\201\170\316\252\057\215\226\211\171  
\152\373\017\310\133\317\264\256\220\266\137\343\174\142\154\267  
\246\377\220\201\265\230\221\163\022\060\257\307\350\201\002\150  
\163\051\273\130\165\075\267\326\103\325\256\115\362\102\271\360  
\337\332\061\000\023\332\341\263\266\006\213\133\375\311\230\270  
\242\023\321\272\217\301\212\032\236\017\377\202\276\004\202\345  
\053\223\076\036\265\242\014\033\306\032\260\163\211\166\203\274  
\216\073\273\027\155\024\303\213\276\175\025\046\265\251\234\027  
\172\120\172\055\353\351\231\224\256\230\020\275\356\052\135\135  
\326\216\064\133\254\036\207\140\153\230\307\207\217\323\234\262  
\150\005\111\007\371\251\061\146\234\376\277\247\131\350\054\360  
\066\324\362\250\031\202\300\236\247\071\371\261\230\064\243\037  
\372\315\311\031\055\170\336\267\375\142\360\223\243\376\000\133  
\326\012\344\363\176\174\227\050\341\005\354\005\064\105\023\377  
\051\023\141\212\047\117\333\270\322\222\041\047\265\210\167\147  
\250\176\317\044\074\207\010\004\063\163\217\013\266\206\370\317  
\357\262\246\044\036\013\221\221\000\120\026\062\022\330\011\045  
\332\143\116\335\333\055\327\347\004\153\343\143\037\251\376\251  
\001\143\304\312\114\024\150\203\274\005\254\131\026\373\156\241  
\007\157\273\113\276\155\230\110\166\045\173\112\021\226\124\010  
\254\251\363\067\253\203\303\321\315\201\230\300\345\100\065\270  
\237\221\347\157\346\113\040\026\212\123\173\254\072\321\230\065  
\124\320\324\277\256\176\232\113\036\351\165\243\045\260\073\347  
\145\277\117\225\364\035\275\304\272\311\115\201\121\302\077\132  
\331\022\364\041\033\326\225\352\075\220\376\251\223\342

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Correo Uruguayo - Root CA"

# Issuer: CN=Correo Uruguayo - Root CA,OU=SERVICIOS ELECTRONICOS,O=ADMINISTRACION  
NACIONAL DE CORREOS,C=UY

# Serial Number:ca:22:79:08:23:2a:f0:f5:82:b8:85:d3:63:dd:f1

# Subject: CN=Correo Uruguayo - Root CA,OU=SERVICIOS ELECTRONICOS,O=ADMINISTRACION  
NACIONAL DE CORREOS,C=UY

```
Not Valid Before: Mon Jul 14 16:52:15 2008
Not Valid After: Tue Dec 31 02:59:59 2030
Fingerprint (MD5): 24:6d:ab:d2:f2:ea:4a:66:ae:5b:bc:ae:50:ad:6e:56
Fingerprint (SHA1): f9:dd:19:26:6b:20:43:f1:fe:4b:3d:cb:01:90:af:f1:1f:31:a6:9d
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Correo Uruguayo - Root CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\371\335\031\046\153\040\103\361\376\113\075\313\001\220\257\361
\037\061\246\235
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\044\155\253\322\362\352\112\146\256\133\274\256\120\255\156\126
END
CKA_ISSUER MULTILINE_OCTAL
\060\177\061\013\060\011\006\003\125\004\006\023\002\125\131\061
\053\060\051\006\003\125\004\012\014\042\101\104\115\111\116\111
\123\124\122\101\103\111\117\116\040\116\101\103\111\117\116\101
\114\040\104\105\040\103\117\122\122\105\117\123\061\037\060\035
\006\003\125\004\013\014\026\123\105\122\126\111\103\111\117\123
\040\105\114\105\103\124\122\117\116\111\103\117\123\061\042\060
\040\006\003\125\004\003\014\031\103\157\162\162\145\157\040\125
\162\165\147\165\141\171\157\040\055\040\122\157\157\164\040\103
\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\000\312\042\171\010\043\052\360\365\202\270\205\323\143
\335\361
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
Certificate "CNNIC ROOT"
Issuer: CN=CNNIC ROOT,O=CNNIC,C=CN
Serial Number:49:33:00:01
Subject: CN=CNNIC ROOT,O=CNNIC,C=CN
Not Valid Before: Mon Apr 16 07:09:14 2007
Not Valid After: Fri Apr 16 07:09:14 2027
Fingerprint (MD5): 21:bc:82:ab:49:c4:13:3b:4b:b2:2b:5c:6b:90:9c:19
Fingerprint (SHA1): 8b:af:4c:9b:1d:f0:2a:92:f7:da:12:8e:b9:1b:ac:f4:98:60:4b:6f
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "CNNIC ROOT"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\062\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\016\060\014\006\003\125\004\012\023\005\103\116\116\111\103\061
\023\060\021\006\003\125\004\003\023\012\103\116\116\111\103\040
\122\117\117\124
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\062\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\016\060\014\006\003\125\004\012\023\005\103\116\116\111\103\061
\023\060\021\006\003\125\004\003\023\012\103\116\116\111\103\040
\122\117\117\124
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\004\111\063\000\001
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\125\060\202\002\075\240\003\002\001\002\002\004\111
\063\000\001\060\015\006\011\052\206\110\206\367\015\001\001\005
\005\000\060\062\061\013\060\011\006\003\125\004\006\023\002\103
\116\061\016\060\014\006\003\125\004\012\023\005\103\116\116\111
\103\061\023\060\021\006\003\125\004\003\023\012\103\116\116\111
\103\040\122\117\117\124\060\036\027\015\060\067\060\064\061\066
\060\067\060\071\061\064\132\027\015\062\067\060\064\061\066\060
\067\060\071\061\064\132\060\062\061\013\060\011\006\003\125\004
\006\023\002\103\116\061\016\060\014\006\003\125\004\012\023\005
\103\116\116\111\103\061\023\060\021\006\003\125\004\003\023\012
\103\116\116\111\103\040\122\117\117\124\060\202\001\042\060\015
\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001
\017\000\060\202\001\012\002\202\001\001\000\323\065\367\077\163
\167\255\350\133\163\027\302\321\157\355\125\274\156\352\350\244
\171\262\154\303\243\357\341\237\261\073\110\205\365\232\134\041
\042\020\054\305\202\316\332\343\232\156\067\341\207\054\334\271
\014\132\272\210\125\337\375\252\333\037\061\352\001\361\337\071
\001\301\023\375\110\122\041\304\125\337\332\330\263\124\166\272
\164\261\267\175\327\300\350\366\131\305\115\310\275\255\037\024
\332\337\130\104\045\062\031\052\307\176\176\216\256\070\260\060
\173\107\162\011\061\360\060\333\303\033\166\051\273\151\166\116
\127\371\033\144\242\223\126\267\157\231\156\333\012\004\234\021
\343\200\037\313\143\224\020\012\251\341\144\202\061\371\214\047
\355\246\231\000\366\160\223\030\370\241\064\206\243\335\172\302
\030\171\366\172\145\065\317\220\353\275\063\223\237\123\253\163
\073\346\233\064\040\057\035\357\251\035\143\032\240\200\333\003
\057\371\046\032\206\322\215\273\251\276\122\072\207\147\110\015
\277\264\240\330\046\276\043\137\163\067\177\046\346\222\004\243
```

\177\317\040\247\267\363\072\312\313\231\313\002\003\001\000\001  
\243\163\060\161\060\021\006\011\140\206\110\001\206\370\102\001  
\001\004\004\003\002\000\007\060\037\006\003\125\035\043\004\030  
\060\026\200\024\145\362\061\255\052\367\367\335\122\226\012\307  
\002\301\016\357\246\325\073\021\060\017\006\003\125\035\023\001  
\001\377\004\005\060\003\001\001\377\060\013\006\003\125\035\017  
\004\004\003\002\001\376\060\035\006\003\125\035\016\004\026\004  
\024\145\362\061\255\052\367\367\335\122\226\012\307\002\301\016  
\357\246\325\073\021\060\015\006\011\052\206\110\206\367\015\001  
\001\005\005\000\003\202\001\001\000\113\065\356\314\344\256\277  
\303\156\255\237\225\073\113\077\133\036\337\127\051\242\131\312  
\070\342\271\032\377\236\346\156\062\335\036\256\352\065\267\365  
\223\221\116\332\102\341\303\027\140\120\362\321\134\046\271\202  
\267\352\155\344\234\204\347\003\171\027\257\230\075\224\333\307  
\272\000\347\270\277\001\127\301\167\105\062\014\073\361\264\034  
\010\260\375\121\240\241\335\232\035\023\066\232\155\267\307\074  
\271\341\305\331\027\372\203\325\075\025\240\074\273\036\013\342  
\310\220\077\250\206\014\374\371\213\136\205\313\117\133\113\142  
\021\107\305\105\174\005\057\101\261\236\020\151\033\231\226\340  
\125\171\373\116\206\231\270\224\332\206\070\152\223\243\347\313  
\156\345\337\352\041\125\211\234\175\175\177\230\365\000\211\356  
\343\204\300\134\226\265\305\106\352\106\340\205\125\266\033\311  
\022\326\301\315\315\200\363\002\001\074\310\151\313\105\110\143  
\330\224\320\354\205\016\073\116\021\145\364\202\214\246\075\256  
\056\042\224\011\310\134\352\074\201\135\026\052\003\227\026\125  
\011\333\212\101\202\236\146\233\021

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "CNNIC ROOT"  
# Issuer: CN=CNNIC ROOT,O=CNNIC,C=CN  
# Serial Number:49:33:00:01  
# Subject: CN=CNNIC ROOT,O=CNNIC,C=CN  
# Not Valid Before: Mon Apr 16 07:09:14 2007  
# Not Valid After: Fri Apr 16 07:09:14 2027  
# Fingerprint (MD5): 21:bc:82:ab:49:c4:13:3b:4b:b2:2b:5c:6b:90:9c:19  
# Fingerprint (SHA1): 8b:af:4c:9b:1d:f0:2a:92:f7:da:12:8e:b9:1b:ac:f4:98:60:4b:6f  
CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "CNNIC ROOT"  
CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL  
\213\257\114\233\035\360\052\222\367\332\022\216\271\033\254\364  
\230\140\113\157

```

END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\041\274\202\253\111\304\023\073\113\262\053\134\153\220\234\031
END
CKA_ISSUER MULTILINE_OCTAL
\060\062\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\016\060\014\006\003\125\004\012\023\005\103\116\116\111\103\061
\023\060\021\006\003\125\004\003\023\012\103\116\116\111\103\040
\122\117\117\124
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\004\111\063\000\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "Common Policy"
Issuer: CN=Common Policy,OU=FBCA,O=U.S. Government,C=us
Serial Number:29:36:47:aa:e3:8a:ac:86:4a:23:56:f2:ca:b7:61:af
Subject: CN=Common Policy,OU=FBCA,O=U.S. Government,C=us
Not Valid Before: Mon Oct 15 15:58:00 2007
Not Valid After: Fri Oct 15 16:08:00 2027
Fingerprint (MD5): f0:58:c5:03:82:67:17:ab:8f:da:03:10:27:8e:19:c2
Fingerprint (SHA1): cb:44:a0:97:85:7c:45:fa:18:7e:d9:52:08:6c:b9:84:1f:2d:51:b5
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Common Policy"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\116\061\013\060\011\006\003\125\004\006\023\002\165\163\061
\030\060\026\006\003\125\004\012\023\017\125\056\123\056\040\107
\157\166\145\162\156\155\145\156\164\061\015\060\013\006\003\125
\004\013\023\004\106\102\103\101\061\026\060\024\006\003\125\004
\003\023\015\103\157\155\155\157\156\040\120\157\154\151\143\171
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\116\061\013\060\011\006\003\125\004\006\023\002\165\163\061
\030\060\026\006\003\125\004\012\023\017\125\056\123\056\040\107
\157\166\145\162\156\155\145\156\164\061\015\060\013\006\003\125
\004\013\023\004\106\102\103\101\061\026\060\024\006\003\125\004
\003\023\015\103\157\155\155\157\156\040\120\157\154\151\143\171
END

```

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\051\066\107\252\343\212\254\206\112\043\126\362\312\267  
\141\257

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\241\060\202\002\211\240\003\002\001\002\002\020\051  
\066\107\252\343\212\254\206\112\043\126\362\312\267\141\257\060  
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\116  
\061\013\060\011\006\003\125\004\006\023\002\165\163\061\030\060  
\026\006\003\125\004\012\023\017\125\056\123\056\040\107\157\166  
\145\162\156\155\145\156\164\061\015\060\013\006\003\125\004\013  
\023\004\106\102\103\101\061\026\060\024\006\003\125\004\003\023  
\015\103\157\155\155\157\156\040\120\157\154\151\143\171\060\036  
\027\015\060\067\061\060\061\065\061\065\065\070\060\060\132\027  
\015\062\067\061\060\061\065\061\066\060\070\060\060\132\060\116  
\061\013\060\011\006\003\125\004\006\023\002\165\163\061\030\060  
\026\006\003\125\004\012\023\017\125\056\123\056\040\107\157\166  
\145\162\156\155\145\156\164\061\015\060\013\006\003\125\004\013  
\023\004\106\102\103\101\061\026\060\024\006\003\125\004\003\023  
\015\103\157\155\155\157\156\040\120\157\154\151\143\171\060\202  
\001\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005  
\000\003\202\001\017\000\060\202\001\012\002\202\001\001\000\227  
\215\275\063\047\344\255\133\373\170\275\057\107\107\156\307\170  
\351\223\234\244\336\311\034\375\057\033\071\070\254\107\027\300  
\176\167\051\000\073\003\037\150\017\315\115\245\356\167\270\054  
\142\153\061\366\372\162\011\175\060\051\006\174\347\174\243\075  
\204\030\212\035\256\054\222\250\037\350\136\117\215\216\353\077  
\032\370\234\012\147\235\260\147\115\360\056\320\060\336\303\224  
\260\240\317\056\012\064\177\124\011\323\066\275\244\111\127\122  
\163\351\235\376\344\110\171\106\033\133\215\062\344\245\110\144  
\363\042\015\222\235\010\025\277\140\074\203\367\107\042\045\042  
\255\051\161\267\167\357\027\311\242\266\224\136\310\060\220\244  
\024\110\134\126\127\013\101\114\005\324\052\114\077\256\022\233  
\131\021\165\160\007\042\151\055\054\323\061\314\222\176\314\315  
\244\176\224\107\252\234\011\010\366\113\257\122\350\152\100\221  
\305\125\275\100\261\310\155\127\206\225\027\346\037\163\276\107  
\056\076\213\114\027\271\271\045\034\245\122\027\066\010\131\300  
\102\276\012\053\264\126\121\074\033\125\311\214\220\167\353\002  
\003\001\000\001\243\173\060\171\060\016\006\003\125\035\017\001  
\001\377\004\004\003\002\001\006\060\017\006\003\125\035\023\001  
\001\377\004\005\060\003\001\001\377\060\035\006\003\125\035\016  
\004\026\004\024\057\130\227\330\251\005\230\245\126\037\373\331  
\253\165\357\002\074\066\064\307\060\022\006\011\053\006\001\004  
\001\202\067\025\001\004\005\002\003\001\000\001\060\043\006\011  
\053\006\001\004\001\202\067\025\002\004\026\004\024\166\267\140  
\226\335\024\126\051\254\165\205\323\160\143\301\274\107\206\034  
\213\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000  
\003\202\001\001\000\140\256\363\110\026\100\162\246\010\210\311

\274\107\054\044\113\135\240\221\163\355\145\170\220\360\147\220  
\172\245\277\012\255\266\052\371\231\147\337\203\305\167\037\064  
\011\070\371\176\236\101\340\110\140\376\342\252\135\207\210\352  
\210\375\134\105\262\311\152\332\175\244\255\261\117\277\034\015  
\237\036\232\300\325\024\163\070\053\212\170\100\156\060\367\142  
\341\315\231\374\121\151\147\154\021\335\270\020\243\150\336\046  
\245\126\375\066\154\067\230\154\373\356\174\074\154\153\160\077  
\367\110\067\011\217\013\102\201\255\106\106\270\013\203\006\364  
\033\070\240\177\117\315\013\357\203\211\207\227\034\212\060\147  
\334\375\124\241\003\176\001\313\205\114\261\013\051\303\276\354  
\174\341\077\017\011\122\074\057\247\232\110\376\067\351\021\006  
\130\341\066\101\212\304\266\277\216\335\316\112\263\274\032\300  
\315\372\032\231\322\161\233\372\317\274\362\304\124\243\210\065  
\166\314\033\054\106\157\014\264\321\303\141\166\222\164\021\352  
\113\200\215\034\211\021\213\354\133\377\027\311\110\374\347\340  
\006\021\342\204\136

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Common Policy"

# Issuer: CN=Common Policy,OU=FBCA,O=U.S. Government,C=us

# Serial Number:29:36:47:aa:e3:8a:ac:86:4a:23:56:f2:ca:b7:61:af

# Subject: CN=Common Policy,OU=FBCA,O=U.S. Government,C=us

# Not Valid Before: Mon Oct 15 15:58:00 2007

# Not Valid After: Fri Oct 15 16:08:00 2027

# Fingerprint (MD5): f0:58:c5:03:82:67:17:ab:8f:da:03:10:27:8e:19:c2

# Fingerprint (SHA1): cb:44:a0:97:85:7c:45:fa:18:7e:d9:52:08:6c:b9:84:1f:2d:51:b5

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Common Policy"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\313\104\240\227\205\174\105\372\030\176\331\122\010\154\271\204  
\037\055\121\265

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\360\130\305\003\202\147\027\253\217\332\003\020\047\216\031\302  
END

CKA\_ISSUER MULTILINE\_OCTAL

\060\116\061\013\060\011\006\003\125\004\006\023\002\165\163\061  
\030\060\026\006\003\125\004\012\023\017\125\056\123\056\040\107  
\157\166\145\162\156\155\145\156\164\061\015\060\013\006\003\125  
\004\013\023\004\106\102\103\101\061\026\060\024\006\003\125\004  
\003\023\015\103\157\155\155\157\156\040\120\157\154\151\143\171

```

END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\051\066\107\252\343\212\254\206\112\043\126\362\312\267
\141\257
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "Macao Post eSignTrust Root Certification Authority"
Issuer: CN=Macao Post eSignTrust Root Certification Authority,O=Macao Post,C=MO
Serial Number:43:11:5a:96:1f:65:5a:d6:f0:33:12:fd:ed:d0:b9:75
Subject: CN=Macao Post eSignTrust Root Certification Authority,O=Macao Post,C=MO
Not Valid Before: Thu Jan 30 00:00:00 2003
Not Valid After: Tue Jan 29 23:59:59 2013
Fingerprint (MD5): 6d:38:c4:9b:22:24:4c:a3:a8:b3:a0:93:45:e1:57:fa
Fingerprint (SHA1): 89:c3:2e:6b:52:4e:4d:65:38:8b:9e:ce:dc:63:71:34:ed:41:93:a3
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Macao Post eSignTrust Root Certification Authority"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\137\061\013\060\011\006\003\125\004\006\023\002\115\117\061
\023\060\021\006\003\125\004\012\023\012\115\141\143\141\157\040
\120\157\163\164\061\073\060\071\006\003\125\004\003\023\062\115
\141\143\141\157\040\120\157\163\164\040\145\123\151\147\156\124
\162\165\163\164\040\122\157\157\164\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164
\171
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\137\061\013\060\011\006\003\125\004\006\023\002\115\117\061
\023\060\021\006\003\125\004\012\023\012\115\141\143\141\157\040
\120\157\163\164\061\073\060\071\006\003\125\004\003\023\062\115
\141\143\141\157\040\120\157\163\164\040\145\123\151\147\156\124
\162\165\163\164\040\122\157\157\164\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164
\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\103\021\132\226\037\145\132\326\360\063\022\375\355\320
\271\165
END

```



CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\145\060\202\002\115\240\003\002\001\002\002\020\103  
\021\132\226\037\145\132\326\360\063\022\375\355\320\271\165\060  
\015\006\011\052\206\110\206\367\015\001\001\004\005\000\060\137  
\061\013\060\011\006\003\125\004\006\023\002\115\117\061\023\060  
\021\006\003\125\004\012\023\012\115\141\143\141\157\040\120\157  
\163\164\061\073\060\071\006\003\125\004\003\023\062\115\141\143  
\141\157\040\120\157\163\164\040\145\123\151\147\156\124\162\165  
\163\164\040\122\157\157\164\040\103\145\162\164\151\146\151\143  
\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171\060  
\036\027\015\060\063\060\061\063\060\060\060\060\060\060\132  
\027\015\061\063\060\061\062\071\062\063\065\071\065\071\132\060  
\137\061\013\060\011\006\003\125\004\006\023\002\115\117\061\023  
\060\021\006\003\125\004\012\023\012\115\141\143\141\157\040\120  
\157\163\164\061\073\060\071\006\003\125\004\003\023\062\115\141  
\143\141\157\040\120\157\163\164\040\145\123\151\147\156\124\162  
\165\163\164\040\122\157\157\164\040\103\145\162\164\151\146\151  
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171  
\060\202\001\042\060\015\006\011\052\206\110\206\367\015\001\001  
\001\005\000\003\202\001\017\000\060\202\001\012\002\202\001\001  
\000\242\034\266\270\270\261\315\124\111\203\256\072\307\255\204  
\320\135\377\225\253\365\377\001\033\136\357\040\076\275\200\040  
\111\054\150\262\203\061\354\225\055\156\111\262\173\277\144\237  
\127\055\325\042\153\356\127\227\164\207\352\373\120\315\162\347  
\044\055\160\124\274\244\342\052\205\265\002\371\247\140\266\162  
\131\353\121\254\106\112\374\247\165\373\004\324\000\377\332\014  
\316\313\223\017\062\171\166\326\046\340\315\162\015\113\352\046  
\217\113\174\326\343\142\150\210\046\320\115\267\232\047\233\300  
\233\266\022\301\233\354\004\321\065\332\047\276\060\342\175\003  
\316\106\070\010\157\341\367\236\054\016\272\012\061\327\302\152  
\104\206\147\321\350\111\223\024\300\314\136\221\247\373\126\272  
\201\000\070\154\322\231\301\277\134\350\244\355\112\234\352\342  
\122\275\343\371\213\370\104\346\304\100\101\315\357\000\114\271  
\302\251\374\001\364\356\376\260\221\017\200\161\266\345\221\150  
\242\345\147\327\350\345\350\243\316\164\254\136\027\255\073\021  
\104\027\136\145\166\262\042\115\270\013\073\351\077\211\151\365  
\263\002\003\001\000\001\243\035\060\033\060\014\006\003\125\035  
\023\004\005\060\003\001\001\377\060\013\006\003\125\035\017\004  
\004\003\002\001\006\060\015\006\011\052\206\110\206\367\015\001  
\001\004\005\000\003\202\001\001\000\240\224\121\001\330\314\373  
\027\176\334\235\176\301\210\262\134\027\317\260\306\044\311\064  
\260\006\145\231\023\124\105\207\027\175\301\310\056\141\064\356  
\306\155\303\115\152\251\036\253\075\043\024\342\005\010\230\125  
\002\016\274\151\213\327\317\117\137\045\320\147\271\126\076\113  
\353\103\202\015\327\050\053\313\357\021\232\360\332\144\151\160  
\342\230\052\000\206\157\230\352\113\016\232\234\215\274\252\117  
\270\375\157\373\123\044\163\257\324\231\274\365\156\314\226\076  
\326\135\327\064\065\151\171\261\321\312\165\311\300\204\275\056

```
\161\245\032\201\221\374\033\211\302\062\107\062\174\150\301\273
\124\342\041\200\154\366\356\154\306\007\226\136\075\300\271\152
\063\304\005\160\251\154\236\325\154\336\306\365\223\147\157\225
\011\300\150\345\370\343\341\062\344\243\015\151\241\015\252\100
\300\343\204\241\313\375\061\056\320\006\224\066\350\240\041\377
\164\335\021\067\111\046\121\105\117\221\022\040\126\362\277\001
\374\331\361\027\156\232\370\134\031\234\064\042\304\046\321\205
\010\204\322\010\003\110\312\030\006
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

# Microsoft Code Signing Only Certificate

# Trust for "Macao Post eSignTrust Root Certification Authority"

# Issuer: CN=Macao Post eSignTrust Root Certification Authority,O=Macao Post,C=MO

# Serial Number:43:11:5a:96:1f:65:5a:d6:f0:33:12:fd:ed:d0:b9:75

# Subject: CN=Macao Post eSignTrust Root Certification Authority,O=Macao Post,C=MO

# Not Valid Before: Thu Jan 30 00:00:00 2003

# Not Valid After: Tue Jan 29 23:59:59 2013

# Fingerprint (MD5): 6d:38:c4:9b:22:24:4c:a3:a8:b3:a0:93:45:e1:57:fa

# Fingerprint (SHA1): 89:c3:2e:6b:52:4e:4d:65:38:8b:9e:ce:dc:63:71:34:ed:41:93:a3

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "Macao Post eSignTrust Root Certification Authority"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\211\303\056\153\122\116\115\145\070\213\236\316\334\143\161\064
\355\101\223\243
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\155\070\304\233\042\044\114\243\250\263\240\223\105\341\127\372
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\137\061\013\060\011\006\003\125\004\006\023\002\115\117\061
\023\060\021\006\003\125\004\012\023\012\115\141\143\141\157\040
\120\157\163\164\061\073\060\071\006\003\125\004\003\023\062\115
\141\143\141\157\040\120\157\163\164\040\145\123\151\147\156\124
\162\165\163\164\040\122\157\157\164\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164
\171
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\020\103\021\132\226\037\145\132\326\360\063\022\375\355\320
\271\165
```

END

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "Staat der Nederlanden Root CA - G2"

# Issuer: CN=Staat der Nederlanden Root CA - G2,O=Staat der Nederlanden,C=NL

# Serial Number:98:96:8c

# Subject: CN=Staat der Nederlanden Root CA - G2,O=Staat der Nederlanden,C=NL

# Not Valid Before: Wed Mar 26 11:18:17 2008

# Not Valid After: Wed Mar 25 11:03:10 2020

# Fingerprint (MD5): 7c:a5:0f:f8:5b:9a:7d:6d:30:ae:54:5a:e3:42:a2:8a

# Fingerprint (SHA1): 59:af:82:79:91:86:c7:b4:75:07:cb:cf:03:57:46:eb:04:dd:b7:16

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Staat der Nederlanden Root CA - G2"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\132\061\013\060\011\006\003\125\004\006\023\002\116\114\061  
\036\060\034\006\003\125\004\012\014\025\123\164\141\141\164\040  
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\061  
\053\060\051\006\003\125\004\003\014\042\123\164\141\141\164\040  
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\040  
\122\157\157\164\040\103\101\040\055\040\107\062

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\132\061\013\060\011\006\003\125\004\006\023\002\116\114\061  
\036\060\034\006\003\125\004\012\014\025\123\164\141\141\164\040  
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\061  
\053\060\051\006\003\125\004\003\014\042\123\164\141\141\164\040  
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\040  
\122\157\157\164\040\103\101\040\055\040\107\062

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\004\000\230\226\214

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\312\060\202\003\262\240\003\002\001\002\002\004\000  
\230\226\214\060\015\006\011\052\206\110\206\367\015\001\001\013  
\005\000\060\132\061\013\060\011\006\003\125\004\006\023\002\116  
\114\061\036\060\034\006\003\125\004\012\014\025\123\164\141\141  
\164\040\144\145\162\040\116\145\144\145\162\154\141\156\144\145  
\156\061\053\060\051\006\003\125\004\003\014\042\123\164\141\141  
\164\040\144\145\162\040\116\145\144\145\162\154\141\156\144\145  
\156\040\122\157\157\164\040\103\101\040\055\040\107\062\060\036

\027\015\060\070\060\063\062\066\061\061\061\070\061\067\132\027  
\015\062\060\060\063\062\065\061\061\060\063\061\060\132\060\132  
\061\013\060\011\006\003\125\004\006\023\002\116\114\061\036\060  
\034\006\003\125\004\012\014\025\123\164\141\141\164\040\144\145  
\162\040\116\145\144\145\162\154\141\156\144\145\156\061\053\060  
\051\006\003\125\004\003\014\042\123\164\141\141\164\040\144\145  
\162\040\116\145\144\145\162\154\141\156\144\145\156\040\122\157  
\157\164\040\103\101\040\055\040\107\062\060\202\002\042\060\015  
\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202\002  
\017\000\060\202\002\012\002\202\002\001\000\305\131\347\157\165  
\252\076\113\234\265\270\254\236\013\344\371\331\312\253\135\217  
\265\071\020\202\327\257\121\340\073\341\000\110\152\317\332\341  
\006\103\021\231\252\024\045\022\255\042\350\000\155\103\304\251  
\270\345\037\211\113\147\275\141\110\357\375\322\340\140\210\345  
\271\030\140\050\303\167\053\255\260\067\252\067\336\144\131\052  
\106\127\344\113\271\370\067\174\325\066\347\200\301\266\363\324  
\147\233\226\350\316\327\306\012\123\320\153\111\226\363\243\013  
\005\167\110\367\045\345\160\254\060\024\040\045\343\177\165\132  
\345\110\370\116\173\003\007\004\372\202\141\207\156\360\073\304  
\244\307\320\365\164\076\245\135\032\010\362\233\045\322\366\254  
\004\046\076\125\072\142\050\245\173\262\060\257\370\067\302\321  
\272\326\070\375\364\357\111\060\067\231\046\041\110\205\001\251  
\345\026\347\334\220\125\337\017\350\070\315\231\067\041\117\135  
\365\042\157\152\305\022\026\140\027\125\362\145\146\246\247\060  
\221\070\301\070\035\206\004\204\272\032\045\170\136\235\257\314  
\120\140\326\023\207\122\355\143\037\155\145\175\302\025\030\164  
\312\341\176\144\051\214\162\330\026\023\175\013\111\112\361\050  
\033\040\164\153\305\075\335\260\252\110\011\075\056\202\224\315  
\032\145\331\053\210\232\231\274\030\176\237\356\175\146\174\076  
\275\224\270\201\316\315\230\060\170\301\157\147\320\276\137\340  
\150\355\336\342\261\311\054\131\170\222\252\337\053\140\143\362  
\345\136\271\343\312\372\177\120\206\076\242\064\030\014\011\150  
\050\021\034\344\341\271\134\076\107\272\062\077\030\314\133\204  
\365\363\153\164\304\162\164\341\343\213\240\112\275\215\146\057  
\352\255\065\332\040\323\210\202\141\360\022\042\266\274\320\325  
\244\354\257\124\210\045\044\074\247\155\261\162\051\077\076\127  
\246\177\125\257\156\046\306\376\347\314\100\134\121\104\201\012  
\170\336\112\316\125\277\035\325\331\267\126\357\360\166\377\013  
\171\265\257\275\373\251\151\221\106\227\150\200\024\066\035\263  
\177\273\051\230\066\245\040\372\202\140\142\063\244\354\326\272  
\007\247\156\305\317\024\246\347\326\222\064\330\201\365\374\035  
\135\252\134\036\366\243\115\073\270\367\071\002\003\001\000\001  
\243\201\227\060\201\224\060\017\006\003\125\035\023\001\001\377  
\004\005\060\003\001\001\377\060\122\006\003\125\035\040\004\113  
\060\111\060\107\006\004\125\035\040\000\060\077\060\075\006\010  
\053\006\001\005\005\007\002\001\026\061\150\164\164\160\072\057  
\057\167\167\167\056\160\153\151\157\166\145\162\150\145\151\144  
\056\156\154\057\160\157\154\151\143\151\145\163\057\162\157\157

\164\055\160\157\154\151\143\171\055\107\062\060\016\006\003\125  
\035\017\001\001\377\004\004\003\002\001\006\060\035\006\003\125  
\035\016\004\026\004\024\221\150\062\207\025\035\211\342\265\361  
\254\066\050\064\215\013\174\142\210\353\060\015\006\011\052\206  
\110\206\367\015\001\001\013\005\000\003\202\002\001\000\250\101  
\112\147\052\222\201\202\120\156\341\327\330\263\071\073\363\002  
\025\011\120\121\357\055\275\044\173\210\206\073\371\264\274\222  
\011\226\271\366\300\253\043\140\006\171\214\021\116\121\322\171  
\200\063\373\235\110\276\354\101\103\201\037\176\107\100\034\345  
\172\010\312\252\213\165\255\024\304\302\350\146\074\202\007\247  
\346\047\202\133\030\346\017\156\331\120\076\212\102\030\051\306  
\264\126\374\126\020\240\005\027\275\014\043\177\364\223\355\234  
\032\121\276\335\105\101\277\221\044\264\037\214\351\137\317\173  
\041\231\237\225\237\071\072\106\034\154\371\315\173\234\220\315  
\050\251\307\251\125\273\254\142\064\142\065\023\113\024\072\125  
\203\271\206\215\222\246\306\364\007\045\124\314\026\127\022\112  
\202\170\310\024\331\027\202\046\055\135\040\037\171\256\376\324  
\160\026\026\225\203\330\065\071\377\122\135\165\034\026\305\023  
\125\317\107\314\165\145\122\112\336\360\260\247\344\012\226\013  
\373\255\302\342\045\204\262\335\344\275\176\131\154\233\360\360  
\330\347\312\362\351\227\070\176\211\276\314\373\071\027\141\077  
\162\333\072\221\330\145\001\031\035\255\120\244\127\012\174\113  
\274\234\161\163\052\105\121\031\205\314\216\375\107\247\164\225  
\035\250\321\257\116\027\261\151\046\302\252\170\127\133\305\115  
\247\345\236\005\027\224\312\262\137\240\111\030\215\064\351\046  
\154\110\036\252\150\222\005\341\202\163\132\233\334\007\133\010  
\155\175\235\327\215\041\331\374\024\040\252\302\105\337\077\347  
\000\262\121\344\302\370\005\271\171\032\214\064\363\236\133\344  
\067\133\153\112\337\054\127\212\100\132\066\272\335\165\104\010  
\067\102\160\014\376\334\136\041\240\243\212\300\220\234\150\332  
\120\346\105\020\107\170\266\116\322\145\311\303\067\337\341\102  
\143\260\127\067\105\055\173\212\234\277\005\352\145\125\063\367  
\071\020\305\050\052\041\172\033\212\304\044\371\077\025\310\232  
\025\040\365\125\142\226\355\155\223\120\274\344\252\170\255\331  
\313\012\145\207\246\146\301\304\201\243\167\072\130\036\013\356  
\203\213\235\036\322\122\244\314\035\157\260\230\155\224\061\265  
\370\161\012\334\271\374\175\062\140\346\353\257\212\001

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "Staat der Nederlanden Root CA - G2"  
# Issuer: CN=Staat der Nederlanden Root CA - G2,O=Staat der Nederlanden,C=NL  
# Serial Number:98:96:8c  
# Subject: CN=Staat der Nederlanden Root CA - G2,O=Staat der Nederlanden,C=NL  
# Not Valid Before: Wed Mar 26 11:18:17 2008

```

Not Valid After: Wed Mar 25 11:03:10 2020
Fingerprint (MD5): 7c:a5:0f:f8:5b:9a:7d:6d:30:ae:54:5a:e3:42:a2:8a
Fingerprint (SHA1): 59:af:82:79:91:86:c7:b4:75:07:cb:cf:03:57:46:eb:04:dd:b7:16
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Staat der Nederlanden Root CA - G2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\131\257\202\171\221\206\307\264\165\007\313\317\003\127\106\353
\004\335\267\026
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\174\245\017\370\133\232\175\155\060\256\124\132\343\102\242\212
END
CKA_ISSUER MULTILINE_OCTAL
\060\132\061\013\060\011\006\003\125\004\006\023\002\116\114\061
\036\060\034\006\003\125\004\012\014\025\123\164\141\141\164\040
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\061
\053\060\051\006\003\125\004\003\014\042\123\164\141\141\164\040
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\040
\122\157\157\164\040\103\101\040\055\040\107\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\004\000\230\226\214
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "NetLock Platina (Class Platinum) Ftanúsítvány"
Issuer: CN=NetLock Platina (Class Platinum) Ftanúsítvány,OU=Tanúsítványkiadók (Certification
Services),O=NetLock Kft.,L=Budapest,C=HU
Serial Number:49:41:2d:ec:00:10
Subject: CN=NetLock Platina (Class Platinum) Ftanúsítvány,OU=Tanúsítványkiadók (Certification
Services),O=NetLock Kft.,L=Budapest,C=HU
Not Valid Before: Thu Dec 11 15:12:44 2008
Not Valid After: Wed Dec 06 15:12:44 2028
Fingerprint (MD5): d5:97:88:da:64:16:e7:1d:66:4a:a6:ea:37:fc:7a:dc
Fingerprint (SHA1): ec:93:de:08:3c:93:d9:33:a9:86:b3:d5:cd:e2:5a:cb:2f:ee:cf:8e
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "NetLock Platina (Class Platinum) Ftanúsítvány"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

```

CKA\_SUBJECT MULTILINE\_OCTAL

\060\201\255\061\013\060\011\006\003\125\004\006\023\002\110\125  
\061\021\060\017\006\003\125\004\007\014\010\102\165\144\141\160  
\145\163\164\061\025\060\023\006\003\125\004\012\014\014\116\145  
\164\114\157\143\153\040\113\146\164\056\061\067\060\065\006\003  
\125\004\013\014\056\124\141\156\303\272\163\303\255\164\166\303  
\241\156\171\153\151\141\144\303\263\153\040\050\103\145\162\164  
\151\146\151\143\141\164\151\157\156\040\123\145\162\166\151\143  
\145\163\051\061\073\060\071\006\003\125\004\003\014\062\116\145  
\164\114\157\143\153\040\120\154\141\164\151\156\141\040\050\103  
\154\141\163\163\040\120\154\141\164\151\156\165\155\051\040\106  
\305\221\164\141\156\303\272\163\303\255\164\166\303\241\156\171  
END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\255\061\013\060\011\006\003\125\004\006\023\002\110\125  
\061\021\060\017\006\003\125\004\007\014\010\102\165\144\141\160  
\145\163\164\061\025\060\023\006\003\125\004\012\014\014\116\145  
\164\114\157\143\153\040\113\146\164\056\061\067\060\065\006\003  
\125\004\013\014\056\124\141\156\303\272\163\303\255\164\166\303  
\241\156\171\153\151\141\144\303\263\153\040\050\103\145\162\164  
\151\146\151\143\141\164\151\157\156\040\123\145\162\166\151\143  
\145\163\051\061\073\060\071\006\003\125\004\003\014\062\116\145  
\164\114\157\143\153\040\120\154\141\164\151\156\141\040\050\103  
\154\141\163\163\040\120\154\141\164\151\156\165\155\051\040\106  
\305\221\164\141\156\303\272\163\303\255\164\166\303\241\156\171  
END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\006\111\101\055\354\000\020

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\006\041\060\202\004\011\240\003\002\001\002\002\006\111  
\101\055\354\000\020\060\015\006\011\052\206\110\206\367\015\001  
\001\013\005\000\060\201\255\061\013\060\011\006\003\125\004\006  
\023\002\110\125\061\021\060\017\006\003\125\004\007\014\010\102  
\165\144\141\160\145\163\164\061\025\060\023\006\003\125\004\012  
\014\014\116\145\164\114\157\143\153\040\113\146\164\056\061\067  
\060\065\006\003\125\004\013\014\056\124\141\156\303\272\163\303  
\255\164\166\303\241\156\171\153\151\141\144\303\263\153\040\050  
\103\145\162\164\151\146\151\143\141\164\151\157\156\040\123\145  
\162\166\151\143\145\163\051\061\073\060\071\006\003\125\004\003  
\014\062\116\145\164\114\157\143\153\040\120\154\141\164\151\156  
\141\040\050\103\154\141\163\163\040\120\154\141\164\151\156\165  
\155\051\040\106\305\221\164\141\156\303\272\163\303\255\164\166  
\303\241\156\171\060\036\027\015\060\070\061\062\061\061\061\065  
\061\062\064\064\132\027\015\062\070\061\062\060\066\061\065\061  
\062\064\064\132\060\201\255\061\013\060\011\006\003\125\004\006  
\023\002\110\125\061\021\060\017\006\003\125\004\007\014\010\102

\165\144\141\160\145\163\164\061\025\060\023\006\003\125\004\012  
\014\014\116\145\164\114\157\143\153\040\113\146\164\056\061\067  
\060\065\006\003\125\004\013\014\056\124\141\156\303\272\163\303  
\255\164\166\303\241\156\171\153\151\141\144\303\263\153\040\050  
\103\145\162\164\151\146\151\143\141\164\151\157\156\040\123\145  
\162\166\151\143\145\163\051\061\073\060\071\006\003\125\004\003  
\014\062\116\145\164\114\157\143\153\040\120\154\141\164\151\156  
\141\040\050\103\154\141\163\163\040\120\154\141\164\151\156\165  
\155\051\040\106\305\221\164\141\156\303\272\163\303\255\164\166  
\303\241\156\171\060\202\002\042\060\015\006\011\052\206\110\206  
\367\015\001\001\001\005\000\003\202\002\017\000\060\202\002\012  
\002\202\002\001\000\315\362\356\304\032\172\353\164\051\114\266  
\275\344\326\012\027\154\145\342\146\075\304\321\274\014\266\132  
\326\053\160\137\055\314\041\321\131\020\344\261\023\275\366\314  
\042\225\326\154\106\116\221\062\263\353\365\254\313\004\001\117  
\166\335\123\076\170\237\371\136\274\265\202\023\106\312\020\343  
\035\055\151\053\224\062\020\163\041\253\251\070\305\343\156\023  
\144\325\143\251\355\011\146\354\212\157\211\215\021\206\320\365  
\277\062\226\013\165\160\365\050\130\102\136\254\151\264\365\374  
\221\071\056\242\221\100\321\074\124\101\207\043\144\120\110\171  
\150\113\150\223\113\162\353\200\151\263\112\034\220\276\262\101  
\243\245\315\027\300\321\032\151\177\002\030\112\265\142\207\046  
\127\055\154\250\054\041\071\365\227\136\233\232\246\370\347\114  
\171\304\173\073\126\334\172\370\264\130\316\166\012\256\042\125  
\353\217\307\204\144\173\275\153\312\225\117\330\276\061\023\277  
\215\241\012\053\325\171\267\365\166\255\332\121\134\201\107\142  
\250\252\377\317\123\340\064\161\317\015\045\123\251\236\143\107  
\257\205\221\370\317\031\021\345\116\371\317\355\343\065\005\001  
\042\003\317\232\174\352\035\121\132\313\375\163\075\071\013\061  
\353\304\073\312\205\052\021\024\000\240\033\201\242\011\210\110  
\363\174\242\144\241\354\147\264\130\207\360\024\352\251\276\245  
\042\101\115\354\275\244\016\350\075\207\367\057\252\316\065\206  
\117\060\127\222\215\066\256\170\326\375\030\374\327\045\036\317  
\172\374\031\375\240\077\162\027\066\010\101\077\227\066\225\014  
\211\225\161\105\372\204\326\324\040\140\263\105\012\362\267\225  
\075\013\345\244\303\270\022\362\221\154\351\155\140\203\366\105  
\021\005\272\346\107\203\331\221\342\156\341\273\106\153\110\033  
\274\306\373\317\176\336\054\273\220\204\356\266\047\071\347\215  
\242\061\017\337\201\267\054\154\000\342\261\330\052\027\134\033  
\036\107\211\113\027\121\024\100\100\117\304\071\030\062\302\200  
\140\066\345\172\107\147\366\250\005\124\301\135\226\240\037\266  
\210\122\014\002\276\215\125\176\024\113\303\242\001\356\234\212  
\101\135\371\137\226\221\011\216\264\344\265\305\004\337\326\066  
\255\131\264\262\327\002\003\000\363\221\243\105\060\103\060\022  
\006\003\125\035\023\001\001\377\004\010\060\006\001\001\377\002  
\001\004\060\016\006\003\125\035\017\001\001\377\004\004\003\002  
\001\006\060\035\006\003\125\035\016\004\026\004\024\346\241\023  
\203\376\227\113\362\330\377\061\241\247\164\063\211\316\136\177



\244\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000  
\003\202\002\001\000\151\204\102\300\343\136\023\141\227\040\111  
\361\364\026\205\245\237\244\021\010\045\304\143\206\217\360\113  
\257\263\051\365\007\127\032\142\307\033\105\156\257\135\026\267  
\301\320\144\203\073\227\365\103\266\105\220\361\146\052\203\044  
\052\377\210\351\172\013\371\302\133\172\257\143\367\011\170\206  
\110\131\064\136\233\152\020\116\361\156\225\211\066\112\150\320  
\157\233\340\176\117\267\065\017\343\171\261\005\257\047\174\252  
\211\012\103\336\372\014\357\331\127\057\050\161\315\151\153\122  
\102\311\212\060\105\131\241\314\372\131\112\217\367\326\335\104  
\245\263\056\133\021\030\342\262\265\347\021\123\070\376\202\114  
\323\163\276\145\222\032\072\250\322\322\252\274\324\276\155\066  
\122\377\153\324\322\265\033\067\363\027\102\361\056\247\325\220  
\154\164\235\164\365\372\137\042\033\323\334\165\250\265\377\362  
\032\321\274\053\000\134\074\305\270\206\010\124\111\242\234\043  
\373\357\246\215\160\364\102\122\115\033\040\000\201\370\240\270  
\364\164\043\234\276\364\271\016\354\036\152\330\145\112\025\165  
\361\167\133\156\330\261\346\017\264\226\270\035\372\206\310\222  
\156\213\351\175\337\242\016\325\361\361\174\256\112\343\146\277  
\135\374\133\357\110\262\236\151\307\175\220\240\125\266\224\160  
\201\271\012\275\211\165\123\354\204\251\003\245\337\121\231\010  
\320\164\014\002\326\163\162\006\173\213\273\135\252\116\374\147  
\147\330\216\020\003\031\055\067\072\324\167\251\072\034\235\300  
\171\173\154\051\167\062\115\112\213\060\210\302\347\066\316\150  
\243\232\230\206\371\211\025\236\277\252\121\175\361\120\106\124  
\017\002\056\134\237\343\336\127\063\025\376\030\222\141\250\322  
\051\005\135\145\104\036\233\343\357\373\334\005\337\025\253\246  
\330\013\244\163\262\114\072\340\236\324\263\152\345\072\016\012  
\360\116\317\170\201\037\276\251\230\157\261\107\121\175\102\063  
\066\263\246\251\002\122\005\164\176\052\154\324\252\222\126\260  
\076\073\043\130\261\215\065\247\023\217\147\036\161\025\246\263  
\265\003\206\270\040\146\300\110\157\271\254\324\112\003\125\262  
\067\337\004\335\042\014\123\206\052\112\052\241\301\070\076\074  
\345\074\337\165\227

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "NetLock Platina (Class Platinum) Ftanúsítvány"

# Issuer: CN=NetLock Platina (Class Platinum) Ftanúsítvány,OU=Tanúsítványkiadók (Certification Services),O=NetLock Kft.,L=Budapest,C=HU

# Serial Number:49:41:2d:ec:00:10

# Subject: CN=NetLock Platina (Class Platinum) Ftanúsítvány,OU=Tanúsítványkiadók (Certification Services),O=NetLock Kft.,L=Budapest,C=HU

# Not Valid Before: Thu Dec 11 15:12:44 2008

# Not Valid After: Wed Dec 06 15:12:44 2028

```

Fingerprint (MD5): d5:97:88:da:64:16:e7:1d:66:4a:a6:ea:37:fc:7a:dc
Fingerprint (SHA1): ec:93:de:08:3c:93:d9:33:a9:86:b3:d5:cd:e2:5a:cb:2f:ee:cf:8e
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "NetLock Platina (Class Platinum) Ftanúsítvány"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\354\223\336\010\074\223\331\063\251\206\263\325\315\342\132\313
\057\356\317\216
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\325\227\210\332\144\026\347\035\146\112\246\352\067\374\172\334
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\255\061\013\060\011\006\003\125\004\006\023\002\110\125
\061\021\060\017\006\003\125\004\007\014\010\102\165\144\141\160
\145\163\164\061\025\060\023\006\003\125\004\012\014\014\116\145
\164\114\157\143\153\040\113\146\164\056\061\067\060\065\006\003
\125\004\013\014\056\124\141\156\303\272\163\303\255\164\166\303
\241\156\171\153\151\141\144\303\263\153\040\050\103\145\162\164
\151\146\151\143\141\164\151\157\156\040\123\145\162\166\151\143
\145\163\051\061\073\060\071\006\003\125\004\003\014\062\116\145
\164\114\157\143\153\040\120\154\141\164\151\156\141\040\050\103
\154\141\163\163\040\120\154\141\164\151\156\165\155\051\040\106
\305\221\164\141\156\303\272\163\303\255\164\166\303\241\156\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\006\111\101\055\354\000\020
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

```

```

Microsoft Code Signing Only Certificate
Certificate "AC Raíz Certicámara S.A."
Issuer: CN=AC Raíz Certicámara S.A.,O=Sociedad Cameral de Certificación Digital - Certicámara S.A.,C=CO
Serial Number:07:7e:52:93:7b:e0:15:e3:57:f0:69:8c:cb:ec:0c
Subject: CN=AC Raíz Certicámara S.A.,O=Sociedad Cameral de Certificación Digital - Certicámara S.A.,C=CO
Not Valid Before: Mon Nov 27 20:46:29 2006
Not Valid After: Tue Apr 02 21:42:02 2030
Fingerprint (MD5): 93:2a:3e:f6:fd:23:69:0d:71:20:d4:2b:47:99:2b:a6
Fingerprint (SHA1): cb:a1:c5:f8:b0:e3:5e:b8:b9:45:12:d3:f9:34:a2:e9:06:10:d3:36
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE

```

CKA\_LABEL UTF8 "AC Raíz Certicámara S.A."  
CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509  
CKA\_SUBJECT MULTILINE\_OCTAL  
\060\173\061\013\060\011\006\003\125\004\006\023\002\103\117\061  
\107\060\105\006\003\125\004\012\014\076\123\157\143\151\145\144  
\141\144\040\103\141\155\145\162\141\154\040\144\145\040\103\145  
\162\164\151\146\151\143\141\143\151\303\263\156\040\104\151\147  
\151\164\141\154\040\055\040\103\145\162\164\151\143\303\241\155  
\141\162\141\040\123\056\101\056\061\043\060\041\006\003\125\004  
\003\014\032\101\103\040\122\141\303\255\172\040\103\145\162\164  
\151\143\303\241\155\141\162\141\040\123\056\101\056

END  
CKA\_ID UTF8 "0"  
CKA\_ISSUER MULTILINE\_OCTAL  
\060\173\061\013\060\011\006\003\125\004\006\023\002\103\117\061  
\107\060\105\006\003\125\004\012\014\076\123\157\143\151\145\144  
\141\144\040\103\141\155\145\162\141\154\040\144\145\040\103\145  
\162\164\151\146\151\143\141\143\151\303\263\156\040\104\151\147  
\151\164\141\154\040\055\040\103\145\162\164\151\143\303\241\155  
\141\162\141\040\123\056\101\056\061\043\060\041\006\003\125\004  
\003\014\032\101\103\040\122\141\303\255\172\040\103\145\162\164  
\151\143\303\241\155\141\162\141\040\123\056\101\056

END  
CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL  
\002\017\007\176\122\223\173\340\025\343\127\360\151\214\313\354  
\014

END  
CKA\_VALUE MULTILINE\_OCTAL  
\060\202\006\146\060\202\004\116\240\003\002\001\002\002\017\007  
\176\122\223\173\340\025\343\127\360\151\214\313\354\014\060\015  
\006\011\052\206\110\206\367\015\001\001\005\005\000\060\173\061  
\013\060\011\006\003\125\004\006\023\002\103\117\061\107\060\105  
\006\003\125\004\012\014\076\123\157\143\151\145\144\141\144\040  
\103\141\155\145\162\141\154\040\144\145\040\103\145\162\164\151  
\146\151\143\141\143\151\303\263\156\040\104\151\147\151\164\141  
\154\040\055\040\103\145\162\164\151\143\303\241\155\141\162\141  
\040\123\056\101\056\061\043\060\041\006\003\125\004\003\014\032  
\101\103\040\122\141\303\255\172\040\103\145\162\164\151\143\303  
\241\155\141\162\141\040\123\056\101\056\060\036\027\015\060\066  
\061\061\062\067\062\060\064\066\062\071\132\027\015\063\060\060  
\064\060\062\062\061\064\062\060\062\132\060\173\061\013\060\011  
\006\003\125\004\006\023\002\103\117\061\107\060\105\006\003\125  
\004\012\014\076\123\157\143\151\145\144\141\144\040\103\141\155  
\145\162\141\154\040\144\145\040\103\145\162\164\151\146\151\143  
\141\143\151\303\263\156\040\104\151\147\151\164\141\154\040\055  
\040\103\145\162\164\151\143\303\241\155\141\162\141\040\123\056  
\101\056\061\043\060\041\006\003\125\004\003\014\032\101\103\040  
\122\141\303\255\172\040\103\145\162\164\151\143\303\241\155\141

\162\141\040\123\056\101\056\060\202\002\042\060\015\006\011\052  
\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060  
\202\002\012\002\202\002\001\000\253\153\211\243\123\314\110\043  
\010\373\303\317\121\226\010\056\270\010\172\155\074\220\027\206  
\251\351\355\056\023\064\107\262\320\160\334\311\074\320\215\312  
\356\113\027\253\320\205\260\247\043\004\313\250\242\374\345\165  
\333\100\312\142\211\217\120\236\001\075\046\133\030\204\034\313  
\174\067\267\175\354\323\177\163\031\260\152\262\330\210\212\055  
\105\164\250\367\263\270\300\324\332\315\042\211\164\115\132\025  
\071\163\030\164\117\265\353\231\247\301\036\210\264\302\223\220  
\143\227\363\247\247\022\262\011\042\007\063\331\221\315\016\234  
\037\016\040\307\356\273\063\215\217\302\322\130\247\137\375\145  
\067\342\210\302\330\217\206\165\136\371\055\247\207\063\362\170  
\067\057\213\274\035\206\067\071\261\224\362\330\274\112\234\203  
\030\132\006\374\363\324\324\272\214\025\011\045\360\371\266\215  
\004\176\027\022\063\153\127\110\114\117\333\046\036\353\314\220  
\347\213\371\150\174\160\017\243\052\320\072\070\337\067\227\342  
\133\336\200\141\323\200\330\221\203\102\132\114\004\211\150\021  
\074\254\137\150\200\101\314\140\102\316\015\132\052\014\017\233  
\060\300\246\360\206\333\253\111\327\227\155\110\213\371\003\300  
\122\147\233\022\367\302\362\056\230\145\102\331\326\232\343\320  
\031\061\014\255\207\325\127\002\172\060\350\206\046\373\217\043  
\212\124\207\344\277\074\356\353\303\165\110\137\036\071\157\201  
\142\154\305\055\304\027\124\031\267\067\215\234\067\221\310\366  
\013\325\352\143\157\203\254\070\302\363\077\336\232\373\341\043  
\141\360\310\046\313\066\310\241\363\060\217\244\243\242\241\335  
\123\263\336\360\232\062\037\203\221\171\060\301\251\037\123\233  
\123\242\025\123\077\335\235\263\020\073\110\175\211\017\374\355  
\003\365\373\045\144\165\016\027\031\015\217\000\026\147\171\172  
\100\374\055\131\007\331\220\372\232\255\075\334\200\212\346\134  
\065\242\147\114\021\153\261\370\200\144\000\055\157\042\141\305  
\254\113\046\345\132\020\202\233\244\203\173\064\367\236\211\221  
\040\227\216\267\102\307\146\303\320\351\244\326\365\040\215\304  
\303\225\254\104\012\235\133\163\074\046\075\057\112\276\247\311  
\247\020\036\373\237\120\151\363\002\003\001\000\001\243\201\346  
\060\201\343\060\017\006\003\125\035\023\001\001\377\004\005\060  
\003\001\001\377\060\016\006\003\125\035\017\001\001\377\004\004  
\003\002\001\006\060\035\006\003\125\035\016\004\026\004\024\321  
\011\320\351\327\316\171\164\124\371\072\060\263\364\155\054\003  
\003\033\150\060\201\240\006\003\125\035\040\004\201\230\060\201  
\225\060\201\222\006\004\125\035\040\000\060\201\211\060\053\006  
\010\053\006\001\005\005\007\002\001\026\037\150\164\164\160\072  
\057\057\167\167\167\056\143\145\162\164\151\143\141\155\141\162  
\141\056\143\157\155\057\144\160\143\057\060\132\006\010\053\006  
\001\005\005\007\002\002\060\116\032\114\114\151\155\151\164\141  
\143\151\157\156\145\163\040\144\145\040\147\141\162\141\156\164  
\355\141\163\040\144\145\040\145\163\164\145\040\143\145\162\164  
\151\146\151\143\141\144\157\040\163\145\040\160\165\145\144\145

\156\040\145\156\143\157\156\164\162\141\162\040\145\156\040\154  
\141\040\104\120\103\056\060\015\006\011\052\206\110\206\367\015  
\001\001\005\005\000\003\202\002\001\000\134\224\265\270\105\221  
\115\216\141\037\003\050\017\123\174\346\244\131\251\263\212\172  
\305\260\377\010\174\054\243\161\034\041\023\147\241\225\022\100  
\065\203\203\217\164\333\063\134\360\111\166\012\201\122\335\111  
\324\232\062\063\357\233\247\313\165\345\172\313\227\022\220\134  
\272\173\305\233\337\273\071\043\310\377\230\316\012\115\042\001  
\110\007\176\212\300\325\040\102\224\104\357\277\167\242\211\147  
\110\033\100\003\005\241\211\354\317\142\343\075\045\166\146\277  
\046\267\273\042\276\157\377\071\127\164\272\172\311\001\225\301  
\225\121\350\253\054\370\261\206\040\351\077\313\065\133\322\027  
\351\052\376\203\023\027\100\356\210\142\145\133\325\073\140\351  
\173\074\270\311\325\177\066\002\045\252\150\302\061\025\267\060  
\145\353\177\035\110\171\261\317\071\342\102\200\026\323\365\223  
\043\374\114\227\311\132\067\154\174\042\330\112\315\322\216\066  
\203\071\221\220\020\310\361\311\065\176\077\270\323\201\306\040  
\144\032\266\120\302\041\244\170\334\320\057\073\144\223\164\360  
\226\220\361\357\373\011\132\064\100\226\360\066\022\301\243\164  
\214\223\176\101\336\167\213\354\206\331\322\017\077\055\321\314  
\100\242\211\146\110\036\040\263\234\043\131\163\251\104\163\274  
\044\171\220\126\067\263\306\051\176\243\017\361\051\071\357\176  
\134\050\062\160\065\254\332\270\310\165\146\374\233\114\071\107  
\216\033\157\233\115\002\124\042\063\357\141\272\236\051\204\357  
\116\113\063\107\166\227\152\313\176\137\375\025\246\236\102\103  
\133\146\132\212\210\015\367\026\271\077\121\145\053\146\152\213  
\321\070\122\242\326\106\021\372\374\232\034\164\236\217\227\013  
\002\117\144\306\365\150\323\113\055\377\244\067\036\213\077\277  
\104\276\141\106\241\204\075\010\047\114\201\040\167\211\010\352  
\147\100\136\154\010\121\137\064\132\214\226\150\315\327\367\211  
\302\034\323\062\000\257\122\313\323\140\133\052\072\107\176\153  
\060\063\241\142\051\177\112\271\341\055\347\024\043\016\016\030  
\107\341\171\374\025\125\320\261\374\045\161\143\165\063\034\043  
\053\257\134\331\355\107\167\140\016\073\017\036\322\300\334\144  
\005\211\374\170\326\134\054\046\103\251

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "AC Raíz Certicámara S.A."

# Issuer: CN=AC Raíz Certicámara S.A.,O=Sociedad Cameral de Certificación Digital - Certicámara S.A.,C=CO

# Serial Number:07:7e:52:93:7b:e0:15:e3:57:f0:69:8c:cb:ec:0c

# Subject: CN=AC Raíz Certicámara S.A.,O=Sociedad Cameral de Certificación Digital - Certicámara S.A.,C=CO

# Not Valid Before: Mon Nov 27 20:46:29 2006

# Not Valid After: Tue Apr 02 21:42:02 2030

# Fingerprint (MD5): 93:2a:3e:f6:fd:23:69:0d:71:20:d4:2b:47:99:2b:a6

```

Fingerprint (SHA1): cb:a1:c5:f8:b0:e3:5e:b8:b9:45:12:d3:f9:34:a2:e9:06:10:d3:36
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "AC Raíz Certicámara S.A."
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\313\241\305\370\260\343\136\270\271\105\022\323\371\064\242\351
\006\020\323\066
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\223\052\076\366\375\043\151\015\161\040\324\053\107\231\053\246
END
CKA_ISSUER MULTILINE_OCTAL
\060\173\061\013\060\011\006\003\125\004\006\023\002\103\117\061
\107\060\105\006\003\125\004\012\014\076\123\157\143\151\145\144
\141\144\040\103\141\155\145\162\141\154\040\144\145\040\103\145
\162\164\151\146\151\143\141\143\151\303\263\156\040\104\151\147
\151\164\141\154\040\055\040\103\145\162\164\151\143\303\241\155
\141\162\141\040\123\056\101\056\061\043\060\041\006\003\125\004
\003\014\032\101\103\040\122\141\303\255\172\040\103\145\162\164
\151\143\303\241\155\141\162\141\040\123\056\101\056
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\017\007\176\122\223\173\340\025\343\127\360\151\214\313\354
\014
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "Cisco Root CA 2048"
Issuer: CN=Cisco Root CA 2048,O=Cisco Systems
Serial Number:5f:f8:7b:28:2b:54:dc:8d:42:a3:15:b5:68:c9:ad:ff
Subject: CN=Cisco Root CA 2048,O=Cisco Systems
Not Valid Before: Fri May 14 20:17:12 2004
Not Valid After: Mon May 14 20:25:42 2029
Fingerprint (MD5): be:39:5a:be:07:8a:b1:12:17:25:cc:1d:46:34:3c:b2
Fingerprint (SHA1): de:99:0c:ed:99:e0:43:1f:60:ed:c3:93:7e:7c:d5:bf:0e:d9:e5:fa
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Cisco Root CA 2048"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL

```

\060\065\061\026\060\024\006\003\125\004\012\023\015\103\151\163  
\143\157\040\123\171\163\164\145\155\163\061\033\060\031\006\003  
\125\004\003\023\022\103\151\163\143\157\040\122\157\157\164\040  
\103\101\040\062\060\064\070

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\065\061\026\060\024\006\003\125\004\012\023\015\103\151\163  
\143\157\040\123\171\163\164\145\155\163\061\033\060\031\006\003  
\125\004\003\023\022\103\151\163\143\157\040\122\157\157\164\040  
\103\101\040\062\060\064\070

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\137\370\173\050\053\124\334\215\102\243\025\265\150\311  
\255\377

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\103\060\202\002\053\240\003\002\001\002\002\020\137  
\370\173\050\053\124\334\215\102\243\025\265\150\311\255\377\060  
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\065  
\061\026\060\024\006\003\125\004\012\023\015\103\151\163\143\157  
\040\123\171\163\164\145\155\163\061\033\060\031\006\003\125\004  
\003\023\022\103\151\163\143\157\040\122\157\157\164\040\103\101  
\040\062\060\064\070\060\036\027\015\060\064\060\065\061\064\062  
\060\061\067\061\062\132\027\015\062\071\060\065\061\064\062\060  
\062\065\064\062\132\060\065\061\026\060\024\006\003\125\004\012  
\023\015\103\151\163\143\157\040\123\171\163\164\145\155\163\061  
\033\060\031\006\003\125\004\003\023\022\103\151\163\143\157\040  
\122\157\157\164\040\103\101\040\062\060\064\070\060\202\001\040  
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003  
\202\001\015\000\060\202\001\010\002\202\001\001\000\260\232\271  
\253\247\257\012\167\247\342\161\266\264\146\142\224\170\210\107  
\306\142\125\204\100\062\277\300\253\056\245\034\161\326\274\156  
\173\250\252\272\156\322\025\210\110\105\235\242\374\203\320\314  
\271\214\340\046\150\160\112\170\337\041\027\236\364\141\005\311  
\025\310\317\026\332\065\141\211\224\103\250\204\250\061\230\170  
\233\271\116\157\054\123\022\154\315\035\255\053\044\273\061\304  
\053\377\203\104\157\266\075\044\167\011\352\277\052\250\037\152  
\126\366\040\017\021\124\227\201\165\247\045\316\131\152\202\145  
\357\267\352\347\342\215\165\213\156\362\335\117\246\136\142\234  
\317\020\012\144\320\116\155\316\053\314\133\365\140\245\047\107  
\215\151\364\177\316\033\160\336\160\033\040\326\156\315\246\001  
\250\074\022\322\251\077\240\153\136\273\216\040\213\172\221\343  
\265\150\356\240\347\304\001\164\250\123\013\053\112\232\017\145  
\022\016\202\115\216\143\375\357\353\233\032\333\123\246\023\140  
\257\302\175\327\307\154\027\045\324\163\373\107\144\120\201\200  
\224\114\341\277\256\113\034\337\222\355\056\005\337\002\001\003  
\243\121\060\117\060\013\006\003\125\035\017\004\004\003\002\001

\206\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001  
\001\377\060\035\006\003\125\035\016\004\026\004\024\047\363\310  
\025\036\156\232\002\011\026\255\053\240\211\140\137\332\173\057  
\252\060\020\006\011\053\006\001\004\001\202\067\025\001\004\003  
\002\001\000\060\015\006\011\052\206\110\206\367\015\001\001\005  
\005\000\003\202\001\001\000\235\235\204\204\243\101\251\174\167  
\014\267\123\312\116\104\120\142\357\124\174\323\165\027\034\350  
\340\306\110\113\266\376\114\072\031\201\126\260\126\356\031\226  
\142\252\132\243\144\301\366\116\124\063\306\167\376\305\034\272  
\345\135\045\312\365\360\223\232\203\021\056\346\313\370\164\105  
\376\347\005\270\253\347\337\313\113\341\067\204\332\271\213\227  
\160\036\360\342\213\327\260\330\016\235\261\151\326\052\221\173  
\251\111\117\176\346\216\225\330\203\047\074\325\150\111\016\324  
\235\366\056\353\247\276\353\060\244\254\037\104\374\225\253\063  
\006\373\175\140\012\336\264\212\143\260\234\251\362\244\271\123  
\001\207\320\150\244\047\177\253\377\351\372\311\100\070\210\147  
\264\071\306\204\157\127\311\123\333\272\216\356\300\103\262\370  
\011\203\156\377\146\317\076\357\027\263\130\030\045\011\064\136  
\343\313\326\024\266\354\362\222\157\164\344\057\201\052\325\222  
\221\340\340\227\074\062\150\005\205\113\321\367\127\342\122\035  
\223\032\124\237\005\160\300\112\161\140\036\103\013\140\036\376  
\243\316\201\031\341\013\065

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Cisco Root CA 2048"

# Issuer: CN=Cisco Root CA 2048,O=Cisco Systems

# Serial Number:5f:f8:7b:28:2b:54:dc:8d:42:a3:15:b5:68:c9:ad:ff

# Subject: CN=Cisco Root CA 2048,O=Cisco Systems

# Not Valid Before: Fri May 14 20:17:12 2004

# Not Valid After: Mon May 14 20:25:42 2029

# Fingerprint (MD5): be:39:5a:be:07:8a:b1:12:17:25:cc:1d:46:34:3c:b2

# Fingerprint (SHA1): de:99:0c:ed:99:e0:43:1f:60:ed:c3:93:7e:7c:d5:bf:0e:d9:e5:fa

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Cisco Root CA 2048"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\336\231\014\355\231\340\103\037\140\355\303\223\176\174\325\277  
\016\331\345\372

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\276\071\132\276\007\212\261\022\027\045\314\035\106\064\074\262

END



```

CKA_ISSUER MULTILINE_OCTAL
\060\065\061\026\060\024\006\003\125\004\012\023\015\103\151\163
\143\157\040\123\171\163\164\145\155\163\061\033\060\031\006\003
\125\004\003\023\022\103\151\163\143\157\040\122\157\157\164\040
\103\101\040\062\060\064\070
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\137\370\173\050\053\124\334\215\102\243\025\265\150\311
\255\377
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "CA Disig"
Issuer: CN=CA Disig,O=Disig a.s.,L=Bratislava,C=SK
Serial Number: 1 (0x1)
Subject: CN=CA Disig,O=Disig a.s.,L=Bratislava,C=SK
Not Valid Before: Wed Mar 22 01:39:34 2006
Not Valid After: Tue Mar 22 01:39:34 2016
Fingerprint (MD5): 3f:45:96:39:e2:50:87:f7:bb:fe:98:0c:3c:20:98:e6
Fingerprint (SHA1): 2a:c8:d5:8b:57:ce:bf:2f:49:af:f2:fc:76:8f:51:14:62:90:7a:41
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "CA Disig"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\112\061\013\060\011\006\003\125\004\006\023\002\123\113\061
\023\060\021\006\003\125\004\007\023\012\102\162\141\164\151\163
\154\141\166\141\061\023\060\021\006\003\125\004\012\023\012\104
\151\163\151\147\040\141\056\163\056\061\021\060\017\006\003\125
\004\003\023\010\103\101\040\104\151\163\151\147
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\112\061\013\060\011\006\003\125\004\006\023\002\123\113\061
\023\060\021\006\003\125\004\007\023\012\102\162\141\164\151\163
\154\141\166\141\061\023\060\021\006\003\125\004\012\023\012\104
\151\163\151\147\040\141\056\163\056\061\021\060\017\006\003\125
\004\003\023\010\103\101\040\104\151\163\151\147
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\001
END

```

CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\017\060\202\002\367\240\003\002\001\002\002\001\001  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060  
\112\061\013\060\011\006\003\125\004\006\023\002\123\113\061\023  
\060\021\006\003\125\004\007\023\012\102\162\141\164\151\163\154  
\141\166\141\061\023\060\021\006\003\125\004\012\023\012\104\151  
\163\151\147\040\141\056\163\056\061\021\060\017\006\003\125\004  
\003\023\010\103\101\040\104\151\163\151\147\060\036\027\015\060  
\066\060\063\062\062\060\061\063\071\063\064\132\027\015\061\066  
\060\063\062\062\060\061\063\071\063\064\132\060\112\061\013\060  
\011\006\003\125\004\006\023\002\123\113\061\023\060\021\006\003  
\125\004\007\023\012\102\162\141\164\151\163\154\141\166\141\061  
\023\060\021\006\003\125\004\012\023\012\104\151\163\151\147\040  
\141\056\163\056\061\021\060\017\006\003\125\004\003\023\010\103  
\101\040\104\151\163\151\147\060\202\001\042\060\015\006\011\052  
\206\110\206\367\015\001\001\001\005\000\003\202\001\017\000\060  
\202\001\012\002\202\001\001\000\222\366\061\301\175\210\375\231  
\001\251\330\173\362\161\165\361\061\306\363\165\146\372\121\050  
\106\204\227\170\064\274\154\374\274\105\131\210\046\030\112\304  
\067\037\241\112\104\275\343\161\004\365\104\027\342\077\374\110  
\130\157\134\236\172\011\272\121\067\042\043\146\103\041\260\074  
\144\242\370\152\025\016\077\353\121\341\124\251\335\006\231\327  
\232\074\124\213\071\003\077\017\305\316\306\353\203\162\002\250  
\037\161\363\055\370\165\010\333\142\114\350\372\316\371\347\152  
\037\266\153\065\202\272\342\217\026\222\175\005\014\154\106\003  
\135\300\355\151\277\072\301\212\240\350\216\331\271\105\050\207  
\010\354\264\312\025\276\202\335\265\104\213\055\255\206\014\150  
\142\155\205\126\362\254\024\143\072\306\321\231\254\064\170\126  
\113\317\266\255\077\214\212\327\004\345\343\170\114\365\206\252  
\365\217\372\075\154\161\243\055\312\147\353\150\173\156\063\251  
\014\202\050\250\114\152\041\100\025\040\014\046\133\203\302\251  
\026\025\300\044\202\135\053\026\255\312\143\366\164\000\260\337  
\103\304\020\140\126\147\143\105\002\003\001\000\001\243\201\377  
\060\201\374\060\017\006\003\125\035\023\001\001\377\004\005\060  
\003\001\001\377\060\035\006\003\125\035\016\004\026\004\024\215  
\262\111\150\235\162\010\045\271\300\047\365\120\223\126\110\106  
\161\371\217\060\016\006\003\125\035\017\001\001\377\004\004\003  
\002\001\006\060\066\006\003\125\035\021\004\057\060\055\201\023  
\143\141\157\160\145\162\141\164\157\162\100\144\151\163\151\147  
\056\163\153\206\026\150\164\164\160\072\057\057\167\167\167\056  
\144\151\163\151\147\056\163\153\057\143\141\060\146\006\003\125  
\035\037\004\137\060\135\060\055\240\053\240\051\206\047\150\164  
\164\160\072\057\057\167\167\167\056\144\151\163\151\147\056\163  
\153\057\143\141\057\143\162\154\057\143\141\137\144\151\163\151  
\147\056\143\162\154\060\054\240\052\240\050\206\046\150\164\164  
\160\072\057\057\143\141\056\144\151\163\151\147\056\163\153\057  
\143\141\057\143\162\154\057\143\141\137\144\151\163\151\147\056  
\143\162\154\060\032\006\003\125\035\040\004\023\060\021\060\017

```
\006\015\053\201\036\221\223\346\012\000\000\000\001\001\001\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003\202
\001\001\000\135\064\164\141\114\257\073\330\377\237\155\130\066
\034\075\013\201\015\022\053\106\020\200\375\347\074\047\320\172
\310\251\266\176\164\060\063\243\072\212\173\164\300\171\171\102
\223\155\377\261\051\024\202\253\041\214\057\027\371\077\046\057
\365\131\306\357\200\006\267\232\111\051\354\316\176\161\074\152
\020\101\300\366\323\232\262\174\132\221\234\300\254\133\310\115
\136\367\341\123\377\103\167\374\236\113\147\154\327\363\203\321
\240\340\177\045\337\270\230\013\232\062\070\154\060\240\363\377
\010\025\063\367\120\112\173\076\243\076\040\251\334\057\126\200
\012\355\101\120\260\311\364\354\262\343\046\104\000\016\157\236
\006\274\042\226\123\160\145\304\120\012\106\153\244\057\047\201
\022\047\023\137\020\241\166\316\212\173\067\352\303\071\141\003
\225\230\072\347\154\210\045\010\374\171\150\015\207\175\142\370
\264\137\373\305\330\114\275\130\274\077\103\133\324\036\001\115
\074\143\276\043\357\214\315\132\120\270\150\124\371\012\231\063
\021\000\341\236\302\106\167\202\365\131\006\214\041\114\207\011
\315\345\250
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
```

```
Trust for "CA Disig"
```

```
Issuer: CN=CA Disig,O=Disig a.s.,L=Bratislava,C=SK
```

```
Serial Number: 1 (0x1)
```

```
Subject: CN=CA Disig,O=Disig a.s.,L=Bratislava,C=SK
```

```
Not Valid Before: Wed Mar 22 01:39:34 2006
```

```
Not Valid After: Tue Mar 22 01:39:34 2016
```

```
Fingerprint (MD5): 3f:45:96:39:e2:50:87:f7:bb:fe:98:0c:3c:20:98:e6
```

```
Fingerprint (SHA1): 2a:c8:d5:8b:57:ce:bf:2f:49:af:f2:fc:76:8f:51:14:62:90:7a:41
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "CA Disig"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\052\310\325\213\127\316\277\057\111\257\362\374\166\217\121\024
\142\220\172\101
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\077\105\226\071\342\120\207\367\273\376\230\014\074\040\230\346
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\112\061\013\060\011\006\003\125\004\006\023\002\123\113\061
\023\060\021\006\003\125\004\007\023\012\102\162\141\164\151\163
```

```
\154\141\166\141\061\023\060\021\006\003\125\004\012\023\012\104
\151\163\151\147\040\141\056\163\056\061\021\060\017\006\003\125
\004\003\023\010\103\101\040\104\151\163\151\147
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\001\001
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "InfoNotary CSP Root"

# Issuer: C=BG+1.2.840.113549.1.9.1=csp@infonotary.com+OU=InfoNotary CSP Root+DC=root-ca+O=InfoNotary PLC+CN=InfoNotary CSP Root

# Serial Number: 1a:af:92:6c:8f:93:af:60

# Subject: C=BG+1.2.840.113549.1.9.1=csp@infonotary.com+OU=InfoNotary CSP Root+DC=root-ca+O=InfoNotary PLC+CN=InfoNotary CSP Root

# Not Valid Before: Mon Mar 06 17:33:05 2006

# Not Valid After: Fri Mar 06 17:33:05 2026

# Fingerprint (MD5): e2:d8:f8:67:f4:50:94:35:fc:5e:05:fc:82:22:95:c3

# Fingerprint (SHA1): 04:46:c8:bb:9a:69:83:c9:5c:8a:2e:54:64:68:7c:11:15:aa:b7:4a

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "InfoNotary CSP Root"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

```
\060\201\225\061\201\222\060\011\006\003\125\004\006\014\002\102
\107\060\025\006\003\125\004\012\014\016\111\156\146\157\116\157
\164\141\162\171\040\120\114\103\060\025\006\012\011\222\046\211
\223\362\054\144\001\031\026\007\162\157\157\164\055\143\141\060
\032\006\003\125\004\003\014\023\111\156\146\157\116\157\164\141
\162\171\040\103\123\120\040\122\157\157\164\060\032\006\003\125
\004\013\014\023\111\156\146\157\116\157\164\141\162\171\040\103
\123\120\040\122\157\157\164\060\037\006\011\052\206\110\206\367
\015\001\011\001\026\022\143\163\160\100\151\156\146\157\156\157
\164\141\162\171\056\143\157\155
```

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\201\225\061\201\222\060\011\006\003\125\004\006\014\002\102
\107\060\025\006\003\125\004\012\014\016\111\156\146\157\116\157
\164\141\162\171\040\120\114\103\060\025\006\012\011\222\046\211
\223\362\054\144\001\031\026\007\162\157\157\164\055\143\141\060
\032\006\003\125\004\003\014\023\111\156\146\157\116\157\164\141
```

\162\171\040\103\123\120\040\122\157\157\164\060\032\006\003\125  
\004\013\014\023\111\156\146\157\116\157\164\141\162\171\040\103  
\123\120\040\122\157\157\164\060\037\006\011\052\206\110\206\367  
\015\001\011\001\026\022\143\163\160\100\151\156\146\157\156\157  
\164\141\162\171\056\143\157\155

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\010\032\257\222\154\217\223\257\140

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\007\304\060\202\005\254\240\003\002\001\002\002\010\032  
\257\222\154\217\223\257\140\060\015\006\011\052\206\110\206\367  
\015\001\001\005\005\000\060\201\225\061\201\222\060\011\006\003  
\125\004\006\014\002\102\107\060\025\006\003\125\004\012\014\016  
\111\156\146\157\116\157\164\141\162\171\040\120\114\103\060\025  
\006\012\011\222\046\211\223\362\054\144\001\031\026\007\162\157  
\157\164\055\143\141\060\032\006\003\125\004\003\014\023\111\156  
\146\157\116\157\164\141\162\171\040\103\123\120\040\122\157\157  
\164\060\032\006\003\125\004\013\014\023\111\156\146\157\116\157  
\164\141\162\171\040\103\123\120\040\122\157\157\164\060\037\006  
\011\052\206\110\206\367\015\001\011\001\026\022\143\163\160\100  
\151\156\146\157\156\157\164\141\162\171\056\143\157\155\060\042  
\030\017\062\060\060\066\060\063\060\066\061\067\063\063\060\065  
\132\030\017\062\060\062\066\060\063\060\066\061\067\063\063\060  
\065\132\060\201\225\061\201\222\060\011\006\003\125\004\006\014  
\002\102\107\060\025\006\003\125\004\012\014\016\111\156\146\157  
\116\157\164\141\162\171\040\120\114\103\060\025\006\012\011\222  
\046\211\223\362\054\144\001\031\026\007\162\157\157\164\055\143  
\141\060\032\006\003\125\004\003\014\023\111\156\146\157\116\157  
\164\141\162\171\040\103\123\120\040\122\157\157\164\060\032\006  
\003\125\004\013\014\023\111\156\146\157\116\157\164\141\162\171  
\040\103\123\120\040\122\157\157\164\060\037\006\011\052\206\110  
\206\367\015\001\011\001\026\022\143\163\160\100\151\156\146\157  
\156\157\164\141\162\171\056\143\157\155\060\202\002\042\060\015  
\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202\002  
\017\000\060\202\002\012\002\202\002\001\000\234\315\244\136\037  
\244\176\010\202\117\200\166\301\047\214\107\026\140\237\163\254  
\311\221\177\055\020\154\073\224\111\234\102\063\137\224\361\203  
\041\011\221\367\222\267\017\070\105\213\224\007\112\253\376\077  
\066\065\133\321\325\122\070\102\106\350\107\307\112\120\063\310  
\344\340\163\266\220\232\272\243\210\070\323\053\102\300\156\337  
\242\023\027\362\117\271\347\362\041\335\145\372\246\375\122\302  
\140\262\313\117\067\275\257\047\216\151\153\062\100\123\131\365  
\362\061\166\210\006\155\150\237\060\274\267\201\034\216\147\143  
\303\005\145\367\063\366\131\251\253\263\212\107\013\024\023\307  
\066\335\042\373\370\104\064\065\101\050\300\201\272\116\265\161  
\023\257\003\250\111\012\056\244\233\141\167\153\035\044\322\245  
\361\055\321\107\136\202\377\110\203\260\025\230\107\336\166\373

\117\116\300\277\124\111\146\274\117\001\321\174\072\145\376\305  
\254\160\133\305\025\033\162\245\175\246\133\073\027\303\276\303  
\077\135\022\177\147\055\166\107\014\213\277\026\043\265\203\162  
\315\200\315\350\272\257\136\150\063\070\324\220\355\156\322\351  
\126\004\044\241\371\276\154\136\312\236\043\040\222\053\232\015  
\113\115\343\242\110\217\276\355\252\016\214\276\251\070\160\271  
\020\177\062\135\200\047\132\003\340\324\107\063\045\132\166\251  
\203\331\230\100\355\177\165\002\357\356\141\221\254\061\076\200  
\323\064\113\360\302\116\065\060\111\136\267\051\350\175\041\260  
\377\052\171\234\064\061\031\146\063\040\141\032\057\260\202\325  
\261\147\123\220\015\235\052\227\050\156\267\146\077\032\177\246  
\304\232\150\226\346\146\133\172\067\337\132\167\025\340\331\343  
\174\263\262\320\325\150\333\076\035\130\037\216\312\230\164\143  
\277\324\175\066\150\356\320\057\244\052\362\210\057\167\303\022  
\077\215\250\045\054\004\151\130\246\313\264\071\361\210\320\246  
\336\226\316\163\102\106\323\243\371\361\330\216\212\235\156\212  
\300\122\117\105\267\160\376\034\173\075\015\226\334\371\220\226  
\155\306\030\241\102\302\266\334\331\043\037\227\223\233\017\031  
\371\260\267\077\045\164\275\202\123\354\015\057\155\326\077\122  
\057\330\166\320\045\275\320\271\365\275\017\002\003\001\000\001  
\243\202\002\020\060\202\002\014\060\016\006\003\125\035\017\001  
\001\377\004\004\003\002\001\006\060\104\006\010\053\006\001\005  
\005\007\001\001\004\070\060\066\060\064\006\010\053\006\001\005  
\005\007\060\001\206\050\150\164\164\160\072\057\057\157\143\163  
\160\056\151\156\146\157\156\157\164\141\162\171\056\143\157\155  
\057\162\145\163\160\157\156\144\145\162\056\143\147\151\060\126  
\006\010\053\006\001\005\005\007\001\013\004\112\060\110\060\106  
\006\010\053\006\001\005\005\007\060\005\206\072\154\144\141\160  
\072\057\057\154\144\141\160\056\151\156\146\157\156\157\164\141  
\162\171\056\143\157\155\057\144\143\075\162\157\157\164\055\143  
\141\054\144\143\075\151\156\146\157\156\157\164\141\162\171\054  
\144\143\075\143\157\155\060\201\252\006\003\125\035\040\004\201  
\242\060\201\237\060\157\006\011\053\006\001\004\001\201\255\000  
\001\060\142\060\072\006\010\053\006\001\005\005\007\002\001\026  
\056\150\164\164\160\072\057\057\162\145\160\157\163\151\164\157  
\162\171\056\151\156\146\157\156\157\164\141\162\171\056\143\157  
\155\057\143\160\163\057\161\143\160\163\056\150\164\155\154\060  
\044\006\010\053\006\001\005\005\007\002\002\060\030\032\026\111  
\156\146\157\116\157\164\141\162\171\040\103\123\120\040\122\157  
\157\164\040\103\101\060\054\006\011\053\006\001\004\001\201\255  
\000\000\060\037\060\035\006\010\053\006\001\005\005\007\002\001  
\026\021\150\164\164\160\072\057\057\167\167\167\056\143\162\143  
\056\142\147\060\017\006\003\125\035\023\001\001\377\004\005\060  
\003\001\001\377\060\177\006\003\125\035\021\004\170\060\166\244  
\164\060\162\061\160\060\013\006\003\125\004\021\014\004\061\060  
\060\060\060\014\006\003\125\004\007\014\005\123\157\146\151\141  
\060\023\006\003\125\004\024\014\014\053\063\065\071\062\071\070  
\067\065\067\061\067\060\033\006\006\125\004\012\144\001\001\014

\021\061\063\061\062\067\066\070\062\067\072\102\125\114\123\124  
\101\124\060\041\006\011\052\206\110\206\367\015\001\011\010\014  
\024\061\066\040\111\166\141\156\040\126\141\163\157\166\040\123  
\164\162\145\145\164\060\035\006\003\125\035\016\004\026\004\024  
\335\324\116\147\103\077\323\352\142\350\332\211\156\216\073\156  
\013\273\225\237\060\015\006\011\052\206\110\206\367\015\001\001  
\005\005\000\003\202\002\001\000\030\233\374\015\301\370\161\254  
\324\314\024\265\047\011\301\130\112\064\100\346\233\145\312\340  
\361\213\122\075\226\176\211\036\336\250\025\372\335\224\056\203  
\306\066\135\033\041\251\066\016\134\075\111\210\014\123\041\135  
\037\155\111\066\157\234\120\353\333\144\317\211\272\257\136\255  
\024\104\207\142\357\060\174\300\226\337\160\071\313\073\121\356  
\053\374\010\005\207\126\315\063\045\340\200\032\340\246\347\015  
\103\114\000\043\103\126\242\016\031\124\342\215\321\015\026\271  
\132\157\233\167\345\034\251\203\213\050\361\341\062\166\137\107  
\260\232\066\352\262\157\335\206\061\130\376\006\151\260\303\140  
\246\373\330\050\324\010\335\361\156\116\032\275\315\267\254\276  
\042\207\026\111\261\070\000\325\214\103\051\347\051\153\053\022  
\142\131\252\103\360\264\162\210\070\326\002\137\037\332\044\222  
\215\215\174\374\037\175\070\220\130\013\037\034\267\034\273\066  
\047\055\132\034\307\061\335\264\053\235\275\107\241\061\267\011  
\021\342\315\157\247\156\364\270\243\051\217\363\140\277\247\035  
\340\117\227\045\045\012\060\111\307\376\172\071\104\324\323\145  
\357\210\135\377\331\356\123\071\274\072\104\250\061\073\045\227  
\173\232\277\321\335\153\342\327\022\152\373\062\273\321\330\216  
\363\226\263\217\220\352\170\130\301\012\333\245\045\276\212\003  
\037\345\222\322\274\177\244\162\344\353\126\172\251\372\174\270  
\361\240\277\046\376\112\064\317\045\252\144\304\273\173\355\030  
\345\114\054\157\101\145\355\340\273\075\054\165\125\157\344\025  
\006\305\113\154\223\366\017\125\314\223\165\205\141\046\003\322  
\314\225\313\172\020\040\047\126\172\277\165\130\334\365\015\226  
\331\112\007\204\330\042\233\020\321\326\006\156\026\007\003\263  
\257\171\343\240\027\272\270\103\010\102\235\074\073\047\314\174  
\021\324\176\061\363\146\121\002\021\162\072\243\351\162\275\225  
\135\241\025\177\107\023\071\225\262\265\256\366\361\141\164\060  
\170\307\146\001\323\262\160\227\010\311\015\044\364\104\052\160  
\246\235\057\022\144\006\156\212\215\040\343\176\332\361\124\277  
\015\024\254\051\276\175\177\177\271\153\105\002\121\147\025\131  
\242\016\041\047\311\202\147\061

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "InfoNotary CSP Root"

# Issuer: C=BG+1.2.840.113549.1.9.1=csp@infonotary.com+OU=InfoNotary CSP Root+DC=root-ca+O=InfoNotary PLC+CN=InfoNotary CSP Root

```

Serial Number: 1a:af:92:6c:8f:93:af:60
Subject: C=BG+1.2.840.113549.1.9.1=csp@infonotary.com+OU=InfoNotary CSP Root+DC=root-
ca+O=InfoNotary PLC+CN=InfoNotary CSP Root
Not Valid Before: Mon Mar 06 17:33:05 2006
Not Valid After: Fri Mar 06 17:33:05 2026
Fingerprint (MD5): e2:d8:f8:67:f4:50:94:35:fc:5e:05:fc:82:22:95:c3
Fingerprint (SHA1): 04:46:c8:bb:9a:69:83:c9:5c:8a:2e:54:64:68:7c:11:15:aa:b7:4a
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "InfoNotary CSP Root"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\004\106\310\273\232\151\203\311\134\212\056\124\144\150\174\021
\025\252\267\112
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\342\330\370\147\364\120\224\065\374\136\005\374\202\042\225\303
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\225\061\201\222\060\011\006\003\125\004\006\014\002\102
\107\060\025\006\003\125\004\012\014\016\111\156\146\157\116\157
\164\141\162\171\040\120\114\103\060\025\006\012\011\222\046\211
\223\362\054\144\001\031\026\007\162\157\157\164\055\143\141\060
\032\006\003\125\004\003\014\023\111\156\146\157\116\157\164\141
\162\171\040\103\123\120\040\122\157\157\164\060\032\006\003\125
\004\013\014\023\111\156\146\157\116\157\164\141\162\171\040\103
\123\120\040\122\157\157\164\060\037\006\011\052\206\110\206\367
\015\001\011\001\026\022\143\163\160\100\151\156\146\157\156\157
\164\141\162\171\056\143\157\155
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\032\257\222\154\217\223\257\140
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "UCA Global Root"
Issuer: CN=UCA Global Root,O=UniTrust,C=CN
Serial Number: 8 (0x8)
Subject: CN=UCA Global Root,O=UniTrust,C=CN
Not Valid Before: Tue Jan 01 00:00:00 2008
Not Valid After: Thu Dec 31 00:00:00 2037
Fingerprint (MD5): c1:d9:51:c0:84:b8:6a:75:e8:2f:d7:d6:5f:7e:ac:46
Fingerprint (SHA1): 0b:97:2c:9e:a6:e7:cc:58:d9:3b:20:bf:71:ec:41:2e:72:09:fa:bf

```



```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "UCA Global Root"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\072\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\021\060\017\006\003\125\004\012\023\010\125\156\151\124\162\165
\163\164\061\030\060\026\006\003\125\004\003\023\017\125\103\101
\040\107\154\157\142\141\154\040\122\157\157\164
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\072\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\021\060\017\006\003\125\004\012\023\010\125\156\151\124\162\165
\163\164\061\030\060\026\006\003\125\004\003\023\017\125\103\101
\040\107\154\157\142\141\154\040\122\157\157\164
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\010
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\222\060\202\003\172\240\003\002\001\002\002\001\010
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\072\061\013\060\011\006\003\125\004\006\023\002\103\116\061\021
\060\017\006\003\125\004\012\023\010\125\156\151\124\162\165\163
\164\061\030\060\026\006\003\125\004\003\023\017\125\103\101\040
\107\154\157\142\141\154\040\122\157\157\164\060\036\027\015\060
\070\060\061\060\061\060\060\060\060\060\060\132\027\015\063\067
\061\062\063\061\060\060\060\060\060\060\132\060\072\061\013\060
\011\006\003\125\004\006\023\002\103\116\061\021\060\017\006\003
\125\004\012\023\010\125\156\151\124\162\165\163\164\061\030\060
\026\006\003\125\004\003\023\017\125\103\101\040\107\154\157\142
\141\154\040\122\157\157\164\060\202\002\042\060\015\006\011\052
\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060
\202\002\012\002\202\002\001\000\332\263\345\006\120\077\366\163
\367\304\062\277\106\245\045\142\063\207\260\150\376\247\337\210
\003\143\175\002\226\375\353\207\311\356\342\010\273\235\273\273
\344\101\217\307\060\211\017\155\044\300\004\154\024\224\201\115
\240\015\164\146\363\360\205\257\370\144\031\336\271\351\201\223
\320\050\205\231\107\102\112\054\074\070\047\112\314\377\371\154
\031\327\265\363\357\233\256\133\064\006\327\217\242\023\006\234
\212\204\102\325\263\243\220\150\155\201\220\356\115\204\354\114
\160\116\055\336\044\071\316\031\000\103\223\170\371\010\206\035
\103\321\364\162\274\005\300\147\372\300\121\322\311\205\007\044
\256\071\036\172\315\101\322\066\253\141\352\053\253\360\040\125
\231\074\155\055\034\056\056\165\226\330\162\227\340\014\312\151
```

\163\356\165\053\025\011\340\216\155\273\332\023\377\106\250\350  
\000\014\254\007\057\035\271\272\271\321\240\367\231\236\164\134  
\031\005\146\061\317\076\052\122\376\157\237\363\271\275\371\301  
\201\365\067\332\056\114\201\045\135\366\331\224\232\323\065\213  
\040\050\067\137\121\353\175\142\307\251\223\321\371\320\064\313  
\251\047\046\054\050\220\222\073\125\143\267\027\016\124\163\253  
\257\174\354\072\253\160\063\254\041\373\042\046\263\206\254\043  
\251\327\177\155\313\010\040\362\257\100\365\377\104\107\161\335  
\047\335\023\050\241\352\166\071\371\020\240\240\115\100\244\047  
\262\131\025\053\154\055\044\267\044\143\170\367\103\030\172\017  
\115\021\343\350\254\207\102\215\347\130\161\244\253\156\242\300  
\227\174\273\343\023\113\312\333\273\153\010\371\151\264\004\162  
\325\303\106\271\167\352\377\272\373\351\360\072\014\065\366\217  
\017\256\006\204\026\335\224\125\324\357\312\047\267\003\074\305  
\034\046\052\365\074\250\245\225\233\206\361\212\211\147\370\307  
\014\146\261\355\101\277\202\246\000\150\072\042\064\356\036\353  
\345\157\211\164\117\152\252\152\250\127\147\122\324\040\141\301  
\316\123\313\375\044\177\137\046\337\241\010\151\226\240\236\376  
\111\103\342\323\352\332\304\361\210\061\041\156\034\341\315\363  
\165\016\040\104\026\314\175\163\164\065\105\054\073\201\324\040  
\354\266\011\214\076\110\262\111\002\003\001\000\001\243\201\242  
\060\201\237\060\013\006\003\125\035\017\004\004\003\002\001\006  
\060\014\006\003\125\035\023\004\005\060\003\001\001\377\060\143  
\006\003\125\035\045\004\134\060\132\006\010\053\006\001\005\005  
\007\003\001\006\010\053\006\001\005\005\007\003\002\006\010\053  
\006\001\005\005\007\003\003\006\010\053\006\001\005\005\007\003  
\004\006\010\053\006\001\005\005\007\003\005\006\010\053\006\001  
\005\005\007\003\006\006\010\053\006\001\005\005\007\003\007\006  
\010\053\006\001\005\005\007\003\010\006\010\053\006\001\005\005  
\007\003\011\060\035\006\003\125\035\016\004\026\004\024\331\303  
\323\370\200\222\147\314\135\322\072\242\327\161\242\264\304\070  
\200\055\060\015\006\011\052\206\110\206\367\015\001\001\005\005  
\000\003\202\002\001\000\320\210\171\312\010\252\367\013\064\240  
\116\011\302\351\176\065\110\211\160\204\043\057\121\303\053\057  
\136\333\123\153\133\165\010\052\124\272\062\016\325\306\161\205  
\261\227\111\200\366\204\320\360\272\267\161\224\310\171\153\246  
\305\104\350\102\242\255\045\055\127\057\346\326\061\051\372\031  
\211\124\051\176\267\176\107\066\151\055\156\062\274\324\165\332  
\102\163\270\116\345\203\100\163\262\135\337\324\104\163\246\142  
\013\333\252\156\005\214\310\177\106\117\071\205\220\235\274\033  
\124\051\254\245\327\376\345\130\126\127\155\054\231\241\111\041  
\325\141\306\214\141\341\165\044\301\001\335\055\033\066\303\057  
\022\314\013\326\170\213\165\200\351\101\271\210\261\312\074\251  
\026\306\116\025\343\162\066\366\324\240\101\205\257\212\145\160  
\115\265\104\020\120\354\355\337\155\346\331\306\300\022\361\113  
\072\057\163\351\074\251\356\033\252\057\065\245\233\237\115\305  
\064\204\137\046\024\151\263\043\261\211\162\024\370\351\115\121  
\042\003\377\112\206\304\034\350\173\171\012\333\107\045\201\176

```
\374\064\204\254\131\270\130\103\344\075\103\011\124\164\302\320
\375\331\357\156\131\367\162\140\231\166\157\365\047\247\273\203
\244\112\201\354\051\201\364\167\113\341\102\022\125\324\206\052
\022\266\360\125\233\001\056\335\366\250\343\031\303\316\107\057
\300\170\141\030\132\307\145\374\235\106\133\127\334\174\016\273
\226\203\020\174\125\030\011\004\256\321\367\213\052\076\240\346
\120\326\060\066\327\347\213\070\123\354\111\104\340\317\244\337
\361\123\173\213\132\266\366\021\220\113\326\165\363\376\002\363
\051\257\360\043\162\175\024\355\251\135\337\172\201\236\233\222
\042\374\036\370\001\105\101\227\307\153\001\141\276\063\150\362
\240\145\204\146\274\340\052\244\150\323\161\354\307\010\336\243
\303\311\066\112\064\361\027\342\200\257\040\041\223\224\036\346
\025\323\124\142\361\265\070\057\343\314\271\147\004\251\272\345
\356\371\020\156\313\056\176\023\257\222\024\376\363\047\163\173
\070\374\163\155\271\271\210\366\156\214\013\365\374\377\011\016
\263\055\136\173\165\343\222\044\342\346\341\130\076\113\050\003
\165\153\030\233\107\014
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
Trust for "UCA Global Root"
Issuer: CN=UCA Global Root,O=UniTrust,C=CN
Serial Number: 8 (0x8)
Subject: CN=UCA Global Root,O=UniTrust,C=CN
Not Valid Before: Tue Jan 01 00:00:00 2008
Not Valid After: Thu Dec 31 00:00:00 2037
Fingerprint (MD5): c1:d9:51:c0:84:b8:6a:75:e8:2f:d7:d6:5f:7e:ac:46
Fingerprint (SHA1): 0b:97:2c:9e:a6:e7:cc:58:d9:3b:20:bf:71:ec:41:2e:72:09:fa:bf
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "UCA Global Root"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\013\227\054\236\246\347\314\130\331\073\040\277\161\354\101\056
\162\011\372\277
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\301\331\121\300\204\270\152\165\350\057\327\326\137\176\254\106
```

```
END
CKA_ISSUER MULTILINE_OCTAL
\060\072\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\021\060\017\006\003\125\004\012\023\010\125\156\151\124\162\165
\163\164\061\030\060\026\006\003\125\004\003\023\017\125\103\101
\040\107\154\157\142\141\154\040\122\157\157\164
```

```

END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\010
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "UCA Root"
Issuer: CN=UCA Root,O=UniTrust,C=CN
Serial Number: 9 (0x9)
Subject: CN=UCA Root,O=UniTrust,C=CN
Not Valid Before: Thu Jan 01 00:00:00 2004
Not Valid After: Mon Dec 31 00:00:00 2029
Fingerprint (MD5): 8f:91:e7:ee:e3:fc:da:86:ca:fc:dc:70:ed:b7:b7:0c
Fingerprint (SHA1): 82:50:be:d5:a2:14:43:3a:66:37:7c:bc:10:ef:83:f6:69:da:3a:67
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "UCA Root"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\063\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\021\060\017\006\003\125\004\012\023\010\125\156\151\124\162\165
\163\164\061\021\060\017\006\003\125\004\003\023\010\125\103\101
\040\122\157\157\164
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\063\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\021\060\017\006\003\125\004\012\023\010\125\156\151\124\162\165
\163\164\061\021\060\017\006\003\125\004\003\023\010\125\103\101
\040\122\157\157\164
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\011
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\204\060\202\002\154\240\003\002\001\002\002\001\011
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\063\061\013\060\011\006\003\125\004\006\023\002\103\116\061\021
\060\017\006\003\125\004\012\023\010\125\156\151\124\162\165\163
\164\061\021\060\017\006\003\125\004\003\023\010\125\103\101\040
\122\157\157\164\060\036\027\015\060\064\060\061\060\061\060\060
\060\060\060\060\132\027\015\062\071\061\062\063\061\060\060\060

```

\060\060\060\132\060\063\061\013\060\011\006\003\125\004\006\023  
\002\103\116\061\021\060\017\006\003\125\004\012\023\010\125\156  
\151\124\162\165\163\164\061\021\060\017\006\003\125\004\003\023  
\010\125\103\101\040\122\157\157\164\060\202\001\042\060\015\006  
\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017  
\000\060\202\001\012\002\202\001\001\000\263\135\007\312\206\046  
\175\153\342\373\070\011\016\314\202\302\152\032\000\242\025\137  
\326\351\324\001\267\126\003\001\131\217\365\070\151\044\166\302  
\136\053\305\366\053\277\257\373\101\375\017\132\374\253\327\203  
\160\115\060\230\321\236\262\166\273\222\326\273\351\020\050\151  
\050\066\104\350\361\054\327\130\174\044\326\177\002\072\360\201  
\153\141\140\077\364\063\336\155\345\352\050\122\117\374\251\035  
\143\174\013\272\352\256\304\150\106\344\336\217\301\247\262\266  
\130\132\155\035\054\331\214\072\267\210\313\205\324\367\350\003  
\136\375\262\115\120\350\326\037\377\256\002\077\213\117\226\041  
\074\233\327\045\311\035\077\373\230\261\131\344\360\251\073\257  
\263\315\205\054\342\140\106\314\157\216\240\353\360\064\305\361  
\102\030\140\256\022\355\106\165\034\345\330\251\226\132\276\336  
\132\326\170\147\226\133\223\167\120\362\156\033\336\226\121\112  
\246\326\113\103\165\041\146\215\167\354\002\204\166\134\104\020  
\266\035\141\154\344\243\040\175\267\215\272\017\221\165\307\215  
\337\274\002\140\250\051\250\275\075\103\002\003\001\000\001\243  
\201\242\060\201\237\060\013\006\003\125\035\017\004\004\003\002  
\001\006\060\014\006\003\125\035\023\004\005\060\003\001\001\377  
\060\143\006\003\125\035\045\004\134\060\132\006\010\053\006\001  
\005\005\007\003\001\006\010\053\006\001\005\005\007\003\002\006  
\010\053\006\001\005\005\007\003\003\006\010\053\006\001\005\005  
\007\003\004\006\010\053\006\001\005\005\007\003\005\006\010\053  
\006\001\005\005\007\003\006\006\010\053\006\001\005\005\007\003  
\007\006\010\053\006\001\005\005\007\003\010\006\010\053\006\001  
\005\005\007\003\011\060\035\006\003\125\035\016\004\026\004\024  
\333\037\065\363\153\114\377\102\061\144\233\315\273\132\036\035  
\110\020\267\356\060\015\006\011\052\206\110\206\367\015\001\001  
\005\005\000\003\202\001\001\000\070\154\267\210\361\255\372\130  
\067\164\321\350\160\336\234\047\131\313\344\025\327\240\303\140  
\327\210\200\004\305\060\114\075\324\032\353\006\136\131\107\346  
\274\146\313\340\010\374\350\065\354\142\175\312\300\332\301\170  
\257\345\106\157\373\211\202\043\217\366\327\123\146\125\240\336  
\045\022\073\161\066\026\125\022\166\373\075\370\124\133\061\272  
\000\006\370\175\125\345\247\166\203\252\134\112\227\246\052\050  
\337\275\306\154\013\043\225\216\063\177\036\136\100\037\023\124  
\054\234\345\265\016\335\027\050\256\153\001\323\122\051\365\042  
\037\220\071\364\334\142\150\360\074\206\107\354\270\005\105\273  
\267\014\226\224\306\147\313\043\161\320\216\164\042\326\101\353  
\003\250\266\352\276\304\001\022\265\263\135\100\166\006\040\324  
\144\270\051\106\006\212\316\037\223\232\020\356\373\252\132\264  
\334\057\325\053\313\366\327\005\204\230\005\221\013\204\367\075  
\372\326\371\172\372\054\025\352\066\202\103\267\267\270\343\363

```
\161\001\355\103\103\242\005\105\303\050\005\007\065\343\001\245
\070\036\200\324\327\303\331\336
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

# Microsoft Code Signing Only Certificate

# Trust for "UCA Root"

# Issuer: CN=UCA Root,O=UniTrust,C=CN

# Serial Number: 9 (0x9)

# Subject: CN=UCA Root,O=UniTrust,C=CN

# Not Valid Before: Thu Jan 01 00:00:00 2004

# Not Valid After: Mon Dec 31 00:00:00 2029

# Fingerprint (MD5): 8f:91:e7:ee:e3:fc:da:86:ca:fc:dc:70:ed:b7:b7:0c

# Fingerprint (SHA1): 82:50:be:d5:a2:14:43:3a:66:37:7c:bc:10:ef:83:f6:69:da:3a:67

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "UCA Root"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\202\120\276\325\242\024\103\072\146\067\174\274\020\357\203\366
\151\332\072\147
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\217\221\347\356\343\374\332\206\312\374\334\160\355\267\267\014
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\063\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\021\060\017\006\003\125\004\012\023\010\125\156\151\124\162\165
\163\164\061\021\060\017\006\003\125\004\003\023\010\125\103\101
\040\122\157\157\164
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\001\011
```

END

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

```
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

```
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

```
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

# Microsoft Code Signing Only Certificate

# Certificate "DigiNotar Root CA"

# Issuer: 1.2.840.113549.1.9.1=info@diginotar.nl,CN=DigiNotar Root CA,O=DigiNotar,C=NL

# Serial Number:0c:76:da:9c:91:0c:4e:2c:9e:fe:15:d0:58:93:3c:4c

# Subject: 1.2.840.113549.1.9.1=info@diginotar.nl,CN=DigiNotar Root CA,O=DigiNotar,C=NL

# Not Valid Before: Wed May 16 17:19:36 2007

```
Not Valid After: Mon Mar 31 18:19:21 2025
Fingerprint (MD5): 7a:79:54:4d:07:92:3b:5b:ff:41:f0:0e:c7:39:a2:98
Fingerprint (SHA1): c0:60:ed:44:cb:d8:81:bd:0e:f8:6c:0b:a2:87:dd:cf:81:67:47:8c
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "DigiNotar Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\137\061\013\060\011\006\003\125\004\006\023\002\116\114\061
\022\060\020\006\003\125\004\012\023\011\104\151\147\151\116\157
\164\141\162\061\032\060\030\006\003\125\004\003\023\021\104\151
\147\151\116\157\164\141\162\040\122\157\157\164\040\103\101\061
\040\060\036\006\011\052\206\110\206\367\015\001\011\001\026\021
\151\156\146\157\100\144\151\147\151\156\157\164\141\162\056\156
\154
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\137\061\013\060\011\006\003\125\004\006\023\002\116\114\061
\022\060\020\006\003\125\004\012\023\011\104\151\147\151\116\157
\164\141\162\061\032\060\030\006\003\125\004\003\023\021\104\151
\147\151\116\157\164\141\162\040\122\157\157\164\040\103\101\061
\040\060\036\006\011\052\206\110\206\367\015\001\011\001\026\021
\151\156\146\157\100\144\151\147\151\156\157\164\141\162\056\156
\154
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\014\166\332\234\221\014\116\054\236\376\025\320\130\223
\074\114
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\212\060\202\003\162\240\003\002\001\002\002\020\014
\166\332\234\221\014\116\054\236\376\025\320\130\223\074\114\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\137
\061\013\060\011\006\003\125\004\006\023\002\116\114\061\022\060
\020\006\003\125\004\012\023\011\104\151\147\151\116\157\164\141
\162\061\032\060\030\006\003\125\004\003\023\021\104\151\147\151
\116\157\164\141\162\040\122\157\157\164\040\103\101\061\040\060
\036\006\011\052\206\110\206\367\015\001\011\001\026\021\151\156
\146\157\100\144\151\147\151\156\157\164\141\162\056\156\154\060
\036\027\015\060\067\060\065\061\066\061\067\061\071\063\066\132
\027\015\062\065\060\063\063\061\061\070\061\071\062\061\132\060
\137\061\013\060\011\006\003\125\004\006\023\002\116\114\061\022
\060\020\006\003\125\004\012\023\011\104\151\147\151\116\157\164
\141\162\061\032\060\030\006\003\125\004\003\023\021\104\151\147
\151\116\157\164\141\162\040\122\157\157\164\040\103\101\061\040
```

\060\036\006\011\052\206\110\206\367\015\001\011\001\026\021\151  
\156\146\157\100\144\151\147\151\156\157\164\141\162\056\156\154  
\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001  
\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001  
\000\254\260\130\301\000\275\330\041\010\013\053\232\376\156\126  
\060\005\237\033\167\220\020\101\134\303\015\207\021\167\216\201  
\361\312\174\351\214\152\355\070\164\065\273\332\337\371\273\300  
\011\067\264\226\163\201\175\063\032\230\071\367\223\157\225\177  
\075\271\261\165\207\272\121\110\350\213\160\076\225\004\305\330  
\266\303\026\331\210\260\261\207\035\160\332\206\264\017\024\213  
\172\317\020\321\164\066\242\022\173\167\206\112\171\346\173\337  
\002\021\150\245\116\206\256\064\130\233\044\023\170\126\042\045  
\036\001\213\113\121\161\373\202\314\131\226\151\210\132\150\123  
\305\271\015\002\067\313\113\274\146\112\220\176\052\013\005\007  
\355\026\137\125\220\165\330\106\311\033\203\342\010\276\361\043  
\314\231\035\326\052\017\203\040\025\130\047\202\056\372\342\042  
\302\111\261\271\001\201\152\235\155\235\100\167\150\166\116\041  
\052\155\204\100\205\116\166\231\174\202\363\363\267\002\131\324  
\046\001\033\216\337\255\123\006\321\256\030\335\342\262\072\313  
\327\210\070\216\254\133\051\271\031\323\230\371\030\003\317\110  
\202\206\146\013\033\151\017\311\353\070\210\172\046\032\005\114  
\222\327\044\324\226\362\254\122\055\243\107\325\122\366\077\376  
\316\204\006\160\246\252\076\242\362\266\126\064\030\127\242\344  
\201\155\347\312\360\152\323\307\221\153\002\203\101\174\025\357  
\153\232\144\136\343\320\074\345\261\353\173\135\206\373\313\346  
\167\111\315\243\145\334\367\271\234\270\344\013\137\223\317\314  
\060\032\062\034\316\034\143\225\245\371\352\341\164\213\236\351  
\053\251\060\173\240\030\037\016\030\013\345\133\251\323\321\154  
\036\007\147\217\221\113\251\212\274\322\146\252\223\001\210\262  
\221\372\061\134\325\246\301\122\010\011\315\012\143\242\323\042  
\246\350\241\331\071\006\227\365\156\215\002\220\214\024\173\077  
\200\315\033\234\272\304\130\162\043\257\266\126\237\306\172\102  
\063\051\007\077\202\311\346\037\005\015\315\114\050\066\213\323  
\310\076\034\306\210\357\136\356\211\144\351\035\353\332\211\176  
\062\246\151\321\335\314\210\237\321\320\311\146\041\334\006\147  
\305\224\172\232\155\142\114\175\314\340\144\200\262\236\107\216  
\243\002\003\001\000\001\243\102\060\100\060\017\006\003\125\035  
\023\001\001\377\004\005\060\003\001\001\377\060\016\006\003\125  
\035\017\001\001\377\004\004\003\002\001\006\060\035\006\003\125  
\035\016\004\026\004\024\210\150\277\340\216\065\304\073\070\153  
\142\367\050\073\204\201\310\014\327\115\060\015\006\011\052\206  
\110\206\367\015\001\001\005\005\000\003\202\002\001\000\073\002  
\215\313\074\060\350\156\240\255\362\163\263\137\236\045\023\004  
\005\323\366\343\213\273\013\171\316\123\336\344\226\305\321\257  
\163\274\325\303\320\100\125\174\100\177\315\033\137\011\325\362  
\174\237\150\035\273\135\316\172\071\302\214\326\230\173\305\203  
\125\250\325\175\100\312\340\036\367\211\136\143\135\241\023\302  
\135\212\266\212\174\000\363\043\303\355\205\137\161\166\360\150



\143\252\105\041\071\110\141\170\066\334\361\103\223\324\045\307  
\362\200\145\341\123\002\165\121\374\172\072\357\067\253\204\050  
\127\014\330\324\324\231\126\154\343\242\376\131\204\264\061\350  
\063\370\144\224\224\121\227\253\071\305\113\355\332\335\200\013  
\157\174\051\015\304\216\212\162\015\347\123\024\262\140\101\075  
\204\221\061\150\075\047\104\333\345\336\364\372\143\105\310\114  
\076\230\365\077\101\272\116\313\067\015\272\146\230\361\335\313  
\237\134\367\124\066\202\153\054\274\023\141\227\102\370\170\273  
\314\310\242\237\312\360\150\275\153\035\262\337\215\157\007\235  
\332\216\147\307\107\036\312\271\277\052\102\221\267\143\123\146  
\361\102\243\341\364\132\115\130\153\265\344\244\063\255\134\160  
\035\334\340\362\353\163\024\221\232\003\301\352\000\145\274\007  
\374\317\022\021\042\054\256\240\275\072\340\242\052\330\131\351  
\051\323\030\065\244\254\021\137\031\265\265\033\377\042\112\134  
\306\172\344\027\357\040\251\247\364\077\255\212\247\232\004\045  
\235\016\312\067\346\120\375\214\102\051\004\232\354\271\317\113  
\162\275\342\010\066\257\043\057\142\345\312\001\323\160\333\174  
\202\043\054\026\061\014\306\066\007\220\172\261\037\147\130\304  
\073\130\131\211\260\214\214\120\263\330\206\313\150\243\304\012  
\347\151\113\040\316\301\036\126\113\225\251\043\150\330\060\330  
\303\353\260\125\121\315\345\375\053\270\365\273\021\237\123\124  
\366\064\031\214\171\011\066\312\141\027\045\027\013\202\230\163  
\014\167\164\303\325\015\307\250\022\114\307\247\124\161\107\056  
\054\032\175\311\343\053\073\110\336\047\204\247\143\066\263\175  
\217\240\144\071\044\015\075\173\207\257\146\134\164\033\113\163  
\262\345\214\360\206\231\270\345\305\337\204\301\267\353

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "DigiNotar Root CA"  
# Issuer: 1.2.840.113549.1.9.1=info@diginotar.nl,CN=DigiNotar Root CA,O=DigiNotar,C=NL  
# Serial Number:0c:76:da:9c:91:0c:4e:2c:9e:fe:15:d0:58:93:3c:4c  
# Subject: 1.2.840.113549.1.9.1=info@diginotar.nl,CN=DigiNotar Root CA,O=DigiNotar,C=NL  
# Not Valid Before: Wed May 16 17:19:36 2007  
# Not Valid After: Mon Mar 31 18:19:21 2025  
# Fingerprint (MD5): 7a:79:54:4d:07:92:3b:5b:ff:41:f0:0e:c7:39:a2:98  
# Fingerprint (SHA1): c0:60:ed:44:cb:d8:81:bd:0e:f8:6c:0b:a2:87:dd:cf:81:67:47:8c  
CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "DigiNotar Root CA"  
CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL  
\300\140\355\104\313\330\201\275\016\370\154\013\242\207\335\317  
\201\147\107\214

```

END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\172\171\124\115\007\222\073\133\377\101\360\016\307\071\242\230
END
CKA_ISSUER MULTILINE_OCTAL
\060\137\061\013\060\011\006\003\125\004\006\023\002\116\114\061
\022\060\020\006\003\125\004\012\023\011\104\151\147\151\116\157
\164\141\162\061\032\060\030\006\003\125\004\003\023\021\104\151
\147\151\116\157\164\141\162\040\122\157\157\164\040\103\101\061
\040\060\036\006\011\052\206\110\206\367\015\001\011\001\026\021
\151\156\146\157\100\144\151\147\151\156\157\164\141\162\056\156
\154
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\014\166\332\234\221\014\116\054\236\376\025\320\130\223
\074\114
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "Starfield Services Root Certificate Authority"
Issuer: CN=Starfield Services Root Certificate
Authority,OU=http://certificates.starfieldtech.com/repository/,O=Starfield Technologies\,
Inc.,L=Scottsdale,ST=Arizona,C=US
Serial Number: 0 (0x0)
Subject: CN=Starfield Services Root Certificate
Authority,OU=http://certificates.starfieldtech.com/repository/,O=Starfield Technologies\,
Inc.,L=Scottsdale,ST=Arizona,C=US
Not Valid Before: Mon Jun 02 00:00:00 2008
Not Valid After: Mon Dec 31 23:59:59 2029
Fingerprint (MD5): cf:8f:3b:62:a3:ca:ca:71:1b:a3:e1:cb:48:57:35:1f
Fingerprint (SHA1): 5d:00:38:60:f0:02:ed:82:9d:ea:a4:18:68:f7:88:18:6d:62:12:7f
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Starfield Services Root Certificate Authority"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\317\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\020\060\016\006\003\125\004\010\023\007\101\162\151\172\157
\156\141\061\023\060\021\006\003\125\004\007\023\012\123\143\157
\164\164\163\144\141\154\145\061\045\060\043\006\003\125\004\012
\023\034\123\164\141\162\146\151\145\154\144\040\124\145\143\150
\156\157\154\157\147\151\145\163\054\040\111\156\143\056\061\072

```

\060\070\006\003\125\004\013\023\061\150\164\164\160\072\057\057  
\143\145\162\164\151\146\151\143\141\164\145\163\056\163\164\141  
\162\146\151\145\154\144\164\145\143\150\056\143\157\155\057\162  
\145\160\157\163\151\164\157\162\171\057\061\066\060\064\006\003  
\125\004\003\023\055\123\164\141\162\146\151\145\154\144\040\123  
\145\162\166\151\143\145\163\040\122\157\157\164\040\103\145\162  
\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151  
\164\171

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\317\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\020\060\016\006\003\125\004\010\023\007\101\162\151\172\157  
\156\141\061\023\060\021\006\003\125\004\007\023\012\123\143\157  
\164\164\163\144\141\154\145\061\045\060\043\006\003\125\004\012  
\023\034\123\164\141\162\146\151\145\154\144\040\124\145\143\150  
\156\157\154\157\147\151\145\163\054\040\111\156\143\056\061\072  
\060\070\006\003\125\004\013\023\061\150\164\164\160\072\057\057  
\143\145\162\164\151\146\151\143\141\164\145\163\056\163\164\141  
\162\146\151\145\154\144\164\145\143\150\056\143\157\155\057\162  
\145\160\157\163\151\164\157\162\171\057\061\066\060\064\006\003  
\125\004\003\023\055\123\164\141\162\146\151\145\154\144\040\123  
\145\162\166\151\143\145\163\040\122\157\157\164\040\103\145\162  
\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151  
\164\171

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\000

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\176\060\202\003\146\240\003\002\001\002\002\001\000  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060  
\201\317\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\020\060\016\006\003\125\004\010\023\007\101\162\151\172\157\156  
\141\061\023\060\021\006\003\125\004\007\023\012\123\143\157\164  
\164\163\144\141\154\145\061\045\060\043\006\003\125\004\012\023  
\034\123\164\141\162\146\151\145\154\144\040\124\145\143\150\156  
\157\154\157\147\151\145\163\054\040\111\156\143\056\061\072\060  
\070\006\003\125\004\013\023\061\150\164\164\160\072\057\057\143  
\145\162\164\151\146\151\143\141\164\145\163\056\163\164\141\162  
\146\151\145\154\144\164\145\143\150\056\143\157\155\057\162\145  
\160\157\163\151\164\157\162\171\057\061\066\060\064\006\003\125  
\004\003\023\055\123\164\141\162\146\151\145\154\144\040\123\145  
\162\166\151\143\145\163\040\122\157\157\164\040\103\145\162\164  
\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151\164  
\171\060\036\027\015\060\070\060\066\060\062\060\060\060\060\060  
\060\132\027\015\062\071\061\062\063\061\062\063\065\071\065\071  
\132\060\201\317\061\013\060\011\006\003\125\004\006\023\002\125

\123\061\020\060\016\006\003\125\004\010\023\007\101\162\151\172  
\157\156\141\061\023\060\021\006\003\125\004\007\023\012\123\143  
\157\164\164\163\144\141\154\145\061\045\060\043\006\003\125\004  
\012\023\034\123\164\141\162\146\151\145\154\144\040\124\145\143  
\150\156\157\154\157\147\151\145\163\054\040\111\156\143\056\061  
\072\060\070\006\003\125\004\013\023\061\150\164\164\160\072\057  
\057\143\145\162\164\151\146\151\143\141\164\145\163\056\163\164  
\141\162\146\151\145\154\144\164\145\143\150\056\143\157\155\057  
\162\145\160\157\163\151\164\157\162\171\057\061\066\060\064\006  
\003\125\004\003\023\055\123\164\141\162\146\151\145\154\144\040  
\123\145\162\166\151\143\145\163\040\122\157\157\164\040\103\145  
\162\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162  
\151\164\171\060\202\001\042\060\015\006\011\052\206\110\206\367  
\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002  
\202\001\001\000\362\314\126\052\115\346\026\067\132\227\352\155  
\065\070\321\020\233\333\270\334\251\004\011\225\063\056\011\305  
\000\173\032\170\102\217\310\364\005\216\376\322\150\203\036\116  
\231\315\027\333\107\076\120\363\211\322\347\334\230\373\005\370  
\252\326\143\364\124\115\301\161\003\260\037\033\166\263\032\064  
\060\163\361\050\062\140\203\375\264\234\327\266\322\042\067\174  
\031\252\073\336\023\020\151\156\134\006\323\157\243\362\146\132  
\166\102\110\257\200\321\124\131\075\324\271\324\333\355\271\253  
\071\231\364\356\142\253\341\170\162\173\330\070\215\100\266\314  
\334\022\000\160\103\205\151\330\030\343\312\127\162\237\264\337  
\077\374\042\250\102\122\365\167\133\231\360\126\055\046\160\026  
\066\022\302\047\236\127\246\174\320\043\361\171\334\243\223\130  
\050\070\075\237\255\066\103\356\067\373\370\371\103\255\310\126  
\362\224\022\136\102\353\163\270\023\015\313\246\325\206\271\252  
\050\152\124\003\241\077\017\051\353\011\000\350\077\136\242\177  
\027\075\241\053\370\276\320\165\035\244\204\343\253\027\145\006  
\122\000\257\261\002\003\001\000\001\243\143\060\141\060\017\006  
\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060\016  
\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060\035  
\006\003\125\035\016\004\026\004\024\264\306\177\032\103\314\233  
\165\135\057\304\113\362\213\230\020\351\361\121\020\060\037\006  
\003\125\035\043\004\030\060\026\200\024\264\306\177\032\103\314  
\233\165\135\057\304\113\362\213\230\020\351\361\121\020\060\015  
\006\011\052\206\110\206\367\015\001\001\005\005\000\003\202\001  
\001\000\254\200\273\304\045\005\013\130\244\344\176\051\176\257  
\274\073\354\055\300\104\056\371\221\340\322\073\062\047\220\055  
\366\200\011\134\302\253\145\044\332\070\020\106\304\111\322\375  
\232\253\050\110\167\210\306\351\157\321\107\221\325\065\117\024  
\011\250\133\100\007\035\174\161\126\313\211\102\324\277\141\300  
\042\367\056\337\253\363\162\103\213\100\350\224\353\260\046\332  
\321\023\323\253\320\066\055\056\072\225\263\167\056\025\071\030  
\014\151\272\252\200\355\361\123\116\063\233\150\004\342\240\060  
\056\327\321\135\324\246\146\235\204\346\347\273\074\211\273\066  
\235\374\027\251\075\125\053\212\373\233\304\114\204\377\337\322

```
\276\151\033\164\260\250\366\352\260\234\262\051\164\201\114\150
\072\232\177\163\045\071\365\023\340\146\221\151\324\127\113\267
\356\255\105\340\054\303\210\323\276\224\111\211\037\377\160\325
\133\155\071\023\260\035\313\230\346\147\143\015\143\366\373\303
\327\141\162\203\210\077\160\176\123\311\236\211\124\326\117\177
\175\161\271\256\361\140\213\167\140\354\370\277\372\152\243\234
\001\042
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE
```

# Microsoft Code Signing Only Certificate

# Trust for "Starfield Services Root Certificate Authority"

# Issuer: CN=Starfield Services Root Certificate

Authority,OU=http://certificates.starfieldtech.com/repository/,O=Starfield Technologies\,
Inc.,L=Scottsdale,ST=Arizona,C=US

# Serial Number: 0 (0x0)

# Subject: CN=Starfield Services Root Certificate

Authority,OU=http://certificates.starfieldtech.com/repository/,O=Starfield Technologies\,
Inc.,L=Scottsdale,ST=Arizona,C=US

# Not Valid Before: Mon Jun 02 00:00:00 2008

# Not Valid After: Mon Dec 31 23:59:59 2029

# Fingerprint (MD5): cf:8f:3b:62:a3:ca:ca:71:1b:a3:e1:cb:48:57:35:1f

# Fingerprint (SHA1): 5d:00:38:60:f0:02:ed:82:9d:ea:a4:18:68:f7:88:18:6d:62:12:7f

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "Starfield Services Root Certificate Authority"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\135\000\070\140\360\002\355\202\235\352\244\030\150\367\210\030
\155\142\022\177
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\317\217\073\142\243\312\312\161\033\243\341\313\110\127\065\037
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\201\317\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\020\060\016\006\003\125\004\010\023\007\101\162\151\172\157
\156\141\061\023\060\021\006\003\125\004\007\023\012\123\143\157
\164\164\163\144\141\154\145\061\045\060\043\006\003\125\004\012
\023\034\123\164\141\162\146\151\145\154\144\040\124\145\143\150
\156\157\154\157\147\151\145\163\054\040\111\156\143\056\061\072
\060\070\006\003\125\004\013\023\061\150\164\164\160\072\057\057
\143\145\162\164\151\146\151\143\141\164\145\163\056\163\164\141
\162\146\151\145\154\144\164\145\143\150\056\143\157\155\057\162
\145\160\157\163\151\164\157\162\171\057\061\066\060\064\006\003
```

```
\125\004\003\023\055\123\164\141\162\146\151\145\154\144\040\123
\145\162\166\151\143\145\163\040\122\157\157\164\040\103\145\162
\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151
\164\171
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\001\000
```

END

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

# Microsoft Code Signing Only Certificate

# Certificate "I.CA - Qualified root certificate"

# Issuer: O=První certifikační autorita, a.s.,CN=I.CA - Qualified root certificate,C=CZ

# Serial Number:9d:2a:60

# Subject: O=První certifikační autorita, a.s.,CN=I.CA - Qualified root certificate,C=CZ

# Not Valid Before: Tue Apr 01 00:00:00 2008

# Not Valid After: Sun Apr 01 00:00:00 2018

# Fingerprint (MD5): 48:d1:1e:62:78:01:c2:6e:43:69:a4:2c:ee:13:0a:b5

# Fingerprint (SHA1): 64:90:2a:d7:27:7a:f3:e3:2c:d8:cc:1d:c7:9d:e1:fd:7f:80:69:ea

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "I.CA - Qualified root certificate"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

```
\060\150\061\013\060\011\006\003\125\004\006\023\002\103\132\061
\052\060\050\006\003\125\004\003\014\041\111\056\103\101\040\055
\040\121\165\141\154\151\146\151\145\144\040\162\157\157\164\040
\143\145\162\164\151\146\151\143\141\164\145\061\055\060\053\006
\003\125\004\012\014\044\120\162\166\156\303\255\040\143\145\162
\164\151\146\151\153\141\304\215\156\303\255\040\141\165\164\157
\162\151\164\141\054\040\141\056\163\056
```

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\150\061\013\060\011\006\003\125\004\006\023\002\103\132\061
\052\060\050\006\003\125\004\003\014\041\111\056\103\101\040\055
\040\121\165\141\154\151\146\151\145\144\040\162\157\157\164\040
\143\145\162\164\151\146\151\143\141\164\145\061\055\060\053\006
\003\125\004\012\014\044\120\162\166\156\303\255\040\143\145\162
\164\151\146\151\153\141\304\215\156\303\255\040\141\165\164\157
\162\151\164\141\054\040\141\056\163\056
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\004\000\235\052\140

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\071\060\202\003\041\240\003\002\001\002\002\004\000  
\235\052\140\060\015\006\011\052\206\110\206\367\015\001\001\005  
\005\000\060\150\061\013\060\011\006\003\125\004\006\023\002\103  
\132\061\052\060\050\006\003\125\004\003\014\041\111\056\103\101  
\040\055\040\121\165\141\154\151\146\151\145\144\040\162\157\157  
\164\040\143\145\162\164\151\146\151\143\141\164\145\061\055\060  
\053\006\003\125\004\012\014\044\120\162\166\156\303\255\040\143  
\145\162\164\151\146\151\153\141\304\215\156\303\255\040\141\165  
\164\157\162\151\164\141\054\040\141\056\163\056\060\036\027\015  
\060\070\060\064\060\061\060\060\060\060\060\060\132\027\015\061  
\070\060\064\060\061\060\060\060\060\060\060\132\060\150\061\013  
\060\011\006\003\125\004\006\023\002\103\132\061\052\060\050\006  
\003\125\004\003\014\041\111\056\103\101\040\055\040\121\165\141  
\154\151\146\151\145\144\040\162\157\157\164\040\143\145\162\164  
\151\146\151\143\141\164\145\061\055\060\053\006\003\125\004\012  
\014\044\120\162\166\156\303\255\040\143\145\162\164\151\146\151  
\153\141\304\215\156\303\255\040\141\165\164\157\162\151\164\141  
\054\040\141\056\163\056\060\202\001\042\060\015\006\011\052\206  
\110\206\367\015\001\001\001\005\000\003\202\001\017\000\060\202  
\001\012\002\202\001\001\000\253\010\210\244\360\164\362\237\370  
\333\326\167\215\060\031\076\246\305\307\212\305\275\335\346\002  
\256\216\075\120\165\270\257\175\066\253\376\365\355\010\147\264  
\000\212\230\301\003\143\210\121\362\033\066\211\164\132\055\310  
\304\202\304\077\271\210\375\154\375\072\035\025\005\104\225\200  
\032\246\206\313\041\165\220\205\134\260\160\000\207\064\250\321  
\037\111\375\154\070\155\152\254\270\105\237\274\024\327\146\324  
\041\343\047\012\215\165\340\132\057\012\113\264\347\176\163\243  
\052\275\160\361\221\206\010\217\277\220\204\034\207\251\365\231  
\045\045\224\301\343\156\007\301\113\007\133\124\374\064\313\106  
\067\234\305\241\040\316\246\254\207\251\203\074\070\117\300\100  
\363\351\377\233\327\071\166\344\023\043\165\265\377\241\102\256  
\134\206\117\305\116\103\266\231\013\122\123\040\250\263\302\114  
\323\000\054\025\322\131\154\012\237\041\265\163\026\171\036\206  
\045\356\032\373\223\236\255\143\361\114\342\166\061\136\067\357  
\374\320\251\066\344\371\021\351\172\374\120\347\101\043\003\064  
\270\175\272\016\317\335\123\002\003\001\000\001\243\201\352\060  
\201\347\060\017\006\003\125\035\023\001\001\377\004\005\060\003  
\001\001\377\060\016\006\003\125\035\017\001\001\377\004\004\003  
\002\001\006\060\201\244\006\003\125\035\040\004\201\234\060\201  
\231\060\201\226\006\014\053\006\001\004\001\201\270\110\001\004  
\000\001\060\201\205\060\201\202\006\010\053\006\001\005\005\007  
\002\002\060\166\032\164\124\145\156\164\157\040\143\145\162\164  
\151\146\151\153\141\164\040\152\145\040\166\171\144\141\156\040  
\152\141\153\157\040\153\166\141\154\151\146\151\153\157\166\141  
\156\171\040\163\171\163\164\145\155\157\166\171\040\143\145\162

\164\151\146\151\153\141\164\040\166\040\163\157\165\154\141\144  
\165\040\163\145\040\172\141\153\157\156\145\155\040\062\062\067  
\057\062\060\060\060\040\123\142\056\040\166\040\160\154\141\164  
\156\145\155\040\172\156\145\156\151\056\060\035\006\003\125\035  
\016\004\026\004\024\150\235\176\326\304\045\071\373\073\240\067  
\326\117\334\214\321\172\360\126\131\060\015\006\011\052\206\110  
\206\367\015\001\001\005\005\000\003\202\001\001\000\162\365\274  
\006\215\322\054\226\362\202\333\130\173\107\360\100\144\345\056  
\033\357\372\340\372\323\361\162\110\001\104\362\210\364\336\230  
\201\123\204\347\175\116\107\347\061\067\126\256\263\301\060\157  
\306\253\110\203\365\230\123\122\151\052\050\301\100\145\353\145  
\347\264\060\013\360\253\016\245\022\045\277\364\120\135\277\243  
\176\345\321\164\370\012\050\256\102\234\260\024\122\304\240\140  
\135\367\105\027\102\272\102\055\233\222\373\156\224\263\160\107  
\040\010\235\123\360\260\255\275\251\204\132\335\007\052\014\315  
\053\155\141\050\337\073\222\050\354\121\201\177\121\174\216\056  
\177\235\351\274\301\064\075\213\255\201\255\361\036\164\146\103  
\074\101\115\270\056\063\117\261\072\036\333\022\337\066\216\161  
\377\127\143\261\326\217\264\075\206\022\152\317\102\060\264\223  
\026\352\231\352\002\133\376\010\356\262\117\160\277\063\000\347  
\172\112\070\241\362\110\221\246\036\313\043\262\070\235\360\056  
\111\242\311\210\126\145\145\216\072\147\105\214\214\013\342\252  
\261\113\007\377\261\037\272\024\317\162\372\247\170

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "I.CA - Qualified root certificate"  
# Issuer: O=První certifikační autorita\, a.s.,CN=I.CA - Qualified root certificate,C=CZ  
# Serial Number:9d:2a:60  
# Subject: O=První certifikační autorita\, a.s.,CN=I.CA - Qualified root certificate,C=CZ  
# Not Valid Before: Tue Apr 01 00:00:00 2008  
# Not Valid After: Sun Apr 01 00:00:00 2018  
# Fingerprint (MD5): 48:d1:1e:62:78:01:c2:6e:43:69:a4:2c:ee:13:0a:b5  
# Fingerprint (SHA1): 64:90:2a:d7:27:7a:f3:e3:2c:d8:cc:1d:c7:9d:e1:fd:7f:80:69:ea  
CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "I.CA - Qualified root certificate"  
CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL  
\144\220\052\327\047\172\363\343\054\330\314\035\307\235\341\375  
\177\200\151\352  
END  
CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL  
\110\321\036\142\170\001\302\156\103\151\244\054\356\023\012\265



```

END
CKA_ISSUER MULTILINE_OCTAL
\060\150\061\013\060\011\006\003\125\004\006\023\002\103\132\061
\052\060\050\006\003\125\004\003\014\041\111\056\103\101\040\055
\040\121\165\141\154\151\146\151\145\144\040\162\157\157\164\040
\143\145\162\164\151\146\151\143\141\164\145\061\055\060\053\006
\003\125\004\012\014\044\120\162\166\156\303\255\040\143\145\162
\164\151\146\151\153\141\304\215\156\303\255\040\141\165\164\157
\162\151\164\141\054\040\141\056\163\056
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\004\000\235\052\140
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "I.CA - Standard root certificate"
Issuer: O=Prvni certifikacni autorita a.s.,CN=I.CA - Standard root certificate,C=CZ
Serial Number:13:d6:20
Subject: O=Prvni certifikacni autorita a.s.,CN=I.CA - Standard root certificate,C=CZ
Not Valid Before: Tue Apr 01 00:00:00 2008
Not Valid After: Sun Apr 01 00:00:00 2018
Fingerprint (MD5): 04:68:e9:24:7e:41:ce:d7:6c:44:16:30:70:3d:dd:b9
Fingerprint (SHA1): ab:16:dd:14:4e:cd:c0:fc:4b:aa:b6:2e:cf:04:08:89:6f:de:52:b7
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "I.CA - Standard root certificate"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\143\061\013\060\011\006\003\125\004\006\023\002\103\132\061
\051\060\047\006\003\125\004\003\023\040\111\056\103\101\040\055
\040\123\164\141\156\144\141\162\144\040\162\157\157\164\040\143
\145\162\164\151\146\151\143\141\164\145\061\051\060\047\006\003
\125\004\012\023\040\120\162\166\156\151\040\143\145\162\164\151
\146\151\153\141\143\156\151\040\141\165\164\157\162\151\164\141
\040\141\056\163\056
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\143\061\013\060\011\006\003\125\004\006\023\002\103\132\061
\051\060\047\006\003\125\004\003\023\040\111\056\103\101\040\055
\040\123\164\141\156\144\141\162\144\040\162\157\157\164\040\143
\145\162\164\151\146\151\143\141\164\145\061\051\060\047\006\003

```

\125\004\012\023\040\120\162\166\156\151\040\143\145\162\164\151  
\146\151\153\141\143\156\151\040\141\165\164\157\162\151\164\141  
\040\141\056\163\056  
END  
CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL  
\002\003\023\326\040  
END  
CKA\_VALUE MULTILINE\_OCTAL  
\060\202\004\056\060\202\003\026\240\003\002\001\002\002\003\023  
\326\040\060\015\006\011\052\206\110\206\367\015\001\001\005\005  
\000\060\143\061\013\060\011\006\003\125\004\006\023\002\103\132  
\061\051\060\047\006\003\125\004\003\023\040\111\056\103\101\040  
\055\040\123\164\141\156\144\141\162\144\040\162\157\157\164\040  
\143\145\162\164\151\146\151\143\141\164\145\061\051\060\047\006  
\003\125\004\012\023\040\120\162\166\156\151\040\143\145\162\164  
\151\146\151\153\141\143\156\151\040\141\165\164\157\162\151\164  
\141\040\141\056\163\056\060\036\027\015\060\070\060\064\060\061  
\060\060\060\060\060\060\132\027\015\061\070\060\064\060\061\060  
\060\060\060\060\060\132\060\143\061\013\060\011\006\003\125\004  
\006\023\002\103\132\061\051\060\047\006\003\125\004\003\023\040  
\111\056\103\101\040\055\040\123\164\141\156\144\141\162\144\040  
\162\157\157\164\040\143\145\162\164\151\146\151\143\141\164\145  
\061\051\060\047\006\003\125\004\012\023\040\120\162\166\156\151  
\040\143\145\162\164\151\146\151\153\141\143\156\151\040\141\165  
\164\157\162\151\164\141\040\141\056\163\056\060\202\001\042\060  
\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202  
\001\017\000\060\202\001\012\002\202\001\001\000\321\055\025\304  
\071\114\152\241\304\345\363\053\264\375\251\026\351\270\121\217  
\067\221\331\247\323\227\220\266\160\151\207\365\257\131\322\142  
\101\130\325\363\225\215\002\025\372\146\234\301\041\024\330\037  
\255\372\052\154\164\126\241\142\341\361\260\255\270\376\322\243  
\340\221\241\265\256\123\255\215\244\015\017\131\140\227\052\374  
\243\056\163\065\043\163\314\250\246\241\024\155\277\211\303\204  
\070\363\144\131\314\061\363\340\371\047\140\012\074\101\005\157  
\132\122\360\217\156\122\156\354\136\210\157\340\100\214\041\107  
\127\042\351\070\156\346\372\363\044\264\256\257\057\163\077\200  
\325\062\217\214\331\204\031\330\140\316\333\151\215\076\257\002  
\257\256\336\257\120\365\317\346\263\141\030\304\340\335\360\116  
\112\146\015\172\163\040\267\344\324\223\206\107\141\330\117\312  
\072\216\253\302\077\306\042\027\243\135\235\040\306\305\016\044  
\151\310\246\175\146\006\315\106\346\063\341\103\164\223\365\203  
\142\322\260\105\042\001\244\166\275\353\121\223\130\154\372\032  
\241\237\165\200\332\330\000\342\361\210\115\077\002\003\001\000  
\001\243\201\352\060\201\347\060\017\006\003\125\035\023\001\001  
\377\004\005\060\003\001\001\377\060\016\006\003\125\035\017\001  
\001\377\004\004\003\002\001\006\060\035\006\003\125\035\016\004  
\026\004\024\353\067\244\276\271\157\140\027\373\323\377\055\140  
\341\004\036\257\317\306\323\060\201\244\006\003\125\035\040\004

\201\234\060\201\231\060\201\226\006\014\053\006\001\004\001\201  
\270\110\001\001\000\001\060\201\205\060\201\202\006\010\053\006  
\001\005\005\007\002\002\060\166\032\164\124\145\156\164\157\040  
\143\145\162\164\151\146\151\153\141\164\040\152\145\040\166\171  
\144\141\156\040\152\141\153\157\040\153\166\141\154\151\146\151  
\153\157\166\141\156\171\040\163\171\163\164\145\155\157\166\171  
\040\143\145\162\164\151\146\151\153\141\164\040\166\040\163\157  
\165\154\141\144\165\040\163\145\040\172\141\153\157\156\145\155  
\040\062\062\067\057\062\060\060\060\040\123\142\056\040\166\040  
\160\154\141\164\156\145\155\040\172\156\145\156\151\056\060\015  
\006\011\052\206\110\206\367\015\001\001\005\005\000\003\202\001  
\001\000\027\042\130\252\057\030\125\002\241\114\066\111\067\113  
\233\163\272\256\143\066\016\213\053\204\105\067\314\372\340\147  
\367\240\163\152\147\150\126\274\141\250\064\232\050\272\146\054  
\141\233\213\034\370\004\160\214\206\343\101\357\224\171\015\335  
\064\207\004\356\265\236\061\153\071\364\176\130\345\362\260\004  
\115\251\127\045\111\340\013\325\344\354\175\016\076\073\001\340  
\214\374\122\220\223\346\362\260\253\365\061\167\314\321\311\103  
\202\253\017\056\264\371\230\256\076\343\104\364\244\003\151\125  
\332\134\216\333\301\271\254\344\230\325\166\025\106\241\056\132  
\014\042\140\240\302\353\160\177\161\003\260\150\323\061\144\315  
\352\313\113\125\211\202\076\134\146\313\032\010\230\107\302\336  
\331\056\070\114\005\375\055\214\372\343\042\045\271\222\375\326  
\262\055\312\242\064\234\337\111\357\325\204\001\054\222\377\005  
\101\012\147\306\102\153\236\313\330\237\220\274\015\017\020\175  
\307\146\275\352\163\007\340\030\352\121\201\264\105\100\074\017  
\241\042\067\025\001\205\251\056\174\016\137\135\316\152\223\276  
\331\276

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "I.CA - Standard root certificate"  
# Issuer: O=Prvni certifikacni autorita a.s.,CN=I.CA - Standard root certificate,C=CZ  
# Serial Number:13:d6:20  
# Subject: O=Prvni certifikacni autorita a.s.,CN=I.CA - Standard root certificate,C=CZ  
# Not Valid Before: Tue Apr 01 00:00:00 2008  
# Not Valid After: Sun Apr 01 00:00:00 2018  
# Fingerprint (MD5): 04:68:e9:24:7e:41:ce:d7:6c:44:16:30:70:3d:dd:b9  
# Fingerprint (SHA1): ab:16:dd:14:4e:cd:c0:fc:4b:aa:b6:2e:cf:04:08:89:6f:de:52:b7  
CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "I.CA - Standard root certificate"  
CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\253\026\335\024\116\315\300\374\113\252\266\056\317\004\010\211  
\157\336\122\267

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\004\150\351\044\176\101\316\327\154\104\026\060\160\075\335\271  
END

CKA\_ISSUER MULTILINE\_OCTAL

\060\143\061\013\060\011\006\003\125\004\006\023\002\103\132\061  
\051\060\047\006\003\125\004\003\023\040\111\056\103\101\040\055  
\040\123\164\141\156\144\141\162\144\040\162\157\157\164\040\143  
\145\162\164\151\146\151\143\141\164\145\061\051\060\047\006\003  
\125\004\012\023\040\120\162\166\156\151\040\143\145\162\164\151  
\146\151\153\141\143\156\151\040\141\165\164\157\162\151\164\141  
\040\141\056\163\056

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\003\023\326\040

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "e-Guven Kok Elektronik Sertifika Hizmet Saglayicisi"

# Issuer: CN=e-Guven Kok Elektronik Sertifika Hizmet Saglayicisi,O=Elektronik Bilgi Guvenligi A.S.,C=TR

# Serial Number:44:99:8d:3c:c0:03:27:bd:9c:76:95:b9:ea:db:ac:b5

# Subject: CN=e-Guven Kok Elektronik Sertifika Hizmet Saglayicisi,O=Elektronik Bilgi Guvenligi A.S.,C=TR

# Not Valid Before: Thu Jan 04 11:32:48 2007

# Not Valid After: Wed Jan 04 11:32:48 2017

# Fingerprint (MD5): 3d:41:29:cb:1e:aa:11:74:cd:5d:b0:62:af:b0:43:5b

# Fingerprint (SHA1): dd:e1:d2:a9:01:80:2e:1d:87:5e:84:b3:80:7e:4b:b1:fd:99:41:34

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "e-Guven Kok Elektronik Sertifika Hizmet Saglayicisi"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\165\061\013\060\011\006\003\125\004\006\023\002\124\122\061  
\050\060\046\006\003\125\004\012\023\037\105\154\145\153\164\162  
\157\156\151\153\040\102\151\154\147\151\040\107\165\166\145\156  
\154\151\147\151\040\101\056\123\056\061\074\060\072\006\003\125  
\004\003\023\063\145\055\107\165\166\145\156\040\113\157\153\040  
\105\154\145\153\164\162\157\156\151\153\040\123\145\162\164\151  
\146\151\153\141\040\110\151\172\155\145\164\040\123\141\147\154  
\141\171\151\143\151\163\151

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\165\061\013\060\011\006\003\125\004\006\023\002\124\122\061  
\050\060\046\006\003\125\004\012\023\037\105\154\145\153\164\162  
\157\156\151\153\040\102\151\154\147\151\040\107\165\166\145\156  
\154\151\147\151\040\101\056\123\056\061\074\060\072\006\003\125  
\004\003\023\063\145\055\107\165\166\145\156\040\113\157\153\040  
\105\154\145\153\164\162\157\156\151\153\040\123\145\162\164\151  
\146\151\153\141\040\110\151\172\155\145\164\040\123\141\147\154  
\141\171\151\143\151\163\151

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\104\231\215\074\300\003\047\275\234\166\225\271\352\333  
\254\265

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\266\060\202\002\236\240\003\002\001\002\002\020\104  
\231\215\074\300\003\047\275\234\166\225\271\352\333\254\265\060  
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\165  
\061\013\060\011\006\003\125\004\006\023\002\124\122\061\050\060  
\046\006\003\125\004\012\023\037\105\154\145\153\164\162\157\156  
\151\153\040\102\151\154\147\151\040\107\165\166\145\156\154\151  
\147\151\040\101\056\123\056\061\074\060\072\006\003\125\004\003  
\023\063\145\055\107\165\166\145\156\040\113\157\153\040\105\154  
\145\153\164\162\157\156\151\153\040\123\145\162\164\151\146\151  
\153\141\040\110\151\172\155\145\164\040\123\141\147\154\141\171  
\151\143\151\163\151\060\036\027\015\060\067\060\061\060\064\061  
\061\063\062\064\070\132\027\015\061\067\060\061\060\064\061\061  
\063\062\064\070\132\060\165\061\013\060\011\006\003\125\004\006  
\023\002\124\122\061\050\060\046\006\003\125\004\012\023\037\105  
\154\145\153\164\162\157\156\151\153\040\102\151\154\147\151\040  
\107\165\166\145\156\154\151\147\151\040\101\056\123\056\061\074  
\060\072\006\003\125\004\003\023\063\145\055\107\165\166\145\156  
\040\113\157\153\040\105\154\145\153\164\162\157\156\151\153\040  
\123\145\162\164\151\146\151\153\141\040\110\151\172\155\145\164  
\040\123\141\147\154\141\171\151\143\151\163\151\060\202\001\042  
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003  
\202\001\017\000\060\202\001\012\002\202\001\001\000\303\022\040  
\236\260\136\000\145\215\116\106\273\200\134\351\054\006\227\325  
\363\162\311\160\271\347\113\145\200\301\113\276\176\074\327\124  
\061\224\336\325\022\272\123\026\002\352\130\143\357\133\330\363  
\355\052\032\252\161\110\243\334\020\055\137\137\353\134\113\234  
\226\010\102\045\050\021\314\212\132\142\001\120\325\353\011\123  
\057\370\303\217\376\263\374\375\235\242\343\137\175\276\355\013  
\340\140\353\151\354\063\355\330\215\373\022\111\203\000\311\213  
\227\214\073\163\052\062\263\022\367\271\115\362\364\115\155\307  
\346\326\046\067\010\362\331\375\153\134\243\345\110\134\130\274  
\102\276\003\132\201\272\034\065\014\000\323\365\043\176\161\060

\010\046\070\334\045\021\107\055\363\272\043\020\245\277\274\002  
\367\103\136\307\376\260\067\120\231\173\017\223\316\346\103\054  
\303\176\015\362\034\103\146\140\313\141\061\107\207\243\117\256  
\275\126\154\114\274\274\370\005\312\144\364\351\064\241\054\265  
\163\341\302\076\350\310\311\064\045\010\134\363\355\246\307\224  
\237\255\210\103\045\327\341\071\140\376\254\071\131\002\003\001  
\000\001\243\102\060\100\060\016\006\003\125\035\017\001\001\377  
\004\004\003\002\001\006\060\017\006\003\125\035\023\001\001\377  
\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026  
\004\024\237\356\104\263\224\325\372\221\117\056\331\125\232\004  
\126\333\055\304\333\245\060\015\006\011\052\206\110\206\367\015  
\001\001\005\005\000\003\202\001\001\000\177\137\271\123\133\143  
\075\165\062\347\372\304\164\032\313\106\337\106\151\034\122\317  
\252\117\302\150\353\377\200\251\121\350\075\142\167\211\075\012  
\165\071\361\156\135\027\207\157\150\005\301\224\154\331\135\337  
\332\262\131\313\245\020\212\312\314\071\315\237\353\116\336\122  
\377\014\360\364\222\251\362\154\123\253\233\322\107\240\037\164  
\367\233\232\361\057\025\237\172\144\060\030\007\074\052\017\147  
\312\374\017\211\141\235\145\245\074\345\274\023\133\010\333\343  
\377\355\273\006\273\152\006\261\172\117\145\306\202\375\036\234  
\213\265\015\356\110\273\270\275\252\010\264\373\243\174\313\237  
\315\220\166\134\206\226\170\127\012\146\371\130\032\235\375\227  
\051\140\336\021\246\220\034\031\034\356\001\226\042\064\064\056  
\221\371\267\304\047\321\173\346\277\373\200\104\132\026\345\353  
\340\324\012\070\274\344\221\343\325\353\134\301\254\337\033\152  
\174\236\345\165\322\266\227\207\333\314\207\053\103\072\204\010  
\257\253\074\333\367\074\146\061\206\260\235\123\171\355\370\043  
\336\102\343\055\202\361\017\345\372\227

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "e-Guven Kok Elektronik Sertifika Hizmet Saglayicisi"

# Issuer: CN=e-Guven Kok Elektronik Sertifika Hizmet Saglayicisi,O=Elektronik Bilgi Guvenligi A.S.,C=TR

# Serial Number:44:99:8d:3c:c0:03:27:bd:9c:76:95:b9:ea:db:ac:b5

# Subject: CN=e-Guven Kok Elektronik Sertifika Hizmet Saglayicisi,O=Elektronik Bilgi Guvenligi A.S.,C=TR

# Not Valid Before: Thu Jan 04 11:32:48 2007

# Not Valid After: Wed Jan 04 11:32:48 2017

# Fingerprint (MD5): 3d:41:29:cb:1e:aa:11:74:cd:5d:b0:62:af:b0:43:5b

# Fingerprint (SHA1): dd:e1:d2:a9:01:80:2e:1d:87:5e:84:b3:80:7e:4b:b1:fd:99:41:34

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "e-Guven Kok Elektronik Sertifika Hizmet Saglayicisi"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\335\341\322\251\001\200\056\035\207\136\204\263\200\176\113\261  
\375\231\101\064

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\075\101\051\313\036\252\021\164\315\135\260\142\257\260\103\133

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\165\061\013\060\011\006\003\125\004\006\023\002\124\122\061  
\050\060\046\006\003\125\004\012\023\037\105\154\145\153\164\162  
\157\156\151\153\040\102\151\154\147\151\040\107\165\166\145\156  
\154\151\147\151\040\101\056\123\056\061\074\060\072\006\003\125  
\004\003\023\063\145\055\107\165\166\145\156\040\113\157\153\040  
\105\154\145\153\164\162\157\156\151\153\040\123\145\162\164\151  
\146\151\153\141\040\110\151\172\155\145\164\040\123\141\147\154  
\141\171\151\143\151\163\151

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\104\231\215\074\300\003\047\275\234\166\225\271\352\333  
\254\265

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "Japanese Government"

# Issuer: OU=ApplicationCA,O=Japanese Government,C=JP

# Serial Number: 49 (0x31)

# Subject: OU=ApplicationCA,O=Japanese Government,C=JP

# Not Valid Before: Wed Dec 12 15:00:00 2007

# Not Valid After: Tue Dec 12 15:00:00 2017

# Fingerprint (MD5): 7e:23:4e:5b:a7:a5:b4:25:e9:00:07:74:11:62:ae:d6

# Fingerprint (SHA1): 7f:8a:b0:cf:d0:51:87:6a:66:f3:36:0f:47:c8:8d:8c:d3:35:fc:74

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Japanese Government"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\103\061\013\060\011\006\003\125\004\006\023\002\112\120\061  
\034\060\032\006\003\125\004\012\023\023\112\141\160\141\156\145  
\163\145\040\107\157\166\145\162\156\155\145\156\164\061\026\060  
\024\006\003\125\004\013\023\015\101\160\160\154\151\143\141\164  
\151\157\156\103\101

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\103\061\013\060\011\006\003\125\004\006\023\002\112\120\061  
\034\060\032\006\003\125\004\012\023\023\112\141\160\141\156\145  
\163\145\040\107\157\166\145\162\156\155\145\156\164\061\026\060  
\024\006\003\125\004\013\023\015\101\160\160\154\151\143\141\164  
\151\157\156\103\101

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\061

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\240\060\202\002\210\240\003\002\001\002\002\001\061  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060  
\103\061\013\060\011\006\003\125\004\006\023\002\112\120\061\034  
\060\032\006\003\125\004\012\023\023\112\141\160\141\156\145\163  
\145\040\107\157\166\145\162\156\155\145\156\164\061\026\060\024  
\006\003\125\004\013\023\015\101\160\160\154\151\143\141\164\151  
\157\156\103\101\060\036\027\015\060\067\061\062\061\062\061\065  
\060\060\060\060\132\027\015\061\067\061\062\061\062\061\065\060  
\060\060\060\132\060\103\061\013\060\011\006\003\125\004\006\023  
\002\112\120\061\034\060\032\006\003\125\004\012\023\023\112\141  
\160\141\156\145\163\145\040\107\157\166\145\162\156\155\145\156  
\164\061\026\060\024\006\003\125\004\013\023\015\101\160\160\154  
\151\143\141\164\151\157\156\103\101\060\202\001\042\060\015\006  
\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017  
\000\060\202\001\012\002\202\001\001\000\247\155\340\164\116\207  
\217\245\006\336\150\242\333\206\231\113\144\015\161\360\012\005  
\233\216\252\341\314\056\322\152\073\301\172\264\227\141\215\212  
\276\306\232\234\006\264\206\121\344\067\016\164\170\176\137\212  
\177\224\244\327\107\010\375\120\132\126\344\150\254\050\163\240  
\173\351\177\030\222\100\117\055\235\365\256\104\110\163\066\006  
\236\144\054\073\064\043\333\134\046\344\161\171\217\324\156\171  
\042\271\223\301\312\315\301\126\355\210\152\327\240\071\041\004  
\127\054\242\365\274\107\101\117\136\064\042\225\265\037\051\155  
\136\112\363\115\162\276\101\126\040\207\374\351\120\107\327\060  
\024\356\134\214\125\272\131\215\207\374\043\336\223\320\004\214  
\375\357\155\275\320\172\311\245\072\152\162\063\306\112\015\005  
\027\052\055\173\261\247\330\326\360\276\364\077\352\016\050\155  
\101\141\043\166\170\303\270\145\244\363\132\256\314\302\252\331  
\347\130\336\266\176\235\205\156\237\052\012\157\237\003\051\060  
\227\050\035\274\267\317\124\051\116\121\061\371\047\266\050\046  
\376\242\143\346\101\026\360\063\230\107\002\003\001\000\001\243  
\201\236\060\201\233\060\035\006\003\125\035\016\004\026\004\024  
\124\132\313\046\077\161\314\224\106\015\226\123\352\153\110\320  
\223\376\102\165\060\016\006\003\125\035\017\001\001\377\004\004  
\003\002\001\006\060\131\006\003\125\035\021\004\122\060\120\244  
\116\060\114\061\013\060\011\006\003\125\004\006\023\002\112\120  
\061\030\060\026\006\003\125\004\012\014\017\346\227\245\346\234



```
\254\345\233\275\346\224\277\345\272\234\061\043\060\041\006\003
\125\004\013\014\032\343\202\242\343\203\227\343\203\252\343\202
\261\343\203\274\343\202\267\343\203\247\343\203\263\103\101\060
\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003
\202\001\001\000\071\152\104\166\167\070\072\354\243\147\106\017
\371\213\006\250\373\152\220\061\316\176\354\332\321\211\174\172
\353\056\014\275\231\062\347\260\044\326\303\377\365\262\210\011
\207\054\343\124\341\243\246\262\010\013\300\205\250\310\322\234
\161\366\035\237\140\374\070\063\023\341\236\334\013\137\332\026
\120\051\173\057\160\221\017\231\272\064\064\215\225\164\305\176
\170\251\146\135\275\312\041\167\102\020\254\146\046\075\336\221
\253\375\025\360\157\355\154\137\020\370\363\026\366\003\212\217
\247\022\021\014\313\375\077\171\301\234\375\142\356\243\317\124
\014\321\053\137\027\076\343\076\277\300\053\076\011\233\376\210
\246\176\264\222\027\374\043\224\201\275\156\247\305\214\302\353
\021\105\333\370\101\311\226\166\352\160\137\171\022\153\344\243
\007\132\005\357\047\111\317\041\237\212\114\011\160\146\251\046
\301\053\021\116\063\322\016\374\326\154\322\016\062\144\150\377
\255\005\170\137\003\035\250\343\220\254\044\340\017\100\247\113
\256\213\050\267\202\312\030\007\346\267\133\164\351\040\031\177
\262\033\211\124
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
Trust for "Japanese Government"
Issuer: OU=ApplicationCA,O=Japanese Government,C=JP
Serial Number: 49 (0x31)
Subject: OU=ApplicationCA,O=Japanese Government,C=JP
Not Valid Before: Wed Dec 12 15:00:00 2007
Not Valid After: Tue Dec 12 15:00:00 2017
Fingerprint (MD5): 7e:23:4e:5b:a7:a5:b4:25:e9:00:07:74:11:62:ae:d6
Fingerprint (SHA1): 7f:8a:b0:cf:d0:51:87:6a:66:f3:36:0f:47:c8:8d:8c:d3:35:fc:74
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Japanese Government"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\177\212\260\317\320\121\207\152\146\363\066\017\107\310\215\214
\323\065\374\164
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\176\043\116\133\247\245\264\045\351\000\007\164\021\142\256\326
END
```

```

CKA_ISSUER MULTILINE_OCTAL
\060\103\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\034\060\032\006\003\125\004\012\023\023\112\141\160\141\156\145
\163\145\040\107\157\166\145\162\156\155\145\156\164\061\026\060
\024\006\003\125\004\013\023\015\101\160\160\154\151\143\141\164
\151\157\156\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\061
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "AdminCA-CD-T01"
Issuer: CN=AdminCA-CD-T01,OU=Certification Authorities,OU=Services,O=admin,C=CH
Serial Number: 1 (0x1)
Subject: CN=AdminCA-CD-T01,OU=Certification Authorities,OU=Services,O=admin,C=CH
Not Valid Before: Wed Jan 25 13:36:19 2006
Not Valid After: Mon Jan 25 12:36:19 2016
Fingerprint (MD5): 5b:9e:fd:3b:60:35:ea:68:8e:52:fe:13:19:14:4a:a3
Fingerprint (SHA1): 6b:81:44:6a:5c:dd:f4:74:a0:f8:00:ff:be:69:fd:0d:b6:28:75:16
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "AdminCA-CD-T01"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\155\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\016\060\014\006\003\125\004\012\023\005\141\144\155\151\156\061
\021\060\017\006\003\125\004\013\023\010\123\145\162\166\151\143
\145\163\061\042\060\040\006\003\125\004\013\023\031\103\145\162
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157
\162\151\164\151\145\163\061\027\060\025\006\003\125\004\003\023
\016\101\144\155\151\156\103\101\055\103\104\055\124\060\061
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\155\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\016\060\014\006\003\125\004\012\023\005\141\144\155\151\156\061
\021\060\017\006\003\125\004\013\023\010\123\145\162\166\151\143
\145\163\061\042\060\040\006\003\125\004\013\023\031\103\145\162
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157
\162\151\164\151\145\163\061\027\060\025\006\003\125\004\003\023
\016\101\144\155\151\156\103\101\055\103\104\055\124\060\061

```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\001

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\115\060\202\003\065\240\003\002\001\002\002\001\001  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060  
\155\061\013\060\011\006\003\125\004\006\023\002\103\110\061\016  
\060\014\006\003\125\004\012\023\005\141\144\155\151\156\061\021  
\060\017\006\003\125\004\013\023\010\123\145\162\166\151\143\145  
\163\061\042\060\040\006\003\125\004\013\023\031\103\145\162\164  
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162  
\151\164\151\145\163\061\027\060\025\006\003\125\004\003\023\016  
\101\144\155\151\156\103\101\055\103\104\055\124\060\061\060\036  
\027\015\060\066\060\061\062\065\061\063\063\066\061\071\132\027  
\015\061\066\060\061\062\065\061\062\063\066\061\071\132\060\155  
\061\013\060\011\006\003\125\004\006\023\002\103\110\061\016\060  
\014\006\003\125\004\012\023\005\141\144\155\151\156\061\021\060  
\017\006\003\125\004\013\023\010\123\145\162\166\151\143\145\163  
\061\042\060\040\006\003\125\004\013\023\031\103\145\162\164\151  
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151  
\164\151\145\163\061\027\060\025\006\003\125\004\003\023\016\101  
\144\155\151\156\103\101\055\103\104\055\124\060\061\060\202\001  
\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000  
\003\202\001\017\000\060\202\001\012\002\202\001\001\000\322\064  
\045\061\231\251\054\070\125\370\143\121\365\060\050\110\331\136  
\046\004\001\343\020\027\044\102\320\177\237\362\110\307\350\024  
\016\014\232\062\252\141\164\044\007\243\006\076\344\012\301\037  
\127\105\024\217\177\255\157\251\277\030\076\307\143\106\150\051  
\157\041\301\161\107\171\267\103\174\105\176\260\105\225\047\074  
\305\276\154\040\250\331\132\200\123\205\305\156\171\134\332\001  
\312\151\251\264\301\324\355\154\024\327\022\113\364\211\342\007  
\177\020\237\027\025\352\112\304\253\353\102\044\027\375\277\305  
\272\300\201\137\320\017\234\207\223\242\036\361\367\200\125\154  
\042\345\113\132\026\253\156\340\270\205\022\035\220\063\054\154  
\073\054\365\071\313\312\316\103\066\203\316\367\267\050\204\356  
\074\314\201\223\376\133\015\355\211\271\066\027\337\236\351\227  
\242\007\176\323\054\351\225\266\370\051\232\274\054\341\370\210  
\254\123\127\021\204\226\005\132\324\115\271\374\325\116\073\311  
\154\316\201\376\137\020\163\364\355\264\125\345\003\202\314\051  
\275\366\243\142\232\306\313\350\041\273\235\076\374\011\002\003  
\001\000\001\243\201\367\060\201\364\060\022\006\003\125\035\023  
\001\001\377\004\010\060\006\001\001\377\002\001\000\060\201\256  
\006\003\125\035\040\004\201\246\060\201\243\060\201\240\006\010  
\140\205\164\001\021\003\025\001\060\201\223\060\110\006\010\053  
\006\001\005\005\007\002\002\060\074\032\072\124\150\151\163\040  
\151\163\040\164\150\145\040\101\144\155\151\156\103\101\055\103  
\104\055\124\060\061\040\103\145\162\164\151\146\151\143\141\164

\145\040\120\162\141\143\164\151\143\145\040\123\164\141\164\145  
\155\145\156\164\056\060\107\006\010\053\006\001\005\005\007\002  
\001\026\073\150\164\164\160\072\057\057\167\167\167\056\160\153  
\151\056\141\144\155\151\156\056\143\150\057\160\157\154\151\143  
\171\057\103\120\123\137\062\137\061\066\137\067\065\066\137\061  
\137\061\067\137\063\137\062\061\137\061\056\160\144\146\060\016  
\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060\035  
\006\003\125\035\016\004\026\004\024\052\304\151\012\241\306\125  
\306\003\156\160\316\206\201\263\244\017\252\031\333\060\015\006  
\011\052\206\110\206\367\015\001\001\005\005\000\003\202\001\001  
\000\237\176\172\155\273\254\214\216\140\224\145\321\103\120\321  
\277\155\152\101\375\022\342\315\306\037\046\146\355\312\235\072  
\101\145\170\316\364\002\260\123\372\103\217\344\331\273\256\124  
\200\027\045\140\022\111\201\164\350\073\263\333\145\134\051\124  
\311\346\105\236\236\224\021\204\124\162\050\317\067\300\365\125  
\243\121\053\243\310\120\346\351\014\024\023\320\057\244\001\374  
\106\367\076\057\333\324\364\113\024\370\262\000\035\013\374\120  
\027\053\371\360\132\175\154\371\373\243\013\212\300\247\062\010  
\175\127\113\050\277\006\236\027\024\102\345\054\346\242\200\026  
\116\377\017\235\074\034\370\025\302\122\165\230\324\370\026\211  
\320\115\347\050\010\307\225\050\116\346\213\201\111\231\332\047  
\075\351\372\171\060\331\154\250\337\253\072\033\020\212\321\166  
\344\110\376\071\212\170\210\033\201\146\303\006\144\242\166\005  
\312\224\047\264\166\361\332\202\373\265\104\020\143\103\303\243  
\306\306\004\307\017\313\361\266\217\347\134\212\246\121\226\311  
\337\200\314\265\321\040\263\103\323\024\307\335\261\120\155\225  
\172

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "AdminCA-CD-T01"  
# Issuer: CN=AdminCA-CD-T01,OU=Certification Authorities,OU=Services,O=admin,C=CH  
# Serial Number: 1 (0x1)  
# Subject: CN=AdminCA-CD-T01,OU=Certification Authorities,OU=Services,O=admin,C=CH  
# Not Valid Before: Wed Jan 25 13:36:19 2006  
# Not Valid After: Mon Jan 25 12:36:19 2016  
# Fingerprint (MD5): 5b:9e:fd:3b:60:35:ea:68:8e:52:fe:13:19:14:4a:a3  
# Fingerprint (SHA1): 6b:81:44:6a:5c:dd:f4:74:a0:f8:00:ff:be:69:fd:0d:b6:28:75:16  
CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "AdminCA-CD-T01"  
CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL  
\153\201\104\152\134\335\364\164\240\370\000\377\276\151\375\015

```

\266\050\165\026
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\133\236\375\073\140\065\352\150\216\122\376\023\031\024\112\243
END
CKA_ISSUER MULTILINE_OCTAL
\060\155\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\016\060\014\006\003\125\004\012\023\005\141\144\155\151\156\061
\021\060\017\006\003\125\004\013\023\010\123\145\162\166\151\143
\145\163\061\042\060\040\006\003\125\004\013\023\031\103\145\162
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157
\162\151\164\151\145\163\061\027\060\025\006\003\125\004\003\023
\016\101\144\155\151\156\103\101\055\103\104\055\124\060\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "Admin-Root-CA"
Issuer: CN=Admin-Root-CA,OU=Certification Authorities,OU=Services,O=admin,C=ch
Serial Number:3b:f3:81:d0
Subject: CN=Admin-Root-CA,OU=Certification Authorities,OU=Services,O=admin,C=ch
Not Valid Before: Thu Nov 15 08:51:07 2001
Not Valid After: Wed Nov 10 07:51:07 2021
Fingerprint (MD5): f3:7e:3a:13:dc:74:63:06:74:1a:3c:38:32:8c:fb:a9
Fingerprint (SHA1): 25:3f:77:5b:0e:77:97:ab:64:5f:15:91:55:97:c3:9e:26:36:31:d1
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Admin-Root-CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\154\061\013\060\011\006\003\125\004\006\023\002\143\150\061
\016\060\014\006\003\125\004\012\023\005\141\144\155\151\156\061
\021\060\017\006\003\125\004\013\023\010\123\145\162\166\151\143
\145\163\061\042\060\040\006\003\125\004\013\023\031\103\145\162
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157
\162\151\164\151\145\163\061\026\060\024\006\003\125\004\003\023
\015\101\144\155\151\156\055\122\157\157\164\055\103\101
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL

```

\060\154\061\013\060\011\006\003\125\004\006\023\002\143\150\061  
\016\060\014\006\003\125\004\012\023\005\141\144\155\151\156\061  
\021\060\017\006\003\125\004\013\023\010\123\145\162\166\151\143  
\145\163\061\042\060\040\006\003\125\004\013\023\031\103\145\162  
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157  
\162\151\164\151\145\163\061\026\060\024\006\003\125\004\003\023  
\015\101\144\155\151\156\055\122\157\157\164\055\103\101

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\004\073\363\201\320

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\125\060\202\004\075\240\003\002\001\002\002\004\073  
\363\201\320\060\015\006\011\052\206\110\206\367\015\001\001\005  
\005\000\060\154\061\013\060\011\006\003\125\004\006\023\002\143  
\150\061\016\060\014\006\003\125\004\012\023\005\141\144\155\151  
\156\061\021\060\017\006\003\125\004\013\023\010\123\145\162\166  
\151\143\145\163\061\042\060\040\006\003\125\004\013\023\031\103  
\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164  
\150\157\162\151\164\151\145\163\061\026\060\024\006\003\125\004  
\003\023\015\101\144\155\151\156\055\122\157\157\164\055\103\101  
\060\036\027\015\060\061\061\061\061\065\060\070\065\061\060\067  
\132\027\015\062\061\061\061\061\060\060\067\065\061\060\067\132  
\060\154\061\013\060\011\006\003\125\004\006\023\002\143\150\061  
\016\060\014\006\003\125\004\012\023\005\141\144\155\151\156\061  
\021\060\017\006\003\125\004\013\023\010\123\145\162\166\151\143  
\145\163\061\042\060\040\006\003\125\004\013\023\031\103\145\162  
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157  
\162\151\164\151\145\163\061\026\060\024\006\003\125\004\003\023  
\015\101\144\155\151\156\055\122\157\157\164\055\103\101\060\202  
\001\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005  
\000\003\202\001\017\000\060\202\001\012\002\202\001\001\000\313  
\340\257\104\024\042\376\152\027\111\362\135\235\317\134\002\142  
\013\200\271\132\277\250\125\063\173\243\022\044\136\114\157\073  
\101\211\116\203\075\237\263\225\046\064\246\314\022\364\314\235  
\207\136\075\014\015\027\057\205\046\076\052\046\131\163\241\250  
\274\073\353\345\106\270\363\131\173\040\261\136\100\001\155\272  
\147\263\153\353\357\305\342\371\065\335\014\152\006\266\232\050  
\232\160\263\100\051\166\300\161\106\021\153\103\257\345\126\101  
\373\346\034\071\203\115\267\366\242\261\146\311\250\015\262\360  
\167\276\066\301\040\047\062\271\314\327\132\312\366\027\101\066  
\115\373\273\125\201\143\234\223\136\203\153\177\270\025\167\162  
\174\175\115\011\153\131\225\346\355\060\253\104\106\331\025\001  
\245\133\211\145\266\340\050\331\050\010\225\176\010\043\262\042  
\350\337\045\114\074\150\367\156\347\113\307\220\375\204\101\046  
\276\134\203\072\327\043\171\267\032\370\007\031\202\132\151\130  
\305\377\210\162\053\307\276\370\323\055\063\167\247\026\022\250  
\213\041\306\102\256\172\144\257\362\263\300\355\167\344\151\002

\003\001\000\001\243\202\001\375\060\202\001\371\060\017\006\003  
\125\035\023\001\001\377\004\005\060\003\001\001\377\060\201\231  
\006\003\125\035\040\004\201\221\060\201\216\060\201\213\006\010  
\140\205\164\001\021\003\001\000\060\177\060\053\006\010\053\006  
\001\005\005\007\002\002\060\037\032\035\124\150\151\163\040\151  
\163\040\164\150\145\040\101\144\155\151\156\055\122\157\157\164  
\055\103\101\040\103\120\123\060\120\006\010\053\006\001\005\005  
\007\002\001\026\104\150\164\164\160\072\057\057\167\167\167\056  
\151\156\146\157\162\155\141\164\151\153\056\141\144\155\151\156  
\056\143\150\057\120\113\111\057\154\151\156\153\163\057\103\120  
\123\137\062\137\061\066\137\067\065\066\137\061\137\061\067\137  
\063\137\061\137\060\056\160\144\146\060\177\006\003\125\035\037  
\004\170\060\166\060\164\240\162\240\160\244\156\060\154\061\026  
\060\024\006\003\125\004\003\023\015\101\144\155\151\156\055\122  
\157\157\164\055\103\101\061\042\060\040\006\003\125\004\013\023  
\031\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101  
\165\164\150\157\162\151\164\151\145\163\061\021\060\017\006\003  
\125\004\013\023\010\123\145\162\166\151\143\145\163\061\016\060  
\014\006\003\125\004\012\023\005\141\144\155\151\156\061\013\060  
\011\006\003\125\004\006\023\002\143\150\060\035\006\003\125\035  
\016\004\026\004\024\202\237\372\043\163\040\361\227\213\262\114  
\115\276\102\305\177\146\315\144\350\060\201\231\006\003\125\035  
\043\004\201\221\060\201\216\200\024\202\237\372\043\163\040\361  
\227\213\262\114\115\276\102\305\177\146\315\144\350\241\160\244  
\156\060\154\061\013\060\011\006\003\125\004\006\023\002\143\150  
\061\016\060\014\006\003\125\004\012\023\005\141\144\155\151\156  
\061\021\060\017\006\003\125\004\013\023\010\123\145\162\166\151  
\143\145\163\061\042\060\040\006\003\125\004\013\023\031\103\145  
\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150  
\157\162\151\164\151\145\163\061\026\060\024\006\003\125\004\003  
\023\015\101\144\155\151\156\055\122\157\157\164\055\103\101\202  
\004\073\363\201\320\060\016\006\003\125\035\017\001\001\377\004  
\004\003\002\001\006\060\015\006\011\052\206\110\206\367\015\001  
\001\005\005\000\003\202\001\001\000\170\117\172\134\046\021\247  
\056\256\232\103\312\134\065\202\106\176\310\066\217\172\146\265  
\251\062\010\034\014\344\156\241\361\310\301\324\344\200\347\214  
\275\143\261\014\337\362\271\076\302\013\161\100\151\106\243\154  
\364\133\017\015\041\104\307\052\053\075\032\013\300\240\301\314  
\210\312\034\077\254\122\266\366\147\315\114\155\304\276\043\375  
\101\053\004\156\167\245\026\170\351\233\134\043\317\201\032\006  
\041\143\152\334\051\121\262\072\371\233\367\135\261\055\365\004  
\027\006\177\234\350\067\205\055\356\061\274\056\001\370\304\353  
\153\216\064\305\071\071\366\224\230\273\037\016\036\021\057\250  
\214\007\012\110\242\214\152\231\205\064\267\052\141\205\170\032  
\051\151\037\235\045\120\121\004\312\027\303\071\070\007\161\347  
\321\230\233\325\321\030\025\226\274\342\363\311\147\053\361\011  
\262\316\234\364\103\046\001\372\127\153\220\251\261\276\350\065  
\325\151\377\360\071\025\116\274\137\360\317\073\364\276\043\077

\105\146\304\264\226\135\276\217\015\336\307\155\011\102\363\211  
\371\361\077\365\164\117\337\270\145

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Admin-Root-CA"

# Issuer: CN=Admin-Root-CA,OU=Certification Authorities,OU=Services,O=admin,C=ch

# Serial Number:3b:f3:81:d0

# Subject: CN=Admin-Root-CA,OU=Certification Authorities,OU=Services,O=admin,C=ch

# Not Valid Before: Thu Nov 15 08:51:07 2001

# Not Valid After: Wed Nov 10 07:51:07 2021

# Fingerprint (MD5): f3:7e:3a:13:dc:74:63:06:74:1a:3c:38:32:8c:fb:a9

# Fingerprint (SHA1): 25:3f:77:5b:0e:77:97:ab:64:5f:15:91:55:97:c3:9e:26:36:31:d1

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Admin-Root-CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\045\077\167\133\016\167\227\253\144\137\025\221\125\227\303\236  
\046\066\061\321

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\363\176\072\023\334\164\143\006\164\032\074\070\062\214\373\251

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\154\061\013\060\011\006\003\125\004\006\023\002\143\150\061  
\016\060\014\006\003\125\004\012\023\005\141\144\155\151\156\061  
\021\060\017\006\003\125\004\013\023\010\123\145\162\166\151\143  
\145\163\061\042\060\040\006\003\125\004\013\023\031\103\145\162  
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157  
\162\151\164\151\145\163\061\026\060\024\006\003\125\004\003\023  
\015\101\144\155\151\156\055\122\157\157\164\055\103\101

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\004\073\363\201\320

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "TÜBTAK UEKAE Kök Sertifika Hizmet Salaycs - Sürüm 3"

# Issuer: CN=TÜBTAK UEKAE Kök Sertifika Hizmet Salaycs - Sürüm 3,OU=Kamu Sertifikasyon



Merkezi,OU=Ulusal Elektronik ve Kriptoloji Aratırma Enstitüsü - UEKAE,O=Türkiye Bilimsel ve Teknolojik Aratırma Kurumu - TÜBTAK,L=Gebze - Kocaeli,C=TR

# Serial Number: 17 (0x11)

# Subject: CN=TÜBTAK UEKAE Kök Sertifika Hizmet Salaycs - Sürüm 3,OU=Kamu Sertifikasyon

Merkezi,OU=Ulusal Elektronik ve Kriptoloji Aratırma Enstitüsü - UEKAE,O=Türkiye Bilimsel ve Teknolojik Aratırma Kurumu - TÜBTAK,L=Gebze - Kocaeli,C=TR

# Not Valid Before: Fri Aug 24 11:37:07 2007

# Not Valid After: Mon Aug 21 11:37:07 2017

# Fingerprint (MD5): ed:41:f5:8c:50:c5:2b:9c:73:e6:ee:6c:eb:c2:a8:26

# Fingerprint (SHA1): 1b:4b:39:61:26:27:6b:64:91:a2:68:6d:d7:02:43:21:2d:1f:1d:96

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "TÜBTAK UEKAE Kök Sertifika Hizmet Salaycs - Sürüm 3"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

```
\060\202\001\053\061\013\060\011\006\003\125\004\006\023\002\124
\122\061\030\060\026\006\003\125\004\007\014\017\107\145\142\172
\145\040\055\040\113\157\143\141\145\154\151\061\107\060\105\006
\003\125\004\012\014\076\124\303\274\162\153\151\171\145\040\102
\151\154\151\155\163\145\154\040\166\145\040\124\145\153\156\157
\154\157\152\151\153\040\101\162\141\305\237\164\304\261\162\155
\141\040\113\165\162\165\155\165\040\055\040\124\303\234\102\304
\260\124\101\113\061\110\060\106\006\003\125\004\013\014\077\125
\154\165\163\141\154\040\105\154\145\153\164\162\157\156\151\153
\040\166\145\040\113\162\151\160\164\157\154\157\152\151\040\101
\162\141\305\237\164\304\261\162\155\141\040\105\156\163\164\151
\164\303\274\163\303\274\040\055\040\125\105\113\101\105\061\043
\060\041\006\003\125\004\013\014\032\113\141\155\165\040\123\145
\162\164\151\146\151\153\141\163\171\157\156\040\115\145\162\153
\145\172\151\061\112\060\110\006\003\125\004\003\014\101\124\303
\234\102\304\260\124\101\113\040\125\105\113\101\105\040\113\303
\266\153\040\123\145\162\164\151\146\151\153\141\040\110\151\172
\155\145\164\040\123\141\304\237\154\141\171\304\261\143\304\261
\163\304\261\040\055\040\123\303\274\162\303\274\155\040\063
```

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\202\001\053\061\013\060\011\006\003\125\004\006\023\002\124
\122\061\030\060\026\006\003\125\004\007\014\017\107\145\142\172
\145\040\055\040\113\157\143\141\145\154\151\061\107\060\105\006
\003\125\004\012\014\076\124\303\274\162\153\151\171\145\040\102
\151\154\151\155\163\145\154\040\166\145\040\124\145\153\156\157
\154\157\152\151\153\040\101\162\141\305\237\164\304\261\162\155
\141\040\113\165\162\165\155\165\040\055\040\124\303\234\102\304
\260\124\101\113\061\110\060\106\006\003\125\004\013\014\077\125
\154\165\163\141\154\040\105\154\145\153\164\162\157\156\151\153
```

\040\166\145\040\113\162\151\160\164\157\154\157\152\151\040\101  
\162\141\305\237\164\304\261\162\155\141\040\105\156\163\164\151  
\164\303\274\163\303\274\040\055\040\125\105\113\101\105\061\043  
\060\041\006\003\125\004\013\014\032\113\141\155\165\040\123\145  
\162\164\151\146\151\153\141\163\171\157\156\040\115\145\162\153  
\145\172\151\061\112\060\110\006\003\125\004\003\014\101\124\303  
\234\102\304\260\124\101\113\040\125\105\113\101\105\040\113\303  
\266\153\040\123\145\162\164\151\146\151\153\141\040\110\151\172  
\155\145\164\040\123\141\304\237\154\141\171\304\261\143\304\261  
\163\304\261\040\055\040\123\303\274\162\303\274\155\040\063

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\021

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\027\060\202\003\377\240\003\002\001\002\002\001\021  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060  
\202\001\053\061\013\060\011\006\003\125\004\006\023\002\124\122  
\061\030\060\026\006\003\125\004\007\014\017\107\145\142\172\145  
\040\055\040\113\157\143\141\145\154\151\061\107\060\105\006\003  
\125\004\012\014\076\124\303\274\162\153\151\171\145\040\102\151  
\154\151\155\163\145\154\040\166\145\040\124\145\153\156\157\154  
\157\152\151\153\040\101\162\141\305\237\164\304\261\162\155\141  
\040\113\165\162\165\155\165\040\055\040\124\303\234\102\304\260  
\124\101\113\061\110\060\106\006\003\125\004\013\014\077\125\154  
\165\163\141\154\040\105\154\145\153\164\162\157\156\151\153\040  
\166\145\040\113\162\151\160\164\157\154\157\152\151\040\101\162  
\141\305\237\164\304\261\162\155\141\040\105\156\163\164\151\164  
\303\274\163\303\274\040\055\040\125\105\113\101\105\061\043\060  
\041\006\003\125\004\013\014\032\113\141\155\165\040\123\145\162  
\164\151\146\151\153\141\163\171\157\156\040\115\145\162\153\145  
\172\151\061\112\060\110\006\003\125\004\003\014\101\124\303\234  
\102\304\260\124\101\113\040\125\105\113\101\105\040\113\303\266  
\153\040\123\145\162\164\151\146\151\153\141\040\110\151\172\155  
\145\164\040\123\141\304\237\154\141\171\304\261\143\304\261\163  
\304\261\040\055\040\123\303\274\162\303\274\155\040\063\060\036  
\027\015\060\067\060\070\062\064\061\061\063\067\060\067\132\027  
\015\061\067\060\070\062\061\061\061\063\067\060\067\132\060\202  
\001\053\061\013\060\011\006\003\125\004\006\023\002\124\122\061  
\030\060\026\006\003\125\004\007\014\017\107\145\142\172\145\040  
\055\040\113\157\143\141\145\154\151\061\107\060\105\006\003\125  
\004\012\014\076\124\303\274\162\153\151\171\145\040\102\151\154  
\151\155\163\145\154\040\166\145\040\124\145\153\156\157\154\157  
\152\151\153\040\101\162\141\305\237\164\304\261\162\155\141\040  
\113\165\162\165\155\165\040\055\040\124\303\234\102\304\260\124  
\101\113\061\110\060\106\006\003\125\004\013\014\077\125\154\165  
\163\141\154\040\105\154\145\153\164\162\157\156\151\153\040\166  
\145\040\113\162\151\160\164\157\154\157\152\151\040\101\162\141

\305\237\164\304\261\162\155\141\040\105\156\163\164\151\164\303  
\274\163\303\274\040\055\040\125\105\113\101\105\061\043\060\041  
\006\003\125\004\013\014\032\113\141\155\165\040\123\145\162\164  
\151\146\151\153\141\163\171\157\156\040\115\145\162\153\145\172  
\151\061\112\060\110\006\003\125\004\003\014\101\124\303\234\102  
\304\260\124\101\113\040\125\105\113\101\105\040\113\303\266\153  
\040\123\145\162\164\151\146\151\153\141\040\110\151\172\155\145  
\164\040\123\141\304\237\154\141\171\304\261\143\304\261\163\304  
\261\040\055\040\123\303\274\162\303\274\155\040\063\060\202\001  
\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000  
\003\202\001\017\000\060\202\001\012\002\202\001\001\000\212\155  
\113\377\020\210\072\303\366\176\224\350\352\040\144\160\256\041  
\201\276\072\173\074\333\361\035\122\177\131\372\363\042\114\225  
\240\220\274\110\116\021\253\373\267\265\215\172\203\050\214\046  
\106\330\116\225\100\207\141\237\305\236\155\201\207\127\154\212  
\073\264\146\352\314\100\374\343\252\154\262\313\001\333\062\277  
\322\353\205\317\241\015\125\303\133\070\127\160\270\165\306\171  
\321\024\060\355\033\130\133\153\357\065\362\241\041\116\305\316  
\174\231\137\154\271\270\042\223\120\247\315\114\160\152\276\152  
\005\177\023\234\053\036\352\376\107\316\004\245\157\254\223\056  
\174\053\237\236\171\023\221\350\352\236\312\070\165\216\142\260  
\225\223\052\345\337\351\136\227\156\040\137\137\204\172\104\071  
\031\100\034\272\125\053\373\060\262\201\357\204\343\334\354\230  
\070\071\003\205\010\251\124\003\005\051\360\311\217\213\352\013  
\206\145\031\021\323\351\011\043\336\150\223\003\311\066\034\041  
\156\316\214\146\361\231\060\330\327\263\303\035\370\201\056\250  
\275\202\013\146\376\202\313\341\340\032\202\303\100\201\002\003  
\001\000\001\243\102\060\100\060\035\006\003\125\035\016\004\026  
\004\024\275\210\207\311\217\366\244\012\013\252\353\305\376\221  
\043\235\253\112\212\062\060\016\006\003\125\035\017\001\001\377  
\004\004\003\002\001\006\060\017\006\003\125\035\023\001\001\377  
\004\005\060\003\001\001\377\060\015\006\011\052\206\110\206\367  
\015\001\001\005\005\000\003\202\001\001\000\035\174\372\111\217  
\064\351\267\046\222\026\232\005\164\347\113\320\155\071\154\303  
\046\366\316\270\061\274\304\337\274\052\370\067\221\030\334\004  
\310\144\231\053\030\155\200\003\131\311\256\370\130\320\076\355  
\303\043\237\151\074\206\070\034\236\357\332\047\170\321\204\067  
\161\212\074\113\071\317\176\105\006\326\055\330\212\115\170\022  
\326\255\302\323\313\322\320\101\363\046\066\112\233\225\154\014  
\356\345\321\103\047\146\301\210\367\172\263\040\154\352\260\151  
\053\307\040\350\014\003\304\101\005\231\342\077\344\153\370\240  
\206\201\307\204\306\037\325\113\201\022\262\026\041\054\023\241  
\200\262\136\014\112\023\236\040\330\142\100\253\220\352\144\112  
\057\254\015\001\022\171\105\250\057\207\031\150\310\342\205\307  
\060\262\165\371\070\077\262\300\223\264\153\342\003\104\316\147  
\240\337\211\326\255\214\166\243\023\303\224\141\053\153\331\154  
\301\007\012\042\007\205\154\205\044\106\251\276\077\213\170\204  
\202\176\044\014\235\375\201\067\343\045\250\355\066\116\225\054

\311\234\220\332\354\251\102\074\255\266\002

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "TÜBTAK UEKAE Kök Sertifika Hizmet Salaycs - Sürüm 3"

# Issuer: CN=TÜBTAK UEKAE Kök Sertifika Hizmet Salaycs - Sürüm 3,OU=Kamu Sertifikasyon

Merkezi,OU=Ulusal Elektronik ve Kriptoloji Aratırma Enstitüsü - UEKAE,O=Türkiye Bilimsel ve Teknolojik Aratırma Kurumu - TÜBTAK,L=Gebze - Kocaeli,C=TR

# Serial Number: 17 (0x11)

# Subject: CN=TÜBTAK UEKAE Kök Sertifika Hizmet Salaycs - Sürüm 3,OU=Kamu Sertifikasyon

Merkezi,OU=Ulusal Elektronik ve Kriptoloji Aratırma Enstitüsü - UEKAE,O=Türkiye Bilimsel ve Teknolojik Aratırma Kurumu - TÜBTAK,L=Gebze - Kocaeli,C=TR

# Not Valid Before: Fri Aug 24 11:37:07 2007

# Not Valid After: Mon Aug 21 11:37:07 2017

# Fingerprint (MD5): ed:41:f5:8c:50:c5:2b:9c:73:e6:ee:6c:eb:c2:a8:26

# Fingerprint (SHA1): 1b:4b:39:61:26:27:6b:64:91:a2:68:6d:d7:02:43:21:2d:1f:1d:96

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "TÜBTAK UEKAE Kök Sertifika Hizmet Salaycs - Sürüm 3"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\033\113\071\141\046\047\153\144\221\242\150\155\327\002\103\041

\055\037\035\226

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\355\101\365\214\120\305\053\234\163\346\356\154\353\302\250\046

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\202\001\053\061\013\060\011\006\003\125\004\006\023\002\124

\122\061\030\060\026\006\003\125\004\007\014\017\107\145\142\172

\145\040\055\040\113\157\143\141\145\154\151\061\107\060\105\006

\003\125\004\012\014\076\124\303\274\162\153\151\171\145\040\102

\151\154\151\155\163\145\154\040\166\145\040\124\145\153\156\157

\154\157\152\151\153\040\101\162\141\305\237\164\304\261\162\155

\141\040\113\165\162\165\155\165\040\055\040\124\303\234\102\304

\260\124\101\113\061\110\060\106\006\003\125\004\013\014\077\125

\154\165\163\141\154\040\105\154\145\153\164\162\157\156\151\153

\040\166\145\040\113\162\151\160\164\157\154\157\152\151\040\101

\162\141\305\237\164\304\261\162\155\141\040\105\156\163\164\151

\164\303\274\163\303\274\040\055\040\125\105\113\101\105\061\043

\060\041\006\003\125\004\013\014\032\113\141\155\165\040\123\145

\162\164\151\146\151\153\141\163\171\157\156\040\115\145\162\153

\145\172\151\061\112\060\110\006\003\125\004\003\014\101\124\303

\234\102\304\260\124\101\113\040\125\105\113\101\105\040\113\303

```
\266\153\040\123\145\162\164\151\146\151\153\141\040\110\151\172
\155\145\164\040\123\141\304\237\154\141\171\304\261\143\304\261
\163\304\261\040\055\040\123\303\274\162\303\274\155\040\063
END
```

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\001\021
```

```
END
```

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

```
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

```
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

```
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
```

```
Certificate "Halcom CA FO"
```

```
Issuer: CN=Halcom CA FO,O=Halcom,C=SI
```

```
Serial Number: 113253 (0x1ba65)
```

```
Subject: CN=Halcom CA FO,O=Halcom,C=SI
```

```
Not Valid Before: Sun Jun 05 10:33:31 2005
```

```
Not Valid After: Fri Jun 05 10:33:31 2020
```

```
Fingerprint (MD5): 0b:09:2c:1c:d7:21:86:6f:94:37:6f:e6:a7:f3:22:4d
```

```
Fingerprint (SHA1): 04:09:56:5b:77:da:58:2e:64:95:ac:00:60:a7:23:54:e6:4b:01:92
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "Halcom CA FO"
```

```
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
```

```
CKA_SUBJECT MULTILINE_OCTAL
```

```
\060\065\061\013\060\011\006\003\125\004\006\023\002\123\111\061
\017\060\015\006\003\125\004\012\023\006\110\141\154\143\157\155
\061\025\060\023\006\003\125\004\003\023\014\110\141\154\143\157
\155\040\103\101\040\106\117
```

```
END
```

```
CKA_ID UTF8 "0"
```

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\065\061\013\060\011\006\003\125\004\006\023\002\123\111\061
\017\060\015\006\003\125\004\012\023\006\110\141\154\143\157\155
\061\025\060\023\006\003\125\004\003\023\014\110\141\154\143\157
\155\040\103\101\040\106\117
```

```
END
```

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\003\001\272\145
```

```
END
```

```
CKA_VALUE MULTILINE_OCTAL
```

```
\060\202\003\032\060\202\002\002\240\003\002\001\002\002\003\001
\272\145\060\015\006\011\052\206\110\206\367\015\001\001\005\005
\000\060\065\061\013\060\011\006\003\125\004\006\023\002\123\111
\061\017\060\015\006\003\125\004\012\023\006\110\141\154\143\157
```

\155\061\025\060\023\006\003\125\004\003\023\014\110\141\154\143  
\157\155\040\103\101\040\106\117\060\036\027\015\060\065\060\066  
\060\065\061\060\063\063\063\061\132\027\015\062\060\060\066\060  
\065\061\060\063\063\063\061\132\060\065\061\013\060\011\006\003  
\125\004\006\023\002\123\111\061\017\060\015\006\003\125\004\012  
\023\006\110\141\154\143\157\155\061\025\060\023\006\003\125\004  
\003\023\014\110\141\154\143\157\155\040\103\101\040\106\117\060  
\202\001\042\060\015\006\011\052\206\110\206\367\015\001\001\001  
\005\000\003\202\001\017\000\060\202\001\012\002\202\001\001\000  
\274\243\046\001\226\345\235\254\032\002\002\071\174\254\334\006  
\114\067\112\256\007\110\165\350\047\034\244\061\375\012\247\043  
\135\174\077\016\372\360\214\221\157\125\064\204\003\164\314\003  
\065\170\315\161\301\107\033\273\352\041\156\270\007\336\041\222  
\252\254\271\336\067\242\037\364\232\034\033\310\356\020\203\326  
\123\103\310\335\351\363\220\106\071\162\012\116\374\022\051\111  
\201\130\046\072\161\023\014\173\123\217\337\146\162\074\027\334  
\336\341\171\112\237\351\140\076\155\065\344\115\121\321\034\300  
\032\060\134\006\077\163\103\310\315\066\364\036\302\207\214\117  
\110\237\332\165\127\052\114\257\215\124\074\104\137\230\074\120  
\332\320\030\006\174\140\156\322\204\377\147\205\220\075\136\306  
\353\330\172\243\265\155\014\276\165\270\251\332\126\161\066\132  
\356\353\111\123\076\342\031\166\174\102\253\241\220\361\367\057  
\270\272\112\101\264\053\244\056\141\066\347\326\332\177\365\237  
\215\270\113\133\204\065\120\305\275\005\252\252\302\014\164\101  
\143\127\031\216\377\341\106\346\173\005\044\376\231\335\061\275  
\002\003\001\000\001\243\063\060\061\060\017\006\003\125\035\023  
\001\001\377\004\005\060\003\001\001\377\060\021\006\003\125\035  
\016\004\012\004\010\110\040\034\142\015\130\122\045\060\013\006  
\003\125\035\017\004\004\003\002\001\006\060\015\006\011\052\206  
\110\206\367\015\001\001\005\005\000\003\202\001\001\000\133\165  
\365\346\060\106\130\212\367\017\321\117\013\001\130\004\271\144  
\344\060\015\076\166\331\153\023\255\034\156\311\114\360\154\346  
\102\021\375\353\203\357\120\330\273\124\235\264\221\212\132\265  
\204\017\214\106\315\074\202\250\245\036\040\234\320\365\101\006  
\312\001\053\230\260\352\051\120\037\342\164\173\131\202\312\012  
\345\156\116\256\260\067\355\076\314\272\062\331\077\013\150\054  
\262\323\074\334\070\305\021\326\033\063\356\271\242\152\104\223  
\033\120\352\141\033\171\127\121\126\236\062\320\063\170\264\317  
\107\052\373\367\315\361\347\155\340\272\144\373\025\233\276\312  
\261\362\107\001\177\340\114\267\245\101\254\036\331\032\154\221  
\341\320\250\112\303\136\170\053\172\200\300\117\315\045\137\120  
\047\306\274\130\165\234\035\265\232\135\225\163\363\204\146\323  
\315\155\035\315\340\132\316\040\070\357\222\163\170\136\002\326  
\215\371\164\324\267\211\330\214\373\173\325\213\161\325\031\027  
\046\330\044\111\074\125\274\202\207\332\143\273\071\327\216\221  
\317\064\160\134\163\117\320\120\107\132\373\345\132\121

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Halcom CA FO"

# Issuer: CN=Halcom CA FO,O=Halcom,C=SI

# Serial Number: 113253 (0x1ba65)

# Subject: CN=Halcom CA FO,O=Halcom,C=SI

# Not Valid Before: Sun Jun 05 10:33:31 2005

# Not Valid After: Fri Jun 05 10:33:31 2020

# Fingerprint (MD5): 0b:09:2c:1c:d7:21:86:6f:94:37:6f:e6:a7:f3:22:4d

# Fingerprint (SHA1): 04:09:56:5b:77:da:58:2e:64:95:ac:00:60:a7:23:54:e6:4b:01:92

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Halcom CA FO"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\004\011\126\133\167\332\130\056\144\225\254\000\140\247\043\124  
\346\113\001\222

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\013\011\054\034\327\041\206\157\224\067\157\346\247\363\042\115  
END

CKA\_ISSUER MULTILINE\_OCTAL

\060\065\061\013\060\011\006\003\125\004\006\023\002\123\111\061  
\017\060\015\006\003\125\004\012\023\006\110\141\154\143\157\155  
\061\025\060\023\006\003\125\004\003\023\014\110\141\154\143\157  
\155\040\103\101\040\106\117

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\003\001\272\145

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "Halcom CA PO 2"

# Issuer: CN=Halcom CA PO 2,O=Halcom,C=SI

# Serial Number: 79074 (0x134e2)

# Subject: CN=Halcom CA PO 2,O=Halcom,C=SI

# Not Valid Before: Sat Feb 07 18:33:31 2004

# Not Valid After: Thu Feb 07 18:33:31 2019

# Fingerprint (MD5): 1d:64:96:af:2d:82:1a:30:0b:a0:62:0d:76:bc:53:aa

# Fingerprint (SHA1): 7f:bb:6a:cd:7e:0a:b4:38:da:af:6f:d5:02:10:d0:07:c6:c0:82:9c

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

```
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Halcom CA PO 2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\067\061\013\060\011\006\003\125\004\006\023\002\123\111\061
\017\060\015\006\003\125\004\012\023\006\110\141\154\143\157\155
\061\027\060\025\006\003\125\004\003\023\016\110\141\154\143\157
\155\040\103\101\040\120\117\040\062
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\067\061\013\060\011\006\003\125\004\006\023\002\123\111\061
\017\060\015\006\003\125\004\012\023\006\110\141\154\143\157\155
\061\027\060\025\006\003\125\004\003\023\016\110\141\154\143\157
\155\040\103\101\040\120\117\040\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\003\001\064\342
END
CKA_VALUE MULTILINE_OCTAL
\060\202\002\031\060\202\001\202\240\003\002\001\002\002\003\001
\064\342\060\015\006\011\052\206\110\206\367\015\001\001\005\005
\000\060\067\061\013\060\011\006\003\125\004\006\023\002\123\111
\061\017\060\015\006\003\125\004\012\023\006\110\141\154\143\157
\155\061\027\060\025\006\003\125\004\003\023\016\110\141\154\143
\157\155\040\103\101\040\120\117\040\062\060\036\027\015\060\064
\060\062\060\067\061\070\063\063\063\061\132\027\015\061\071\060
\062\060\067\061\070\063\063\063\061\132\060\067\061\013\060\011
\006\003\125\004\006\023\002\123\111\061\017\060\015\006\003\125
\004\012\023\006\110\141\154\143\157\155\061\027\060\025\006\003
\125\004\003\023\016\110\141\154\143\157\155\040\103\101\040\120
\117\040\062\060\201\237\060\015\006\011\052\206\110\206\367\015
\001\001\001\005\000\003\201\215\000\060\201\211\002\201\201\000
\224\027\362\111\067\060\062\011\010\074\276\365\067\267\164\154
\020\073\313\042\161\007\006\271\306\354\332\110\363\237\047\155
\144\215\125\336\171\107\120\373\150\316\171\001\276\247\033\366
\141\255\175\061\013\123\040\255\061\361\133\316\043\372\377\314
\022\002\132\000\234\374\315\153\022\122\350\254\324\063\073\163
\046\020\161\220\100\277\003\210\337\274\137\041\015\214\326\212
\223\037\347\256\025\124\306\114\344\231\141\222\340\367\215\162
\307\334\142\023\063\243\076\111\051\373\204\277\160\072\221\041
\002\003\001\000\001\243\063\060\061\060\017\006\003\125\035\023
\001\001\377\004\005\060\003\001\001\377\060\021\006\003\125\035
\016\004\012\004\010\110\257\127\146\277\322\300\002\060\013\006
\003\125\035\017\004\004\003\002\001\006\060\015\006\011\052\206
\110\206\367\015\001\001\005\005\000\003\201\201\000\220\026\127
```



```
\166\270\171\316\374\304\321\067\000\242\315\377\070\007\021\163
\023\005\111\355\337\301\305\316\306\100\330\367\002\226\015\267
\157\021\204\070\146\373\161\367\020\001\147\174\135\175\044\332
\366\144\073\010\200\110\246\116\275\104\342\260\007\062\217\174
\206\067\106\157\300\203\003\223\265\364\363\022\174\243\350\313
\342\072\043\170\372\150\157\376\130\312\014\247\127\121\055\142
\220\371\344\250\334\365\312\337\016\207\121\156\067\165\046\016
\327\176\170\212\003\242\225\031\266\136\221\001\126
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

# Microsoft Code Signing Only Certificate

# Trust for "Halcom CA PO 2"

# Issuer: CN=Halcom CA PO 2,O=Halcom,C=SI

# Serial Number: 79074 (0x134e2)

# Subject: CN=Halcom CA PO 2,O=Halcom,C=SI

# Not Valid Before: Sat Feb 07 18:33:31 2004

# Not Valid After: Thu Feb 07 18:33:31 2019

# Fingerprint (MD5): 1d:64:96:af:2d:82:1a:30:0b:a0:62:0d:76:bc:53:aa

# Fingerprint (SHA1): 7f:bb:6a:cd:7e:0a:b4:38:da:af:6f:d5:02:10:d0:07:c6:c0:82:9c

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "Halcom CA PO 2"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\177\273\152\315\176\012\264\070\332\257\157\325\002\020\320\007
\306\300\202\234
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\035\144\226\257\055\202\032\060\013\240\142\015\166\274\123\252
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\067\061\013\060\011\006\003\125\004\006\023\002\123\111\061
\017\060\015\006\003\125\004\012\023\006\110\141\154\143\157\155
\061\027\060\025\006\003\125\004\003\023\016\110\141\154\143\157
\155\040\103\101\040\120\117\040\062
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\003\001\064\342
```

END

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

```
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

```
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

```
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```

Microsoft Code Signing Only Certificate
Certificate "Root CA"
Issuer: CN=Root CA,OU=GPKI,O=Government of Korea,C=KR
Serial Number:3c:c2:81:4b:00:e7:52:4d:9b:aa:47:b7:e1:61:f5:0e
Subject: CN=Root CA,OU=GPKI,O=Government of Korea,C=KR
Not Valid Before: Sun Apr 21 09:07:23 2002
Not Valid After: Sat Apr 21 09:07:23 2012
Fingerprint (MD5): c7:bd:11:d6:91:8a:35:82:c5:36:66:01:7c:6f:47:79
Fingerprint (SHA1): 63:4c:3b:02:30:cf:1b:78:b4:56:9f:ec:f2:c0:4a:86:52:ef:ef:0e
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\114\061\013\060\011\006\003\125\004\006\023\002\113\122\061
\034\060\032\006\003\125\004\012\023\023\107\157\166\145\162\156
\155\145\156\164\040\157\146\040\113\157\162\145\141\061\015\060
\013\006\003\125\004\013\023\004\107\120\113\111\061\020\060\016
\006\003\125\004\003\023\007\122\157\157\164\040\103\101
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\114\061\013\060\011\006\003\125\004\006\023\002\113\122\061
\034\060\032\006\003\125\004\012\023\023\107\157\166\145\162\156
\155\145\156\164\040\157\146\040\113\157\162\145\141\061\015\060
\013\006\003\125\004\013\023\004\107\120\113\111\061\020\060\016
\006\003\125\004\003\023\007\122\157\157\164\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\074\302\201\113\000\347\122\115\233\252\107\267\341\141
\365\016
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\231\060\202\002\201\240\003\002\001\002\002\020\074
\302\201\113\000\347\122\115\233\252\107\267\341\141\365\016\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\114
\061\013\060\011\006\003\125\004\006\023\002\113\122\061\034\060
\032\006\003\125\004\012\023\023\107\157\166\145\162\156\155\145
\156\164\040\157\146\040\113\157\162\145\141\061\015\060\013\006
\003\125\004\013\023\004\107\120\113\111\061\020\060\016\006\003
\125\004\003\023\007\122\157\157\164\040\103\101\060\036\027\015
\060\062\060\064\062\061\060\071\060\067\062\063\132\027\015\061
\062\060\064\062\061\060\071\060\067\062\063\132\060\114\061\013
\060\011\006\003\125\004\006\023\002\113\122\061\034\060\032\006
\003\125\004\012\023\023\107\157\166\145\162\156\155\145\156\164
\040\157\146\040\113\157\162\145\141\061\015\060\013\006\003\125

```

\004\013\023\004\107\120\113\111\061\020\060\016\006\003\125\004  
\003\023\007\122\157\157\164\040\103\101\060\202\001\041\060\015  
\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001  
\016\000\060\202\001\011\002\202\001\000\100\326\241\102\027\054  
\125\100\337\232\172\303\221\364\343\275\221\053\365\333\134\146  
\057\211\134\375\170\324\011\114\075\247\304\234\056\372\360\131  
\266\275\264\322\215\050\010\253\257\023\101\256\200\102\364\353  
\134\055\137\176\103\172\065\265\257\077\334\304\075\066\105\222  
\262\270\176\015\274\254\307\301\144\330\336\155\316\263\244\216  
\120\176\110\364\255\216\331\206\031\065\003\212\167\050\165\055  
\202\133\112\354\245\313\161\002\364\104\061\203\112\171\354\316  
\145\377\034\241\063\146\257\133\062\145\376\346\255\207\047\114  
\375\117\030\011\230\144\176\077\316\067\126\363\302\340\306\231  
\233\000\113\067\230\357\034\143\052\225\256\255\003\317\072\134  
\042\016\075\331\365\160\161\166\373\104\317\053\000\041\046\160  
\072\341\252\353\315\111\373\073\142\270\164\132\126\245\362\054  
\222\076\265\000\274\204\277\140\343\102\156\215\243\340\144\266  
\255\245\103\230\367\141\337\305\350\340\360\325\246\275\240\151  
\157\162\156\216\215\017\313\366\370\353\366\314\133\163\235\325  
\055\361\316\027\333\336\010\177\334\215\002\003\001\000\001\243  
\170\060\166\060\037\006\003\125\035\043\004\030\060\026\200\024  
\002\023\356\256\034\040\070\054\251\360\157\352\137\237\007\072  
\223\357\107\164\060\035\006\003\125\035\016\004\026\004\024\002  
\023\356\256\034\040\070\054\251\360\157\352\137\237\007\072\223  
\357\107\164\060\016\006\003\125\035\017\001\001\377\004\004\003  
\002\001\006\060\023\006\003\125\035\040\004\014\060\012\060\010  
\006\004\125\035\040\000\060\000\060\017\006\003\125\035\023\001  
\001\377\004\005\060\003\001\001\377\060\015\006\011\052\206\110  
\206\367\015\001\001\005\005\000\003\202\001\001\000\001\250\251  
\310\046\174\254\076\264\367\266\222\301\176\363\250\220\155\175  
\027\314\150\014\104\302\345\014\122\370\261\002\117\312\071\073  
\127\130\346\337\277\144\012\215\106\264\324\331\262\347\203\007  
\255\113\375\021\277\357\347\231\300\211\335\270\304\247\350\055  
\204\222\315\037\327\030\307\173\206\117\353\271\136\136\311\325  
\260\340\364\372\366\244\301\220\346\155\334\366\016\113\341\357  
\335\065\071\376\361\306\154\220\101\244\141\211\043\346\244\077  
\143\147\272\361\236\167\343\016\355\052\173\343\172\045\163\110  
\067\177\171\345\052\123\006\331\214\262\010\157\064\004\133\211  
\166\007\253\054\243\050\001\377\023\122\164\240\023\123\221\146  
\070\302\211\245\031\110\112\060\270\304\276\144\334\354\237\060  
\131\232\146\305\226\037\175\023\060\352\175\012\337\326\275\202  
\060\050\350\115\215\332\160\312\200\233\034\150\025\174\103\263  
\212\365\057\151\004\206\027\017\060\242\217\321\066\327\215\031  
\112\152\153\070\027\144\053\273\011\322\253\326\021\256\366\247  
\271\053\220\147\212\052\004\332\066\223\033\174\076

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Root CA"

# Issuer: CN=Root CA,OU=GPKI,O=Government of Korea,C=KR

# Serial Number:3c:c2:81:4b:00:e7:52:4d:9b:aa:47:b7:e1:61:f5:0e

# Subject: CN=Root CA,OU=GPKI,O=Government of Korea,C=KR

# Not Valid Before: Sun Apr 21 09:07:23 2002

# Not Valid After: Sat Apr 21 09:07:23 2012

# Fingerprint (MD5): c7:bd:11:d6:91:8a:35:82:c5:36:66:01:7c:6f:47:79

# Fingerprint (SHA1): 63:4c:3b:02:30:cf:1b:78:b4:56:9f:ec:f2:c0:4a:86:52:ef:ef:0e

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Root CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\143\114\073\002\060\317\033\170\264\126\237\354\362\300\112\206  
\122\357\357\016

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\307\275\021\326\221\212\065\202\305\066\146\001\174\157\107\171

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\114\061\013\060\011\006\003\125\004\006\023\002\113\122\061  
\034\060\032\006\003\125\004\012\023\023\107\157\166\145\162\156  
\155\145\156\164\040\157\146\040\113\157\162\145\141\061\015\060  
\013\006\003\125\004\013\023\004\107\120\113\111\061\020\060\016  
\006\003\125\004\003\023\007\122\157\157\164\040\103\101

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\074\302\201\113\000\347\122\115\233\252\107\267\341\141  
\365\016

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "GPKIRootCA"

# Issuer: CN=GPKIRootCA,OU=GPKI,O=Government of Korea,C=KR

# Serial Number:45:f8:e0:e4:01:c5:3e:71:e6:bd:71:6d:97:9c:41:23

# Subject: CN=GPKIRootCA,OU=GPKI,O=Government of Korea,C=KR

# Not Valid Before: Thu Mar 15 06:00:04 2007

# Not Valid After: Wed Mar 15 06:00:04 2017

# Fingerprint (MD5): b4:81:9e:89:ac:17:24:fd:2a:42:85:27:1d:0c:2b:5d

# Fingerprint (SHA1): 20:cb:59:4f:b4:ed:d8:95:76:3f:d5:25:4e:95:9a:66:74:c6:ee:b2

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GPKIRootCA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\117\061\013\060\011\006\003\125\004\006\023\002\113\122\061
\034\060\032\006\003\125\004\012\023\023\107\157\166\145\162\156
\155\145\156\164\040\157\146\040\113\157\162\145\141\061\015\060
\013\006\003\125\004\013\023\004\107\120\113\111\061\023\060\021
\006\003\125\004\003\023\012\107\120\113\111\122\157\157\164\103
\101
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\117\061\013\060\011\006\003\125\004\006\023\002\113\122\061
\034\060\032\006\003\125\004\012\023\023\107\157\166\145\162\156
\155\145\156\164\040\157\146\040\113\157\162\145\141\061\015\060
\013\006\003\125\004\013\023\004\107\120\113\111\061\023\060\021
\006\003\125\004\003\023\012\107\120\113\111\122\157\157\164\103
\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\105\370\340\344\001\305\076\161\346\275\161\155\227\234
\101\043
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\212\060\202\002\162\240\003\002\001\002\002\020\105
\370\340\344\001\305\076\161\346\275\161\155\227\234\101\043\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\117
\061\013\060\011\006\003\125\004\006\023\002\113\122\061\034\060
\032\006\003\125\004\012\023\023\107\157\166\145\162\156\155\145
\156\164\040\157\146\040\113\157\162\145\141\061\015\060\013\006
\003\125\004\013\023\004\107\120\113\111\061\023\060\021\006\003
\125\004\003\023\012\107\120\113\111\122\157\157\164\103\101\060
\036\027\015\060\067\060\063\061\065\060\066\060\060\060\064\132
\027\015\061\067\060\063\061\065\060\066\060\060\060\064\132\060
\117\061\013\060\011\006\003\125\004\006\023\002\113\122\061\034
\060\032\006\003\125\004\012\023\023\107\157\166\145\162\156\155
\145\156\164\040\157\146\040\113\157\162\145\141\061\015\060\013
\006\003\125\004\013\023\004\107\120\113\111\061\023\060\021\006
\003\125\004\003\023\012\107\120\113\111\122\157\157\164\103\101
\060\202\001\041\060\015\006\011\052\206\110\206\367\015\001\001
\001\005\000\003\202\001\016\000\060\202\001\011\002\202\001\000
\132\053\101\025\233\333\166\046\001\360\124\162\013\207\023\037
\240\320\077\226\252\015\263\064\201\336\110\132\237\363\160\132
\302\361\072\236\004\360\116\224\171\227\341\364\265\024\114\327
```

\157\304\213\030\267\334\022\053\035\012\233\356\040\014\133\217  
\377\371\257\202\236\230\106\320\075\135\050\363\227\026\301\134  
\345\126\277\104\244\000\241\172\313\233\172\133\334\324\355\373  
\362\240\002\147\000\036\104\345\212\001\334\245\243\116\376\326  
\014\147\312\111\271\360\320\240\371\115\037\003\323\206\357\015  
\205\165\115\363\355\373\315\152\146\004\127\364\127\233\254\146  
\212\117\302\250\117\161\211\011\335\114\000\337\226\273\325\220  
\012\264\266\152\155\306\277\323\231\051\377\142\360\020\332\105  
\254\011\162\013\202\020\350\025\250\213\137\342\242\132\171\036  
\302\147\375\351\104\127\013\003\320\041\025\121\260\000\363\217  
\155\342\043\360\111\041\331\155\317\142\075\354\353\375\050\222  
\001\077\172\243\162\174\353\363\256\347\370\012\354\156\255\172  
\233\125\311\060\113\234\266\141\106\153\130\032\376\237\110\035  
\002\003\001\000\001\243\143\060\141\060\037\006\003\125\035\043  
\004\030\060\026\200\024\026\147\062\364\150\136\150\061\107\333  
\355\354\316\141\056\232\044\106\304\175\060\035\006\003\125\035  
\016\004\026\004\024\026\147\062\364\150\136\150\061\107\333\355  
\354\316\141\056\232\044\106\304\175\060\016\006\003\125\035\017  
\001\001\377\004\004\003\002\001\256\060\017\006\003\125\035\023  
\001\001\377\004\005\060\003\001\001\377\060\015\006\011\052\206  
\110\206\367\015\001\001\005\005\000\003\202\001\001\000\065\143  
\122\306\140\030\034\267\302\301\132\130\002\354\007\325\241\220  
\223\374\200\107\320\122\170\253\205\370\166\323\270\260\030\062  
\240\266\220\150\023\146\075\157\257\216\334\366\243\304\316\071  
\137\257\355\012\146\340\174\021\310\014\313\236\037\070\051\212  
\213\336\310\143\056\307\264\322\316\066\221\224\340\117\204\222  
\266\252\042\250\375\061\247\063\110\311\133\366\023\330\026\026  
\353\037\077\245\116\006\223\072\331\006\145\060\226\372\215\006  
\333\241\032\364\053\372\017\150\360\301\053\174\235\005\327\011  
\102\073\322\057\221\220\374\016\153\070\133\262\165\251\127\234  
\127\144\365\230\040\244\377\324\060\004\344\316\037\220\311\057  
\301\337\132\126\270\313\252\252\264\277\353\270\367\042\112\115  
\301\065\364\145\275\170\274\157\170\033\126\072\201\350\015\365  
\302\245\027\060\323\215\127\167\313\245\301\114\261\060\335\064  
\270\253\222\012\042\002\066\213\366\154\367\141\271\010\356\060  
\255\032\250\104\361\056\062\354\203\242\110\110\072\147\137\351  
\157\033\027\063\010\052\301\311\303\147\232\016\205\147

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "GPKIRootCA"  
# Issuer: CN=GPKIRootCA,OU=GPKI,O=Government of Korea,C=KR  
# Serial Number:45:f8:e0:e4:01:c5:3e:71:e6:bd:71:6d:97:9c:41:23  
# Subject: CN=GPKIRootCA,OU=GPKI,O=Government of Korea,C=KR  
# Not Valid Before: Thu Mar 15 06:00:04 2007

```

Not Valid After: Wed Mar 15 06:00:04 2017
Fingerprint (MD5): b4:81:9e:89:ac:17:24:fd:2a:42:85:27:1d:0c:2b:5d
Fingerprint (SHA1): 20:cb:59:4f:b4:ed:d8:95:76:3f:d5:25:4e:95:9a:66:74:c6:ee:b2
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GPKIRootCA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\040\313\131\117\264\355\330\225\166\077\325\045\116\225\232\146
\164\306\356\262
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\264\201\236\211\254\027\044\375\052\102\205\047\035\014\053\135
END
CKA_ISSUER MULTILINE_OCTAL
\060\117\061\013\060\011\006\003\125\004\006\023\002\113\122\061
\034\060\032\006\003\125\004\012\023\023\107\157\166\145\162\156
\155\145\156\164\040\157\146\040\113\157\162\145\141\061\015\060
\013\006\003\125\004\013\023\004\107\120\113\111\061\023\060\021
\006\003\125\004\003\023\012\107\120\113\111\122\157\157\164\103
\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\105\370\340\344\001\305\076\161\346\275\161\155\227\234
\101\043
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "ACNLB"
Issuer: O=ACNLB,C=SI
Serial Number:3e:c3:86:8e
Subject: O=ACNLB,C=SI
Not Valid Before: Thu May 15 11:52:45 2003
Not Valid After: Mon May 15 12:22:45 2023
Fingerprint (MD5): ba:92:64:42:16:1f:cb:a1:16:48:1a:f6:40:5c:59:87
Fingerprint (SHA1): 04:56:f2:3d:1e:9c:43:ae:cb:0d:80:7f:1c:06:47:55:1a:05:f4:56
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ACNLB"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL

```

\060\035\061\013\060\011\006\003\125\004\006\023\002\123\111\061  
\016\060\014\006\003\125\004\012\023\005\101\103\116\114\102  
END  
CKA\_ID UTF8 "0"  
CKA\_ISSUER MULTILINE\_OCTAL  
\060\035\061\013\060\011\006\003\125\004\006\023\002\123\111\061  
\016\060\014\006\003\125\004\012\023\005\101\103\116\114\102  
END  
CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL  
\002\004\076\303\206\216  
END  
CKA\_VALUE MULTILINE\_OCTAL  
\060\202\003\267\060\202\002\237\240\003\002\001\002\002\004\076  
\303\206\216\060\015\006\011\052\206\110\206\367\015\001\001\005  
\005\000\060\035\061\013\060\011\006\003\125\004\006\023\002\123  
\111\061\016\060\014\006\003\125\004\012\023\005\101\103\116\114  
\102\060\036\027\015\060\063\060\065\061\065\061\061\065\062\064  
\065\132\027\015\062\063\060\065\061\065\061\062\062\062\064\065  
\132\060\035\061\013\060\011\006\003\125\004\006\023\002\123\111  
\061\016\060\014\006\003\125\004\012\023\005\101\103\116\114\102  
\060\202\001\042\060\015\006\011\052\206\110\206\367\015\001\001  
\001\005\000\003\202\001\017\000\060\202\001\012\002\202\001\001  
\000\277\166\165\075\014\174\100\072\146\137\115\214\373\335\074  
\056\376\175\224\144\355\112\324\111\110\241\356\221\161\262\171  
\310\216\053\037\252\360\062\264\050\262\243\302\165\117\244\351  
\246\032\366\242\146\141\043\047\141\054\156\027\220\013\372\336  
\036\161\122\002\051\004\231\171\254\300\260\300\146\230\230\021  
\067\144\020\317\234\274\073\102\034\051\134\125\220\366\172\042  
\116\126\257\067\150\277\164\072\154\074\306\230\314\140\041\277  
\342\010\047\344\331\053\274\343\204\225\327\324\044\140\374\176  
\055\057\235\041\353\235\221\306\273\244\321\353\311\022\255\243  
\350\310\265\177\125\113\353\231\002\124\304\201\034\014\256\071  
\344\152\172\005\330\116\160\240\372\003\167\263\256\330\270\024  
\222\373\101\167\023\065\152\267\242\312\210\113\255\055\121\274  
\166\232\154\273\100\275\347\044\114\042\246\346\375\116\010\173  
\235\013\020\326\022\322\246\306\241\144\062\364\001\163\226\201  
\342\110\260\301\050\143\075\073\347\147\254\156\305\024\365\027  
\023\242\234\037\053\127\360\025\047\165\135\335\261\064\326\223  
\021\002\003\001\000\001\243\201\376\060\201\373\060\021\006\011  
\140\206\110\001\206\370\102\001\001\004\004\003\002\000\007\060  
\077\006\003\125\035\037\004\070\060\066\060\064\240\062\240\060  
\244\056\060\054\061\013\060\011\006\003\125\004\006\023\002\123  
\111\061\016\060\014\006\003\125\004\012\023\005\101\103\116\114  
\102\061\015\060\013\006\003\125\004\003\023\004\103\122\114\061  
\060\053\006\003\125\035\020\004\044\060\042\200\017\062\060\060  
\063\060\065\061\065\061\061\065\062\064\065\132\201\017\062\060  
\062\063\060\065\061\065\061\062\062\062\064\065\132\060\013\006  
\003\125\035\017\004\004\003\002\001\006\060\037\006\003\125\035



\043\004\030\060\026\200\024\314\273\273\206\326\157\370\276\264  
\107\042\167\263\266\255\327\001\131\226\115\060\035\006\003\125  
\035\016\004\026\004\024\314\273\273\206\326\157\370\276\264\107  
\042\167\263\266\255\327\001\131\226\115\060\014\006\003\125\035  
\023\004\005\060\003\001\001\377\060\035\006\011\052\206\110\206  
\366\175\007\101\000\004\020\060\016\033\010\126\066\056\060\072  
\064\056\060\003\002\004\220\060\015\006\011\052\206\110\206\367  
\015\001\001\005\005\000\003\202\001\001\000\021\147\313\313\232  
\153\040\041\335\157\151\203\325\077\015\272\223\025\227\116\160  
\166\046\134\350\236\044\347\067\376\074\120\364\324\371\052\057  
\014\023\241\135\004\274\320\260\351\302\003\027\205\005\141\075  
\300\247\252\166\114\303\270\072\203\251\206\317\003\371\167\016  
\053\262\075\166\033\145\321\152\161\140\161\333\273\270\172\216  
\362\371\041\203\370\127\114\250\307\335\145\306\356\357\157\263  
\266\231\273\264\303\320\253\137\262\240\176\335\164\041\054\303  
\132\353\215\241\312\330\360\310\027\355\166\272\204\143\156\133  
\271\265\312\155\327\374\064\071\200\057\272\117\337\215\330\374  
\030\304\074\212\065\057\167\202\226\255\040\222\030\262\347\066  
\364\256\062\164\270\107\321\330\017\330\054\313\152\302\000\165  
\371\054\370\102\016\313\376\163\223\251\217\341\307\256\041\067  
\363\312\271\014\264\347\211\176\161\034\126\064\040\303\361\064  
\271\125\113\323\123\122\361\007\055\053\076\133\031\100\237\020  
\355\323\051\063\305\257\017\020\126\207\332\073\310\261\355\070  
\331\031\373\113\360\120\055\244\315\324\130

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "ACNLB"

# Issuer: O=ACNLB,C=SI

# Serial Number:3e:c3:86:8e

# Subject: O=ACNLB,C=SI

# Not Valid Before: Thu May 15 11:52:45 2003

# Not Valid After: Mon May 15 12:22:45 2023

# Fingerprint (MD5): ba:92:64:42:16:1f:cb:a1:16:48:1a:f6:40:5c:59:87

# Fingerprint (SHA1): 04:56:f2:3d:1e:9c:43:ae:cb:0d:80:7f:1c:06:47:55:1a:05:f4:56

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "ACNLB"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\004\126\362\075\036\234\103\256\313\015\200\177\034\006\107\125  
\032\005\364\126

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```

\272\222\144\102\026\037\313\241\026\110\032\366\100\134\131\207
END
CKA_ISSUER MULTILINE_OCTAL
\060\035\061\013\060\011\006\003\125\004\006\023\002\123\111\061
\016\060\014\006\003\125\004\012\023\005\101\103\116\114\102
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\004\076\303\206\216
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "state-institutions"
Issuer: OU=sigen-ca,O=state-institutions,C=si
Serial Number:3b:3c:f9:c9
Subject: OU=sigen-ca,O=state-institutions,C=si
Not Valid Before: Fri Jun 29 21:27:46 2001
Not Valid After: Tue Jun 29 21:57:46 2021
Fingerprint (MD5): 49:ef:a6:a1:f0:de:8e:a7:6a:ee:5b:7d:1e:5f:c4:46
Fingerprint (SHA1): 3e:42:a1:87:06:bd:0c:9c:cf:59:47:50:d2:e4:d6:ab:00:48:fd:c4
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "state-institutions"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\075\061\013\060\011\006\003\125\004\006\023\002\163\151\061
\033\060\031\006\003\125\004\012\023\022\163\164\141\164\145\055
\151\156\163\164\151\164\165\164\151\157\156\163\061\021\060\017
\006\003\125\004\013\023\010\163\151\147\145\156\055\143\141
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\075\061\013\060\011\006\003\125\004\006\023\002\163\151\061
\033\060\031\006\003\125\004\012\023\022\163\164\141\164\145\055
\151\156\163\164\151\164\165\164\151\157\156\163\061\021\060\017
\006\003\125\004\013\023\010\163\151\147\145\156\055\143\141
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\004\073\074\371\311
END
CKA_VALUE MULTILINE_OCTAL
\060\202\004\031\060\202\003\001\240\003\002\001\002\002\004\073
\074\371\311\060\015\006\011\052\206\110\206\367\015\001\001\005

```

\005\000\060\075\061\013\060\011\006\003\125\004\006\023\002\163  
\151\061\033\060\031\006\003\125\004\012\023\022\163\164\141\164  
\145\055\151\156\163\164\151\164\165\164\151\157\156\163\061\021  
\060\017\006\003\125\004\013\023\010\163\151\147\145\156\055\143  
\141\060\036\027\015\060\061\060\066\062\071\062\061\062\067\064  
\066\132\027\015\062\061\060\066\062\071\062\061\065\067\064\066  
\132\060\075\061\013\060\011\006\003\125\004\006\023\002\163\151  
\061\033\060\031\006\003\125\004\012\023\022\163\164\141\164\145  
\055\151\156\163\164\151\164\165\164\151\157\156\163\061\021\060  
\017\006\003\125\004\013\023\010\163\151\147\145\156\055\143\141  
\060\202\001\042\060\015\006\011\052\206\110\206\367\015\001\001  
\001\005\000\003\202\001\017\000\060\202\001\012\002\202\001\001  
\000\260\345\145\262\300\254\144\226\362\210\033\263\355\236\344  
\002\306\117\053\210\316\056\212\121\200\165\257\020\133\362\313  
\070\146\233\242\016\155\064\107\226\245\222\021\257\366\065\107  
\242\167\042\014\316\026\210\142\252\323\111\156\030\274\056\104  
\330\276\306\236\302\032\031\254\101\216\374\060\007\002\362\306  
\152\324\133\043\000\357\101\064\330\244\163\143\337\042\222\063  
\204\001\245\215\363\203\134\372\270\324\172\065\337\354\370\155  
\017\340\114\355\255\234\072\175\206\326\245\010\224\276\175\172  
\021\037\376\205\077\124\132\210\143\207\234\245\261\247\116\315  
\267\104\163\257\317\212\111\153\037\343\315\327\111\115\132\053  
\027\346\134\166\263\273\162\271\157\047\322\233\211\025\210\337  
\020\137\166\041\001\152\307\025\061\012\321\234\130\370\050\026  
\005\155\331\116\331\241\327\007\040\313\113\046\211\115\222\262  
\247\272\226\350\343\130\217\042\234\001\226\132\304\367\061\115  
\013\111\265\341\170\141\342\124\030\006\273\236\124\064\176\014  
\076\353\356\265\200\037\335\026\204\035\150\070\146\147\163\370  
\221\002\003\001\000\001\243\202\001\037\060\202\001\033\060\021  
\006\011\140\206\110\001\206\370\102\001\001\004\004\003\002\000  
\007\060\137\006\003\125\035\037\004\130\060\126\060\124\240\122  
\240\120\244\116\060\114\061\013\060\011\006\003\125\004\006\023  
\002\163\151\061\033\060\031\006\003\125\004\012\023\022\163\164  
\141\164\145\055\151\156\163\164\151\164\165\164\151\157\156\163  
\061\021\060\017\006\003\125\004\013\023\010\163\151\147\145\156  
\055\143\141\061\015\060\013\006\003\125\004\003\023\004\103\122  
\114\061\060\053\006\003\125\035\020\004\044\060\042\200\017\062  
\060\060\061\060\066\062\071\062\061\062\067\064\066\132\201\017  
\062\060\062\061\060\066\062\071\062\061\065\067\064\066\132\060  
\013\006\003\125\035\017\004\004\003\002\001\006\060\037\006\003  
\125\035\043\004\030\060\026\200\024\161\173\212\006\037\061\005  
\125\253\140\022\167\107\040\036\003\210\030\354\211\060\035\006  
\003\125\035\016\004\026\004\024\161\173\212\006\037\061\005\125  
\253\140\022\167\107\040\036\003\210\030\354\211\060\014\006\003  
\125\035\023\004\005\060\003\001\001\377\060\035\006\011\052\206  
\110\206\366\175\007\101\000\004\020\060\016\033\010\126\065\056  
\060\072\064\056\060\003\002\004\220\060\015\006\011\052\206\110  
\206\367\015\001\001\005\005\000\003\202\001\001\000\000\272\143

```
\064\363\030\030\356\256\176\215\222\307\065\365\302\023\324\326
\000\252\041\062\026\326\320\133\372\051\260\215\372\027\167\222
\371\245\266\366\371\207\077\006\017\040\356\142\075\064\367\251
\057\307\251\073\320\047\210\114\254\335\311\251\345\132\130\205
\327\022\065\075\334\260\202\133\162\364\273\163\267\373\376\070
\041\230\004\200\262\210\142\017\036\254\072\026\251\346\263\012
\366\025\020\105\003\243\227\342\315\254\020\334\371\000\036\277
\163\154\103\354\167\042\026\006\057\226\203\211\173\260\270\123
\104\101\010\334\200\037\005\333\031\011\166\207\276\065\235\116
\041\113\264\223\301\150\072\235\137\066\376\241\256\060\054\113
\336\170\044\072\130\326\026\103\357\235\231\070\213\052\230\376
\060\321\302\352\326\257\045\325\245\166\013\271\357\100\071\056
\366\353\337\062\136\035\175\207\265\104\314\002\071\322\046\225
\162\330\157\205\103\250\217\016\243\106\316\327\316\350\271\126
\251\370\211\027\022\037\103\111\006\172\062\347\077\276\157\171
\276\326\063\327\114\074\050\374\022\361\166\166\030
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

# Microsoft Code Signing Only Certificate

# Trust for "state-institutions"

# Issuer: OU=sigen-ca,O=state-institutions,C=si

# Serial Number:3b:3c:f9:c9

# Subject: OU=sigen-ca,O=state-institutions,C=si

# Not Valid Before: Fri Jun 29 21:27:46 2001

# Not Valid After: Tue Jun 29 21:57:46 2021

# Fingerprint (MD5): 49:ef:a6:a1:f0:de:8e:a7:6a:ee:5b:7d:1e:5f:c4:46

# Fingerprint (SHA1): 3e:42:a1:87:06:bd:0c:9c:cf:59:47:50:d2:e4:d6:ab:00:48:fd:c4

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "state-institutions"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\076\102\241\207\006\275\014\234\317\131\107\120\322\344\326\253
\000\110\375\304
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\111\357\246\241\360\336\216\247\152\356\133\175\036\137\304\106
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\075\061\013\060\011\006\003\125\004\006\023\002\163\151\061
\033\060\031\006\003\125\004\012\023\022\163\164\141\164\145\055
\151\156\163\164\151\164\165\164\151\157\156\163\061\021\060\017
\006\003\125\004\013\023\010\163\151\147\145\156\055\143\141
```

END

```

CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\004\073\074\371\311
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "SECOM Trust Systems CO.,LTD."
Issuer: OU=Security Communication EV RootCA1,O=SECOM Trust Systems CO.,LTD.,C=JP
Serial Number: 0 (0x0)
Subject: OU=Security Communication EV RootCA1,O=SECOM Trust Systems CO.,LTD.,C=JP
Not Valid Before: Wed Jun 06 02:12:32 2007
Not Valid After: Sat Jun 06 02:12:32 2037
Fingerprint (MD5): 22:2d:a6:01:ea:7c:0a:f7:f0:6c:56:43:3f:77:76:d3
Fingerprint (SHA1): fe:b8:c4:32:dc:f9:76:9a:ce:ae:3d:d8:90:8f:fd:28:86:65:64:7d
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SECOM Trust Systems CO.,LTD."
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\140\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\045\060\043\006\003\125\004\012\023\034\123\105\103\117\115\040
\124\162\165\163\164\040\123\171\163\164\145\155\163\040\103\117
\056\054\114\124\104\056\061\052\060\050\006\003\125\004\013\023
\041\123\145\143\165\162\151\164\171\040\103\157\155\155\165\156
\151\143\141\164\151\157\156\040\105\126\040\122\157\157\164\103
\101\061
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\140\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\045\060\043\006\003\125\004\012\023\034\123\105\103\117\115\040
\124\162\165\163\164\040\123\171\163\164\145\155\163\040\103\117
\056\054\114\124\104\056\061\052\060\050\006\003\125\004\013\023
\041\123\145\143\165\162\151\164\171\040\103\157\155\155\165\156
\151\143\141\164\151\157\156\040\105\126\040\122\157\157\164\103
\101\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\000
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\175\060\202\002\145\240\003\002\001\002\002\001\000
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060

```

\140\061\013\060\011\006\003\125\004\006\023\002\112\120\061\045  
\060\043\006\003\125\004\012\023\034\123\105\103\117\115\040\124  
\162\165\163\164\040\123\171\163\164\145\155\163\040\103\117\056  
\054\114\124\104\056\061\052\060\050\006\003\125\004\013\023\041  
\123\145\143\165\162\151\164\171\040\103\157\155\155\165\156\151  
\143\141\164\151\157\156\040\105\126\040\122\157\157\164\103\101  
\061\060\036\027\015\060\067\060\066\060\066\060\062\061\062\063  
\062\132\027\015\063\067\060\066\060\066\060\062\061\062\063\062  
\132\060\140\061\013\060\011\006\003\125\004\006\023\002\112\120  
\061\045\060\043\006\003\125\004\012\023\034\123\105\103\117\115  
\040\124\162\165\163\164\040\123\171\163\164\145\155\163\040\103  
\117\056\054\114\124\104\056\061\052\060\050\006\003\125\004\013  
\023\041\123\145\143\165\162\151\164\171\040\103\157\155\155\165  
\156\151\143\141\164\151\157\156\040\105\126\040\122\157\157\164  
\103\101\061\060\202\001\042\060\015\006\011\052\206\110\206\367  
\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002  
\202\001\001\000\274\177\354\127\233\044\340\376\234\272\102\171  
\251\210\212\372\200\340\365\007\051\103\352\216\012\064\066\215  
\034\372\247\265\071\170\377\227\165\367\057\344\252\153\004\204  
\104\312\246\342\150\216\375\125\120\142\017\244\161\016\316\007  
\070\055\102\205\120\255\074\226\157\213\325\242\016\317\336\111  
\211\075\326\144\056\070\345\036\154\265\127\212\236\357\110\016  
\315\172\151\026\207\104\265\220\344\006\235\256\241\004\227\130  
\171\357\040\112\202\153\214\042\277\354\037\017\351\204\161\355  
\361\016\344\270\030\023\314\126\066\135\321\232\036\121\153\071  
\156\140\166\210\064\013\363\263\321\260\235\312\141\342\144\035  
\301\106\007\270\143\335\036\063\145\263\216\011\125\122\075\265  
\275\377\007\353\255\141\125\030\054\251\151\230\112\252\100\305  
\063\024\145\164\000\371\221\336\257\003\110\305\100\124\334\017  
\204\220\150\040\305\222\226\334\056\345\002\105\252\300\137\124  
\370\155\352\111\317\135\154\113\257\357\232\302\126\134\306\065  
\126\102\152\060\137\302\253\366\342\075\077\263\311\021\217\061  
\114\327\237\111\002\003\001\000\001\243\102\060\100\060\035\006  
\003\125\035\016\004\026\004\024\065\112\365\115\257\077\327\202  
\070\254\253\161\145\027\165\214\235\125\223\346\060\016\006\003  
\125\035\017\001\001\377\004\004\003\002\001\006\060\017\006\003  
\125\035\023\001\001\377\004\005\060\003\001\001\377\060\015\006  
\011\052\206\110\206\367\015\001\001\005\005\000\003\202\001\001  
\000\250\207\351\354\370\100\147\135\303\301\146\307\100\113\227  
\374\207\023\220\132\304\357\240\312\137\213\267\247\267\361\326  
\265\144\267\212\263\270\033\314\332\373\254\146\210\101\316\350  
\374\344\333\036\210\246\355\047\120\033\002\060\044\106\171\376  
\004\207\160\227\100\163\321\300\301\127\031\232\151\245\047\231  
\253\235\142\204\366\121\301\054\311\043\025\330\050\267\253\045  
\023\265\106\341\206\002\377\046\214\304\210\222\035\126\376\031  
\147\362\125\344\200\243\153\234\253\167\341\121\161\015\040\333  
\020\232\333\275\166\171\007\167\231\050\255\232\136\332\261\117  
\104\054\065\216\245\226\307\375\203\360\130\306\171\326\230\174

```
\250\215\376\206\076\007\026\222\341\173\347\035\354\063\166\176
\102\056\112\205\371\221\211\150\204\003\201\245\233\232\276\343
\067\305\124\253\126\073\030\055\101\244\014\370\102\333\231\240
\340\162\157\273\135\341\026\117\123\012\144\371\116\364\277\116
\124\275\170\154\210\352\277\234\023\044\302\160\151\242\177\017
\310\074\255\010\311\260\230\100\243\052\347\210\203\355\167\217
\164
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

# Microsoft Code Signing Only Certificate

# Trust for "SECOM Trust Systems CO.,LTD."

# Issuer: OU=Security Communication EV RootCA1,O=SECOM Trust Systems CO.,LTD.,C=JP

# Serial Number: 0 (0x0)

# Subject: OU=Security Communication EV RootCA1,O=SECOM Trust Systems CO.,LTD.,C=JP

# Not Valid Before: Wed Jun 06 02:12:32 2007

# Not Valid After: Sat Jun 06 02:12:32 2037

# Fingerprint (MD5): 22:2d:a6:01:ea:7c:0a:f7:f0:6c:56:43:3f:77:76:d3

# Fingerprint (SHA1): fe:b8:c4:32:dc:f9:76:9a:ce:ae:3d:d8:90:8f:fd:28:86:65:64:7d

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "SECOM Trust Systems CO.,LTD."
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\376\270\304\062\334\371\166\232\316\256\075\330\220\217\375\050
\206\145\144\175
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\042\055\246\001\352\174\012\367\360\154\126\103\077\167\166\323
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\140\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\045\060\043\006\003\125\004\012\023\034\123\105\103\117\115\040
\124\162\165\163\164\040\123\171\163\164\145\155\163\040\103\117
\056\054\114\124\104\056\061\052\060\050\006\003\125\004\013\023
\041\123\145\143\165\162\151\164\171\040\103\157\155\155\165\156
\151\143\141\164\151\157\156\040\105\126\040\122\157\157\164\103
\101\061
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\001\000
```

END

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

```
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

```
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "D-TRUST Qualified Root CA 1 2007:PN"

# Issuer: CN=D-TRUST Qualified Root CA 1 2007:PN,O=D-Trust GmbH,C=DE

# Serial Number: 206554 (0x326da)

# Subject: CN=D-TRUST Qualified Root CA 1 2007:PN,O=D-Trust GmbH,C=DE

# Not Valid Before: Fri Jun 08 11:47:46 2007

# Not Valid After: Fri Jun 08 11:47:46 2012

# Fingerprint (MD5): b7:b0:d1:ec:1a:03:3e:ce:a9:15:11:cc:b1:6f:b2:ae

# Fingerprint (SHA1): e3:d7:36:06:99:6c:df:ef:61:fa:04:c3:35:e9:8e:a9:61:04:26:4a

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "D-TRUST Qualified Root CA 1 2007:PN"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\122\061\013\060\011\006\003\125\004\006\023\002\104\105\061  
\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165\163  
\164\040\107\155\142\110\061\054\060\052\006\003\125\004\003\014  
\043\104\055\124\122\125\123\124\040\121\165\141\154\151\146\151  
\145\144\040\122\157\157\164\040\103\101\040\061\040\062\060\060  
\067\072\120\116

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\122\061\013\060\011\006\003\125\004\006\023\002\104\105\061  
\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165\163  
\164\040\107\155\142\110\061\054\060\052\006\003\125\004\003\014  
\043\104\055\124\122\125\123\124\040\121\165\141\154\151\146\151  
\145\144\040\122\157\157\164\040\103\101\040\061\040\062\060\060  
\067\072\120\116

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\003\003\046\332

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\347\060\202\003\317\240\003\002\001\002\002\003\003  
\046\332\060\015\006\011\052\206\110\206\367\015\001\001\005\005  
\000\060\122\061\013\060\011\006\003\125\004\006\023\002\104\105  
\061\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165  
\163\164\040\107\155\142\110\061\054\060\052\006\003\125\004\003  
\014\043\104\055\124\122\125\123\124\040\121\165\141\154\151\146  
\151\145\144\040\122\157\157\164\040\103\101\040\061\040\062\060  
\060\067\072\120\116\060\036\027\015\060\067\060\066\060\070\061  
\061\064\067\064\066\132\027\015\061\062\060\066\060\070\061\061  
\064\067\064\066\132\060\122\061\013\060\011\006\003\125\004\006



\023\002\104\105\061\025\060\023\006\003\125\004\012\014\014\104  
\055\124\162\165\163\164\040\107\155\142\110\061\054\060\052\006  
\003\125\004\003\014\043\104\055\124\122\125\123\124\040\121\165  
\141\154\151\146\151\145\144\040\122\157\157\164\040\103\101\040  
\061\040\062\060\060\067\072\120\116\060\202\001\044\060\015\006  
\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001\021  
\000\060\202\001\014\002\202\001\001\000\211\331\377\323\377\067  
\374\127\210\025\140\301\275\057\150\020\200\267\055\131\245\242  
\112\307\012\326\057\216\100\067\173\052\062\252\306\266\023\015  
\040\347\117\376\077\016\156\255\371\124\317\153\005\013\376\151  
\362\372\274\201\077\336\355\263\063\273\071\054\164\304\064\366  
\264\372\303\323\322\130\312\171\160\217\143\343\225\064\370\071  
\127\237\001\164\213\227\234\255\352\034\273\145\375\112\346\044  
\070\111\076\236\262\306\120\343\134\326\073\351\207\071\167\331  
\244\036\007\050\240\135\222\207\053\114\213\165\305\100\003\275  
\077\100\015\224\074\073\024\247\340\256\162\275\053\353\322\361  
\260\336\010\342\321\244\021\326\070\302\116\362\022\167\037\317  
\110\106\013\370\027\063\233\203\037\010\270\005\347\106\123\113  
\210\173\207\374\322\243\075\105\162\351\016\031\264\005\212\152  
\037\067\014\017\014\314\310\250\271\133\002\272\363\270\243\015  
\017\303\024\353\153\173\067\201\352\236\130\321\260\267\107\113  
\005\061\004\351\114\012\241\300\222\024\275\043\067\322\041\366  
\344\300\354\116\231\177\215\215\350\121\002\005\000\351\314\105  
\051\243\202\001\302\060\202\001\276\060\017\006\003\125\035\023  
\001\001\377\004\005\060\003\001\001\377\060\035\006\003\125\035  
\016\004\026\004\024\054\114\366\232\052\237\050\202\001\301\231  
\006\021\257\263\113\174\267\232\376\060\070\006\010\053\006\001  
\005\005\007\001\001\004\054\060\052\060\050\006\010\053\006\001  
\005\005\007\060\001\206\034\150\164\164\160\072\057\057\161\165  
\141\154\056\157\143\163\160\056\144\055\164\162\165\163\164\056  
\156\145\164\060\027\006\003\125\035\040\004\020\060\016\060\014  
\006\012\053\006\001\004\001\245\064\002\037\001\060\063\006\003  
\125\035\021\004\054\060\052\201\020\151\156\146\157\100\144\055  
\164\162\165\163\164\056\156\145\164\206\026\150\164\164\160\072  
\057\057\167\167\167\056\144\055\164\162\165\163\164\056\156\145  
\164\060\030\006\010\053\006\001\005\005\007\001\003\004\014\060  
\012\060\010\006\006\004\000\216\106\001\001\060\016\006\003\125  
\035\017\001\001\377\004\004\003\002\001\006\060\201\331\006\003  
\125\035\037\004\201\321\060\201\316\060\201\313\240\201\310\240  
\201\305\206\177\154\144\141\160\072\057\057\144\151\162\145\143  
\164\157\162\171\056\144\055\164\162\165\163\164\056\156\145\164  
\057\103\116\075\104\055\124\122\125\123\124\045\062\060\121\165  
\141\154\151\146\151\145\144\045\062\060\122\157\157\164\045\062  
\060\103\101\045\062\060\061\045\062\060\062\060\060\067\045\063  
\101\120\116\054\117\075\104\055\124\162\165\163\164\045\062\060  
\107\155\142\110\054\103\075\104\105\077\143\145\162\164\151\146  
\151\143\141\164\145\162\145\166\157\143\141\164\151\157\156\154  
\151\163\164\206\102\150\164\164\160\072\057\057\167\167\167\056

\144\055\164\162\165\163\164\056\156\145\164\057\143\162\154\057  
\144\055\164\162\165\163\164\137\161\165\141\154\151\146\151\145  
\144\137\162\157\157\164\137\143\141\137\061\137\062\060\060\067  
\137\160\156\056\143\162\154\060\015\006\011\052\206\110\206\367  
\015\001\001\005\005\000\003\202\001\001\000\151\251\361\204\310  
\266\006\235\032\027\007\145\363\252\107\234\367\162\252\075\257  
\046\146\345\024\041\016\316\033\211\076\212\124\310\377\066\311  
\035\054\212\021\345\315\307\162\244\204\133\036\133\303\065\065  
\261\261\155\113\252\010\324\331\324\342\375\007\113\344\126\133  
\366\312\160\310\165\272\234\176\104\016\005\212\375\326\033\164  
\323\273\322\345\132\344\332\366\017\262\037\215\124\314\025\145  
\376\166\032\054\020\271\306\324\044\046\073\014\255\150\111\157  
\143\254\254\130\136\326\027\271\006\150\014\264\060\314\341\267  
\346\077\300\356\322\017\115\240\330\242\137\174\200\310\340\027  
\212\124\367\105\010\162\167\112\113\263\051\240\223\240\341\312  
\103\301\163\055\273\332\264\222\361\134\346\020\046\325\210\361  
\206\347\076\033\142\047\046\314\273\316\314\060\336\317\330\272  
\377\214\202\067\036\154\105\204\331\043\265\206\226\227\016\307  
\252\042\215\117\242\373\051\003\260\032\334\020\124\143\275\234  
\326\236\234\344\037\062\227\220\320\327\232\273\171\243\043\217  
\264\165\256\144\310\167\227\372\054\043\215

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "D-TRUST Qualified Root CA 1 2007:PN"  
# Issuer: CN=D-TRUST Qualified Root CA 1 2007:PN,O=D-Trust GmbH,C=DE  
# Serial Number: 206554 (0x326da)  
# Subject: CN=D-TRUST Qualified Root CA 1 2007:PN,O=D-Trust GmbH,C=DE  
# Not Valid Before: Fri Jun 08 11:47:46 2007  
# Not Valid After: Fri Jun 08 11:47:46 2012  
# Fingerprint (MD5): b7:b0:d1:ec:1a:03:3e:ce:a9:15:11:cc:b1:6f:b2:ae  
# Fingerprint (SHA1): e3:d7:36:06:99:6c:df:ef:61:fa:04:c3:35:e9:8e:a9:61:04:26:4a  
CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "D-TRUST Qualified Root CA 1 2007:PN"  
CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL  
\343\327\066\006\231\154\337\357\141\372\004\303\065\351\216\251  
\141\004\046\112  
END  
CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL  
\267\260\321\354\032\003\076\316\251\025\021\314\261\157\262\256  
END  
CKA\_ISSUER MULTILINE\_OCTAL

```
\060\122\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165\163
\164\040\107\155\142\110\061\054\060\052\006\003\125\004\003\014
\043\104\055\124\122\125\123\124\040\121\165\141\154\151\146\151
\145\144\040\122\157\157\164\040\103\101\040\061\040\062\060\060
\067\072\120\116
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\003\003\046\332
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "D-TRUST Root Class 2 CA 2007"

# Issuer: CN=D-TRUST Root Class 2 CA 2007,O=D-Trust GmbH,C=DE

# Serial Number: 200341 (0x30e95)

# Subject: CN=D-TRUST Root Class 2 CA 2007,O=D-Trust GmbH,C=DE

# Not Valid Before: Wed May 16 05:20:47 2007

# Not Valid After: Mon May 16 05:20:47 2022

# Fingerprint (MD5): 2c:c2:b0:d5:d6:22:c5:2e:90:1e:f4:63:3f:0f:bb:32

# Fingerprint (SHA1): 4a:05:8f:df:d7:61:db:21:b0:c2:ee:48:57:9b:e2:7f:42:a4:da:1c

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "D-TRUST Root Class 2 CA 2007"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

```
\060\113\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165\163
\164\040\107\155\142\110\061\045\060\043\006\003\125\004\003\014
\034\104\055\124\122\125\123\124\040\122\157\157\164\040\103\154
\141\163\163\040\062\040\103\101\040\062\060\060\067
```

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\113\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165\163
\164\040\107\155\142\110\061\045\060\043\006\003\125\004\003\014
\034\104\055\124\122\125\123\124\040\122\157\157\164\040\103\154
\141\163\163\040\062\040\103\101\040\062\060\060\067
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\003\003\016\225
```

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\225\060\202\003\175\240\003\002\001\002\002\003\003  
\016\225\060\015\006\011\052\206\110\206\367\015\001\001\005\005  
\000\060\113\061\013\060\011\006\003\125\004\006\023\002\104\105  
\061\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165  
\163\164\040\107\155\142\110\061\045\060\043\006\003\125\004\003  
\014\034\104\055\124\122\125\123\124\040\122\157\157\164\040\103  
\154\141\163\163\040\062\040\103\101\040\062\060\060\067\060\036  
\027\015\060\067\060\065\061\066\060\065\062\060\064\067\132\027  
\015\062\062\060\065\061\066\060\065\062\060\064\067\132\060\113  
\061\013\060\011\006\003\125\004\006\023\002\104\105\061\025\060  
\023\006\003\125\004\012\014\014\104\055\124\162\165\163\164\040  
\107\155\142\110\061\045\060\043\006\003\125\004\003\014\034\104  
\055\124\122\125\123\124\040\122\157\157\164\040\103\154\141\163  
\163\040\062\040\103\101\040\062\060\060\067\060\202\001\042\060  
\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202  
\001\017\000\060\202\001\012\002\202\001\001\000\263\315\344\204  
\025\111\370\344\326\316\204\263\232\255\366\060\165\220\015\204  
\353\356\332\263\172\165\052\342\073\244\352\060\054\353\075\167  
\215\201\204\150\112\246\244\150\334\220\163\141\064\145\007\035  
\043\245\014\346\277\323\335\063\135\332\062\355\246\015\123\246  
\164\152\134\031\131\246\114\265\057\171\001\136\236\177\112\372  
\272\311\047\176\324\377\315\000\131\040\353\006\314\263\104\317  
\326\205\351\355\073\014\154\301\352\214\134\340\271\251\002\360  
\023\000\047\223\234\120\376\315\023\117\155\033\152\252\335\017  
\377\106\045\031\334\341\136\120\254\032\177\016\313\332\356\040  
\374\303\364\234\112\170\065\156\356\061\307\105\026\162\205\322  
\202\040\333\122\105\174\074\277\131\127\371\207\164\126\230\133  
\035\120\216\314\057\263\263\077\213\356\354\067\111\001\210\357  
\330\041\014\223\323\366\156\211\117\272\027\313\104\201\267\173  
\247\043\273\164\012\323\330\352\067\105\047\377\334\360\236\103  
\343\272\173\212\033\232\175\351\206\240\376\057\321\326\366\207  
\127\252\362\051\224\207\163\025\372\152\116\255\002\003\001\000  
\001\243\202\001\200\060\202\001\174\060\017\006\003\125\035\023  
\001\001\377\004\005\060\003\001\001\377\060\035\006\003\125\035  
\016\004\026\004\024\221\060\253\366\363\306\104\267\353\335\050  
\274\017\024\237\122\135\142\177\002\060\071\006\010\053\006\001  
\005\005\007\001\001\004\055\060\053\060\051\006\010\053\006\001  
\005\005\007\060\001\206\035\150\164\164\160\072\057\057\165\163  
\145\162\163\056\157\143\163\160\056\144\055\164\162\165\163\164  
\056\156\145\164\060\063\006\003\125\035\021\004\054\060\052\201  
\020\151\156\146\157\100\144\055\164\162\165\163\164\056\156\145  
\164\206\026\150\164\164\160\072\057\057\167\167\167\056\144\055  
\164\162\165\163\164\056\156\145\164\060\016\006\003\125\035\017  
\001\001\377\004\004\003\002\001\006\060\201\311\006\003\125\035  
\037\004\201\301\060\201\276\060\201\273\240\201\270\240\201\265  
\206\166\154\144\141\160\072\057\057\144\151\162\145\143\164\157  
\162\171\056\144\055\164\162\165\163\164\056\156\145\164\057\103

\116\075\104\055\124\122\125\123\124\045\062\060\122\157\157\164  
\045\062\060\103\154\141\163\163\045\062\060\062\045\062\060\103  
\101\045\062\060\062\060\060\067\054\117\075\104\055\124\162\165  
\163\164\045\062\060\107\155\142\110\054\103\075\104\105\077\143  
\145\162\164\151\146\151\143\141\164\145\162\145\166\157\143\141  
\164\151\157\156\154\151\163\164\206\073\150\164\164\160\072\057  
\057\167\167\167\056\144\055\164\162\165\163\164\056\156\145\164  
\057\143\162\154\057\144\055\164\162\165\163\164\137\162\157\157  
\164\137\143\154\141\163\163\137\062\137\143\141\137\062\060\060  
\067\056\143\162\154\060\015\006\011\052\206\110\206\367\015\001  
\001\005\005\000\003\202\001\001\000\133\213\362\103\343\005\056  
\144\037\325\222\251\121\153\144\374\016\106\314\007\231\342\267  
\374\223\051\040\334\374\057\140\344\254\175\045\062\355\020\341  
\017\157\333\362\274\116\356\101\311\263\324\007\110\172\012\257  
\244\266\377\121\060\355\313\322\234\353\177\120\356\113\342\142  
\247\064\302\040\366\363\366\365\066\300\313\221\020\353\355\056  
\215\364\007\032\041\014\065\167\364\174\055\215\111\245\327\013  
\104\150\325\322\342\345\014\170\070\023\312\261\114\122\252\052  
\345\325\257\134\005\071\235\055\255\276\043\126\325\057\125\363  
\336\235\253\202\066\240\115\267\131\221\107\356\336\203\245\352  
\073\136\047\005\200\013\155\054\120\364\001\067\325\243\167\027  
\354\376\335\204\364\305\370\120\222\320\113\306\056\243\213\100  
\344\303\067\243\167\275\316\054\125\342\254\337\135\144\000\272  
\276\247\152\061\006\374\231\153\120\025\045\235\251\166\232\247  
\115\052\232\002\143\353\160\347\376\021\046\320\030\305\246\037  
\012\103\223\362\030\331\365\071\171\270\007\135\214\037\346\077  
\363\305\313\041\146\061\173\173\317

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "D-TRUST Root Class 2 CA 2007"  
# Issuer: CN=D-TRUST Root Class 2 CA 2007,O=D-Trust GmbH,C=DE  
# Serial Number: 200341 (0x30e95)  
# Subject: CN=D-TRUST Root Class 2 CA 2007,O=D-Trust GmbH,C=DE  
# Not Valid Before: Wed May 16 05:20:47 2007  
# Not Valid After: Mon May 16 05:20:47 2022  
# Fingerprint (MD5): 2c:c2:b0:d5:d6:22:c5:2e:90:1e:f4:63:3f:0f:bb:32  
# Fingerprint (SHA1): 4a:05:8f:df:d7:61:db:21:b0:c2:ee:48:57:9b:e2:7f:42:a4:da:1c  
CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "D-TRUST Root Class 2 CA 2007"  
CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL  
\112\005\217\337\327\141\333\041\260\302\356\110\127\233\342\177

```

\102\244\332\034
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\054\302\260\325\326\042\305\056\220\036\364\143\077\017\273\062
END
CKA_ISSUER MULTILINE_OCTAL
\060\113\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165\163
\164\040\107\155\142\110\061\045\060\043\006\003\125\004\003\014
\034\104\055\124\122\125\123\124\040\122\157\157\164\040\103\154
\141\163\163\040\062\040\103\101\040\062\060\060\067
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\003\003\016\225
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "D-TRUST Root Class 3 CA 2007"
Issuer: CN=D-TRUST Root Class 3 CA 2007,O=D-Trust GmbH,C=DE
Serial Number: 200342 (0x30e96)
Subject: CN=D-TRUST Root Class 3 CA 2007,O=D-Trust GmbH,C=DE
Not Valid Before: Wed May 16 05:20:47 2007
Not Valid After: Mon May 16 05:20:47 2022
Fingerprint (MD5): 1e:24:0e:a0:f8:76:d7:85:a3:f5:f8:a1:49:3d:2e:ba
Fingerprint (SHA1): fd:1e:d1:e2:02:1b:0b:9f:73:e8:eb:75:ce:23:43:6b:bc:c7:46:eb
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "D-TRUST Root Class 3 CA 2007"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\113\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165\163
\164\040\107\155\142\110\061\045\060\043\006\003\125\004\003\014
\034\104\055\124\122\125\123\124\040\122\157\157\164\040\103\154
\141\163\163\040\063\040\103\101\040\062\060\060\067
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\113\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165\163
\164\040\107\155\142\110\061\045\060\043\006\003\125\004\003\014
\034\104\055\124\122\125\123\124\040\122\157\157\164\040\103\154

```

\141\163\163\040\063\040\103\101\040\062\060\060\067

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\003\003\016\226

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\225\060\202\003\175\240\003\002\001\002\002\003\003  
\016\226\060\015\006\011\052\206\110\206\367\015\001\001\005\005  
\000\060\113\061\013\060\011\006\003\125\004\006\023\002\104\105  
\061\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165  
\163\164\040\107\155\142\110\061\045\060\043\006\003\125\004\003  
\014\034\104\055\124\122\125\123\124\040\122\157\157\164\040\103  
\154\141\163\163\040\063\040\103\101\040\062\060\060\067\060\036  
\027\015\060\067\060\065\061\066\060\065\062\060\064\067\132\027  
\015\062\062\060\065\061\066\060\065\062\060\064\067\132\060\113  
\061\013\060\011\006\003\125\004\006\023\002\104\105\061\025\060  
\023\006\003\125\004\012\014\014\104\055\124\162\165\163\164\040  
\107\155\142\110\061\045\060\043\006\003\125\004\003\014\034\104  
\055\124\122\125\123\124\040\122\157\157\164\040\103\154\141\163  
\163\040\063\040\103\101\040\062\060\060\067\060\202\001\042\060  
\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202  
\001\017\000\060\202\001\012\002\202\001\001\000\272\215\315\065  
\123\062\356\246\275\110\220\232\362\352\350\130\017\107\146\250  
\314\156\011\022\344\241\313\133\337\223\270\366\351\071\071\370  
\306\330\351\317\032\206\274\246\256\017\214\257\010\105\343\362  
\216\053\302\134\131\053\372\214\066\263\160\035\310\120\074\245  
\126\276\352\256\351\107\366\347\111\017\257\177\224\046\324\002  
\032\007\270\272\071\125\316\237\273\042\071\051\330\065\305\231  
\003\041\330\247\070\143\361\344\064\337\107\256\237\067\361\154  
\240\231\302\042\260\155\162\334\042\311\061\071\350\126\327\240  
\217\072\041\133\206\232\117\050\371\034\166\367\314\117\077\371  
\116\167\213\052\234\212\252\171\101\212\325\034\331\071\157\230  
\311\136\105\227\035\011\224\031\331\120\121\205\162\163\277\254  
\113\235\164\064\161\207\041\026\017\176\356\322\111\176\312\111  
\323\371\222\052\107\110\117\017\135\132\241\313\325\050\354\360  
\222\305\162\103\106\353\263\003\246\363\127\045\112\012\141\204  
\012\046\326\357\246\270\330\024\215\170\271\323\267\045\321\116  
\343\132\026\252\354\237\007\356\043\020\175\265\002\003\001\000  
\001\243\202\001\200\060\202\001\174\060\017\006\003\125\035\023  
\001\001\377\004\005\060\003\001\001\377\060\035\006\003\125\035  
\016\004\026\004\024\202\057\066\043\111\170\040\102\327\260\122  
\130\240\326\164\124\025\170\277\252\060\071\006\010\053\006\001  
\005\005\007\001\001\004\055\060\053\060\051\006\010\053\006\001  
\005\005\007\060\001\206\035\150\164\164\160\072\057\057\165\163  
\145\162\163\056\157\143\163\160\056\144\055\164\162\165\163\164  
\056\156\145\164\060\063\006\003\125\035\021\004\054\060\052\201  
\020\151\156\146\157\100\144\055\164\162\165\163\164\056\156\145  
\164\206\026\150\164\164\160\072\057\057\167\167\167\056\144\055

\164\162\165\163\164\056\156\145\164\060\016\006\003\125\035\017  
\001\001\377\004\004\003\002\001\006\060\201\311\006\003\125\035  
\037\004\201\301\060\201\276\060\201\273\240\201\270\240\201\265  
\206\166\154\144\141\160\072\057\057\144\151\162\145\143\164\157  
\162\171\056\144\055\164\162\165\163\164\056\156\145\164\057\103  
\116\075\104\055\124\122\125\123\124\045\062\060\122\157\157\164  
\045\062\060\103\154\141\163\163\045\062\060\063\045\062\060\103  
\101\045\062\060\062\060\060\067\054\117\075\104\055\124\162\165  
\163\164\045\062\060\107\155\142\110\054\103\075\104\105\077\143  
\145\162\164\151\146\151\143\141\164\145\162\145\166\157\143\141  
\164\151\157\156\154\151\163\164\206\073\150\164\164\160\072\057  
\057\167\167\167\056\144\055\164\162\165\163\164\056\156\145\164  
\057\143\162\154\057\144\055\164\162\165\163\164\137\162\157\157  
\164\137\143\154\141\163\163\137\063\137\143\141\137\062\060\060  
\067\056\143\162\154\060\015\006\011\052\206\110\206\367\015\001  
\001\005\005\000\003\202\001\001\000\125\016\150\012\215\334\331  
\250\206\140\002\151\171\215\175\351\220\302\331\035\035\265\016  
\273\163\222\144\143\024\106\114\320\152\273\243\165\135\206\031  
\070\141\206\035\270\212\042\064\243\264\065\025\263\251\140\114  
\124\027\237\261\336\133\062\342\176\153\336\117\042\360\055\035  
\042\004\236\266\112\117\253\054\126\235\343\335\354\261\046\116  
\052\327\125\302\076\275\202\327\276\125\273\105\310\051\133\206  
\074\235\077\150\104\104\104\066\015\150\277\256\001\242\031\265  
\114\227\377\362\226\074\147\262\102\336\017\341\240\227\116\312  
\347\064\145\256\225\202\141\147\046\163\055\335\173\347\225\113  
\016\041\252\222\256\114\374\306\263\251\345\231\203\062\071\360  
\140\302\114\121\250\301\107\024\065\211\245\115\066\017\237\033  
\002\161\101\215\102\112\044\370\257\156\235\015\160\206\215\252  
\142\023\036\003\213\044\371\303\124\223\111\205\033\165\166\142  
\177\042\377\111\275\166\163\014\077\230\255\052\262\372\347\305  
\337\164\365\377\151\061\125\012\072\300\031\142\065\304\111\271  
\053\031\035\364\160\231\356\330\334

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "D-TRUST Root Class 3 CA 2007"  
# Issuer: CN=D-TRUST Root Class 3 CA 2007,O=D-Trust GmbH,C=DE  
# Serial Number: 200342 (0x30e96)  
# Subject: CN=D-TRUST Root Class 3 CA 2007,O=D-Trust GmbH,C=DE  
# Not Valid Before: Wed May 16 05:20:47 2007  
# Not Valid After: Mon May 16 05:20:47 2022  
# Fingerprint (MD5): 1e:24:0e:a0:f8:76:d7:85:a3:f5:f8:a1:49:3d:2e:ba  
# Fingerprint (SHA1): fd:1e:d1:e2:02:1b:0b:9f:73:e8:eb:75:ce:23:43:6b:bc:c7:46:eb  
CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST  
CKA\_TOKEN CK\_BBOOL CK\_TRUE



```

CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "D-TRUST Root Class 3 CA 2007"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\375\036\321\342\002\033\013\237\163\350\353\165\316\043\103\153
\274\307\106\353
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\036\044\016\240\370\166\327\205\243\365\370\241\111\075\056\272
END
CKA_ISSUER MULTILINE_OCTAL
\060\113\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165\163
\164\040\107\155\142\110\061\045\060\043\006\003\125\004\003\014
\034\104\055\124\122\125\123\124\040\122\157\157\164\040\103\154
\141\163\163\040\063\040\103\101\040\062\060\060\067
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\003\003\016\226
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "SSC Root CA A"
Issuer: CN=SSC Root CA A,OU=Certification Authority,O=Skaitmeninio sertifikavimo centras,C=LT
Serial Number:66:07:a3:d2:9d:29:56:18:0e:e1:5e:59:98:b1:84:55
Subject: CN=SSC Root CA A,OU=Certification Authority,O=Skaitmeninio sertifikavimo centras,C=LT
Not Valid Before: Wed Dec 27 12:18:52 2006
Not Valid After: Mon Dec 28 12:05:04 2026
Fingerprint (MD5): 46:8c:21:0e:ab:92:21:46:59:db:a6:db:00:61:de:26
Fingerprint (SHA1): 5a:5a:4d:af:78:61:26:7c:4b:1f:1e:67:58:6b:ae:6e:d4:fe:b9:3f
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SSC Root CA A"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\164\061\013\060\011\006\003\125\004\006\023\002\114\124\061
\053\060\051\006\003\125\004\012\023\042\123\153\141\151\164\155
\145\156\151\156\151\157\040\163\145\162\164\151\146\151\153\141
\166\151\155\157\040\143\145\156\164\162\141\163\061\040\060\036
\006\003\125\004\013\023\027\103\145\162\164\151\146\151\143\141
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\061\026
\060\024\006\003\125\004\003\023\015\123\123\103\040\122\157\157

```

\164\040\103\101\040\101

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\164\061\013\060\011\006\003\125\004\006\023\002\114\124\061  
\053\060\051\006\003\125\004\012\023\042\123\153\141\151\164\155  
\145\156\151\156\151\157\040\163\145\162\164\151\146\151\153\141  
\166\151\155\157\040\143\145\156\164\162\141\163\061\040\060\036  
\006\003\125\004\013\023\027\103\145\162\164\151\146\151\143\141  
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\061\026  
\060\024\006\003\125\004\003\023\015\123\123\103\040\122\157\157  
\164\040\103\101\040\101

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\146\007\243\322\235\051\126\030\016\341\136\131\230\261  
\204\125

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\006\052\060\202\004\022\240\003\002\001\002\002\020\146  
\007\243\322\235\051\126\030\016\341\136\131\230\261\204\125\060  
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\164  
\061\013\060\011\006\003\125\004\006\023\002\114\124\061\053\060  
\051\006\003\125\004\012\023\042\123\153\141\151\164\155\145\156  
\151\156\151\157\040\163\145\162\164\151\146\151\153\141\166\151  
\155\157\040\143\145\156\164\162\141\163\061\040\060\036\006\003  
\125\004\013\023\027\103\145\162\164\151\146\151\143\141\164\151  
\157\156\040\101\165\164\150\157\162\151\164\171\061\026\060\024  
\006\003\125\004\003\023\015\123\123\103\040\122\157\157\164\040  
\103\101\040\101\060\036\027\015\060\066\061\062\062\067\061\062  
\061\070\065\062\132\027\015\062\066\061\062\062\070\061\062\060  
\065\060\064\132\060\164\061\013\060\011\006\003\125\004\006\023  
\002\114\124\061\053\060\051\006\003\125\004\012\023\042\123\153  
\141\151\164\155\145\156\151\156\151\157\040\163\145\162\164\151  
\146\151\153\141\166\151\155\157\040\143\145\156\164\162\141\163  
\061\040\060\036\006\003\125\004\013\023\027\103\145\162\164\151  
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151  
\164\171\061\026\060\024\006\003\125\004\003\023\015\123\123\103  
\040\122\157\157\164\040\103\101\040\101\060\202\002\042\060\015  
\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202\002  
\017\000\060\202\002\012\002\202\002\001\000\272\352\117\276\204  
\300\031\044\212\041\251\114\231\175\367\014\325\245\121\222\250  
\145\343\211\243\013\146\347\102\370\171\322\017\203\043\173\267  
\246\301\044\326\065\326\330\345\001\312\160\261\026\326\107\156  
\276\020\154\176\351\120\156\166\367\345\344\203\017\170\325\240  
\163\365\215\321\231\037\224\104\043\226\306\356\162\132\371\332  
\135\074\221\257\154\350\227\350\206\135\367\236\213\372\304\254  
\146\117\344\162\077\073\335\236\116\065\322\023\037\175\273\104  
\113\364\123\254\326\024\327\100\071\272\300\077\374\205\040\323

\304\000\320\347\330\107\231\004\171\207\206\100\262\254\136\311  
\165\040\303\011\024\257\004\216\246\242\255\052\127\210\145\241  
\314\050\276\066\311\037\045\017\303\153\042\204\071\167\116\072  
\003\300\152\333\076\272\266\211\236\344\327\056\232\267\103\001  
\077\371\332\254\251\254\344\167\063\207\355\013\071\335\307\301  
\255\015\131\203\060\321\066\004\130\264\144\116\346\377\010\350  
\102\261\200\253\370\230\377\363\051\206\026\021\044\116\011\241  
\317\060\177\274\136\260\012\152\241\161\153\365\232\022\153\045  
\155\167\002\242\106\136\371\151\057\373\073\030\225\137\216\134  
\227\224\140\136\035\161\250\101\264\135\317\132\172\147\343\324  
\112\065\037\067\340\166\026\003\073\364\121\234\230\024\051\111  
\210\014\102\320\055\155\251\247\100\046\072\171\000\060\073\300  
\273\104\230\255\044\316\321\226\334\211\170\201\366\132\133\102  
\274\164\341\207\323\145\310\107\346\066\262\314\301\157\300\307  
\334\200\045\122\074\061\220\335\311\310\120\250\172\273\166\340  
\357\023\224\316\004\176\152\266\116\167\371\203\320\157\370\072  
\320\012\103\312\272\020\266\377\074\035\224\140\224\204\155\365  
\245\311\175\114\012\176\057\217\157\375\335\055\173\112\351\357  
\064\333\273\176\377\014\157\067\372\371\303\314\311\057\321\351  
\054\075\052\254\154\046\073\320\011\136\304\200\047\213\335\141  
\360\347\225\121\103\304\015\346\061\320\170\326\301\306\302\146  
\001\321\343\314\307\323\036\025\005\066\333\224\232\354\122\303  
\221\307\057\261\364\003\367\007\254\323\113\221\253\126\074\320  
\256\375\137\155\055\323\000\021\317\223\275\002\003\001\000\001  
\243\201\267\060\201\264\060\017\006\003\125\035\023\001\001\377  
\004\005\060\003\001\001\377\060\075\006\003\125\035\040\004\066  
\060\064\060\062\006\013\053\006\001\004\001\201\257\145\001\002  
\000\060\043\060\041\006\010\053\006\001\005\005\007\002\001\026  
\025\150\164\164\160\072\057\057\167\167\167\056\163\163\143\056  
\154\164\057\143\160\163\060\063\006\003\125\035\037\004\054\060  
\052\060\050\240\046\240\044\206\042\150\164\164\160\072\057\057  
\143\162\154\056\163\163\143\056\154\164\057\162\157\157\164\055  
\141\057\143\141\143\162\154\056\143\162\154\060\016\006\003\125  
\035\017\001\001\377\004\004\003\002\001\006\060\035\006\003\125  
\035\016\004\026\004\024\314\277\336\247\220\167\142\152\035\170  
\151\056\012\070\233\167\121\123\003\360\060\015\006\011\052\206  
\110\206\367\015\001\001\005\005\000\003\202\002\001\000\076\257  
\310\250\307\063\117\360\156\232\103\341\362\260\127\122\341\234  
\236\006\137\102\326\361\375\312\213\121\077\341\307\145\151\117  
\164\031\120\212\317\030\223\111\215\240\034\260\073\075\216\110  
\223\331\350\005\176\304\011\261\017\122\212\153\227\157\327\216  
\074\200\000\320\101\163\255\075\303\104\007\161\152\217\142\176  
\005\330\123\140\162\261\001\351\000\142\252\015\330\330\111\302  
\264\175\015\133\263\227\051\066\231\271\247\321\113\230\153\104  
\274\262\022\216\166\144\165\114\015\315\302\056\263\130\374\172  
\117\125\263\131\177\135\340\057\060\063\317\210\033\151\351\115  
\212\220\236\220\271\061\072\363\242\005\274\376\371\335\120\215  
\016\224\031\235\176\215\252\025\176\017\122\223\045\344\201\016

```
\226\055\034\003\034\060\203\021\226\102\251\230\244\235\137\311
\251\134\073\111\150\302\204\155\231\332\366\376\242\362\334\067
\136\215\172\345\245\127\312\043\113\223\135\222\052\125\204\263
\226\263\036\230\224\111\174\154\074\334\236\035\266\253\303\254
\011\305\235\336\067\327\124\304\234\255\077\260\326\151\001\345
\020\206\175\271\201\203\156\234\146\116\225\005\222\220\061\207
\046\262\332\221\164\275\204\344\161\150\344\166\000\340\166\163
\064\107\206\225\145\272\133\220\242\155\005\051\170\140\353\206
\371\022\115\350\010\126\244\314\214\242\126\112\316\200\364\024
\141\042\345\253\035\072\101\073\204\327\202\170\005\057\254\035
\043\150\253\162\171\205\315\106\346\172\247\202\132\050\320\025
\075\035\333\214\230\120\316\373\257\130\073\323\251\256\200\073
\026\000\166\047\325\160\351\011\215\066\224\011\177\343\357\140
\020\121\312\306\125\160\146\253\121\157\363\121\117\022\126\256
\373\327\331\015\340\372\253\020\336\152\201\254\205\167\055\254
\172\143\173\106\341\067\332\127\156\255\145\374\041\004\231\205
\001\317\043\072\062\305\355\132\233\325\241\202\004\167\021\105
\216\244\104\175\302\313\313\247\017\350\022\272\362\156\272\217
\063\060\033\335\051\370\360\102\243\156\102\245\156\372\126\245
\251\120\203\321\005\146\026\213\055\373\346\222\321\346\154\013
\325\132\051\155\053\317\171\327\331\332\117\360\150\266
```

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "SSC Root CA A"

# Issuer: CN=SSC Root CA A,OU=Certification Authority,O=Skaitmeninio sertifikavimo centras,C=LT

# Serial Number:66:07:a3:d2:9d:29:56:18:0e:e1:5e:59:98:b1:84:55

# Subject: CN=SSC Root CA A,OU=Certification Authority,O=Skaitmeninio sertifikavimo centras,C=LT

# Not Valid Before: Wed Dec 27 12:18:52 2006

# Not Valid After: Mon Dec 28 12:05:04 2026

# Fingerprint (MD5): 46:8c:21:0e:ab:92:21:46:59:db:a6:db:00:61:de:26

# Fingerprint (SHA1): 5a:5a:4d:af:78:61:26:7c:4b:1f:1e:67:58:6b:ae:6e:d4:fe:b9:3f

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "SSC Root CA A"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\132\132\115\257\170\141\046\174\113\037\036\147\130\153\256\156
\324\376\271\077
```

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\106\214\041\016\253\222\041\106\131\333\246\333\000\141\336\046
```

END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\164\061\013\060\011\006\003\125\004\006\023\002\114\124\061
\053\060\051\006\003\125\004\012\023\042\123\153\141\151\164\155
\145\156\151\156\151\157\040\163\145\162\164\151\146\151\153\141
\166\151\155\157\040\143\145\156\164\162\141\163\061\040\060\036
\006\003\125\004\013\023\027\103\145\162\164\151\146\151\143\141
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\061\026
\060\024\006\003\125\004\003\023\015\123\123\103\040\122\157\157
\164\040\103\101\040\101
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\020\146\007\243\322\235\051\126\030\016\341\136\131\230\261
\204\125
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "SSC Root CA B"

# Issuer: CN=SSC Root CA B,OU=Certification Authority,O=Skaitmeninio sertifikavimo centras,C=LT

# Serial Number:be:92:83:18:f3:55:8a:78:a3:67:59:1c:69:24:09:3f

# Subject: CN=SSC Root CA B,OU=Certification Authority,O=Skaitmeninio sertifikavimo centras,C=LT

# Not Valid Before: Wed Dec 27 12:22:50 2006

# Not Valid After: Fri Dec 25 12:08:26 2026

# Fingerprint (MD5): da:26:b6:e6:c7:c2:f7:b7:9e:46:59:b3:57:77:18:65

# Fingerprint (SHA1): 3e:84:d3:bc:c5:44:c0:f6:fa:19:43:5c:85:1f:3f:2f:cb:a8:e8:14

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "SSC Root CA B"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

```
\060\164\061\013\060\011\006\003\125\004\006\023\002\114\124\061
\053\060\051\006\003\125\004\012\023\042\123\153\141\151\164\155
\145\156\151\156\151\157\040\163\145\162\164\151\146\151\153\141
\166\151\155\157\040\143\145\156\164\162\141\163\061\040\060\036
\006\003\125\004\013\023\027\103\145\162\164\151\146\151\143\141
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\061\026
\060\024\006\003\125\004\003\023\015\123\123\103\040\122\157\157
\164\040\103\101\040\102
```

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\164\061\013\060\011\006\003\125\004\006\023\002\114\124\061
\053\060\051\006\003\125\004\012\023\042\123\153\141\151\164\155
\145\156\151\156\151\157\040\163\145\162\164\151\146\151\153\141
```

\166\151\155\157\040\143\145\156\164\162\141\163\061\040\060\036  
\006\003\125\004\013\023\027\103\145\162\164\151\146\151\143\141  
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\061\026  
\060\024\006\003\125\004\003\023\015\123\123\103\040\122\157\157  
\164\040\103\101\040\102

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\021\000\276\222\203\030\363\125\212\170\243\147\131\034\151  
\044\011\077

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\006\053\060\202\004\023\240\003\002\001\002\002\021\000  
\276\222\203\030\363\125\212\170\243\147\131\034\151\044\011\077  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060  
\164\061\013\060\011\006\003\125\004\006\023\002\114\124\061\053  
\060\051\006\003\125\004\012\023\042\123\153\141\151\164\155\145  
\156\151\156\151\157\040\163\145\162\164\151\146\151\153\141\166  
\151\155\157\040\143\145\156\164\162\141\163\061\040\060\036\006  
\003\125\004\013\023\027\103\145\162\164\151\146\151\143\141\164  
\151\157\156\040\101\165\164\150\157\162\151\164\171\061\026\060  
\024\006\003\125\004\003\023\015\123\123\103\040\122\157\157\164  
\040\103\101\040\102\060\036\027\015\060\066\061\062\062\067\061  
\062\062\062\065\060\132\027\015\062\066\061\062\062\065\061\062  
\060\070\062\066\132\060\164\061\013\060\011\006\003\125\004\006  
\023\002\114\124\061\053\060\051\006\003\125\004\012\023\042\123  
\153\141\151\164\155\145\156\151\156\151\157\040\163\145\162\164  
\151\146\151\153\141\166\151\155\157\040\143\145\156\164\162\141  
\163\061\040\060\036\006\003\125\004\013\023\027\103\145\162\164  
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162  
\151\164\171\061\026\060\024\006\003\125\004\003\023\015\123\123  
\103\040\122\157\157\164\040\103\101\040\102\060\202\002\042\060  
\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202  
\002\017\000\060\202\002\012\002\202\002\001\000\301\363\125\365  
\107\121\116\125\027\145\215\260\262\101\050\241\112\321\237\113  
\366\163\377\076\322\311\115\131\077\344\267\307\237\006\135\330  
\074\243\210\204\340\163\135\375\005\352\307\216\327\244\004\152  
\353\237\275\103\375\024\222\106\270\305\272\252\355\140\354\354  
\312\220\215\012\162\251\101\233\324\235\274\260\154\242\021\037  
\144\313\347\035\324\105\147\016\011\153\345\170\354\361\077\004  
\124\363\232\231\307\131\321\322\171\247\244\032\260\174\111\374  
\034\207\124\136\170\006\325\335\035\314\205\240\102\170\325\320  
\260\212\352\350\361\241\236\126\357\323\301\175\207\254\347\332  
\150\117\031\326\157\340\223\255\111\134\163\024\301\106\152\235  
\367\130\100\331\127\130\116\154\067\364\162\043\004\370\333\112  
\260\336\361\101\226\022\100\241\025\213\147\270\136\170\126\313  
\177\344\276\300\111\150\221\270\107\010\223\201\301\265\033\061  
\006\323\200\173\321\105\241\317\014\075\141\363\222\370\361\260  
\025\016\370\056\060\133\000\243\111\367\155\376\356\334\277\210

|317|360|175|127|076|257|300|321|212|353|174|322|155|061|125|372  
|204|215|163|152|332|160|200|304|364|302|317|220|216|060|232|341  
|306|065|162|001|010|346|077|346|146|000|243|362|370|222|035|274  
|122|354|217|366|334|367|012|357|274|020|207|371|204|030|214|136  
|037|003|270|377|065|057|001|152|345|360|133|142|174|343|263|177  
|063|252|224|327|116|121|201|265|350|127|170|217|042|226|251|014  
|211|124|076|266|356|331|163|137|144|364|104|341|361|152|030|377  
|122|226|304|034|277|211|227|244|303|247|312|176|030|156|026|334  
|023|214|273|325|265|045|011|206|257|366|057|105|224|052|060|301  
|024|224|065|366|135|312|045|225|234|261|130|211|270|265|140|205  
|311|306|276|024|031|243|076|371|126|205|253|312|154|326|231|171  
|242|112|024|157|303|072|330|347|146|121|012|351|034|376|314|151  
|346|064|154|364|201|333|175|242|021|370|114|304|207|005|026|075  
|353|227|164|077|156|354|234|271|266|047|214|044|337|055|263|257  
|335|023|141|166|217|377|362|114|340|010|031|060|062|044|062|134  
|066|200|027|356|206|311|337|057|121|342|126|256|203|222|360|263  
|275|330|207|072|054|236|304|334|151|231|371|313|002|003|001|000  
|001|243|201|267|060|201|264|060|017|006|003|125|035|023|001|001  
|377|004|005|060|003|001|001|377|060|075|006|003|125|035|040|004  
|066|060|064|060|062|006|013|053|006|001|004|001|201|257|145|001  
|002|000|060|043|060|041|006|010|053|006|001|005|005|007|002|001  
|026|025|150|164|164|160|072|057|057|167|167|167|056|163|163|143  
|056|154|164|057|143|160|163|060|063|006|003|125|035|037|004|054  
|060|052|060|050|240|046|240|044|206|042|150|164|164|160|072|057  
|057|143|162|154|056|163|163|143|056|154|164|057|162|157|157|164  
|055|142|057|143|141|143|162|154|056|143|162|154|060|016|006|003  
|125|035|017|001|001|377|004|004|003|002|001|006|060|035|006|003  
|125|035|016|004|026|004|024|234|003|360|250|322|230|162|150|256  
|362|355|340|117|342|205|016|262|045|116|317|060|015|006|011|052  
|206|110|206|367|015|001|001|005|005|000|003|202|002|001|000|254  
|134|274|057|374|256|001|044|246|020|076|254|250|341|247|047|231  
|215|312|210|301|035|075|221|366|242|176|245|361|230|101|377|252  
|141|370|011|276|315|032|045|141|164|264|303|257|102|132|011|017  
|221|001|276|110|225|364|312|167|136|013|203|316|204|235|317|100  
|375|200|054|275|343|146|065|012|270|261|372|140|332|345|330|124  
|265|113|227|272|242|032|303|040|151|215|264|106|163|134|252|277  
|275|173|377|032|060|064|130|100|371|053|140|013|171|104|371|367  
|242|226|013|153|122|173|360|053|113|073|322|213|240|153|223|075  
|311|127|143|212|153|314|120|023|217|167|250|121|276|032|114|055  
|114|135|014|220|133|216|363|357|120|040|155|201|346|121|111|253  
|304|347|327|135|010|053|121|374|075|106|022|347|321|245|166|305  
|123|044|005|311|252|323|216|130|305|363|212|164|222|062|355|360  
|057|335|253|255|351|322|065|217|164|043|343|231|000|342|213|060  
|344|303|102|256|360|273|351|342|010|033|112|160|055|175|370|322  
|232|047|221|102|160|165|172|010|176|276|057|034|177|067|075|250  
|213|334|106|162|365|350|157|066|150|372|156|215|040|235|324|365  
|007|161|277|275|047|102|271|163|050|326|354|111|264|005|205|117  
|150|110|366|253|224|337|016|243|106|024|140|302|061|040|073|353

```
\056\133\336\325\241\054\155\345\122\372\201\137\227\210\311\143
\275\001\354\343\315\153\012\065\302\311\070\343\016\363\130\033
\175\332\220\155\267\365\310\130\126\235\256\001\337\221\235\255
\125\202\003\014\021\164\004\221\206\307\174\223\214\363\047\373
\305\044\127\156\213\331\033\230\235\210\061\360\257\167\270\015
\264\314\317\366\012\157\022\233\354\011\053\123\211\354\104\340
\241\151\213\250\164\206\164\030\122\340\322\277\240\241\145\041
\271\010\203\172\363\244\365\370\136\067\045\107\231\246\135\327
\042\132\333\223\147\027\333\020\343\214\321\022\221\107\212\225
\245\107\241\003\370\113\056\041\305\220\142\260\177\047\243\333
\025\177\070\177\154\177\116\005\305\003\264\055\337\105\137\165
\054\035\361\137\246\265\366\027\071\101\351\370\145\302\036\130
\021\312\174\216\342\265\272\222\017\147\267\217\353\231\324\061
\373\162\173\132\230\137\222\224\307\004\352\060\366\273\032
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

# Microsoft Code Signing Only Certificate

# Trust for "SSC Root CA B"

# Issuer: CN=SSC Root CA B,OU=Certification Authority,O=Skaitmeninio sertifikavimo centras,C=LT

# Serial Number:be:92:83:18:f3:55:8a:78:a3:67:59:1c:69:24:09:3f

# Subject: CN=SSC Root CA B,OU=Certification Authority,O=Skaitmeninio sertifikavimo centras,C=LT

# Not Valid Before: Wed Dec 27 12:22:50 2006

# Not Valid After: Fri Dec 25 12:08:26 2026

# Fingerprint (MD5): da:26:b6:e6:c7:c2:f7:b7:9e:46:59:b3:57:77:18:65

# Fingerprint (SHA1): 3e:84:d3:bc:c5:44:c0:f6:fa:19:43:5c:85:1f:3f:2f:cb:a8:e8:14

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "SSC Root CA B"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\076\204\323\274\305\104\300\366\372\031\103\134\205\037\077\057
\313\250\350\024
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\332\046\266\346\307\302\367\267\236\106\131\263\127\167\030\145
END
```

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\164\061\013\060\011\006\003\125\004\006\023\002\114\124\061
\053\060\051\006\003\125\004\012\023\042\123\153\141\151\164\155
\145\156\151\156\151\157\040\163\145\162\164\151\146\151\153\141
\166\151\155\157\040\143\145\156\164\162\141\163\061\040\060\036
\006\003\125\004\013\023\027\103\145\162\164\151\146\151\143\141
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\061\026
\060\024\006\003\125\004\003\023\015\123\123\103\040\122\157\157
```



```

\164\040\103\101\040\102
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\021\000\276\222\203\030\363\125\212\170\243\147\131\034\151
\044\011\077
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "SSC Root CA C"
Issuer: CN=SSC Root CA C,OU=Certification Authority,O=Skaitmeninio sertifikavimo centras,C=LT
Serial Number:34:b9:12:9f:ac:c7:92:55:42:5c:de:57:ff:e3:c0:05
Subject: CN=SSC Root CA C,OU=Certification Authority,O=Skaitmeninio sertifikavimo centras,C=LT
Not Valid Before: Wed Dec 27 12:26:30 2006
Not Valid After: Tue Dec 22 12:11:30 2026
Fingerprint (MD5): 3c:4c:25:cc:0a:19:ca:ee:6a:eb:55:16:00:86:72:5f
Fingerprint (SHA1): 23:e8:33:23:3e:7d:0c:c9:2b:7c:42:79:ac:19:c2:f4:74:d6:04:ca
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SSC Root CA C"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\164\061\013\060\011\006\003\125\004\006\023\002\114\124\061
\053\060\051\006\003\125\004\012\023\042\123\153\141\151\164\155
\145\156\151\156\151\157\040\163\145\162\164\151\146\151\153\141
\166\151\155\157\040\143\145\156\164\162\141\163\061\040\060\036
\006\003\125\004\013\023\027\103\145\162\164\151\146\151\143\141
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\061\026
\060\024\006\003\125\004\003\023\015\123\123\103\040\122\157\157
\164\040\103\101\040\103
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\164\061\013\060\011\006\003\125\004\006\023\002\114\124\061
\053\060\051\006\003\125\004\012\023\042\123\153\141\151\164\155
\145\156\151\156\151\157\040\163\145\162\164\151\146\151\153\141
\166\151\155\157\040\143\145\156\164\162\141\163\061\040\060\036
\006\003\125\004\013\023\027\103\145\162\164\151\146\151\143\141
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\061\026
\060\024\006\003\125\004\003\023\015\123\123\103\040\122\157\157
\164\040\103\101\040\103
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL

```

\002\020\064\271\022\237\254\307\222\125\102\134\336\127\377\343  
\300\005  
END  
CKA\_VALUE MULTILINE\_OCTAL  
\060\202\006\052\060\202\004\022\240\003\002\001\002\002\020\064  
\271\022\237\254\307\222\125\102\134\336\127\377\343\300\005\060  
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\164  
\061\013\060\011\006\003\125\004\006\023\002\114\124\061\053\060  
\051\006\003\125\004\012\023\042\123\153\141\151\164\155\145\156  
\151\156\151\157\040\163\145\162\164\151\146\151\153\141\166\151  
\155\157\040\143\145\156\164\162\141\163\061\040\060\036\006\003  
\125\004\013\023\027\103\145\162\164\151\146\151\143\141\164\151  
\157\156\040\101\165\164\150\157\162\151\164\171\061\026\060\024  
\006\003\125\004\003\023\015\123\123\103\040\122\157\157\164\040  
\103\101\040\103\060\036\027\015\060\066\061\062\062\067\061\062  
\062\066\063\060\132\027\015\062\066\061\062\062\062\061\062\061  
\061\063\060\132\060\164\061\013\060\011\006\003\125\004\006\023  
\002\114\124\061\053\060\051\006\003\125\004\012\023\042\123\153  
\141\151\164\155\145\156\151\156\151\157\040\163\145\162\164\151  
\146\151\153\141\166\151\155\157\040\143\145\156\164\162\141\163  
\061\040\060\036\006\003\125\004\013\023\027\103\145\162\164\151  
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151  
\164\171\061\026\060\024\006\003\125\004\003\023\015\123\123\103  
\040\122\157\157\164\040\103\101\040\103\060\202\002\042\060\015  
\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202\002  
\017\000\060\202\002\012\002\202\002\001\000\241\105\042\372\214  
\314\251\157\004\263\364\150\062\026\151\021\117\171\337\103\275  
\121\140\160\032\230\335\170\170\226\230\142\367\160\113\201\250  
\340\035\004\211\364\217\353\156\351\360\377\201\330\056\175\257  
\027\040\361\042\357\360\077\105\107\100\264\313\262\270\040\077  
\076\112\150\120\377\232\006\327\227\305\267\212\026\056\161\322  
\107\163\135\030\145\057\357\071\063\350\266\125\257\046\255\002  
\200\351\143\327\041\160\007\076\314\276\137\211\300\370\316\035  
\045\156\303\374\177\126\071\141\321\216\302\046\172\347\170\002  
\012\131\335\125\043\260\370\065\247\342\253\363\253\057\327\265  
\213\012\052\162\124\053\155\171\274\362\331\351\103\371\317\361  
\216\146\022\367\227\131\052\331\327\224\334\370\224\263\105\243  
\257\026\055\263\200\312\075\316\350\246\307\012\224\164\374\067  
\232\351\077\014\067\026\040\103\311\107\160\273\214\205\374\230  
\211\051\313\207\031\176\031\123\020\211\200\165\256\023\361\277  
\244\135\060\005\051\174\250\367\266\136\007\060\025\210\256\115  
\025\240\312\315\327\377\253\243\006\127\017\247\343\211\151\034  
\326\032\321\324\047\337\226\306\070\134\257\167\376\025\253\104  
\101\175\323\230\273\250\040\030\257\213\155\324\132\302\330\226  
\215\110\365\007\061\176\141\364\141\233\122\201\100\216\112\047  
\004\262\007\323\002\020\224\363\373\335\261\173\160\270\264\310  
\201\365\000\007\246\215\210\005\115\304\217\226\316\324\266\300  
\301\146\214\052\254\150\112\311\106\334\015\346\056\250\171\050

\175\167\103\160\026\176\034\032\072\246\171\117\023\100\211\261  
\062\273\011\106\021\015\164\274\047\345\330\355\055\372\120\051  
\334\045\312\227\020\347\251\242\141\056\072\211\246\104\141\276  
\117\136\222\011\355\334\056\246\357\123\273\141\045\330\047\245  
\024\106\051\205\046\000\330\371\371\005\325\173\026\061\102\103  
\005\027\221\234\112\140\100\044\155\265\155\172\171\373\234\232  
\143\303\230\151\345\167\142\043\052\121\211\017\154\262\375\303  
\312\330\364\032\103\224\320\175\013\341\130\076\032\310\164\204  
\233\367\254\202\256\121\105\222\322\006\131\341\263\301\336\245  
\037\223\042\171\330\315\304\171\140\043\225\002\003\001\000\001  
\243\201\267\060\201\264\060\017\006\003\125\035\023\001\001\377  
\004\005\060\003\001\001\377\060\075\006\003\125\035\040\004\066  
\060\064\060\062\006\013\053\006\001\004\001\201\257\145\001\002  
\000\060\043\060\041\006\010\053\006\001\005\005\007\002\001\026  
\025\150\164\164\160\072\057\057\167\167\167\056\163\163\143\056  
\154\164\057\143\160\163\060\063\006\003\125\035\037\004\054\060  
\052\060\050\240\046\240\044\206\042\150\164\164\160\072\057\057  
\143\162\154\056\163\163\143\056\154\164\057\162\157\157\164\055  
\143\057\143\141\143\162\154\056\143\162\154\060\016\006\003\125  
\035\017\001\001\377\004\004\003\002\001\006\060\035\006\003\125  
\035\016\004\026\004\024\210\007\163\366\361\274\122\032\132\035  
\075\221\142\355\135\254\235\013\345\267\060\015\006\011\052\206  
\110\206\367\015\001\001\005\005\000\003\202\002\001\000\037\220  
\161\120\230\325\331\064\322\226\204\030\302\254\106\002\040\034  
\313\071\261\267\257\005\244\327\130\363\221\121\175\216\201\047  
\234\350\222\261\347\034\237\072\213\020\122\163\114\302\307\102  
\035\320\353\336\052\312\042\121\175\214\164\172\032\374\274\244  
\363\163\310\146\043\304\056\103\020\107\340\212\151\127\356\057  
\362\000\122\260\060\222\252\326\324\025\305\127\313\140\172\364  
\016\215\376\036\011\143\164\217\340\376\276\120\331\001\071\126  
\272\120\114\366\343\105\232\273\122\166\336\176\235\373\215\302  
\124\061\076\307\261\074\076\337\343\117\375\335\233\044\151\174  
\355\350\161\266\102\006\307\037\305\137\373\040\165\333\301\375  
\351\154\242\052\220\324\206\375\315\015\377\340\005\212\130\141  
\075\237\304\231\057\355\333\174\304\015\230\230\125\234\164\242  
\027\136\333\252\021\344\067\014\044\377\040\147\321\045\333\232  
\211\240\145\210\061\221\004\161\137\040\224\130\063\066\035\062  
\336\157\327\147\010\251\240\073\375\333\244\120\045\226\036\251  
\137\211\027\245\227\231\121\225\151\333\304\361\217\364\157\060  
\053\131\363\254\165\207\063\175\006\335\341\301\153\326\304\311  
\136\160\104\172\152\307\234\167\073\026\376\376\165\276\237\054  
\321\300\003\356\021\171\165\354\251\133\034\172\205\265\050\120  
\040\251\032\035\346\173\214\063\030\377\301\355\310\166\145\037  
\035\360\114\073\247\333\352\315\126\330\224\127\077\340\110\251  
\177\214\063\113\275\364\014\145\024\200\202\364\065\167\330\004  
\020\160\316\017\154\301\131\313\231\255\201\356\336\075\110\320  
\172\210\057\100\223\327\234\272\171\204\030\200\165\337\320\132  
\337\121\167\076\130\211\151\165\107\061\344\152\026\160\124\004

```
\354\275\134\171\123\143\322\342\136\275\115\045\332\021\266\017
\252\351\054\256\365\321\251\215\002\126\313\374\260\044\352\214
\272\160\377\062\320\267\306\004\052\143\325\312\106\221\325\231
\162\011\007\136\050\003\253\022\034\045\263\154\072\131\145\264
\164\155\055\055\031\162\157\375\347\230\021\207\036\163\043\277
\065\361\233\266\303\331\314\073\120\174\162\350\317\136\300\230
\314\056\003\375\037\057\312\164\134\261\034\321\354\151
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE
```

# Microsoft Code Signing Only Certificate

# Trust for "SSC Root CA C"

# Issuer: CN=SSC Root CA C,OU=Certification Authority,O=Skaitmeninio sertifikavimo centras,C=LT

# Serial Number:34:b9:12:9f:ac:c7:92:55:42:5c:de:57:ff:e3:c0:05

# Subject: CN=SSC Root CA C,OU=Certification Authority,O=Skaitmeninio sertifikavimo centras,C=LT

# Not Valid Before: Wed Dec 27 12:26:30 2006

# Not Valid After: Tue Dec 22 12:11:30 2026

# Fingerprint (MD5): 3c:4c:25:cc:0a:19:ca:ee:6a:eb:55:16:00:86:72:5f

# Fingerprint (SHA1): 23:e8:33:23:3e:7d:0c:c9:2b:7c:42:79:ac:19:c2:f4:74:d6:04:ca

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "SSC Root CA C"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\043\350\063\043\076\175\014\311\053\174\102\171\254\031\302\364
\164\326\004\312
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\074\114\045\314\012\031\312\356\152\353\125\026\000\206\162\137
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\164\061\013\060\011\006\003\125\004\006\023\002\114\124\061
\053\060\051\006\003\125\004\012\023\042\123\153\141\151\164\155
\145\156\151\156\151\157\040\163\145\162\164\151\146\151\153\141
\166\151\155\157\040\143\145\156\164\162\141\163\061\040\060\036
\006\003\125\004\013\023\027\103\145\162\164\151\146\151\143\141
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\061\026
\060\024\006\003\125\004\003\023\015\123\123\103\040\122\157\157
\164\040\103\101\040\103
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\020\064\271\022\237\254\307\222\125\102\134\336\127\377\343
\300\005
```

END

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "Autoridad de Certificacion de la Abogacia"

# Issuer: CN=Autoridad de Certificacion de la Abogacia,O=Consejo General de la Abogacia NIF:Q-2863006I,C=ES

# Serial Number:90:8b:32:4f:c1:90:1a:ce:b4:c3:38:09:cd:cf:e4

# Subject: CN=Autoridad de Certificacion de la Abogacia,O=Consejo General de la Abogacia NIF:Q-2863006I,C=ES

# Not Valid Before: Mon Jun 13 22:00:00 2005

# Not Valid After: Thu Jun 13 22:00:00 2030

# Fingerprint (MD5): 15:ee:9f:5a:a0:85:28:df:6b:dd:34:a3:a0:56:d8:30

# Fingerprint (SHA1): 7f:8a:77:83:6b:dc:6d:06:8f:8b:07:37:fc:c5:72:54:13:06:8c:a4

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Autoridad de Certificacion de la Abogacia"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\171\061\013\060\011\006\003\125\004\006\023\002\105\123\061  
\066\060\064\006\003\125\004\012\023\055\103\157\156\163\145\152  
\157\040\107\145\156\145\162\141\154\040\144\145\040\154\141\040  
\101\142\157\147\141\143\151\141\040\116\111\106\072\121\055\062  
\070\066\063\060\060\066\111\061\062\060\060\006\003\125\004\003  
\023\051\101\165\164\157\162\151\144\141\144\040\144\145\040\103  
\145\162\164\151\146\151\143\141\143\151\157\156\040\144\145\040  
\154\141\040\101\142\157\147\141\143\151\141

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\171\061\013\060\011\006\003\125\004\006\023\002\105\123\061  
\066\060\064\006\003\125\004\012\023\055\103\157\156\163\145\152  
\157\040\107\145\156\145\162\141\154\040\144\145\040\154\141\040  
\101\142\157\147\141\143\151\141\040\116\111\106\072\121\055\062  
\070\066\063\060\060\066\111\061\062\060\060\006\003\125\004\003  
\023\051\101\165\164\157\162\151\144\141\144\040\144\145\040\103  
\145\162\164\151\146\151\143\141\143\151\157\156\040\144\145\040  
\154\141\040\101\142\157\147\141\143\151\141

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\000\220\213\062\117\301\220\032\316\264\303\070\011\315  
\317\344

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\274\060\202\003\244\240\003\002\001\002\002\020\000  
\220\213\062\117\301\220\032\316\264\303\070\011\315\317\344\060

\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\171  
\061\013\060\011\006\003\125\004\006\023\002\105\123\061\066\060  
\064\006\003\125\004\012\023\055\103\157\156\163\145\152\157\040  
\107\145\156\145\162\141\154\040\144\145\040\154\141\040\101\142  
\157\147\141\143\151\141\040\116\111\106\072\121\055\062\070\066  
\063\060\060\066\111\061\062\060\060\006\003\125\004\003\023\051  
\101\165\164\157\162\151\144\141\144\040\144\145\040\103\145\162  
\164\151\146\151\143\141\143\151\157\156\040\144\145\040\154\141  
\040\101\142\157\147\141\143\151\141\060\036\027\015\060\065\060  
\066\061\063\062\062\060\060\060\060\132\027\015\063\060\060\066  
\061\063\062\062\060\060\060\060\132\060\171\061\013\060\011\006  
\003\125\004\006\023\002\105\123\061\066\060\064\006\003\125\004  
\012\023\055\103\157\156\163\145\152\157\040\107\145\156\145\162  
\141\154\040\144\145\040\154\141\040\101\142\157\147\141\143\151  
\141\040\116\111\106\072\121\055\062\070\066\063\060\060\066\111  
\061\062\060\060\006\003\125\004\003\023\051\101\165\164\157\162  
\151\144\141\144\040\144\145\040\103\145\162\164\151\146\151\143  
\141\143\151\157\156\040\144\145\040\154\141\040\101\142\157\147  
\141\143\151\141\060\202\001\042\060\015\006\011\052\206\110\206  
\367\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012  
\002\202\001\001\000\264\262\127\356\205\360\043\350\015\373\262  
\200\204\361\020\147\253\262\371\111\337\134\336\133\344\217\051  
\031\123\311\325\350\034\120\153\141\002\214\207\360\217\074\301  
\105\222\013\254\231\241\306\032\205\326\075\255\176\046\246\035  
\270\075\262\263\076\212\305\012\062\323\113\221\357\111\165\176  
\126\367\376\240\010\142\106\053\316\352\362\121\237\140\336\062  
\310\355\032\247\317\165\134\353\075\300\275\232\110\245\206\224  
\316\130\120\024\352\152\341\232\364\214\145\225\341\140\025\045  
\225\022\366\272\170\213\262\300\355\346\154\227\044\132\035\344  
\164\103\312\070\304\065\224\130\216\365\212\260\150\074\050\054  
\104\226\011\277\011\133\162\012\347\147\074\220\271\124\070\164  
\124\273\155\055\152\103\310\274\357\011\254\037\043\350\122\126  
\136\065\027\137\053\273\136\315\145\122\245\024\174\073\262\252  
\351\335\047\265\067\043\073\006\015\054\173\215\272\332\157\146  
\027\206\247\266\327\036\007\135\036\154\031\227\310\345\043\163  
\170\321\256\371\036\272\241\256\111\042\355\145\161\037\177\367  
\132\164\104\215\103\002\003\001\000\001\243\202\001\076\060\202  
\001\072\060\067\006\003\125\035\021\004\060\060\056\201\021\141  
\143\100\141\143\141\142\157\147\141\143\151\141\056\157\162\147  
\206\031\150\164\164\160\072\057\057\167\167\167\056\141\143\141  
\142\157\147\141\143\151\141\056\157\162\147\060\017\006\003\125  
\035\023\001\001\377\004\005\060\003\001\001\377\060\016\006\003  
\125\035\017\001\001\377\004\004\003\002\001\006\060\021\006\011  
\140\206\110\001\206\370\102\001\001\004\004\003\002\000\007\060  
\035\006\003\125\035\016\004\026\004\024\374\210\114\216\155\004  
\241\040\220\323\370\034\232\263\147\004\137\171\200\306\060\201  
\253\006\003\125\035\040\004\201\243\060\201\240\060\201\235\006  
\013\053\006\001\004\001\201\201\025\012\001\001\060\201\215\060

\051\006\010\053\006\001\005\005\007\002\001\026\035\150\164\164  
\160\072\057\057\167\167\167\056\141\143\141\142\157\147\141\143  
\151\141\056\157\162\147\057\144\157\143\060\140\006\010\053\006  
\001\005\005\007\002\002\060\124\032\122\103\157\156\163\165\154  
\164\145\040\154\141\040\144\145\143\154\141\162\141\143\151\157  
\156\040\144\145\040\160\162\141\143\164\151\143\141\163\040\144  
\145\040\143\145\162\164\151\146\151\143\141\143\151\157\156\040  
\145\156\040\150\164\164\160\072\057\057\167\167\167\056\141\143  
\141\142\157\147\141\143\151\141\056\157\162\147\060\015\006\011  
\052\206\110\206\367\015\001\001\005\005\000\003\202\001\001\000  
\230\247\372\071\265\163\021\046\177\274\211\077\264\153\045\063  
\061\012\206\070\153\311\036\025\227\024\340\322\114\055\205\364  
\074\164\233\215\050\021\373\314\016\046\271\200\203\026\321\371  
\106\230\266\106\007\216\146\205\155\160\300\272\114\200\363\244  
\360\325\067\124\053\257\146\204\162\163\371\110\057\011\316\341  
\205\001\312\217\340\207\336\240\227\320\224\264\015\265\115\016  
\147\054\310\140\304\062\224\300\101\201\007\215\272\277\251\350  
\014\100\232\102\170\005\135\201\353\142\034\344\117\024\012\075  
\013\076\037\351\364\315\175\356\105\273\274\336\135\363\230\227  
\046\173\306\023\051\370\053\177\032\324\352\372\262\156\040\236  
\332\027\352\241\222\275\067\351\016\273\273\221\325\045\366\140  
\135\205\041\120\133\377\124\135\365\113\073\264\303\051\021\130  
\002\366\045\344\341\202\202\273\242\215\347\221\044\136\100\221  
\236\107\007\214\063\127\324\142\061\121\166\165\205\103\157\011  
\253\021\245\045\051\271\330\377\137\245\367\077\353\145\073\035  
\357\206\345\026\042\325\036\312\062\151\175\176\005\327\060\047  
END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "Autoridad de Certificacion de la Abogacia"  
# Issuer: CN=Autoridad de Certificacion de la Abogacia,O=Consejo General de la Abogacia NIF:Q-2863006I,C=ES  
# Serial Number:90:8b:32:4f:c1:90:1a:ce:b4:c3:38:09:cd:cf:e4  
# Subject: CN=Autoridad de Certificacion de la Abogacia,O=Consejo General de la Abogacia NIF:Q-2863006I,C=ES  
# Not Valid Before: Mon Jun 13 22:00:00 2005  
# Not Valid After: Thu Jun 13 22:00:00 2030  
# Fingerprint (MD5): 15:ee:9f:5a:a0:85:28:df:6b:dd:34:a3:a0:56:d8:30  
# Fingerprint (SHA1): 7f:8a:77:83:6b:dc:6d:06:8f:8b:07:37:fc:c5:72:54:13:06:8c:a4  
CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "Autoridad de Certificacion de la Abogacia"  
CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL  
\177\212\167\203\153\334\155\006\217\213\007\067\374\305\162\124

```

\023\006\214\244
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\025\356\237\132\240\205\050\337\153\335\064\243\240\126\330\060
END
CKA_ISSUER MULTILINE_OCTAL
\060\171\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\066\060\064\006\003\125\004\012\023\055\103\157\156\163\145\152
\157\040\107\145\156\145\162\141\154\040\144\145\040\154\141\040
\101\142\157\147\141\143\151\141\040\116\111\106\072\121\055\062
\070\066\063\060\060\066\111\061\062\060\060\006\003\125\004\003
\023\051\101\165\164\157\162\151\144\141\144\040\144\145\040\103
\145\162\164\151\146\151\143\141\143\151\157\156\040\144\145\040
\154\141\040\101\142\157\147\141\143\151\141
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\000\220\213\062\117\301\220\032\316\264\303\070\011\315
\317\344
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "Root CA Generalitat Valenciana"
Issuer: CN=Root CA Generalitat Valenciana,OU=PKIGVA,O=Generalitat Valenciana,C=ES
Serial Number:3b:45:e5:68
Subject: CN=Root CA Generalitat Valenciana,OU=PKIGVA,O=Generalitat Valenciana,C=ES
Not Valid Before: Fri Jul 06 16:22:47 2001
Not Valid After: Thu Jul 01 15:22:47 2021
Fingerprint (MD5): 2c:8c:17:5e:b1:54:ab:93:17:b5:36:5a:db:d1:c6:f2
Fingerprint (SHA1): a0:73:e5:c5:bd:43:61:0d:86:4c:21:13:0a:85:58:57:cc:9c:ea:46
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Root CA Generalitat Valenciana"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\150\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\037\060\035\006\003\125\004\012\023\026\107\145\156\145\162\141
\154\151\164\141\164\040\126\141\154\145\156\143\151\141\156\141
\061\017\060\015\006\003\125\004\013\023\006\120\113\111\107\126
\101\061\047\060\045\006\003\125\004\003\023\036\122\157\157\164
\040\103\101\040\107\145\156\145\162\141\154\151\164\141\164\040
\126\141\154\145\156\143\151\141\156\141
END

```



CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\150\061\013\060\011\006\003\125\004\006\023\002\105\123\061  
\037\060\035\006\003\125\004\012\023\026\107\145\156\145\162\141  
\154\151\164\141\164\040\126\141\154\145\156\143\151\141\156\141  
\061\017\060\015\006\003\125\004\013\023\006\120\113\111\107\126  
\101\061\047\060\045\006\003\125\004\003\023\036\122\157\157\164  
\040\103\101\040\107\145\156\145\162\141\154\151\164\141\164\040  
\126\141\154\145\156\143\151\141\156\141

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\004\073\105\345\150

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\006\213\060\202\005\163\240\003\002\001\002\002\004\073  
\105\345\150\060\015\006\011\052\206\110\206\367\015\001\001\005  
\005\000\060\150\061\013\060\011\006\003\125\004\006\023\002\105  
\123\061\037\060\035\006\003\125\004\012\023\026\107\145\156\145  
\162\141\154\151\164\141\164\040\126\141\154\145\156\143\151\141  
\156\141\061\017\060\015\006\003\125\004\013\023\006\120\113\111  
\107\126\101\061\047\060\045\006\003\125\004\003\023\036\122\157  
\157\164\040\103\101\040\107\145\156\145\162\141\154\151\164\141  
\164\040\126\141\154\145\156\143\151\141\156\141\060\036\027\015  
\060\061\060\067\060\066\061\066\062\062\064\067\132\027\015\062  
\061\060\067\060\061\061\065\062\062\064\067\132\060\150\061\013  
\060\011\006\003\125\004\006\023\002\105\123\061\037\060\035\006  
\003\125\004\012\023\026\107\145\156\145\162\141\154\151\164\141  
\164\040\126\141\154\145\156\143\151\141\156\141\061\017\060\015  
\006\003\125\004\013\023\006\120\113\111\107\126\101\061\047\060  
\045\006\003\125\004\003\023\036\122\157\157\164\040\103\101\040  
\107\145\156\145\162\141\154\151\164\141\164\040\126\141\154\145  
\156\143\151\141\156\141\060\202\001\042\060\015\006\011\052\206  
\110\206\367\015\001\001\001\005\000\003\202\001\017\000\060\202  
\001\012\002\202\001\001\000\306\052\253\127\021\067\057\042\212  
\312\003\164\035\312\355\055\242\013\274\063\122\100\046\107\276  
\132\151\246\073\162\066\027\114\350\337\270\273\057\166\341\100  
\106\164\145\002\220\122\010\264\377\250\214\301\340\307\211\126  
\020\071\063\357\150\264\137\137\332\155\043\241\211\136\042\243  
\112\006\360\047\360\127\271\370\351\116\062\167\012\077\101\144  
\363\353\145\356\166\376\124\252\175\035\040\256\363\327\164\302  
\012\137\365\010\050\122\010\314\125\135\322\017\333\232\201\245  
\273\241\263\301\224\315\124\340\062\165\061\221\032\142\262\336  
\165\342\317\117\211\331\221\220\017\101\033\264\132\112\167\275  
\147\203\340\223\347\136\247\014\347\201\323\364\122\254\123\262  
\003\307\104\046\373\171\345\313\064\140\120\020\173\033\333\153  
\327\107\253\137\174\150\312\156\235\101\003\020\356\153\231\173  
\136\045\250\302\253\344\300\363\134\234\343\276\316\061\114\144  
\036\136\200\242\365\203\176\014\326\312\214\125\216\276\340\276

\111\007\017\243\044\101\172\130\035\204\352\130\022\310\341\267  
\355\357\223\336\224\010\061\002\003\001\000\001\243\202\003\073  
\060\202\003\067\060\062\006\010\053\006\001\005\005\007\001\001  
\004\046\060\044\060\042\006\010\053\006\001\005\005\007\060\001  
\206\026\150\164\164\160\072\057\057\157\143\163\160\056\160\153  
\151\056\147\166\141\056\145\163\060\022\006\003\125\035\023\001  
\001\377\004\010\060\006\001\001\377\002\001\002\060\202\002\064  
\006\003\125\035\040\004\202\002\053\060\202\002\047\060\202\002  
\043\006\012\053\006\001\004\001\277\125\002\001\000\060\202\002  
\023\060\202\001\350\006\010\053\006\001\005\005\007\002\002\060  
\202\001\332\036\202\001\326\000\101\000\165\000\164\000\157\000  
\162\000\151\000\144\000\141\000\144\000\040\000\144\000\145\000  
\040\000\103\000\145\000\162\000\164\000\151\000\146\000\151\000  
\143\000\141\000\143\000\151\000\363\000\156\000\040\000\122\000  
\141\000\355\000\172\000\040\000\144\000\145\000\040\000\154\000  
\141\000\040\000\107\000\145\000\156\000\145\000\162\000\141\000  
\154\000\151\000\164\000\141\000\164\000\040\000\126\000\141\000  
\154\000\145\000\156\000\143\000\151\000\141\000\156\000\141\000  
\056\000\015\000\012\000\114\000\141\000\040\000\104\000\145\000  
\143\000\154\000\141\000\162\000\141\000\143\000\151\000\363\000  
\156\000\040\000\144\000\145\000\040\000\120\000\162\000\341\000  
\143\000\164\000\151\000\143\000\141\000\163\000\040\000\144\000  
\145\000\040\000\103\000\145\000\162\000\164\000\151\000\146\000  
\151\000\143\000\141\000\143\000\151\000\363\000\156\000\040\000  
\161\000\165\000\145\000\040\000\162\000\151\000\147\000\145\000  
\040\000\145\000\154\000\040\000\146\000\165\000\156\000\143\000  
\151\000\157\000\156\000\141\000\155\000\151\000\145\000\156\000  
\164\000\157\000\040\000\144\000\145\000\040\000\154\000\141\000  
\040\000\160\000\162\000\145\000\163\000\145\000\156\000\164\000  
\145\000\040\000\101\000\165\000\164\000\157\000\162\000\151\000  
\144\000\141\000\144\000\040\000\144\000\145\000\040\000\103\000  
\145\000\162\000\164\000\151\000\146\000\151\000\143\000\141\000  
\143\000\151\000\363\000\156\000\040\000\163\000\145\000\040\000  
\145\000\156\000\143\000\165\000\145\000\156\000\164\000\162\000  
\141\000\040\000\145\000\156\000\040\000\154\000\141\000\040\000  
\144\000\151\000\162\000\145\000\143\000\143\000\151\000\363\000  
\156\000\040\000\167\000\145\000\142\000\040\000\150\000\164\000  
\164\000\160\000\072\000\057\000\057\000\167\000\167\000\167\000  
\056\000\160\000\153\000\151\000\056\000\147\000\166\000\141\000  
\056\000\145\000\163\000\057\000\143\000\160\000\163\060\045\006  
\010\053\006\001\005\005\007\002\001\026\031\150\164\164\160\072  
\057\057\167\167\167\056\160\153\151\056\147\166\141\056\145\163  
\057\143\160\163\060\035\006\003\125\035\016\004\026\004\024\173  
\065\323\100\322\034\170\031\146\357\164\020\050\334\076\117\262  
\170\004\374\060\201\225\006\003\125\035\043\004\201\215\060\201  
\212\200\024\173\065\323\100\322\034\170\031\146\357\164\020\050  
\334\076\117\262\170\004\374\241\154\244\152\060\150\061\013\060  
\011\006\003\125\004\006\023\002\105\123\061\037\060\035\006\003

\125\004\012\023\026\107\145\156\145\162\141\154\151\164\141\164  
\040\126\141\154\145\156\143\151\141\156\141\061\017\060\015\006  
\003\125\004\013\023\006\120\113\111\107\126\101\061\047\060\045  
\006\003\125\004\003\023\036\122\157\157\164\040\103\101\040\107  
\145\156\145\162\141\154\151\164\141\164\040\126\141\154\145\156  
\143\151\141\156\141\202\004\073\105\345\150\060\015\006\011\052  
\206\110\206\367\015\001\001\005\005\000\003\202\001\001\000\044  
\141\116\365\265\310\102\002\052\263\134\165\255\305\155\312\347  
\224\077\245\150\225\210\301\124\300\020\151\242\022\057\030\077  
\045\120\250\174\112\352\306\011\331\364\165\306\100\332\257\120  
\235\075\245\026\273\155\061\306\307\163\012\110\376\040\162\355  
\157\314\350\203\141\026\106\220\001\225\113\175\216\232\122\011  
\057\366\157\034\344\241\161\317\214\052\132\027\163\203\107\115  
\017\066\373\004\115\111\121\342\024\311\144\141\373\324\024\340  
\364\236\267\064\217\012\046\275\227\134\364\171\072\112\060\031  
\314\255\117\240\230\212\264\061\227\052\342\163\155\176\170\270  
\370\210\211\117\261\042\221\144\113\365\120\336\003\333\345\305  
\166\347\023\146\165\176\145\373\001\237\223\207\210\235\371\106  
\127\174\115\140\257\230\163\023\043\244\040\221\201\372\320\141  
\146\270\175\321\257\326\157\036\154\075\351\021\375\251\371\202  
\042\206\231\063\161\132\352\031\127\075\221\315\251\300\243\156  
\007\023\246\311\355\370\150\243\236\303\132\162\011\207\050\321  
\304\163\304\163\030\137\120\165\026\061\237\267\350\174\303

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "Root CA Generalitat Valenciana"  
# Issuer: CN=Root CA Generalitat Valenciana,OU=PKIGVA,O=Generalitat Valenciana,C=ES  
# Serial Number:3b:45:e5:68  
# Subject: CN=Root CA Generalitat Valenciana,OU=PKIGVA,O=Generalitat Valenciana,C=ES  
# Not Valid Before: Fri Jul 06 16:22:47 2001  
# Not Valid After: Thu Jul 01 15:22:47 2021  
# Fingerprint (MD5): 2c:8c:17:5e:b1:54:ab:93:17:b5:36:5a:db:d1:c6:f2  
# Fingerprint (SHA1): a0:73:e5:c5:bd:43:61:0d:86:4c:21:13:0a:85:58:57:cc:9c:ea:46  
CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "Root CA Generalitat Valenciana"  
CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL  
\240\163\345\305\275\103\141\015\206\114\041\023\012\205\130\127  
\314\234\352\106

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL  
\054\214\027\136\261\124\253\223\027\265\066\132\333\321\306\362

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\150\061\013\060\011\006\003\125\004\006\023\002\105\123\061  
\037\060\035\006\003\125\004\012\023\026\107\145\156\145\162\141  
\154\151\164\141\164\040\126\141\154\145\156\143\151\141\156\141  
\061\017\060\015\006\003\125\004\013\023\006\120\113\111\107\126  
\101\061\047\060\045\006\003\125\004\003\023\036\122\157\157\164  
\040\103\101\040\107\145\156\145\162\141\154\151\164\141\164\040  
\126\141\154\145\156\143\151\141\156\141

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\004\073\105\345\150

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "VAS Latvijas Pasts SSI(RCA)"

# Issuer: CN=VAS Latvijas Pasts SSI(RCA),OU=Sertifikācijas pakalpojumi,O=VAS Latvijas Pasts -  
Vien.reg.Nr.40003052790,C=LV

# Serial Number:63:06:86:a7:c5:37:65:a5:43:90:a8:6a:58:cc:d4:32

# Subject: CN=VAS Latvijas Pasts SSI(RCA),OU=Sertifikācijas pakalpojumi,O=VAS Latvijas Pasts -  
Vien.reg.Nr.40003052790,C=LV

# Not Valid Before: Wed Sep 13 09:22:10 2006

# Not Valid After: Fri Sep 13 09:27:57 2024

# Fingerprint (MD5): fd:49:be:5b:18:5a:25:ec:f9:c3:54:85:10:40:e8:d4

# Fingerprint (SHA1): 08:64:18:e9:06:ce:e8:9c:23:53:b6:e2:7f:bd:9e:74:39:f7:63:16

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "VAS Latvijas Pasts SSI(RCA)"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\201\217\061\013\060\011\006\003\125\004\006\023\002\114\126  
\061\065\060\063\006\003\125\004\012\023\054\126\101\123\040\114  
\141\164\166\151\152\141\163\040\120\141\163\164\163\040\055\040  
\126\151\145\156\056\162\145\147\056\116\162\056\064\060\060\060  
\063\060\065\062\067\071\060\061\043\060\041\006\003\125\004\013  
\023\032\123\145\162\164\151\146\151\153\141\143\151\152\141\163  
\040\160\141\153\141\154\160\157\152\165\155\151\061\044\060\042  
\006\003\125\004\003\023\033\126\101\123\040\114\141\164\166\151  
\152\141\163\040\120\141\163\164\163\040\123\123\111\050\122\103  
\101\051

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\217\061\013\060\011\006\003\125\004\006\023\002\114\126  
\061\065\060\063\006\003\125\004\012\023\054\126\101\123\040\114  
\141\164\166\151\152\141\163\040\120\141\163\164\163\040\055\040  
\126\151\145\156\056\162\145\147\056\116\162\056\064\060\060\060  
\063\060\065\062\067\071\060\061\043\060\041\006\003\125\004\013  
\023\032\123\145\162\164\151\146\151\153\141\143\151\152\141\163  
\040\160\141\153\141\154\160\157\152\165\155\151\061\044\060\042  
\006\003\125\004\003\023\033\126\101\123\040\114\141\164\166\151  
\152\141\163\040\120\141\163\164\163\040\123\123\111\050\122\103  
\101\051

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\143\006\206\247\305\067\145\245\103\220\250\152\130\314  
\324\062

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\007\251\060\202\005\221\240\003\002\001\002\002\020\143  
\006\206\247\305\067\145\245\103\220\250\152\130\314\324\062\060  
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\201  
\217\061\013\060\011\006\003\125\004\006\023\002\114\126\061\065  
\060\063\006\003\125\004\012\023\054\126\101\123\040\114\141\164  
\166\151\152\141\163\040\120\141\163\164\163\040\055\040\126\151  
\145\156\056\162\145\147\056\116\162\056\064\060\060\060\063\060  
\065\062\067\071\060\061\043\060\041\006\003\125\004\013\023\032  
\123\145\162\164\151\146\151\153\141\143\151\152\141\163\040\160  
\141\153\141\154\160\157\152\165\155\151\061\044\060\042\006\003  
\125\004\003\023\033\126\101\123\040\114\141\164\166\151\152\141  
\163\040\120\141\163\164\163\040\123\123\111\050\122\103\101\051  
\060\036\027\015\060\066\060\071\061\063\060\071\062\062\061\060  
\132\027\015\062\064\060\071\061\063\060\071\062\067\065\067\132  
\060\201\217\061\013\060\011\006\003\125\004\006\023\002\114\126  
\061\065\060\063\006\003\125\004\012\023\054\126\101\123\040\114  
\141\164\166\151\152\141\163\040\120\141\163\164\163\040\055\040  
\126\151\145\156\056\162\145\147\056\116\162\056\064\060\060\060  
\063\060\065\062\067\071\060\061\043\060\041\006\003\125\004\013  
\023\032\123\145\162\164\151\146\151\153\141\143\151\152\141\163  
\040\160\141\153\141\154\160\157\152\165\155\151\061\044\060\042  
\006\003\125\004\003\023\033\126\101\123\040\114\141\164\166\151  
\152\141\163\040\120\141\163\164\163\040\123\123\111\050\122\103  
\101\051\060\202\002\042\060\015\006\011\052\206\110\206\367\015  
\001\001\001\005\000\003\202\002\017\000\060\202\002\012\002\202  
\002\001\000\233\270\371\375\141\125\057\117\244\245\024\265\056  
\216\271\044\217\254\373\261\124\077\100\377\117\305\345\206\150  
\173\123\223\373\065\202\065\250\120\056\224\122\240\333\203\076  
\165\332\025\160\254\011\317\356\202\111\255\066\111\271\264\161  
\213\264\000\241\102\006\312\010\012\143\227\266\010\374\356\264  
\334\230\170\031\202\311\370\177\144\076\252\311\376\261\215\353

\260\144\365\274\363\304\076\072\220\352\116\216\077\033\031\274  
\152\203\303\221\074\154\125\373\012\122\300\350\341\135\167\205  
\063\305\111\337\354\152\277\277\154\067\376\216\111\242\025\030  
\316\213\216\153\036\070\243\060\157\210\201\176\162\126\104\032  
\304\172\071\017\366\304\217\226\324\262\353\000\116\134\336\273  
\347\073\267\346\044\005\223\153\115\346\221\104\277\356\230\033  
\307\205\033\021\101\173\042\066\247\276\076\350\172\067\334\030  
\336\220\235\217\315\262\327\232\077\342\027\177\133\014\341\357  
\077\146\075\156\044\344\260\316\303\014\210\154\224\332\070\045  
\174\122\071\343\163\024\263\000\105\143\232\014\102\100\136\004  
\306\367\162\144\316\311\156\063\263\344\323\155\044\225\067\223  
\176\362\000\135\031\213\037\363\103\163\250\237\105\322\006\251  
\354\264\102\273\372\356\014\307\117\077\121\037\321\257\320\254  
\030\177\207\201\042\376\251\335\007\226\155\174\370\116\331\115  
\072\120\151\325\101\176\305\332\164\330\216\163\345\176\203\341  
\303\031\201\267\275\277\100\216\276\056\232\242\014\252\116\002  
\056\273\052\341\010\135\061\003\311\254\047\260\257\334\325\310  
\024\175\100\235\125\211\041\371\220\314\324\311\140\101\163\253  
\350\315\330\072\125\071\012\202\231\376\233\365\365\074\034\221  
\313\300\372\106\124\256\041\374\052\254\134\173\336\172\227\161  
\375\154\153\315\110\232\244\333\201\174\030\067\057\220\175\141  
\224\275\027\311\134\266\124\026\167\312\011\112\252\351\274\117  
\224\165\001\132\126\274\222\322\217\271\327\227\336\126\164\001  
\367\026\161\111\261\365\030\106\231\101\356\142\341\263\054\145  
\165\151\051\162\103\003\370\233\037\372\070\364\236\354\100\020  
\216\254\227\325\260\063\276\237\030\334\055\367\101\170\124\112  
\142\104\347\002\003\001\000\001\243\202\001\375\060\202\001\371  
\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006  
\060\030\006\010\053\006\001\005\005\007\001\003\004\014\060\012  
\060\010\006\006\004\000\216\106\001\001\060\017\006\003\125\035  
\023\001\001\377\004\005\060\003\001\001\377\060\035\006\003\125  
\035\016\004\026\004\024\314\303\365\146\377\163\254\070\132\226  
\033\041\211\270\201\114\037\313\136\045\060\020\006\011\053\006  
\001\004\001\202\067\025\001\004\003\002\001\000\060\202\001\211  
\006\003\125\035\040\004\202\001\200\060\202\001\174\060\202\001  
\170\006\013\053\006\001\004\001\201\304\131\001\001\002\060\202  
\001\147\060\202\001\070\006\010\053\006\001\005\005\007\002\002  
\060\202\001\052\036\202\001\046\000\123\000\151\000\163\000\040  
\000\151\000\162\000\040\000\163\000\145\000\162\000\164\000\151  
\000\146\000\151\000\153\000\141\000\164\000\163\000\054\000\040  
\000\153\000\157\000\040\000\151\000\172\000\144\000\145\000\166  
\000\151\000\163\000\040\000\126\000\101\000\123\000\040\000\114  
\000\141\000\164\000\166\000\151\000\152\000\141\000\163\000\040  
\000\120\000\141\000\163\000\164\000\163\000\054\000\040\000\156  
\000\157\000\144\000\162\000\157\000\163\000\151\000\156\000\157  
\000\164\000\040\000\141\000\164\000\142\000\151\000\154\000\163  
\000\164\000\151\000\142\000\165\000\040\000\105\000\154\000\145  
\000\153\000\164\000\162\000\157\000\156\000\151\000\163\000\153

\000\157\000\040\000\144\000\157\000\153\000\165\000\155\000\145  
\000\156\000\164\000\165\000\040\000\154\000\151\000\153\000\165  
\000\155\000\141\000\155\000\040\000\165\000\156\000\040\000\105  
\000\151\000\162\000\157\000\160\000\141\000\163\000\040\000\120  
\000\141\000\162\000\154\000\141\000\155\000\145\000\156\000\164  
\000\141\000\040\000\144\000\151\000\162\000\145\000\153\000\164  
\000\151\000\166\000\141\000\151\000\040\000\061\000\071\000\071  
\000\071\000\057\000\071\000\063\000\057\000\105\000\113\060\051  
\006\010\053\006\001\005\005\007\002\001\026\035\150\164\164\160  
\072\057\057\167\167\167\056\145\055\155\145\056\154\166\057\162  
\145\160\157\163\151\164\157\162\171\060\015\006\011\052\206\110  
\206\367\015\001\001\005\005\000\003\202\002\001\000\037\050\112  
\065\220\041\143\150\012\057\170\257\243\036\202\046\227\243\077  
\047\031\322\113\243\102\172\006\023\145\133\301\004\313\353\175  
\174\357\224\362\361\211\365\267\337\122\002\041\151\322\352\226  
\064\345\240\317\227\270\234\125\016\020\205\243\024\136\054\005  
\370\265\072\166\363\371\172\270\336\266\014\047\151\362\313\224  
\221\013\035\271\325\216\157\231\057\315\362\031\126\071\072\110  
\126\360\001\377\202\165\266\262\375\321\324\365\362\143\127\114  
\115\241\176\314\020\272\004\151\357\364\024\374\263\227\037\105  
\356\157\112\050\177\321\306\047\274\307\243\251\153\173\355\202  
\023\157\253\336\017\373\161\353\134\021\032\251\054\320\060\237  
\374\066\067\126\357\225\351\272\267\023\266\256\237\002\141\255  
\236\354\153\004\157\066\237\017\231\367\302\311\310\114\050\271  
\050\324\041\327\236\124\325\300\316\364\216\344\125\224\173\217  
\044\306\070\374\253\172\244\126\167\075\250\105\357\144\222\244  
\320\112\176\273\163\213\364\015\122\163\270\072\110\136\103\200  
\323\251\160\167\142\377\307\050\034\163\036\103\346\047\044\133  
\111\271\346\066\244\216\375\305\055\057\172\245\171\022\172\327  
\041\262\045\155\310\017\242\303\141\113\345\110\342\127\272\237  
\362\212\041\335\333\144\360\332\031\337\316\300\233\200\071\302  
\167\167\143\025\123\162\204\372\244\217\007\067\206\041\175\120  
\372\075\152\067\333\221\016\067\263\375\316\013\312\173\141\320  
\234\164\234\175\070\150\155\351\173\035\326\361\052\264\357\073  
\140\122\167\005\346\002\302\137\214\133\274\360\175\267\163\307  
\221\153\262\052\263\143\243\064\325\253\255\045\161\107\377\032  
\076\172\266\215\225\166\303\356\246\315\003\011\154\356\105\147  
\230\317\231\110\166\301\316\212\164\232\150\122\001\064\042\310  
\355\342\024\013\204\275\156\020\214\261\162\233\276\350\010\327  
\127\325\177\352\264\001\075\116\344\342\350\147\347\214\176\351  
\347\102\021\357\225\106\310\221\326\276\047\027\200\031\064\230  
\347\306\337\036\374\041\137\236\206\075\274\176\360\234\275\162  
\236\364\107\202\133\161\147\363\372\334\124\114\250\134\330\131  
\307\320\007\016\023\063\047\274\364\151\360\153\041

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

```
Microsoft Code Signing Only Certificate
Trust for "VAS Latvijas Pasts SSI(RCA)"
Issuer: CN=VAS Latvijas Pasts SSI(RCA),OU=Sertifikācijas pakalpojumi,O=VAS Latvijas Pasts -
Vien.reg.Nr.40003052790,C=LV
Serial Number:63:06:86:a7:c5:37:65:a5:43:90:a8:6a:58:cc:d4:32
Subject: CN=VAS Latvijas Pasts SSI(RCA),OU=Sertifikācijas pakalpojumi,O=VAS Latvijas Pasts -
Vien.reg.Nr.40003052790,C=LV
Not Valid Before: Wed Sep 13 09:22:10 2006
Not Valid After: Fri Sep 13 09:27:57 2024
Fingerprint (MD5): fd:49:be:5b:18:5a:25:ec:f9:c3:54:85:10:40:e8:d4
Fingerprint (SHA1): 08:64:18:e9:06:ce:e8:9c:23:53:b6:e2:7f:bd:9e:74:39:f7:63:16
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "VAS Latvijas Pasts SSI(RCA)"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\010\144\030\351\006\316\350\234\043\123\266\342\177\275\236\164
\071\367\143\026
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\375\111\276\133\030\132\045\354\371\303\124\205\020\100\350\324
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\217\061\013\060\011\006\003\125\004\006\023\002\114\126
\061\065\060\063\006\003\125\004\012\023\054\126\101\123\040\114
\141\164\166\151\152\141\163\040\120\141\163\164\163\040\055\040
\126\151\145\156\056\162\145\147\056\116\162\056\064\060\060\060
\063\060\065\062\067\071\060\061\043\060\041\006\003\125\004\013
\023\032\123\145\162\164\151\146\151\153\141\143\151\152\141\163
\040\160\141\153\141\154\160\157\152\165\155\151\061\044\060\042
\006\003\125\004\003\023\033\126\101\123\040\114\141\164\166\151
\152\141\163\040\120\141\163\164\163\040\123\123\111\050\122\103
\101\051
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\143\006\206\247\305\067\145\245\103\220\250\152\130\314
\324\062
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
Certificate "ANCERT Certificados CGN"
Issuer: CN=ANCERT Certificados CGN,O=Agencia Notarial de Certificacion S.L. Unipersonal - CIF
```



```
B83395988,C=ES
Serial Number:44:74:ec:c8:6c:72:1e:58:dd:b8:2c:7e:f4:fc:95
Subject: CN=ANCERT Certificados CGN,O=Agencia Notarial de Certificacion S.L. Unipersonal - CIF
B83395988,C=ES
Not Valid Before: Wed Feb 11 17:27:12 2004
Not Valid After: Sun Feb 11 17:27:12 2024
Fingerprint (MD5): 1c:4b:e2:c6:2d:b9:ac:31:14:f4:40:07:69:cb:1f:40
Fingerprint (SHA1): 11:c5:b5:f7:55:52:b0:11:66:9c:2e:97:17:de:6d:9b:ff:5f:a8:10
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ANCERT Certificados CGN"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\174\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\113\060\111\006\003\125\004\012\023\102\101\147\145\156\143\151
\141\040\116\157\164\141\162\151\141\154\040\144\145\040\103\145
\162\164\151\146\151\143\141\143\151\157\156\040\123\056\114\056
\040\125\156\151\160\145\162\163\157\156\141\154\040\055\040\103
\111\106\040\102\070\063\063\071\065\071\070\070\061\040\060\036
\006\003\125\004\003\023\027\101\116\103\105\122\124\040\103\145
\162\164\151\146\151\143\141\144\157\163\040\103\107\116
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\174\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\113\060\111\006\003\125\004\012\023\102\101\147\145\156\143\151
\141\040\116\157\164\141\162\151\141\154\040\144\145\040\103\145
\162\164\151\146\151\143\141\143\151\157\156\040\123\056\114\056
\040\125\156\151\160\145\162\163\157\156\141\154\040\055\040\103
\111\106\040\102\070\063\063\071\065\071\070\070\061\040\060\036
\006\003\125\004\003\023\027\101\116\103\105\122\124\040\103\145
\162\164\151\146\151\143\141\144\157\163\040\103\107\116
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\017\104\164\354\310\154\162\036\130\335\270\054\176\364\374
\225
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\052\060\202\004\022\240\003\002\001\002\002\017\104
\164\354\310\154\162\036\130\335\270\054\176\364\374\225\060\015
\006\011\052\206\110\206\367\015\001\001\005\005\000\060\174\061
\013\060\011\006\003\125\004\006\023\002\105\123\061\113\060\111
\006\003\125\004\012\023\102\101\147\145\156\143\151\141\040\116
\157\164\141\162\151\141\154\040\144\145\040\103\145\162\164\151
\146\151\143\141\143\151\157\156\040\123\056\114\056\040\125\156
\151\160\145\162\163\157\156\141\154\040\055\040\103\111\106\040
```

\102\070\063\063\071\065\071\070\070\061\040\060\036\006\003\125  
\004\003\023\027\101\116\103\105\122\124\040\103\145\162\164\151  
\146\151\143\141\144\157\163\040\103\107\116\060\036\027\015\060  
\064\060\062\061\061\061\067\062\067\061\062\132\027\015\062\064  
\060\062\061\061\061\067\062\067\061\062\132\060\174\061\013\060  
\011\006\003\125\004\006\023\002\105\123\061\113\060\111\006\003  
\125\004\012\023\102\101\147\145\156\143\151\141\040\116\157\164  
\141\162\151\141\154\040\144\145\040\103\145\162\164\151\146\151  
\143\141\143\151\157\156\040\123\056\114\056\040\125\156\151\160  
\145\162\163\157\156\141\154\040\055\040\103\111\106\040\102\070  
\063\063\071\065\071\070\070\061\040\060\036\006\003\125\004\003  
\023\027\101\116\103\105\122\124\040\103\145\162\164\151\146\151  
\143\141\144\157\163\040\103\107\116\060\202\001\042\060\015\006  
\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017  
\000\060\202\001\012\002\202\001\001\000\220\165\077\077\014\254  
\312\324\174\304\110\247\030\273\072\273\241\273\325\173\337\213  
\031\344\202\104\373\145\354\266\022\141\076\151\042\031\142\065  
\044\266\325\020\006\251\105\152\044\052\365\047\214\170\074\310  
\271\363\005\154\305\002\003\322\116\200\144\354\206\253\170\224  
\042\002\000\265\150\233\324\345\125\137\340\310\200\060\347\013  
\277\153\327\004\216\116\171\230\160\114\034\046\271\263\250\352  
\360\021\242\271\212\123\002\046\165\022\211\341\373\210\116\131  
\172\000\321\202\330\026\256\345\266\274\225\045\140\100\167\045  
\033\236\357\215\344\375\360\117\063\061\045\277\356\172\012\124  
\360\220\070\147\022\173\245\140\332\014\001\211\232\166\207\056  
\365\033\103\173\345\347\046\112\373\025\142\253\105\033\173\325  
\012\245\115\154\115\253\237\050\110\204\341\203\165\270\030\160  
\125\123\333\320\337\051\220\257\071\306\027\225\301\224\305\136  
\331\145\137\135\377\156\026\225\230\041\237\136\115\360\315\061  
\071\041\003\027\015\221\037\241\125\231\101\354\125\311\273\075  
\231\134\233\305\177\321\034\136\352\123\002\003\001\000\001\243  
\202\001\247\060\202\001\243\060\017\006\003\125\035\023\001\001  
\377\004\005\060\003\001\001\377\060\202\001\040\006\003\125\035  
\040\004\202\001\027\060\202\001\023\060\202\001\017\006\011\053  
\006\001\004\001\201\223\150\004\060\202\001\000\060\045\006\010  
\053\006\001\005\005\007\002\001\026\031\150\164\164\160\072\057  
\057\167\167\167\056\141\156\143\145\162\164\056\143\157\155\057  
\143\160\163\060\201\326\006\010\053\006\001\005\005\007\002\002  
\060\201\311\060\015\026\006\101\116\103\105\122\124\060\003\002  
\001\001\032\201\267\101\147\145\156\143\151\141\040\116\157\164  
\141\162\151\141\154\040\144\145\040\103\145\162\164\151\146\151  
\143\141\143\151\157\156\056\040\114\141\040\144\145\143\154\141  
\162\141\143\151\157\156\040\144\145\040\160\162\141\143\164\151  
\143\141\163\040\144\145\040\143\145\162\164\151\146\151\141\143  
\151\157\156\040\161\165\145\040\162\151\147\145\040\145\154\040  
\146\165\156\143\151\157\156\141\155\151\145\156\164\157\040\144  
\145\040\154\141\040\160\162\145\163\145\156\164\145\040\141\165  
\164\157\162\151\144\141\144\040\163\145\040\145\156\143\165\145

\156\164\162\141\040\144\151\163\160\157\156\151\142\154\145\040  
\145\156\040\150\164\164\160\072\057\057\167\167\167\056\141\156  
\143\145\162\164\056\143\157\155\057\143\160\163\060\016\006\003  
\125\035\017\001\001\377\004\004\003\002\001\206\060\034\006\003  
\125\035\021\004\025\060\023\201\021\141\156\143\145\162\164\100  
\141\156\143\145\162\164\056\143\157\155\060\037\006\003\125\035  
\043\004\030\060\026\200\024\354\127\237\310\166\042\157\314\072  
\256\133\360\055\241\142\130\321\215\002\314\060\035\006\003\125  
\035\016\004\026\004\024\354\127\237\310\166\042\157\314\072\256  
\133\360\055\241\142\130\321\215\002\314\060\015\006\011\052\206  
\110\206\367\015\001\001\005\005\000\003\202\001\001\000\213\075  
\337\334\066\054\177\047\234\374\265\130\123\161\012\022\135\020  
\144\121\161\265\112\126\364\136\104\147\036\357\035\262\361\244  
\121\074\147\154\054\145\226\172\241\022\243\257\013\010\067\016  
\231\326\156\050\207\013\142\253\116\170\116\162\201\233\337\021  
\117\211\140\310\121\246\033\006\011\161\163\174\067\267\034\070  
\067\232\371\207\341\357\241\356\177\327\300\352\071\024\372\174  
\157\013\371\206\312\346\305\167\151\240\237\215\051\243\167\156  
\305\314\332\366\335\006\172\323\151\146\076\140\073\343\062\337  
\256\360\033\236\052\235\314\204\337\032\020\107\355\245\126\226  
\102\067\265\055\162\015\101\022\223\272\062\210\104\310\256\011  
\304\275\200\355\375\140\017\162\262\266\144\366\143\040\062\160  
\167\207\056\063\056\237\065\310\137\250\222\126\267\377\044\072  
\054\135\362\046\005\150\031\362\121\147\317\337\122\011\351\202  
\004\172\153\202\247\177\345\322\251\164\153\030\046\310\272\324  
\325\036\245\113\073\046\301\235\042\341\373\022\275\325\142\106  
\325\327\135\322\335\303\374\141\015\060\005\117\005\213

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "ANCERT Certificados CGN"  
# Issuer: CN=ANCERT Certificados CGN,O=Agencia Notarial de Certificacion S.L. Unipersonal - CIF  
B83395988,C=ES  
# Serial Number:44:74:ec:c8:6c:72:1e:58:dd:b8:2c:7e:f4:fc:95  
# Subject: CN=ANCERT Certificados CGN,O=Agencia Notarial de Certificacion S.L. Unipersonal - CIF  
B83395988,C=ES  
# Not Valid Before: Wed Feb 11 17:27:12 2004  
# Not Valid After: Sun Feb 11 17:27:12 2024  
# Fingerprint (MD5): 1c:4b:e2:c6:2d:b9:ac:31:14:f4:40:07:69:cb:1f:40  
# Fingerprint (SHA1): 11:c5:b5:f7:55:52:b0:11:66:9c:2e:97:17:de:6d:9b:ff:5f:a8:10  
CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "ANCERT Certificados CGN"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL  
\021\305\265\367\125\122\260\021\146\234\056\227\027\336\155\233  
\377\137\250\020

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL  
\034\113\342\306\055\271\254\061\024\364\100\007\151\313\037\100

END

CKA\_ISSUER MULTILINE\_OCTAL  
\060\174\061\013\060\011\006\003\125\004\006\023\002\105\123\061  
\113\060\111\006\003\125\004\012\023\102\101\147\145\156\143\151  
\141\040\116\157\164\141\162\151\141\154\040\144\145\040\103\145  
\162\164\151\146\151\143\141\143\151\157\156\040\123\056\114\056  
\040\125\156\151\160\145\162\163\157\156\141\154\040\055\040\103  
\111\106\040\102\070\063\063\071\065\071\070\070\061\040\060\036  
\006\003\125\004\003\023\027\101\116\103\105\122\124\040\103\145  
\162\164\151\146\151\143\141\144\157\163\040\103\107\116

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL  
\002\017\104\164\354\310\154\162\036\130\335\270\054\176\364\374  
\225

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "ANCERT Certificados Notariales"

# Issuer: CN=ANCERT Certificados Notariales,O=Agencia Notarial de Certificacion S.L. Unipersonal - CIF  
B83395988,C=ES

# Serial Number:f4:cf:89:ea:dd:a4:c6:3e:91:ad:48:0e:2d:22:36:84

# Subject: CN=ANCERT Certificados Notariales,O=Agencia Notarial de Certificacion S.L. Unipersonal - CIF  
B83395988,C=ES

# Not Valid Before: Wed Feb 11 15:58:30 2004

# Not Valid After: Sun Feb 11 15:58:26 2024

# Fingerprint (MD5): 45:f7:50:11:4e:c5:ad:bd:53:68:86:63:ec:7b:6a:e1

# Fingerprint (SHA1): c0:9a:b0:c8:ad:71:14:71:4e:d5:e2:1a:5a:27:6a:dc:d5:e7:ef:cb

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "ANCERT Certificados Notariales"  
CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509  
CKA\_SUBJECT MULTILINE\_OCTAL

\060\201\203\061\013\060\011\006\003\125\004\006\023\002\105\123  
\061\113\060\111\006\003\125\004\012\023\102\101\147\145\156\143  
\151\141\040\116\157\164\141\162\151\141\154\040\144\145\040\103  
\145\162\164\151\146\151\143\141\143\151\157\156\040\123\056\114

\056\040\125\156\151\160\145\162\163\157\156\141\154\040\055\040  
\103\111\106\040\102\070\063\063\071\065\071\070\070\061\047\060  
\045\006\003\125\004\003\023\036\101\116\103\105\122\124\040\103  
\145\162\164\151\146\151\143\141\144\157\163\040\116\157\164\141  
\162\151\141\154\145\163

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\203\061\013\060\011\006\003\125\004\006\023\002\105\123  
\061\113\060\111\006\003\125\004\012\023\102\101\147\145\156\143  
\151\141\040\116\157\164\141\162\151\141\154\040\144\145\040\103  
\145\162\164\151\146\151\143\141\143\151\157\156\040\123\056\114  
\056\040\125\156\151\160\145\162\163\157\156\141\154\040\055\040  
\103\111\106\040\102\070\063\063\071\065\071\070\070\061\047\060  
\045\006\003\125\004\003\023\036\101\116\103\105\122\124\040\103  
\145\162\164\151\146\151\143\141\144\157\163\040\116\157\164\141  
\162\151\141\154\145\163

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\021\000\364\317\211\352\335\244\306\076\221\255\110\016\055  
\042\066\204

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\074\060\202\004\044\240\003\002\001\002\002\021\000  
\364\317\211\352\335\244\306\076\221\255\110\016\055\042\066\204  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060  
\201\203\061\013\060\011\006\003\125\004\006\023\002\105\123\061  
\113\060\111\006\003\125\004\012\023\102\101\147\145\156\143\151  
\141\040\116\157\164\141\162\151\141\154\040\144\145\040\103\145  
\162\164\151\146\151\143\141\143\151\157\156\040\123\056\114\056  
\040\125\156\151\160\145\162\163\157\156\141\154\040\055\040\103  
\111\106\040\102\070\063\063\071\065\071\070\070\061\047\060\045  
\006\003\125\004\003\023\036\101\116\103\105\122\124\040\103\145  
\162\164\151\146\151\143\141\144\157\163\040\116\157\164\141\162  
\151\141\154\145\163\060\036\027\015\060\064\060\062\061\061\061  
\065\065\070\063\060\132\027\015\062\064\060\062\061\061\061\065  
\065\070\062\066\132\060\201\203\061\013\060\011\006\003\125\004  
\006\023\002\105\123\061\113\060\111\006\003\125\004\012\023\102  
\101\147\145\156\143\151\141\040\116\157\164\141\162\151\141\154  
\040\144\145\040\103\145\162\164\151\146\151\143\141\143\151\157  
\156\040\123\056\114\056\040\125\156\151\160\145\162\163\157\156  
\141\154\040\055\040\103\111\106\040\102\070\063\063\071\065\071  
\070\070\061\047\060\045\006\003\125\004\003\023\036\101\116\103  
\105\122\124\040\103\145\162\164\151\146\151\143\141\144\157\163  
\040\116\157\164\141\162\151\141\154\145\163\060\202\001\042\060  
\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202  
\001\017\000\060\202\001\012\002\202\001\001\000\360\221\017\320  
\147\055\051\262\143\115\037\065\171\366\145\153\271\363\363\265

\130\223\047\144\117\247\325\133\202\005\162\233\177\035\256\010  
\322\214\320\321\311\140\260\231\031\065\326\031\306\000\071\151  
\175\042\357\164\042\203\264\176\352\020\213\076\063\034\341\335  
\144\066\051\363\122\112\156\101\303\276\121\014\037\143\270\277  
\215\251\077\061\061\073\273\361\066\104\074\047\145\024\171\165  
\346\020\244\074\130\033\313\123\142\022\365\207\132\106\242\171  
\243\140\343\026\250\336\204\246\372\345\314\304\020\062\366\102  
\332\107\115\030\075\346\172\017\053\016\143\377\147\175\103\325  
\164\026\220\064\264\017\316\046\163\041\301\112\332\144\344\117  
\343\043\265\331\366\253\267\112\177\226\341\313\107\375\006\103  
\321\224\064\151\012\376\075\350\146\252\046\014\325\143\071\006  
\160\223\255\174\263\344\107\301\073\107\216\151\227\014\221\240  
\114\007\217\311\200\114\256\160\223\150\217\241\303\042\302\361  
\165\233\050\175\222\222\125\072\250\131\031\354\022\061\034\357  
\235\027\334\271\100\011\133\364\055\023\046\163\002\003\001\000  
\001\243\202\001\247\060\202\001\243\060\034\006\003\125\035\021  
\004\025\060\023\201\021\141\156\143\145\162\164\100\141\156\143  
\145\162\164\056\143\157\155\060\037\006\003\125\035\043\004\030  
\060\026\200\024\204\367\372\162\136\210\144\146\035\050\214\260  
\167\275\014\152\237\114\115\142\060\017\006\003\125\035\023\001  
\001\377\004\005\060\003\001\001\377\060\202\001\040\006\003\125  
\035\040\004\202\001\027\060\202\001\023\060\202\001\017\006\011  
\053\006\001\004\001\201\223\150\001\060\202\001\000\060\045\006  
\010\053\006\001\005\005\007\002\001\026\031\150\164\164\160\072  
\057\057\167\167\167\056\141\156\143\145\162\164\056\143\157\155  
\057\143\160\163\060\201\326\006\010\053\006\001\005\005\007\002  
\002\060\201\311\060\015\026\006\101\116\103\105\122\124\060\003  
\002\001\001\032\201\267\101\147\145\156\143\151\141\040\116\157  
\164\141\162\151\141\154\040\144\145\040\103\145\162\164\151\146  
\151\143\141\143\151\157\156\056\040\114\141\040\144\145\143\154  
\141\162\141\143\151\157\156\040\144\145\040\160\162\141\143\164  
\151\143\141\163\040\144\145\040\143\145\162\164\151\146\151\141  
\143\151\157\156\040\161\165\145\040\162\151\147\145\040\145\154  
\040\146\165\156\143\151\157\156\141\155\151\145\156\164\157\040  
\144\145\040\154\141\040\160\162\145\163\145\156\164\145\040\141  
\165\164\157\162\151\144\141\144\040\163\145\040\145\156\143\165  
\145\156\164\162\141\040\144\151\163\160\157\156\151\142\154\145  
\040\145\156\040\150\164\164\160\072\057\057\167\167\167\056\141  
\156\143\145\162\164\056\143\157\155\057\143\160\163\060\016\006  
\003\125\035\017\001\001\377\004\004\003\002\001\206\060\035\006  
\003\125\035\016\004\026\004\024\204\367\372\162\136\210\144\146  
\035\050\214\260\167\275\014\152\237\114\115\142\060\015\006\011  
\052\206\110\206\367\015\001\001\005\005\000\003\202\001\001\000  
\057\370\345\330\063\245\302\224\156\136\300\361\356\241\114\012  
\255\206\017\300\063\335\236\322\331\233\356\305\053\205\051\166  
\254\245\022\123\223\035\252\007\354\351\071\144\013\150\360\165  
\044\351\321\206\214\234\123\152\353\025\241\011\267\031\007\271  
\235\217\002\262\033\111\160\302\143\164\335\013\252\376\007\306

\067\126\306\203\376\300\117\034\314\070\252\375\356\125\230\211  
\134\302\123\255\040\207\272\026\144\122\141\354\301\237\273\324  
\142\321\052\310\135\360\053\370\332\022\316\043\313\261\314\301  
\322\012\275\374\300\200\116\125\111\372\211\330\144\243\112\312  
\356\213\327\345\355\222\373\140\342\342\052\317\055\050\076\246  
\377\200\234\145\314\022\236\245\034\164\131\220\245\207\177\147  
\025\200\020\300\241\321\250\060\354\241\002\221\212\132\323\043  
\027\223\132\107\041\171\352\063\172\017\177\070\065\232\312\126  
\270\277\144\272\247\260\265\121\035\026\236\216\211\175\070\072  
\313\204\115\007\230\330\345\341\214\005\152\245\067\014\326\171  
\051\076\361\102\304\266\367\352\031\240\141\340\002\116\277\022  
END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "ANCERT Certificados Notariales"  
# Issuer: CN=ANCERT Certificados Notariales,O=Agencia Notarial de Certificacion S.L. Unipersonal - CIF  
B83395988,C=ES  
# Serial Number:f4:cf:89:ea:dd:a4:c6:3e:91:ad:48:0e:2d:22:36:84  
# Subject: CN=ANCERT Certificados Notariales,O=Agencia Notarial de Certificacion S.L. Unipersonal - CIF  
B83395988,C=ES  
# Not Valid Before: Wed Feb 11 15:58:30 2004  
# Not Valid After: Sun Feb 11 15:58:26 2024  
# Fingerprint (MD5): 45:f7:50:11:4e:c5:ad:bd:53:68:86:63:ec:7b:6a:e1  
# Fingerprint (SHA1): c0:9a:b0:c8:ad:71:14:71:4e:d5:e2:1a:5a:27:6a:dc:d5:e7:ef:cb  
CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "ANCERT Certificados Notariales"  
CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL  
\300\232\260\310\255\161\024\161\116\325\342\032\132\047\152\334  
\325\347\357\313  
END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL  
\105\367\120\021\116\305\255\275\123\150\206\143\354\173\152\341  
END

CKA\_ISSUER MULTILINE\_OCTAL  
\060\201\203\061\013\060\011\006\003\125\004\006\023\002\105\123  
\061\113\060\111\006\003\125\004\012\023\102\101\147\145\156\143  
\151\141\040\116\157\164\141\162\151\141\154\040\144\145\040\103  
\145\162\164\151\146\151\143\141\143\151\157\156\040\123\056\114  
\056\040\125\156\151\160\145\162\163\157\156\141\154\040\055\040  
\103\111\106\040\102\070\063\063\071\065\071\070\070\061\047\060  
\045\006\003\125\004\003\023\036\101\116\103\105\122\124\040\103  
\145\162\164\151\146\151\143\141\144\157\163\040\116\157\164\141

\162\151\141\154\145\163

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\021\000\364\317\211\352\335\244\306\076\221\255\110\016\055

\042\066\204

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "ANCERT Corporaciones de Derecho Publico"

# Issuer: CN=ANCERT Corporaciones de Derecho Publico,O=Agencia Notarial de Certificacion S.L. Unipersonal -  
CIF B83395988,C=ES

# Serial Number:3f:b2:e5:f2:d1:7c:8b:18:64:56:62:a9:39:81:7f:a7

# Subject: CN=ANCERT Corporaciones de Derecho Publico,O=Agencia Notarial de Certificacion S.L. Unipersonal  
- CIF B83395988,C=ES

# Not Valid Before: Wed Feb 11 17:22:45 2004

# Not Valid After: Sun Feb 11 17:22:45 2024

# Fingerprint (MD5): 20:6b:d6:8b:4a:8f:48:ab:e4:88:09:0d:e5:65:1a:50

# Fingerprint (SHA1): 0c:fd:83:db:ae:44:b9:a0:c8:f6:76:f3:b5:70:65:0b:94:b6:9d:bf

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "ANCERT Corporaciones de Derecho Publico"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\201\214\061\013\060\011\006\003\125\004\006\023\002\105\123

\061\113\060\111\006\003\125\004\012\023\102\101\147\145\156\143

\151\141\040\116\157\164\141\162\151\141\154\040\144\145\040\103

\145\162\164\151\146\151\143\141\143\151\157\156\040\123\056\114

\056\040\125\156\151\160\145\162\163\157\156\141\154\040\055\040

\103\111\106\040\102\070\063\063\071\065\071\070\070\061\060\060

\056\006\003\125\004\003\023\047\101\116\103\105\122\124\040\103

\157\162\160\157\162\141\143\151\157\156\145\163\040\144\145\040

\104\145\162\145\143\150\157\040\120\165\142\154\151\143\157

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\214\061\013\060\011\006\003\125\004\006\023\002\105\123

\061\113\060\111\006\003\125\004\012\023\102\101\147\145\156\143

\151\141\040\116\157\164\141\162\151\141\154\040\144\145\040\103

\145\162\164\151\146\151\143\141\143\151\157\156\040\123\056\114

\056\040\125\156\151\160\145\162\163\157\156\141\154\040\055\040

\103\111\106\040\102\070\063\063\071\065\071\070\070\061\060\060

\056\006\003\125\004\003\023\047\101\116\103\105\122\124\040\103



\157\162\160\157\162\141\143\151\157\156\145\163\040\144\145\040  
\104\145\162\145\143\150\157\040\120\165\142\154\151\143\157  
END  
CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL  
\002\020\077\262\345\362\321\174\213\030\144\126\142\251\071\201  
\177\247  
END  
CKA\_VALUE MULTILINE\_OCTAL  
\060\202\005\115\060\202\004\065\240\003\002\001\002\002\020\077  
\262\345\362\321\174\213\030\144\126\142\251\071\201\177\247\060  
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\201  
\214\061\013\060\011\006\003\125\004\006\023\002\105\123\061\113  
\060\111\006\003\125\004\012\023\102\101\147\145\156\143\151\141  
\040\116\157\164\141\162\151\141\154\040\144\145\040\103\145\162  
\164\151\146\151\143\141\143\151\157\156\040\123\056\114\056\040  
\125\156\151\160\145\162\163\157\156\141\154\040\055\040\103\111  
\106\040\102\070\063\063\071\065\071\070\070\061\060\060\056\006  
\003\125\004\003\023\047\101\116\103\105\122\124\040\103\157\162  
\160\157\162\141\143\151\157\156\145\163\040\144\145\040\104\145  
\162\145\143\150\157\040\120\165\142\154\151\143\157\060\036\027  
\015\060\064\060\062\061\061\061\067\062\062\064\065\132\027\015  
\062\064\060\062\061\061\061\067\062\062\064\065\132\060\201\214  
\061\013\060\011\006\003\125\004\006\023\002\105\123\061\113\060  
\111\006\003\125\004\012\023\102\101\147\145\156\143\151\141\040  
\116\157\164\141\162\151\141\154\040\144\145\040\103\145\162\164  
\151\146\151\143\141\143\151\157\156\040\123\056\114\056\040\125  
\156\151\160\145\162\163\157\156\141\154\040\055\040\103\111\106  
\040\102\070\063\063\071\065\071\070\070\061\060\060\056\006\003  
\125\004\003\023\047\101\116\103\105\122\124\040\103\157\162\160  
\157\162\141\143\151\157\156\145\163\040\144\145\040\104\145\162  
\145\143\150\157\040\120\165\142\154\151\143\157\060\202\001\042  
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003  
\202\001\017\000\060\202\001\012\002\202\001\001\000\242\041\225  
\207\334\212\353\326\172\220\250\150\065\375\027\374\164\072\124  
\020\222\065\223\102\165\056\330\076\313\251\224\241\276\152\067  
\077\122\272\244\173\332\204\231\026\171\116\000\150\324\037\023  
\351\106\073\074\112\235\203\072\330\041\357\302\362\100\105\341  
\017\140\105\004\355\374\212\030\056\371\075\344\244\021\062\040  
\216\072\267\356\226\100\025\032\231\351\041\235\162\254\315\037  
\211\256\252\331\241\100\260\250\147\276\374\172\016\107\261\136  
\274\370\060\152\216\067\237\005\102\354\054\303\246\033\213\253  
\304\120\075\372\344\163\365\041\260\270\125\137\207\340\242\107  
\070\057\100\137\117\154\253\224\044\126\343\114\217\176\220\351  
\047\202\050\233\230\272\232\326\265\233\127\157\153\025\034\371  
\273\160\051\175\074\367\023\250\321\161\361\260\376\210\105\161  
\251\245\164\145\313\303\371\365\003\017\020\303\206\060\000\156  
\301\300\046\242\210\376\041\307\062\075\273\306\173\033\267\233  
\212\263\372\261\174\161\331\001\247\102\220\252\057\230\220\204

\252\336\306\255\354\074\121\112\005\035\001\121\233\002\003\001  
\000\001\243\202\001\247\060\202\001\243\060\017\006\003\125\035  
\023\001\001\377\004\005\060\003\001\001\377\060\202\001\040\006  
\003\125\035\040\004\202\001\027\060\202\001\023\060\202\001\017  
\006\011\053\006\001\004\001\201\223\150\003\060\202\001\000\060  
\045\006\010\053\006\001\005\005\007\002\001\026\031\150\164\164  
\160\072\057\057\167\167\167\056\141\156\143\145\162\164\056\143  
\157\155\057\143\160\163\060\201\326\006\010\053\006\001\005\005  
\007\002\002\060\201\311\060\015\026\006\101\116\103\105\122\124  
\060\003\002\001\001\032\201\267\101\147\145\156\143\151\141\040  
\116\157\164\141\162\151\141\154\040\144\145\040\103\145\162\164  
\151\146\151\143\141\143\151\157\156\056\040\114\141\040\144\145  
\143\154\141\162\141\143\151\157\156\040\144\145\040\160\162\141  
\143\164\151\143\141\163\040\144\145\040\143\145\162\164\151\146  
\151\141\143\151\157\156\040\161\165\145\040\162\151\147\145\040  
\145\154\040\146\165\156\143\151\157\156\141\155\151\145\156\164  
\157\040\144\145\040\154\141\040\160\162\145\163\145\156\164\145  
\040\141\165\164\157\162\151\144\141\144\040\163\145\040\145\156  
\143\165\145\156\164\162\141\040\144\151\163\160\157\156\151\142  
\154\145\040\145\156\040\150\164\164\160\072\057\057\167\167\167  
\056\141\156\143\145\162\164\056\143\157\155\057\143\160\163\060  
\016\006\003\125\035\017\001\001\377\004\004\003\002\001\206\060  
\034\006\003\125\035\021\004\025\060\023\201\021\141\156\143\145  
\162\164\100\141\156\143\145\162\164\056\143\157\155\060\037\006  
\003\125\035\043\004\030\060\026\200\024\214\114\036\067\014\261  
\237\322\254\104\013\072\276\002\317\364\215\055\146\225\060\035  
\006\003\125\035\016\004\026\004\024\214\114\036\067\014\261\237  
\322\254\104\013\072\276\002\317\364\215\055\146\225\060\015\006  
\011\052\206\110\206\367\015\001\001\005\005\000\003\202\001\001  
\000\107\164\300\224\221\342\245\373\230\122\104\223\154\304\300  
\035\340\171\333\151\144\055\141\256\244\167\221\065\265\267\312  
\227\252\300\261\206\365\033\150\153\252\130\262\174\077\347\003  
\047\370\101\161\274\246\322\040\251\200\225\242\107\255\155\106  
\164\255\204\233\330\157\251\365\271\057\155\233\300\335\231\207  
\355\131\262\165\201\245\211\205\052\314\320\205\201\115\363\257  
\167\336\214\301\050\232\102\254\005\207\014\064\234\161\207\375  
\354\001\024\037\276\303\056\360\337\372\044\246\135\037\074\361  
\242\013\121\210\001\256\022\207\244\265\135\161\262\337\357\015  
\174\040\343\177\023\013\115\246\300\167\314\077\326\017\161\307  
\161\114\056\036\372\031\006\145\311\255\126\154\167\215\106\077  
\275\060\203\036\340\056\125\270\170\043\164\074\130\012\143\072  
\115\201\173\157\065\160\256\266\045\331\366\044\376\043\306\332  
\032\210\257\250\024\223\163\340\300\133\260\061\151\032\366\051  
\137\126\267\032\012\302\371\013\352\002\301\063\021\142\152\174  
\103\350\352\032\253\220\000\205\340\105\017\175\216\272\120\325  
\306

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "ANCERT Corporaciones de Derecho Publico"

# Issuer: CN=ANCERT Corporaciones de Derecho Publico,O=Agencia Notarial de Certificacion S.L. Unipersonal -  
CIF B83395988,C=ES

# Serial Number:3f:b2:e5:f2:d1:7c:8b:18:64:56:62:a9:39:81:7f:a7

# Subject: CN=ANCERT Corporaciones de Derecho Publico,O=Agencia Notarial de Certificacion S.L. Unipersonal  
- CIF B83395988,C=ES

# Not Valid Before: Wed Feb 11 17:22:45 2004

# Not Valid After: Sun Feb 11 17:22:45 2024

# Fingerprint (MD5): 20:6b:d6:8b:4a:8f:48:ab:e4:88:09:0d:e5:65:1a:50

# Fingerprint (SHA1): 0c:fd:83:db:ae:44:b9:a0:c8:f6:76:f3:b5:70:65:0b:94:b6:9d:bf

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "ANCERT Corporaciones de Derecho Publico"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\014\375\203\333\256\104\271\240\310\366\166\363\265\160\145\013  
\224\266\235\277

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\040\153\326\213\112\217\110\253\344\210\011\015\345\145\032\120

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\214\061\013\060\011\006\003\125\004\006\023\002\105\123  
\061\113\060\111\006\003\125\004\012\023\102\101\147\145\156\143  
\151\141\040\116\157\164\141\162\151\141\154\040\144\145\040\103  
\145\162\164\151\146\151\143\141\143\151\157\156\040\123\056\114  
\056\040\125\156\151\160\145\162\163\157\156\141\154\040\055\040  
\103\111\106\040\102\070\063\063\071\065\071\070\070\061\060\060  
\056\006\003\125\004\003\023\047\101\116\103\105\122\124\040\103  
\157\162\160\157\162\141\143\151\157\156\145\163\040\144\145\040  
\104\145\162\145\143\150\157\040\120\165\142\154\151\143\157

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\077\262\345\362\321\174\213\030\144\126\142\251\071\201  
\177\247

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "GLOBALTRUST"

```
Issuer: 1.2.840.113549.1.9.1=info@globaltrust.info,CN=GLOBALTRUST,OU=GLOBALTRUST Certification
Service,O=ARGE DATEN - Austrian Society for Data Protection,ST=Austria,L=Vienna,C=AT
Serial Number: 0 (0x0)
Subject: 1.2.840.113549.1.9.1=info@globaltrust.info,CN=GLOBALTRUST,OU=GLOBALTRUST Certification
Service,O=ARGE DATEN - Austrian Society for Data Protection,ST=Austria,L=Vienna,C=AT
Not Valid Before: Mon Aug 07 14:12:35 2006
Not Valid After: Thu Sep 18 14:12:35 2036
Fingerprint (MD5): df:0d:bc:7c:c8:36:b7:76:99:a1:ab:f0:d2:0f:89:6a
Fingerprint (SHA1): 34:2c:d9:d3:06:2d:a4:8c:34:69:65:29:7f:08:1e:bc:2e:f6:8f:dc
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GLOBALTRUST"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\324\061\013\060\011\006\003\125\004\006\023\002\101\124
\061\017\060\015\006\003\125\004\007\023\006\126\151\145\156\156
\141\061\020\060\016\006\003\125\004\010\023\007\101\165\163\164
\162\151\141\061\072\060\070\006\003\125\004\012\023\061\101\122
\107\105\040\104\101\124\105\116\040\055\040\101\165\163\164\162
\151\141\156\040\123\157\143\151\145\164\171\040\146\157\162\040
\104\141\164\141\040\120\162\157\164\145\143\164\151\157\156\061
\052\060\050\006\003\125\004\013\023\041\107\114\117\102\101\114
\124\122\125\123\124\040\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\123\145\162\166\151\143\145\061\024\060\022\006
\003\125\004\003\023\013\107\114\117\102\101\114\124\122\125\123
\124\061\044\060\042\006\011\052\206\110\206\367\015\001\011\001
\026\025\151\156\146\157\100\147\154\157\142\141\154\164\162\165
\163\164\056\151\156\146\157
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\324\061\013\060\011\006\003\125\004\006\023\002\101\124
\061\017\060\015\006\003\125\004\007\023\006\126\151\145\156\156
\141\061\020\060\016\006\003\125\004\010\023\007\101\165\163\164
\162\151\141\061\072\060\070\006\003\125\004\012\023\061\101\122
\107\105\040\104\101\124\105\116\040\055\040\101\165\163\164\162
\151\141\156\040\123\157\143\151\145\164\171\040\146\157\162\040
\104\141\164\141\040\120\162\157\164\145\143\164\151\157\156\061
\052\060\050\006\003\125\004\013\023\041\107\114\117\102\101\114
\124\122\125\123\124\040\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\123\145\162\166\151\143\145\061\024\060\022\006
\003\125\004\003\023\013\107\114\117\102\101\114\124\122\125\123
\124\061\044\060\042\006\011\052\206\110\206\367\015\001\011\001
\026\025\151\156\146\157\100\147\154\157\142\141\154\164\162\165
\163\164\056\151\156\146\157
END
```

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\000

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\007\376\060\202\005\346\240\003\002\001\002\002\001\000  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060  
\201\324\061\013\060\011\006\003\125\004\006\023\002\101\124\061  
\017\060\015\006\003\125\004\007\023\006\126\151\145\156\156\141  
\061\020\060\016\006\003\125\004\010\023\007\101\165\163\164\162  
\151\141\061\072\060\070\006\003\125\004\012\023\061\101\122\107  
\105\040\104\101\124\105\116\040\055\040\101\165\163\164\162\151  
\141\156\040\123\157\143\151\145\164\171\040\146\157\162\040\104  
\141\164\141\040\120\162\157\164\145\143\164\151\157\156\061\052  
\060\050\006\003\125\004\013\023\041\107\114\117\102\101\114\124  
\122\125\123\124\040\103\145\162\164\151\146\151\143\141\164\151  
\157\156\040\123\145\162\166\151\143\145\061\024\060\022\006\003  
\125\004\003\023\013\107\114\117\102\101\114\124\122\125\123\124  
\061\044\060\042\006\011\052\206\110\206\367\015\001\011\001\026  
\025\151\156\146\157\100\147\154\157\142\141\154\164\162\165\163  
\164\056\151\156\146\157\060\036\027\015\060\066\060\070\060\067  
\061\064\061\062\063\065\132\027\015\063\066\060\071\061\070\061  
\064\061\062\063\065\132\060\201\324\061\013\060\011\006\003\125  
\004\006\023\002\101\124\061\017\060\015\006\003\125\004\007\023  
\006\126\151\145\156\156\141\061\020\060\016\006\003\125\004\010  
\023\007\101\165\163\164\162\151\141\061\072\060\070\006\003\125  
\004\012\023\061\101\122\107\105\040\104\101\124\105\116\040\055  
\040\101\165\163\164\162\151\141\156\040\123\157\143\151\145\164  
\171\040\146\157\162\040\104\141\164\141\040\120\162\157\164\145  
\143\164\151\157\156\061\052\060\050\006\003\125\004\013\023\041  
\107\114\117\102\101\114\124\122\125\123\124\040\103\145\162\164  
\151\146\151\143\141\164\151\157\156\040\123\145\162\166\151\143  
\145\061\024\060\022\006\003\125\004\003\023\013\107\114\117\102  
\101\114\124\122\125\123\124\061\044\060\042\006\011\052\206\110  
\206\367\015\001\011\001\026\025\151\156\146\157\100\147\154\157  
\142\141\154\164\162\165\163\164\056\151\156\146\157\060\202\002  
\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000  
\003\202\002\017\000\060\202\002\012\002\202\002\001\000\322\022  
\107\354\137\230\350\015\206\025\111\304\335\354\236\361\154\315  
\121\266\373\225\117\213\304\220\075\123\063\261\323\023\305\110  
\342\245\277\365\364\003\204\017\234\170\161\366\222\227\361\133  
\131\165\030\077\047\013\121\057\134\150\307\241\353\000\363\366  
\225\075\151\303\176\302\254\304\012\066\162\172\133\246\320\367  
\001\173\050\307\052\307\062\140\356\131\270\327\013\047\335\263  
\105\005\053\173\144\247\163\134\350\223\002\227\150\354\374\204  
\333\236\324\325\201\107\306\234\300\254\227\313\031\352\207\245  
\012\243\270\165\044\347\120\047\015\253\026\371\126\135\261\201  
\001\026\175\363\351\341\044\363\010\041\271\272\254\135\236\307  
\110\171\177\152\312\337\071\167\004\155\033\156\072\315\177\316

\134\110\254\022\074\131\362\152\317\200\110\341\366\000\147\170  
\040\340\375\265\144\173\027\227\263\345\047\335\105\153\233\141  
\231\006\276\362\347\236\244\155\213\073\153\014\201\356\264\157  
\241\276\032\022\101\113\236\255\016\371\106\264\132\321\003\000  
\224\026\300\300\363\254\373\174\274\226\300\051\330\371\063\026  
\211\243\016\035\225\331\003\324\041\014\335\126\010\111\145\310  
\215\253\041\037\124\273\231\274\361\104\133\173\000\030\375\052  
\031\130\322\005\311\331\051\066\045\376\167\356\153\131\124\117  
\010\024\242\231\011\105\127\255\007\336\042\374\207\034\240\357  
\240\171\335\012\175\300\177\065\350\014\146\115\343\265\152\026  
\131\161\133\363\220\260\122\136\221\002\307\250\271\302\004\157  
\236\117\264\000\055\354\010\354\256\100\156\360\051\047\042\071  
\266\315\240\206\020\272\013\065\354\173\132\015\266\171\303\372  
\307\255\301\373\353\355\053\204\015\352\336\371\353\232\131\063  
\154\301\053\022\214\270\076\305\066\043\070\032\326\167\223\220  
\326\167\165\152\130\031\027\241\025\216\156\166\016\243\163\341  
\134\225\111\333\301\017\224\024\305\325\142\033\231\253\070\325  
\147\156\322\251\031\341\132\072\207\152\110\077\221\226\343\306  
\305\047\153\127\164\061\230\366\076\161\161\355\176\336\260\115  
\054\363\356\217\333\173\150\327\020\104\051\255\354\253\120\131  
\122\232\154\152\162\024\115\026\024\121\367\327\176\037\002\003  
\001\000\001\243\202\001\327\060\202\001\323\060\035\006\003\125  
\035\016\004\026\004\024\300\001\325\340\170\037\057\164\072\343  
\353\300\041\122\246\004\356\046\313\244\060\202\001\001\006\003  
\125\035\043\004\201\371\060\201\366\200\024\300\001\325\340\170  
\037\057\164\072\343\353\300\041\122\246\004\356\046\313\244\241  
\201\332\244\201\327\060\201\324\061\013\060\011\006\003\125\004  
\006\023\002\101\124\061\017\060\015\006\003\125\004\007\023\006  
\126\151\145\156\156\141\061\020\060\016\006\003\125\004\010\023  
\007\101\165\163\164\162\151\141\061\072\060\070\006\003\125\004  
\012\023\061\101\122\107\105\040\104\101\124\105\116\040\055\040  
\101\165\163\164\162\151\141\156\040\123\157\143\151\145\164\171  
\040\146\157\162\040\104\141\164\141\040\120\162\157\164\145\143  
\164\151\157\156\061\052\060\050\006\003\125\004\013\023\041\107  
\114\117\102\101\114\124\122\125\123\124\040\103\145\162\164\151  
\146\151\143\141\164\151\157\156\040\123\145\162\166\151\143\145  
\061\024\060\022\006\003\125\004\003\023\013\107\114\117\102\101  
\114\124\122\125\123\124\061\044\060\042\006\011\052\206\110\206  
\367\015\001\011\001\026\025\151\156\146\157\100\147\154\157\142  
\141\154\164\162\165\163\164\056\151\156\146\157\202\001\000\060  
\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377  
\060\013\006\003\125\035\017\004\004\003\002\001\306\060\021\006  
\003\125\035\040\004\012\060\010\060\006\006\004\125\035\040\000  
\060\075\006\003\125\035\021\004\066\060\064\201\025\151\156\146  
\157\100\147\154\157\142\141\154\164\162\165\163\164\056\151\156  
\146\157\206\033\150\164\164\160\072\057\057\167\167\167\056\147  
\154\157\142\141\154\164\162\165\163\164\056\151\156\146\157\060  
\075\006\003\125\035\022\004\066\060\064\201\025\151\156\146\157

\100\147\154\157\142\141\154\164\162\165\163\164\056\151\156\146  
\157\206\033\150\164\164\160\072\057\057\167\167\167\056\147\154  
\157\142\141\154\164\162\165\163\164\056\151\156\146\157\060\015  
\006\011\052\206\110\206\367\015\001\001\005\005\000\003\202\002  
\001\000\025\073\210\203\136\016\336\076\360\076\135\334\055\241  
\112\372\050\245\326\007\245\044\110\316\236\171\350\171\232\134  
\044\216\130\162\024\101\205\307\105\356\074\050\151\070\111\256  
\042\215\273\214\005\155\256\145\273\207\271\176\166\073\050\143  
\152\326\157\063\060\210\176\125\005\272\271\025\003\230\035\142  
\322\316\300\017\156\034\232\064\356\344\257\037\142\321\354\264  
\171\317\317\151\222\212\130\375\301\307\166\013\134\315\122\064  
\110\153\345\013\177\311\062\022\337\230\012\026\331\063\126\026  
\217\337\103\077\327\275\077\305\036\305\255\041\254\207\054\232  
\344\034\037\205\003\254\213\307\267\063\142\111\301\370\252\053  
\116\135\207\076\166\122\256\131\176\061\341\174\272\122\213\130  
\220\327\200\106\013\064\066\336\357\021\311\134\042\106\302\074  
\247\177\142\004\157\337\076\110\216\352\013\076\010\254\030\032  
\122\326\361\366\324\142\057\003\271\232\326\074\123\177\125\046  
\306\065\053\041\164\260\211\220\124\344\001\210\134\234\205\052  
\232\145\136\113\127\362\200\034\354\147\064\232\106\334\002\166  
\376\162\067\162\011\261\360\043\217\130\263\002\175\356\170\016  
\271\075\163\022\055\125\237\027\143\257\256\330\256\163\266\307  
\120\152\205\301\333\175\373\224\131\160\306\303\007\154\126\305  
\260\007\374\116\175\223\035\271\047\300\260\225\325\347\174\005  
\274\367\017\012\263\364\156\025\127\111\033\265\024\000\244\060  
\053\132\364\126\130\277\166\064\242\075\376\001\046\360\335\270  
\155\360\244\347\274\040\366\121\010\366\343\067\211\127\066\366  
\367\057\376\315\270\144\275\352\327\246\320\377\170\357\176\341  
\034\036\124\176\017\064\031\201\020\163\322\343\170\006\027\266  
\322\121\373\065\170\166\332\167\203\067\101\076\055\106\250\176  
\206\336\126\364\312\220\236\264\255\260\036\105\030\074\064\210  
\002\207\350\360\066\221\353\362\347\265\322\004\271\056\270\135  
\215\035\232\056\013\026\031\315\166\244\253\373\321\342\243\242  
\334\204\175\173\352\120\352\365\262\004\073\211\122\072\262\303  
\031\117\271\046\261\274\274\054\262\341\201\246\263\141\265\364  
\105\140\057\054\165\305\310\055\210\113\046\273\160\356\073\177  
\001\055

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "GLOBALTRUST"

# Issuer: 1.2.840.113549.1.9.1=info@globaltrust.info,CN=GLOBALTRUST,OU=GLOBALTRUST Certification  
Service,O=ARGE DATEN - Austrian Society for Data Protection,ST=Austria,L=Vienna,C=AT

# Serial Number: 0 (0x0)

# Subject: 1.2.840.113549.1.9.1=info@globaltrust.info,CN=GLOBALTRUST,OU=GLOBALTRUST Certification

Service,O=ARGE DATEN - Austrian Society for Data Protection,ST=Austria,L=Vienna,C=AT

# Not Valid Before: Mon Aug 07 14:12:35 2006

# Not Valid After: Thu Sep 18 14:12:35 2036

# Fingerprint (MD5): df:0d:bc:7c:c8:36:b7:76:99:a1:ab:f0:d2:0f:89:6a

# Fingerprint (SHA1): 34:2c:d9:d3:06:2d:a4:8c:34:69:65:29:7f:08:1e:bc:2e:f6:8f:dc

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "GLOBALTRUST"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\064\054\331\323\006\055\244\214\064\151\145\051\177\010\036\274  
\056\366\217\334

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\337\015\274\174\310\066\267\166\231\241\253\360\322\017\211\152

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\324\061\013\060\011\006\003\125\004\006\023\002\101\124  
\061\017\060\015\006\003\125\004\007\023\006\126\151\145\156\156  
\141\061\020\060\016\006\003\125\004\010\023\007\101\165\163\164  
\162\151\141\061\072\060\070\006\003\125\004\012\023\061\101\122  
\107\105\040\104\101\124\105\116\040\055\040\101\165\163\164\162  
\151\141\156\040\123\157\143\151\145\164\171\040\146\157\162\040  
\104\141\164\141\040\120\162\157\164\145\143\164\151\157\156\061  
\052\060\050\006\003\125\004\013\023\041\107\114\117\102\101\114  
\124\122\125\123\124\040\103\145\162\164\151\146\151\143\141\164  
\151\157\156\040\123\145\162\166\151\143\145\061\024\060\022\006  
\003\125\004\003\023\013\107\114\117\102\101\114\124\122\125\123  
\124\061\044\060\042\006\011\052\206\110\206\367\015\001\011\001  
\026\025\151\156\146\157\100\147\154\157\142\141\154\164\162\165  
\163\164\056\151\156\146\157

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\000

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "Certipost E-Trust TOP Root CA"

# Issuer: CN=Certipost E-Trust TOP Root CA,O=Certipost s.a./n.v.,C=BE

# Serial Number:04:00:00:00:00:01:05:52:64:c1:95

# Subject: CN=Certipost E-Trust TOP Root CA,O=Certipost s.a./n.v.,C=BE

# Not Valid Before: Tue Jul 26 10:00:00 2005

# Not Valid After: Sat Jul 26 10:00:00 2025



```
Fingerprint (MD5): b8:d3:12:03:4e:8c:0c:5a:47:c9:b6:c5:9e:5b:97:fd
Fingerprint (SHA1): 05:60:a2:c7:38:ff:98:d1:17:2a:94:fe:45:fb:8a:47:d6:65:37:1e
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certipost E-Trust TOP Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\123\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\034\060\032\006\003\125\004\012\023\023\103\145\162\164\151\160
\157\163\164\040\163\056\141\056\057\156\056\166\056\061\046\060
\044\006\003\125\004\003\023\035\103\145\162\164\151\160\157\163
\164\040\105\055\124\162\165\163\164\040\124\117\120\040\122\157
\157\164\040\103\101
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\123\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\034\060\032\006\003\125\004\012\023\023\103\145\162\164\151\160
\157\163\164\040\163\056\141\056\057\156\056\166\056\061\046\060
\044\006\003\125\004\003\023\035\103\145\162\164\151\160\157\163
\164\040\105\055\124\162\165\163\164\040\124\117\120\040\122\157
\157\164\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\013\004\000\000\000\000\001\005\122\144\301\225
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\314\060\202\002\264\240\003\002\001\002\002\013\004
\000\000\000\000\001\005\122\144\301\225\060\015\006\011\052\206
\110\206\367\015\001\001\005\005\000\060\123\061\013\060\011\006
\003\125\004\006\023\002\102\105\061\034\060\032\006\003\125\004
\012\023\023\103\145\162\164\151\160\157\163\164\040\163\056\141
\056\057\156\056\166\056\061\046\060\044\006\003\125\004\003\023
\035\103\145\162\164\151\160\157\163\164\040\105\055\124\162\165
\163\164\040\124\117\120\040\122\157\157\164\040\103\101\060\036
\027\015\060\065\060\067\062\066\061\060\060\060\060\060\132\027
\015\062\065\060\067\062\066\061\060\060\060\060\060\132\060\123
\061\013\060\011\006\003\125\004\006\023\002\102\105\061\034\060
\032\006\003\125\004\012\023\023\103\145\162\164\151\160\157\163
\164\040\163\056\141\056\057\156\056\166\056\061\046\060\044\006
\003\125\004\003\023\035\103\145\162\164\151\160\157\163\164\040
\105\055\124\162\165\163\164\040\124\117\120\040\122\157\157\164
\040\103\101\060\202\001\042\060\015\006\011\052\206\110\206\367
\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002
\202\001\001\000\245\324\113\100\326\373\361\065\030\073\242\260
\103\344\311\125\241\300\007\273\010\276\072\031\265\043\303\036
```

\235\263\010\112\364\103\113\351\301\031\140\220\337\204\327\130  
\306\072\335\012\054\225\054\275\227\177\376\242\165\332\006\343  
\253\233\154\321\270\317\104\206\301\122\140\267\334\076\073\260  
\362\351\304\121\074\112\271\203\271\116\141\152\003\233\034\122  
\200\072\120\264\040\262\333\323\262\306\124\177\313\140\233\310  
\044\236\257\011\307\145\015\050\366\332\232\042\302\063\156\362  
\363\045\324\244\371\226\365\157\252\074\153\334\101\060\345\346  
\157\312\110\037\060\170\035\171\175\247\321\277\256\305\136\103  
\371\306\057\203\166\233\064\112\244\050\130\053\250\210\205\104  
\152\053\362\126\102\166\231\220\063\252\356\371\041\317\362\075  
\371\167\204\313\335\051\204\304\324\212\052\244\071\134\076\371  
\034\045\150\115\365\347\233\135\261\032\064\136\312\002\163\371  
\010\304\014\155\136\335\022\052\345\173\305\066\170\122\235\062  
\301\305\050\245\040\250\345\230\015\271\157\317\271\200\236\345  
\276\271\233\375\002\003\001\000\001\243\201\240\060\201\235\060  
\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060  
\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377  
\060\035\006\003\125\035\016\004\026\004\024\113\336\276\005\061  
\056\363\065\310\330\312\247\126\305\224\015\264\132\145\305\060  
\110\006\003\125\035\040\004\101\060\077\060\075\006\011\003\220  
\016\007\001\000\001\002\000\060\060\060\056\006\010\053\006\001  
\005\005\007\002\001\026\042\150\164\164\160\072\057\057\167\167  
\167\056\145\055\164\162\165\163\164\056\142\145\057\103\120\123  
\057\121\116\143\145\162\164\163\040\060\021\006\011\140\206\110  
\001\206\370\102\001\001\004\004\003\002\000\007\060\015\006\011  
\052\206\110\206\367\015\001\001\005\005\000\003\202\001\001\000  
\211\143\314\242\316\370\124\152\174\131\064\170\253\001\264\226  
\055\052\041\156\100\055\137\320\226\042\231\203\005\034\345\044  
\315\342\365\065\004\277\000\226\007\354\262\244\072\152\053\043  
\076\311\017\312\023\035\270\044\226\011\046\330\074\052\201\316  
\341\201\310\311\163\076\365\273\017\010\036\220\340\260\222\271  
\322\072\227\120\340\006\216\344\202\060\074\140\040\267\244\356  
\253\211\006\341\374\045\273\221\324\371\267\137\150\143\250\240  
\150\206\153\247\354\222\313\042\372\120\133\023\130\047\256\053  
\103\013\266\027\306\060\162\004\063\104\046\112\104\007\037\163  
\240\203\101\051\340\222\006\274\325\001\352\376\274\257\161\353  
\040\037\012\135\015\240\051\136\316\344\101\121\125\226\303\037  
\264\061\245\243\363\123\352\377\302\234\206\162\317\066\114\126  
\132\006\062\176\136\253\112\241\316\247\353\237\244\214\052\271  
\044\213\270\265\363\006\115\246\312\175\231\373\366\125\352\256  
\110\171\356\046\131\323\037\014\123\025\367\142\121\371\204\015  
\226\154\136\261\010\346\131\010\053\046\051\012\301\203\100\163  
END  
CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

```

Trust for "Certipost E-Trust TOP Root CA"
Issuer: CN=Certipost E-Trust TOP Root CA,O=Certipost s.a./n.v.,C=BE
Serial Number:04:00:00:00:00:01:05:52:64:c1:95
Subject: CN=Certipost E-Trust TOP Root CA,O=Certipost s.a./n.v.,C=BE
Not Valid Before: Tue Jul 26 10:00:00 2005
Not Valid After: Sat Jul 26 10:00:00 2025
Fingerprint (MD5): b8:d3:12:03:4e:8c:0c:5a:47:c9:b6:c5:9e:5b:97:fd
Fingerprint (SHA1): 05:60:a2:c7:38:ff:98:d1:17:2a:94:fe:45:fb:8a:47:d6:65:37:1e
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certipost E-Trust TOP Root CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\005\140\242\307\070\377\230\321\027\052\224\376\105\373\212\107
\326\145\067\036
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\270\323\022\003\116\214\014\132\107\311\266\305\236\133\227\375
END
CKA_ISSUER MULTILINE_OCTAL
\060\123\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\034\060\032\006\003\125\004\012\023\023\103\145\162\164\151\160
\157\163\164\040\163\056\141\056\057\156\056\166\056\061\046\060
\044\006\003\125\004\003\023\035\103\145\162\164\151\160\157\163
\164\040\105\055\124\162\165\163\164\040\124\117\120\040\122\157
\157\164\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\013\004\000\000\000\000\001\005\122\144\301\225
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "Certipost E-Trust Primary Qualified CA"
Issuer: CN=Certipost E-Trust Primary Qualified CA,O=Certipost s.a./n.v.,C=BE
Serial Number:04:00:00:00:00:01:05:52:64:c4:25
Subject: CN=Certipost E-Trust Primary Qualified CA,O=Certipost s.a./n.v.,C=BE
Not Valid Before: Tue Jul 26 10:00:00 2005
Not Valid After: Sun Jul 26 10:00:00 2020
Fingerprint (MD5): 10:0e:ad:f3:5c:84:1d:8e:03:5f:2d:c9:39:37:f5:52
Fingerprint (SHA1): 74:2c:df:15:94:04:9c:bf:17:a2:04:6c:c6:39:bb:38:88:e0:2e:33
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE

```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certipost E-Trust Primary Qualified CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\134\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\034\060\032\006\003\125\004\012\023\023\103\145\162\164\151\160
\157\163\164\040\163\056\141\056\057\156\056\166\056\061\057\060
\055\006\003\125\004\003\023\046\103\145\162\164\151\160\157\163
\164\040\105\055\124\162\165\163\164\040\120\162\151\155\141\162
\171\040\121\165\141\154\151\146\151\145\144\040\103\101
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\134\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\034\060\032\006\003\125\004\012\023\023\103\145\162\164\151\160
\157\163\164\040\163\056\141\056\057\156\056\166\056\061\057\060
\055\006\003\125\004\003\023\046\103\145\162\164\151\160\157\163
\164\040\105\055\124\162\165\163\164\040\120\162\151\155\141\162
\171\040\121\165\141\154\151\146\151\145\144\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\013\004\000\000\000\000\001\005\122\144\304\045
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\336\060\202\002\306\240\003\002\001\002\002\013\004
\000\000\000\000\001\005\122\144\304\045\060\015\006\011\052\206
\110\206\367\015\001\001\005\005\000\060\134\061\013\060\011\006
\003\125\004\006\023\002\102\105\061\034\060\032\006\003\125\004
\012\023\023\103\145\162\164\151\160\157\163\164\040\163\056\141
\056\057\156\056\166\056\061\057\060\055\006\003\125\004\003\023
\046\103\145\162\164\151\160\157\163\164\040\105\055\124\162\165
\163\164\040\120\162\151\155\141\162\171\040\121\165\141\154\151
\146\151\145\144\040\103\101\060\036\027\015\060\065\060\067\062
\066\061\060\060\060\060\060\132\027\015\062\060\060\067\062\066
\061\060\060\060\060\060\132\060\134\061\013\060\011\006\003\125
\004\006\023\002\102\105\061\034\060\032\006\003\125\004\012\023
\023\103\145\162\164\151\160\157\163\164\040\163\056\141\056\057
\156\056\166\056\061\057\060\055\006\003\125\004\003\023\046\103
\145\162\164\151\160\157\163\164\040\105\055\124\162\165\163\164
\040\120\162\151\155\141\162\171\040\121\165\141\154\151\146\151
\145\144\040\103\101\060\202\001\042\060\015\006\011\052\206\110
\206\367\015\001\001\001\005\000\003\202\001\017\000\060\202\001
\012\002\202\001\001\000\256\040\322\170\333\232\240\162\234\004
\122\045\054\155\122\330\327\047\211\063\240\341\262\325\373\060
\165\153\055\177\034\147\216\016\347\037\022\337\027\171\030\273
\264\033\157\370\075\165\033\236\147\067\360\361\372\017\165\355
\206\235\003\004\241\050\160\055\074\262\153\240\163\121\343\065
\251\164\245\010\076\224\205\047\066\052\252\162\144\374\167\356
```

\166\224\034\162\353\277\062\307\167\003\152\045\202\011\005\257  
\137\140\074\177\254\033\274\222\350\074\164\131\316\361\174\124  
\055\070\256\226\360\254\157\241\063\014\041\132\001\272\043\040  
\133\240\206\002\325\123\334\111\037\250\062\263\257\073\106\073  
\266\357\237\071\263\070\013\347\172\212\366\050\371\247\157\120  
\051\310\171\130\213\111\322\245\330\205\176\126\361\151\025\170  
\104\021\065\327\245\124\076\253\146\045\322\333\343\030\361\056  
\053\342\161\043\011\067\144\103\102\164\062\226\167\336\227\242  
\351\226\206\234\045\104\011\324\001\235\121\176\063\267\011\104  
\345\200\227\015\144\133\167\030\227\245\113\251\236\020\235\207  
\372\126\247\317\012\175\002\003\001\000\001\243\201\240\060\201  
\235\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001  
\006\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001  
\001\377\060\035\006\003\125\035\016\004\026\004\024\360\170\371  
\007\167\020\273\334\036\241\256\171\373\060\020\333\306\064\370  
\027\060\110\006\003\125\035\040\004\101\060\077\060\075\006\011  
\003\220\016\007\001\000\001\002\000\060\060\060\056\006\010\053  
\006\001\005\005\007\002\001\026\042\150\164\164\160\072\057\057  
\167\167\167\056\145\055\164\162\165\163\164\056\142\145\057\103  
\120\123\057\121\116\143\145\162\164\163\040\060\021\006\011\140  
\206\110\001\206\370\102\001\001\004\004\003\002\000\007\060\015  
\006\011\052\206\110\206\367\015\001\001\005\005\000\003\202\001  
\001\000\154\341\330\137\164\130\351\160\111\326\312\015\054\130  
\332\312\144\266\121\117\303\006\144\001\351\212\163\035\236\317  
\106\170\277\073\205\206\342\075\112\030\224\052\201\167\157\202  
\370\157\364\356\042\374\235\030\041\162\140\273\030\200\202\225  
\373\371\367\225\044\201\146\301\265\303\265\322\266\166\213\073  
\201\134\270\241\016\053\001\024\213\200\011\100\356\370\140\114  
\031\344\027\315\047\001\263\143\022\005\244\010\311\264\277\236  
\120\116\265\336\017\222\063\146\165\320\075\347\043\174\352\045  
\161\174\376\076\056\066\171\241\345\051\120\043\065\005\225\170  
\273\237\171\144\334\127\110\047\054\342\134\063\315\302\273\176  
\150\167\247\057\243\111\027\162\341\000\204\153\175\172\257\071  
\013\054\325\330\127\144\062\154\204\012\152\166\072\323\254\315  
\235\261\347\067\334\354\014\057\305\127\140\337\210\365\103\261  
\001\144\046\264\047\202\020\262\243\120\357\227\346\177\277\221  
\207\263\333\220\251\052\342\172\064\154\163\111\364\350\215\056  
\153\212\335\241\212\177\143\320\277\130\036\257\314\077\222\120  
\055\321

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Certipost E-Trust Primary Qualified CA"

# Issuer: CN=Certipost E-Trust Primary Qualified CA,O=Certipost s.a./n.v.,C=BE

# Serial Number:04:00:00:00:01:05:52:64:c4:25

```
Subject: CN=Certipost E-Trust Primary Qualified CA,O=Certipost s.a./n.v.,C=BE
Not Valid Before: Tue Jul 26 10:00:00 2005
Not Valid After: Sun Jul 26 10:00:00 2020
Fingerprint (MD5): 10:0e:ad:f3:5c:84:1d:8e:03:5f:2d:c9:39:37:f5:52
Fingerprint (SHA1): 74:2c:df:15:94:04:9c:bf:17:a2:04:6c:c6:39:bb:38:88:e0:2e:33
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certipost E-Trust Primary Qualified CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\164\054\337\025\224\004\234\277\027\242\004\154\306\071\273\070
\210\340\056\063
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\020\016\255\363\134\204\035\216\003\137\055\311\071\067\365\122
END
CKA_ISSUER MULTILINE_OCTAL
\060\134\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\034\060\032\006\003\125\004\012\023\023\103\145\162\164\151\160
\157\163\164\040\163\056\141\056\057\156\056\166\056\061\057\060
\055\006\003\125\004\003\023\046\103\145\162\164\151\160\157\163
\164\040\105\055\124\162\165\163\164\040\120\162\151\155\141\162
\171\040\121\165\141\154\151\146\151\145\144\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\013\004\000\000\000\000\001\005\122\144\304\045
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
Certificate "Certipost E-Trust Primary Normalised CA"
Issuer: CN=Certipost E-Trust Primary Normalised CA,O=Certipost s.a./n.v.,C=BE
Serial Number:04:00:00:00:00:01:05:52:64:c7:61
Subject: CN=Certipost E-Trust Primary Normalised CA,O=Certipost s.a./n.v.,C=BE
Not Valid Before: Tue Jul 26 10:00:00 2005
Not Valid After: Sun Jul 26 10:00:00 2020
Fingerprint (MD5): 21:ef:b8:50:40:39:3f:75:6f:27:fe:e3:ea:58:70:eb
Fingerprint (SHA1): a5:9c:9b:10:ec:73:57:51:5a:bb:66:0c:4d:94:f7:3b:9e:6e:92:72
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certipost E-Trust Primary Normalised CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
```

CKA\_SUBJECT MULTILINE\_OCTAL

\060\135\061\013\060\011\006\003\125\004\006\023\002\102\105\061  
\034\060\032\006\003\125\004\012\023\023\103\145\162\164\151\160  
\157\163\164\040\163\056\141\056\057\156\056\166\056\061\060\060  
\056\006\003\125\004\003\023\047\103\145\162\164\151\160\157\163  
\164\040\105\055\124\162\165\163\164\040\120\162\151\155\141\162  
\171\040\116\157\162\155\141\154\151\163\145\144\040\103\101

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\135\061\013\060\011\006\003\125\004\006\023\002\102\105\061  
\034\060\032\006\003\125\004\012\023\023\103\145\162\164\151\160  
\157\163\164\040\163\056\141\056\057\156\056\166\056\061\060\060  
\056\006\003\125\004\003\023\047\103\145\162\164\151\160\157\163  
\164\040\105\055\124\162\165\163\164\040\120\162\151\155\141\162  
\171\040\116\157\162\155\141\154\151\163\145\144\040\103\101

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\013\004\000\000\000\000\001\005\122\144\307\141

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\340\060\202\002\310\240\003\002\001\002\002\013\004  
\000\000\000\000\001\005\122\144\307\141\060\015\006\011\052\206  
\110\206\367\015\001\001\005\005\000\060\135\061\013\060\011\006  
\003\125\004\006\023\002\102\105\061\034\060\032\006\003\125\004  
\012\023\023\103\145\162\164\151\160\157\163\164\040\163\056\141  
\056\057\156\056\166\056\061\060\060\056\006\003\125\004\003\023  
\047\103\145\162\164\151\160\157\163\164\040\105\055\124\162\165  
\163\164\040\120\162\151\155\141\162\171\040\116\157\162\155\141  
\154\151\163\145\144\040\103\101\060\036\027\015\060\065\060\067  
\062\066\061\060\060\060\060\060\132\027\015\062\060\060\067\062  
\066\061\060\060\060\060\060\132\060\135\061\013\060\011\006\003  
\125\004\006\023\002\102\105\061\034\060\032\006\003\125\004\012  
\023\023\103\145\162\164\151\160\157\163\164\040\163\056\141\056  
\057\156\056\166\056\061\060\060\056\006\003\125\004\003\023\047  
\103\145\162\164\151\160\157\163\164\040\105\055\124\162\165\163  
\164\040\120\162\151\155\141\162\171\040\116\157\162\155\141\154  
\151\163\145\144\040\103\101\060\202\001\042\060\015\006\011\052  
\206\110\206\367\015\001\001\001\005\000\003\202\001\017\000\060  
\202\001\012\002\202\001\001\000\325\263\252\122\204\172\027\223  
\042\017\270\004\030\312\311\362\202\052\254\025\013\247\120\161  
\266\114\045\153\367\377\001\252\127\132\167\116\136\023\024\015  
\125\362\036\361\205\315\205\327\202\034\014\332\011\053\275\375  
\274\236\376\155\211\115\242\002\044\346\121\352\067\177\061\106  
\132\173\232\166\263\056\240\135\137\344\370\231\012\007\276\356  
\222\046\022\311\173\347\135\154\320\203\107\016\300\214\247\321  
\171\127\300\013\031\234\233\236\103\305\116\221\045\316\210\053  
\155\171\331\171\212\326\146\116\042\303\032\105\116\357\310\260

\142\046\116\046\124\120\237\014\157\263\153\314\174\237\177\336  
\017\015\265\217\303\153\324\341\302\373\273\126\120\252\214\075  
\217\000\213\074\374\110\027\152\322\132\363\165\155\145\201\275  
\106\135\237\242\142\123\256\316\363\251\344\221\053\132\046\303  
\171\146\321\246\123\146\065\034\006\161\261\356\231\016\304\373  
\130\022\254\042\106\055\342\042\222\333\341\074\277\273\376\206  
\347\223\064\163\317\170\151\323\313\336\371\014\262\150\332\311  
\212\012\140\124\304\363\126\143\002\003\001\000\001\243\201\240  
\060\201\235\060\016\006\003\125\035\017\001\001\377\004\004\003  
\002\001\006\060\017\006\003\125\035\023\001\001\377\004\005\060  
\003\001\001\377\060\110\006\003\125\035\040\004\101\060\077\060  
\075\006\011\003\220\016\007\001\000\001\002\000\060\060\060\056  
\006\010\053\006\001\005\005\007\002\001\026\042\150\164\164\160  
\072\057\057\167\167\167\056\145\055\164\162\165\163\164\056\142  
\145\057\103\120\123\057\121\116\143\145\162\164\163\040\060\035  
\006\003\125\035\016\004\026\004\024\021\362\013\226\322\063\070  
\201\127\130\023\375\100\244\021\157\116\231\372\147\060\021\006  
\011\140\206\110\001\206\370\102\001\001\004\004\003\002\000\007  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003  
\202\001\001\000\065\153\117\336\235\363\003\266\035\310\274\215  
\347\136\152\236\251\351\355\242\053\227\352\257\321\341\106\323  
\002\111\175\304\122\205\353\272\366\323\277\071\142\030\235\223  
\111\275\170\003\277\323\136\025\335\357\047\034\341\273\105\001  
\042\201\000\115\072\340\205\312\132\062\003\314\040\217\257\357  
\301\333\250\372\363\334\327\262\261\017\003\201\011\051\340\161  
\174\213\372\177\313\066\156\033\350\024\316\360\113\046\241\062  
\051\117\314\264\365\207\110\014\023\374\307\235\257\253\324\223  
\365\052\115\177\110\202\130\076\027\377\303\200\052\253\077\127  
\125\270\071\054\146\020\144\046\155\214\153\326\335\240\203\032  
\132\126\021\226\106\275\256\160\050\326\070\127\133\221\325\077  
\115\351\254\263\303\044\112\226\145\134\064\320\036\324\277\010  
\245\227\135\367\106\333\166\360\315\076\165\143\000\053\257\255  
\256\206\336\137\246\231\124\015\205\043\245\374\272\355\033\122  
\372\111\030\167\205\133\252\162\233\047\010\065\105\067\047\333  
\227\311\372\213\075\310\320\235\336\132\357\135\243\026\266\230  
\171\312\174\313

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "Certipost E-Trust Primary Normalised CA"  
# Issuer: CN=Certipost E-Trust Primary Normalised CA,O=Certipost s.a./n.v.,C=BE  
# Serial Number:04:00:00:00:00:01:05:52:64:c7:61  
# Subject: CN=Certipost E-Trust Primary Normalised CA,O=Certipost s.a./n.v.,C=BE  
# Not Valid Before: Tue Jul 26 10:00:00 2005  
# Not Valid After: Sun Jul 26 10:00:00 2020



```

Fingerprint (MD5): 21:ef:b8:50:40:39:3f:75:6f:27:fe:e3:ea:58:70:eb
Fingerprint (SHA1): a5:9c:9b:10:ec:73:57:51:5a:bb:66:0c:4d:94:f7:3b:9e:6e:92:72
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certipost E-Trust Primary Normalised CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\245\234\233\020\354\163\127\121\132\273\146\014\115\224\367\073
\236\156\222\162
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\041\357\270\120\100\071\077\165\157\047\376\343\352\130\160\353
END
CKA_ISSUER MULTILINE_OCTAL
\060\135\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\034\060\032\006\003\125\004\012\023\023\103\145\162\164\151\160
\157\163\164\040\163\056\141\056\057\156\056\166\056\061\060\060
\056\006\003\125\004\003\023\047\103\145\162\164\151\160\157\163
\164\040\105\055\124\162\165\163\164\040\120\162\151\155\141\162
\171\040\116\157\162\155\141\154\151\163\145\144\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\013\004\000\000\000\000\001\005\122\144\307\141
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

```

```

Microsoft Code Signing Only Certificate
Certificate "Cybertrust Global Root"
Issuer: CN=Cybertrust Global Root,O=Cybertrust\, Inc
Serial Number:04:00:00:00:00:01:0f:85:aa:2d:48
Subject: CN=Cybertrust Global Root,O=Cybertrust\, Inc
Not Valid Before: Fri Dec 15 08:00:00 2006
Not Valid After: Wed Dec 15 08:00:00 2021
Fingerprint (MD5): 72:e4:4a:87:e3:69:40:80:77:ea:bc:e3:f4:ff:f0:e1
Fingerprint (SHA1): 5f:43:e5:b1:bf:f8:78:8c:ac:1c:c7:ca:4a:9a:c6:22:2b:cc:34:c6
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Cybertrust Global Root"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\073\061\030\060\026\006\003\125\004\012\023\017\103\171\142
\145\162\164\162\165\163\164\054\040\111\156\143\061\037\060\035

```

\006\003\125\004\003\023\026\103\171\142\145\162\164\162\165\163  
\164\040\107\154\157\142\141\154\040\122\157\157\164  
END  
CKA\_ID UTF8 "0"  
CKA\_ISSUER MULTILINE\_OCTAL  
\060\073\061\030\060\026\006\003\125\004\012\023\017\103\171\142  
\145\162\164\162\165\163\164\054\040\111\156\143\061\037\060\035  
\006\003\125\004\003\023\026\103\171\142\145\162\164\162\165\163  
\164\040\107\154\157\142\141\154\040\122\157\157\164  
END  
CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL  
\002\013\004\000\000\000\000\001\017\205\252\055\110  
END  
CKA\_VALUE MULTILINE\_OCTAL  
\060\202\003\241\060\202\002\211\240\003\002\001\002\002\013\004  
\000\000\000\000\001\017\205\252\055\110\060\015\006\011\052\206  
\110\206\367\015\001\001\005\005\000\060\073\061\030\060\026\006  
\003\125\004\012\023\017\103\171\142\145\162\164\162\165\163\164  
\054\040\111\156\143\061\037\060\035\006\003\125\004\003\023\026  
\103\171\142\145\162\164\162\165\163\164\040\107\154\157\142\141  
\154\040\122\157\157\164\060\036\027\015\060\066\061\062\061\065  
\060\070\060\060\060\060\132\027\015\062\061\061\062\061\065\060  
\070\060\060\060\060\132\060\073\061\030\060\026\006\003\125\004  
\012\023\017\103\171\142\145\162\164\162\165\163\164\054\040\111  
\156\143\061\037\060\035\006\003\125\004\003\023\026\103\171\142  
\145\162\164\162\165\163\164\040\107\154\157\142\141\154\040\122  
\157\157\164\060\202\001\042\060\015\006\011\052\206\110\206\367  
\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002  
\202\001\001\000\370\310\274\275\024\120\146\023\377\360\323\171  
\354\043\362\267\032\307\216\205\361\022\163\246\031\252\020\333  
\234\242\145\164\132\167\076\121\175\126\366\334\043\266\324\355  
\137\130\261\067\115\325\111\016\156\365\152\207\326\322\214\322  
\047\306\342\377\066\237\230\145\240\023\116\306\052\144\233\325  
\220\022\317\024\006\364\073\343\324\050\276\350\016\370\253\116  
\110\224\155\216\225\061\020\134\355\242\055\275\325\072\155\262  
\034\273\140\300\106\113\001\365\111\256\176\106\212\320\164\215  
\241\014\002\316\356\374\347\217\270\153\146\363\177\104\000\277  
\146\045\024\053\335\020\060\035\007\226\077\115\366\153\270\217  
\267\173\014\245\070\353\336\107\333\325\135\071\374\210\247\363  
\327\052\164\361\350\132\242\073\237\120\272\246\214\105\065\302  
\120\145\225\334\143\202\357\335\277\167\115\234\142\311\143\163  
\026\320\051\017\111\251\110\360\263\252\267\154\305\247\060\071  
\100\135\256\304\342\135\046\123\360\316\034\043\010\141\250\224  
\031\272\004\142\100\354\037\070\160\167\022\006\161\247\060\030  
\135\045\047\245\002\003\001\000\001\243\201\245\060\201\242\060  
\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060  
\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377  
\060\035\006\003\125\035\016\004\026\004\024\266\010\173\015\172

\314\254\040\114\206\126\062\136\317\253\156\205\055\160\127\060  
\077\006\003\125\035\037\004\070\060\066\060\064\240\062\240\060  
\206\056\150\164\164\160\072\057\057\167\167\167\062\056\160\165  
\142\154\151\143\055\164\162\165\163\164\056\143\157\155\057\143  
\162\154\057\143\164\057\143\164\162\157\157\164\056\143\162\154  
\060\037\006\003\125\035\043\004\030\060\026\200\024\266\010\173  
\015\172\314\254\040\114\206\126\062\136\317\253\156\205\055\160  
\127\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000  
\003\202\001\001\000\126\357\012\043\240\124\116\225\227\311\370  
\211\332\105\301\324\243\000\045\364\037\023\253\267\243\205\130  
\151\302\060\255\330\025\212\055\343\311\315\201\132\370\163\043  
\132\247\174\005\363\375\042\073\016\321\006\304\333\066\114\163  
\004\216\345\260\042\344\305\363\056\245\331\043\343\270\116\112  
\040\247\156\002\044\237\042\140\147\173\213\035\162\011\305\061  
\134\351\171\237\200\107\075\255\241\013\007\024\075\107\377\003  
\151\032\014\013\104\347\143\045\247\177\262\311\270\166\204\355  
\043\366\175\007\253\105\176\323\337\263\277\351\212\266\315\250  
\242\147\053\122\325\267\145\360\071\114\143\240\221\171\223\122  
\017\124\335\203\273\237\321\217\247\123\163\303\313\377\060\354  
\174\004\270\330\104\037\223\137\161\011\042\267\156\076\352\034  
\003\116\235\032\040\141\373\201\067\354\136\374\012\105\253\327  
\347\027\125\320\240\352\140\233\246\366\343\214\133\051\302\006  
\140\024\235\055\227\114\251\223\025\235\141\304\001\137\110\326  
\130\275\126\061\022\116\021\310\041\340\263\021\221\145\333\264  
\246\210\070\316\125

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "Cybertrust Global Root"  
# Issuer: CN=Cybertrust Global Root,O=Cybertrust\, Inc  
# Serial Number:04:00:00:00:00:01:0f:85:aa:2d:48  
# Subject: CN=Cybertrust Global Root,O=Cybertrust\, Inc  
# Not Valid Before: Fri Dec 15 08:00:00 2006  
# Not Valid After: Wed Dec 15 08:00:00 2021  
# Fingerprint (MD5): 72:e4:4a:87:e3:69:40:80:77:ea:bc:e3:f4:ff:f0:e1  
# Fingerprint (SHA1): 5f:43:e5:b1:bf:f8:78:8c:ac:1c:c7:ca:4a:9a:c6:22:2b:cc:34:c6  
CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "Cybertrust Global Root"  
CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL  
\137\103\345\261\277\370\170\214\254\034\307\312\112\232\306\042  
\053\314\064\306  
END

```

CKA_CERT_MD5_HASH MULTILINE_OCTAL
\162\344\112\207\343\151\100\200\167\352\274\343\364\377\360\341
END
CKA_ISSUER MULTILINE_OCTAL
\060\073\061\030\060\026\006\003\125\004\012\023\017\103\171\142
\145\162\164\162\165\163\164\054\040\111\156\143\061\037\060\035
\006\003\125\004\003\023\026\103\171\142\145\162\164\162\165\163
\164\040\107\154\157\142\141\154\040\122\157\157\164
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\013\004\000\000\000\000\001\017\205\252\055\110
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "IGC/A"
Issuer:
1.2.840.113549.1.9.1=igca@sgdn.pm.gouv.fr,CN=IGC/A,OU=DCSSI,O=PM/SGDN,L=Paris,ST=France,C=FR
Serial Number:39:11:45:10:94
Subject:
1.2.840.113549.1.9.1=igca@sgdn.pm.gouv.fr,CN=IGC/A,OU=DCSSI,O=PM/SGDN,L=Paris,ST=France,C=FR
Not Valid Before: Fri Dec 13 14:29:23 2002
Not Valid After: Sat Oct 17 14:29:22 2020
Fingerprint (MD5): 0c:7f:dd:6a:f4:2a:b9:c8:9b:bd:20:7e:a9:db:5c:37
Fingerprint (SHA1): 60:d6:89:74:b5:c2:65:9e:8a:0f:c1:88:7c:88:d2:46:69:1b:18:2c
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "IGC/A"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\205\061\013\060\011\006\003\125\004\006\023\002\106\122
\061\017\060\015\006\003\125\004\010\023\006\106\162\141\156\143
\145\061\016\060\014\006\003\125\004\007\023\005\120\141\162\151
\163\061\020\060\016\006\003\125\004\012\023\007\120\115\057\123
\107\104\116\061\016\060\014\006\003\125\004\013\023\005\104\103
\123\123\111\061\016\060\014\006\003\125\004\003\023\005\111\107
\103\057\101\061\043\060\041\006\011\052\206\110\206\367\015\001
\011\001\026\024\151\147\143\141\100\163\147\144\156\056\160\155
\056\147\157\165\166\056\146\162
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\205\061\013\060\011\006\003\125\004\006\023\002\106\122

```

\061\017\060\015\006\003\125\004\010\023\006\106\162\141\156\143  
\145\061\016\060\014\006\003\125\004\007\023\005\120\141\162\151  
\163\061\020\060\016\006\003\125\004\012\023\007\120\115\057\123  
\107\104\116\061\016\060\014\006\003\125\004\013\023\005\104\103  
\123\123\111\061\016\060\014\006\003\125\004\003\023\005\111\107  
\103\057\101\061\043\060\041\006\011\052\206\110\206\367\015\001  
\011\001\026\024\151\147\143\141\100\163\147\144\156\056\160\155  
\056\147\157\165\166\056\146\162

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\005\071\021\105\020\224

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\002\060\202\002\352\240\003\002\001\002\002\005\071  
\021\105\020\224\060\015\006\011\052\206\110\206\367\015\001\001  
\005\005\000\060\201\205\061\013\060\011\006\003\125\004\006\023  
\002\106\122\061\017\060\015\006\003\125\004\010\023\006\106\162  
\141\156\143\145\061\016\060\014\006\003\125\004\007\023\005\120  
\141\162\151\163\061\020\060\016\006\003\125\004\012\023\007\120  
\115\057\123\107\104\116\061\016\060\014\006\003\125\004\013\023  
\005\104\103\123\123\111\061\016\060\014\006\003\125\004\003\023  
\005\111\107\103\057\101\061\043\060\041\006\011\052\206\110\206  
\367\015\001\011\001\026\024\151\147\143\141\100\163\147\144\156  
\056\160\155\056\147\157\165\166\056\146\162\060\036\027\015\060  
\062\061\062\061\063\061\064\062\071\062\063\132\027\015\062\060  
\061\060\061\067\061\064\062\071\062\062\132\060\201\205\061\013  
\060\011\006\003\125\004\006\023\002\106\122\061\017\060\015\006  
\003\125\004\010\023\006\106\162\141\156\143\145\061\016\060\014  
\006\003\125\004\007\023\005\120\141\162\151\163\061\020\060\016  
\006\003\125\004\012\023\007\120\115\057\123\107\104\116\061\016  
\060\014\006\003\125\004\013\023\005\104\103\123\123\111\061\016  
\060\014\006\003\125\004\003\023\005\111\107\103\057\101\061\043  
\060\041\006\011\052\206\110\206\367\015\001\011\001\026\024\151  
\147\143\141\100\163\147\144\156\056\160\155\056\147\157\165\166  
\056\146\162\060\202\001\042\060\015\006\011\052\206\110\206\367  
\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002  
\202\001\001\000\262\037\321\320\142\305\063\073\300\004\206\210  
\263\334\370\210\367\375\337\103\337\172\215\232\111\134\366\116  
\252\314\034\271\241\353\047\211\362\106\351\073\112\161\325\035  
\216\055\317\346\255\253\143\120\307\124\013\156\022\311\220\066  
\306\330\057\332\221\252\150\305\162\376\027\012\262\027\176\171  
\265\062\210\160\312\160\300\226\112\216\344\125\315\035\047\224  
\277\316\162\052\354\134\371\163\040\376\275\367\056\211\147\270  
\273\107\163\022\367\321\065\151\072\362\012\271\256\377\106\102  
\106\242\277\241\205\032\371\277\344\377\111\205\367\243\160\206  
\062\034\135\237\140\367\251\255\245\377\317\321\064\371\175\133  
\027\306\334\326\016\050\153\302\335\361\365\063\150\235\116\374  
\207\174\066\022\326\243\200\350\103\015\125\141\224\352\144\067

\107\352\167\312\320\262\130\005\303\135\176\261\250\106\220\061  
\126\316\160\052\226\262\060\270\167\346\171\300\275\051\073\375  
\224\167\114\275\040\315\101\045\340\056\307\033\273\356\244\004  
\101\322\135\255\022\152\212\233\107\373\311\335\106\100\341\235  
\074\063\320\265\002\003\001\000\001\243\167\060\165\060\017\006  
\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060\013  
\006\003\125\035\017\004\004\003\002\001\106\060\025\006\003\125  
\035\040\004\016\060\014\060\012\006\010\052\201\172\001\171\001  
\001\001\060\035\006\003\125\035\016\004\026\004\024\243\005\057  
\030\140\120\302\211\012\335\053\041\117\377\216\116\250\060\061  
\066\060\037\006\003\125\035\043\004\030\060\026\200\024\243\005  
\057\030\140\120\302\211\012\335\053\041\117\377\216\116\250\060  
\061\066\060\015\006\011\052\206\110\206\367\015\001\001\005\005  
\000\003\202\001\001\000\005\334\046\330\372\167\025\104\150\374  
\057\146\072\164\340\135\344\051\377\006\007\023\204\112\253\317  
\155\240\037\121\224\370\111\313\164\066\024\274\025\335\333\211  
\057\335\217\240\135\174\365\022\353\237\236\070\244\107\314\263  
\226\331\276\234\045\253\003\176\063\017\225\201\015\375\026\340  
\210\276\067\360\154\135\320\061\233\062\053\135\027\145\223\230  
\140\274\156\217\261\250\074\036\331\034\363\251\046\102\371\144  
\035\302\347\222\366\364\036\132\252\031\122\135\257\350\242\367  
\140\240\366\215\360\211\365\156\340\012\005\001\225\311\213\040  
\012\272\132\374\232\054\074\275\303\267\311\135\170\045\005\077  
\126\024\233\014\332\373\072\110\376\227\151\136\312\020\206\367  
\116\226\004\010\115\354\260\276\135\334\073\216\117\301\375\232  
\066\064\232\114\124\176\027\003\110\225\010\021\034\007\157\205  
\010\176\135\115\304\235\333\373\256\316\262\321\263\270\203\154  
\035\262\263\171\361\330\160\231\176\360\023\002\316\136\335\121  
\323\337\066\201\241\033\170\057\161\263\361\131\114\106\030\050  
\253\205\322\140\126\132

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "IGC/A"

# Issuer:

1.2.840.113549.1.9.1=igca@sgdn.pm.gouv.fr,CN=IGC/A,OU=DCSSI,O=PM/SGDN,L=Paris,ST=France,C=FR

# Serial Number:39:11:45:10:94

# Subject:

1.2.840.113549.1.9.1=igca@sgdn.pm.gouv.fr,CN=IGC/A,OU=DCSSI,O=PM/SGDN,L=Paris,ST=France,C=FR

# Not Valid Before: Fri Dec 13 14:29:23 2002

# Not Valid After: Sat Oct 17 14:29:22 2020

# Fingerprint (MD5): 0c:7f:dd:6a:f4:2a:b9:c8:9b:bd:20:7e:a9:db:5c:37

# Fingerprint (SHA1): 60:d6:89:74:b5:c2:65:9e:8a:0f:c1:88:7c:88:d2:46:69:1b:18:2c

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

```

CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "IGC/A"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\140\326\211\164\265\302\145\236\212\017\301\210\174\210\322\106
\151\033\030\054
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\014\177\335\152\364\052\271\310\233\275\040\176\251\333\134\067
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\205\061\013\060\011\006\003\125\004\006\023\002\106\122
\061\017\060\015\006\003\125\004\010\023\006\106\162\141\156\143
\145\061\016\060\014\006\003\125\004\007\023\005\120\141\162\151
\163\061\020\060\016\006\003\125\004\012\023\007\120\115\057\123
\107\104\116\061\016\060\014\006\003\125\004\013\023\005\104\103
\123\123\111\061\016\060\014\006\003\125\004\003\023\005\111\107
\103\057\101\061\043\060\041\006\011\052\206\110\206\367\015\001
\011\001\026\024\151\147\143\141\100\163\147\144\156\056\160\155
\056\147\157\165\166\056\146\162
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\005\071\021\105\020\224
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

```

```

Microsoft Code Signing Only Certificate
Certificate "S-TRUST Authentication and Encryption Root CA 2005:PN"
Issuer: CN=S-TRUST Authentication and Encryption Root CA 2005:PN,O=Deutscher Sparkassen Verlag
GmbH,L=Stuttgart,ST=Baden-Wuerttemberg (BW),C=DE
Serial Number:37:19:18:e6:53:54:7c:1a:b5:b8:cb:59:5a:db:35:b7
Subject: CN=S-TRUST Authentication and Encryption Root CA 2005:PN,O=Deutscher Sparkassen Verlag
GmbH,L=Stuttgart,ST=Baden-Wuerttemberg (BW),C=DE
Not Valid Before: Wed Jun 22 00:00:00 2005
Not Valid After: Fri Jun 21 23:59:59 2030
Fingerprint (MD5): 04:4b:fd:c9:6c:da:2a:32:85:7c:59:84:61:46:8a:64
Fingerprint (SHA1): be:b5:a9:95:74:6b:9e:df:73:8b:56:e6:df:43:7a:77:be:10:6b:81
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "S-TRUST Authentication and Encryption Root CA 2005:PN"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\256\061\013\060\011\006\003\125\004\006\023\002\104\105

```

\061\040\060\036\006\003\125\004\010\023\027\102\141\144\145\156  
\055\127\165\145\162\164\164\145\155\142\145\162\147\040\050\102  
\127\051\061\022\060\020\006\003\125\004\007\023\011\123\164\165  
\164\164\147\141\162\164\061\051\060\047\006\003\125\004\012\023  
\040\104\145\165\164\163\143\150\145\162\040\123\160\141\162\153  
\141\163\163\145\156\040\126\145\162\154\141\147\040\107\155\142  
\110\061\076\060\074\006\003\125\004\003\023\065\123\055\124\122  
\125\123\124\040\101\165\164\150\145\156\164\151\143\141\164\151  
\157\156\040\141\156\144\040\105\156\143\162\171\160\164\151\157  
\156\040\122\157\157\164\040\103\101\040\062\060\060\065\072\120  
\116

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\256\061\013\060\011\006\003\125\004\006\023\002\104\105  
\061\040\060\036\006\003\125\004\010\023\027\102\141\144\145\156  
\055\127\165\145\162\164\164\145\155\142\145\162\147\040\050\102  
\127\051\061\022\060\020\006\003\125\004\007\023\011\123\164\165  
\164\164\147\141\162\164\061\051\060\047\006\003\125\004\012\023  
\040\104\145\165\164\163\143\150\145\162\040\123\160\141\162\153  
\141\163\163\145\156\040\126\145\162\154\141\147\040\107\155\142  
\110\061\076\060\074\006\003\125\004\003\023\065\123\055\124\122  
\125\123\124\040\101\165\164\150\145\156\164\151\143\141\164\151  
\157\156\040\141\156\144\040\105\156\143\162\171\160\164\151\157  
\156\040\122\157\157\164\040\103\101\040\062\060\060\065\072\120  
\116

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\067\031\030\346\123\124\174\032\265\270\313\131\132\333  
\065\267

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\173\060\202\003\143\240\003\002\001\002\002\020\067  
\031\030\346\123\124\174\032\265\270\313\131\132\333\065\267\060  
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\201  
\256\061\013\060\011\006\003\125\004\006\023\002\104\105\061\040  
\060\036\006\003\125\004\010\023\027\102\141\144\145\156\055\127  
\165\145\162\164\164\145\155\142\145\162\147\040\050\102\127\051  
\061\022\060\020\006\003\125\004\007\023\011\123\164\165\164\164  
\147\141\162\164\061\051\060\047\006\003\125\004\012\023\040\104  
\145\165\164\163\143\150\145\162\040\123\160\141\162\153\141\163  
\163\145\156\040\126\145\162\154\141\147\040\107\155\142\110\061  
\076\060\074\006\003\125\004\003\023\065\123\055\124\122\125\123  
\124\040\101\165\164\150\145\156\164\151\143\141\164\151\157\156  
\040\141\156\144\040\105\156\143\162\171\160\164\151\157\156\040  
\122\157\157\164\040\103\101\040\062\060\060\065\072\120\116\060  
\036\027\015\060\065\060\066\062\062\060\060\060\060\060\132  
\027\015\063\060\060\066\062\061\062\063\065\071\065\071\132\060



\201\256\061\013\060\011\006\003\125\004\006\023\002\104\105\061  
\040\060\036\006\003\125\004\010\023\027\102\141\144\145\156\055  
\127\165\145\162\164\164\145\155\142\145\162\147\040\050\102\127  
\051\061\022\060\020\006\003\125\004\007\023\011\123\164\165\164  
\164\147\141\162\164\061\051\060\047\006\003\125\004\012\023\040  
\104\145\165\164\163\143\150\145\162\040\123\160\141\162\153\141  
\163\163\145\156\040\126\145\162\154\141\147\040\107\155\142\110  
\061\076\060\074\006\003\125\004\003\023\065\123\055\124\122\125  
\123\124\040\101\165\164\150\145\156\164\151\143\141\164\151\157  
\156\040\141\156\144\040\105\156\143\162\171\160\164\151\157\156  
\040\122\157\157\164\040\103\101\040\062\060\060\065\072\120\116  
\060\202\001\042\060\015\006\011\052\206\110\206\367\015\001\001  
\001\005\000\003\202\001\017\000\060\202\001\012\002\202\001\001  
\000\331\265\112\301\323\063\352\323\106\263\321\342\114\322\365  
\266\203\320\157\325\030\351\223\257\047\216\023\315\265\045\066  
\120\064\022\144\051\241\125\341\072\140\223\236\050\311\343\363  
\233\341\004\260\043\277\225\212\216\133\033\101\177\132\303\350  
\115\114\325\044\026\076\207\110\324\047\256\346\367\123\035\273  
\014\000\357\076\141\161\255\277\072\172\130\037\224\075\134\201  
\325\325\157\337\270\233\322\365\345\313\203\162\222\302\123\262  
\202\002\353\255\255\137\026\055\222\123\166\361\211\266\054\365  
\301\057\340\247\112\157\240\060\152\062\353\232\164\003\150\170  
\023\235\312\057\233\013\035\276\317\165\015\046\227\233\307\365  
\136\012\237\170\337\263\274\354\232\272\357\125\217\033\232\246  
\007\143\051\027\131\142\011\052\171\007\167\245\340\321\027\151  
\351\133\335\366\220\253\342\230\012\000\321\045\155\236\327\205  
\207\057\222\361\321\166\203\117\013\072\131\067\050\057\063\247  
\027\120\326\040\013\012\364\046\371\237\070\347\055\244\270\233  
\211\215\255\255\311\152\175\211\027\273\366\177\200\203\172\346  
\355\002\003\001\000\001\243\201\222\060\201\217\060\022\006\003  
\125\035\023\001\001\377\004\010\060\006\001\001\377\002\001\000  
\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006  
\060\051\006\003\125\035\021\004\042\060\040\244\036\060\034\061  
\032\060\030\006\003\125\004\003\023\021\123\124\122\157\156\154  
\151\156\145\061\055\062\060\064\070\055\065\060\035\006\003\125  
\035\016\004\026\004\024\017\312\036\134\171\340\242\363\051\266  
\322\205\263\013\112\265\145\354\153\122\060\037\006\003\125\035  
\043\004\030\060\026\200\024\017\312\036\134\171\340\242\363\051  
\266\322\205\263\013\112\265\145\354\153\122\060\015\006\011\052  
\206\110\206\367\015\001\001\005\005\000\003\202\001\001\000\257  
\001\360\355\031\074\050\350\115\134\273\245\143\034\210\063\003  
\247\000\207\244\037\040\253\326\034\343\006\037\227\176\124\275  
\267\321\262\311\325\332\200\354\027\327\212\365\173\302\000\366  
\351\021\157\204\240\132\045\061\342\211\371\244\000\077\061\150  
\056\325\075\350\156\346\325\035\074\077\262\275\237\167\353\235  
\323\214\272\300\327\266\115\354\123\234\017\004\156\352\065\147  
\127\343\012\145\173\220\072\341\117\076\303\000\222\172\273\005  
\211\163\214\313\246\115\300\373\366\002\326\260\007\243\003\302

```
\047\100\237\014\344\205\202\055\257\232\102\035\320\307\215\370
\100\356\235\006\127\034\331\242\330\200\024\376\341\143\055\062
\207\325\224\122\226\072\106\306\161\226\075\367\230\016\262\221
\252\217\332\364\116\044\000\071\125\350\255\027\271\323\064\053
\112\251\100\314\027\052\125\145\101\164\102\176\365\300\257\310
\223\255\362\030\133\075\211\014\333\107\071\044\370\340\114\362
\037\260\075\012\312\005\116\211\041\032\343\052\231\254\374\177
\241\361\017\033\037\075\236\004\203\335\226\331\035\072\224
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

# Microsoft Code Signing Only Certificate

# Trust for "S-TRUST Authentication and Encryption Root CA 2005:PN"

# Issuer: CN=S-TRUST Authentication and Encryption Root CA 2005:PN,O=Deutscher Sparkassen Verlag  
GmbH,L=Stuttgart,ST=Baden-Wuerttemberg (BW),C=DE

# Serial Number:37:19:18:e6:53:54:7c:1a:b5:b8:cb:59:5a:db:35:b7

# Subject: CN=S-TRUST Authentication and Encryption Root CA 2005:PN,O=Deutscher Sparkassen Verlag  
GmbH,L=Stuttgart,ST=Baden-Wuerttemberg (BW),C=DE

# Not Valid Before: Wed Jun 22 00:00:00 2005

# Not Valid After: Fri Jun 21 23:59:59 2030

# Fingerprint (MD5): 04:4b:fd:c9:6c:da:2a:32:85:7c:59:84:61:46:8a:64

# Fingerprint (SHA1): be:b5:a9:95:74:6b:9e:df:73:8b:56:e6:df:43:7a:77:be:10:6b:81

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "S-TRUST Authentication and Encryption Root CA 2005:PN"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\276\265\251\225\164\153\236\337\163\213\126\346\337\103\172\167
\276\020\153\201
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\004\113\375\311\154\332\052\062\205\174\131\204\141\106\212\144
END
```

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\201\256\061\013\060\011\006\003\125\004\006\023\002\104\105
\061\040\060\036\006\003\125\004\010\023\027\102\141\144\145\156
\055\127\165\145\162\164\164\145\155\142\145\162\147\040\050\102
\127\051\061\022\060\020\006\003\125\004\007\023\011\123\164\165
\164\164\147\141\162\164\061\051\060\047\006\003\125\004\012\023
\040\104\145\165\164\163\143\150\145\162\040\123\160\141\162\153
\141\163\163\145\156\040\126\145\162\154\141\147\040\107\155\142
\110\061\076\060\074\006\003\125\004\003\023\065\123\055\124\122
\125\123\124\040\101\165\164\150\145\156\164\151\143\141\164\151
\157\156\040\141\156\144\040\105\156\143\162\171\160\164\151\157
\156\040\122\157\157\164\040\103\101\040\062\060\060\065\072\120
```

```

\116
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\067\031\030\346\123\124\174\032\265\270\313\131\132\333
\065\267
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "TC TrustCenter Universal CA I"
Issuer: CN=TC TrustCenter Universal CA I,OU=TC TrustCenter Universal CA,O=TC TrustCenter GmbH,C=DE
Serial Number: 1d:a2:00:01:00:02:ec:b7:60:80:78:8d:b6:06
Subject: CN=TC TrustCenter Universal CA I,OU=TC TrustCenter Universal CA,O=TC TrustCenter
GmbH,C=DE
Not Valid Before: Wed Mar 22 15:54:28 2006
Not Valid After: Wed Dec 31 22:59:59 2025
Fingerprint (MD5): 45:e1:a5:72:c5:a9:36:64:40:9e:f5:e4:58:84:67:8c
Fingerprint (SHA1): 6b:2f:34:ad:89:58:be:62:fd:b0:6b:5c:ce:bb:9d:d9:4f:4e:39:f3
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "TC TrustCenter Universal CA I"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\171\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\034\060\032\006\003\125\004\012\023\023\124\103\040\124\162\165
\163\164\103\145\156\164\145\162\040\107\155\142\110\061\044\060
\042\006\003\125\004\013\023\033\124\103\040\124\162\165\163\164
\103\145\156\164\145\162\040\125\156\151\166\145\162\163\141\154
\040\103\101\061\046\060\044\006\003\125\004\003\023\035\124\103
\040\124\162\165\163\164\103\145\156\164\145\162\040\125\156\151
\166\145\162\163\141\154\040\103\101\040\111
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\171\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\034\060\032\006\003\125\004\012\023\023\124\103\040\124\162\165
\163\164\103\145\156\164\145\162\040\107\155\142\110\061\044\060
\042\006\003\125\004\013\023\033\124\103\040\124\162\165\163\164
\103\145\156\164\145\162\040\125\156\151\166\145\162\163\141\154
\040\103\101\061\046\060\044\006\003\125\004\003\023\035\124\103
\040\124\162\165\163\164\103\145\156\164\145\162\040\125\156\151
\166\145\162\163\141\154\040\103\101\040\111
END

```

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\016\035\242\000\001\000\002\354\267\140\200\170\215\266\006

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\335\060\202\002\305\240\003\002\001\002\002\016\035

\242\000\001\000\002\354\267\140\200\170\215\266\006\060\015\006

\011\052\206\110\206\367\015\001\001\005\005\000\060\171\061\013

\060\011\006\003\125\004\006\023\002\104\105\061\034\060\032\006

\003\125\004\012\023\023\124\103\040\124\162\165\163\164\103\145

\156\164\145\162\040\107\155\142\110\061\044\060\042\006\003\125

\004\013\023\033\124\103\040\124\162\165\163\164\103\145\156\164

\145\162\040\125\156\151\166\145\162\163\141\154\040\103\101\061

\046\060\044\006\003\125\004\003\023\035\124\103\040\124\162\165

\163\164\103\145\156\164\145\162\040\125\156\151\166\145\162\163

\141\154\040\103\101\040\111\060\036\027\015\060\066\060\063\062

\062\061\065\065\064\062\070\132\027\015\062\065\061\062\063\061

\062\062\065\071\065\071\132\060\171\061\013\060\011\006\003\125

\004\006\023\002\104\105\061\034\060\032\006\003\125\004\012\023

\023\124\103\040\124\162\165\163\164\103\145\156\164\145\162\040

\107\155\142\110\061\044\060\042\006\003\125\004\013\023\033\124

\103\040\124\162\165\163\164\103\145\156\164\145\162\040\125\156

\151\166\145\162\163\141\154\040\103\101\061\046\060\044\006\003

\125\004\003\023\035\124\103\040\124\162\165\163\164\103\145\156

\164\145\162\040\125\156\151\166\145\162\163\141\154\040\103\101

\040\111\060\202\001\042\060\015\006\011\052\206\110\206\367\015

\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002\202

\001\001\000\244\167\043\226\104\257\220\364\061\247\020\364\046

\207\234\363\070\331\017\136\336\317\101\350\061\255\306\164\221

\044\226\170\036\011\240\233\232\225\112\112\365\142\174\002\250

\312\254\373\132\004\166\071\336\137\361\371\263\277\363\003\130

\125\322\252\267\343\004\042\321\370\224\332\042\010\000\215\323

\174\046\135\314\167\171\347\054\170\071\250\046\163\016\242\135

\045\151\205\117\125\016\232\357\306\271\104\341\127\075\337\037

\124\042\345\157\145\252\063\204\072\363\316\172\276\125\227\256

\215\022\017\024\063\342\120\160\303\111\207\023\274\121\336\327

\230\022\132\357\072\203\063\222\006\165\213\222\174\022\150\173

\160\152\017\265\233\266\167\133\110\131\235\344\357\132\255\363

\301\236\324\327\105\116\312\126\064\041\274\076\027\133\157\167

\014\110\001\103\051\260\335\077\226\156\346\225\252\014\300\040

\266\375\076\066\047\234\343\134\317\116\201\334\031\273\221\220

\175\354\346\227\004\036\223\314\042\111\327\227\206\266\023\012

\074\103\043\167\176\360\334\346\315\044\037\073\203\233\064\072

\203\064\343\002\003\001\000\001\243\143\060\141\060\037\006\003

\125\035\043\004\030\060\026\200\024\222\244\165\054\244\236\276

\201\104\353\171\374\212\305\225\245\353\020\165\163\060\017\006

\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060\016

\006\003\125\035\017\001\001\377\004\004\003\002\001\206\060\035

\006\003\125\035\016\004\026\004\024\222\244\165\054\244\236\276

```
\201\104\353\171\374\212\305\225\245\353\020\165\163\060\015\006
\011\052\206\110\206\367\015\001\001\005\005\000\003\202\001\001
\000\050\322\340\206\325\346\370\173\360\227\334\042\153\073\225
\024\126\017\021\060\245\232\117\072\260\072\340\006\313\145\365
\355\306\227\047\376\045\362\127\346\136\225\214\076\144\140\025
\132\177\057\015\001\305\261\140\375\105\065\317\360\262\277\006
\331\357\132\276\263\142\041\264\327\253\065\174\123\076\246\047
\361\241\055\332\032\043\235\314\335\354\074\055\236\047\064\135
\017\302\066\171\274\311\112\142\055\355\153\331\175\101\103\174
\266\252\312\355\141\261\067\202\025\011\032\212\026\060\330\354
\311\326\107\162\170\113\020\106\024\216\137\016\257\354\307\057
\253\020\327\266\361\156\354\206\262\302\350\015\222\163\334\242
\364\017\072\277\141\043\020\211\234\110\100\156\160\000\263\323
\272\067\104\130\021\172\002\152\210\360\067\064\360\031\351\254
\324\145\163\366\151\214\144\224\072\171\205\051\260\026\053\014
\202\077\006\234\307\375\020\053\236\017\054\266\236\343\025\277
\331\066\034\272\045\032\122\075\032\354\042\014\034\340\244\242
\075\360\350\071\317\201\300\173\355\135\037\157\305\320\013\327
\230
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

# Microsoft Code Signing Only Certificate

# Trust for "TC TrustCenter Universal CA I"

# Issuer: CN=TC TrustCenter Universal CA I,OU=TC TrustCenter Universal CA,O=TC TrustCenter GmbH,C=DE

# Serial Number: 1d:a2:00:01:00:02:ec:b7:60:80:78:8d:b6:06

# Subject: CN=TC TrustCenter Universal CA I,OU=TC TrustCenter Universal CA,O=TC TrustCenter GmbH,C=DE

# Not Valid Before: Wed Mar 22 15:54:28 2006

# Not Valid After: Wed Dec 31 22:59:59 2025

# Fingerprint (MD5): 45:e1:a5:72:c5:a9:36:64:40:9e:f5:e4:58:84:67:8c

# Fingerprint (SHA1): 6b:2f:34:ad:89:58:be:62:fd:b0:6b:5c:ce:bb:9d:d9:4f:4e:39:f3

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "TC TrustCenter Universal CA I"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\153\057\064\255\211\130\276\142\375\260\153\134\316\273\235\331
\117\116\071\363
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\105\341\245\162\305\251\066\144\100\236\365\344\130\204\147\214
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\171\061\013\060\011\006\003\125\004\006\023\002\104\105\061
```

```
\034\060\032\006\003\125\004\012\023\023\124\103\040\124\162\165
\163\164\103\145\156\164\145\162\040\107\155\142\110\061\044\060
\042\006\003\125\004\013\023\033\124\103\040\124\162\165\163\164
\103\145\156\164\145\162\040\125\156\151\166\145\162\163\141\154
\040\103\101\061\046\060\044\006\003\125\004\003\023\035\124\103
\040\124\162\165\163\164\103\145\156\164\145\162\040\125\156\151
\166\145\162\163\141\154\040\103\101\040\111
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\016\035\242\000\001\000\002\354\267\140\200\170\215\266\006
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "TC TrustCenter Universal CA II"

# Issuer: CN=TC TrustCenter Universal CA II,OU=TC TrustCenter Universal CA,O=TC TrustCenter GmbH,C=DE

# Serial Number:19:33:00:01:00:02:28:1a:9a:04:bc:f2:55:45

# Subject: CN=TC TrustCenter Universal CA II,OU=TC TrustCenter Universal CA,O=TC TrustCenter GmbH,C=DE

# Not Valid Before: Wed Mar 22 15:58:34 2006

# Not Valid After: Tue Dec 31 22:59:59 2030

# Fingerprint (MD5): a2:08:e4:b3:3e:ef:de:08:4b:60:d0:bf:79:52:49:8d

# Fingerprint (SHA1): 8c:c4:30:7b:c6:07:55:e7:b2:2d:d9:f7:fe:a2:45:93:6c:7c:f2:88

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "TC TrustCenter Universal CA II"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

```
\060\172\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\034\060\032\006\003\125\004\012\023\023\124\103\040\124\162\165
\163\164\103\145\156\164\145\162\040\107\155\142\110\061\044\060
\042\006\003\125\004\013\023\033\124\103\040\124\162\165\163\164
\103\145\156\164\145\162\040\125\156\151\166\145\162\163\141\154
\040\103\101\061\047\060\045\006\003\125\004\003\023\036\124\103
\040\124\162\165\163\164\103\145\156\164\145\162\040\125\156\151
\166\145\162\163\141\154\040\103\101\040\111\111
```

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\172\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\034\060\032\006\003\125\004\012\023\023\124\103\040\124\162\165
\163\164\103\145\156\164\145\162\040\107\155\142\110\061\044\060
\042\006\003\125\004\013\023\033\124\103\040\124\162\165\163\164
```

\103\145\156\164\145\162\040\125\156\151\166\145\162\163\141\154  
\040\103\101\061\047\060\045\006\003\125\004\003\023\036\124\103  
\040\124\162\165\163\164\103\145\156\164\145\162\040\125\156\151  
\166\145\162\163\141\154\040\103\101\040\111\111

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\016\031\063\000\001\000\002\050\032\232\004\274\362\125\105  
END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\337\060\202\003\307\240\003\002\001\002\002\016\031  
\063\000\001\000\002\050\032\232\004\274\362\125\105\060\015\006  
\011\052\206\110\206\367\015\001\001\005\005\000\060\172\061\013  
\060\011\006\003\125\004\006\023\002\104\105\061\034\060\032\006  
\003\125\004\012\023\023\124\103\040\124\162\165\163\164\103\145  
\156\164\145\162\040\107\155\142\110\061\044\060\042\006\003\125  
\004\013\023\033\124\103\040\124\162\165\163\164\103\145\156\164  
\145\162\040\125\156\151\166\145\162\163\141\154\040\103\101\061  
\047\060\045\006\003\125\004\003\023\036\124\103\040\124\162\165  
\163\164\103\145\156\164\145\162\040\125\156\151\166\145\162\163  
\141\154\040\103\101\040\111\111\060\036\027\015\060\066\060\063  
\062\062\061\065\065\070\063\064\132\027\015\063\060\061\062\063  
\061\062\062\065\071\065\071\132\060\172\061\013\060\011\006\003  
\125\004\006\023\002\104\105\061\034\060\032\006\003\125\004\012  
\023\023\124\103\040\124\162\165\163\164\103\145\156\164\145\162  
\040\107\155\142\110\061\044\060\042\006\003\125\004\013\023\033  
\124\103\040\124\162\165\163\164\103\145\156\164\145\162\040\125  
\156\151\166\145\162\163\141\154\040\103\101\061\047\060\045\006  
\003\125\004\003\023\036\124\103\040\124\162\165\163\164\103\145  
\156\164\145\162\040\125\156\151\166\145\162\163\141\154\040\103  
\101\040\111\111\060\202\002\042\060\015\006\011\052\206\110\206  
\367\015\001\001\001\005\000\003\202\002\017\000\060\202\002\012  
\002\202\002\001\000\213\324\167\153\064\154\345\066\330\152\134  
\136\070\356\374\325\035\171\003\073\173\203\142\104\202\116\210  
\355\336\203\377\356\314\120\142\005\005\225\231\166\230\366\271  
\362\137\330\006\221\222\302\366\055\146\027\037\375\123\003\350  
\250\215\143\251\156\341\326\033\214\274\230\263\213\073\324\344  
\056\312\175\205\111\046\133\171\270\032\213\100\236\177\273\311  
\077\143\054\317\321\132\174\272\050\042\101\022\132\115\371\027  
\167\374\205\375\302\111\340\052\030\177\351\240\054\234\371\104  
\374\014\150\071\102\365\047\005\276\216\025\172\140\235\360\073  
\307\074\346\076\026\274\257\166\336\152\267\242\341\253\106\105  
\353\214\145\175\321\227\363\227\021\045\253\131\353\240\042\331  
\202\335\230\355\176\342\372\240\141\012\112\062\336\054\027\367  
\155\104\352\201\107\131\227\127\067\003\071\335\136\202\042\324  
\063\270\372\046\011\266\274\071\210\057\121\025\116\233\303\073  
\337\023\202\210\335\113\064\362\063\326\220\351\363\123\334\065  
\174\300\303\331\174\170\263\315\160\077\215\152\340\243\201\110  
\344\051\255\143\270\360\374\050\144\073\231\263\175\376\232\235

\210\366\231\042\010\221\107\026\211\065\170\135\167\241\317\277  
\111\341\375\044\224\053\151\066\173\350\034\346\052\220\212\133  
\325\073\064\131\102\334\155\317\273\017\101\034\125\315\365\015  
\133\056\026\042\046\357\141\036\227\374\342\123\310\317\133\243  
\307\251\361\272\016\206\022\313\023\312\025\307\354\344\066\215  
\332\134\023\075\145\322\016\135\160\164\334\277\217\172\152\301  
\056\017\323\306\136\017\053\131\154\314\141\154\376\300\141\116  
\331\346\117\106\262\132\342\031\024\160\204\370\040\000\355\001  
\247\227\176\303\275\022\134\222\043\027\240\245\035\105\027\025  
\043\232\222\010\265\042\210\215\334\053\044\353\340\261\027\150  
\323\257\141\275\331\205\170\366\215\272\170\312\067\215\143\276  
\347\254\037\337\245\107\011\271\310\045\061\124\106\121\021\125  
\015\211\134\215\332\322\030\055\163\362\270\325\047\365\110\042  
\067\321\142\367\173\015\310\070\213\241\112\260\374\320\361\353  
\267\206\143\347\340\016\163\177\375\162\121\265\351\175\342\125  
\005\144\170\147\177\002\003\001\000\001\243\143\060\141\060\037  
\006\003\125\035\043\004\030\060\026\200\024\315\327\220\241\156  
\243\277\333\060\326\332\062\045\220\014\346\071\036\200\145\060  
\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377  
\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\206  
\060\035\006\003\125\035\016\004\026\004\024\315\327\220\241\156  
\243\277\333\060\326\332\062\045\220\014\346\071\036\200\145\060  
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003\202  
\002\001\000\176\026\210\350\023\016\066\314\156\052\205\007\070  
\306\126\211\172\343\107\041\146\114\120\010\061\132\121\320\374  
\246\136\024\165\336\114\073\354\361\355\314\176\021\007\112\141  
\356\352\263\216\072\244\063\306\355\212\102\146\117\361\074\173  
\311\245\005\101\231\261\354\054\133\356\334\226\322\210\123\113  
\170\064\271\156\346\273\017\305\172\246\174\016\030\337\157\017  
\164\114\321\251\361\241\351\330\124\144\314\136\226\170\242\126  
\032\301\163\262\025\306\127\005\337\332\367\110\044\212\216\177  
\152\251\371\115\351\076\152\316\140\054\175\055\220\010\366\143  
\217\025\320\055\234\214\377\361\375\374\014\026\120\126\024\373  
\272\227\206\356\264\111\003\124\356\033\131\177\060\072\002\202  
\206\041\256\376\360\025\362\337\116\203\346\231\305\272\065\367  
\040\220\214\070\355\165\317\341\056\367\004\060\373\121\255\216  
\202\044\100\312\175\051\135\325\331\367\145\144\374\252\237\164  
\270\175\222\135\322\204\051\340\023\352\212\367\320\253\304\256  
\357\025\305\302\211\362\173\266\073\111\230\141\363\116\162\221  
\067\214\111\222\351\310\354\052\240\367\111\156\174\015\044\306  
\153\154\362\070\057\312\160\005\345\177\337\306\053\053\200\200  
\325\332\157\313\100\273\330\033\360\044\311\020\310\104\002\176  
\056\323\230\252\242\015\361\053\320\332\372\216\034\377\124\350  
\341\112\156\335\250\326\170\265\067\245\254\144\325\024\043\307  
\016\245\353\341\011\070\327\300\174\140\245\135\230\217\214\002  
\325\334\126\250\363\115\130\251\013\324\174\144\164\001\062\362  
\337\017\112\212\251\002\242\242\035\204\167\302\361\314\227\275  
\064\031\164\135\342\164\076\165\047\367\257\277\356\174\016\155



```
\124\210\246\126\342\046\255\061\022\074\036\101\171\155\027\352
\023\136\037\365\134\237\111\131\243\262\057\243\102\303\372\250
\176\277\245\237\110\311\140\142\142\012\337\275\105\336\343\102
\265\121\226\375\304\365\032\231\270\122\242\104\315\055\141\214
\025\217\201\325\135\242\324\220\075\214\156\100\141\303\131\135
\330\331\341\366\164\107\042\171\164\175\332\312\243\157\067\025
\066\360\054\032\161\074\021\166\337\135\032\076\124\143\170\153
\145\176\037
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

# Microsoft Code Signing Only Certificate

# Trust for "TC TrustCenter Universal CA II"

# Issuer: CN=TC TrustCenter Universal CA II,OU=TC TrustCenter Universal CA,O=TC TrustCenter GmbH,C=DE

# Serial Number:19:33:00:01:00:02:28:1a:9a:04:bc:f2:55:45

# Subject: CN=TC TrustCenter Universal CA II,OU=TC TrustCenter Universal CA,O=TC TrustCenter GmbH,C=DE

# Not Valid Before: Wed Mar 22 15:58:34 2006

# Not Valid After: Tue Dec 31 22:59:59 2030

# Fingerprint (MD5): a2:08:e4:b3:3e:ef:de:08:4b:60:d0:bf:79:52:49:8d

# Fingerprint (SHA1): 8c:c4:30:7b:c6:07:55:e7:b2:2d:d9:f7:fe:a2:45:93:6c:7c:f2:88

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "TC TrustCenter Universal CA II"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\214\304\060\173\306\007\125\347\262\055\331\367\376\242\105\223
\154\174\362\210
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\242\010\344\263\076\357\336\010\113\140\320\277\171\122\111\215
END
```

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\172\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\034\060\032\006\003\125\004\012\023\023\124\103\040\124\162\165
\163\164\103\145\156\164\145\162\040\107\155\142\110\061\044\060
\042\006\003\125\004\013\023\033\124\103\040\124\162\165\163\164
\103\145\156\164\145\162\040\125\156\151\166\145\162\163\141\154
\040\103\101\061\047\060\045\006\003\125\004\003\023\036\124\103
\040\124\162\165\163\164\103\145\156\164\145\162\040\125\156\151
\166\145\162\163\141\154\040\103\101\040\111\111
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\016\031\063\000\001\000\002\050\032\232\004\274\362\125\105
END
```

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
Certificate "TC TrustCenter Class 2 CA II"
Issuer: CN=TC TrustCenter Class 2 CA II,OU=TC TrustCenter Class 2 CA,O=TC TrustCenter GmbH,C=DE
Serial Number:2e:6a:00:01:00:02:1f:d7:52:21:2c:11:5c:3b
Subject: CN=TC TrustCenter Class 2 CA II,OU=TC TrustCenter Class 2 CA,O=TC TrustCenter GmbH,C=DE
Not Valid Before: Thu Jan 12 14:38:43 2006
Not Valid After: Wed Dec 31 22:59:59 2025
Fingerprint (MD5): ce:78:33:5c:59:78:01:6e:18:ea:b9:36:a0:b9:2e:23
Fingerprint (SHA1): ae:50:83:ed:7c:f4:5c:bc:8f:61:c6:21:fe:68:5d:79:42:21:15:6e
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "TC TrustCenter Class 2 CA II"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
```

```
\060\166\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\034\060\032\006\003\125\004\012\023\023\124\103\040\124\162\165
\163\164\103\145\156\164\145\162\040\107\155\142\110\061\042\060
\040\006\003\125\004\013\023\031\124\103\040\124\162\165\163\164
\103\145\156\164\145\162\040\103\154\141\163\163\040\062\040\103
\101\061\045\060\043\006\003\125\004\003\023\034\124\103\040\124
\162\165\163\164\103\145\156\164\145\162\040\103\154\141\163\163
\040\062\040\103\101\040\111\111
```

```
END
```

```
CKA_ID UTF8 "0"
```

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\166\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\034\060\032\006\003\125\004\012\023\023\124\103\040\124\162\165
\163\164\103\145\156\164\145\162\040\107\155\142\110\061\042\060
\040\006\003\125\004\013\023\031\124\103\040\124\162\165\163\164
\103\145\156\164\145\162\040\103\154\141\163\163\040\062\040\103
\101\061\045\060\043\006\003\125\004\003\023\034\124\103\040\124
\162\165\163\164\103\145\156\164\145\162\040\103\154\141\163\163
\040\062\040\103\101\040\111\111
```

```
END
```

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\016\056\152\000\001\000\002\037\327\122\041\054\021\134\073
END
```

```
CKA_VALUE MULTILINE_OCTAL
```

```
\060\202\004\252\060\202\003\222\240\003\002\001\002\002\016\056
\152\000\001\000\002\037\327\122\041\054\021\134\073\060\015\006
\011\052\206\110\206\367\015\001\001\005\005\000\060\166\061\013
```

\060\011\006\003\125\004\006\023\002\104\105\061\034\060\032\006  
\003\125\004\012\023\023\124\103\040\124\162\165\163\164\103\145  
\156\164\145\162\040\107\155\142\110\061\042\060\040\006\003\125  
\004\013\023\031\124\103\040\124\162\165\163\164\103\145\156\164  
\145\162\040\103\154\141\163\163\040\062\040\103\101\061\045\060  
\043\006\003\125\004\003\023\034\124\103\040\124\162\165\163\164  
\103\145\156\164\145\162\040\103\154\141\163\163\040\062\040\103  
\101\040\111\111\060\036\027\015\060\066\060\061\061\062\061\064  
\063\070\064\063\132\027\015\062\065\061\062\063\061\062\062\065  
\071\065\071\132\060\166\061\013\060\011\006\003\125\004\006\023  
\002\104\105\061\034\060\032\006\003\125\004\012\023\023\124\103  
\040\124\162\165\163\164\103\145\156\164\145\162\040\107\155\142  
\110\061\042\060\040\006\003\125\004\013\023\031\124\103\040\124  
\162\165\163\164\103\145\156\164\145\162\040\103\154\141\163\163  
\040\062\040\103\101\061\045\060\043\006\003\125\004\003\023\034  
\124\103\040\124\162\165\163\164\103\145\156\164\145\162\040\103  
\154\141\163\163\040\062\040\103\101\040\111\111\060\202\001\042  
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003  
\202\001\017\000\060\202\001\012\002\202\001\001\000\253\200\207  
\233\216\360\303\174\207\327\350\044\202\021\263\074\335\103\142  
\356\370\303\105\332\350\341\240\137\321\052\262\352\223\150\337  
\264\310\326\103\351\304\165\131\177\374\341\035\370\061\160\043  
\033\210\236\047\271\173\375\072\322\311\251\351\024\057\220\276  
\003\122\301\111\315\366\375\344\010\146\013\127\212\242\102\240  
\270\325\177\151\134\220\062\262\227\015\312\112\334\106\076\002  
\125\211\123\343\032\132\313\066\306\007\126\367\214\317\021\364  
\114\273\060\160\004\225\245\366\071\214\375\163\201\010\175\211  
\136\062\036\042\251\042\105\113\260\146\056\060\314\237\145\375  
\374\313\201\251\361\340\073\257\243\206\321\211\352\304\105\171  
\120\135\256\351\041\164\222\115\213\131\202\217\224\343\351\112  
\361\347\111\260\024\343\365\142\313\325\162\275\037\271\322\237  
\240\315\250\372\001\310\331\015\337\332\374\107\235\263\310\124  
\337\111\112\361\041\251\376\030\116\356\110\324\031\273\357\175  
\344\342\235\313\133\266\156\377\343\315\132\347\164\202\005\272  
\200\045\070\313\344\151\236\257\101\252\032\204\365\002\003\001  
\000\001\243\202\001\064\060\202\001\060\060\017\006\003\125\035  
\023\001\001\377\004\005\060\003\001\001\377\060\016\006\003\125  
\035\017\001\001\377\004\004\003\002\001\006\060\035\006\003\125  
\035\016\004\026\004\024\343\253\124\114\200\241\333\126\103\267  
\221\112\313\363\202\172\023\134\010\253\060\201\355\006\003\125  
\035\037\004\201\345\060\201\342\060\201\337\240\201\334\240\201  
\331\206\065\150\164\164\160\072\057\057\167\167\167\056\164\162  
\165\163\164\143\145\156\164\145\162\056\144\145\057\143\162\154  
\057\166\062\057\164\143\137\143\154\141\163\163\137\062\137\143  
\141\137\111\111\056\143\162\154\206\201\237\154\144\141\160\072  
\057\057\167\167\167\056\164\162\165\163\164\143\145\156\164\145  
\162\056\144\145\057\103\116\075\124\103\045\062\060\124\162\165  
\163\164\103\145\156\164\145\162\045\062\060\103\154\141\163\163

```
\045\062\060\062\045\062\060\103\101\045\062\060\111\111\054\117
\075\124\103\045\062\060\124\162\165\163\164\103\145\156\164\145
\162\045\062\060\107\155\142\110\054\117\125\075\162\157\157\164
\143\145\162\164\163\054\104\103\075\164\162\165\163\164\143\145
\156\164\145\162\054\104\103\075\144\145\077\143\145\162\164\151
\146\151\143\141\164\145\122\145\166\157\143\141\164\151\157\156
\114\151\163\164\077\142\141\163\145\077\060\015\006\011\052\206
\110\206\367\015\001\001\005\005\000\003\202\001\001\000\214\327
\337\176\356\033\200\020\263\203\365\333\021\352\153\113\250\222
\030\331\367\007\071\365\054\276\006\165\172\150\123\025\034\352
\112\355\136\374\043\262\023\240\323\011\377\366\366\056\153\101
\161\171\315\342\155\375\256\131\153\205\035\270\116\042\232\355
\146\071\156\113\224\346\125\374\013\033\213\167\301\123\023\146
\211\331\050\326\213\363\105\112\143\267\375\173\013\141\135\270
\155\276\303\334\133\171\322\355\206\345\242\115\276\136\164\174
\152\355\026\070\037\177\130\201\132\032\353\062\210\055\262\363
\071\167\200\257\136\266\141\165\051\333\043\115\210\312\120\050
\313\205\322\323\020\242\131\156\323\223\124\000\172\242\106\225
\206\005\234\251\031\230\345\061\162\014\000\342\147\331\100\340
\044\063\173\157\054\271\134\253\145\235\054\254\166\352\065\231
\365\227\271\017\044\354\307\166\041\050\145\256\127\350\007\210
\165\112\126\240\322\005\072\244\346\215\222\210\054\363\362\341
\301\306\141\333\101\305\307\233\367\016\032\121\105\302\141\153
\334\144\047\027\214\132\267\332\164\050\315\227\344\275
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
Trust for "TC TrustCenter Class 2 CA II"
Issuer: CN=TC TrustCenter Class 2 CA II,OU=TC TrustCenter Class 2 CA,O=TC TrustCenter GmbH,C=DE
Serial Number:2e:6a:00:01:00:02:1f:d7:52:21:2c:11:5c:3b
Subject: CN=TC TrustCenter Class 2 CA II,OU=TC TrustCenter Class 2 CA,O=TC TrustCenter GmbH,C=DE
Not Valid Before: Thu Jan 12 14:38:43 2006
Not Valid After: Wed Dec 31 22:59:59 2025
Fingerprint (MD5): ce:78:33:5c:59:78:01:6e:18:ea:b9:36:a0:b9:2e:23
Fingerprint (SHA1): ae:50:83:ed:7c:f4:5c:bc:8f:61:c6:21:fe:68:5d:79:42:21:15:6e
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "TC TrustCenter Class 2 CA II"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\256\120\203\355\174\364\134\274\217\141\306\041\376\150\135\171
\102\041\025\156
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

\316\170\063\134\131\170\001\156\030\352\271\066\240\271\056\043

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\166\061\013\060\011\006\003\125\004\006\023\002\104\105\061  
\034\060\032\006\003\125\004\012\023\023\124\103\040\124\162\165  
\163\164\103\145\156\164\145\162\040\107\155\142\110\061\042\060  
\040\006\003\125\004\013\023\031\124\103\040\124\162\165\163\164  
\103\145\156\164\145\162\040\103\154\141\163\163\040\062\040\103  
\101\061\045\060\043\006\003\125\004\003\023\034\124\103\040\124  
\162\165\163\164\103\145\156\164\145\162\040\103\154\141\163\163  
\040\062\040\103\101\040\111\111

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\016\056\152\000\001\000\002\037\327\122\041\054\021\134\073

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "TC TrustCenter Class 4 CA II"

# Issuer: CN=TC TrustCenter Class 4 CA II,OU=TC TrustCenter Class 4 CA,O=TC TrustCenter GmbH,C=DE

# Serial Number:05:c0:00:01:00:02:41:d0:06:0a:4d:ce:75:10

# Subject: CN=TC TrustCenter Class 4 CA II,OU=TC TrustCenter Class 4 CA,O=TC TrustCenter GmbH,C=DE

# Not Valid Before: Thu Mar 23 14:10:23 2006

# Not Valid After: Wed Dec 31 22:59:59 2025

# Fingerprint (MD5): 9d:fb:f9:ac:ed:89:33:22:f4:28:48:83:25:23:5b:e0

# Fingerprint (SHA1): a6:9a:91:fd:05:7f:13:6a:42:63:0b:b1:76:0d:2d:51:12:0c:16:50

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "TC TrustCenter Class 4 CA II"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\166\061\013\060\011\006\003\125\004\006\023\002\104\105\061  
\034\060\032\006\003\125\004\012\023\023\124\103\040\124\162\165  
\163\164\103\145\156\164\145\162\040\107\155\142\110\061\042\060  
\040\006\003\125\004\013\023\031\124\103\040\124\162\165\163\164  
\103\145\156\164\145\162\040\103\154\141\163\163\040\064\040\103  
\101\061\045\060\043\006\003\125\004\003\023\034\124\103\040\124  
\162\165\163\164\103\145\156\164\145\162\040\103\154\141\163\163  
\040\064\040\103\101\040\111\111

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\166\061\013\060\011\006\003\125\004\006\023\002\104\105\061

\034\060\032\006\003\125\004\012\023\023\124\103\040\124\162\165  
\163\164\103\145\156\164\145\162\040\107\155\142\110\061\042\060  
\040\006\003\125\004\013\023\031\124\103\040\124\162\165\163\164  
\103\145\156\164\145\162\040\103\154\141\163\163\040\064\040\103  
\101\061\045\060\043\006\003\125\004\003\023\034\124\103\040\124  
\162\165\163\164\103\145\156\164\145\162\040\103\154\141\163\163  
\040\064\040\103\101\040\111\111

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\016\005\300\000\001\000\002\101\320\006\012\115\316\165\020  
END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\266\060\202\002\236\240\003\002\001\002\002\016\005  
\300\000\001\000\002\101\320\006\012\115\316\165\020\060\015\006  
\011\052\206\110\206\367\015\001\001\005\005\000\060\166\061\013  
\060\011\006\003\125\004\006\023\002\104\105\061\034\060\032\006  
\003\125\004\012\023\023\124\103\040\124\162\165\163\164\103\145  
\156\164\145\162\040\107\155\142\110\061\042\060\040\006\003\125  
\004\013\023\031\124\103\040\124\162\165\163\164\103\145\156\164  
\145\162\040\103\154\141\163\163\040\064\040\103\101\061\045\060  
\043\006\003\125\004\003\023\034\124\103\040\124\162\165\163\164  
\103\145\156\164\145\162\040\103\154\141\163\163\040\064\040\103  
\101\040\111\111\060\036\027\015\060\066\060\063\062\063\061\064  
\061\060\062\063\132\027\015\062\065\061\062\063\061\062\062\065  
\071\065\071\132\060\166\061\013\060\011\006\003\125\004\006\023  
\002\104\105\061\034\060\032\006\003\125\004\012\023\023\124\103  
\040\124\162\165\163\164\103\145\156\164\145\162\040\107\155\142  
\110\061\042\060\040\006\003\125\004\013\023\031\124\103\040\124  
\162\165\163\164\103\145\156\164\145\162\040\103\154\141\163\163  
\040\064\040\103\101\061\045\060\043\006\003\125\004\003\023\034  
\124\103\040\124\162\165\163\164\103\145\156\164\145\162\040\103  
\154\141\163\163\040\064\040\103\101\040\111\111\060\202\001\042  
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003  
\202\001\017\000\060\202\001\012\002\202\001\001\000\265\315\114  
\234\255\256\121\273\174\110\305\015\051\206\172\024\255\331\120  
\075\011\162\040\015\024\266\143\306\376\130\236\340\041\136\363  
\217\042\031\334\116\221\040\315\157\210\051\242\263\301\254\052  
\162\272\213\124\270\100\137\362\252\370\103\206\302\060\134\314  
\247\135\177\306\010\111\344\016\071\057\216\030\326\221\335\043  
\026\171\200\333\154\110\035\274\301\337\050\020\143\321\201\343  
\335\337\057\171\165\242\033\170\362\224\001\346\020\142\171\313  
\240\175\002\300\064\202\173\307\300\255\035\114\327\152\226\166  
\133\277\046\204\110\375\207\366\204\012\252\222\007\231\110\074  
\141\274\116\205\130\307\227\055\375\201\112\241\306\233\022\365  
\102\120\321\144\076\211\150\202\042\160\335\365\372\343\050\102  
\057\116\062\363\263\243\066\212\152\326\142\134\254\372\001\155  
\264\340\162\056\225\150\264\361\223\014\306\212\202\322\035\123  
\352\174\340\077\102\267\022\132\270\315\332\245\006\147\313\241

```
\167\175\245\226\360\222\036\147\016\035\102\106\346\371\355\373
\107\123\177\127\004\106\037\106\137\307\256\340\217\002\003\001
\000\001\243\102\060\100\060\017\006\003\125\035\023\001\001\377
\004\005\060\003\001\001\377\060\016\006\003\125\035\017\001\001
\377\004\004\003\002\001\206\060\035\006\003\125\035\016\004\026
\004\024\037\352\273\076\045\033\006\275\245\335\142\005\176\306
\114\132\277\350\017\103\060\015\006\011\052\206\110\206\367\015
\001\001\005\005\000\003\202\001\001\000\130\244\053\233\114\367
\344\244\222\244\234\145\230\031\142\042\374\162\062\351\004\135
\304\304\160\055\132\106\336\114\107\212\045\271\242\335\356\352
\022\257\110\215\357\053\147\333\073\314\064\230\052\367\010\107
\377\042\257\173\361\364\353\342\070\002\063\030\165\050\033\236
\166\145\254\210\003\162\362\070\107\035\214\365\237\012\210\123
\020\024\273\200\345\014\263\135\215\027\356\036\031\034\206\215
\024\147\170\214\222\313\036\041\111\367\177\323\030\277\234\171
\370\135\010\171\265\252\152\115\222\066\154\274\171\353\016\075
\171\212\330\366\243\126\160\135\336\333\117\171\322\172\322\225
\134\206\047\145\276\240\323\007\201\100\125\335\020\313\340\113
\210\202\300\220\175\070\347\277\226\341\227\272\232\253\102\017
\323\237\330\236\025\063\021\313\367\202\171\365\265\300\101\126
\222\341\337\125\003\255\110\317\323\362\056\261\307\055\126\114
\144\164\052\061\316\334\165\251\124\107\244\247\102\162\011\347
\341\002\246\107\262\004\315\102\023\341\141\014\340\170\072\042
\040\242\034\140\102\206\207\367\245\346
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
Trust for "TC TrustCenter Class 4 CA II"
Issuer: CN=TC TrustCenter Class 4 CA II,OU=TC TrustCenter Class 4 CA,O=TC TrustCenter GmbH,C=DE
Serial Number:05:c0:00:01:00:02:41:d0:06:0a:4d:ce:75:10
Subject: CN=TC TrustCenter Class 4 CA II,OU=TC TrustCenter Class 4 CA,O=TC TrustCenter GmbH,C=DE
Not Valid Before: Thu Mar 23 14:10:23 2006
Not Valid After: Wed Dec 31 22:59:59 2025
Fingerprint (MD5): 9d:fb:f9:ac:ed:89:33:22:f4:28:48:83:25:23:5b:e0
Fingerprint (SHA1): a6:9a:91:fd:05:7f:13:6a:42:63:0b:b1:76:0d:2d:51:12:0c:16:50
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "TC TrustCenter Class 4 CA II"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\246\232\221\375\005\177\023\152\102\143\013\261\166\015\055\121
\022\014\026\120
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

\235\373\371\254\355\211\063\042\364\050\110\203\045\043\133\340

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\166\061\013\060\011\006\003\125\004\006\023\002\104\105\061  
\034\060\032\006\003\125\004\012\023\023\124\103\040\124\162\165  
\163\164\103\145\156\164\145\162\040\107\155\142\110\061\042\060  
\040\006\003\125\004\013\023\031\124\103\040\124\162\165\163\164  
\103\145\156\164\145\162\040\103\154\141\163\163\040\064\040\103  
\101\061\045\060\043\006\003\125\004\003\023\034\124\103\040\124  
\162\165\163\164\103\145\156\164\145\162\040\103\154\141\163\163  
\040\064\040\103\101\040\111\111

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\016\005\300\000\001\000\002\101\320\006\012\115\316\165\020

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "Swisscom Root CA 1"

# Issuer: CN=Swisscom Root CA 1,OU=Digital Certificate Services,O=Swisscom,C=ch

# Serial Number:5c:0b:85:5c:0b:e7:59:41:df:57:cc:3f:7f:9d:a8:36

# Subject: CN=Swisscom Root CA 1,OU=Digital Certificate Services,O=Swisscom,C=ch

# Not Valid Before: Thu Aug 18 12:06:20 2005

# Not Valid After: Mon Aug 18 22:06:20 2025

# Fingerprint (MD5): f8:38:7c:77:88:df:2c:16:68:2e:c2:e2:52:4b:b8:f9

# Fingerprint (SHA1): 5f:3a:fc:0a:8b:64:f6:86:67:34:74:df:7e:a9:a2:fe:f9:fa:7a:51

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Swisscom Root CA 1"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\144\061\013\060\011\006\003\125\004\006\023\002\143\150\061  
\021\060\017\006\003\125\004\012\023\010\123\167\151\163\163\143  
\157\155\061\045\060\043\006\003\125\004\013\023\034\104\151\147  
\151\164\141\154\040\103\145\162\164\151\146\151\143\141\164\145  
\040\123\145\162\166\151\143\145\163\061\033\060\031\006\003\125  
\004\003\023\022\123\167\151\163\163\143\157\155\040\122\157\157  
\164\040\103\101\040\061

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\144\061\013\060\011\006\003\125\004\006\023\002\143\150\061  
\021\060\017\006\003\125\004\012\023\010\123\167\151\163\163\143



\157\155\061\045\060\043\006\003\125\004\013\023\034\104\151\147  
\151\164\141\154\040\103\145\162\164\151\146\151\143\141\164\145  
\040\123\145\162\166\151\143\145\163\061\033\060\031\006\003\125  
\004\003\023\022\123\167\151\163\163\143\157\155\040\122\157\157  
\164\040\103\101\040\061

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\134\013\205\134\013\347\131\101\337\127\314\077\177\235  
\250\066

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\331\060\202\003\301\240\003\002\001\002\002\020\134  
\013\205\134\013\347\131\101\337\127\314\077\177\235\250\066\060  
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\144  
\061\013\060\011\006\003\125\004\006\023\002\143\150\061\021\060  
\017\006\003\125\004\012\023\010\123\167\151\163\163\143\157\155  
\061\045\060\043\006\003\125\004\013\023\034\104\151\147\151\164  
\141\154\040\103\145\162\164\151\146\151\143\141\164\145\040\123  
\145\162\166\151\143\145\163\061\033\060\031\006\003\125\004\003  
\023\022\123\167\151\163\163\143\157\155\040\122\157\157\164\040  
\103\101\040\061\060\036\027\015\060\065\060\070\061\070\061\062  
\060\066\062\060\132\027\015\062\065\060\070\061\070\062\062\060  
\066\062\060\132\060\144\061\013\060\011\006\003\125\004\006\023  
\002\143\150\061\021\060\017\006\003\125\004\012\023\010\123\167  
\151\163\163\143\157\155\061\045\060\043\006\003\125\004\013\023  
\034\104\151\147\151\164\141\154\040\103\145\162\164\151\146\151  
\143\141\164\145\040\123\145\162\166\151\143\145\163\061\033\060  
\031\006\003\125\004\003\023\022\123\167\151\163\163\143\157\155  
\040\122\157\157\164\040\103\101\040\061\060\202\002\042\060\015  
\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202\002  
\017\000\060\202\002\012\002\202\002\001\000\320\271\260\250\014  
\331\273\077\041\370\033\325\063\223\200\026\145\040\165\262\075  
\233\140\155\106\310\214\061\157\027\303\372\232\154\126\355\074  
\305\221\127\303\315\253\226\111\220\052\031\113\036\243\155\127  
\335\361\053\142\050\165\105\136\252\326\133\372\013\045\330\241  
\026\371\034\304\056\346\225\052\147\314\320\051\156\074\205\064  
\070\141\111\261\000\237\326\072\161\137\115\155\316\137\271\251  
\344\211\177\152\122\372\312\233\362\334\251\371\235\231\107\077  
\116\051\137\264\246\215\135\173\013\231\021\003\003\376\347\333  
\333\243\377\035\245\315\220\036\001\037\065\260\177\000\333\220  
\157\306\176\173\321\356\172\172\247\252\014\127\157\244\155\305  
\023\073\260\245\331\355\062\034\264\136\147\213\124\334\163\207  
\345\323\027\174\146\120\162\135\324\032\130\301\331\317\330\211  
\002\157\247\111\264\066\135\320\244\336\007\054\266\165\267\050  
\221\326\227\276\050\365\230\036\352\133\046\311\275\260\227\163  
\332\256\221\046\353\150\301\371\071\025\326\147\113\012\155\117  
\313\317\260\344\102\161\214\123\171\347\356\341\333\035\240\156  
\035\214\032\167\065\134\026\036\053\123\037\064\213\321\154\374

\362\147\007\172\365\255\355\326\232\253\241\261\113\341\314\067  
\137\375\177\315\115\256\270\037\234\103\371\052\130\125\103\105  
\274\226\315\160\016\374\311\343\146\272\116\215\073\201\313\025  
\144\173\271\224\350\135\063\122\205\161\056\117\216\242\006\021  
\121\311\343\313\241\156\061\010\144\014\302\322\074\365\066\350  
\327\320\016\170\043\040\221\311\044\052\145\051\133\042\367\041  
\316\203\136\244\363\336\113\323\150\217\106\165\134\203\011\156  
\051\153\304\160\214\365\235\327\040\057\377\106\322\053\070\302  
\057\165\034\075\176\332\245\357\036\140\205\151\102\323\314\370  
\143\376\036\103\071\205\246\266\143\101\020\263\163\036\274\323  
\372\312\175\026\107\342\247\325\320\243\212\012\010\226\142\126  
\156\064\333\331\002\271\060\165\343\004\322\347\217\302\260\021  
\100\012\254\325\161\002\142\213\061\276\335\306\043\130\061\102  
\103\055\164\371\306\236\246\212\017\351\376\277\203\346\103\127  
\044\272\357\106\064\252\327\022\001\070\355\002\003\001\000\001  
\243\201\206\060\201\203\060\016\006\003\125\035\017\001\001\377  
\004\004\003\002\001\206\060\035\006\003\125\035\041\004\026\060  
\024\060\022\006\007\140\205\164\001\123\000\001\006\007\140\205  
\164\001\123\000\001\060\022\006\003\125\035\023\001\001\377\004  
\010\060\006\001\001\377\002\001\007\060\037\006\003\125\035\043  
\004\030\060\026\200\024\003\045\057\336\157\202\001\072\134\054  
\334\053\241\151\265\147\324\214\323\375\060\035\006\003\125\035  
\016\004\026\004\024\003\045\057\336\157\202\001\072\134\054\334  
\053\241\151\265\147\324\214\323\375\060\015\006\011\052\206\110  
\206\367\015\001\001\005\005\000\003\202\002\001\000\065\020\313  
\354\246\004\015\015\017\315\300\333\253\250\362\210\227\014\337  
\223\057\115\174\100\126\061\172\353\244\017\140\315\172\363\276  
\303\047\216\003\076\244\335\022\357\176\036\164\006\074\077\061  
\362\034\173\221\061\041\264\360\320\154\227\324\351\227\262\044  
\126\036\126\303\065\275\210\005\017\133\020\032\144\341\307\202  
\060\371\062\255\236\120\054\347\170\005\320\061\261\132\230\212  
\165\116\220\134\152\024\052\340\122\107\202\140\346\036\332\201  
\261\373\024\013\132\361\237\322\225\272\076\320\033\326\025\035  
\243\276\206\325\333\017\300\111\144\273\056\120\031\113\322\044  
\370\335\036\007\126\320\070\240\225\160\040\166\214\327\335\036  
\336\237\161\304\043\357\203\023\134\243\044\025\115\051\100\074  
\152\304\251\330\267\246\104\245\015\364\340\235\167\036\100\160  
\046\374\332\331\066\344\171\344\265\077\274\233\145\276\273\021  
\226\317\333\306\050\071\072\010\316\107\133\123\132\305\231\376  
\135\251\335\357\114\324\306\245\255\002\346\214\007\022\036\157  
\003\321\157\240\243\363\051\275\022\307\120\242\260\177\210\251  
\231\167\232\261\300\245\071\056\134\174\151\342\054\260\352\067  
\152\244\341\132\341\365\120\345\203\357\245\273\052\210\347\214  
\333\375\155\136\227\031\250\176\146\165\153\161\352\277\261\307  
\157\240\364\216\244\354\064\121\133\214\046\003\160\241\167\325  
\001\022\127\000\065\333\043\336\016\212\050\231\375\261\020\157  
\113\377\070\055\140\116\054\234\353\147\265\255\111\356\113\037  
\254\257\373\015\220\132\146\140\160\135\252\315\170\324\044\356

```
\310\101\240\223\001\222\234\152\236\374\271\044\305\263\025\202
\176\276\256\225\053\353\261\300\332\343\001\140\013\136\151\254
\204\126\141\276\161\027\376\035\023\017\376\306\207\105\351\376
\062\240\032\015\023\244\224\125\161\245\026\213\272\312\211\260
\262\307\374\217\330\124\265\223\142\235\316\317\131\373\075\030
\316\052\313\065\025\202\135\377\124\042\133\161\122\373\267\311
\376\140\233\000\101\144\360\252\052\354\266\102\103\316\211\146
\201\310\213\237\071\124\003\045\323\026\065\216\204\320\137\372
\060\032\365\232\154\364\016\123\371\072\133\321\034
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

# Microsoft Code Signing Only Certificate

# Trust for "Swisscom Root CA 1"

# Issuer: CN=Swisscom Root CA 1,OU=Digital Certificate Services,O=Swisscom,C=ch

# Serial Number:5c:0b:85:5c:0b:e7:59:41:df:57:cc:3f:7f:9d:a8:36

# Subject: CN=Swisscom Root CA 1,OU=Digital Certificate Services,O=Swisscom,C=ch

# Not Valid Before: Thu Aug 18 12:06:20 2005

# Not Valid After: Mon Aug 18 22:06:20 2025

# Fingerprint (MD5): f8:38:7c:77:88:df:2c:16:68:2e:c2:e2:52:4b:b8:f9

# Fingerprint (SHA1): 5f:3a:fc:0a:8b:64:f6:86:67:34:74:df:7e:a9:a2:fe:f9:fa:7a:51

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "Swisscom Root CA 1"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\137\072\374\012\213\144\366\206\147\064\164\337\176\251\242\376
\371\372\172\121
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\370\070\174\167\210\337\054\026\150\056\302\342\122\113\270\371
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\144\061\013\060\011\006\003\125\004\006\023\002\143\150\061
\021\060\017\006\003\125\004\012\023\010\123\167\151\163\163\143
\157\155\061\045\060\043\006\003\125\004\013\023\034\104\151\147
\151\164\141\154\040\103\145\162\164\151\146\151\143\141\164\145
\040\123\145\162\166\151\143\145\163\061\033\060\031\006\003\125
\004\003\023\022\123\167\151\163\163\143\157\155\040\122\157\157
\164\040\103\101\040\061
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\020\134\013\205\134\013\347\131\101\337\127\314\077\177\235
\250\066
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Certificate "Microsec e-Szigno Root CA"  
# Issuer: CN=Microsec e-Szigno Root CA,OU=e-Szigno CA,O=Microsec Ltd.,L=Budapest,C=HU  
# Serial Number:cc:b8:e7:bf:4e:29:1a:fd:a2:dc:66:a5:1c:2c:0f:11  
# Subject: CN=Microsec e-Szigno Root CA,OU=e-Szigno CA,O=Microsec Ltd.,L=Budapest,C=HU  
# Not Valid Before: Wed Apr 06 12:28:44 2005  
# Not Valid After: Thu Apr 06 12:28:44 2017  
# Fingerprint (MD5): f0:96:b6:2f:c5:10:d5:67:8e:83:25:32:e8:5e:2e:e5  
# Fingerprint (SHA1): 23:88:c9:d3:71:cc:9e:96:3d:ff:7d:3c:a7:ce:fc:d6:25:ec:19:0d

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "Microsec e-Szigno Root CA"  
CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL  
\060\162\061\013\060\011\006\003\125\004\006\023\002\110\125\061  
\021\060\017\006\003\125\004\007\023\010\102\165\144\141\160\145  
\163\164\061\026\060\024\006\003\125\004\012\023\015\115\151\143  
\162\157\163\145\143\040\114\164\144\056\061\024\060\022\006\003  
\125\004\013\023\013\145\055\123\172\151\147\156\157\040\103\101  
\061\042\060\040\006\003\125\004\003\023\031\115\151\143\162\157  
\163\145\143\040\145\055\123\172\151\147\156\157\040\122\157\157  
\164\040\103\101

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL  
\060\162\061\013\060\011\006\003\125\004\006\023\002\110\125\061  
\021\060\017\006\003\125\004\007\023\010\102\165\144\141\160\145  
\163\164\061\026\060\024\006\003\125\004\012\023\015\115\151\143  
\162\157\163\145\143\040\114\164\144\056\061\024\060\022\006\003  
\125\004\013\023\013\145\055\123\172\151\147\156\157\040\103\101  
\061\042\060\040\006\003\125\004\003\023\031\115\151\143\162\157  
\163\145\143\040\145\055\123\172\151\147\156\157\040\122\157\157  
\164\040\103\101

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL  
\002\021\000\314\270\347\277\116\051\032\375\242\334\146\245\034  
\054\017\021

END

CKA\_VALUE MULTILINE\_OCTAL  
\060\202\007\250\060\202\006\220\240\003\002\001\002\002\021\000  
\314\270\347\277\116\051\032\375\242\334\146\245\034\054\017\021

\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060  
\162\061\013\060\011\006\003\125\004\006\023\002\110\125\061\021  
\060\017\006\003\125\004\007\023\010\102\165\144\141\160\145\163  
\164\061\026\060\024\006\003\125\004\012\023\015\115\151\143\162  
\157\163\145\143\040\114\164\144\056\061\024\060\022\006\003\125  
\004\013\023\013\145\055\123\172\151\147\156\157\040\103\101\061  
\042\060\040\006\003\125\004\003\023\031\115\151\143\162\157\163  
\145\143\040\145\055\123\172\151\147\156\157\040\122\157\157\164  
\040\103\101\060\036\027\015\060\065\060\064\060\066\061\062\062  
\070\064\064\132\027\015\061\067\060\064\060\066\061\062\062\070  
\064\064\132\060\162\061\013\060\011\006\003\125\004\006\023\002  
\110\125\061\021\060\017\006\003\125\004\007\023\010\102\165\144  
\141\160\145\163\164\061\026\060\024\006\003\125\004\012\023\015  
\115\151\143\162\157\163\145\143\040\114\164\144\056\061\024\060  
\022\006\003\125\004\013\023\013\145\055\123\172\151\147\156\157  
\040\103\101\061\042\060\040\006\003\125\004\003\023\031\115\151  
\143\162\157\163\145\143\040\145\055\123\172\151\147\156\157\040  
\122\157\157\164\040\103\101\060\202\001\042\060\015\006\011\052  
\206\110\206\367\015\001\001\001\005\000\003\202\001\017\000\060  
\202\001\012\002\202\001\001\000\355\310\000\325\201\173\315\070  
\000\107\314\333\204\301\041\151\054\164\220\014\041\331\123\207  
\355\076\103\104\123\257\253\370\200\233\074\170\215\324\215\256  
\270\357\323\021\334\201\346\317\073\226\214\326\157\025\306\167  
\176\241\057\340\137\222\266\047\327\166\232\035\103\074\352\331  
\354\057\356\071\363\152\147\113\213\202\317\042\370\145\125\376  
\054\313\057\175\110\172\075\165\371\252\240\047\273\170\302\006  
\312\121\302\176\146\113\257\315\242\247\115\002\202\077\202\254  
\205\306\341\017\220\107\231\224\012\161\162\223\052\311\246\300  
\276\074\126\114\163\222\047\361\153\265\365\375\374\060\005\140  
\222\306\353\226\176\001\221\302\151\261\036\035\173\123\105\270  
\334\101\037\311\213\161\326\124\024\343\213\124\170\077\276\364  
\142\073\133\365\243\354\325\222\164\342\164\060\357\001\333\341  
\324\253\231\233\052\153\370\275\246\034\206\043\102\137\354\111  
\336\232\213\133\364\162\072\100\305\111\076\245\276\216\252\161  
\353\154\372\365\032\344\152\375\173\175\125\100\357\130\156\346  
\331\325\274\044\253\301\357\267\002\003\001\000\001\243\202\004  
\067\060\202\004\063\060\147\006\010\053\006\001\005\005\007\001  
\001\004\133\060\131\060\050\006\010\053\006\001\005\005\007\060  
\001\206\034\150\164\164\160\163\072\057\057\162\143\141\056\145  
\055\163\172\151\147\156\157\056\150\165\057\157\143\163\160\060  
\055\006\010\053\006\001\005\005\007\060\002\206\041\150\164\164  
\160\072\057\057\167\167\167\056\145\055\163\172\151\147\156\157  
\056\150\165\057\122\157\157\164\103\101\056\143\162\164\060\017  
\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060  
\202\001\163\006\003\125\035\040\004\202\001\152\060\202\001\146  
\060\202\001\142\006\014\053\006\001\004\001\201\250\030\002\001  
\001\001\060\202\001\120\060\050\006\010\053\006\001\005\005\007  
\002\001\026\034\150\164\164\160\072\057\057\167\167\167\056\145

\055\163\172\151\147\156\157\056\150\165\057\123\132\123\132\057  
\060\202\001\042\006\010\053\006\001\005\005\007\002\002\060\202  
\001\024\036\202\001\020\000\101\000\040\000\164\000\141\000\156  
\000\372\000\163\000\355\000\164\000\166\000\341\000\156\000\171  
\000\040\000\351\000\162\000\164\000\145\000\154\000\155\000\145  
\000\172\000\351\000\163\000\351\000\150\000\145\000\172\000\040  
\000\351\000\163\000\040\000\145\000\154\000\146\000\157\000\147  
\000\141\000\144\000\341\000\163\000\341\000\150\000\157\000\172  
\000\040\000\141\000\040\000\123\000\172\000\157\000\154\000\147  
\000\341\000\154\000\164\000\141\000\164\000\363\000\040\000\123  
\000\172\000\157\000\154\000\147\000\341\000\154\000\164\000\141  
\000\164\000\341\000\163\000\151\000\040\000\123\000\172\000\141  
\000\142\000\341\000\154\000\171\000\172\000\141\000\164\000\141  
\000\040\000\163\000\172\000\145\000\162\000\151\000\156\000\164  
\000\040\000\153\000\145\000\154\000\154\000\040\000\145\000\154  
\000\152\000\341\000\162\000\156\000\151\000\072\000\040\000\150  
\000\164\000\164\000\160\000\072\000\057\000\057\000\167\000\167  
\000\167\000\056\000\145\000\055\000\163\000\172\000\151\000\147  
\000\156\000\157\000\056\000\150\000\165\000\057\000\123\000\132  
\000\123\000\132\000\057\060\201\310\006\003\125\035\037\004\201  
\300\060\201\275\060\201\272\240\201\267\240\201\264\206\041\150  
\164\164\160\072\057\057\167\167\167\056\145\055\163\172\151\147  
\156\157\056\150\165\057\122\157\157\164\103\101\056\143\162\154  
\206\201\216\154\144\141\160\072\057\057\154\144\141\160\056\145  
\055\163\172\151\147\156\157\056\150\165\057\103\116\075\115\151  
\143\162\157\163\145\143\045\062\060\145\055\123\172\151\147\156  
\157\045\062\060\122\157\157\164\045\062\060\103\101\054\117\125  
\075\145\055\123\172\151\147\156\157\045\062\060\103\101\054\117  
\075\115\151\143\162\157\163\145\143\045\062\060\114\164\144\056  
\054\114\075\102\165\144\141\160\145\163\164\054\103\075\110\125  
\077\143\145\162\164\151\146\151\143\141\164\145\122\145\166\157  
\143\141\164\151\157\156\114\151\163\164\073\142\151\156\141\162  
\171\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001  
\006\060\201\226\006\003\125\035\021\004\201\216\060\201\213\201  
\020\151\156\146\157\100\145\055\163\172\151\147\156\157\056\150  
\165\244\167\060\165\061\043\060\041\006\003\125\004\003\014\032  
\115\151\143\162\157\163\145\143\040\145\055\123\172\151\147\156  
\303\263\040\122\157\157\164\040\103\101\061\026\060\024\006\003  
\125\004\013\014\015\145\055\123\172\151\147\156\303\263\040\110  
\123\132\061\026\060\024\006\003\125\004\012\023\015\115\151\143  
\162\157\163\145\143\040\113\146\164\056\061\021\060\017\006\003  
\125\004\007\023\010\102\165\144\141\160\145\163\164\061\013\060  
\011\006\003\125\004\006\023\002\110\125\060\201\254\006\003\125  
\035\043\004\201\244\060\201\241\200\024\307\240\111\165\026\141  
\204\333\061\113\204\322\361\067\100\220\357\116\334\367\241\166  
\244\164\060\162\061\013\060\011\006\003\125\004\006\023\002\110  
\125\061\021\060\017\006\003\125\004\007\023\010\102\165\144\141  
\160\145\163\164\061\026\060\024\006\003\125\004\012\023\015\115

\151\143\162\157\163\145\143\040\114\164\144\056\061\024\060\022  
\006\003\125\004\013\023\013\145\055\123\172\151\147\156\157\040  
\103\101\061\042\060\040\006\003\125\004\003\023\031\115\151\143  
\162\157\163\145\143\040\145\055\123\172\151\147\156\157\040\122  
\157\157\164\040\103\101\202\021\000\314\270\347\277\116\051\032  
\375\242\334\146\245\034\054\017\021\060\035\006\003\125\035\016  
\004\026\004\024\307\240\111\165\026\141\204\333\061\113\204\322  
\361\067\100\220\357\116\334\367\060\015\006\011\052\206\110\206  
\367\015\001\001\005\005\000\003\202\001\001\000\323\023\234\146  
\143\131\056\312\134\160\014\374\203\274\125\261\364\216\007\154  
\146\047\316\301\073\040\251\034\273\106\124\160\356\132\314\240  
\167\352\150\104\047\353\362\051\335\167\251\325\373\343\324\247  
\004\304\225\270\013\341\104\150\140\007\103\060\061\102\141\345  
\356\331\345\044\325\033\337\341\112\033\252\237\307\137\370\172  
\021\352\023\223\000\312\212\130\261\356\355\016\115\264\327\250  
\066\046\174\340\072\301\325\127\202\361\165\266\375\211\137\332  
\363\250\070\237\065\006\010\316\042\225\276\315\325\374\276\133  
\336\171\153\334\172\251\145\146\276\261\045\132\137\355\176\323  
\254\106\155\114\364\062\207\264\040\004\340\154\170\260\167\321  
\205\106\113\246\022\267\165\350\112\311\126\154\327\222\253\235  
\365\111\070\322\117\123\343\125\220\021\333\230\226\306\111\362  
\076\364\237\033\340\367\210\334\045\142\231\104\330\163\277\077  
\060\363\014\067\076\324\302\050\200\163\261\001\267\235\132\226  
\024\001\113\251\021\235\051\152\056\320\135\201\300\317\262\040  
\103\307\003\340\067\116\135\012\334\131\040\045

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "Microsec e-Szigno Root CA"  
# Issuer: CN=Microsec e-Szigno Root CA,OU=e-Szigno CA,O=Microsec Ltd.,L=Budapest,C=HU  
# Serial Number:cc:b8:e7:bf:4e:29:1a:fd:a2:dc:66:a5:1c:2c:0f:11  
# Subject: CN=Microsec e-Szigno Root CA,OU=e-Szigno CA,O=Microsec Ltd.,L=Budapest,C=HU  
# Not Valid Before: Wed Apr 06 12:28:44 2005  
# Not Valid After: Thu Apr 06 12:28:44 2017  
# Fingerprint (MD5): f0:96:b6:2f:c5:10:d5:67:8e:83:25:32:e8:5e:2e:e5  
# Fingerprint (SHA1): 23:88:c9:d3:71:cc:9e:96:3d:ff:7d:3c:a7:ce:fc:d6:25:ec:19:0d  
CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "Microsec e-Szigno Root CA"  
CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL  
\043\210\311\323\161\314\236\226\075\377\175\074\247\316\374\326  
\045\354\031\015  
END

```

CKA_CERT_MD5_HASH MULTILINE_OCTAL
\360\226\266\057\305\020\325\147\216\203\045\062\350\136\056\345
END
CKA_ISSUER MULTILINE_OCTAL
\060\162\061\013\060\011\006\003\125\004\006\023\002\110\125\061
\021\060\017\006\003\125\004\007\023\010\102\165\144\141\160\145
\163\164\061\026\060\024\006\003\125\004\012\023\015\115\151\143
\162\157\163\145\143\040\114\164\144\056\061\024\060\022\006\003
\125\004\013\023\013\145\055\123\172\151\147\156\157\040\103\101
\061\042\060\040\006\003\125\004\003\023\031\115\151\143\162\157
\163\145\143\040\145\055\123\172\151\147\156\157\040\122\157\157
\164\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\021\000\314\270\347\277\116\051\032\375\242\334\146\245\034
\054\017\021
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "LGPKI"
Issuer: OU=Application CA G2,O=LGPKI,C=JP
Serial Number: 49 (0x31)
Subject: OU=Application CA G2,O=LGPKI,C=JP
Not Valid Before: Fri Mar 31 15:00:00 2006
Not Valid After: Thu Mar 31 14:59:59 2016
Fingerprint (MD5): f3:d7:52:a8:75:fd:18:ec:e1:7d:35:b1:70:6e:a5:9c
Fingerprint (SHA1): 96:83:38:f1:13:e3:6a:7b:ab:dd:08:f7:77:63:91:a6:87:36:58:2e
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "LGPKI"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\071\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\016\060\014\006\003\125\004\012\023\005\114\107\120\113\111\061
\032\060\030\006\003\125\004\013\023\021\101\160\160\154\151\143
\141\164\151\157\156\040\103\101\040\107\062
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\071\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\016\060\014\006\003\125\004\012\023\005\114\107\120\113\111\061
\032\060\030\006\003\125\004\013\023\021\101\160\160\154\151\143

```



\141\164\151\157\156\040\103\101\040\107\062  
END  
CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL  
\002\001\061  
END  
CKA\_VALUE MULTILINE\_OCTAL  
\060\202\003\240\060\202\002\210\240\003\002\001\002\002\001\061  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060  
\071\061\013\060\011\006\003\125\004\006\023\002\112\120\061\016  
\060\014\006\003\125\004\012\023\005\114\107\120\113\111\061\032  
\060\030\006\003\125\004\013\023\021\101\160\160\154\151\143\141  
\164\151\157\156\040\103\101\040\107\062\060\036\027\015\060\066  
\060\063\063\061\061\065\060\060\060\060\132\027\015\061\066\060  
\063\063\061\061\064\065\071\065\071\132\060\071\061\013\060\011  
\006\003\125\004\006\023\002\112\120\061\016\060\014\006\003\125  
\004\012\023\005\114\107\120\113\111\061\032\060\030\006\003\125  
\004\013\023\021\101\160\160\154\151\143\141\164\151\157\156\040  
\103\101\040\107\062\060\202\001\042\060\015\006\011\052\206\110  
\206\367\015\001\001\001\005\000\003\202\001\017\000\060\202\001  
\012\002\202\001\001\000\271\065\306\020\370\333\150\333\007\304  
\100\114\260\035\036\066\334\303\101\366\317\125\025\155\010\177  
\134\306\150\125\345\347\127\361\226\121\346\341\115\170\017\156  
\100\025\160\073\145\376\021\337\347\323\326\130\065\073\341\237  
\002\374\224\122\106\056\263\236\140\233\002\236\311\202\322\366  
\343\256\011\117\204\104\266\142\233\000\121\150\270\072\255\354  
\144\321\062\113\351\224\104\203\264\016\316\041\211\153\260\066  
\300\230\306\113\234\302\076\133\140\052\011\061\053\055\253\114  
\336\261\240\375\130\126\302\203\035\040\274\304\204\011\207\173  
\250\225\227\306\045\216\203\340\076\223\015\321\307\175\163\251  
\250\374\031\000\100\056\042\270\172\063\101\365\170\375\132\161  
\347\202\331\110\210\134\354\250\205\207\055\155\200\211\147\032  
\151\276\020\300\132\216\355\210\175\076\157\054\070\153\067\316  
\107\330\242\061\060\336\176\123\145\154\213\206\123\101\040\154  
\275\110\245\176\257\000\132\126\022\130\201\321\334\211\131\371  
\265\356\370\115\232\330\104\051\213\171\247\367\042\252\352\174  
\134\264\026\210\040\015\002\003\001\000\001\243\201\262\060\201  
\257\060\035\006\003\125\035\016\004\026\004\024\177\270\135\216  
\304\030\153\306\175\314\056\351\256\316\064\347\027\135\340\241  
\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006  
\060\114\006\003\125\035\037\004\105\060\103\060\101\240\077\240  
\075\244\073\060\071\061\013\060\011\006\003\125\004\006\023\002  
\112\120\061\016\060\014\006\003\125\004\012\023\005\114\107\120  
\113\111\061\032\060\030\006\003\125\004\013\023\021\101\160\160  
\154\151\143\141\164\151\157\156\040\103\101\040\107\062\060\017  
\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060  
\037\006\003\125\035\043\004\030\060\026\200\024\177\270\135\216  
\304\030\153\306\175\314\056\351\256\316\064\347\027\135\340\241  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003

```
\202\001\001\000\074\330\163\066\100\006\110\112\124\031\365\047
\110\071\045\245\156\102\347\266\315\033\313\071\064\267\233\354
\117\052\276\167\344\312\204\374\035\353\233\042\100\325\364\373
\150\207\162\374\107\135\152\016\122\112\343\265\135\110\306\042
\226\346\063\155\155\253\366\315\327\313\044\132\214\250\105\236
\076\141\202\175\224\325\005\360\032\065\137\161\057\056\124\265
\101\005\357\206\015\122\357\234\230\033\361\054\114\072\321\363
\206\323\214\076\172\057\206\105\216\203\062\046\133\277\123\312
\016\121\126\334\232\302\132\060\031\015\247\236\325\252\233\040
\071\151\170\041\364\227\155\321\016\021\114\056\323\033\132\260
\371\227\170\134\052\217\122\145\356\114\102\045\302\067\060\016
\155\053\065\224\203\006\350\257\105\073\004\146\247\060\273\371
\340\041\073\143\156\175\104\135\072\152\123\357\021\027\044\375
\124\262\132\154\163\126\041\311\154\055\227\244\102\263\047\141
\005\041\143\155\352\050\274\117\032\157\102\334\230\253\125\323
\036\033\300\222\077\233\301\346\073\027\126\342\304\230\103\045
\356\266\313\000
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
Trust for "LGPKI"
Issuer: OU=Application CA G2,O=LGPKI,C=JP
Serial Number: 49 (0x31)
Subject: OU=Application CA G2,O=LGPKI,C=JP
Not Valid Before: Fri Mar 31 15:00:00 2006
Not Valid After: Thu Mar 31 14:59:59 2016
Fingerprint (MD5): f3:d7:52:a8:75:fd:18:ec:e1:7d:35:b1:70:6e:a5:9c
Fingerprint (SHA1): 96:83:38:f1:13:e3:6a:7b:ab:dd:08:f7:77:63:91:a6:87:36:58:2e
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "LGPKI"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\226\203\070\361\023\343\152\173\253\335\010\367\167\143\221\246
\207\066\130\056
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\363\327\122\250\165\375\030\354\341\175\065\261\160\156\245\234
```

END

```
CKA_ISSUER MULTILINE_OCTAL
\060\071\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\016\060\014\006\003\125\004\012\023\005\114\107\120\113\111\061
\032\060\030\006\003\125\004\013\023\021\101\160\160\154\151\143
\141\164\151\157\156\040\103\101\040\107\062
```

```

END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\061
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "AC RAIZ DNIE"
Issuer: CN=AC RAIZ DNIE,OU=DNIE,O=DIRECCION GENERAL DE LA POLICIA,C=ES
Serial Number:d2:85:70:fd:ae:a7:d6:5f:11:84:15:c6:31:b5:cb
Subject: CN=AC RAIZ DNIE,OU=DNIE,O=DIRECCION GENERAL DE LA POLICIA,C=ES
Not Valid Before: Thu Feb 16 10:37:25 2006
Not Valid After: Fri Feb 08 22:59:59 2036
Fingerprint (MD5): 15:5e:f5:11:7a:a2:c1:15:0e:92:7e:66:fe:3b:84:c3
Fingerprint (SHA1): b3:8f:ec:ec:0b:14:8a:a6:86:c3:d0:0f:01:ec:c8:84:8e:80:85:eb
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "AC RAIZ DNIE"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\135\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\050\060\046\006\003\125\004\012\014\037\104\111\122\105\103\103
\111\117\116\040\107\105\116\105\122\101\114\040\104\105\040\114
\101\040\120\117\114\111\103\111\101\061\015\060\013\006\003\125
\004\013\014\004\104\116\111\105\061\025\060\023\006\003\125\004
\003\014\014\101\103\040\122\101\111\132\040\104\116\111\105
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\135\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\050\060\046\006\003\125\004\012\014\037\104\111\122\105\103\103
\111\117\116\040\107\105\116\105\122\101\114\040\104\105\040\114
\101\040\120\117\114\111\103\111\101\061\015\060\013\006\003\125
\004\013\014\004\104\116\111\105\061\025\060\023\006\003\125\004
\003\014\014\101\103\040\122\101\111\132\040\104\116\111\105
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\000\322\205\160\375\256\247\326\137\021\204\025\306\061
\265\313
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\277\060\202\003\247\240\003\002\001\002\002\020\000
\322\205\160\375\256\247\326\137\021\204\025\306\061\265\313\060

```

\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\135  
\061\013\060\011\006\003\125\004\006\023\002\105\123\061\050\060  
\046\006\003\125\004\012\014\037\104\111\122\105\103\103\111\117  
\116\040\107\105\116\105\122\101\114\040\104\105\040\114\101\040  
\120\117\114\111\103\111\101\061\015\060\013\006\003\125\004\013  
\014\004\104\116\111\105\061\025\060\023\006\003\125\004\003\014  
\014\101\103\040\122\101\111\132\040\104\116\111\105\060\036\027  
\015\060\066\060\062\061\066\061\060\063\067\062\065\132\027\015  
\063\066\060\062\060\070\062\062\065\071\065\071\132\060\135\061  
\013\060\011\006\003\125\004\006\023\002\105\123\061\050\060\046  
\006\003\125\004\012\014\037\104\111\122\105\103\103\111\117\116  
\040\107\105\116\105\122\101\114\040\104\105\040\114\101\040\120  
\117\114\111\103\111\101\061\015\060\013\006\003\125\004\013\014  
\004\104\116\111\105\061\025\060\023\006\003\125\004\003\014\014  
\101\103\040\122\101\111\132\040\104\116\111\105\060\202\002\042  
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003  
\202\002\017\000\060\202\002\012\002\202\002\001\000\200\000\255  
\014\303\243\040\007\243\143\377\367\064\240\315\356\152\124\010  
\027\135\261\001\025\247\346\271\137\212\161\377\014\302\035\352  
\067\363\336\223\177\326\005\115\204\262\325\327\034\014\364\304  
\221\160\100\016\132\310\230\244\200\350\015\063\300\007\363\267  
\365\254\241\070\172\300\146\124\044\374\122\314\060\052\362\303  
\304\241\054\166\277\301\300\277\202\361\233\360\150\172\023\100  
\310\227\274\034\045\007\010\012\267\226\357\314\051\124\340\346  
\145\055\352\262\056\261\011\151\022\116\060\325\330\370\274\000  
\200\057\115\223\017\315\056\127\033\063\273\237\060\116\304\245  
\313\171\247\373\342\064\030\266\040\236\033\237\135\247\311\072  
\255\105\144\263\030\316\021\022\234\155\036\125\105\050\204\234  
\127\147\115\371\313\342\213\217\130\011\324\071\377\310\066\322  
\070\342\014\145\177\025\016\175\301\007\335\251\042\337\221\000  
\304\154\161\064\164\334\071\352\352\117\104\151\177\130\333\130  
\012\122\161\053\354\251\035\120\164\063\371\051\152\372\376\231  
\364\347\314\105\105\155\312\132\045\242\022\343\316\327\070\005  
\071\360\032\011\365\166\131\316\142\157\172\064\015\054\321\274  
\004\022\354\075\123\310\372\320\002\313\316\075\041\265\305\340  
\071\063\145\317\071\123\311\233\106\371\235\063\363\131\200\010  
\101\276\157\113\240\372\112\316\244\166\034\205\342\257\257\024  
\235\145\254\367\177\227\344\063\111\246\257\276\316\053\067\361  
\056\301\163\005\234\234\140\114\235\060\015\227\124\236\201\142  
\273\347\340\057\367\024\007\024\251\167\221\351\334\221\225\216  
\323\210\220\063\107\157\161\303\024\151\372\246\055\001\036\033  
\352\323\056\342\177\013\334\317\347\042\360\361\101\243\001\222  
\345\200\323\276\251\142\250\125\210\013\064\064\354\334\041\025  
\252\357\326\042\136\211\365\121\222\023\052\157\200\026\331\261  
\015\331\056\370\020\270\302\376\122\105\063\234\035\070\174\334  
\025\151\064\163\277\240\054\273\021\173\224\315\370\067\055\157  
\075\357\203\132\306\036\233\164\111\217\331\302\215\276\026\166  
\120\310\132\321\045\026\366\366\314\214\234\132\060\236\145\276

\320\232\110\223\327\372\150\015\165\061\207\371\367\002\003\001  
\000\001\243\173\060\171\060\017\006\003\125\035\023\001\001\377  
\004\005\060\003\001\001\377\060\016\006\003\125\035\017\001\001  
\377\004\004\003\002\001\006\060\035\006\003\125\035\016\004\026  
\004\024\216\105\364\237\163\305\377\057\033\005\333\001\107\140  
\033\003\212\201\267\272\060\067\006\003\125\035\040\004\060\060  
\056\060\054\006\004\125\035\040\000\060\044\060\042\006\010\053  
\006\001\005\005\007\002\001\026\026\150\164\164\160\072\057\057  
\167\167\167\056\144\156\151\145\056\145\163\057\144\160\143\060  
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003\202  
\002\001\000\165\345\163\311\121\121\057\213\031\240\207\351\377  
\256\066\066\246\374\101\037\343\036\327\161\140\031\306\157\232  
\002\060\275\142\161\255\163\376\221\055\116\344\046\100\104\251  
\256\170\046\043\061\151\334\232\163\226\036\111\121\013\340\357  
\301\270\103\357\161\234\356\101\267\305\120\037\062\204\236\042  
\206\361\367\037\217\331\255\053\116\332\227\050\227\273\226\232  
\032\370\261\331\172\004\363\124\231\022\031\226\025\200\147\071  
\377\002\137\172\374\125\102\120\132\346\271\242\377\270\250\142  
\036\024\315\331\077\276\243\145\110\305\073\327\067\316\015\372  
\050\220\332\277\371\343\121\107\045\175\112\323\147\115\207\252  
\142\274\136\354\172\200\104\174\367\237\012\275\145\127\224\312  
\362\021\146\326\122\177\344\072\160\165\004\315\073\227\324\066  
\162\367\121\126\277\064\365\322\101\341\264\332\250\103\376\153  
\022\111\022\264\135\317\042\102\226\214\010\043\046\214\262\020  
\116\135\252\123\356\001\057\165\345\271\242\021\063\304\327\152  
\375\370\016\312\156\202\331\347\273\131\043\116\265\371\021\035  
\057\153\043\365\173\021\040\352\101\022\220\062\106\333\061\073  
\251\301\133\163\150\072\106\033\214\376\227\267\126\271\141\231  
\314\116\360\203\372\067\361\336\034\235\034\161\213\003\223\303  
\304\163\202\056\250\230\035\144\242\232\214\367\124\010\115\317  
\352\201\313\365\133\011\231\143\257\165\214\226\370\171\065\325  
\334\353\101\201\171\070\204\136\157\361\157\142\166\333\221\316  
\132\205\140\071\035\133\342\052\057\103\045\333\302\172\044\323  
\025\260\242\361\214\240\175\153\110\011\023\377\242\114\146\212  
\354\160\122\011\123\214\060\314\270\325\272\044\334\060\231\076  
\241\136\267\337\201\254\354\067\276\116\233\047\130\336\176\241  
\233\124\177\006\266\057\344\062\120\375\347\020\273\250\315\332  
\030\033\324\143\146\075\352\121\161\071\364\234\076\337\132\364  
\332\307\114\046\355\213\265\041\272\064\171\002\163\141\020\332  
\230\061\250\140\313\176\007\247\320\267\005\103\211\133\315\205  
\046\331\260\121\257\367\214\122\252\022\247\130\337\222\233\147  
\362\235\362\346\364\151\061\364\026\347\336\167\133\036\335\232  
\005\001\255

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

```

Microsoft Code Signing Only Certificate
Trust for "AC RAIZ DNIE"
Issuer: CN=AC RAIZ DNIE,OU=DNIE,O=DIRECCION GENERAL DE LA POLICIA,C=ES
Serial Number:d2:85:70:fd:ae:a7:d6:5f:11:84:15:c6:31:b5:cb
Subject: CN=AC RAIZ DNIE,OU=DNIE,O=DIRECCION GENERAL DE LA POLICIA,C=ES
Not Valid Before: Thu Feb 16 10:37:25 2006
Not Valid After: Fri Feb 08 22:59:59 2036
Fingerprint (MD5): 15:5e:f5:11:7a:a2:c1:15:0e:92:7e:66:fe:3b:84:c3
Fingerprint (SHA1): b3:8f:ec:ec:0b:14:8a:a6:86:c3:d0:0f:01:ec:c8:84:8e:80:85:eb
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "AC RAIZ DNIE"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\263\217\354\354\013\024\212\246\206\303\320\017\001\354\310\204
\216\200\205\353
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\025\136\365\021\172\242\301\025\016\222\176\146\376\073\204\303
END
CKA_ISSUER MULTILINE_OCTAL
\060\135\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\050\060\046\006\003\125\004\012\014\037\104\111\122\105\103\103
\111\117\116\040\107\105\116\105\122\101\114\040\104\105\040\114
\101\040\120\117\114\111\103\111\101\061\015\060\013\006\003\125
\004\013\014\004\104\116\111\105\061\025\060\023\006\003\125\004
\003\014\014\101\103\040\122\101\111\132\040\104\116\111\105
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\000\322\205\160\375\256\247\326\137\021\204\025\306\061
\265\313
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

```

```

Microsoft Code Signing Only Certificate
Certificate "TÜRKTRUST Elektronik Sertifika Hizmet Salaycs"
Issuer: O=TÜRKTRUST Bilgi letiim ve Biliim Güvenlii Hizmetleri A.. (c) Kasm
2005,L=Ankara,C=TR,CN=TÜRKTRUST Elektronik Sertifika Hizmet Salaycs
Serial Number: 1 (0x1)
Subject: O=TÜRKTRUST Bilgi letiim ve Biliim Güvenlii Hizmetleri A.. (c) Kasm
2005,L=Ankara,C=TR,CN=TÜRKTRUST Elektronik Sertifika Hizmet Salaycs
Not Valid Before: Mon Nov 07 10:07:57 2005
Not Valid After: Wed Sep 16 10:07:57 2015
Fingerprint (MD5): 37:a5:6e:d4:b1:25:84:97:b7:fd:56:15:7a:f9:a2:00

```

# Fingerprint (SHA1): b4:35:d4:e1:11:9d:1c:66:90:a7:49:eb:b3:94:bd:63:7b:a7:82:b7

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "TÜRKTRUST Elektronik Sertifika Hizmet Salaycs"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\201\276\061\077\060\075\006\003\125\004\003\014\066\124\303  
\234\122\113\124\122\125\123\124\040\105\154\145\153\164\162\157  
\156\151\153\040\123\145\162\164\151\146\151\153\141\040\110\151  
\172\155\145\164\040\123\141\304\237\154\141\171\304\261\143\304  
\261\163\304\261\061\013\060\011\006\003\125\004\006\023\002\124  
\122\061\017\060\015\006\003\125\004\007\014\006\101\156\153\141  
\162\141\061\135\060\133\006\003\125\004\012\014\124\124\303\234  
\122\113\124\122\125\123\124\040\102\151\154\147\151\040\304\260  
\154\145\164\151\305\237\151\155\040\166\145\040\102\151\154\151  
\305\237\151\155\040\107\303\274\166\145\156\154\151\304\237\151  
\040\110\151\172\155\145\164\154\145\162\151\040\101\056\305\236  
\056\040\050\143\051\040\113\141\163\304\261\155\040\062\060\060  
\065

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\276\061\077\060\075\006\003\125\004\003\014\066\124\303  
\234\122\113\124\122\125\123\124\040\105\154\145\153\164\162\157  
\156\151\153\040\123\145\162\164\151\146\151\153\141\040\110\151  
\172\155\145\164\040\123\141\304\237\154\141\171\304\261\143\304  
\261\163\304\261\061\013\060\011\006\003\125\004\006\023\002\124  
\122\061\017\060\015\006\003\125\004\007\014\006\101\156\153\141  
\162\141\061\135\060\133\006\003\125\004\012\014\124\124\303\234  
\122\113\124\122\125\123\124\040\102\151\154\147\151\040\304\260  
\154\145\164\151\305\237\151\155\040\166\145\040\102\151\154\151  
\305\237\151\155\040\107\303\274\166\145\156\154\151\304\237\151  
\040\110\151\172\155\145\164\154\145\162\151\040\101\056\305\236  
\056\040\050\143\051\040\113\141\163\304\261\155\040\062\060\060  
\065

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\001

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\074\060\202\003\044\240\003\002\001\002\002\001\001  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060  
\201\276\061\077\060\075\006\003\125\004\003\014\066\124\303\234  
\122\113\124\122\125\123\124\040\105\154\145\153\164\162\157\156  
\151\153\040\123\145\162\164\151\146\151\153\141\040\110\151\172  
\155\145\164\040\123\141\304\237\154\141\171\304\261\143\304\261

\163\304\261\061\013\060\011\006\003\125\004\006\023\002\124\122  
\061\017\060\015\006\003\125\004\007\014\006\101\156\153\141\162  
\141\061\135\060\133\006\003\125\004\012\014\124\124\303\234\122  
\113\124\122\125\123\124\040\102\151\154\147\151\040\304\260\154  
\145\164\151\305\237\151\155\040\166\145\040\102\151\154\151\305  
\237\151\155\040\107\303\274\166\145\156\154\151\304\237\151\040  
\110\151\172\155\145\164\154\145\162\151\040\101\056\305\236\056  
\040\050\143\051\040\113\141\163\304\261\155\040\062\060\060\065  
\060\036\027\015\060\065\061\061\060\067\061\060\060\067\065\067  
\132\027\015\061\065\060\071\061\066\061\060\060\067\065\067\132  
\060\201\276\061\077\060\075\006\003\125\004\003\014\066\124\303  
\234\122\113\124\122\125\123\124\040\105\154\145\153\164\162\157  
\156\151\153\040\123\145\162\164\151\146\151\153\141\040\110\151  
\172\155\145\164\040\123\141\304\237\154\141\171\304\261\143\304  
\261\163\304\261\061\013\060\011\006\003\125\004\006\023\002\124  
\122\061\017\060\015\006\003\125\004\007\014\006\101\156\153\141  
\162\141\061\135\060\133\006\003\125\004\012\014\124\124\303\234  
\122\113\124\122\125\123\124\040\102\151\154\147\151\040\304\260  
\154\145\164\151\305\237\151\155\040\166\145\040\102\151\154\151  
\305\237\151\155\040\107\303\274\166\145\156\154\151\304\237\151  
\040\110\151\172\155\145\164\154\145\162\151\040\101\056\305\236  
\056\040\050\143\051\040\113\141\163\304\261\155\040\062\060\060  
\065\060\202\001\042\060\015\006\011\052\206\110\206\367\015\001  
\001\001\005\000\003\202\001\017\000\060\202\001\012\002\202\001  
\001\000\251\066\176\303\221\103\114\303\031\230\010\310\307\130  
\173\117\026\214\245\316\111\001\037\163\016\254\165\023\246\372  
\236\054\040\336\330\220\016\012\321\151\322\047\373\252\167\237  
\047\122\045\342\313\135\330\330\203\120\027\175\212\265\202\077  
\004\216\264\325\360\111\247\144\267\036\056\137\040\234\120\165  
\117\257\341\265\101\024\364\230\222\210\307\345\345\144\107\141  
\107\171\375\300\121\361\301\231\347\334\316\152\373\257\265\001  
\060\334\106\034\357\212\354\225\357\334\377\257\020\034\353\235  
\330\260\252\152\205\030\015\027\311\076\277\361\233\320\011\211  
\102\375\240\102\264\235\211\121\125\051\317\033\160\274\204\124  
\255\301\023\037\230\364\056\166\140\213\135\077\232\255\312\014  
\277\247\126\133\217\167\270\325\236\171\111\222\077\340\361\227  
\044\172\154\233\027\017\155\357\123\230\221\053\344\017\276\131  
\171\007\170\273\227\225\364\237\151\324\130\207\012\251\343\314  
\266\130\031\237\046\041\261\304\131\215\262\101\165\300\255\151  
\316\234\000\010\362\066\377\076\360\241\017\032\254\024\375\246  
\140\017\002\003\001\000\001\243\103\060\101\060\035\006\003\125  
\035\016\004\026\004\024\331\067\263\116\005\375\331\317\237\022  
\026\256\266\211\057\353\045\072\210\034\060\017\006\003\125\035  
\017\001\001\377\004\005\003\003\007\006\000\060\017\006\003\125  
\035\023\001\001\377\004\005\060\003\001\001\377\060\015\006\011  
\052\206\110\206\367\015\001\001\005\005\000\003\202\001\001\000  
\162\140\226\267\311\334\330\051\136\043\205\137\262\263\055\166  
\373\210\327\027\376\173\155\105\270\366\205\154\237\042\374\052



```
\020\042\354\252\271\060\366\253\130\326\071\020\061\231\051\000
\275\211\146\101\373\164\336\221\301\030\013\237\265\141\313\235
\072\276\365\250\224\243\042\125\156\027\111\377\322\051\361\070
\046\135\357\245\252\072\371\161\173\346\332\130\035\323\164\302
\001\372\076\151\130\137\255\313\150\276\024\056\233\154\300\266
\334\240\046\372\167\032\342\044\332\032\067\340\147\255\321\163
\203\015\245\032\035\156\022\222\176\204\142\000\027\275\274\045
\030\127\362\327\251\157\131\210\274\064\267\056\205\170\235\226
\334\024\303\054\212\122\233\226\214\122\146\075\206\026\213\107
\270\121\011\214\352\175\315\210\162\263\140\063\261\360\012\104
\357\017\365\011\067\210\044\016\054\153\040\072\242\372\021\362
\100\065\234\104\150\143\073\254\063\157\143\274\054\273\362\322
\313\166\175\175\210\330\035\310\005\035\156\274\224\251\146\214
\167\161\307\372\221\372\057\121\236\351\071\122\266\347\004\102
END
```

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
Trust for "TÜRKTRUST Elektronik Sertifika Hizmet Salaycs"
Issuer: O=TÜRKTRUST Bilgi letiim ve Biliim Güvenlii Hizmetleri A.. (c) Kasm
2005,L=Ankara,C=TR,CN=TÜRKTRUST Elektronik Sertifika Hizmet Salaycs
Serial Number: 1 (0x1)
Subject: O=TÜRKTRUST Bilgi letiim ve Biliim Güvenlii Hizmetleri A.. (c) Kasm
2005,L=Ankara,C=TR,CN=TÜRKTRUST Elektronik Sertifika Hizmet Salaycs
Not Valid Before: Mon Nov 07 10:07:57 2005
Not Valid After: Wed Sep 16 10:07:57 2015
Fingerprint (MD5): 37:a5:6e:d4:b1:25:84:97:b7:fd:56:15:7a:f9:a2:00
Fingerprint (SHA1): b4:35:d4:e1:11:9d:1c:66:90:a7:49:eb:b3:94:bd:63:7b:a7:82:b7
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "TÜRKTRUST Elektronik Sertifika Hizmet Salaycs"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\264\065\324\341\021\235\034\146\220\247\111\353\263\224\275\143
\173\247\202\267
END
```

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\067\245\156\324\261\045\204\227\267\375\126\025\172\371\242\000
END
```

```
CKA_ISSUER MULTILINE_OCTAL
\060\201\276\061\077\060\075\006\003\125\004\003\014\066\124\303
\234\122\113\124\122\125\123\124\040\105\154\145\153\164\162\157
\156\151\153\040\123\145\162\164\151\146\151\153\141\040\110\151
\172\155\145\164\040\123\141\304\237\154\141\171\304\261\143\304
\261\163\304\261\061\013\060\011\006\003\125\004\006\023\002\124
```

```
\122\061\017\060\015\006\003\125\004\007\014\006\101\156\153\141
\162\141\061\135\060\133\006\003\125\004\012\014\124\124\303\234
\122\113\124\122\125\123\124\040\102\151\154\147\151\040\304\260
\154\145\164\151\305\237\151\155\040\166\145\040\102\151\154\151
\305\237\151\155\040\107\303\274\166\145\156\154\151\304\237\151
\040\110\151\172\155\145\164\154\145\162\151\040\101\056\305\236
\056\040\050\143\051\040\113\141\163\304\261\155\040\062\060\060
\065
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\001\001
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "A-Trust-nQual-03"

# Issuer: CN=A-Trust-nQual-03,OU=A-Trust-nQual-03,O=A-Trust Ges. f. Sicherheitssysteme im elektr.  
Datenverkehr GmbH,C=AT

# Serial Number: 93214 (0x16c1e)

# Subject: CN=A-Trust-nQual-03,OU=A-Trust-nQual-03,O=A-Trust Ges. f. Sicherheitssysteme im elektr.  
Datenverkehr GmbH,C=AT

# Not Valid Before: Wed Aug 17 22:00:00 2005

# Not Valid After: Mon Aug 17 22:00:00 2015

# Fingerprint (MD5): 49:63:ae:27:f4:d5:95:3d:d8:db:24:86:b8:9c:07:53

# Fingerprint (SHA1): d3:c0:63:f2:19:ed:07:3e:34:ad:5d:75:0b:32:76:29:ff:d5:9a:f2

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "A-Trust-nQual-03"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

```
\060\201\215\061\013\060\011\006\003\125\004\006\023\002\101\124
\061\110\060\106\006\003\125\004\012\014\077\101\055\124\162\165
\163\164\040\107\145\163\056\040\146\056\040\123\151\143\150\145
\162\150\145\151\164\163\163\171\163\164\145\155\145\040\151\155
\040\145\154\145\153\164\162\056\040\104\141\164\145\156\166\145
\162\153\145\150\162\040\107\155\142\110\061\031\060\027\006\003
\125\004\013\014\020\101\055\124\162\165\163\164\055\156\121\165
\141\154\055\060\063\061\031\060\027\006\003\125\004\003\014\020
\101\055\124\162\165\163\164\055\156\121\165\141\154\055\060\063
```

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\201\215\061\013\060\011\006\003\125\004\006\023\002\101\124
```

\061\110\060\106\006\003\125\004\012\014\077\101\055\124\162\165  
\163\164\040\107\145\163\056\040\146\056\040\123\151\143\150\145  
\162\150\145\151\164\163\163\171\163\164\145\155\145\040\151\155  
\040\145\154\145\153\164\162\056\040\104\141\164\145\156\166\145  
\162\153\145\150\162\040\107\155\142\110\061\031\060\027\006\003  
\125\004\013\014\020\101\055\124\162\165\163\164\055\156\121\165  
\141\154\055\060\063\061\031\060\027\006\003\125\004\003\014\020  
\101\055\124\162\165\163\164\055\156\121\165\141\154\055\060\063  
END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\003\001\154\036

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\317\060\202\002\267\240\003\002\001\002\002\003\001  
\154\036\060\015\006\011\052\206\110\206\367\015\001\001\005\005  
\000\060\201\215\061\013\060\011\006\003\125\004\006\023\002\101  
\124\061\110\060\106\006\003\125\004\012\014\077\101\055\124\162  
\165\163\164\040\107\145\163\056\040\146\056\040\123\151\143\150  
\145\162\150\145\151\164\163\163\171\163\164\145\155\145\040\151  
\155\040\145\154\145\153\164\162\056\040\104\141\164\145\156\166  
\145\162\153\145\150\162\040\107\155\142\110\061\031\060\027\006  
\003\125\004\013\014\020\101\055\124\162\165\163\164\055\156\121  
\165\141\154\055\060\063\061\031\060\027\006\003\125\004\003\014  
\020\101\055\124\162\165\163\164\055\156\121\165\141\154\055\060  
\063\060\036\027\015\060\065\060\070\061\067\062\062\060\060\060  
\060\132\027\015\061\065\060\070\061\067\062\062\060\060\060\060  
\132\060\201\215\061\013\060\011\006\003\125\004\006\023\002\101  
\124\061\110\060\106\006\003\125\004\012\014\077\101\055\124\162  
\165\163\164\040\107\145\163\056\040\146\056\040\123\151\143\150  
\145\162\150\145\151\164\163\163\171\163\164\145\155\145\040\151  
\155\040\145\154\145\153\164\162\056\040\104\141\164\145\156\166  
\145\162\153\145\150\162\040\107\155\142\110\061\031\060\027\006  
\003\125\004\013\014\020\101\055\124\162\165\163\164\055\156\121  
\165\141\154\055\060\063\061\031\060\027\006\003\125\004\003\014  
\020\101\055\124\162\165\163\164\055\156\121\165\141\154\055\060  
\063\060\202\001\042\060\015\006\011\052\206\110\206\367\015\001  
\001\001\005\000\003\202\001\017\000\060\202\001\012\002\202\001  
\001\000\255\075\141\156\003\363\220\073\300\101\013\204\200\315  
\354\052\243\235\153\273\156\302\102\204\367\121\024\341\240\250  
\055\121\243\121\362\336\043\360\064\104\377\224\353\314\005\043  
\225\100\271\007\170\245\045\366\012\275\105\206\350\331\275\300  
\004\216\205\104\141\357\177\247\311\372\301\045\314\205\054\143  
\077\005\140\163\111\005\340\140\170\225\020\113\334\371\021\131  
\316\161\177\100\233\212\252\044\337\013\102\342\333\126\274\112  
\322\245\014\233\267\103\076\335\203\323\046\020\002\317\352\043  
\304\111\116\345\323\351\264\210\253\014\256\142\222\324\145\207  
\331\152\327\364\205\237\344\063\042\045\245\345\310\063\272\303  
\307\101\334\137\306\152\314\000\016\155\062\250\266\207\066\000

\142\167\233\036\037\064\313\220\074\170\210\164\005\353\171\365  
\223\161\145\312\235\307\153\030\055\075\134\116\347\325\370\077  
\061\175\217\207\354\012\042\057\043\351\376\273\175\311\340\364  
\354\353\174\304\260\303\055\142\265\232\161\326\261\152\350\354  
\331\355\325\162\354\276\127\001\316\005\125\237\336\321\140\210  
\020\263\002\003\001\000\001\243\066\060\064\060\017\006\003\125  
\035\023\001\001\377\004\005\060\003\001\001\377\060\021\006\003  
\125\035\016\004\012\004\010\104\152\225\147\125\171\021\117\060  
\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060  
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003\202  
\001\001\000\125\324\124\321\131\110\134\263\223\205\252\277\143  
\057\344\200\316\064\243\064\142\076\366\330\356\147\210\061\004  
\003\157\013\324\007\373\116\165\017\323\056\323\300\027\307\306  
\050\354\006\015\021\044\016\016\245\135\277\214\262\023\226\161  
\334\324\316\016\015\012\150\062\154\271\101\061\031\253\261\007  
\173\115\230\323\134\260\321\360\247\102\240\265\304\216\257\376  
\361\077\364\357\117\106\000\166\353\002\373\371\235\322\100\226  
\307\210\072\270\237\021\171\363\200\145\250\275\037\323\170\201  
\240\121\114\067\264\246\135\045\160\321\146\311\150\371\056\021  
\024\150\361\124\230\010\254\046\222\017\336\211\236\324\372\263  
\171\053\322\243\171\324\354\213\254\207\123\150\102\114\121\121  
\164\036\033\047\056\343\365\037\051\164\115\355\257\367\341\222  
\231\201\350\276\072\307\027\120\366\267\306\374\233\260\212\153  
\326\210\003\221\217\006\167\072\205\002\335\230\325\103\170\077  
\306\060\025\254\233\153\313\127\267\211\121\213\072\350\311\204  
\014\333\261\120\040\012\032\112\272\152\032\275\354\033\310\305  
\204\232\315

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "A-Trust-nQual-03"

# Issuer: CN=A-Trust-nQual-03,OU=A-Trust-nQual-03,O=A-Trust Ges. f. Sicherheitssysteme im elektr.  
Datenverkehr GmbH,C=AT

# Serial Number: 93214 (0x16c1e)

# Subject: CN=A-Trust-nQual-03,OU=A-Trust-nQual-03,O=A-Trust Ges. f. Sicherheitssysteme im elektr.  
Datenverkehr GmbH,C=AT

# Not Valid Before: Wed Aug 17 22:00:00 2005

# Not Valid After: Mon Aug 17 22:00:00 2015

# Fingerprint (MD5): 49:63:ae:27:f4:d5:95:3d:d8:db:24:86:b8:9c:07:53

# Fingerprint (SHA1): d3:c0:63:f2:19:ed:07:3e:34:ad:5d:75:0b:32:76:29:ff:d5:9a:f2

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "A-Trust-nQual-03"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL  
\323\300\143\362\031\355\007\076\064\255\135\165\013\062\166\051  
\377\325\232\362

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL  
\111\143\256\047\364\325\225\075\330\333\044\206\270\234\007\123

END

CKA\_ISSUER MULTILINE\_OCTAL  
\060\201\215\061\013\060\011\006\003\125\004\006\023\002\101\124  
\061\110\060\106\006\003\125\004\012\014\077\101\055\124\162\165  
\163\164\040\107\145\163\056\040\146\056\040\123\151\143\150\145  
\162\150\145\151\164\163\163\171\163\164\145\155\145\040\151\155  
\040\145\154\145\153\164\162\056\040\104\141\164\145\156\166\145  
\162\153\145\150\162\040\107\155\142\110\061\031\060\027\006\003  
\125\004\013\014\020\101\055\124\162\165\163\164\055\156\121\165  
\141\154\055\060\063\061\031\060\027\006\003\125\004\003\014\020  
\101\055\124\162\165\163\164\055\156\121\165\141\154\055\060\063

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL  
\002\003\001\154\036

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "CertRSA01"

# Issuer: CN=CertRSA01,OU=ROOTCA,O=KISA,C=KR

# Serial Number: 3 (0x3)

# Subject: CN=CertRSA01,OU=ROOTCA,O=KISA,C=KR

# Not Valid Before: Thu Mar 02 15:00:00 2000

# Not Valid After: Wed Mar 03 14:59:59 2010

# Fingerprint (MD5): 9f:6c:1f:0f:07:ac:19:21:f9:15:bb:d5:c7:2c:d8:2a

# Fingerprint (SHA1): f5:c2:7c:f5:ff:f3:02:9a:cf:1a:1a:4b:ec:7e:e1:96:4c:77:d7:84

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "CertRSA01"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\101\061\013\060\011\006\003\125\004\006\023\002\113\122\061  
\015\060\013\006\003\125\004\012\023\004\113\111\123\101\061\017  
\060\015\006\003\125\004\013\023\006\122\117\117\124\103\101\061  
\022\060\020\006\003\125\004\003\023\011\103\145\162\164\122\123  
\101\060\061

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\101\061\013\060\011\006\003\125\004\006\023\002\113\122\061  
\015\060\013\006\003\125\004\012\023\004\113\111\123\101\061\017  
\060\015\006\003\125\004\013\023\006\122\117\117\124\103\101\061  
\022\060\020\006\003\125\004\003\023\011\103\145\162\164\122\123  
\101\060\061

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\003

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\112\060\202\003\062\240\003\002\001\002\002\001\003  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060  
\101\061\013\060\011\006\003\125\004\006\023\002\113\122\061\015  
\060\013\006\003\125\004\012\023\004\113\111\123\101\061\017\060  
\015\006\003\125\004\013\023\006\122\117\117\124\103\101\061\022  
\060\020\006\003\125\004\003\023\011\103\145\162\164\122\123\101  
\060\061\060\036\027\015\060\060\060\063\060\062\061\065\060\060  
\060\060\132\027\015\061\060\060\063\060\063\061\064\065\071\065  
\071\132\060\101\061\013\060\011\006\003\125\004\006\023\002\113  
\122\061\015\060\013\006\003\125\004\012\023\004\113\111\123\101  
\061\017\060\015\006\003\125\004\013\023\006\122\117\117\124\103  
\101\061\022\060\020\006\003\125\004\003\023\011\103\145\162\164  
\122\123\101\060\061\060\202\001\042\060\015\006\011\052\206\110  
\206\367\015\001\001\001\005\000\003\202\001\017\000\060\202\001  
\012\002\202\001\001\000\316\317\355\341\350\126\035\311\113\062  
\140\233\052\267\227\207\141\006\064\150\313\027\256\300\170\305  
\306\021\133\113\174\227\253\271\154\116\057\000\366\123\054\351  
\341\234\132\220\152\075\172\070\070\065\132\255\034\012\131\205  
\273\365\143\147\011\023\351\046\117\330\074\135\357\123\102\336  
\105\142\344\076\315\162\244\372\263\300\340\037\216\224\342\145  
\055\125\301\025\222\054\157\363\103\324\065\005\005\064\067\240  
\054\264\163\133\361\047\046\224\232\365\272\022\314\372\170\065  
\242\255\124\325\146\217\021\352\246\031\115\327\023\065\124\173  
\221\227\003\107\143\260\251\017\150\276\322\364\236\352\215\265  
\173\104\265\271\055\070\311\000\343\345\277\306\165\211\003\231  
\377\214\113\010\017\302\005\061\244\115\027\021\316\303\165\017  
\153\260\137\320\254\206\255\175\351\240\210\271\306\022\326\300  
\072\054\322\157\154\047\035\252\377\105\233\306\003\020\002\151  
\371\006\357\237\042\240\070\070\202\310\044\021\254\241\236\217  
\115\276\170\137\337\272\077\203\003\175\121\243\370\307\135\250  
\221\150\037\036\162\335\002\003\001\000\001\243\202\001\113\060  
\202\001\107\060\035\006\003\125\035\016\004\026\004\024\377\212  
\106\162\063\130\350\110\210\042\252\027\150\332\026\110\011\213  
\065\221\060\037\006\003\125\035\043\004\030\060\026\200\024\377  
\212\106\162\063\130\350\110\210\042\252\027\150\332\026\110\011  
\213\065\221\060\016\006\003\125\035\017\001\001\377\004\004\003

\002\001\006\060\025\006\003\125\035\040\004\016\060\014\060\012  
\006\010\052\203\032\214\232\104\002\001\060\060\006\003\125\035  
\021\004\051\060\047\244\045\060\043\061\041\060\037\006\003\125  
\004\003\014\030\355\225\234\352\265\255\354\240\225\353\263\264  
\353\263\264\355\230\270\354\204\274\355\204\260\060\060\006\003  
\125\035\022\004\051\060\047\244\045\060\043\061\041\060\037\006  
\003\125\004\003\014\030\355\225\234\352\265\255\354\240\225\353  
\263\264\353\263\264\355\230\270\354\204\274\355\204\260\060\022  
\006\003\125\035\023\001\001\377\004\010\060\006\001\001\377\002  
\001\001\060\014\006\003\125\035\044\004\005\060\003\200\001\000  
\060\130\006\003\125\035\037\004\121\060\117\060\115\240\113\240  
\111\206\107\154\144\141\160\072\057\057\144\151\162\163\171\163  
\056\162\157\157\164\143\141\056\157\162\056\153\162\072\063\070  
\071\057\103\116\075\122\117\117\124\055\122\123\101\055\103\122  
\114\054\040\117\125\075\122\117\117\124\103\101\054\040\117\075  
\113\111\123\101\054\040\103\075\113\122\060\015\006\011\052\206  
\110\206\367\015\001\001\005\005\000\003\202\001\001\000\054\074  
\244\043\154\102\370\211\050\107\120\174\343\346\347\043\055\066  
\066\306\210\052\221\230\373\036\174\017\253\235\021\255\165\254  
\344\134\153\061\021\164\063\142\157\324\006\221\021\306\162\164  
\230\057\260\142\373\064\051\257\024\362\306\144\340\277\253\313  
\127\271\141\234\363\142\115\063\171\327\146\052\121\314\334\000  
\124\005\001\126\176\214\266\216\023\364\055\231\121\341\232\170  
\274\125\121\112\111\332\133\013\202\373\103\075\332\315\223\011  
\313\265\243\011\303\260\175\131\110\242\233\330\373\067\303\157  
\016\067\352\005\227\277\322\156\241\310\350\303\373\363\255\062  
\310\125\222\064\102\340\324\022\345\324\355\041\212\347\230\222  
\377\134\327\245\146\252\277\361\072\174\055\302\340\125\065\005  
\332\221\152\007\123\321\205\261\224\307\046\015\033\150\051\010  
\301\041\223\017\153\242\140\270\123\257\104\331\144\135\323\156  
\233\204\022\170\061\030\332\163\277\254\044\370\253\055\277\016  
\176\272\173\011\312\132\211\250\054\122\314\114\164\255\331\137  
\263\267\326\005\367\101\137\161\345\146\031\006\045\171

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "CertRSA01"  
# Issuer: CN=CertRSA01,OU=ROOTCA,O=KISA,C=KR  
# Serial Number: 3 (0x3)  
# Subject: CN=CertRSA01,OU=ROOTCA,O=KISA,C=KR  
# Not Valid Before: Thu Mar 02 15:00:00 2000  
# Not Valid After: Wed Mar 03 14:59:59 2010  
# Fingerprint (MD5): 9f:6c:1f:0f:07:ac:19:21:f9:15:bb:d5:c7:2c:d8:2a  
# Fingerprint (SHA1): f5:c2:7c:f5:ff:f3:02:9a:cf:1a:1a:4b:ec:7e:e1:96:4c:77:d7:84  
CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

```

CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "CertRSA01"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\365\302\174\365\377\363\002\232\317\032\032\113\354\176\341\226
\114\167\327\204
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\237\154\037\017\007\254\031\041\371\025\273\325\307\054\330\052
END
CKA_ISSUER MULTILINE_OCTAL
\060\101\061\013\060\011\006\003\125\004\006\023\002\113\122\061
\015\060\013\006\003\125\004\012\023\004\113\111\123\101\061\017
\060\015\006\003\125\004\013\023\006\122\117\117\124\103\101\061
\022\060\020\006\003\125\004\003\023\011\103\145\162\164\122\123
\101\060\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\003
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

```

```

Microsoft Code Signing Only Certificate
Certificate "KISA RootCA 1"
Issuer: CN=KISA RootCA 1,OU=Korea Certification Authority Central,O=KISA,C=KR
Serial Number: 4 (0x4)
Subject: CN=KISA RootCA 1,OU=Korea Certification Authority Central,O=KISA,C=KR
Not Valid Before: Wed Aug 24 08:05:46 2005
Not Valid After: Sun Aug 24 08:05:46 2025
Fingerprint (MD5): 68:9b:17:c6:54:e0:e0:e0:99:55:16:42:f7:5a:86:d8
Fingerprint (SHA1): 02:72:68:29:3e:5f:5d:17:aa:a4:b3:c3:e6:36:1e:1f:92:57:5e:aa

```

```

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "KISA RootCA 1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\144\061\013\060\011\006\003\125\004\006\023\002\113\122\061
\015\060\013\006\003\125\004\012\014\004\113\111\123\101\061\056
\060\054\006\003\125\004\013\014\045\113\157\162\145\141\040\103
\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164
\150\157\162\151\164\171\040\103\145\156\164\162\141\154\061\026
\060\024\006\003\125\004\003\014\015\113\111\123\101\040\122\157

```



```
\157\164\103\101\040\061
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\144\061\013\060\011\006\003\125\004\006\023\002\113\122\061
\015\060\013\006\003\125\004\012\014\004\113\111\123\101\061\056
\060\054\006\003\125\004\013\014\045\113\157\162\145\141\040\103
\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164
\150\157\162\151\164\171\040\103\145\156\164\162\141\154\061\026
\060\024\006\003\125\004\003\014\015\113\111\123\101\040\122\157
\157\164\103\101\040\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\004
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\163\060\202\002\133\240\003\002\001\002\002\001\004
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\144\061\013\060\011\006\003\125\004\006\023\002\113\122\061\015
\060\013\006\003\125\004\012\014\004\113\111\123\101\061\056\060
\054\006\003\125\004\013\014\045\113\157\162\145\141\040\103\145
\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150
\157\162\151\164\171\040\103\145\156\164\162\141\154\061\026\060
\024\006\003\125\004\003\014\015\113\111\123\101\040\122\157\157
\164\103\101\040\061\060\036\027\015\060\065\060\070\062\064\060
\070\060\065\064\066\132\027\015\062\065\060\070\062\064\060\070
\060\065\064\066\132\060\144\061\013\060\011\006\003\125\004\006
\023\002\113\122\061\015\060\013\006\003\125\004\012\014\004\113
\111\123\101\061\056\060\054\006\003\125\004\013\014\045\113\157
\162\145\141\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171\040\103\145\156\164
\162\141\154\061\026\060\024\006\003\125\004\003\014\015\113\111
\123\101\040\122\157\157\164\103\101\040\061\060\202\001\040\060
\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202
\001\015\000\060\202\001\010\002\202\001\001\000\274\004\344\372
\023\071\360\064\226\040\153\154\150\273\372\333\167\377\047\367
\254\354\057\347\375\360\177\155\157\214\052\315\045\011\133\044
\364\241\150\374\050\354\311\045\342\254\355\336\310\063\204\365
\260\245\011\072\247\261\107\110\305\314\117\214\171\234\371\006
\127\175\335\356\070\366\317\024\262\234\352\323\300\135\167\142
\360\107\015\271\032\100\123\134\144\160\257\010\132\300\367\317
\165\371\154\215\144\050\036\040\376\267\033\031\323\132\146\203
\162\342\260\233\275\323\045\025\015\062\157\144\067\224\205\106
\310\162\276\167\325\156\037\050\057\307\151\355\347\203\211\063
\130\323\336\240\277\100\350\103\120\356\334\115\153\274\245\352
\246\310\141\216\365\303\144\257\006\025\334\051\213\077\165\214
\274\161\104\333\374\255\265\027\035\155\211\203\317\306\063\275
\277\105\242\376\012\237\243\021\137\017\271\037\234\032\302\106
```

\314\234\050\146\237\160\046\074\056\337\252\200\376\214\305\004  
\011\045\117\315\223\107\074\067\352\002\147\222\376\374\042\044  
\134\254\322\054\340\134\001\063\212\301\031\333\002\001\003\243  
\062\060\060\060\035\006\003\125\035\016\004\026\004\024\277\266  
\047\330\003\132\166\145\114\141\001\101\126\061\345\213\173\072  
\331\314\060\017\006\003\125\035\023\001\001\377\004\005\060\003  
\001\001\377\060\015\006\011\052\206\110\206\367\015\001\001\005  
\005\000\003\202\001\001\000\023\257\121\013\336\212\152\133\346  
\232\012\310\261\220\112\116\241\002\235\314\210\322\253\146\275  
\075\354\273\261\102\225\152\262\134\132\377\241\143\144\226\251  
\150\025\177\045\136\212\370\244\163\301\200\212\205\012\016\122  
\350\062\347\105\370\116\145\200\221\231\164\103\345\105\235\111  
\052\360\224\225\335\351\341\060\322\023\156\311\116\261\167\345  
\004\317\255\132\036\224\011\132\327\074\010\034\256\172\351\024  
\062\301\105\255\322\046\110\162\254\250\101\332\360\041\207\071  
\136\337\374\144\377\141\164\052\234\331\233\213\137\302\067\223  
\330\243\067\057\073\223\153\262\033\007\247\177\011\120\357\323  
\072\276\041\153\212\220\073\047\112\121\116\153\236\234\207\235  
\370\170\220\061\355\021\047\306\250\131\276\374\030\013\373\216  
\176\056\102\341\355\347\011\041\275\271\023\305\126\147\364\046  
\246\102\103\220\104\124\264\161\233\166\344\032\022\254\032\050  
\000\337\233\301\325\370\333\134\243\370\222\261\275\264\324\371  
\120\331\000\002\117\333\203\320\021\117\244\102\126\141\072\176  
\023\062\323\204\037\311\272

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "KISA RootCA 1"  
# Issuer: CN=KISA RootCA 1,OU=Korea Certification Authority Central,O=KISA,C=KR  
# Serial Number: 4 (0x4)  
# Subject: CN=KISA RootCA 1,OU=Korea Certification Authority Central,O=KISA,C=KR  
# Not Valid Before: Wed Aug 24 08:05:46 2005  
# Not Valid After: Sun Aug 24 08:05:46 2025  
# Fingerprint (MD5): 68:9b:17:c6:54:e0:e0:99:55:16:42:f7:5a:86:d8  
# Fingerprint (SHA1): 02:72:68:29:3e:5f:5d:17:aa:a4:b3:c3:e6:36:1e:1f:92:57:5e:aa  
CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "KISA RootCA 1"  
CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL  
\002\162\150\051\076\137\135\027\252\244\263\303\346\066\036\037  
\222\127\136\252  
END  
CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\150\233\027\306\124\340\340\340\231\125\026\102\367\132\206\330

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\144\061\013\060\011\006\003\125\004\006\023\002\113\122\061

\015\060\013\006\003\125\004\012\014\004\113\111\123\101\061\056

\060\054\006\003\125\004\013\014\045\113\157\162\145\141\040\103

\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164

\150\157\162\151\164\171\040\103\145\156\164\162\141\154\061\026

\060\024\006\003\125\004\003\014\015\113\111\123\101\040\122\157

\157\164\103\101\040\061

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\004

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "KISA RootCA 3"

# Issuer: CN=KISA RootCA 3,OU=Korea Certification Authority Central,O=KISA,C=KR

# Serial Number: 2 (0x2)

# Subject: CN=KISA RootCA 3,OU=Korea Certification Authority Central,O=KISA,C=KR

# Not Valid Before: Fri Nov 19 06:39:51 2004

# Not Valid After: Wed Nov 19 06:39:51 2014

# Fingerprint (MD5): 93:eb:36:13:0b:c1:54:f1:3e:75:05:e5:e0:1c:d4:37

# Fingerprint (SHA1): 5f:4e:1f:cf:31:b7:91:3b:85:0b:54:f6:e5:ff:50:1a:2b:6f:c6:cf

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "KISA RootCA 3"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\144\061\013\060\011\006\003\125\004\006\023\002\113\122\061

\015\060\013\006\003\125\004\012\023\004\113\111\123\101\061\056

\060\054\006\003\125\004\013\023\045\113\157\162\145\141\040\103

\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164

\150\157\162\151\164\171\040\103\145\156\164\162\141\154\061\026

\060\024\006\003\125\004\003\023\015\113\111\123\101\040\122\157

\157\164\103\101\040\063

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\144\061\013\060\011\006\003\125\004\006\023\002\113\122\061

\015\060\013\006\003\125\004\012\023\004\113\111\123\101\061\056

\060\054\006\003\125\004\013\023\045\113\157\162\145\141\040\103

\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164  
\150\157\162\151\164\171\040\103\145\156\164\162\141\154\061\026  
\060\024\006\003\125\004\003\023\015\113\111\123\101\040\122\157  
\157\164\103\101\040\063

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\002

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\122\060\202\004\072\240\003\002\001\002\002\001\002  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060  
\144\061\013\060\011\006\003\125\004\006\023\002\113\122\061\015  
\060\013\006\003\125\004\012\023\004\113\111\123\101\061\056\060  
\054\006\003\125\004\013\023\045\113\157\162\145\141\040\103\145  
\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150  
\157\162\151\164\171\040\103\145\156\164\162\141\154\061\026\060  
\024\006\003\125\004\003\023\015\113\111\123\101\040\122\157\157  
\164\103\101\040\063\060\036\027\015\060\064\061\061\061\071\060  
\066\063\071\065\061\132\027\015\061\064\061\061\061\071\060\066  
\063\071\065\061\132\060\144\061\013\060\011\006\003\125\004\006  
\023\002\113\122\061\015\060\013\006\003\125\004\012\023\004\113  
\111\123\101\061\056\060\054\006\003\125\004\013\023\045\113\157  
\162\145\141\040\103\145\162\164\151\146\151\143\141\164\151\157  
\156\040\101\165\164\150\157\162\151\164\171\040\103\145\156\164  
\162\141\154\061\026\060\024\006\003\125\004\003\023\015\113\111  
\123\101\040\122\157\157\164\103\101\040\063\060\202\001\040\060  
\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202  
\001\015\000\060\202\001\010\002\202\001\001\000\336\272\355\027  
\145\256\321\275\112\075\254\333\200\162\314\130\341\347\341\223  
\332\314\060\172\317\357\013\256\055\247\103\253\277\247\102\317  
\010\126\010\244\107\035\175\372\206\357\330\060\227\046\064\141  
\074\200\016\370\324\353\237\374\042\060\033\241\155\076\343\114  
\322\125\116\026\100\067\302\366\007\156\333\007\265\245\214\226  
\201\342\233\134\176\224\141\310\316\204\074\261\372\000\346\162  
\323\011\205\167\351\334\136\041\117\264\344\116\364\342\027\253  
\120\257\034\377\241\071\130\165\133\022\262\226\271\215\360\160  
\142\110\133\126\050\052\245\207\221\066\271\036\044\365\271\272  
\173\266\122\121\133\027\132\140\005\154\234\302\346\306\214\076  
\371\352\335\074\214\377\211\336\103\160\254\035\270\361\165\315  
\070\312\123\015\107\150\152\306\074\030\312\275\341\264\276\016  
\364\320\343\322\023\372\260\121\021\021\324\101\253\350\364\071  
\216\341\064\204\117\013\223\252\152\070\374\345\306\170\107\256  
\166\027\372\241\200\067\006\000\025\010\375\153\043\216\372\162  
\015\225\326\113\142\261\150\302\335\064\233\135\002\001\003\243  
\202\002\017\060\202\002\013\060\037\006\003\125\035\043\004\030  
\060\026\200\024\217\201\360\332\246\315\164\074\276\146\364\025  
\153\106\244\376\006\050\314\252\060\035\006\003\125\035\016\004  
\026\004\024\217\201\360\332\246\315\164\074\276\146\364\025\153

\106\244\376\006\050\314\252\060\016\006\003\125\035\017\001\001  
\377\004\004\003\002\001\006\060\202\001\056\006\003\125\035\040  
\004\202\001\045\060\202\001\041\060\202\001\035\006\004\125\035  
\040\000\060\202\001\023\060\060\006\010\053\006\001\005\005\007  
\002\001\026\044\150\164\164\160\072\057\057\167\167\167\056\162  
\157\157\164\143\141\056\157\162\056\153\162\057\162\143\141\057  
\143\160\163\056\150\164\155\154\060\201\336\006\010\053\006\001  
\005\005\007\002\002\060\201\321\036\201\316\307\164\000\040\307  
\170\311\235\301\034\262\224\000\040\254\365\307\170\307\170\311  
\235\301\034\307\205\262\310\262\344\000\050\000\124\000\150\000  
\151\000\163\000\040\000\143\000\145\000\162\000\164\000\151\000  
\146\000\151\000\143\000\141\000\164\000\145\000\040\000\151\000  
\163\000\040\000\141\000\143\000\143\000\162\000\145\000\144\000  
\151\000\164\000\145\000\144\000\040\000\165\000\156\000\144\000  
\145\000\162\000\040\000\105\000\154\000\145\000\143\000\164\000  
\162\000\157\000\156\000\151\000\143\000\040\000\123\000\151\000  
\147\000\156\000\141\000\164\000\165\000\162\000\145\000\040\000  
\101\000\143\000\164\000\040\000\157\000\146\000\040\000\164\000  
\150\000\145\000\040\000\122\000\145\000\160\000\165\000\142\000  
\154\000\151\000\143\000\040\000\157\000\146\000\040\000\113\000  
\157\000\162\000\145\000\141\000\051\060\063\006\003\125\035\021  
\004\054\060\052\244\050\060\046\061\044\060\042\006\003\125\004  
\003\014\033\355\225\234\352\265\255\354\240\225\353\263\264\353  
\263\264\355\230\270\354\247\204\355\235\245\354\233\220\060\063  
\006\003\125\035\022\004\054\060\052\244\050\060\046\061\044\060  
\042\006\003\125\004\003\014\033\355\225\234\352\265\255\354\240  
\225\353\263\264\353\263\264\355\230\270\354\247\204\355\235\245  
\354\233\220\060\017\006\003\125\035\023\001\001\377\004\005\060  
\003\001\001\377\060\014\006\003\125\035\044\004\005\060\003\200  
\001\000\060\015\006\011\052\206\110\206\367\015\001\001\005\005  
\000\003\202\001\001\000\317\326\367\016\375\260\214\156\005\025  
\216\250\134\053\262\132\321\036\127\246\136\030\252\202\021\010  
\374\231\267\133\247\343\310\322\242\323\371\044\064\367\343\344  
\256\211\124\107\323\151\111\311\200\301\021\353\342\051\307\366  
\006\213\137\272\342\136\317\253\303\316\317\356\222\045\334\237  
\071\036\016\003\364\336\220\133\241\160\231\134\307\163\116\311  
\244\165\111\173\045\241\237\202\222\215\115\354\141\305\014\062  
\247\307\070\070\200\125\072\052\203\035\234\144\171\271\015\247  
\065\112\150\357\217\377\005\330\272\116\126\141\330\370\112\160  
\230\010\226\223\330\140\307\072\354\137\237\035\053\065\117\110  
\024\241\232\273\157\356\322\003\206\123\361\020\307\007\124\142  
\136\066\216\342\034\053\035\027\115\346\365\132\357\212\272\202  
\350\167\331\050\021\176\067\207\112\224\012\311\100\351\065\245  
\072\373\144\076\362\137\026\172\363\166\327\316\356\077\104\035  
\105\252\137\021\252\123\034\072\037\122\121\142\124\017\243\220  
\065\317\115\157\272\307\276\054\011\361\065\370\001\273\044\335  
\060\274\110\017\356\331

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "KISA RootCA 3"

# Issuer: CN=KISA RootCA 3,OU=Korea Certification Authority Central,O=KISA,C=KR

# Serial Number: 2 (0x2)

# Subject: CN=KISA RootCA 3,OU=Korea Certification Authority Central,O=KISA,C=KR

# Not Valid Before: Fri Nov 19 06:39:51 2004

# Not Valid After: Wed Nov 19 06:39:51 2014

# Fingerprint (MD5): 93:eb:36:13:0b:c1:54:f1:3e:75:05:e5:e0:1c:d4:37

# Fingerprint (SHA1): 5f:4e:1f:cf:31:b7:91:3b:85:0b:54:f6:e5:ff:50:1a:2b:6f:c6:cf

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "KISA RootCA 3"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\137\116\037\317\061\267\221\073\205\013\124\366\345\377\120\032  
\053\157\306\317

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\223\353\066\023\013\301\124\361\076\165\005\345\340\034\324\067

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\144\061\013\060\011\006\003\125\004\006\023\002\113\122\061  
\015\060\013\006\003\125\004\012\023\004\113\111\123\101\061\056  
\060\054\006\003\125\004\013\023\045\113\157\162\145\141\040\103  
\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164  
\150\157\162\151\164\171\040\103\145\156\164\162\141\154\061\026  
\060\024\006\003\125\004\003\023\015\113\111\123\101\040\122\157  
\157\164\103\101\040\063

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\002

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "NetLock Minositett Kozjegyzoi (Class QA) Tanusitvanykiado"

# Issuer: 1.2.840.113549.1.9.1=info@netlock.hu,CN=NetLock Minositett Kozjegyzoi (Class QA)  
Tanusitvanykiado,OU=Tanusitvanykiadok,O=NetLock Halozatbiztonsagi Kft.,L=Budapest,C=HU

# Serial Number: 123 (0x7b)

# Subject: 1.2.840.113549.1.9.1=info@netlock.hu,CN=NetLock Minositett Kozjegyzoi (Class QA)

Tanusitvanykiado,OU=Tanusitvanykiadok,O=NetLock Halozatbiztonsagi Kft.,L=Budapest,C=HU

# Not Valid Before: Sun Mar 30 01:47:11 2003

# Not Valid After: Thu Dec 15 01:47:11 2022

# Fingerprint (MD5): d4:80:65:68:24:f9:89:22:28:db:f5:a4:9a:17:8f:14

# Fingerprint (SHA1): 01:68:97:e1:a0:b8:f2:c3:b1:34:66:5c:20:a7:27:b7:a1:58:e2:8f

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "NetLock Minositett Kozjegyzoi (Class QA) Tanusitvanykiado"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\201\311\061\013\060\011\006\003\125\004\006\023\002\110\125  
\061\021\060\017\006\003\125\004\007\023\010\102\165\144\141\160  
\145\163\164\061\047\060\045\006\003\125\004\012\023\036\116\145  
\164\114\157\143\153\040\110\141\154\157\172\141\164\142\151\172  
\164\157\156\163\141\147\151\040\113\146\164\056\061\032\060\030  
\006\003\125\004\013\023\021\124\141\156\165\163\151\164\166\141  
\156\171\153\151\141\144\157\153\061\102\060\100\006\003\125\004  
\003\023\071\116\145\164\114\157\143\153\040\115\151\156\157\163  
\151\164\145\164\164\040\113\157\172\152\145\147\171\172\157\151  
\040\050\103\154\141\163\163\040\121\101\051\040\124\141\156\165  
\163\151\164\166\141\156\171\153\151\141\144\157\061\036\060\034  
\006\011\052\206\110\206\367\015\001\011\001\026\017\151\156\146  
\157\100\156\145\164\154\157\143\153\056\150\165

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\311\061\013\060\011\006\003\125\004\006\023\002\110\125  
\061\021\060\017\006\003\125\004\007\023\010\102\165\144\141\160  
\145\163\164\061\047\060\045\006\003\125\004\012\023\036\116\145  
\164\114\157\143\153\040\110\141\154\157\172\141\164\142\151\172  
\164\157\156\163\141\147\151\040\113\146\164\056\061\032\060\030  
\006\003\125\004\013\023\021\124\141\156\165\163\151\164\166\141  
\156\171\153\151\141\144\157\153\061\102\060\100\006\003\125\004  
\003\023\071\116\145\164\114\157\143\153\040\115\151\156\157\163  
\151\164\145\164\164\040\113\157\172\152\145\147\171\172\157\151  
\040\050\103\154\141\163\163\040\121\101\051\040\124\141\156\165  
\163\151\164\166\141\156\171\153\151\141\144\157\061\036\060\034  
\006\011\052\206\110\206\367\015\001\011\001\026\017\151\156\146  
\157\100\156\145\164\154\157\143\153\056\150\165

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\173

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\006\321\060\202\005\271\240\003\002\001\002\002\001\173  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060

\201\311\061\013\060\011\006\003\125\004\006\023\002\110\125\061  
\021\060\017\006\003\125\004\007\023\010\102\165\144\141\160\145  
\163\164\061\047\060\045\006\003\125\004\012\023\036\116\145\164  
\114\157\143\153\040\110\141\154\157\172\141\164\142\151\172\164  
\157\156\163\141\147\151\040\113\146\164\056\061\032\060\030\006  
\003\125\004\013\023\021\124\141\156\165\163\151\164\166\141\156  
\171\153\151\141\144\157\153\061\102\060\100\006\003\125\004\003  
\023\071\116\145\164\114\157\143\153\040\115\151\156\157\163\151  
\164\145\164\164\040\113\157\172\152\145\147\171\172\157\151\040  
\050\103\154\141\163\163\040\121\101\051\040\124\141\156\165\163  
\151\164\166\141\156\171\153\151\141\144\157\061\036\060\034\006  
\011\052\206\110\206\367\015\001\011\001\026\017\151\156\146\157  
\100\156\145\164\154\157\143\153\056\150\165\060\036\027\015\060  
\063\060\063\063\060\060\061\064\067\061\061\132\027\015\062\062  
\061\062\061\065\060\061\064\067\061\061\132\060\201\311\061\013  
\060\011\006\003\125\004\006\023\002\110\125\061\021\060\017\006  
\003\125\004\007\023\010\102\165\144\141\160\145\163\164\061\047  
\060\045\006\003\125\004\012\023\036\116\145\164\114\157\143\153  
\040\110\141\154\157\172\141\164\142\151\172\164\157\156\163\141  
\147\151\040\113\146\164\056\061\032\060\030\006\003\125\004\013  
\023\021\124\141\156\165\163\151\164\166\141\156\171\153\151\141  
\144\157\153\061\102\060\100\006\003\125\004\003\023\071\116\145  
\164\114\157\143\153\040\115\151\156\157\163\151\164\145\164\164  
\040\113\157\172\152\145\147\171\172\157\151\040\050\103\154\141  
\163\163\040\121\101\051\040\124\141\156\165\163\151\164\166\141  
\156\171\153\151\141\144\157\061\036\060\034\006\011\052\206\110  
\206\367\015\001\011\001\026\017\151\156\146\157\100\156\145\164  
\154\157\143\153\056\150\165\060\202\001\042\060\015\006\011\052  
\206\110\206\367\015\001\001\001\005\000\003\202\001\017\000\060  
\202\001\012\002\202\001\001\000\307\122\045\262\330\075\324\204  
\125\011\247\033\275\154\271\024\364\212\002\333\166\374\152\052  
\170\253\345\167\360\156\340\214\043\147\333\245\144\231\271\335  
\001\076\157\357\055\232\074\042\360\135\311\127\240\125\101\177  
\362\103\136\130\202\123\061\145\316\036\362\046\272\000\124\036  
\257\260\274\034\344\122\214\240\062\257\267\067\261\123\147\150  
\164\147\120\366\055\056\144\336\256\046\171\337\337\231\206\253  
\253\177\205\354\240\373\200\314\364\270\014\036\223\105\143\271  
\334\270\133\233\355\133\071\324\137\142\260\247\216\174\146\070  
\054\252\261\010\143\027\147\175\314\275\263\361\303\077\317\120  
\071\355\321\031\203\025\333\207\022\047\226\267\332\352\345\235  
\274\272\352\071\117\213\357\164\232\347\305\320\322\352\206\121  
\034\344\376\144\010\050\004\171\005\353\312\305\161\016\013\357  
\253\352\354\022\021\241\030\005\062\151\321\014\054\032\075\045  
\231\077\265\174\312\155\260\256\231\231\372\010\140\347\031\302  
\362\275\121\323\314\323\002\254\301\021\014\200\316\253\334\224  
\235\153\243\071\123\072\326\205\002\003\000\305\175\243\202\002  
\300\060\202\002\274\060\022\006\003\125\035\023\001\001\377\004  
\010\060\006\001\001\377\002\001\004\060\016\006\003\125\035\017



\001\001\377\004\004\003\002\001\006\060\202\002\165\006\011\140  
\206\110\001\206\370\102\001\015\004\202\002\146\026\202\002\142  
\106\111\107\131\105\114\105\115\041\040\105\172\145\156\040\164  
\141\156\165\163\151\164\166\141\156\171\040\141\040\116\145\164  
\114\157\143\153\040\113\146\164\056\040\115\151\156\157\163\151  
\164\145\164\164\040\123\172\157\154\147\141\154\164\141\164\141  
\163\151\040\123\172\141\142\141\154\171\172\141\164\141\142\141  
\156\040\154\145\151\162\164\040\145\154\152\141\162\141\163\157  
\153\040\141\154\141\160\152\141\156\040\153\145\163\172\165\154  
\164\056\040\101\040\155\151\156\157\163\151\164\145\164\164\040  
\145\154\145\153\164\162\157\156\151\153\165\163\040\141\154\141  
\151\162\141\163\040\152\157\147\150\141\164\141\163\040\145\162  
\166\145\156\171\145\163\165\154\145\163\145\156\145\153\054\040  
\166\141\154\141\155\151\156\164\040\145\154\146\157\147\141\144  
\141\163\141\156\141\153\040\146\145\154\164\145\164\145\154\145  
\040\141\040\115\151\156\157\163\151\164\145\164\164\040\123\172  
\157\154\147\141\154\164\141\164\141\163\151\040\123\172\141\142  
\141\154\171\172\141\164\142\141\156\054\040\141\172\040\101\154  
\164\141\154\141\156\157\163\040\123\172\145\162\172\157\144\145  
\163\151\040\106\145\154\164\145\164\145\154\145\153\142\145\156  
\040\145\154\157\151\162\164\040\145\154\154\145\156\157\162\172  
\145\163\151\040\145\154\152\141\162\141\163\040\155\145\147\164  
\145\164\145\154\145\056\040\101\040\144\157\153\165\155\145\156  
\164\165\155\157\153\040\155\145\147\164\141\154\141\154\150\141  
\164\157\153\040\141\040\150\164\164\160\163\072\057\057\167\167  
\167\056\156\145\164\154\157\143\153\056\150\165\057\144\157\143  
\163\057\040\143\151\155\145\156\040\166\141\147\171\040\153\145  
\162\150\145\164\157\153\040\141\172\040\151\156\146\157\100\156  
\145\164\154\157\143\153\056\156\145\164\040\145\055\155\141\151  
\154\040\143\151\155\145\156\056\040\127\101\122\116\111\116\107  
\041\040\124\150\145\040\151\163\163\165\141\156\143\145\040\141  
\156\144\040\164\150\145\040\165\163\145\040\157\146\040\164\150  
\151\163\040\143\145\162\164\151\146\151\143\141\164\145\040\141  
\162\145\040\163\165\142\152\145\143\164\040\164\157\040\164\150  
\145\040\116\145\164\114\157\143\153\040\121\165\141\154\151\146  
\151\145\144\040\103\120\123\040\141\166\141\151\154\141\142\154  
\145\040\141\164\040\150\164\164\160\163\072\057\057\167\167\167  
\056\156\145\164\154\157\143\153\056\150\165\057\144\157\143\163  
\057\040\157\162\040\142\171\040\145\055\155\141\151\154\040\141  
\164\040\151\156\146\157\100\156\145\164\154\157\143\153\056\156  
\145\164\060\035\006\003\125\035\016\004\026\004\024\011\152\142  
\026\222\260\132\273\125\016\313\165\062\072\062\345\262\041\311  
\050\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000  
\003\202\001\001\000\221\152\120\234\333\170\201\233\077\213\102  
\343\073\374\246\303\356\103\340\317\363\342\200\065\111\105\166  
\002\342\343\057\005\305\361\052\347\300\101\063\306\266\233\320  
\063\071\315\300\333\241\255\154\067\002\114\130\101\073\362\227  
\222\306\110\250\315\345\212\071\211\141\371\122\227\351\275\366

```
\371\224\164\350\161\016\274\167\206\303\006\314\132\174\112\176
\064\120\060\056\373\177\062\232\215\075\363\040\133\370\152\312
\206\363\061\114\054\131\200\002\175\376\070\311\060\165\034\267
\125\343\274\237\272\250\155\204\050\005\165\263\213\015\300\221
\124\041\347\246\013\264\231\365\121\101\334\315\243\107\042\331
\307\001\201\304\334\107\117\046\352\037\355\333\315\015\230\364
\243\234\264\163\062\112\226\231\376\274\177\310\045\130\370\130
\363\166\146\211\124\244\246\076\304\120\134\272\211\030\202\165
\110\041\322\117\023\350\140\176\007\166\333\020\265\121\346\252
\271\150\252\315\366\235\220\165\022\352\070\032\312\104\350\267
\231\247\052\150\225\146\225\253\255\357\211\313\140\251\006\022
\306\224\107\351\050
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
```

```
Trust for "NetLock Minositett Kozjegyzoi (Class QA) Tanusitvanykiado"
```

```
Issuer: 1.2.840.113549.1.9.1=info@netlock.hu,CN=NetLock Minositett Kozjegyzoi (Class QA)
```

```
Tanusitvanykiado,OU=Tanusitvanykiadok,O=NetLock Halozatbiztonsagi Kft.,L=Budapest,C=HU
```

```
Serial Number: 123 (0x7b)
```

```
Subject: 1.2.840.113549.1.9.1=info@netlock.hu,CN=NetLock Minositett Kozjegyzoi (Class QA)
```

```
Tanusitvanykiado,OU=Tanusitvanykiadok,O=NetLock Halozatbiztonsagi Kft.,L=Budapest,C=HU
```

```
Not Valid Before: Sun Mar 30 01:47:11 2003
```

```
Not Valid After: Thu Dec 15 01:47:11 2022
```

```
Fingerprint (MD5): d4:80:65:68:24:f9:89:22:28:db:f5:a4:9a:17:8f:14
```

```
Fingerprint (SHA1): 01:68:97:e1:a0:b8:f2:c3:b1:34:66:5c:20:a7:27:b7:a1:58:e2:8f
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "NetLock Minositett Kozjegyzoi (Class QA) Tanusitvanykiado"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\001\150\227\341\240\270\362\303\261\064\146\134\040\247\047\267
```

```
\241\130\342\217
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\324\200\145\150\044\371\211\042\050\333\365\244\232\027\217\024
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\201\311\061\013\060\011\006\003\125\004\006\023\002\110\125
```

```
\061\021\060\017\006\003\125\004\007\023\010\102\165\144\141\160
```

```
\145\163\164\061\047\060\045\006\003\125\004\012\023\036\116\145
```

```
\164\114\157\143\153\040\110\141\154\157\172\141\164\142\151\172
```

```
\164\157\156\163\141\147\151\040\113\146\164\056\061\032\060\030
```

```
\006\003\125\004\013\023\021\124\141\156\165\163\151\164\166\141
```

```
\156\171\153\151\141\144\157\153\061\102\060\100\006\003\125\004
```

```
\003\023\071\116\145\164\114\157\143\153\040\115\151\156\157\163
\151\164\145\164\164\040\113\157\172\152\145\147\171\172\157\151
\040\050\103\154\141\163\163\040\121\101\051\040\124\141\156\165
\163\151\164\166\141\156\171\153\151\141\144\157\061\036\060\034
\006\011\052\206\110\206\367\015\001\011\001\026\017\151\156\146
\157\100\156\145\164\154\157\143\153\056\150\165
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\001\173
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "A-CERT ADVANCED"

# Issuer: 1.2.840.113549.1.9.1=info@a-cert.at,CN=A-CERT ADVANCED,OU=A-CERT Certification Service,O=ARGE DATEN - Austrian Society for Data Protection,L=Vienna,ST=Austria,C=AT

# Serial Number: 0 (0x0)

# Subject: 1.2.840.113549.1.9.1=info@a-cert.at,CN=A-CERT ADVANCED,OU=A-CERT Certification Service,O=ARGE DATEN - Austrian Society for Data Protection,L=Vienna,ST=Austria,C=AT

# Not Valid Before: Sat Oct 23 14:14:14 2004

# Not Valid After: Sun Oct 23 14:14:14 2011

# Fingerprint (MD5): b4:4a:db:e8:59:16:46:1e:5a:d8:6e:da:06:43:52:62

# Fingerprint (SHA1): 29:64:b6:86:13:5b:5d:fd:dd:32:53:a8:9b:bc:24:d7:4b:08:c6:4d

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "A-CERT ADVANCED"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

```
\060\201\314\061\013\060\011\006\003\125\004\006\023\002\101\124
\061\020\060\016\006\003\125\004\010\023\007\101\165\163\164\162
\151\141\061\017\060\015\006\003\125\004\007\023\006\126\151\145
\156\156\141\061\072\060\070\006\003\125\004\012\023\061\101\122
\107\105\040\104\101\124\105\116\040\055\040\101\165\163\164\162
\151\141\156\040\123\157\143\151\145\164\171\040\146\157\162\040
\104\141\164\141\040\120\162\157\164\145\143\164\151\157\156\061
\045\060\043\006\003\125\004\013\023\034\101\055\103\105\122\124
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\123
\145\162\166\151\143\145\061\030\060\026\006\003\125\004\003\023
\017\101\055\103\105\122\124\040\101\104\126\101\116\103\105\104
\061\035\060\033\006\011\052\206\110\206\367\015\001\011\001\026
\016\151\156\146\157\100\141\055\143\145\162\164\056\141\164
```

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\314\061\013\060\011\006\003\125\004\006\023\002\101\124  
\061\020\060\016\006\003\125\004\010\023\007\101\165\163\164\162  
\151\141\061\017\060\015\006\003\125\004\007\023\006\126\151\145  
\156\156\141\061\072\060\070\006\003\125\004\012\023\061\101\122  
\107\105\040\104\101\124\105\116\040\055\040\101\165\163\164\162  
\151\141\156\040\123\157\143\151\145\164\171\040\146\157\162\040  
\104\141\164\141\040\120\162\157\164\145\143\164\151\157\156\061  
\045\060\043\006\003\125\004\013\023\034\101\055\103\105\122\124  
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\123  
\145\162\166\151\143\145\061\030\060\026\006\003\125\004\003\023  
\017\101\055\103\105\122\124\040\101\104\126\101\116\103\105\104  
\061\035\060\033\006\011\052\206\110\206\367\015\001\011\001\026  
\016\151\156\146\157\100\141\055\143\145\162\164\056\141\164

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\000

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\006\323\060\202\005\273\240\003\002\001\002\002\001\000  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060  
\201\314\061\013\060\011\006\003\125\004\006\023\002\101\124\061  
\020\060\016\006\003\125\004\010\023\007\101\165\163\164\162\151  
\141\061\017\060\015\006\003\125\004\007\023\006\126\151\145\156  
\156\141\061\072\060\070\006\003\125\004\012\023\061\101\122\107  
\105\040\104\101\124\105\116\040\055\040\101\165\163\164\162\151  
\141\156\040\123\157\143\151\145\164\171\040\146\157\162\040\104  
\141\164\141\040\120\162\157\164\145\143\164\151\157\156\061\045  
\060\043\006\003\125\004\013\023\034\101\055\103\105\122\124\040  
\103\145\162\164\151\146\151\143\141\164\151\157\156\040\123\145  
\162\166\151\143\145\061\030\060\026\006\003\125\004\003\023\017  
\101\055\103\105\122\124\040\101\104\126\101\116\103\105\104\061  
\035\060\033\006\011\052\206\110\206\367\015\001\011\001\026\016  
\151\156\146\157\100\141\055\143\145\162\164\056\141\164\060\036  
\027\015\060\064\061\060\062\063\061\064\061\064\061\064\132\027  
\015\061\061\061\060\062\063\061\064\061\064\061\064\132\060\201  
\314\061\013\060\011\006\003\125\004\006\023\002\101\124\061\020  
\060\016\006\003\125\004\010\023\007\101\165\163\164\162\151\141  
\061\017\060\015\006\003\125\004\007\023\006\126\151\145\156\156  
\141\061\072\060\070\006\003\125\004\012\023\061\101\122\107\105  
\040\104\101\124\105\116\040\055\040\101\165\163\164\162\151\141  
\156\040\123\157\143\151\145\164\171\040\146\157\162\040\104\141  
\164\141\040\120\162\157\164\145\143\164\151\157\156\061\045\060  
\043\006\003\125\004\013\023\034\101\055\103\105\122\124\040\103  
\145\162\164\151\146\151\143\141\164\151\157\156\040\123\145\162  
\166\151\143\145\061\030\060\026\006\003\125\004\003\023\017\101  
\055\103\105\122\124\040\101\104\126\101\116\103\105\104\061\035  
\060\033\006\011\052\206\110\206\367\015\001\011\001\026\016\151

\156\146\157\100\141\055\143\145\162\164\056\141\164\060\202\001  
\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000  
\003\202\001\017\000\060\202\001\012\002\202\001\001\000\335\353  
\227\043\057\246\235\376\201\140\246\312\371\001\371\223\256\375  
\265\101\152\171\077\043\225\234\114\173\017\036\066\041\356\303  
\322\250\305\140\163\057\242\244\260\257\271\270\256\306\152\334  
\076\261\260\030\236\321\006\023\315\017\370\230\065\204\000\314  
\173\341\153\345\135\033\163\244\022\336\011\025\265\365\002\133  
\364\110\275\363\014\337\332\061\276\152\211\230\350\017\234\225  
\073\037\257\247\230\273\154\253\255\155\277\331\025\046\057\366  
\341\216\160\135\155\350\165\353\173\332\301\171\354\112\006\352  
\316\374\303\100\124\124\263\134\062\170\022\365\266\131\316\147  
\106\337\367\172\045\271\006\202\203\105\377\300\334\200\040\111  
\133\373\164\046\267\010\317\052\151\134\203\225\265\114\363\072  
\272\324\363\254\356\122\004\367\106\331\045\346\110\306\354\061  
\007\244\126\375\037\107\323\071\215\157\363\350\021\241\243\272  
\332\000\064\074\050\262\262\005\131\217\010\025\171\207\267\050  
\010\065\326\174\347\312\127\203\277\137\174\270\255\303\163\132  
\027\040\146\043\047\035\205\244\245\224\274\013\200\023\002\003  
\001\000\001\243\202\002\274\060\202\002\270\060\035\006\003\125  
\035\016\004\026\004\024\067\177\076\076\231\161\140\312\044\324  
\221\023\171\320\164\051\264\250\044\330\060\201\371\006\003\125  
\035\043\004\201\361\060\201\356\200\024\067\177\076\076\231\161  
\140\312\044\324\221\023\171\320\164\051\264\250\044\330\241\201  
\322\244\201\317\060\201\314\061\013\060\011\006\003\125\004\006  
\023\002\101\124\061\020\060\016\006\003\125\004\010\023\007\101  
\165\163\164\162\151\141\061\017\060\015\006\003\125\004\007\023  
\006\126\151\145\156\156\141\061\072\060\070\006\003\125\004\012  
\023\061\101\122\107\105\040\104\101\124\105\116\040\055\040\101  
\165\163\164\162\151\141\156\040\123\157\143\151\145\164\171\040  
\146\157\162\040\104\141\164\141\040\120\162\157\164\145\143\164  
\151\157\156\061\045\060\043\006\003\125\004\013\023\034\101\055  
\103\105\122\124\040\103\145\162\164\151\146\151\143\141\164\151  
\157\156\040\123\145\162\166\151\143\145\061\030\060\026\006\003  
\125\004\003\023\017\101\055\103\105\122\124\040\101\104\126\101  
\116\103\105\104\061\035\060\033\006\011\052\206\110\206\367\015  
\001\011\001\026\016\151\156\146\157\100\141\055\143\145\162\164  
\056\141\164\202\001\000\060\017\006\003\125\035\023\001\001\377  
\004\005\060\003\001\001\377\060\013\006\003\125\035\017\004\004  
\003\002\001\346\060\107\006\003\125\035\045\004\100\060\076\006  
\010\053\006\001\005\005\007\003\001\006\010\053\006\001\005\005  
\007\003\002\006\010\053\006\001\005\005\007\003\003\006\010\053  
\006\001\005\005\007\003\004\006\010\053\006\001\005\005\007\003  
\010\006\012\053\006\001\004\001\202\067\012\003\004\060\021\006  
\011\140\206\110\001\206\370\102\001\001\004\004\003\002\000\377  
\060\121\006\003\125\035\040\004\112\060\110\060\106\006\010\052  
\050\000\030\001\001\001\003\060\072\060\070\006\010\053\006\001  
\005\005\007\002\001\026\054\150\164\164\160\072\057\057\167\167

\167\056\141\055\143\145\162\164\056\141\164\057\143\145\162\164  
\151\146\151\143\141\164\145\055\160\157\154\151\143\171\056\150  
\164\155\154\060\073\006\011\140\206\110\001\206\370\102\001\010  
\004\056\026\054\150\164\164\160\072\057\057\167\167\167\056\141  
\055\143\145\162\164\056\141\164\057\143\145\162\164\151\146\151  
\143\141\164\145\055\160\157\154\151\143\171\056\150\164\155\154  
\060\031\006\003\125\035\021\004\022\060\020\201\016\151\156\146  
\157\100\141\055\143\145\162\164\056\141\164\060\057\006\003\125  
\035\022\004\050\060\046\201\016\151\156\146\157\100\141\055\143  
\145\162\164\056\141\164\206\024\150\164\164\160\072\057\057\167  
\167\167\056\141\055\143\145\162\164\056\141\164\060\105\006\003  
\125\035\037\004\076\060\074\060\072\240\070\240\066\206\064\150  
\164\164\160\163\072\057\057\163\145\143\165\162\145\056\141\055  
\143\145\162\164\056\141\164\057\143\147\151\055\142\151\156\057  
\141\055\143\145\162\164\055\141\144\166\141\156\143\145\144\056  
\143\147\151\060\015\006\011\052\206\110\206\367\015\001\001\005  
\005\000\003\202\001\001\000\045\365\042\370\037\164\155\253\275  
\373\367\344\356\074\275\041\057\161\126\204\166\123\174\121\041  
\101\035\154\367\045\020\050\316\014\357\150\033\160\036\110\312  
\147\013\171\227\360\126\072\330\333\274\167\321\214\073\173\212  
\071\101\021\314\116\072\263\102\325\367\362\060\174\007\255\172  
\157\175\376\230\245\016\160\237\031\210\140\104\034\121\030\206  
\034\312\253\270\105\364\132\113\203\066\004\212\301\347\354\201  
\173\066\355\347\201\152\341\340\064\145\134\115\201\365\256\141  
\356\375\234\213\244\274\116\310\224\066\074\054\300\324\074\326  
\336\265\244\041\177\166\242\002\173\225\064\135\132\266\361\301  
\102\365\134\150\247\306\171\332\103\276\076\377\055\051\043\322  
\115\022\376\342\163\153\151\223\007\221\062\231\036\165\242\326  
\232\300\265\372\212\337\051\067\233\262\016\275\150\306\202\307  
\272\072\214\323\215\106\144\177\355\065\132\075\377\077\223\250  
\071\331\301\331\365\205\243\102\373\251\333\146\371\255\154\106  
\047\232\371\055\236\057\010\371\205\343\344\370\226\353\143\121  
\200\032\376\121\256\101\070

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "A-CERT ADVANCED"  
# Issuer: 1.2.840.113549.1.9.1=info@a-cert.at,CN=A-CERT ADVANCED,OU=A-CERT Certification  
Service,O=ARGE DATEN - Austrian Society for Data Protection,L=Vienna,ST=Austria,C=AT  
# Serial Number: 0 (0x0)  
# Subject: 1.2.840.113549.1.9.1=info@a-cert.at,CN=A-CERT ADVANCED,OU=A-CERT Certification  
Service,O=ARGE DATEN - Austrian Society for Data Protection,L=Vienna,ST=Austria,C=AT  
# Not Valid Before: Sat Oct 23 14:14:14 2004  
# Not Valid After: Sun Oct 23 14:14:14 2011  
# Fingerprint (MD5): b4:4a:db:e8:59:16:46:1e:5a:d8:6e:da:06:43:52:62

```

Fingerprint (SHA1): 29:64:b6:86:13:5b:5d:fd:dd:32:53:a8:9b:bc:24:d7:4b:08:c6:4d
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "A-CERT ADVANCED"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\051\144\266\206\023\133\135\375\335\062\123\250\233\274\044\327
\113\010\306\115
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\264\112\333\350\131\026\106\036\132\330\156\332\006\103\122\142
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\314\061\013\060\011\006\003\125\004\006\023\002\101\124
\061\020\060\016\006\003\125\004\010\023\007\101\165\163\164\162
\151\141\061\017\060\015\006\003\125\004\007\023\006\126\151\145
\156\156\141\061\072\060\070\006\003\125\004\012\023\061\101\122
\107\105\040\104\101\124\105\116\040\055\040\101\165\163\164\162
\151\141\156\040\123\157\143\151\145\164\171\040\146\157\162\040
\104\141\164\141\040\120\162\157\164\145\143\164\151\157\156\061
\045\060\043\006\003\125\004\013\023\034\101\055\103\105\122\124
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\123
\145\162\166\151\143\145\061\030\060\026\006\003\125\004\003\023
\017\101\055\103\105\122\124\040\101\104\126\101\116\103\105\104
\061\035\060\033\006\011\052\206\110\206\367\015\001\011\001\026
\016\151\156\146\157\100\141\055\143\145\162\164\056\141\164
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\000
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

```

```

Microsoft Code Signing Only Certificate
Certificate "A-Trust-Qual-01"
Issuer: CN=A-Trust-Qual-01,OU=A-Trust-Qual-01,O=A-Trust Ges. für Sicherheitssysteme im elektr.
Datenverkehr GmbH,C=AT
Serial Number: 57923 (0xe243)
Subject: CN=A-Trust-Qual-01,OU=A-Trust-Qual-01,O=A-Trust Ges. für Sicherheitssysteme im elektr.
Datenverkehr GmbH,C=AT
Not Valid Before: Tue Nov 30 23:00:00 2004
Not Valid After: Sun Nov 30 23:00:00 2014
Fingerprint (MD5): a7:71:fd:26:fc:3c:e5:40:f1:99:06:eb:c1:93:6d:e9
Fingerprint (SHA1): e6:19:d2:5b:38:0b:7b:13:fd:a3:3e:8a:58:cd:82:d8:a8:8e:05:15
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

```

```
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "A-Trust-Qual-01"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\317\061\013\060\011\006\003\125\004\006\023\002\101\124
\061\201\213\060\201\210\006\003\125\004\012\036\201\200\000\101
\000\055\000\124\000\162\000\165\000\163\000\164\000\040\000\107
\000\145\000\163\000\056\000\040\000\146\000\374\000\162\000\040
\000\123\000\151\000\143\000\150\000\145\000\162\000\150\000\145
\000\151\000\164\000\163\000\163\000\171\000\163\000\164\000\145
\000\155\000\145\000\040\000\151\000\155\000\040\000\145\000\154
\000\145\000\153\000\164\000\162\000\056\000\040\000\104\000\141
\000\164\000\145\000\156\000\166\000\145\000\162\000\153\000\145
\000\150\000\162\000\040\000\107\000\155\000\142\000\110\061\030
\060\026\006\003\125\004\013\023\017\101\055\124\162\165\163\164
\055\121\165\141\154\055\060\061\061\030\060\026\006\003\125\004
\003\023\017\101\055\124\162\165\163\164\055\121\165\141\154\055
\060\061
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\317\061\013\060\011\006\003\125\004\006\023\002\101\124
\061\201\213\060\201\210\006\003\125\004\012\036\201\200\000\101
\000\055\000\124\000\162\000\165\000\163\000\164\000\040\000\107
\000\145\000\163\000\056\000\040\000\146\000\374\000\162\000\040
\000\123\000\151\000\143\000\150\000\145\000\162\000\150\000\145
\000\151\000\164\000\163\000\163\000\171\000\163\000\164\000\145
\000\155\000\145\000\040\000\151\000\155\000\040\000\145\000\154
\000\145\000\153\000\164\000\162\000\056\000\040\000\104\000\141
\000\164\000\145\000\156\000\166\000\145\000\162\000\153\000\145
\000\150\000\162\000\040\000\107\000\155\000\142\000\110\061\030
\060\026\006\003\125\004\013\023\017\101\055\124\162\165\163\164
\055\121\165\141\154\055\060\061\061\030\060\026\006\003\125\004
\003\023\017\101\055\124\162\165\163\164\055\121\165\141\154\055
\060\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\003\000\342\103
END
CKA_VALUE MULTILINE_OCTAL
\060\202\004\123\060\202\003\073\240\003\002\001\002\002\003\000
\342\103\060\015\006\011\052\206\110\206\367\015\001\001\005\005
\000\060\201\317\061\013\060\011\006\003\125\004\006\023\002\101
\124\061\201\213\060\201\210\006\003\125\004\012\036\201\200\000
\101\000\055\000\124\000\162\000\165\000\163\000\164\000\040\000
\107\000\145\000\163\000\056\000\040\000\146\000\374\000\162\000
```



\040\000\123\000\151\000\143\000\150\000\145\000\162\000\150\000  
\145\000\151\000\164\000\163\000\163\000\171\000\163\000\164\000  
\145\000\155\000\145\000\040\000\151\000\155\000\040\000\145\000  
\154\000\145\000\153\000\164\000\162\000\056\000\040\000\104\000  
\141\000\164\000\145\000\156\000\166\000\145\000\162\000\153\000  
\145\000\150\000\162\000\040\000\107\000\155\000\142\000\110\061  
\030\060\026\006\003\125\004\013\023\017\101\055\124\162\165\163  
\164\055\121\165\141\154\055\060\061\061\030\060\026\006\003\125  
\004\003\023\017\101\055\124\162\165\163\164\055\121\165\141\154  
\055\060\061\060\036\027\015\060\064\061\061\063\060\062\063\060  
\060\060\060\132\027\015\061\064\061\061\063\060\062\063\060\060  
\060\060\132\060\201\317\061\013\060\011\006\003\125\004\006\023  
\002\101\124\061\201\213\060\201\210\006\003\125\004\012\036\201  
\200\000\101\000\055\000\124\000\162\000\165\000\163\000\164\000  
\040\000\107\000\145\000\163\000\056\000\040\000\146\000\374\000  
\162\000\040\000\123\000\151\000\143\000\150\000\145\000\162\000  
\150\000\145\000\151\000\164\000\163\000\163\000\171\000\163\000  
\164\000\145\000\155\000\145\000\040\000\151\000\155\000\040\000  
\145\000\154\000\145\000\153\000\164\000\162\000\056\000\040\000  
\104\000\141\000\164\000\145\000\156\000\166\000\145\000\162\000  
\153\000\145\000\150\000\162\000\040\000\107\000\155\000\142\000  
\110\061\030\060\026\006\003\125\004\013\023\017\101\055\124\162  
\165\163\164\055\121\165\141\154\055\060\061\061\030\060\026\006  
\003\125\004\003\023\017\101\055\124\162\165\163\164\055\121\165  
\141\154\055\060\061\060\202\001\042\060\015\006\011\052\206\110  
\206\367\015\001\001\001\005\000\003\202\001\017\000\060\202\001  
\012\002\202\001\001\000\246\206\007\161\041\274\123\030\103\207  
\175\161\242\173\002\067\064\131\135\001\142\205\131\362\350\174  
\357\271\043\125\033\274\016\132\276\336\310\202\301\227\317\373  
\110\375\376\107\031\106\332\261\302\064\213\274\106\322\332\225  
\224\016\134\265\010\013\106\254\140\304\173\140\116\103\034\252  
\300\004\141\333\063\334\266\154\011\325\316\325\012\357\020\021  
\213\115\040\001\167\030\213\376\004\226\047\254\373\354\044\260  
\307\265\340\323\141\360\304\365\174\331\310\306\221\041\167\020  
\321\211\236\333\210\000\011\321\015\151\377\071\021\343\025\253  
\115\107\051\250\061\261\332\070\106\127\110\150\137\355\216\105  
\256\261\304\250\154\242\364\116\254\277\277\070\015\357\323\325  
\244\357\262\111\374\161\147\224\230\074\357\377\372\046\210\157  
\332\375\137\112\101\354\177\353\125\315\360\353\141\121\005\147  
\137\353\277\226\042\366\064\254\173\340\215\202\374\150\007\137  
\220\164\132\103\315\252\304\216\202\151\157\047\367\012\271\075  
\017\275\345\040\124\120\300\003\112\030\006\007\004\324\240\314  
\224\026\315\322\111\217\002\003\001\000\001\243\066\060\064\060  
\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377  
\060\021\006\003\125\035\016\004\012\004\010\113\074\214\035\205  
\351\157\255\060\016\006\003\125\035\017\001\001\377\004\004\003  
\002\001\006\060\015\006\011\052\206\110\206\367\015\001\001\005  
\005\000\003\202\001\001\000\041\113\254\230\234\314\045\030\220

```
\361\060\007\254\220\016\172\127\356\132\204\306\162\247\110\277
\264\362\263\367\315\227\154\205\331\370\357\035\077\011\323\126
\212\211\251\105\126\226\325\171\015\227\051\275\116\331\261\316
\101\200\012\202\307\131\332\066\177\261\322\366\121\121\121\114
\171\242\164\273\272\075\330\026\010\024\141\045\204\004\055\012
\051\204\357\120\126\367\341\000\015\023\301\261\022\142\244\363
\372\171\110\344\152\373\011\227\274\177\241\304\232\022\146\012
\325\020\261\324\002\271\361\240\225\030\170\117\353\110\032\043
\106\162\174\225\020\166\175\336\144\225\172\221\153\325\120\066
\364\044\321\076\327\256\032\060\074\326\067\200\317\332\136\142
\041\104\324\045\357\304\257\134\046\053\364\005\300\013\024\265
\246\000\060\250\104\274\310\105\230\100\372\300\060\141\111\260
\063\132\352\124\043\300\336\100\120\274\200\275\346\334\220\274
\334\266\164\155\025\263\343\272\077\002\332\065\177\354\271\051
\104\225\015\072\137\151\165\127\003\032\141\276\057\144\241\152
\067\106\316\204\025\304\126
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

# Microsoft Code Signing Only Certificate

# Trust for "A-Trust-Qual-01"

# Issuer: CN=A-Trust-Qual-01,OU=A-Trust-Qual-01,O=A-Trust Ges. für Sicherheitssysteme im elektr.  
Datenverkehr GmbH,C=AT

# Serial Number: 57923 (0xe243)

# Subject: CN=A-Trust-Qual-01,OU=A-Trust-Qual-01,O=A-Trust Ges. für Sicherheitssysteme im elektr.  
Datenverkehr GmbH,C=AT

# Not Valid Before: Tue Nov 30 23:00:00 2004

# Not Valid After: Sun Nov 30 23:00:00 2014

# Fingerprint (MD5): a7:71:fd:26:fc:3c:e5:40:f1:99:06:eb:c1:93:6d:e9

# Fingerprint (SHA1): e6:19:d2:5b:38:0b:7b:13:fd:a3:3e:8a:58:cd:82:d8:a8:8e:05:15

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "A-Trust-Qual-01"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\346\031\322\133\070\013\173\023\375\243\076\212\130\315\202\330
\250\216\005\025
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\247\161\375\046\374\074\345\100\361\231\006\353\301\223\155\351
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\201\317\061\013\060\011\006\003\125\004\006\023\002\101\124
\061\201\213\060\201\210\006\003\125\004\012\036\201\200\000\101
\000\055\000\124\000\162\000\165\000\163\000\164\000\040\000\107
```

```
\000\145\000\163\000\056\000\040\000\146\000\374\000\162\000\040
\000\123\000\151\000\143\000\150\000\145\000\162\000\150\000\145
\000\151\000\164\000\163\000\163\000\171\000\163\000\164\000\145
\000\155\000\145\000\040\000\151\000\155\000\040\000\145\000\154
\000\145\000\153\000\164\000\162\000\056\000\040\000\104\000\141
\000\164\000\145\000\156\000\166\000\145\000\162\000\153\000\145
\000\150\000\162\000\040\000\107\000\155\000\142\000\110\061\030
\060\026\006\003\125\004\013\023\017\101\055\124\162\165\163\164
\055\121\165\141\154\055\060\061\061\030\060\026\006\003\125\004
\003\023\017\101\055\124\162\165\163\164\055\121\165\141\154\055
\060\061
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\003\000\342\103
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "A-Trust-nQual-01"

# Issuer: CN=A-Trust-nQual-01,OU=A-Trust-nQual-01,O=A-Trust,C=AT

# Serial Number: 57922 (0xe242)

# Subject: CN=A-Trust-nQual-01,OU=A-Trust-nQual-01,O=A-Trust,C=AT

# Not Valid Before: Tue Nov 30 23:00:00 2004

# Not Valid After: Sun Nov 30 23:00:00 2014

# Fingerprint (MD5): c9:19:62:d0:da:7e:10:20:fc:a4:cd:03:80:87:2d:f5

# Fingerprint (SHA1): 51:a4:4c:28:f3:13:e3:f9:cb:5e:7c:0a:1e:0e:0d:d2:84:37:58:ae

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "A-Trust-nQual-01"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

```
\060\125\061\013\060\011\006\003\125\004\006\023\002\101\124\061
\020\060\016\006\003\125\004\012\023\007\101\055\124\162\165\163
\164\061\031\060\027\006\003\125\004\013\023\020\101\055\124\162
\165\163\164\055\156\121\165\141\154\055\060\061\061\031\060\027
\006\003\125\004\003\023\020\101\055\124\162\165\163\164\055\156
\121\165\141\154\055\060\061
```

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\125\061\013\060\011\006\003\125\004\006\023\002\101\124\061
\020\060\016\006\003\125\004\012\023\007\101\055\124\162\165\163
\164\061\031\060\027\006\003\125\004\013\023\020\101\055\124\162
```

\165\163\164\055\156\121\165\141\154\055\060\061\061\031\060\027  
\006\003\125\004\003\023\020\101\055\124\162\165\163\164\055\156  
\121\165\141\154\055\060\061

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\003\000\342\102

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\135\060\202\002\105\240\003\002\001\002\002\003\000  
\342\102\060\015\006\011\052\206\110\206\367\015\001\001\005\005  
\000\060\125\061\013\060\011\006\003\125\004\006\023\002\101\124  
\061\020\060\016\006\003\125\004\012\023\007\101\055\124\162\165  
\163\164\061\031\060\027\006\003\125\004\013\023\020\101\055\124  
\162\165\163\164\055\156\121\165\141\154\055\060\061\061\031\060  
\027\006\003\125\004\003\023\020\101\055\124\162\165\163\164\055  
\156\121\165\141\154\055\060\061\060\036\027\015\060\064\061\061  
\063\060\062\063\060\060\060\060\132\027\015\061\064\061\061\063  
\060\062\063\060\060\060\060\132\060\125\061\013\060\011\006\003  
\125\004\006\023\002\101\124\061\020\060\016\006\003\125\004\012  
\023\007\101\055\124\162\165\163\164\061\031\060\027\006\003\125  
\004\013\023\020\101\055\124\162\165\163\164\055\156\121\165\141  
\154\055\060\061\061\031\060\027\006\003\125\004\003\023\020\101  
\055\124\162\165\163\164\055\156\121\165\141\154\055\060\061\060  
\202\001\042\060\015\006\011\052\206\110\206\367\015\001\001\001  
\005\000\003\202\001\017\000\060\202\001\012\002\202\001\001\000  
\377\365\034\200\021\236\236\036\150\130\314\322\167\333\307\364  
\216\147\122\120\130\272\022\244\152\073\026\367\214\163\117\114  
\212\112\363\140\221\353\076\145\231\051\331\100\325\056\010\360  
\376\206\326\315\145\367\335\330\062\225\007\116\215\073\046\165  
\333\067\016\060\050\043\340\153\144\146\212\204\323\063\351\075  
\075\333\246\201\071\346\171\031\145\357\352\130\105\377\353\214  
\063\374\277\370\021\331\057\050\064\212\033\365\054\077\276\114  
\266\140\225\143\231\266\022\016\367\105\121\121\317\207\034\004  
\203\051\035\351\170\227\061\052\112\107\103\265\223\230\345\371  
\344\254\115\367\336\034\172\356\174\152\333\133\330\360\114\237  
\360\356\037\075\016\121\264\337\036\242\024\002\160\364\065\317  
\254\251\123\124\173\067\330\317\106\231\310\373\054\314\072\054  
\035\337\344\034\052\021\342\326\150\202\316\215\051\220\346\201  
\324\054\046\176\304\362\066\137\052\123\103\111\120\277\123\153  
\247\036\153\265\223\207\004\342\132\211\166\310\077\074\161\335  
\234\313\177\074\306\226\315\221\372\302\076\146\115\030\272\025  
\002\003\001\000\001\243\066\060\064\060\017\006\003\125\035\023  
\001\001\377\004\005\060\003\001\001\377\060\021\006\003\125\035  
\016\004\012\004\010\116\131\316\307\002\062\207\060\060\016\006  
\003\125\035\017\001\001\377\004\004\003\002\001\006\060\015\006  
\011\052\206\110\206\367\015\001\001\005\005\000\003\202\001\001  
\000\353\322\075\107\130\124\364\146\345\366\365\173\133\260\007  
\102\225\011\002\121\100\276\375\210\267\367\230\362\235\250\271

```
\005\017\125\244\231\212\106\212\264\006\053\010\077\332\257\067
\327\007\215\320\172\337\235\063\240\251\036\311\374\212\106\021
\275\002\236\076\065\357\334\113\337\370\055\133\307\002\100\212
\147\047\145\136\226\371\263\116\116\227\150\362\125\345\217\031
\046\174\337\231\345\057\227\316\362\266\266\325\055\077\201\055
\140\345\132\304\174\066\230\363\015\156\360\336\143\347\350\046
\110\201\237\162\230\214\146\233\061\244\174\232\206\152\241\376
\150\176\076\042\113\365\262\152\144\331\266\056\257\375\362\261
\237\133\310\043\357\356\132\107\061\127\220\323\347\352\375\034
\272\047\320\326\005\321\130\067\327\265\241\372\005\203\127\237
\125\146\217\235\163\002\103\157\351\036\142\243\005\142\212\251
\357\264\206\221\221\256\343\124\274\064\146\044\101\215\327\366
\263\107\106\100\333\055\372\112\140\071\262\350\326\247\244\341
\065\020\165\265\376\303\122\024\013\070\336\246\131\050\221\020
\306
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
Trust for "A-Trust-nQual-01"
Issuer: CN=A-Trust-nQual-01,OU=A-Trust-nQual-01,O=A-Trust,C=AT
Serial Number: 57922 (0xe242)
Subject: CN=A-Trust-nQual-01,OU=A-Trust-nQual-01,O=A-Trust,C=AT
Not Valid Before: Tue Nov 30 23:00:00 2004
Not Valid After: Sun Nov 30 23:00:00 2014
Fingerprint (MD5): c9:19:62:d0:da:7e:10:20:fc:a4:cd:03:80:87:2d:f5
Fingerprint (SHA1): 51:a4:4c:28:f3:13:e3:f9:cb:5e:7c:0a:1e:0e:0d:d2:84:37:58:ae
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "A-Trust-nQual-01"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\121\244\114\050\363\023\343\371\313\136\174\012\036\016\015\322
\204\067\130\256
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\311\031\142\320\332\176\020\040\374\244\315\003\200\207\055\365
END
```

```
CKA_ISSUER MULTILINE_OCTAL
\060\125\061\013\060\011\006\003\125\004\006\023\002\101\124\061
\020\060\016\006\003\125\004\012\023\007\101\055\124\162\165\163
\164\061\031\060\027\006\003\125\004\013\023\020\101\055\124\162
\165\163\164\055\156\121\165\141\154\055\060\061\061\031\060\027
\006\003\125\004\003\023\020\101\055\124\162\165\163\164\055\156
\121\165\141\154\055\060\061
```

```
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\003\000\342\102
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
Certificate "Staat der Nederlanden Root CA"
Issuer: CN=Staat der Nederlanden Root CA,O=Staat der Nederlanden,C=NL
Serial Number:98:96:8a
Subject: CN=Staat der Nederlanden Root CA,O=Staat der Nederlanden,C=NL
Not Valid Before: Tue Dec 17 09:23:49 2002
Not Valid After: Wed Dec 16 09:15:38 2015
Fingerprint (MD5): 60:84:7c:5a:ce:db:0c:d4:cb:a7:e9:fe:02:c6:a9:c0
Fingerprint (SHA1): 10:1d:fa:3f:d5:0b:cb:bb:9b:b5:60:0c:19:55:a4:1a:f4:73:3a:04
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Staat der Nederlanden Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\125\061\013\060\011\006\003\125\004\006\023\002\116\114\061
\036\060\034\006\003\125\004\012\023\025\123\164\141\141\164\040
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\061
\046\060\044\006\003\125\004\003\023\035\123\164\141\141\164\040
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\040
\122\157\157\164\040\103\101
END
```

```
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\125\061\013\060\011\006\003\125\004\006\023\002\116\114\061
\036\060\034\006\003\125\004\012\023\025\123\164\141\141\164\040
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\061
\046\060\044\006\003\125\004\003\023\035\123\164\141\141\164\040
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\040
\122\157\157\164\040\103\101
END
```

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\004\000\230\226\212
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\272\060\202\002\242\240\003\002\001\002\002\004\000
\230\226\212\060\015\006\011\052\206\110\206\367\015\001\001\005
\005\000\060\125\061\013\060\011\006\003\125\004\006\023\002\116
```

\114\061\036\060\034\006\003\125\004\012\023\025\123\164\141\141  
\164\040\144\145\162\040\116\145\144\145\162\154\141\156\144\145  
\156\061\046\060\044\006\003\125\004\003\023\035\123\164\141\141  
\164\040\144\145\162\040\116\145\144\145\162\154\141\156\144\145  
\156\040\122\157\157\164\040\103\101\060\036\027\015\060\062\061  
\062\061\067\060\071\062\063\064\071\132\027\015\061\065\061\062  
\061\066\060\071\061\065\063\070\132\060\125\061\013\060\011\006  
\003\125\004\006\023\002\116\114\061\036\060\034\006\003\125\004  
\012\023\025\123\164\141\141\164\040\144\145\162\040\116\145\144  
\145\162\154\141\156\144\145\156\061\046\060\044\006\003\125\004  
\003\023\035\123\164\141\141\164\040\144\145\162\040\116\145\144  
\145\162\154\141\156\144\145\156\040\122\157\157\164\040\103\101  
\060\202\001\042\060\015\006\011\052\206\110\206\367\015\001\001  
\001\005\000\003\202\001\017\000\060\202\001\012\002\202\001\001  
\000\230\322\265\121\021\172\201\246\024\230\161\155\276\314\347  
\023\033\326\047\016\172\263\152\030\034\266\141\132\325\141\011  
\277\336\220\023\307\147\356\335\363\332\305\014\022\236\065\125  
\076\054\047\210\100\153\367\334\335\042\141\365\302\307\016\365  
\366\325\166\123\115\217\214\274\030\166\067\205\235\350\312\111  
\307\322\117\230\023\011\242\076\042\210\234\177\326\362\020\145  
\264\356\137\030\325\027\343\370\305\375\342\235\242\357\123\016  
\205\167\242\017\341\060\107\356\000\347\063\175\104\147\032\013  
\121\350\213\240\236\120\230\150\064\122\037\056\155\001\362\140  
\105\362\061\353\251\061\150\051\273\172\101\236\306\031\177\224  
\264\121\071\003\177\262\336\247\062\233\264\107\216\157\264\112  
\256\345\257\261\334\260\033\141\274\231\162\336\344\211\267\172  
\046\135\332\063\111\133\122\234\016\365\212\255\303\270\075\350  
\006\152\302\325\052\013\154\173\204\275\126\005\313\206\145\222  
\354\104\053\260\216\271\334\160\013\106\332\255\274\143\210\071  
\372\333\152\376\043\372\274\344\110\364\147\053\152\021\020\041  
\111\002\003\001\000\001\243\201\221\060\201\216\060\014\006\003  
\125\035\023\004\005\060\003\001\001\377\060\117\006\003\125\035  
\040\004\110\060\106\060\104\006\004\125\035\040\000\060\074\060  
\072\006\010\053\006\001\005\005\007\002\001\026\056\150\164\164  
\160\072\057\057\167\167\167\056\160\153\151\157\166\145\162\150  
\145\151\144\056\156\154\057\160\157\154\151\143\151\145\163\057  
\162\157\157\164\055\160\157\154\151\143\171\060\016\006\003\125  
\035\017\001\001\377\004\004\003\002\001\006\060\035\006\003\125  
\035\016\004\026\004\024\250\175\353\274\143\244\164\023\164\000  
\354\226\340\323\064\301\054\277\154\370\060\015\006\011\052\206  
\110\206\367\015\001\001\005\005\000\003\202\001\001\000\005\204  
\207\125\164\066\141\301\273\321\324\306\025\250\023\264\237\244  
\376\273\356\025\264\057\006\014\051\362\250\222\244\141\015\374  
\253\134\010\133\121\023\053\115\302\052\141\310\370\011\130\374  
\055\002\262\071\175\231\146\201\277\156\134\225\105\040\154\346  
\171\247\321\330\034\051\374\302\040\047\121\310\361\174\135\064  
\147\151\205\021\060\306\000\322\327\363\323\174\266\360\061\127  
\050\022\202\163\351\063\057\246\125\264\013\221\224\107\234\372

```
\273\172\102\062\350\256\176\055\310\274\254\024\277\331\017\331
\133\374\301\371\172\225\341\175\176\226\374\161\260\302\114\310
\337\105\064\311\316\015\362\234\144\010\320\073\303\051\305\262
\355\220\004\301\261\051\221\305\060\157\301\251\162\063\314\376
\135\026\027\054\021\151\347\176\376\305\203\010\337\274\334\042
\072\056\040\151\043\071\126\140\147\220\213\056\166\071\373\021
\210\227\366\174\275\113\270\040\026\147\005\215\342\073\301\162
\077\224\225\067\307\135\271\236\330\223\241\027\217\377\014\146
\025\301\044\174\062\174\003\035\073\241\130\105\062\223
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

# Microsoft Code Signing Only Certificate

# Trust for "Staat der Nederlanden Root CA"

# Issuer: CN=Staat der Nederlanden Root CA,O=Staat der Nederlanden,C=NL

# Serial Number:98:96:8a

# Subject: CN=Staat der Nederlanden Root CA,O=Staat der Nederlanden,C=NL

# Not Valid Before: Tue Dec 17 09:23:49 2002

# Not Valid After: Wed Dec 16 09:15:38 2015

# Fingerprint (MD5): 60:84:7c:5a:ce:db:0c:d4:cb:a7:e9:fe:02:c6:a9:c0

# Fingerprint (SHA1): 10:1d:fa:3f:d5:0b:cb:bb:9b:b5:60:0c:19:55:a4:1a:f4:73:3a:04

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "Staat der Nederlanden Root CA"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\020\035\372\077\325\013\313\273\233\265\140\014\031\125\244\032
\364\163\072\004
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\140\204\174\132\316\333\014\324\313\247\351\376\002\306\251\300
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\125\061\013\060\011\006\003\125\004\006\023\002\116\114\061
\036\060\034\006\003\125\004\012\023\025\123\164\141\141\164\040
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\061
\046\060\044\006\003\125\004\003\023\035\123\164\141\141\164\040
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\040
\122\157\157\164\040\103\101
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\004\000\230\226\212
```

END

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

```
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```



CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Certificate "Serasa Certificate Authority II"  
# Issuer: CN=Serasa Certificate Authority II,OU=Serasa CA II,O=Serasa S.A.,C=BR  
# Serial Number:46:2b:56:c6:ef:a7:91:a0  
# Subject: CN=Serasa Certificate Authority II,OU=Serasa CA II,O=Serasa S.A.,C=BR  
# Not Valid Before: Fri Nov 26 12:34:48 2004  
# Not Valid After: Thu Nov 21 12:44:48 2024  
# Fingerprint (MD5): 1b:d7:5f:76:73:4c:c0:dc:98:ca:44:2b:cc:0f:78:dd  
# Fingerprint (SHA1): 31:e2:c5:2c:e1:08:9b:ef:fd:da:db:26:dd:7c:78:2e:bc:40:37:bd

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "Serasa Certificate Authority II"  
CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL  
\060\144\061\013\060\011\006\003\125\004\006\023\002\102\122\061  
\024\060\022\006\003\125\004\012\023\013\123\145\162\141\163\141  
\040\123\056\101\056\061\025\060\023\006\003\125\004\013\023\014  
\123\145\162\141\163\141\040\103\101\040\111\111\061\050\060\046  
\006\003\125\004\003\023\037\123\145\162\141\163\141\040\103\145  
\162\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162  
\151\164\171\040\111\111

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL  
\060\144\061\013\060\011\006\003\125\004\006\023\002\102\122\061  
\024\060\022\006\003\125\004\012\023\013\123\145\162\141\163\141  
\040\123\056\101\056\061\025\060\023\006\003\125\004\013\023\014  
\123\145\162\141\163\141\040\103\101\040\111\111\061\050\060\046  
\006\003\125\004\003\023\037\123\145\162\141\163\141\040\103\145  
\162\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162  
\151\164\171\040\111\111

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\010\106\053\126\306\357\247\221\240

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\026\060\202\002\376\240\003\002\001\002\002\010\106  
\053\126\306\357\247\221\240\060\015\006\011\052\206\110\206\367  
\015\001\001\005\005\000\060\144\061\013\060\011\006\003\125\004  
\006\023\002\102\122\061\024\060\022\006\003\125\004\012\023\013  
\123\145\162\141\163\141\040\123\056\101\056\061\025\060\023\006  
\003\125\004\013\023\014\123\145\162\141\163\141\040\103\101\040  
\111\111\061\050\060\046\006\003\125\004\003\023\037\123\145\162

\141\163\141\040\103\145\162\164\151\146\151\143\141\164\145\040  
\101\165\164\150\157\162\151\164\171\040\111\111\060\036\027\015  
\060\064\061\061\062\066\061\062\063\064\064\070\132\027\015\062  
\064\061\061\062\061\061\062\064\064\064\070\132\060\144\061\013  
\060\011\006\003\125\004\006\023\002\102\122\061\024\060\022\006  
\003\125\004\012\023\013\123\145\162\141\163\141\040\123\056\101  
\056\061\025\060\023\006\003\125\004\013\023\014\123\145\162\141  
\163\141\040\103\101\040\111\111\061\050\060\046\006\003\125\004  
\003\023\037\123\145\162\141\163\141\040\103\145\162\164\151\146  
\151\143\141\164\145\040\101\165\164\150\157\162\151\164\171\040  
\111\111\060\202\001\042\060\015\006\011\052\206\110\206\367\015  
\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002\202  
\001\001\000\255\037\211\262\146\235\133\267\251\325\345\362\140  
\104\204\371\224\155\342\171\135\156\300\245\256\272\061\143\240  
\251\236\121\136\134\156\007\331\112\105\164\137\215\236\151\070  
\266\050\103\222\256\117\202\240\374\066\121\065\076\215\240\347  
\016\051\010\014\065\267\043\075\357\113\032\016\060\130\127\100  
\000\022\361\200\232\200\043\112\301\240\206\215\101\070\210\120  
\163\150\361\137\123\210\224\012\021\041\305\140\264\242\140\145  
\053\030\372\020\073\221\222\077\370\325\142\116\276\126\136\305  
\220\205\112\065\200\256\156\073\101\014\225\022\356\247\052\003  
\116\274\147\075\113\200\031\022\342\164\056\135\353\110\271\117  
\073\157\074\367\302\260\037\032\104\075\233\134\300\275\272\006  
\145\014\347\164\147\037\311\144\076\367\237\215\054\033\101\222  
\370\035\334\251\137\220\322\123\160\065\215\004\252\044\176\364  
\315\245\046\116\350\366\363\070\025\060\276\255\032\363\107\044  
\217\112\120\047\047\123\376\141\232\172\134\330\154\307\117\126  
\364\051\054\245\243\024\227\337\142\015\274\222\043\133\243\112  
\364\072\225\002\003\001\000\001\243\201\313\060\201\310\060\047  
\006\003\125\035\045\004\040\060\036\006\010\053\006\001\005\005  
\007\003\001\006\010\053\006\001\005\005\007\003\003\006\010\053  
\006\001\005\005\007\003\010\060\135\006\003\125\035\037\004\126  
\060\124\060\122\240\120\240\116\206\114\150\164\164\160\072\057  
\057\167\167\167\056\143\145\162\164\151\146\151\143\141\144\157  
\144\151\147\151\164\141\154\056\143\157\155\056\142\162\057\162  
\145\160\157\163\151\164\157\162\151\157\057\163\145\162\141\163  
\141\143\141\057\143\162\154\057\123\145\162\141\163\141\103\101  
\111\111\056\143\162\154\060\035\006\003\125\035\016\004\026\004  
\024\236\354\231\020\000\111\153\314\212\077\333\157\006\345\312  
\024\030\162\223\203\060\017\006\003\125\035\023\001\001\377\004  
\005\060\003\001\001\377\060\016\006\003\125\035\017\001\001\377  
\004\004\003\002\001\006\060\015\006\011\052\206\110\206\367\015  
\001\001\005\005\000\003\202\001\001\000\240\013\266\247\335\315  
\065\110\350\156\217\250\150\340\261\233\221\044\041\311\126\351  
\232\365\356\160\241\064\260\344\174\076\252\312\227\350\200\377  
\142\005\344\354\100\354\331\345\234\145\133\000\231\264\242\060  
\105\004\134\057\265\320\223\257\332\221\005\351\337\231\061\365  
\212\204\017\045\330\147\336\051\153\034\267\110\375\266\336\223

```
\022\257\167\252\001\351\303\341\060\024\252\137\170\250\107\177
\324\272\122\141\061\361\031\270\333\036\053\250\211\236\306\060
\162\221\006\260\043\251\003\031\150\362\247\004\253\356\316\122
\066\140\312\110\333\123\372\234\247\174\265\365\064\057\103\176
\254\364\204\266\225\062\245\244\276\351\152\252\213\101\231\312
\002\275\022\073\347\007\321\261\362\105\247\164\247\046\344\274
\150\157\314\031\041\360\224\312\310\102\137\376\071\367\333\072
\136\063\245\233\006\252\320\062\254\310\252\176\213\261\070\210
\277\346\114\350\240\345\217\234\104\036\036\040\036\360\057\141
\252\151\206\174\325\365\267\316\311\053\305\014\335\312\267\050
\302\005\336\147\031\253\055\215\243\147
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
Trust for "Serasa Certificate Authority II"
Issuer: CN=Serasa Certificate Authority II,OU=Serasa CA II,O=Serasa S.A.,C=BR
Serial Number:46:2b:56:c6:ef:a7:91:a0
Subject: CN=Serasa Certificate Authority II,OU=Serasa CA II,O=Serasa S.A.,C=BR
Not Valid Before: Fri Nov 26 12:34:48 2004
Not Valid After: Thu Nov 21 12:44:48 2024
Fingerprint (MD5): 1b:d7:5f:76:73:4c:c0:dc:98:ca:44:2b:cc:0f:78:dd
Fingerprint (SHA1): 31:e2:c5:2c:e1:08:9b:ef:fd:da:db:26:dd:7c:78:2e:bc:40:37:bd
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Serasa Certificate Authority II"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\061\342\305\054\341\010\233\357\375\332\333\046\335\174\170\056
\274\100\067\275
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\033\327\137\166\163\114\300\334\230\312\104\053\314\017\170\335
END
```

```
CKA_ISSUER MULTILINE_OCTAL
\060\144\061\013\060\011\006\003\125\004\006\023\002\102\122\061
\024\060\022\006\003\125\004\012\023\013\123\145\162\141\163\141
\040\123\056\101\056\061\025\060\023\006\003\125\004\013\023\014
\123\145\162\141\163\141\040\103\101\040\111\111\061\050\060\046
\006\003\125\004\003\023\037\123\145\162\141\163\141\040\103\145
\162\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162
\151\164\171\040\111\111
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\106\053\126\306\357\247\221\240
```

```
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
Certificate "TDC Internet"
Issuer: OU=TDC Internet Root CA,O=TDC Internet,C=DK
Serial Number:3a:cc:a5:4c
Subject: OU=TDC Internet Root CA,O=TDC Internet,C=DK
Not Valid Before: Thu Apr 05 16:33:17 2001
Not Valid After: Mon Apr 05 17:03:17 2021
Fingerprint (MD5): 91:f4:03:55:20:a1:f8:63:2c:62:de:ac:fb:61:1c:8e
Fingerprint (SHA1): 21:fc:bd:8e:7f:6c:af:05:1b:d1:b3:43:ec:a8:e7:61:47:f2:0f:8a
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "TDC Internet"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\103\061\013\060\011\006\003\125\004\006\023\002\104\113\061
\025\060\023\006\003\125\004\012\023\014\124\104\103\040\111\156
\164\145\162\156\145\164\061\035\060\033\006\003\125\004\013\023
\024\124\104\103\040\111\156\164\145\162\156\145\164\040\122\157
\157\164\040\103\101
```

```
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\103\061\013\060\011\006\003\125\004\006\023\002\104\113\061
\025\060\023\006\003\125\004\012\023\014\124\104\103\040\111\156
\164\145\162\156\145\164\061\035\060\033\006\003\125\004\013\023
\024\124\104\103\040\111\156\164\145\162\156\145\164\040\122\157
\157\164\040\103\101
```

```
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\004\072\314\245\114
```

```
END
CKA_VALUE MULTILINE_OCTAL
\060\202\004\053\060\202\003\023\240\003\002\001\002\002\004\072
\314\245\114\060\015\006\011\052\206\110\206\367\015\001\001\005
\005\000\060\103\061\013\060\011\006\003\125\004\006\023\002\104
\113\061\025\060\023\006\003\125\004\012\023\014\124\104\103\040
\111\156\164\145\162\156\145\164\061\035\060\033\006\003\125\004
\013\023\024\124\104\103\040\111\156\164\145\162\156\145\164\040
\122\157\157\164\040\103\101\060\036\027\015\060\061\060\064\060
\065\061\066\063\063\061\067\132\027\015\062\061\060\064\060\065
```

\061\067\060\063\061\067\132\060\103\061\013\060\011\006\003\125  
\004\006\023\002\104\113\061\025\060\023\006\003\125\004\012\023  
\014\124\104\103\040\111\156\164\145\162\156\145\164\061\035\060  
\033\006\003\125\004\013\023\024\124\104\103\040\111\156\164\145  
\162\156\145\164\040\122\157\157\164\040\103\101\060\202\001\042  
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003  
\202\001\017\000\060\202\001\012\002\202\001\001\000\304\270\100  
\274\221\325\143\037\327\231\240\213\014\100\036\164\267\110\235  
\106\214\002\262\340\044\137\360\031\023\247\067\203\153\135\307  
\216\371\204\060\316\032\073\372\373\316\213\155\043\306\303\156  
\146\237\211\245\337\340\102\120\147\372\037\154\036\364\320\005  
\326\277\312\326\116\344\150\140\154\106\252\034\135\143\341\007  
\206\016\145\000\247\056\246\161\306\274\271\201\250\072\175\032  
\322\371\321\254\113\313\316\165\257\334\173\372\201\163\324\374  
\272\275\101\210\324\164\263\371\136\070\072\074\103\250\322\225  
\116\167\155\023\014\235\217\170\001\267\132\040\037\003\067\065  
\342\054\333\113\053\054\170\271\111\333\304\320\307\234\234\344  
\212\040\011\041\026\126\146\377\005\354\133\343\360\317\253\044  
\044\136\303\177\160\172\022\304\322\265\020\240\266\041\341\215  
\170\151\125\104\151\365\312\226\034\064\205\027\045\167\342\366  
\057\047\230\170\375\171\006\072\242\326\132\103\301\377\354\004  
\073\356\023\357\323\130\132\377\222\353\354\256\332\362\067\003  
\107\101\266\227\311\055\012\101\042\273\273\346\247\002\003\001  
\000\001\243\202\001\045\060\202\001\041\060\021\006\011\140\206  
\110\001\206\370\102\001\001\004\004\003\002\000\007\060\145\006  
\003\125\035\037\004\136\060\134\060\132\240\130\240\126\244\124  
\060\122\061\013\060\011\006\003\125\004\006\023\002\104\113\061  
\025\060\023\006\003\125\004\012\023\014\124\104\103\040\111\156  
\164\145\162\156\145\164\061\035\060\033\006\003\125\004\013\023  
\024\124\104\103\040\111\156\164\145\162\156\145\164\040\122\157  
\157\164\040\103\101\061\015\060\013\006\003\125\004\003\023\004  
\103\122\114\061\060\053\006\003\125\035\020\004\044\060\042\200  
\017\062\060\060\061\060\064\060\065\061\066\063\063\061\067\132  
\201\017\062\060\062\061\060\064\060\065\061\067\060\063\061\067  
\132\060\013\006\003\125\035\017\004\004\003\002\001\006\060\037  
\006\003\125\035\043\004\030\060\026\200\024\154\144\001\307\375  
\205\155\254\310\332\236\120\010\205\010\265\074\126\250\120\060  
\035\006\003\125\035\016\004\026\004\024\154\144\001\307\375\205  
\155\254\310\332\236\120\010\205\010\265\074\126\250\120\060\014  
\006\003\125\035\023\004\005\060\003\001\001\377\060\035\006\011  
\052\206\110\206\366\175\007\101\000\004\020\060\016\033\010\126  
\065\056\060\072\064\056\060\003\002\004\220\060\015\006\011\052  
\206\110\206\367\015\001\001\005\005\000\003\202\001\001\000\116  
\103\314\321\335\035\020\033\006\177\267\244\372\323\331\115\373  
\043\237\043\124\133\346\213\057\004\050\213\265\047\155\211\241  
\354\230\151\334\347\215\046\203\005\171\164\354\264\271\243\227  
\301\065\000\375\025\332\071\201\072\225\061\220\336\227\351\206  
\250\231\167\014\345\132\240\204\377\022\026\254\156\270\215\303

```
\173\222\302\254\056\320\175\050\354\266\363\140\070\151\157\076
\330\004\125\076\236\314\125\322\272\376\273\107\004\327\012\331
\026\012\064\051\365\130\023\325\117\317\217\126\113\263\036\356
\323\230\171\332\010\036\014\157\270\370\026\047\357\302\157\075
\366\243\113\076\016\344\155\154\333\073\101\022\233\275\015\107
\043\177\074\112\320\257\300\257\366\357\033\265\025\304\353\203
\304\011\137\164\213\331\021\373\302\126\261\074\370\160\312\064
\215\103\100\023\214\375\231\003\124\171\306\056\352\206\241\366
\072\324\011\274\364\274\146\314\075\130\320\127\111\012\356\045
\342\101\356\023\371\233\070\064\321\000\365\176\347\224\035\374
\151\003\142\270\231\005\005\075\153\170\022\275\260\157\145
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
```

```
Trust for "TDC Internet"
```

```
Issuer: OU=TDC Internet Root CA,O=TDC Internet,C=DK
```

```
Serial Number:3a:cc:a5:4c
```

```
Subject: OU=TDC Internet Root CA,O=TDC Internet,C=DK
```

```
Not Valid Before: Thu Apr 05 16:33:17 2001
```

```
Not Valid After: Mon Apr 05 17:03:17 2021
```

```
Fingerprint (MD5): 91:f4:03:55:20:a1:f8:63:2c:62:de:ac:fb:61:1c:8e
```

```
Fingerprint (SHA1): 21:fc:bd:8e:7f:6c:af:05:1b:d1:b3:43:ec:a8:e7:61:47:f2:0f:8a
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "TDC Internet"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\041\374\275\216\177\154\257\005\033\321\263\103\354\250\347\141
\107\362\017\212
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\221\364\003\125\040\241\370\143\054\142\336\254\373\141\034\216
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\103\061\013\060\011\006\003\125\004\006\023\002\104\113\061
\025\060\023\006\003\125\004\012\023\014\124\104\103\040\111\156
\164\145\162\156\145\164\061\035\060\033\006\003\125\004\013\023
\024\124\104\103\040\111\156\164\145\162\156\145\164\040\122\157
\157\164\040\103\101
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\004\072\314\245\114
```

END

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "America Online Root Certification Authority 2"

# Issuer: CN=America Online Root Certification Authority 2,O=America Online Inc.,C=US

# Serial Number: 1 (0x1)

# Subject: CN=America Online Root Certification Authority 2,O=America Online Inc.,C=US

# Not Valid Before: Tue May 28 06:00:00 2002

# Not Valid After: Tue Sep 29 14:08:00 2037

# Fingerprint (MD5): d6:ed:3c:ca:e2:66:0f:af:10:43:0d:77:9b:04:09:bf

# Fingerprint (SHA1): 85:b5:ff:67:9b:0c:79:96:1f:c8:6e:44:22:00:46:13:db:17:92:84

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "America Online Root Certification Authority 2"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\143\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\034\060\032\006\003\125\004\012\023\023\101\155\145\162\151\143  
\141\040\117\156\154\151\156\145\040\111\156\143\056\061\066\060  
\064\006\003\125\004\003\023\055\101\155\145\162\151\143\141\040  
\117\156\154\151\156\145\040\122\157\157\164\040\103\145\162\164  
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162  
\151\164\171\040\062

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\143\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\034\060\032\006\003\125\004\012\023\023\101\155\145\162\151\143  
\141\040\117\156\154\151\156\145\040\111\156\143\056\061\066\060  
\064\006\003\125\004\003\023\055\101\155\145\162\151\143\141\040  
\117\156\154\151\156\145\040\122\157\157\164\040\103\145\162\164  
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162  
\151\164\171\040\062

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\001

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\244\060\202\003\214\240\003\002\001\002\002\001\001  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060  
\143\061\013\060\011\006\003\125\004\006\023\002\125\123\061\034  
\060\032\006\003\125\004\012\023\023\101\155\145\162\151\143\141  
\040\117\156\154\151\156\145\040\111\156\143\056\061\066\060\064  
\006\003\125\004\003\023\055\101\155\145\162\151\143\141\040\117

\156\154\151\156\145\040\122\157\157\164\040\103\145\162\164\151  
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151  
\164\171\040\062\060\036\027\015\060\062\060\065\062\070\060\066  
\060\060\060\060\132\027\015\063\067\060\071\062\071\061\064\060  
\070\060\060\132\060\143\061\013\060\011\006\003\125\004\006\023  
\002\125\123\061\034\060\032\006\003\125\004\012\023\023\101\155  
\145\162\151\143\141\040\117\156\154\151\156\145\040\111\156\143  
\056\061\066\060\064\006\003\125\004\003\023\055\101\155\145\162  
\151\143\141\040\117\156\154\151\156\145\040\122\157\157\164\040  
\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165  
\164\150\157\162\151\164\171\040\062\060\202\002\042\060\015\006  
\011\052\206\110\206\367\015\001\001\001\005\000\003\202\002\017  
\000\060\202\002\012\002\202\002\001\000\314\101\105\035\351\075  
\115\020\366\214\261\101\311\340\136\313\015\267\277\107\163\323  
\360\125\115\335\306\014\372\261\146\005\152\315\170\264\334\002  
\333\116\201\363\327\247\174\161\274\165\143\240\135\343\007\014  
\110\354\045\304\003\040\364\377\016\073\022\377\233\215\341\306  
\325\033\264\155\042\343\261\333\177\041\144\257\206\274\127\042  
\052\326\107\201\127\104\202\126\123\275\206\024\001\013\374\177  
\164\244\132\256\361\272\021\265\233\130\132\200\264\067\170\011  
\063\174\062\107\003\134\304\245\203\110\364\127\126\156\201\066  
\047\030\117\354\233\050\302\324\264\327\174\014\076\014\053\337  
\312\004\327\306\216\352\130\116\250\244\245\030\034\154\105\230  
\243\101\321\055\322\307\155\215\031\361\255\171\267\201\077\275  
\006\202\047\055\020\130\005\265\170\005\271\057\333\014\153\220  
\220\176\024\131\070\273\224\044\023\345\321\235\024\337\323\202  
\115\106\360\200\071\122\062\017\343\204\262\172\103\362\136\336  
\137\077\035\335\343\262\033\240\241\052\043\003\156\056\001\025  
\207\134\246\165\165\307\227\141\276\336\206\334\324\110\333\275  
\052\277\112\125\332\350\175\120\373\264\200\027\270\224\277\001  
\075\352\332\272\174\340\130\147\027\271\130\340\210\206\106\147  
\154\235\020\107\130\062\320\065\174\171\052\220\242\132\020\021  
\043\065\255\057\314\344\112\133\247\310\047\362\203\336\136\273  
\136\167\347\350\245\156\143\302\015\135\141\320\214\322\154\132  
\041\016\312\050\243\316\052\351\225\307\110\317\226\157\035\222  
\045\310\306\306\301\301\014\005\254\046\304\322\165\322\341\052  
\147\300\075\133\245\232\353\317\173\032\250\235\024\105\345\017  
\240\232\145\336\057\050\275\316\157\224\146\203\110\051\330\352  
\145\214\257\223\331\144\237\125\127\046\277\157\313\067\061\231  
\243\140\273\034\255\211\064\062\142\270\103\041\006\162\014\241  
\134\155\106\305\372\051\317\060\336\211\334\161\133\335\266\067  
\076\337\120\365\270\007\045\046\345\274\265\376\074\002\263\267  
\370\276\103\301\207\021\224\236\043\154\027\212\270\212\047\014  
\124\107\360\251\263\300\200\214\240\047\353\035\031\343\007\216  
\167\160\312\053\364\175\166\340\170\147\002\003\001\000\001\243  
\143\060\141\060\017\006\003\125\035\023\001\001\377\004\005\060  
\003\001\001\377\060\035\006\003\125\035\016\004\026\004\024\115  
\105\301\150\070\273\163\251\151\241\040\347\355\365\042\241\043



\024\327\236\060\037\006\003\125\035\043\004\030\060\026\200\024  
\115\105\301\150\070\273\163\251\151\241\040\347\355\365\042\241  
\043\024\327\236\060\016\006\003\125\035\017\001\001\377\004\004  
\003\002\001\206\060\015\006\011\052\206\110\206\367\015\001\001  
\005\005\000\003\202\002\001\000\147\153\006\271\137\105\073\052  
\113\063\263\346\033\153\131\116\042\314\271\267\244\045\311\247  
\304\360\124\226\013\144\363\261\130\117\136\121\374\262\227\173  
\047\145\302\345\312\347\015\014\045\173\142\343\372\237\264\207  
\267\105\106\257\203\245\227\110\214\245\275\361\026\053\233\166  
\054\172\065\140\154\021\200\227\314\251\222\122\346\053\346\151  
\355\251\370\066\055\054\167\277\141\110\321\143\013\271\133\122  
\355\030\260\103\102\042\246\261\167\256\336\151\305\315\307\034  
\241\261\245\034\020\373\030\276\032\160\335\301\222\113\276\051  
\132\235\077\065\276\345\175\121\370\125\340\045\165\043\207\036  
\134\334\272\235\260\254\263\151\333\027\203\311\367\336\014\274  
\010\334\221\236\250\320\327\025\067\163\245\065\270\374\176\305  
\104\100\006\303\353\370\042\200\134\107\316\002\343\021\237\104  
\377\375\232\062\314\175\144\121\016\353\127\046\166\072\343\036  
\042\074\302\246\066\335\031\357\247\374\022\363\046\300\131\061  
\205\114\234\330\317\337\244\314\314\051\223\377\224\155\166\134  
\023\010\227\362\355\245\013\115\335\350\311\150\016\146\323\000  
\016\063\022\133\274\225\345\062\220\250\263\306\154\203\255\167  
\356\213\176\176\261\251\253\323\341\361\266\300\261\352\210\300  
\347\323\220\351\050\222\224\173\150\173\227\052\012\147\055\205  
\002\070\020\344\003\141\324\332\045\066\307\010\130\055\241\247  
\121\257\060\012\111\365\246\151\207\007\055\104\106\166\216\052  
\345\232\073\327\030\242\374\234\070\020\314\306\073\322\265\027  
\072\157\375\256\045\275\365\162\131\144\261\164\052\070\137\030  
\114\337\317\161\004\132\066\324\277\057\231\234\350\331\272\261  
\225\346\002\113\041\241\133\325\301\117\217\256\151\155\123\333  
\001\223\265\134\036\030\335\144\132\312\030\050\076\143\004\021  
\375\034\215\000\017\270\067\337\147\212\235\146\251\002\152\221  
\377\023\312\057\135\203\274\207\223\154\334\044\121\026\004\045  
\146\372\263\331\302\272\051\276\232\110\070\202\231\364\277\073  
\112\061\031\371\277\216\041\063\024\312\117\124\137\373\316\373  
\217\161\177\375\136\031\240\017\113\221\270\304\124\274\006\260  
\105\217\046\221\242\216\376\251

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "America Online Root Certification Authority 2"  
# Issuer: CN=America Online Root Certification Authority 2,O=America Online Inc.,C=US  
# Serial Number: 1 (0x1)  
# Subject: CN=America Online Root Certification Authority 2,O=America Online Inc.,C=US  
# Not Valid Before: Tue May 28 06:00:00 2002

```

Not Valid After: Tue Sep 29 14:08:00 2037
Fingerprint (MD5): d6:ed:3c:ca:e2:66:0f:af:10:43:0d:77:9b:04:09:bf
Fingerprint (SHA1): 85:b5:ff:67:9b:0c:79:96:1f:c8:6e:44:22:00:46:13:db:17:92:84
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "America Online Root Certification Authority 2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\205\265\377\147\233\014\171\226\037\310\156\104\042\000\106\023
\333\027\222\204
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\326\355\074\312\342\146\017\257\020\103\015\167\233\004\011\277
END
CKA_ISSUER MULTILINE_OCTAL
\060\143\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\034\060\032\006\003\125\004\012\023\023\101\155\145\162\151\143
\141\040\117\156\154\151\156\145\040\111\156\143\056\061\066\060
\064\006\003\125\004\003\023\055\101\155\145\162\151\143\141\040
\117\156\154\151\156\145\040\122\157\157\164\040\103\145\162\164
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162
\151\164\171\040\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "RSA Security Inc"
Issuer: OU=RSA Security 2048 V3,O=RSA Security Inc
Serial Number:0a:01:01:01:00:00:02:7c:00:00:00:0a:00:00:00:02
Subject: OU=RSA Security 2048 V3,O=RSA Security Inc
Not Valid Before: Thu Feb 22 20:39:23 2001
Not Valid After: Sun Feb 22 20:39:23 2026
Fingerprint (MD5): 77:0d:19:b1:21:fd:00:42:9c:3e:0c:a5:dd:0b:02:8e
Fingerprint (SHA1): 25:01:90:19:cf:fb:d9:99:1c:b7:68:25:74:8d:94:5f:30:93:95:42
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "RSA Security Inc"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL

```

\060\072\061\031\060\027\006\003\125\004\012\023\020\122\123\101  
\040\123\145\143\165\162\151\164\171\040\111\156\143\061\035\060  
\033\006\003\125\004\013\023\024\122\123\101\040\123\145\143\165  
\162\151\164\171\040\062\060\064\070\040\126\063

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\072\061\031\060\027\006\003\125\004\012\023\020\122\123\101  
\040\123\145\143\165\162\151\164\171\040\111\156\143\061\035\060  
\033\006\003\125\004\013\023\024\122\123\101\040\123\145\143\165  
\162\151\164\171\040\062\060\064\070\040\126\063

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\012\001\001\001\000\000\002\174\000\000\000\012\000\000  
\000\002

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\141\060\202\002\111\240\003\002\001\002\002\020\012  
\001\001\001\000\000\002\174\000\000\000\012\000\000\000\002\060  
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\072  
\061\031\060\027\006\003\125\004\012\023\020\122\123\101\040\123  
\145\143\165\162\151\164\171\040\111\156\143\061\035\060\033\006  
\003\125\004\013\023\024\122\123\101\040\123\145\143\165\162\151  
\164\171\040\062\060\064\070\040\126\063\060\036\027\015\060\061  
\060\062\062\062\062\060\063\071\062\063\132\027\015\062\066\060  
\062\062\062\062\060\063\071\062\063\132\060\072\061\031\060\027  
\006\003\125\004\012\023\020\122\123\101\040\123\145\143\165\162  
\151\164\171\040\111\156\143\061\035\060\033\006\003\125\004\013  
\023\024\122\123\101\040\123\145\143\165\162\151\164\171\040\062  
\060\064\070\040\126\063\060\202\001\042\060\015\006\011\052\206  
\110\206\367\015\001\001\001\005\000\003\202\001\017\000\060\202  
\001\012\002\202\001\001\000\267\217\125\161\322\200\335\173\151  
\171\247\360\030\120\062\074\142\147\366\012\225\007\335\346\033  
\363\236\331\322\101\124\153\255\237\174\276\031\315\373\106\253  
\101\150\036\030\352\125\310\057\221\170\211\050\373\047\051\140  
\377\337\217\214\073\311\111\233\265\244\224\316\001\352\076\265  
\143\173\177\046\375\031\335\300\041\275\204\321\055\117\106\303  
\116\334\330\067\071\073\050\257\313\235\032\352\053\257\041\245  
\301\043\042\270\270\033\132\023\207\127\203\321\360\040\347\350  
\117\043\102\260\000\245\175\211\351\351\141\163\224\230\161\046  
\274\055\152\340\367\115\360\361\266\052\070\061\201\015\051\341  
\000\301\121\017\114\122\370\004\132\252\175\162\323\270\207\052  
\273\143\020\003\052\263\241\117\015\132\136\106\267\075\016\365  
\164\354\231\237\371\075\044\201\210\246\335\140\124\350\225\066  
\075\306\011\223\232\243\022\200\000\125\231\031\107\275\320\245  
\174\303\272\373\037\367\365\017\370\254\271\265\364\067\230\023  
\030\336\205\133\267\014\202\073\207\157\225\071\130\060\332\156  
\001\150\027\042\314\300\013\002\003\001\000\001\243\143\060\141

\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001  
\377\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001  
\006\060\037\006\003\125\035\043\004\030\060\026\200\024\007\303  
\121\060\244\252\351\105\256\065\044\372\377\044\054\063\320\261  
\235\214\060\035\006\003\125\035\016\004\026\004\024\007\303\121  
\060\244\252\351\105\256\065\044\372\377\044\054\063\320\261\235  
\214\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000  
\003\202\001\001\000\137\076\206\166\156\270\065\074\116\066\034  
\036\171\230\277\375\325\022\021\171\122\016\356\061\211\274\335  
\177\371\321\306\025\041\350\212\001\124\015\072\373\124\271\326  
\143\324\261\252\226\115\242\102\115\324\123\037\213\020\336\177  
\145\276\140\023\047\161\210\244\163\343\204\143\321\244\125\341  
\120\223\346\033\016\171\320\147\274\106\310\277\077\027\015\225  
\346\306\220\151\336\347\264\057\336\225\175\320\022\077\075\076  
\177\115\077\024\150\365\021\120\325\301\364\220\245\010\035\061  
\140\377\140\214\043\124\012\257\376\241\156\305\321\172\052\150  
\170\317\036\202\012\040\264\037\255\345\205\262\152\150\165\116  
\255\045\067\224\205\276\275\241\324\352\267\014\113\074\235\350  
\022\000\360\137\254\015\341\254\160\143\163\367\177\171\237\062  
\045\102\164\005\200\050\277\275\301\044\226\130\025\261\027\041  
\351\211\113\333\007\210\147\364\025\255\160\076\057\115\205\073  
\302\267\333\376\230\150\043\211\341\164\017\336\364\305\204\143  
\051\033\314\313\007\311\000\244\251\327\302\042\117\147\327\167  
\354\040\005\141\336

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "RSA Security Inc"  
# Issuer: OU=RSA Security 2048 V3,O=RSA Security Inc  
# Serial Number:0a:01:01:01:00:00:02:7c:00:00:00:0a:00:00:00:02  
# Subject: OU=RSA Security 2048 V3,O=RSA Security Inc  
# Not Valid Before: Thu Feb 22 20:39:23 2001  
# Not Valid After: Sun Feb 22 20:39:23 2026  
# Fingerprint (MD5): 77:0d:19:b1:21:fd:00:42:9c:3e:0c:a5:dd:0b:02:8e  
# Fingerprint (SHA1): 25:01:90:19:cf:fb:d9:99:1c:b7:68:25:74:8d:94:5f:30:93:95:42  
CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "RSA Security Inc"  
CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL  
\045\001\220\031\317\373\331\231\034\267\150\045\164\215\224\137  
\060\223\225\102  
END  
CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\167\015\031\261\041\375\000\102\234\076\014\245\335\013\002\216

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\072\061\031\060\027\006\003\125\004\012\023\020\122\123\101

\040\123\145\143\165\162\151\164\171\040\111\156\143\061\035\060

\033\006\003\125\004\013\023\024\122\123\101\040\123\145\143\165

\162\151\164\171\040\062\060\064\070\040\126\063

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\012\001\001\001\000\000\002\174\000\000\000\012\000\000

\000\002

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "Public Notary Root"

# Issuer: CN=Public Notary Root,OU=http://www.chambersign.org,O=AC Camerfirma SA CIF A82743287,C=EU

# Serial Number: 0 (0x0)

# Subject: CN=Public Notary Root,OU=http://www.chambersign.org,O=AC Camerfirma SA CIF

A82743287,C=EU

# Not Valid Before: Tue Sep 30 16:14:49 2003

# Not Valid After: Wed Sep 30 16:14:49 2037

# Fingerprint (MD5): cd:99:6c:db:2a:c2:96:15:5a:bf:87:9e:ae:a5:ee:93

# Fingerprint (SHA1): ee:29:d6:ea:98:e6:32:c6:e5:27:e0:90:6f:02:80:68:8b:df:44:dc

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Public Notary Root"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\170\061\013\060\011\006\003\125\004\006\023\002\105\125\061

\047\060\045\006\003\125\004\012\023\036\101\103\040\103\141\155

\145\162\146\151\162\155\141\040\123\101\040\103\111\106\040\101

\070\062\067\064\063\062\070\067\061\043\060\041\006\003\125\004

\013\023\032\150\164\164\160\072\057\057\167\167\167\056\143\150

\141\155\142\145\162\163\151\147\156\056\157\162\147\061\033\060

\031\006\003\125\004\003\023\022\120\165\142\154\151\143\040\116

\157\164\141\162\171\040\122\157\157\164

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\170\061\013\060\011\006\003\125\004\006\023\002\105\125\061

\047\060\045\006\003\125\004\012\023\036\101\103\040\103\141\155

\145\162\146\151\162\155\141\040\123\101\040\103\111\106\040\101

\070\062\067\064\063\062\070\067\061\043\060\041\006\003\125\004  
\013\023\032\150\164\164\160\072\057\057\167\167\167\056\143\150  
\141\155\142\145\162\163\151\147\156\056\157\162\147\061\033\060  
\031\006\003\125\004\003\023\022\120\165\142\154\151\143\040\116  
\157\164\141\162\171\040\122\157\157\164

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\000

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\276\060\202\003\246\240\003\002\001\002\002\001\000  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060  
\170\061\013\060\011\006\003\125\004\006\023\002\105\125\061\047  
\060\045\006\003\125\004\012\023\036\101\103\040\103\141\155\145  
\162\146\151\162\155\141\040\123\101\040\103\111\106\040\101\070  
\062\067\064\063\062\070\067\061\043\060\041\006\003\125\004\013  
\023\032\150\164\164\160\072\057\057\167\167\167\056\143\150\141  
\155\142\145\162\163\151\147\156\056\157\162\147\061\033\060\031  
\006\003\125\004\003\023\022\120\165\142\154\151\143\040\116\157  
\164\141\162\171\040\122\157\157\164\060\036\027\015\060\063\060  
\071\063\060\061\066\061\064\064\071\132\027\015\063\067\060\071  
\063\060\061\066\061\064\064\071\132\060\170\061\013\060\011\006  
\003\125\004\006\023\002\105\125\061\047\060\045\006\003\125\004  
\012\023\036\101\103\040\103\141\155\145\162\146\151\162\155\141  
\040\123\101\040\103\111\106\040\101\070\062\067\064\063\062\070  
\067\061\043\060\041\006\003\125\004\013\023\032\150\164\164\160  
\072\057\057\167\167\167\056\143\150\141\155\142\145\162\163\151  
\147\156\056\157\162\147\061\033\060\031\006\003\125\004\003\023  
\022\120\165\142\154\151\143\040\116\157\164\141\162\171\040\122  
\157\157\164\060\202\001\037\060\015\006\011\052\206\110\206\367  
\015\001\001\001\005\000\003\202\001\014\000\060\202\001\007\002  
\202\001\000\130\172\002\274\176\354\223\146\355\313\021\116\247  
\335\016\313\225\215\307\036\067\141\011\347\000\305\331\351\005  
\173\352\374\236\264\323\130\266\031\106\344\150\227\117\201\155  
\254\256\001\236\232\100\070\154\170\104\171\170\071\217\347\342  
\304\365\172\154\377\062\114\123\313\107\216\326\220\075\254\105  
\174\047\312\102\317\176\164\323\251\351\063\116\320\245\230\145  
\252\120\014\124\206\035\200\152\216\160\152\235\154\102\053\307  
\066\225\300\234\102\021\054\150\150\376\154\376\152\146\275\133  
\262\327\245\316\233\120\071\004\235\241\044\037\266\020\157\056  
\027\166\344\073\120\173\300\171\002\000\210\333\065\107\345\261  
\037\331\047\377\155\065\320\271\154\126\364\265\365\117\164\127  
\055\230\162\004\307\031\007\177\176\275\055\125\242\254\216\211  
\260\110\053\116\337\164\005\333\124\145\006\065\325\161\074\341  
\072\331\064\321\257\136\007\110\034\035\000\164\052\041\005\016  
\301\037\167\116\012\345\342\223\200\016\334\126\264\273\006\340  
\077\110\102\123\371\011\065\011\145\270\102\163\077\074\215\113  
\344\001\245\002\001\003\243\202\001\124\060\202\001\120\060\022

\006\003\125\035\023\001\001\377\004\010\060\006\001\001\377\002  
\001\014\060\100\006\003\125\035\037\004\071\060\067\060\065\240  
\063\240\061\206\057\150\164\164\160\072\057\057\143\162\154\056  
\143\150\141\155\142\145\162\163\151\147\156\056\157\162\147\057  
\160\165\142\154\151\143\156\157\164\141\162\171\162\157\157\164  
\056\143\162\154\060\035\006\003\125\035\016\004\026\004\024\032  
\130\207\314\317\144\306\073\360\242\063\164\111\144\135\006\303  
\253\347\371\060\016\006\003\125\035\017\001\001\377\004\004\003  
\002\001\006\060\021\006\011\140\206\110\001\206\370\102\001\001  
\004\004\003\002\000\007\060\053\006\003\125\035\021\004\044\060  
\042\201\040\160\165\142\154\151\143\156\157\164\141\162\171\162  
\157\157\164\100\143\150\141\155\142\145\162\163\151\147\156\056  
\157\162\147\060\053\006\003\125\035\022\004\044\060\042\201\040  
\160\165\142\154\151\143\156\157\164\141\162\171\162\157\157\164  
\100\143\150\141\155\142\145\162\163\151\147\156\056\157\162\147  
\060\134\006\003\125\035\040\004\125\060\123\060\121\006\013\053  
\006\001\004\001\201\207\056\012\002\001\060\102\060\100\006\010  
\053\006\001\005\005\007\002\001\026\064\150\164\164\160\072\057  
\057\143\160\163\056\143\150\141\155\142\145\162\163\151\147\156  
\056\157\162\147\057\143\160\163\057\160\165\142\154\151\143\156  
\157\164\141\162\171\162\157\157\164\056\150\164\155\154\060\015  
\006\011\052\206\110\206\367\015\001\001\005\005\000\003\202\001  
\001\000\025\050\051\376\270\042\262\125\277\143\037\161\231\001  
\344\263\210\155\267\165\267\057\121\231\221\116\352\151\327\135  
\260\236\177\112\043\223\270\107\306\176\217\376\176\003\236\211  
\226\122\076\057\241\033\366\075\160\303\075\246\336\101\303\104  
\020\136\247\047\257\265\017\342\172\223\304\275\314\213\373\274  
\266\163\115\037\062\043\244\243\173\320\341\203\135\277\303\236  
\301\124\110\103\037\051\056\336\345\317\112\134\354\263\230\131  
\273\101\017\205\071\346\006\244\034\277\251\155\232\344\051\141  
\074\235\350\035\120\067\266\254\237\060\257\236\347\060\354\046  
\374\052\044\241\241\123\250\076\375\021\170\327\000\155\070\262  
\270\254\337\322\037\277\206\130\005\357\034\045\305\115\071\032  
\054\104\123\122\302\327\040\001\054\302\131\117\276\344\333\026  
\325\263\133\372\016\017\366\146\231\302\130\153\227\350\014\020  
\055\055\257\313\335\157\043\263\227\235\110\106\172\102\023\002  
\241\215\066\137\362\356\326\241\230\352\067\174\351\274\241\030  
\226\002\266\312\130\052\032\070\325\262\161\276\170\246\114\367  
\352\307

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Public Notary Root"

# Issuer: CN=Public Notary Root,OU=http://www.chambersign.org,O=AC Camerfirma SA CIF A82743287,C=EU

# Serial Number: 0 (0x0)

```
Subject: CN=Public Notary Root,OU=http://www.chambersign.org,O=AC Camerfirma SA CIF
A82743287,C=EU
Not Valid Before: Tue Sep 30 16:14:49 2003
Not Valid After: Wed Sep 30 16:14:49 2037
Fingerprint (MD5): cd:99:6c:db:2a:c2:96:15:5a:bf:87:9e:ae:a5:ee:93
Fingerprint (SHA1): ee:29:d6:ea:98:e6:32:c6:e5:27:e0:90:6f:02:80:68:8b:df:44:dc
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Public Notary Root"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\356\051\326\352\230\346\062\306\345\047\340\220\157\002\200\150
\213\337\104\334
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\315\231\154\333\052\302\226\025\132\277\207\236\256\245\356\223
END
CKA_ISSUER MULTILINE_OCTAL
\060\170\061\013\060\011\006\003\125\004\006\023\002\105\125\061
\047\060\045\006\003\125\004\012\023\036\101\103\040\103\141\155
\145\162\146\151\162\155\141\040\123\101\040\103\111\106\040\101
\070\062\067\064\063\062\070\067\061\043\060\041\006\003\125\004
\013\023\032\150\164\164\160\072\057\057\167\167\167\056\143\150
\141\155\142\145\162\163\151\147\156\056\157\162\147\061\033\060
\031\006\003\125\004\003\023\022\120\165\142\154\151\143\040\116
\157\164\141\162\171\040\122\157\157\164
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\000
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
Certificate "GeoTrust Global CA"
Issuer: CN=GeoTrust Global CA,O=GeoTrust Inc.,C=US
Serial Number: 144470 (0x23456)
Subject: CN=GeoTrust Global CA,O=GeoTrust Inc.,C=US
Not Valid Before: Tue May 21 04:00:00 2002
Not Valid After: Sat May 21 04:00:00 2022
Fingerprint (MD5): f7:75:ab:29:fb:51:4e:b7:77:5e:ff:05:3c:99:8e:f5
Fingerprint (SHA1): de:28:f4:a4:ff:e5:b9:2f:a3:c5:03:d1:a3:49:a7:f9:96:2a:82:12
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
```



```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GeoTrust Global CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\102\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162\165
\163\164\040\111\156\143\056\061\033\060\031\006\003\125\004\003
\023\022\107\145\157\124\162\165\163\164\040\107\154\157\142\141
\154\040\103\101
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\102\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162\165
\163\164\040\111\156\143\056\061\033\060\031\006\003\125\004\003
\023\022\107\145\157\124\162\165\163\164\040\107\154\157\142\141
\154\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\003\002\064\126
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\124\060\202\002\074\240\003\002\001\002\002\003\002
\064\126\060\015\006\011\052\206\110\206\367\015\001\001\005\005
\000\060\102\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162
\165\163\164\040\111\156\143\056\061\033\060\031\006\003\125\004
\003\023\022\107\145\157\124\162\165\163\164\040\107\154\157\142
\141\154\040\103\101\060\036\027\015\060\062\060\065\062\061\060
\064\060\060\060\060\132\027\015\062\062\060\065\062\061\060\064
\060\060\060\060\132\060\102\061\013\060\011\006\003\125\004\006
\023\002\125\123\061\026\060\024\006\003\125\004\012\023\015\107
\145\157\124\162\165\163\164\040\111\156\143\056\061\033\060\031
\006\003\125\004\003\023\022\107\145\157\124\162\165\163\164\040
\107\154\157\142\141\154\040\103\101\060\202\001\042\060\015\006
\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017
\000\060\202\001\012\002\202\001\001\000\332\314\030\143\060\375
\364\027\043\032\126\176\133\337\074\154\070\344\161\267\170\221
\324\274\241\330\114\370\250\103\266\003\351\115\041\007\010\210
\332\130\057\146\071\051\275\005\170\213\235\070\350\005\267\152
\176\161\244\346\304\140\246\260\357\200\344\211\050\017\236\045
\326\355\203\363\255\246\221\307\230\311\102\030\065\024\235\255
\230\106\222\056\117\312\361\207\103\301\026\225\127\055\120\357
\211\055\200\172\127\255\362\356\137\153\322\000\215\271\024\370
\024\025\065\331\300\106\243\173\162\310\221\277\311\125\053\315
\320\227\076\234\046\144\314\337\316\203\031\161\312\116\346\324
\325\173\251\031\315\125\336\310\354\322\136\070\123\345\134\117
\214\055\376\120\043\066\374\146\346\313\216\244\071\031\000\267
```

\225\002\071\221\013\016\376\070\056\321\035\005\232\366\115\076  
\157\017\007\035\257\054\036\217\140\071\342\372\066\123\023\071  
\324\136\046\053\333\075\250\024\275\062\353\030\003\050\122\004  
\161\345\253\063\075\341\070\273\007\066\204\142\234\171\352\026  
\060\364\137\300\053\350\161\153\344\371\002\003\001\000\001\243  
\123\060\121\060\017\006\003\125\035\023\001\001\377\004\005\060  
\003\001\001\377\060\035\006\003\125\035\016\004\026\004\024\300  
\172\230\150\215\211\373\253\005\144\014\021\175\252\175\145\270  
\312\314\116\060\037\006\003\125\035\043\004\030\060\026\200\024  
\300\172\230\150\215\211\373\253\005\144\014\021\175\252\175\145  
\270\312\314\116\060\015\006\011\052\206\110\206\367\015\001\001  
\005\005\000\003\202\001\001\000\065\343\051\152\345\057\135\124  
\216\051\120\224\237\231\032\024\344\217\170\052\142\224\242\047  
\147\236\320\317\032\136\107\351\301\262\244\317\335\101\032\005  
\116\233\113\356\112\157\125\122\263\044\241\067\012\353\144\166  
\052\056\054\363\375\073\165\220\277\372\161\330\307\075\067\322  
\265\005\225\142\271\246\336\211\075\066\173\070\167\110\227\254  
\246\040\217\056\246\311\014\302\262\231\105\000\307\316\021\121  
\042\042\340\245\352\266\025\110\011\144\352\136\117\164\367\005  
\076\307\212\122\014\333\025\264\275\155\233\345\306\261\124\150  
\251\343\151\220\266\232\245\017\270\271\077\040\175\256\112\265  
\270\234\344\035\266\253\346\224\245\301\307\203\255\333\365\047  
\207\016\004\154\325\377\335\240\135\355\207\122\267\053\025\002  
\256\071\246\152\164\351\332\304\347\274\115\064\036\251\134\115  
\063\137\222\011\057\210\146\135\167\227\307\035\166\023\251\325  
\345\361\026\011\021\065\325\254\333\044\161\160\054\230\126\013  
\331\027\264\321\343\121\053\136\165\350\325\320\334\117\064\355  
\302\005\146\200\241\313\346\063

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "GeoTrust Global CA"  
# Issuer: CN=GeoTrust Global CA,O=GeoTrust Inc.,C=US  
# Serial Number: 144470 (0x23456)  
# Subject: CN=GeoTrust Global CA,O=GeoTrust Inc.,C=US  
# Not Valid Before: Tue May 21 04:00:00 2002  
# Not Valid After: Sat May 21 04:00:00 2022  
# Fingerprint (MD5): f7:75:ab:29:fb:51:4e:b7:77:5e:ff:05:3c:99:8e:f5  
# Fingerprint (SHA1): de:28:f4:a4:ff:e5:b9:2f:a3:c5:03:d1:a3:49:a7:f9:96:2a:82:12  
CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "GeoTrust Global CA"  
CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\336\050\364\244\377\345\271\057\243\305\003\321\243\111\247\371  
\226\052\202\022

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\367\165\253\051\373\121\116\267\167\136\377\005\074\231\216\365

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\102\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162\165  
\163\164\040\111\156\143\056\061\033\060\031\006\003\125\004\003  
\023\022\107\145\157\124\162\165\163\164\040\107\154\157\142\141  
\154\040\103\101

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\003\002\064\126

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "GeoTrust Global CA 2"

# Issuer: CN=GeoTrust Global CA 2,O=GeoTrust Inc.,C=US

# Serial Number: 1 (0x1)

# Subject: CN=GeoTrust Global CA 2,O=GeoTrust Inc.,C=US

# Not Valid Before: Thu Mar 04 05:00:00 2004

# Not Valid After: Mon Mar 04 05:00:00 2019

# Fingerprint (MD5): 0e:40:a7:6c:de:03:5d:8f:d1:0f:e4:d1:8d:f9:6c:a9

# Fingerprint (SHA1): a9:e9:78:08:14:37:58:88:f2:05:19:b0:6d:2b:0d:2b:60:16:90:7d

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "GeoTrust Global CA 2"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\104\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162\165  
\163\164\040\111\156\143\056\061\035\060\033\006\003\125\004\003  
\023\024\107\145\157\124\162\165\163\164\040\107\154\157\142\141  
\154\040\103\101\040\062

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\104\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162\165  
\163\164\040\111\156\143\056\061\035\060\033\006\003\125\004\003

\023\024\107\145\157\124\162\165\163\164\040\107\154\157\142\141  
\154\040\103\101\040\062

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\001

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\146\060\202\002\116\240\003\002\001\002\002\001\001  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060  
\104\061\013\060\011\006\003\125\004\006\023\002\125\123\061\026  
\060\024\006\003\125\004\012\023\015\107\145\157\124\162\165\163  
\164\040\111\156\143\056\061\035\060\033\006\003\125\004\003\023  
\024\107\145\157\124\162\165\163\164\040\107\154\157\142\141\154  
\040\103\101\040\062\060\036\027\015\060\064\060\063\060\064\060  
\065\060\060\060\060\132\027\015\061\071\060\063\060\064\060\065  
\060\060\060\060\132\060\104\061\013\060\011\006\003\125\004\006  
\023\002\125\123\061\026\060\024\006\003\125\004\012\023\015\107  
\145\157\124\162\165\163\164\040\111\156\143\056\061\035\060\033  
\006\003\125\004\003\023\024\107\145\157\124\162\165\163\164\040  
\107\154\157\142\141\154\040\103\101\040\062\060\202\001\042\060  
\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202  
\001\017\000\060\202\001\012\002\202\001\001\000\357\074\115\100  
\075\020\337\073\123\000\341\147\376\224\140\025\076\205\210\361  
\211\015\220\310\050\043\231\005\350\053\040\235\306\363\140\106  
\330\301\262\325\214\061\331\334\040\171\044\201\277\065\062\374  
\143\151\333\261\052\153\356\041\130\362\010\351\170\313\157\313  
\374\026\122\310\221\304\377\075\163\336\261\076\247\302\175\146  
\301\365\176\122\044\032\342\325\147\221\320\202\020\327\170\113  
\117\053\102\071\275\144\055\100\240\260\020\323\070\110\106\210  
\241\014\273\072\063\052\142\230\373\000\235\023\131\177\157\073  
\162\252\356\246\017\206\371\005\141\352\147\177\014\067\226\213  
\346\151\026\107\021\302\047\131\003\263\246\140\302\041\100\126  
\372\240\307\175\072\023\343\354\127\307\263\326\256\235\211\200  
\367\001\347\054\366\226\053\023\015\171\054\331\300\344\206\173  
\113\214\014\162\202\212\373\027\315\000\154\072\023\074\260\204  
\207\113\026\172\051\262\117\333\035\324\013\363\146\067\275\330  
\366\127\273\136\044\172\270\074\213\271\372\222\032\032\204\236  
\330\164\217\252\033\177\136\364\376\105\042\041\002\003\001\000  
\001\243\143\060\141\060\017\006\003\125\035\023\001\001\377\004  
\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026\004  
\024\161\070\066\362\002\061\123\107\053\156\272\145\106\251\020  
\025\130\040\005\011\060\037\006\003\125\035\043\004\030\060\026  
\200\024\161\070\066\362\002\061\123\107\053\156\272\145\106\251  
\020\025\130\040\005\011\060\016\006\003\125\035\017\001\001\377  
\004\004\003\002\001\206\060\015\006\011\052\206\110\206\367\015  
\001\001\005\005\000\003\202\001\001\000\003\367\265\053\253\135  
\020\374\173\262\262\136\254\233\016\176\123\170\131\076\102\004  
\376\165\243\255\254\201\116\327\002\213\136\304\055\310\122\166

```
\307\054\037\374\201\062\230\321\113\306\222\223\063\065\061\057
\374\330\035\104\335\340\201\177\235\351\213\341\144\221\142\013
\071\010\214\254\164\235\131\331\172\131\122\227\021\271\026\173
\157\105\323\226\331\061\175\002\066\017\234\073\156\317\054\015
\003\106\105\353\240\364\177\110\104\306\010\100\314\336\033\160
\265\051\255\272\213\073\064\145\165\033\161\041\035\054\024\012
\260\226\225\270\326\352\362\145\373\051\272\117\352\221\223\164
\151\266\362\377\341\032\320\014\321\166\205\313\212\045\275\227
\136\054\157\025\231\046\347\266\051\377\042\354\311\002\307\126
\000\315\111\271\263\154\173\123\004\032\342\250\311\252\022\005
\043\302\316\347\273\004\002\314\300\107\242\344\304\051\057\133
\105\127\211\121\356\074\353\122\010\377\007\065\036\237\065\152
\107\112\126\230\321\132\205\037\214\365\042\277\253\316\203\363
\342\042\051\256\175\203\100\250\272\154
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
Trust for "GeoTrust Global CA 2"
Issuer: CN=GeoTrust Global CA 2,O=GeoTrust Inc.,C=US
Serial Number: 1 (0x1)
Subject: CN=GeoTrust Global CA 2,O=GeoTrust Inc.,C=US
Not Valid Before: Thu Mar 04 05:00:00 2004
Not Valid After: Mon Mar 04 05:00:00 2019
Fingerprint (MD5): 0e:40:a7:6c:de:03:5d:8f:d1:0f:e4:d1:8d:f9:6c:a9
Fingerprint (SHA1): a9:e9:78:08:14:37:58:88:f2:05:19:b0:6d:2b:0d:2b:60:16:90:7d
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GeoTrust Global CA 2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\251\351\170\010\024\067\130\210\362\005\031\260\155\053\015\053
\140\026\220\175
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\016\100\247\154\336\003\135\217\321\017\344\321\215\371\154\251
```

END

```
CKA_ISSUER MULTILINE_OCTAL
\060\104\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162\165
\163\164\040\111\156\143\056\061\035\060\033\006\003\125\004\003
\023\024\107\145\157\124\162\165\163\164\040\107\154\157\142\141
\154\040\103\101\040\062
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\001\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
Certificate "GeoTrust Universal CA"
Issuer: CN=GeoTrust Universal CA,O=GeoTrust Inc.,C=US
Serial Number: 1 (0x1)
Subject: CN=GeoTrust Universal CA,O=GeoTrust Inc.,C=US
Not Valid Before: Thu Mar 04 05:00:00 2004
Not Valid After: Sun Mar 04 05:00:00 2029
Fingerprint (MD5): 92:65:58:8b:a2:1a:31:72:73:68:5c:b4:a5:7a:07:48
Fingerprint (SHA1): e6:21:f3:35:43:79:05:9a:4b:68:30:9d:8a:2f:74:22:15:87:ec:79
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GeoTrust Universal CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\105\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162\165
\163\164\040\111\156\143\056\061\036\060\034\006\003\125\004\003
\023\025\107\145\157\124\162\165\163\164\040\125\156\151\166\145
\162\163\141\154\040\103\101
```

```
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\105\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162\165
\163\164\040\111\156\143\056\061\036\060\034\006\003\125\004\003
\023\025\107\145\157\124\162\165\163\164\040\125\156\151\166\145
\162\163\141\154\040\103\101
```

```
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\001
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\150\060\202\003\120\240\003\002\001\002\002\001\001
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\105\061\013\060\011\006\003\125\004\006\023\002\125\123\061\026
\060\024\006\003\125\004\012\023\015\107\145\157\124\162\165\163
\164\040\111\156\143\056\061\036\060\034\006\003\125\004\003\023
\025\107\145\157\124\162\165\163\164\040\125\156\151\166\145\162
\163\141\154\040\103\101\060\036\027\015\060\064\060\063\060\064
```

\060\065\060\060\060\060\132\027\015\062\071\060\063\060\064\060  
\065\060\060\060\060\132\060\105\061\013\060\011\006\003\125\004  
\006\023\002\125\123\061\026\060\024\006\003\125\004\012\023\015  
\107\145\157\124\162\165\163\164\040\111\156\143\056\061\036\060  
\034\006\003\125\004\003\023\025\107\145\157\124\162\165\163\164  
\040\125\156\151\166\145\162\163\141\154\040\103\101\060\202\002  
\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000  
\003\202\002\017\000\060\202\002\012\002\202\002\001\000\246\025  
\125\240\243\306\340\037\214\235\041\120\327\301\276\053\133\265  
\244\236\241\331\162\130\275\000\033\114\277\141\311\024\035\105  
\202\253\306\035\200\326\075\353\020\234\072\257\155\044\370\274  
\161\001\236\006\365\174\137\036\301\016\125\312\203\232\131\060  
\256\031\313\060\110\225\355\042\067\215\364\112\232\162\146\076  
\255\225\300\340\026\000\340\020\037\053\061\016\327\224\124\323  
\102\063\240\064\035\036\105\166\335\117\312\030\067\354\205\025  
\172\031\010\374\325\307\234\360\362\251\056\020\251\222\346\075  
\130\075\251\026\150\074\057\165\041\030\177\050\167\245\341\141  
\027\267\246\351\370\036\231\333\163\156\364\012\242\041\154\356  
\332\252\205\222\146\257\366\172\153\202\332\272\042\010\065\017  
\317\102\361\065\372\152\356\176\053\045\314\072\021\344\155\257  
\163\262\166\035\255\320\262\170\147\032\244\071\034\121\013\147  
\126\203\375\070\135\015\316\335\360\273\053\226\037\336\173\062  
\122\375\035\273\265\006\241\262\041\136\245\326\225\150\177\360  
\231\236\334\105\010\076\347\322\011\015\065\224\335\200\116\123  
\227\327\265\011\104\040\144\026\027\003\002\114\123\015\150\336  
\325\252\162\115\223\155\202\016\333\234\275\317\264\363\134\135  
\124\172\151\011\226\326\333\021\301\215\165\250\264\317\071\310  
\316\074\274\044\174\346\142\312\341\275\175\247\275\127\145\013  
\344\376\045\355\266\151\020\334\050\032\106\275\001\035\320\227  
\265\341\230\073\300\067\144\326\075\224\356\013\341\365\050\256  
\013\126\277\161\213\043\051\101\216\206\305\113\122\173\330\161  
\253\037\212\025\246\073\203\132\327\130\001\121\306\114\101\331  
\177\330\101\147\162\242\050\337\140\203\251\236\310\173\374\123  
\163\162\131\365\223\172\027\166\016\316\367\345\134\331\013\125  
\064\242\252\133\265\152\124\347\023\312\127\354\227\155\364\136  
\006\057\105\213\130\324\043\026\222\344\026\156\050\143\131\060  
\337\120\001\234\143\211\032\237\333\027\224\202\160\067\303\044  
\236\232\107\326\132\312\116\250\151\211\162\037\221\154\333\176  
\236\033\255\307\037\163\335\054\117\031\145\375\177\223\100\020  
\056\322\360\355\074\236\056\050\076\151\046\063\305\173\002\003  
\001\000\001\243\143\060\141\060\017\006\003\125\035\023\001\001  
\377\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004  
\026\004\024\332\273\056\252\260\014\270\210\046\121\164\134\155  
\003\323\300\330\217\172\326\060\037\006\003\125\035\043\004\030  
\060\026\200\024\332\273\056\252\260\014\270\210\046\121\164\134  
\155\003\323\300\330\217\172\326\060\016\006\003\125\035\017\001  
\001\377\004\004\003\002\001\206\060\015\006\011\052\206\110\206  
\367\015\001\001\005\005\000\003\202\002\001\000\061\170\346\307

\265\337\270\224\100\311\161\304\250\065\354\106\035\302\205\363  
\050\130\206\260\013\374\216\262\071\217\104\125\253\144\204\134  
\151\251\320\232\070\074\372\345\037\065\345\104\343\200\171\224  
\150\244\273\304\237\075\341\064\315\060\106\213\124\053\225\245  
\357\367\077\231\204\375\065\346\317\061\306\334\152\277\247\327  
\043\010\341\230\136\303\132\010\166\251\246\257\167\057\267\140  
\275\104\106\152\357\227\377\163\225\301\216\350\223\373\375\061  
\267\354\127\021\021\105\233\060\361\032\210\071\301\117\074\247  
\000\325\307\374\253\155\200\042\160\245\014\340\135\004\051\002  
\373\313\240\221\321\174\326\303\176\120\325\235\130\276\101\070  
\353\271\165\074\025\331\233\311\112\203\131\300\332\123\375\063  
\273\066\030\233\205\017\025\335\356\055\254\166\223\271\331\001  
\215\110\020\250\373\365\070\206\361\333\012\306\275\204\243\043  
\101\336\326\167\157\205\324\205\034\120\340\256\121\212\272\215  
\076\166\342\271\312\047\362\137\237\357\156\131\015\006\330\053  
\027\244\322\174\153\273\137\024\032\110\217\032\114\347\263\107  
\034\216\114\105\053\040\356\110\337\347\335\011\216\030\250\332  
\100\215\222\046\021\123\141\163\135\353\275\347\304\115\051\067  
\141\353\254\071\055\147\056\026\326\365\000\203\205\241\314\177  
\166\304\175\344\267\113\146\357\003\105\140\151\266\014\122\226  
\222\204\136\246\243\265\244\076\053\331\314\330\033\107\252\362  
\104\332\117\371\003\350\360\024\313\077\363\203\336\320\301\124  
\343\267\350\012\067\115\213\040\131\003\060\031\241\054\310\275  
\021\037\337\256\311\112\305\363\047\146\146\206\254\150\221\377  
\331\346\123\034\017\213\134\151\145\012\046\310\036\064\303\135  
\121\173\327\251\234\006\241\066\335\325\211\224\274\331\344\055  
\014\136\011\154\010\227\174\243\075\174\223\377\077\241\024\247  
\317\265\135\353\333\333\034\304\166\337\210\271\275\105\005\225  
\033\256\374\106\152\114\257\110\343\316\256\017\322\176\353\346  
\154\234\117\201\152\172\144\254\273\076\325\347\313\166\056\305  
\247\110\301\134\220\017\313\310\077\372\346\062\341\215\033\157  
\244\346\216\330\371\051\110\212\316\163\376\054

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "GeoTrust Universal CA"  
# Issuer: CN=GeoTrust Universal CA,O=GeoTrust Inc.,C=US  
# Serial Number: 1 (0x1)  
# Subject: CN=GeoTrust Universal CA,O=GeoTrust Inc.,C=US  
# Not Valid Before: Thu Mar 04 05:00:00 2004  
# Not Valid After: Sun Mar 04 05:00:00 2029  
# Fingerprint (MD5): 92:65:58:8b:a2:1a:31:72:73:68:5c:b4:a5:7a:07:48  
# Fingerprint (SHA1): e6:21:f3:35:43:79:05:9a:4b:68:30:9d:8a:2f:74:22:15:87:ec:79  
CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST  
CKA\_TOKEN CK\_BBOOL CK\_TRUE



```

CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GeoTrust Universal CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\346\041\363\065\103\171\005\232\113\150\060\235\212\057\164\042
\025\207\354\171
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\222\145\130\213\242\032\061\162\163\150\134\264\245\172\007\110
END
CKA_ISSUER MULTILINE_OCTAL
\060\105\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162\165
\163\164\040\111\156\143\056\061\036\060\034\006\003\125\004\003
\023\025\107\145\157\124\162\165\163\164\040\125\156\151\166\145
\162\163\141\154\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "GeoTrust Universal CA 2"
Issuer: CN=GeoTrust Universal CA 2,O=GeoTrust Inc.,C=US
Serial Number: 1 (0x1)
Subject: CN=GeoTrust Universal CA 2,O=GeoTrust Inc.,C=US
Not Valid Before: Thu Mar 04 05:00:00 2004
Not Valid After: Sun Mar 04 05:00:00 2029
Fingerprint (MD5): 34:fc:b8:d0:36:db:9e:14:b3:c2:f2:db:8f:e4:94:c7
Fingerprint (SHA1): 37:9a:19:7b:41:85:45:35:0c:a6:03:69:f3:3c:2e:af:47:4f:20:79
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GeoTrust Universal CA 2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\107\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162\165
\163\164\040\111\156\143\056\061\040\060\036\006\003\125\004\003
\023\027\107\145\157\124\162\165\163\164\040\125\156\151\166\145
\162\163\141\154\040\103\101\040\062
END
CKA_ID UTF8 "0"

```

CKA\_ISSUER MULTILINE\_OCTAL

\060\107\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162\165  
\163\164\040\111\156\143\056\061\040\060\036\006\003\125\004\003  
\023\027\107\145\157\124\162\165\163\164\040\125\156\151\166\145  
\162\163\141\154\040\103\101\040\062

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\001

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\154\060\202\003\124\240\003\002\001\002\002\001\001  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060  
\107\061\013\060\011\006\003\125\004\006\023\002\125\123\061\026  
\060\024\006\003\125\004\012\023\015\107\145\157\124\162\165\163  
\164\040\111\156\143\056\061\040\060\036\006\003\125\004\003\023  
\027\107\145\157\124\162\165\163\164\040\125\156\151\166\145\162  
\163\141\154\040\103\101\040\062\060\036\027\015\060\064\060\063  
\060\064\060\065\060\060\060\060\132\027\015\062\071\060\063\060  
\064\060\065\060\060\060\060\132\060\107\061\013\060\011\006\003  
\125\004\006\023\002\125\123\061\026\060\024\006\003\125\004\012  
\023\015\107\145\157\124\162\165\163\164\040\111\156\143\056\061  
\040\060\036\006\003\125\004\003\023\027\107\145\157\124\162\165  
\163\164\040\125\156\151\166\145\162\163\141\154\040\103\101\040  
\062\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001  
\001\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002  
\001\000\263\124\122\301\311\076\362\331\334\261\123\032\131\051  
\347\261\303\105\050\345\327\321\355\305\305\113\241\252\164\173  
\127\257\112\046\374\330\365\136\247\156\031\333\164\014\117\065  
\133\062\013\001\343\333\353\172\167\065\352\252\132\340\326\350  
\241\127\224\360\220\243\164\126\224\104\060\003\036\134\116\053  
\205\046\164\202\172\014\166\240\157\115\316\101\055\240\025\006  
\024\137\267\102\315\173\217\130\141\064\334\052\010\371\056\303  
\001\246\042\104\034\114\007\202\346\133\316\320\112\174\004\323  
\031\163\047\360\252\230\177\056\257\116\353\207\036\044\167\152  
\135\266\350\133\105\272\334\303\241\005\157\126\216\217\020\046  
\245\111\303\056\327\101\207\042\340\117\206\312\140\265\352\241  
\143\300\001\227\020\171\275\000\074\022\155\053\025\261\254\113  
\261\356\030\271\116\226\334\334\166\377\073\276\317\137\003\300  
\374\073\350\276\106\033\377\332\100\302\122\367\376\343\072\367  
\152\167\065\320\332\215\353\136\030\152\061\307\036\272\074\033  
\050\326\153\124\306\252\133\327\242\054\033\031\314\242\002\366  
\233\131\275\067\153\206\265\155\202\272\330\352\311\126\274\251  
\066\130\375\076\031\363\355\014\046\251\223\070\370\117\301\135  
\042\006\320\227\352\341\255\306\125\340\201\053\050\203\072\372  
\364\173\041\121\000\276\122\070\316\315\146\171\250\364\201\126  
\342\320\203\011\107\121\133\120\152\317\333\110\032\135\076\367  
\313\366\145\367\154\361\225\370\002\073\062\126\202\071\172\133

\275\057\211\033\277\241\264\350\377\177\215\214\337\003\361\140  
\116\130\021\114\353\243\077\020\053\203\232\001\163\331\224\155  
\204\000\047\146\254\360\160\100\011\102\222\255\117\223\015\141  
\011\121\044\330\222\325\013\224\141\262\207\262\355\377\232\065  
\377\205\124\312\355\104\103\254\033\074\026\153\110\112\012\034  
\100\210\037\222\302\013\000\005\377\362\310\002\112\244\252\251  
\314\231\226\234\057\130\340\175\341\276\273\007\334\137\004\162  
\134\061\064\303\354\137\055\340\075\144\220\042\346\321\354\270  
\056\335\131\256\331\241\067\277\124\065\334\163\062\117\214\004  
\036\063\262\311\106\361\330\134\310\125\120\311\150\275\250\272  
\066\011\002\003\001\000\001\243\143\060\141\060\017\006\003\125  
\035\023\001\001\377\004\005\060\003\001\001\377\060\035\006\003  
\125\035\016\004\026\004\024\166\363\125\341\372\244\066\373\360  
\237\134\142\161\355\074\364\107\070\020\053\060\037\006\003\125  
\035\043\004\030\060\026\200\024\166\363\125\341\372\244\066\373  
\360\237\134\142\161\355\074\364\107\070\020\053\060\016\006\003  
\125\035\017\001\001\377\004\004\003\002\001\206\060\015\006\011  
\052\206\110\206\367\015\001\001\005\005\000\003\202\002\001\000  
\146\301\306\043\363\331\340\056\156\137\350\317\256\260\260\045  
\115\053\370\073\130\233\100\044\067\132\313\253\026\111\377\263  
\165\171\063\241\057\155\160\027\064\221\376\147\176\217\354\233  
\345\136\202\251\125\037\057\334\324\121\007\022\376\254\026\076  
\054\065\306\143\374\334\020\353\015\243\252\320\174\314\321\320  
\057\121\056\304\024\132\336\350\031\341\076\306\314\244\051\347  
\056\204\252\006\060\170\166\124\163\050\230\131\070\340\000\015  
\142\323\102\175\041\237\256\075\072\214\325\372\167\015\030\053  
\026\016\137\066\341\374\052\265\060\044\317\340\143\014\173\130  
\032\376\231\272\102\022\261\221\364\174\150\342\310\350\257\054  
\352\311\176\256\273\052\075\015\025\334\064\225\266\030\164\250  
\152\017\307\264\364\023\304\344\133\355\012\322\244\227\114\052  
\355\057\154\022\211\075\361\047\160\252\152\003\122\041\237\100  
\250\147\120\362\363\132\037\337\337\043\366\334\170\116\346\230  
\117\125\072\123\343\357\362\364\237\307\174\330\130\257\051\042  
\227\270\340\275\221\056\260\166\354\127\021\317\357\051\104\363  
\351\205\172\140\143\344\135\063\211\027\331\061\252\332\326\363  
\030\065\162\317\207\053\057\143\043\204\135\204\214\077\127\240  
\210\374\231\221\050\046\151\231\324\217\227\104\276\216\325\110  
\261\244\050\051\361\025\264\341\345\236\335\370\217\246\157\046  
\327\011\074\072\034\021\016\246\154\067\367\255\104\207\054\050  
\307\330\164\202\263\320\157\112\127\273\065\051\047\240\213\350  
\041\247\207\144\066\135\314\330\026\254\307\262\047\100\222\125  
\070\050\215\121\156\335\024\147\123\154\161\134\046\204\115\165  
\132\266\176\140\126\251\115\255\373\233\036\227\363\015\331\322  
\227\124\167\332\075\022\267\340\036\357\010\006\254\371\205\207  
\351\242\334\257\176\030\022\203\375\126\027\101\056\325\051\202  
\175\231\364\061\366\161\251\317\054\001\047\245\005\271\252\262  
\110\116\052\357\237\223\122\121\225\074\122\163\216\126\114\027  
\100\300\011\050\344\213\152\110\123\333\354\315\125\125\361\306

```
\370\351\242\054\114\246\321\046\137\176\257\132\114\332\037\246
\362\034\054\176\256\002\026\322\126\320\057\127\123\107\350\222
END
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
Trust for "GeoTrust Universal CA 2"
Issuer: CN=GeoTrust Universal CA 2,O=GeoTrust Inc.,C=US
Serial Number: 1 (0x1)
Subject: CN=GeoTrust Universal CA 2,O=GeoTrust Inc.,C=US
Not Valid Before: Thu Mar 04 05:00:00 2004
Not Valid After: Sun Mar 04 05:00:00 2029
Fingerprint (MD5): 34:fc:b8:d0:36:db:9e:14:b3:c2:f2:db:8f:e4:94:c7
Fingerprint (SHA1): 37:9a:19:7b:41:85:45:35:0c:a6:03:69:f3:3c:2e:af:47:4f:20:79
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GeoTrust Universal CA 2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\067\232\031\173\101\205\105\065\014\246\003\151\363\074\056\257
\107\117\040\171
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\064\374\270\320\066\333\236\024\263\302\362\333\217\344\224\307
END
CKA_ISSUER MULTILINE_OCTAL
\060\107\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162\165
\163\164\040\111\156\143\056\061\040\060\036\006\003\125\004\003
\023\027\107\145\157\124\162\165\163\164\040\125\156\151\166\145
\162\163\141\154\040\103\101\040\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
Certificate "QuoVadis Root Certification Authority"
Issuer: CN=QuoVadis Root Certification Authority,OU=Root Certification Authority,O=QuoVadis
Limited,C=BM
Serial Number:3a:b6:50:8b
```

```
Subject: CN=QuoVadis Root Certification Authority,OU=Root Certification Authority,O=QuoVadis
Limited,C=BM
Not Valid Before: Mon Mar 19 18:33:33 2001
Not Valid After: Wed Mar 17 18:33:33 2021
Fingerprint (MD5): 27:de:36:fe:72:b7:00:03:00:9d:f4:f0:1e:6c:04:24
Fingerprint (SHA1): de:3f:40:bd:50:93:d3:9b:6c:60:f6:da:bc:07:62:01:00:89:76:c9
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "QuoVadis Root Certification Authority"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\177\061\013\060\011\006\003\125\004\006\023\002\102\115\061
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144
\151\163\040\114\151\155\151\164\145\144\061\045\060\043\006\003
\125\004\013\023\034\122\157\157\164\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164
\171\061\056\060\054\006\003\125\004\003\023\045\121\165\157\126
\141\144\151\163\040\122\157\157\164\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164
\171
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\177\061\013\060\011\006\003\125\004\006\023\002\102\115\061
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144
\151\163\040\114\151\155\151\164\145\144\061\045\060\043\006\003
\125\004\013\023\034\122\157\157\164\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164
\171\061\056\060\054\006\003\125\004\003\023\045\121\165\157\126
\141\144\151\163\040\122\157\157\164\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164
\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\004\072\266\120\213
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\320\060\202\004\270\240\003\002\001\002\002\004\072
\266\120\213\060\015\006\011\052\206\110\206\367\015\001\001\005
\005\000\060\177\061\013\060\011\006\003\125\004\006\023\002\102
\115\061\031\060\027\006\003\125\004\012\023\020\121\165\157\126
\141\144\151\163\040\114\151\155\151\164\145\144\061\045\060\043
\006\003\125\004\013\023\034\122\157\157\164\040\103\145\162\164
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162
\151\164\171\061\056\060\054\006\003\125\004\003\023\045\121\165
\157\126\141\144\151\163\040\122\157\157\164\040\103\145\162\164
```

\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162  
\151\164\171\060\036\027\015\060\061\060\063\061\071\061\070\063  
\063\063\063\132\027\015\062\061\060\063\061\067\061\070\063\063  
\063\063\132\060\177\061\013\060\011\006\003\125\004\006\023\002  
\102\115\061\031\060\027\006\003\125\004\012\023\020\121\165\157  
\126\141\144\151\163\040\114\151\155\151\164\145\144\061\045\060  
\043\006\003\125\004\013\023\034\122\157\157\164\040\103\145\162  
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157  
\162\151\164\171\061\056\060\054\006\003\125\004\003\023\045\121  
\165\157\126\141\144\151\163\040\122\157\157\164\040\103\145\162  
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157  
\162\151\164\171\060\202\001\042\060\015\006\011\052\206\110\206  
\367\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012  
\002\202\001\001\000\277\141\265\225\123\272\127\374\372\362\147  
\013\072\032\337\021\200\144\225\264\321\274\315\172\317\366\051  
\226\056\044\124\100\044\070\367\032\205\334\130\114\313\244\047  
\102\227\320\237\203\212\303\344\006\003\133\000\245\121\036\160  
\004\164\342\301\324\072\253\327\255\073\007\030\005\216\375\203  
\254\352\146\331\030\033\150\212\365\127\032\230\272\365\355\166  
\075\174\331\336\224\152\073\113\027\301\325\217\275\145\070\072  
\225\320\075\125\066\116\337\171\127\061\052\036\330\131\145\111  
\130\040\230\176\253\137\176\237\351\326\115\354\203\164\251\307  
\154\330\356\051\112\205\052\006\024\371\124\346\323\332\145\007  
\213\143\067\022\327\320\354\303\173\040\101\104\243\355\313\240  
\027\341\161\145\316\035\146\061\367\166\001\031\310\175\003\130  
\266\225\111\035\246\022\046\350\306\014\166\340\343\146\313\352  
\135\246\046\356\345\314\137\275\147\247\001\047\016\242\312\124  
\305\261\172\225\035\161\036\112\051\212\003\334\152\105\301\244  
\031\136\157\066\315\303\242\260\267\376\134\070\342\122\274\370  
\104\103\346\220\273\002\003\001\000\001\243\202\002\122\060\202  
\002\116\060\075\006\010\053\006\001\005\005\007\001\001\004\061  
\060\057\060\055\006\010\053\006\001\005\005\007\060\001\206\041  
\150\164\164\160\163\072\057\057\157\143\163\160\056\161\165\157  
\166\141\144\151\163\157\146\146\163\150\157\162\145\056\143\157  
\155\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001  
\001\377\060\202\001\032\006\003\125\035\040\004\202\001\021\060  
\202\001\015\060\202\001\011\006\011\053\006\001\004\001\276\130  
\000\001\060\201\373\060\201\324\006\010\053\006\001\005\005\007  
\002\002\060\201\307\032\201\304\122\145\154\151\141\156\143\145  
\040\157\156\040\164\150\145\040\121\165\157\126\141\144\151\163  
\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164  
\145\040\142\171\040\141\156\171\040\160\141\162\164\171\040\141  
\163\163\165\155\145\163\040\141\143\143\145\160\164\141\156\143  
\145\040\157\146\040\164\150\145\040\164\150\145\156\040\141\160  
\160\154\151\143\141\142\154\145\040\163\164\141\156\144\141\162  
\144\040\164\145\162\155\163\040\141\156\144\040\143\157\156\144  
\151\164\151\157\156\163\040\157\146\040\165\163\145\054\040\143  
\145\162\164\151\146\151\143\141\164\151\157\156\040\160\162\141

\143\164\151\143\145\163\054\040\141\156\144\040\164\150\145\040  
\121\165\157\126\141\144\151\163\040\103\145\162\164\151\146\151  
\143\141\164\145\040\120\157\154\151\143\171\056\060\042\006\010  
\053\006\001\005\005\007\002\001\026\026\150\164\164\160\072\057  
\057\167\167\167\056\161\165\157\166\141\144\151\163\056\142\155  
\060\035\006\003\125\035\016\004\026\004\024\213\113\155\355\323  
\051\271\006\031\354\071\071\251\360\227\204\152\313\357\337\060  
\201\256\006\003\125\035\043\004\201\246\060\201\243\200\024\213  
\113\155\355\323\051\271\006\031\354\071\071\251\360\227\204\152  
\313\357\337\241\201\204\244\201\201\060\177\061\013\060\011\006  
\003\125\004\006\023\002\102\115\061\031\060\027\006\003\125\004  
\012\023\020\121\165\157\126\141\144\151\163\040\114\151\155\151  
\164\145\144\061\045\060\043\006\003\125\004\013\023\034\122\157  
\157\164\040\103\145\162\164\151\146\151\143\141\164\151\157\156  
\040\101\165\164\150\157\162\151\164\171\061\056\060\054\006\003  
\125\004\003\023\045\121\165\157\126\141\144\151\163\040\122\157  
\157\164\040\103\145\162\164\151\146\151\143\141\164\151\157\156  
\040\101\165\164\150\157\162\151\164\171\202\004\072\266\120\213  
\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006  
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003  
\202\001\001\000\212\324\024\265\376\364\232\222\247\031\324\244  
\176\162\030\217\331\150\174\122\044\335\147\157\071\172\304\252  
\136\075\342\130\260\115\160\230\204\141\350\033\343\151\030\016  
\316\373\107\120\240\116\377\360\044\037\275\262\316\365\047\374  
\354\057\123\252\163\173\003\075\164\156\346\026\236\353\245\056  
\304\277\126\047\120\053\142\272\276\113\034\074\125\134\101\035  
\044\276\202\040\107\135\325\104\176\172\026\150\337\175\115\121  
\160\170\127\035\063\036\375\002\231\234\014\315\012\005\117\307  
\273\216\244\165\372\112\155\261\200\216\011\126\271\234\032\140  
\376\135\301\327\172\334\021\170\320\326\135\301\267\325\255\062  
\231\003\072\212\314\124\045\071\061\201\173\023\042\121\272\106  
\154\241\273\236\372\004\154\111\046\164\217\322\163\353\314\060  
\242\346\352\131\042\207\370\227\365\016\375\352\314\222\244\026  
\304\122\030\352\041\316\261\361\346\204\201\345\272\251\206\050  
\362\103\132\135\022\235\254\036\331\250\345\012\152\247\177\240  
\207\051\317\362\211\115\324\354\305\342\346\172\320\066\043\212  
\112\164\066\371

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "QuoVadis Root Certification Authority"

# Issuer: CN=QuoVadis Root Certification Authority,OU=Root Certification Authority,O=QuoVadis Limited,C=BM

# Serial Number:3a:b6:50:8b

# Subject: CN=QuoVadis Root Certification Authority,OU=Root Certification Authority,O=QuoVadis

Limited,C=BM

# Not Valid Before: Mon Mar 19 18:33:33 2001

# Not Valid After: Wed Mar 17 18:33:33 2021

# Fingerprint (MD5): 27:de:36:fe:72:b7:00:03:00:9d:f4:f0:1e:6c:04:24

# Fingerprint (SHA1): de:3f:40:bd:50:93:d3:9b:6c:60:f6:da:bc:07:62:01:00:89:76:c9

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "QuoVadis Root Certification Authority"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\336\077\100\275\120\223\323\233\154\140\366\332\274\007\142\001  
\000\211\166\311

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\047\336\066\376\162\267\000\003\000\235\364\360\036\154\004\044

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\177\061\013\060\011\006\003\125\004\006\023\002\102\115\061  
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144  
\151\163\040\114\151\155\151\164\145\144\061\045\060\043\006\003  
\125\004\013\023\034\122\157\157\164\040\103\145\162\164\151\146  
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164  
\171\061\056\060\054\006\003\125\004\003\023\045\121\165\157\126  
\141\144\151\163\040\122\157\157\164\040\103\145\162\164\151\146  
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164  
\171

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\004\072\266\120\213

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "Autoridade Certificadora Raiz Brasileira"

# Issuer: CN=Autoridade Certificadora Raiz Brasileira,ST=DF,L=Brasilia,OU=Instituto Nacional de Tecnologia da Informacao - ITI,O=ICP-Brasil,C=BR

# Serial Number: 4 (0x4)

# Subject: CN=Autoridade Certificadora Raiz Brasileira,ST=DF,L=Brasilia,OU=Instituto Nacional de Tecnologia da Informacao - ITI,O=ICP-Brasil,C=BR

# Not Valid Before: Fri Nov 30 12:58:00 2001

# Not Valid After: Wed Nov 30 23:59:00 2011

# Fingerprint (MD5): 96:89:7d:61:d1:55:2b:27:e2:5a:39:b4:2a:6c:44:6f

# Fingerprint (SHA1): 8e:fd:ca:bc:93:e6:1e:92:5d:4d:1d:ed:18:1a:43:20:a4:67:a1:39

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE



```
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Autoridade Certificadora Raiz Brasileira"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\264\061\013\060\011\006\003\125\004\006\023\002\102\122
\061\023\060\021\006\003\125\004\012\023\012\111\103\120\055\102
\162\141\163\151\154\061\075\060\073\006\003\125\004\013\023\064
\111\156\163\164\151\164\165\164\157\040\116\141\143\151\157\156
\141\154\040\144\145\040\124\145\143\156\157\154\157\147\151\141
\040\144\141\040\111\156\146\157\162\155\141\143\141\157\040\055
\040\111\124\111\061\021\060\017\006\003\125\004\007\023\010\102
\162\141\163\151\154\151\141\061\013\060\011\006\003\125\004\010
\023\002\104\106\061\061\060\057\006\003\125\004\003\023\050\101
\165\164\157\162\151\144\141\144\145\040\103\145\162\164\151\146
\151\143\141\144\157\162\141\040\122\141\151\172\040\102\162\141
\163\151\154\145\151\162\141
```

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\201\264\061\013\060\011\006\003\125\004\006\023\002\102\122
\061\023\060\021\006\003\125\004\012\023\012\111\103\120\055\102
\162\141\163\151\154\061\075\060\073\006\003\125\004\013\023\064
\111\156\163\164\151\164\165\164\157\040\116\141\143\151\157\156
\141\154\040\144\145\040\124\145\143\156\157\154\157\147\151\141
\040\144\141\040\111\156\146\157\162\155\141\143\141\157\040\055
\040\111\124\111\061\021\060\017\006\003\125\004\007\023\010\102
\162\141\163\151\154\151\141\061\013\060\011\006\003\125\004\010
\023\002\104\106\061\061\060\057\006\003\125\004\003\023\050\101
\165\164\157\162\151\144\141\144\145\040\103\145\162\164\151\146
\151\143\141\144\157\162\141\040\122\141\151\172\040\102\162\141
\163\151\154\145\151\162\141
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\001\004
```

END

CKA\_VALUE MULTILINE\_OCTAL

```
\060\202\004\270\060\202\003\240\240\003\002\001\002\002\001\004
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\201\264\061\013\060\011\006\003\125\004\006\023\002\102\122\061
\023\060\021\006\003\125\004\012\023\012\111\103\120\055\102\162
\141\163\151\154\061\075\060\073\006\003\125\004\013\023\064\111
\156\163\164\151\164\165\164\157\040\116\141\143\151\157\156\141
\154\040\144\145\040\124\145\143\156\157\154\157\147\151\141\040
\144\141\040\111\156\146\157\162\155\141\143\141\157\040\055\040
\111\124\111\061\021\060\017\006\003\125\004\007\023\010\102\162
\141\163\151\154\151\141\061\013\060\011\006\003\125\004\010\023
```

\002\104\106\061\061\060\057\006\003\125\004\003\023\050\101\165  
\164\157\162\151\144\141\144\145\040\103\145\162\164\151\146\151  
\143\141\144\157\162\141\040\122\141\151\172\040\102\162\141\163  
\151\154\145\151\162\141\060\036\027\015\060\061\061\061\063\060\060  
\061\062\065\070\060\060\132\027\015\061\061\061\061\063\060\062  
\063\065\071\060\060\132\060\201\264\061\013\060\011\006\003\125  
\004\006\023\002\102\122\061\023\060\021\006\003\125\004\012\023  
\012\111\103\120\055\102\162\141\163\151\154\061\075\060\073\006  
\003\125\004\013\023\064\111\156\163\164\151\164\165\164\157\040  
\116\141\143\151\157\156\141\154\040\144\145\040\124\145\143\156  
\157\154\157\147\151\141\040\144\141\040\111\156\146\157\162\155  
\141\143\141\157\040\055\040\111\124\111\061\021\060\017\006\003  
\125\004\007\023\010\102\162\141\163\151\154\151\141\061\013\060  
\011\006\003\125\004\010\023\002\104\106\061\061\060\057\006\003  
\125\004\003\023\050\101\165\164\157\162\151\144\141\144\145\040  
\103\145\162\164\151\146\151\143\141\144\157\162\141\040\122\141  
\151\172\040\102\162\141\163\151\154\145\151\162\141\060\202\001  
\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000  
\003\202\001\017\000\060\202\001\012\002\202\001\001\000\300\363  
\056\167\005\377\206\371\276\122\035\233\376\124\000\160\165\100  
\212\306\246\150\271\026\166\114\017\367\364\277\264\342\210\201  
\032\313\350\354\276\144\201\245\071\107\135\352\346\055\223\323  
\032\377\172\124\246\007\037\064\010\364\275\211\271\202\314\243  
\102\217\136\232\307\076\307\251\270\125\154\044\366\052\214\145  
\040\212\344\104\044\002\257\324\267\211\373\052\342\304\327\350  
\035\176\334\035\042\014\137\122\303\355\340\054\215\255\216\164  
\101\136\173\050\315\224\117\314\171\256\271\263\022\072\373\114  
\200\206\245\045\000\227\150\025\251\356\261\152\050\276\156\146  
\021\325\012\346\131\240\122\000\156\175\056\271\053\216\266\055  
\155\030\105\156\205\003\173\120\312\373\244\374\263\222\372\223  
\307\074\242\112\133\036\226\275\275\343\063\264\065\102\366\303  
\311\353\103\026\136\036\232\235\122\250\325\107\013\161\265\021  
\310\107\215\275\231\336\125\022\200\001\116\250\273\007\143\016  
\374\045\261\242\262\164\122\260\171\335\023\241\016\073\156\145  
\012\201\311\276\301\135\336\115\031\067\351\103\247\117\002\003  
\001\000\001\243\201\322\060\201\317\060\116\006\003\125\035\040  
\004\107\060\105\060\103\006\005\140\114\001\001\000\060\072\060  
\070\006\010\053\006\001\005\005\007\002\001\026\054\150\164\164  
\160\072\057\057\141\143\162\141\151\172\056\151\143\160\142\162  
\141\163\151\154\056\147\157\166\056\142\162\057\104\120\103\141  
\143\162\141\151\172\056\160\144\146\060\075\006\003\125\035\037  
\004\066\060\064\060\062\240\060\240\056\206\054\150\164\164\160  
\072\057\057\141\143\162\141\151\172\056\151\143\160\142\162\141  
\163\151\154\056\147\157\166\056\142\162\057\114\103\122\141\143  
\162\141\151\172\056\143\162\154\060\035\006\003\125\035\016\004  
\026\004\024\212\372\361\127\204\021\023\065\220\102\372\127\111  
\124\151\015\244\304\360\067\060\017\006\003\125\035\023\001\001  
\377\004\005\060\003\001\001\377\060\016\006\003\125\035\017\001

```
\001\377\004\004\003\002\001\006\060\015\006\011\052\206\110\206
\367\015\001\001\005\005\000\003\202\001\001\000\031\003\227\065
\123\370\140\042\036\216\162\002\300\176\042\140\025\152\157\230
\066\126\252\125\167\323\366\307\026\230\374\210\032\033\045\051
\271\270\072\155\355\070\253\142\035\124\305\355\337\101\241\245
\142\062\136\373\334\335\372\054\317\105\260\152\134\365\120\003
\176\004\135\314\044\342\252\126\271\375\141\036\270\226\175\332
\361\360\007\052\112\252\372\012\344\005\301\052\373\344\132\054
\113\071\160\014\000\332\357\111\223\357\006\143\002\144\041\235
\234\166\304\236\260\175\151\123\365\124\037\113\377\311\141\342
\034\354\133\236\330\223\113\167\115\024\071\043\014\152\042\277
\267\277\136\234\243\107\020\015\237\272\221\367\274\110\240\177
\221\041\341\265\100\067\225\150\206\264\346\350\306\071\337\036
\327\101\226\153\324\301\073\153\236\145\024\111\322\171\075\056
\232\123\200\215\035\246\001\273\322\063\225\371\241\046\115\256
\147\255\167\074\223\217\147\345\010\317\002\013\263\013\151\275
\044\221\331\340\104\211\124\004\141\305\327\364\271\236\143\333
\053\357\100\343\253\035\337\172\052\053\311\374
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

# Microsoft Code Signing Only Certificate

# Trust for "Autoridade Certificadora Raiz Brasileira"

# Issuer: CN=Autoridade Certificadora Raiz Brasileira,ST=DF,L=Brasilia,OU=Instituto Nacional de Tecnologia da Informacao - ITI,O=ICP-Brasil,C=BR

# Serial Number: 4 (0x4)

# Subject: CN=Autoridade Certificadora Raiz Brasileira,ST=DF,L=Brasilia,OU=Instituto Nacional de Tecnologia da Informacao - ITI,O=ICP-Brasil,C=BR

# Not Valid Before: Fri Nov 30 12:58:00 2001

# Not Valid After: Wed Nov 30 23:59:00 2011

# Fingerprint (MD5): 96:89:7d:61:d1:55:2b:27:e2:5a:39:b4:2a:6c:44:6f

# Fingerprint (SHA1): 8e:fd:ca:bc:93:e6:1e:92:5d:4d:1d:ed:18:1a:43:20:a4:67:a1:39

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "Autoridade Certificadora Raiz Brasileira"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\216\375\312\274\223\346\036\222\135\115\035\355\030\032\103\040
\244\147\241\071
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\226\211\175\141\321\125\053\047\342\132\071\264\052\154\104\157
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\201\264\061\013\060\011\006\003\125\004\006\023\002\102\122
```

```
\061\023\060\021\006\003\125\004\012\023\012\111\103\120\055\102
\162\141\163\151\154\061\075\060\073\006\003\125\004\013\023\064
\111\156\163\164\151\164\165\164\157\040\116\141\143\151\157\156
\141\154\040\144\145\040\124\145\143\156\157\154\157\147\151\141
\040\144\141\040\111\156\146\157\162\155\141\143\141\157\040\055
\040\111\124\111\061\021\060\017\006\003\125\004\007\023\010\102
\162\141\163\151\154\151\141\061\013\060\011\006\003\125\004\010
\023\002\104\106\061\061\060\057\006\003\125\004\003\023\050\101
\165\164\157\162\151\144\141\144\145\040\103\145\162\164\151\146
\151\143\141\144\157\162\141\040\122\141\151\172\040\102\162\141
\163\151\154\145\151\162\141
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\001\004
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "Post.Trust Root CA"

# Issuer: CN=Post.Trust Root CA,OU=Post.Trust Ltd.,O=An Post,C=IE

# Serial Number:39:a2:93:e3

# Subject: CN=Post.Trust Root CA,OU=Post.Trust Ltd.,O=An Post,C=IE

# Not Valid Before: Tue Aug 22 14:56:21 2000

# Not Valid After: Fri Aug 20 13:56:21 2010

# Fingerprint (MD5): af:b8:33:6e:7c:dd:c6:02:64:ad:58:fc:0d:4f:7b:cf

# Fingerprint (SHA1): bc:7b:3c:6f:ef:26:b9:f7:ab:10:d7:a1:f6:b6:7c:5e:d2:a1:2d:3d

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Post.Trust Root CA"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

```
\060\126\061\013\060\011\006\003\125\004\006\023\002\111\105\061
\020\060\016\006\003\125\004\012\023\007\101\156\040\120\157\163
\164\061\030\060\026\006\003\125\004\013\023\017\120\157\163\164
\056\124\162\165\163\164\040\114\164\144\056\061\033\060\031\006
\003\125\004\003\023\022\120\157\163\164\056\124\162\165\163\164
\040\122\157\157\164\040\103\101
```

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\126\061\013\060\011\006\003\125\004\006\023\002\111\105\061
\020\060\016\006\003\125\004\012\023\007\101\156\040\120\157\163
\164\061\030\060\026\006\003\125\004\013\023\017\120\157\163\164
```

\056\124\162\165\163\164\040\114\164\144\056\061\033\060\031\006  
\003\125\004\003\023\022\120\157\163\164\056\124\162\165\163\164  
\040\122\157\157\164\040\103\101  
END  
CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL  
\002\004\071\242\223\343  
END  
CKA\_VALUE MULTILINE\_OCTAL  
\060\202\006\272\060\202\005\242\240\003\002\001\002\002\004\071  
\242\223\343\060\015\006\011\052\206\110\206\367\015\001\001\005  
\005\000\060\126\061\013\060\011\006\003\125\004\006\023\002\111  
\105\061\020\060\016\006\003\125\004\012\023\007\101\156\040\120  
\157\163\164\061\030\060\026\006\003\125\004\013\023\017\120\157  
\163\164\056\124\162\165\163\164\040\114\164\144\056\061\033\060  
\031\006\003\125\004\003\023\022\120\157\163\164\056\124\162\165  
\163\164\040\122\157\157\164\040\103\101\060\036\027\015\060\060  
\060\070\062\062\061\064\065\066\062\061\132\027\015\061\060\060  
\070\062\060\061\063\065\066\062\061\132\060\126\061\013\060\011  
\006\003\125\004\006\023\002\111\105\061\020\060\016\006\003\125  
\004\012\023\007\101\156\040\120\157\163\164\061\030\060\026\006  
\003\125\004\013\023\017\120\157\163\164\056\124\162\165\163\164  
\040\114\164\144\056\061\033\060\031\006\003\125\004\003\023\022  
\120\157\163\164\056\124\162\165\163\164\040\122\157\157\164\040  
\103\101\060\202\001\042\060\015\006\011\052\206\110\206\367\015  
\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002\202  
\001\001\000\326\177\023\344\015\044\330\330\373\351\266\303\261  
\122\243\116\334\267\073\342\367\016\137\201\346\001\360\246\346  
\066\160\330\023\163\241\377\122\010\220\362\025\274\362\062\034  
\250\327\341\006\020\173\101\250\224\307\077\075\104\025\334\200  
\121\347\060\376\123\110\365\220\137\155\155\045\340\140\273\240  
\373\326\306\051\370\115\160\120\032\067\240\016\315\170\052\266  
\150\363\231\324\014\216\136\022\142\377\302\137\132\232\053\210  
\107\252\273\241\331\165\360\054\134\376\155\302\261\133\061\314  
\203\207\032\247\276\220\016\350\020\124\123\122\013\234\111\363  
\200\002\376\157\047\246\243\127\060\270\333\270\320\000\004\003  
\344\345\324\103\006\353\253\150\115\150\046\322\231\064\271\340  
\022\226\177\113\273\153\156\041\161\346\010\105\112\035\146\015  
\067\311\003\341\321\312\334\261\057\160\366\267\201\142\226\033  
\144\247\376\273\341\206\353\101\237\250\234\330\312\240\341\326  
\057\370\017\341\272\100\070\367\155\321\245\312\114\031\310\226  
\334\314\111\034\012\266\323\250\221\072\371\332\354\035\315\163  
\112\044\077\002\003\001\000\001\243\202\003\216\060\202\003\212  
\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001  
\377\060\202\003\115\006\003\125\035\040\004\202\003\104\060\202  
\003\100\060\202\003\074\006\007\052\202\164\273\350\042\001\060  
\202\003\057\060\202\002\364\006\010\053\006\001\005\005\007\002  
\002\060\202\002\346\032\202\002\342\124\150\151\163\040\143\145  
\162\164\151\146\151\143\141\164\145\040\151\163\040\151\163\163

\165\145\144\040\163\165\142\152\145\143\164\040\164\157\040\164  
\150\145\040\120\157\163\164\056\124\162\165\163\164\040\103\120  
\123\040\164\145\162\155\163\040\141\156\144\040\143\157\156\144  
\151\164\151\157\156\163\040\167\150\151\143\150\040\157\165\164  
\154\151\156\145\040\164\150\145\040\167\141\162\162\141\156\164  
\151\145\163\040\160\162\157\166\151\144\145\144\040\167\151\164  
\150\040\164\150\151\163\040\143\145\162\164\151\146\151\143\141  
\164\145\040\141\156\144\040\164\150\145\040\145\170\164\145\156  
\164\040\157\146\040\164\150\145\040\154\151\141\142\151\154\151  
\164\171\040\157\146\040\120\157\163\164\056\124\162\165\163\164  
\040\114\151\155\151\164\145\144\056\040\040\120\157\163\164\056  
\124\162\165\163\164\040\114\151\155\151\164\145\144\040\145\170  
\160\162\145\163\163\154\171\040\145\170\143\154\165\144\145\163  
\040\143\145\162\164\141\151\156\040\145\170\160\162\145\163\163  
\040\141\156\144\040\151\155\160\154\151\145\144\040\167\141\162  
\162\141\156\164\151\145\163\040\141\156\144\040\143\157\156\144  
\151\164\151\157\156\163\054\040\151\156\143\154\165\144\151\156  
\147\040\167\141\162\162\141\156\164\151\145\163\040\141\163\040  
\164\157\040\146\151\164\156\145\163\163\040\146\157\162\040\160  
\165\162\160\157\163\145\040\157\162\040\155\145\162\143\150\141  
\156\164\141\142\151\154\151\164\171\054\040\141\156\144\040\167  
\151\154\154\040\156\157\164\040\142\145\040\154\151\141\142\154  
\145\040\146\157\162\040\151\156\144\151\162\145\143\164\040\141  
\156\144\040\143\157\156\163\145\161\165\145\156\164\151\141\154  
\040\164\171\160\145\040\154\157\163\163\145\163\054\040\157\162  
\040\146\157\162\040\154\157\163\163\040\151\156\040\145\170\143  
\145\163\163\040\157\146\040\141\040\163\160\145\143\151\146\151  
\145\144\040\141\155\157\165\156\164\056\040\040\101\143\143\157  
\162\144\151\156\147\154\171\054\040\164\150\145\040\103\120\123  
\040\164\145\162\155\163\040\141\156\144\040\143\157\156\144\151  
\164\151\157\156\163\040\155\165\163\164\040\142\145\040\162\145  
\141\144\040\142\145\146\157\162\145\040\141\156\171\040\162\145  
\154\151\141\156\143\145\040\143\141\156\040\142\145\040\160\154  
\141\143\145\144\040\157\156\040\164\150\151\163\040\143\145\162  
\164\151\146\151\143\141\164\145\054\040\141\156\144\040\142\171  
\040\141\143\143\145\160\164\151\156\147\040\157\156\040\164\150  
\151\163\040\143\145\162\164\151\146\151\143\141\164\145\054\040  
\141\040\163\165\142\163\143\162\151\142\145\162\040\141\156\144  
\057\157\162\040\162\145\154\171\151\156\147\040\160\141\162\164  
\171\040\151\163\040\141\143\153\156\157\167\154\145\144\147\151  
\156\147\040\164\150\141\164\040\151\164\040\150\141\163\040\162  
\145\141\144\054\040\165\156\144\145\162\163\164\157\157\144\040  
\141\156\144\040\141\143\143\145\160\164\145\144\040\164\150\145  
\040\103\120\123\040\164\145\162\155\163\040\141\156\144\040\143  
\157\156\144\151\164\151\157\156\163\056\040\060\065\006\010\053  
\006\001\005\005\007\002\001\026\051\150\164\164\160\072\057\057  
\167\167\167\056\160\157\163\164\056\164\162\165\163\164\056\151  
\145\057\162\145\160\157\163\151\164\057\143\160\163\056\150\164

```
\155\154\060\021\006\003\125\035\016\004\012\004\010\101\032\214
\343\117\075\357\361\060\023\006\003\125\035\043\004\014\060\012
\200\010\101\032\214\343\117\075\357\361\060\015\006\011\052\206
\110\206\367\015\001\001\005\005\000\003\202\001\001\000\147\215
\251\343\257\370\361\341\155\054\373\327\015\142\113\256\360\130
\073\276\062\103\120\133\362\103\216\076\033\360\067\065\022\220
\074\066\001\035\377\051\364\010\246\176\356\261\036\121\270\271
\013\134\353\267\342\015\364\212\060\370\250\065\030\013\307\216
\163\352\006\231\053\007\045\007\017\163\113\377\272\044\133\204
\374\316\224\066\122\373\220\234\172\215\213\240\210\172\106\374
\232\050\130\313\215\253\124\364\355\170\072\367\073\323\147\343
\217\220\203\231\242\010\122\202\026\265\201\134\233\010\061\374
\345\326\170\256\200\361\114\002\143\154\216\004\234\271\173\231
\361\034\063\241\257\173\103\121\205\007\256\337\056\305\011\374
\204\245\376\125\274\012\344\170\134\246\330\367\073\217\012\307
\156\371\237\216\020\017\102\004\374\127\101\376\122\077\261\061
\224\157\360\155\324\116\005\335\236\053\000\137\301\022\176\102
\144\247\141\026\061\117\174\276\016\310\343\020\373\056\367\025
\145\247\124\312\135\244\314\054\314\170\000\275\001\327\315\337
\320\333\063\335\211\247\024\327\242\041\274\065\326\016
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
Trust for "Post.Trust Root CA"
Issuer: CN=Post.Trust Root CA,OU=Post.Trust Ltd.,O=An Post,C=IE
Serial Number:39:a2:93:e3
Subject: CN=Post.Trust Root CA,OU=Post.Trust Ltd.,O=An Post,C=IE
Not Valid Before: Tue Aug 22 14:56:21 2000
Not Valid After: Fri Aug 20 13:56:21 2010
Fingerprint (MD5): af:b8:33:6e:7c:dd:c6:02:64:ad:58:fc:0d:4f:7b:cf
Fingerprint (SHA1): bc:7b:3c:6f:ef:26:b9:f7:ab:10:d7:a1:f6:b6:7c:5e:d2:a1:2d:3d
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Post.Trust Root CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\274\173\074\157\357\046\271\367\253\020\327\241\366\266\174\136
\322\241\055\075
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\257\270\063\156\174\335\306\002\144\255\130\374\015\117\173\317
END
CKA_ISSUER MULTILINE_OCTAL
\060\126\061\013\060\011\006\003\125\004\006\023\002\111\105\061
```

```
\020\060\016\006\003\125\004\012\023\007\101\156\040\120\157\163
\164\061\030\060\026\006\003\125\004\013\023\017\120\157\163\164
\056\124\162\165\163\164\040\114\164\144\056\061\033\060\031\006
\003\125\004\003\023\022\120\157\163\164\056\124\162\165\163\164
\040\122\157\157\164\040\103\101
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\004\071\242\223\343
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "Microsoft Root Authority"

# Issuer: CN=Microsoft Root Authority,OU=Microsoft Corporation,OU=Copyright (c) 1997 Microsoft Corp.

# Serial Number:c1:00:8b:3c:3c:88:11:d1:3e:f6:63:ec:df:40

# Subject: CN=Microsoft Root Authority,OU=Microsoft Corporation,OU=Copyright (c) 1997 Microsoft Corp.

# Not Valid Before: Fri Jan 10 07:00:00 1997

# Not Valid After: Thu Dec 31 07:00:00 2020

# Fingerprint (MD5): 2a:95:4e:ca:79:b2:87:45:73:d9:2d:90:ba:f9:9f:b6

# Fingerprint (SHA1): a4:34:89:15:9a:52:0f:0d:93:d0:32:cc:af:37:e7:fe:20:a8:b4:19

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Microsoft Root Authority"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

```
\060\160\061\053\060\051\006\003\125\004\013\023\042\103\157\160
\171\162\151\147\150\164\040\050\143\051\040\061\071\071\067\040
\115\151\143\162\157\163\157\146\164\040\103\157\162\160\056\061
\036\060\034\006\003\125\004\013\023\025\115\151\143\162\157\163
\157\146\164\040\103\157\162\160\157\162\141\164\151\157\156\061
\041\060\037\006\003\125\004\003\023\030\115\151\143\162\157\163
\157\146\164\040\122\157\157\164\040\101\165\164\150\157\162\151
\164\171
```

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\160\061\053\060\051\006\003\125\004\013\023\042\103\157\160
\171\162\151\147\150\164\040\050\143\051\040\061\071\071\067\040
\115\151\143\162\157\163\157\146\164\040\103\157\162\160\056\061
\036\060\034\006\003\125\004\013\023\025\115\151\143\162\157\163
\157\146\164\040\103\157\162\160\157\162\141\164\151\157\156\061
\041\060\037\006\003\125\004\003\023\030\115\151\143\162\157\163
\157\146\164\040\122\157\157\164\040\101\165\164\150\157\162\151
```



\164\171  
END  
CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL  
\002\017\000\301\000\213\074\074\210\021\321\076\366\143\354\337  
\100  
END  
CKA\_VALUE MULTILINE\_OCTAL  
\060\202\004\022\060\202\002\372\240\003\002\001\002\002\017\000  
\301\000\213\074\074\210\021\321\076\366\143\354\337\100\060\015  
\006\011\052\206\110\206\367\015\001\001\004\005\000\060\160\061  
\053\060\051\006\003\125\004\013\023\042\103\157\160\171\162\151  
\147\150\164\040\050\143\051\040\061\071\071\067\040\115\151\143  
\162\157\163\157\146\164\040\103\157\162\160\056\061\036\060\034  
\006\003\125\004\013\023\025\115\151\143\162\157\163\157\146\164  
\040\103\157\162\160\157\162\141\164\151\157\156\061\041\060\037  
\006\003\125\004\003\023\030\115\151\143\162\157\163\157\146\164  
\040\122\157\157\164\040\101\165\164\150\157\162\151\164\171\060  
\036\027\015\071\067\060\061\061\060\060\067\060\060\060\132  
\027\015\062\060\061\062\063\061\060\067\060\060\060\060\132\060  
\160\061\053\060\051\006\003\125\004\013\023\042\103\157\160\171  
\162\151\147\150\164\040\050\143\051\040\061\071\071\067\040\115  
\151\143\162\157\163\157\146\164\040\103\157\162\160\056\061\036  
\060\034\006\003\125\004\013\023\025\115\151\143\162\157\163\157  
\146\164\040\103\157\162\160\157\162\141\164\151\157\156\061\041  
\060\037\006\003\125\004\003\023\030\115\151\143\162\157\163\157  
\146\164\040\122\157\157\164\040\101\165\164\150\157\162\151\164  
\171\060\202\001\042\060\015\006\011\052\206\110\206\367\015\001  
\001\001\005\000\003\202\001\017\000\060\202\001\012\002\202\001  
\001\000\251\002\275\301\160\346\073\362\116\033\050\237\227\170  
\136\060\352\242\251\215\045\137\370\376\225\114\243\267\376\235  
\242\040\076\174\121\242\233\242\217\140\062\153\321\102\144\171  
\356\254\166\311\124\332\362\353\234\206\034\217\237\204\146\263  
\305\153\172\142\043\326\035\074\336\017\001\222\350\226\304\277  
\055\146\232\232\150\046\231\320\072\054\277\014\265\130\046\301  
\106\347\012\076\070\226\054\251\050\071\250\354\111\203\102\343  
\204\017\273\232\154\125\141\254\202\174\241\140\055\167\114\351  
\231\264\144\073\232\120\034\061\010\044\024\237\251\347\221\053  
\030\346\075\230\143\024\140\130\005\145\237\035\067\122\207\367  
\247\357\224\002\306\033\323\277\125\105\263\211\200\277\072\354  
\124\224\116\256\375\247\172\155\164\116\257\030\314\226\011\050  
\041\000\127\220\140\151\067\273\113\022\007\074\126\377\133\373  
\244\146\012\010\246\322\201\126\127\357\266\073\136\026\201\167  
\004\332\366\276\256\200\225\376\260\315\177\326\247\032\162\134  
\074\312\274\360\010\243\042\060\263\006\205\311\263\040\167\023  
\205\337\002\003\001\000\001\243\201\250\060\201\245\060\201\242  
\006\003\125\035\001\004\201\232\060\201\227\200\020\133\320\160  
\357\151\162\236\043\121\176\024\262\115\216\377\313\241\162\060  
\160\061\053\060\051\006\003\125\004\013\023\042\103\157\160\171

\162\151\147\150\164\040\050\143\051\040\061\071\071\067\040\115  
\151\143\162\157\163\157\146\164\040\103\157\162\160\056\061\036  
\060\034\006\003\125\004\013\023\025\115\151\143\162\157\163\157  
\146\164\040\103\157\162\160\157\162\141\164\151\157\156\061\041  
\060\037\006\003\125\004\003\023\030\115\151\143\162\157\163\157  
\146\164\040\122\157\157\164\040\101\165\164\150\157\162\151\164  
\171\202\017\000\301\000\213\074\074\210\021\321\076\366\143\354  
\337\100\060\015\006\011\052\206\110\206\367\015\001\001\004\005  
\000\003\202\001\001\000\225\350\013\300\215\363\227\030\065\355  
\270\001\044\330\167\021\363\134\140\062\237\236\013\313\076\005  
\221\210\217\311\072\346\041\362\360\127\223\054\265\240\107\310  
\142\357\374\327\314\073\073\132\251\066\124\151\376\044\155\077  
\311\314\252\336\005\174\335\061\215\075\237\020\160\152\273\376  
\022\117\030\151\300\374\320\103\343\021\132\040\117\352\142\173  
\257\252\031\310\053\067\045\055\276\145\241\022\212\045\017\143  
\243\367\124\034\371\041\311\326\025\363\122\254\156\103\062\007  
\375\202\027\370\345\147\154\015\121\366\275\361\122\307\275\347  
\304\060\374\040\061\011\210\035\225\051\032\115\325\035\002\245  
\361\200\340\003\264\133\364\261\335\310\127\356\145\111\307\122  
\124\266\264\003\050\022\377\220\326\360\010\217\176\270\227\305  
\253\067\054\344\172\344\250\167\343\166\240\000\320\152\077\301  
\322\066\212\340\101\022\250\065\152\033\152\333\065\341\324\034  
\004\344\250\105\004\310\132\063\070\156\115\034\015\142\267\012  
\242\214\323\325\124\077\106\315\034\125\246\160\333\022\072\207  
\223\165\237\247\322\240

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Microsoft Root Authority"

# Issuer: CN=Microsoft Root Authority,OU=Microsoft Corporation,OU=Copyright (c) 1997 Microsoft Corp.

# Serial Number:c1:00:8b:3c:3c:88:11:d1:3e:f6:63:ec:df:40

# Subject: CN=Microsoft Root Authority,OU=Microsoft Corporation,OU=Copyright (c) 1997 Microsoft Corp.

# Not Valid Before: Fri Jan 10 07:00:00 1997

# Not Valid After: Thu Dec 31 07:00:00 2020

# Fingerprint (MD5): 2a:95:4e:ca:79:b2:87:45:73:d9:2d:90:ba:f9:9f:b6

# Fingerprint (SHA1): a4:34:89:15:9a:52:0f:0d:93:d0:32:cc:af:37:e7:fe:20:a8:b4:19

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Microsoft Root Authority"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\244\064\211\025\232\122\017\015\223\320\062\314\257\067\347\376  
\040\250\264\031

END

```

CKA_CERT_MD5_HASH MULTILINE_OCTAL
\052\225\116\312\171\262\207\105\163\331\055\220\272\371\237\266
END
CKA_ISSUER MULTILINE_OCTAL
\060\160\061\053\060\051\006\003\125\004\013\023\042\103\157\160
\171\162\151\147\150\164\040\050\143\051\040\061\071\071\067\040
\115\151\143\162\157\163\157\146\164\040\103\157\162\160\056\061
\036\060\034\006\003\125\004\013\023\025\115\151\143\162\157\163
\157\146\164\040\103\157\162\160\157\162\141\164\151\157\156\061
\041\060\037\006\003\125\004\003\023\030\115\151\143\162\157\163
\157\146\164\040\122\157\157\164\040\101\165\164\150\157\162\151
\164\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\017\000\301\000\213\074\074\210\021\321\076\366\143\354\337
\100
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "Microsoft Root Certificate Authority"
Issuer: CN=Microsoft Root Certificate Authority,DC=microsoft,DC=com
Serial Number: 79:ad:16:a1:4a:a0:a5:ad:4c:73:58:f4:07:13:2e:65
Subject: CN=Microsoft Root Certificate Authority,DC=microsoft,DC=com
Not Valid Before: Wed May 09 23:19:22 2001
Not Valid After: Sun May 09 23:28:13 2021
Fingerprint (MD5): e1:c0:7e:a0:aa:bb:d4:b7:7b:84:c2:28:11:78:08:a7
Fingerprint (SHA1): cd:d4:ee:ae:60:00:ac:7f:40:c3:80:2c:17:1e:30:14:80:30:c0:72
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Microsoft Root Certificate Authority"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\137\061\023\060\021\006\012\011\222\046\211\223\362\054\144
\001\031\026\003\143\157\155\061\031\060\027\006\012\011\222\046
\211\223\362\054\144\001\031\026\011\155\151\143\162\157\163\157
\146\164\061\055\060\053\006\003\125\004\003\023\044\115\151\143
\162\157\163\157\146\164\040\122\157\157\164\040\103\145\162\164
\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151\164
\171
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL

```

\060\137\061\023\060\021\006\012\011\222\046\211\223\362\054\144  
\001\031\026\003\143\157\155\061\031\060\027\006\012\011\222\046  
\211\223\362\054\144\001\031\026\011\155\151\143\162\157\163\157  
\146\164\061\055\060\053\006\003\125\004\003\023\044\115\151\143  
\162\157\163\157\146\164\040\122\157\157\164\040\103\145\162\164  
\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151\164  
\171

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\171\255\026\241\112\240\245\255\114\163\130\364\007\023  
\056\145

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\231\060\202\003\201\240\003\002\001\002\002\020\171  
\255\026\241\112\240\245\255\114\163\130\364\007\023\056\145\060  
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\137  
\061\023\060\021\006\012\011\222\046\211\223\362\054\144\001\031  
\026\003\143\157\155\061\031\060\027\006\012\011\222\046\211\223  
\362\054\144\001\031\026\011\155\151\143\162\157\163\157\146\164  
\061\055\060\053\006\003\125\004\003\023\044\115\151\143\162\157  
\163\157\146\164\040\122\157\157\164\040\103\145\162\164\151\146  
\151\143\141\164\145\040\101\165\164\150\157\162\151\164\171\060  
\036\027\015\060\061\060\065\060\071\062\063\061\071\062\062\132  
\027\015\062\061\060\065\060\071\062\063\062\070\061\063\132\060  
\137\061\023\060\021\006\012\011\222\046\211\223\362\054\144\001  
\031\026\003\143\157\155\061\031\060\027\006\012\011\222\046\211  
\223\362\054\144\001\031\026\011\155\151\143\162\157\163\157\146  
\164\061\055\060\053\006\003\125\004\003\023\044\115\151\143\162  
\157\163\157\146\164\040\122\157\157\164\040\103\145\162\164\151  
\146\151\143\141\164\145\040\101\165\164\150\157\162\151\164\171  
\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001  
\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001  
\000\363\135\372\200\147\324\132\247\251\014\054\220\040\320\065  
\010\074\165\204\315\267\007\211\234\211\332\336\316\303\140\372  
\221\150\132\236\224\161\051\030\166\174\302\340\310\045\166\224  
\016\130\372\004\064\066\346\337\257\367\200\272\351\130\013\053  
\223\345\235\005\343\167\042\221\367\064\144\074\042\221\035\136  
\341\011\220\274\024\376\374\165\130\031\341\171\267\007\222\243  
\256\210\131\010\330\237\007\312\003\130\374\150\051\155\062\327  
\322\250\313\113\374\341\013\110\062\117\346\353\270\255\117\344  
\134\157\023\224\231\333\225\325\165\333\250\032\267\224\221\264  
\167\133\365\110\014\217\152\171\175\024\160\004\175\155\257\220  
\365\332\160\330\107\267\277\233\057\154\347\005\267\341\021\140  
\254\171\221\024\174\305\326\246\344\341\176\325\303\176\345\222  
\322\074\000\265\066\202\336\171\341\155\363\265\156\370\237\063  
\311\313\122\175\163\230\066\333\213\241\153\242\225\227\233\243  
\336\302\115\046\377\006\226\147\045\006\310\347\254\344\356\022  
\063\225\061\231\310\065\010\116\064\312\171\123\325\265\276\143

\062\131\100\066\300\245\116\004\115\075\333\133\007\063\344\130  
\277\357\077\123\144\330\102\131\065\127\375\017\105\174\044\004  
\115\236\326\070\164\021\227\042\220\316\150\104\164\222\157\325  
\113\157\260\206\343\307\066\102\240\320\374\301\300\132\371\243  
\141\271\060\107\161\226\012\026\260\221\300\102\225\357\020\177  
\050\152\343\052\037\261\344\315\003\077\167\161\004\307\040\374  
\111\017\035\105\210\244\327\313\176\210\255\216\055\354\105\333  
\304\121\004\311\052\374\354\206\236\232\021\227\133\336\316\123  
\210\346\342\267\375\254\225\302\050\100\333\357\004\220\337\201  
\063\071\331\262\105\245\043\207\006\245\125\211\061\273\006\055  
\140\016\101\030\175\037\056\265\227\313\021\353\025\325\044\245  
\224\357\025\024\211\375\113\163\372\062\133\374\321\063\000\371  
\131\142\160\007\062\352\056\253\100\055\173\312\335\041\147\033  
\060\231\217\026\252\043\250\101\321\260\156\021\233\066\304\336  
\100\164\234\341\130\145\301\140\036\172\133\070\310\217\273\004  
\046\174\324\026\100\345\266\153\154\252\206\375\000\277\316\301  
\065\002\003\001\000\001\243\121\060\117\060\013\006\003\125\035  
\017\004\004\003\002\001\306\060\017\006\003\125\035\023\001\001  
\377\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004  
\026\004\024\016\254\202\140\100\126\047\227\345\045\023\374\052  
\341\012\123\225\131\344\244\060\020\006\011\053\006\001\004\001  
\202\067\025\001\004\003\002\001\000\060\015\006\011\052\206\110  
\206\367\015\001\001\005\005\000\003\202\002\001\000\305\021\115  
\003\072\140\335\135\122\021\167\217\262\273\066\310\262\005\277  
\264\267\250\330\040\235\134\023\003\266\034\042\372\006\023\065  
\266\310\143\324\232\107\157\046\127\322\125\361\004\261\046\137  
\326\251\120\150\240\274\322\270\156\314\303\351\254\337\031\315  
\170\254\131\164\254\146\064\066\304\033\076\154\070\114\063\016  
\060\022\015\243\046\376\121\123\000\377\257\132\116\204\015\017  
\037\344\155\005\056\116\205\113\215\154\063\157\124\322\144\253  
\277\120\257\175\172\071\240\067\355\143\003\017\374\023\006\316  
\026\066\324\124\073\225\033\121\142\072\345\115\027\324\005\071  
\222\232\047\250\133\252\275\354\273\276\343\040\211\140\161\154  
\126\263\245\023\320\155\016\043\176\225\003\355\150\075\362\330  
\143\270\153\115\266\350\060\265\341\312\224\113\367\242\252\135  
\231\060\262\075\247\302\121\154\050\040\001\044\047\053\113\000  
\267\235\021\153\160\276\262\020\202\274\014\233\150\320\215\073  
\044\207\252\231\050\162\235\063\137\131\220\275\365\336\223\236  
\072\142\132\064\071\342\210\125\035\271\006\260\301\211\153\055  
\327\151\303\031\022\066\204\320\311\240\332\377\057\151\170\262  
\345\172\332\353\327\014\300\367\275\143\027\270\071\023\070\242  
\066\133\173\362\205\126\152\035\144\142\301\070\342\252\277\121  
\146\242\224\365\022\234\146\042\020\153\362\267\060\222\055\362  
\051\360\075\073\024\103\150\242\361\234\051\067\313\316\070\040  
\045\155\174\147\363\176\044\022\044\003\010\201\107\354\245\236  
\227\365\030\327\317\273\325\357\166\226\357\375\316\333\126\235  
\225\240\102\371\227\130\341\327\061\042\323\137\131\346\076\156  
\042\000\352\103\204\266\045\333\331\363\010\126\150\300\144\153

```
\035\174\354\266\223\242\142\127\156\056\330\347\130\217\304\061
\111\046\335\336\051\065\207\365\060\161\160\133\024\074\151\275
\211\022\175\353\056\243\376\330\177\236\202\132\122\012\053\301
\103\053\331\060\210\237\310\020\373\211\215\346\241\205\165\063
\176\154\236\333\163\023\144\142\151\245\057\175\312\226\155\237
\370\004\115\060\222\075\156\041\024\041\311\075\340\303\375\212
\153\235\112\375\321\241\235\231\103\167\077\260\332
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

# Microsoft Code Signing Only Certificate

# Trust for "Microsoft Root Certificate Authority"

# Issuer: CN=Microsoft Root Certificate Authority,DC=microsoft,DC=com

# Serial Number:79:ad:16:a1:4a:a0:a5:ad:4c:73:58:f4:07:13:2e:65

# Subject: CN=Microsoft Root Certificate Authority,DC=microsoft,DC=com

# Not Valid Before: Wed May 09 23:19:22 2001

# Not Valid After: Sun May 09 23:28:13 2021

# Fingerprint (MD5): e1:c0:7e:a0:aa:bb:d4:b7:7b:84:c2:28:11:78:08:a7

# Fingerprint (SHA1): cd:d4:ee:ae:60:00:ac:7f:40:c3:80:2c:17:1e:30:14:80:30:c0:72

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "Microsoft Root Certificate Authority"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\315\324\356\256\140\000\254\177\100\303\200\054\027\036\060\024
\200\060\300\162
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\341\300\176\240\252\273\324\267\173\204\302\050\021\170\010\247
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\137\061\023\060\021\006\012\011\222\046\211\223\362\054\144
\001\031\026\003\143\157\155\061\031\060\027\006\012\011\222\046
\211\223\362\054\144\001\031\026\011\155\151\143\162\157\163\157
\146\164\061\055\060\053\006\003\125\004\003\023\044\115\151\143
\162\157\163\157\146\164\040\122\157\157\164\040\103\145\162\164
\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151\164
\171
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\020\171\255\026\241\112\240\245\255\114\163\130\364\007\023
\056\145
```

END

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

```
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Certificate "Microsoft Root Certificate Authority 2010"  
# Issuer: CN=Microsoft Root Certificate Authority 2010,O=Microsoft  
Corporation,L=Redmond,ST=Washington,C=US  
# Serial Number:28:cc:3a:25:bf:ba:44:ac:44:9a:9b:58:6b:43:39:aa  
# Subject: CN=Microsoft Root Certificate Authority 2010,O=Microsoft  
Corporation,L=Redmond,ST=Washington,C=US  
# Not Valid Before: Wed Jun 23 21:57:24 2010  
# Not Valid After: Sat Jun 23 22:04:01 2035  
# Fingerprint (MD5): a2:66:bb:7d:cc:38:a5:62:63:13:61:bb:f6:1d:d1:1b  
# Fingerprint (SHA1): 3b:1e:fd:3a:66:ea:28:b1:66:97:39:47:03:a7:2c:a3:40:a0:5b:d5

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "Microsoft Root Certificate Authority 2010"  
CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL  
\060\201\210\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\023\060\021\006\003\125\004\010\023\012\127\141\163\150\151  
\156\147\164\157\156\061\020\060\016\006\003\125\004\007\023\007  
\122\145\144\155\157\156\144\061\036\060\034\006\003\125\004\012  
\023\025\115\151\143\162\157\163\157\146\164\040\103\157\162\160  
\157\162\141\164\151\157\156\061\062\060\060\006\003\125\004\003  
\023\051\115\151\143\162\157\163\157\146\164\040\122\157\157\164  
\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164  
\150\157\162\151\164\171\040\062\060\061\060

END  
CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL  
\060\201\210\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\023\060\021\006\003\125\004\010\023\012\127\141\163\150\151  
\156\147\164\157\156\061\020\060\016\006\003\125\004\007\023\007  
\122\145\144\155\157\156\144\061\036\060\034\006\003\125\004\012  
\023\025\115\151\143\162\157\163\157\146\164\040\103\157\162\160  
\157\162\141\164\151\157\156\061\062\060\060\006\003\125\004\003  
\023\051\115\151\143\162\157\163\157\146\164\040\122\157\157\164  
\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164  
\150\157\162\151\164\171\040\062\060\061\060

END  
CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL  
\002\020\050\314\072\045\277\272\104\254\104\232\233\130\153\103  
\071\252  
END  
CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\355\060\202\003\325\240\003\002\001\002\002\020\050  
\314\072\045\277\272\104\254\104\232\233\130\153\103\071\252\060  
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\201  
\210\061\013\060\011\006\003\125\004\006\023\002\125\123\061\023  
\060\021\006\003\125\004\010\023\012\127\141\163\150\151\156\147  
\164\157\156\061\020\060\016\006\003\125\004\007\023\007\122\145  
\144\155\157\156\144\061\036\060\034\006\003\125\004\012\023\025  
\115\151\143\162\157\163\157\146\164\040\103\157\162\160\157\162  
\141\164\151\157\156\061\062\060\060\006\003\125\004\003\023\051  
\115\151\143\162\157\163\157\146\164\040\122\157\157\164\040\103  
\145\162\164\151\146\151\143\141\164\145\040\101\165\164\150\157  
\162\151\164\171\040\062\060\061\060\060\036\027\015\061\060\060  
\066\062\063\062\061\065\067\062\064\132\027\015\063\065\060\066  
\062\063\062\062\060\064\060\061\132\060\201\210\061\013\060\011  
\006\003\125\004\006\023\002\125\123\061\023\060\021\006\003\125  
\004\010\023\012\127\141\163\150\151\156\147\164\157\156\061\020  
\060\016\006\003\125\004\007\023\007\122\145\144\155\157\156\144  
\061\036\060\034\006\003\125\004\012\023\025\115\151\143\162\157  
\163\157\146\164\040\103\157\162\160\157\162\141\164\151\157\156  
\061\062\060\060\006\003\125\004\003\023\051\115\151\143\162\157  
\163\157\146\164\040\122\157\157\164\040\103\145\162\164\151\146  
\151\143\141\164\145\040\101\165\164\150\157\162\151\164\171\040  
\062\060\061\060\060\202\002\042\060\015\006\011\052\206\110\206  
\367\015\001\001\001\005\000\003\202\002\017\000\060\202\002\012  
\002\202\002\001\000\271\010\236\050\344\344\354\006\116\120\150  
\263\101\305\173\353\256\266\216\257\201\272\042\104\037\145\064  
\151\114\276\160\100\027\362\026\173\342\171\375\206\355\015\071  
\364\033\250\255\222\220\036\313\075\166\217\132\331\265\221\020  
\056\074\005\215\212\155\044\124\347\037\355\126\255\203\264\120  
\234\025\245\027\164\210\131\040\374\010\305\204\166\323\150\324  
\157\050\170\316\134\270\363\120\220\104\377\343\143\137\276\241  
\232\054\226\025\004\326\007\376\036\204\041\340\102\061\021\304  
\050\066\224\317\120\244\142\236\311\326\253\161\000\262\133\014  
\346\226\324\012\044\226\365\377\306\325\267\033\327\313\267\041  
\142\257\022\334\241\135\067\343\032\373\032\106\230\300\233\300  
\347\143\037\052\010\223\002\176\036\152\216\362\237\030\211\344  
\042\205\242\261\204\127\100\377\365\016\330\157\234\355\342\105  
\061\001\315\027\351\177\260\201\105\343\252\041\100\046\241\162  
\252\247\117\074\001\005\176\356\203\130\261\136\006\143\231\142  
\221\170\202\267\015\223\014\044\152\264\033\333\047\354\137\225  
\004\077\223\112\060\365\227\030\263\247\371\031\247\223\063\035  
\001\310\333\042\122\134\327\045\311\106\371\242\373\207\131\103  
\276\233\142\261\215\055\206\104\032\106\254\170\141\176\060\011  
\372\256\211\304\101\052\042\146\003\221\071\105\234\307\213\014  
\250\312\015\057\373\122\352\014\367\143\063\043\235\376\260\037  
\255\147\326\247\120\003\306\004\160\143\265\054\261\206\132\103  
\267\373\256\371\156\051\156\041\041\101\046\006\214\311\303\356  
\260\302\205\223\241\271\205\331\346\062\154\113\114\077\326\135



\243\345\265\235\167\303\234\300\125\267\164\000\343\270\070\253  
\203\227\120\341\232\102\044\035\306\300\243\060\321\032\132\310  
\122\064\367\163\361\307\030\037\063\255\172\354\313\101\140\363  
\043\224\040\302\110\105\254\134\121\306\056\200\302\342\167\025  
\275\205\207\355\066\235\226\221\356\000\265\243\160\354\237\343  
\215\200\150\203\166\272\257\135\160\122\042\026\342\146\373\272  
\263\305\302\367\076\057\167\246\312\336\301\246\306\110\114\303  
\067\121\043\323\047\327\270\116\160\226\360\241\104\166\257\170  
\317\232\341\146\023\002\003\001\000\001\243\121\060\117\060\013  
\006\003\125\035\017\004\004\003\002\001\206\060\017\006\003\125  
\035\023\001\001\377\004\005\060\003\001\001\377\060\035\006\003  
\125\035\016\004\026\004\024\325\366\126\313\217\350\242\134\142  
\150\321\075\224\220\133\327\316\232\030\304\060\020\006\011\053  
\006\001\004\001\202\067\025\001\004\003\002\001\000\060\015\006  
\011\052\206\110\206\367\015\001\001\013\005\000\003\202\002\001  
\000\254\245\226\214\277\273\256\246\366\327\161\207\103\061\126  
\210\375\034\062\161\133\065\267\324\360\221\362\257\067\342\024  
\361\363\002\046\005\076\026\024\177\024\272\270\117\373\211\262  
\262\347\324\011\314\155\271\133\073\144\145\160\146\267\362\261  
\132\337\032\002\363\365\121\270\147\155\171\363\277\126\173\344  
\204\271\053\036\233\100\234\046\064\371\107\030\230\151\330\034  
\327\266\321\277\217\141\302\147\304\265\357\140\103\216\020\033  
\066\111\344\040\312\255\247\301\261\047\145\011\370\315\365\133  
\052\320\204\063\363\357\037\362\365\234\013\130\223\067\240\165  
\240\336\162\336\154\165\052\146\042\365\214\006\060\126\237\100  
\271\060\252\100\167\025\202\327\213\354\300\323\262\275\203\305  
\167\014\036\256\257\031\123\240\115\171\161\237\017\257\060\316  
\147\371\326\054\314\042\101\172\007\362\227\102\030\316\131\171  
\020\125\336\157\020\344\270\332\203\146\100\026\011\150\043\133  
\227\056\046\232\002\273\127\214\305\270\272\151\142\062\200\211  
\236\241\375\300\222\174\173\053\063\031\204\052\143\305\000\150  
\142\372\237\107\215\231\172\105\072\247\351\355\356\151\102\265  
\363\201\233\107\126\020\173\374\160\066\204\030\163\352\357\371  
\227\115\236\063\043\335\046\013\272\052\267\077\104\334\203\047  
\377\275\141\131\053\021\267\312\117\333\305\213\014\034\061\256  
\062\370\370\271\102\367\177\334\141\232\166\261\132\004\341\021  
\075\146\105\267\030\161\276\311\044\205\326\363\324\272\101\064  
\135\022\055\045\271\215\246\023\110\155\113\260\007\175\231\223  
\011\141\201\164\127\046\212\253\151\343\344\331\307\210\314\044  
\330\354\122\044\134\036\274\221\024\342\226\336\353\012\332\236  
\335\137\263\133\333\324\202\354\306\040\120\207\045\100\072\373  
\307\356\315\376\063\345\156\303\204\011\125\003\045\071\300\351  
\065\135\145\061\250\366\277\240\011\315\051\307\263\066\062\056  
\334\225\363\203\301\132\317\213\215\366\352\263\041\370\244\355  
\036\061\016\266\114\021\253\140\013\244\022\043\042\027\243\066  
\144\202\221\004\022\340\253\157\036\313\120\005\141\264\100\377  
\131\206\161\321\325\063\151\174\251\163\212\070\327\144\014\361  
\151

```

END
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Trust for "Microsoft Root Certificate Authority 2010"
Issuer: CN=Microsoft Root Certificate Authority 2010,O=Microsoft
Corporation,L=Redmond,ST=Washington,C=US
Serial Number:28:cc:3a:25:bf:ba:44:ac:44:9a:9b:58:6b:43:39:aa
Subject: CN=Microsoft Root Certificate Authority 2010,O=Microsoft
Corporation,L=Redmond,ST=Washington,C=US
Not Valid Before: Wed Jun 23 21:57:24 2010
Not Valid After: Sat Jun 23 22:04:01 2035
Fingerprint (MD5): a2:66:bb:7d:cc:38:a5:62:63:13:61:bb:f6:1d:d1:1b
Fingerprint (SHA1): 3b:1e:fd:3a:66:ea:28:b1:66:97:39:47:03:a7:2c:a3:40:a0:5b:d5
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Microsoft Root Certificate Authority 2010"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\073\036\375\072\146\352\050\261\146\227\071\107\003\247\054\243
\100\240\133\325
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\242\146\273\175\314\070\245\142\143\023\141\273\366\035\321\033
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\210\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\023\060\021\006\003\125\004\010\023\012\127\141\163\150\151
\156\147\164\157\156\061\020\060\016\006\003\125\004\007\023\007
\122\145\144\155\157\156\144\061\036\060\034\006\003\125\004\012
\023\025\115\151\143\162\157\163\157\146\164\040\103\157\162\160
\157\162\141\164\151\157\156\061\062\060\060\006\003\125\004\003
\023\051\115\151\143\162\157\163\157\146\164\040\122\157\157\164
\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164
\150\157\162\151\164\171\040\062\060\061\060
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\050\314\072\045\277\272\104\254\104\232\233\130\153\103
\071\252
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

```

```
Microsoft Code Signing Only Certificate
Certificate "Entrust.net Secure Server Certification Authority"
Issuer: CN=Entrust.net Secure Server Certification Authority,OU=(c) 1999 Entrust.net
Limited,OU=www.entrust.net/CPS incorp. by ref. (limits liab.),O=Entrust.net,C=US
Serial Number:37:4a:d2:43
Subject: CN=Entrust.net Secure Server Certification Authority,OU=(c) 1999 Entrust.net
Limited,OU=www.entrust.net/CPS incorp. by ref. (limits liab.),O=Entrust.net,C=US
Not Valid Before: Tue May 25 16:09:40 1999
Not Valid After: Sat May 25 16:39:40 2019
Fingerprint (MD5): df:f2:80:73:cc:f1:e6:61:73:fc:f5:42:e9:c5:7c:ee
Fingerprint (SHA1): 99:a6:9b:e6:1a:fe:88:6b:4d:2b:82:00:7c:b8:54:fc:31:7e:15:39
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Entrust.net Secure Server Certification Authority"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\303\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\024\060\022\006\003\125\004\012\023\013\105\156\164\162\165
\163\164\056\156\145\164\061\073\060\071\006\003\125\004\013\023
\062\167\167\167\056\145\156\164\162\165\163\164\056\156\145\164
\057\103\120\123\040\151\156\143\157\162\160\056\040\142\171\040
\162\145\146\056\040\050\154\151\155\151\164\163\040\154\151\141
\142\056\051\061\045\060\043\006\003\125\004\013\023\034\050\143
\051\040\061\071\071\071\040\105\156\164\162\165\163\164\056\156
\145\164\040\114\151\155\151\164\145\144\061\072\060\070\006\003
\125\004\003\023\061\105\156\164\162\165\163\164\056\156\145\164
\040\123\145\143\165\162\145\040\123\145\162\166\145\162\040\103
\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164
\150\157\162\151\164\171
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\303\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\024\060\022\006\003\125\004\012\023\013\105\156\164\162\165
\163\164\056\156\145\164\061\073\060\071\006\003\125\004\013\023
\062\167\167\167\056\145\156\164\162\165\163\164\056\156\145\164
\057\103\120\123\040\151\156\143\157\162\160\056\040\142\171\040
\162\145\146\056\040\050\154\151\155\151\164\163\040\154\151\141
\142\056\051\061\045\060\043\006\003\125\004\013\023\034\050\143
\051\040\061\071\071\071\040\105\156\164\162\165\163\164\056\156
\145\164\040\114\151\155\151\164\145\144\061\072\060\070\006\003
\125\004\003\023\061\105\156\164\162\165\163\164\056\156\145\164
\040\123\145\143\165\162\145\040\123\145\162\166\145\162\040\103
\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164
\150\157\162\151\164\171
END
```

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\004\067\112\322\103

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\330\060\202\004\101\240\003\002\001\002\002\004\067  
\112\322\103\060\015\006\011\052\206\110\206\367\015\001\001\005  
\005\000\060\201\303\061\013\060\011\006\003\125\004\006\023\002  
\125\123\061\024\060\022\006\003\125\004\012\023\013\105\156\164  
\162\165\163\164\056\156\145\164\061\073\060\071\006\003\125\004  
\013\023\062\167\167\167\056\145\156\164\162\165\163\164\056\156  
\145\164\057\103\120\123\040\151\156\143\157\162\160\056\040\142  
\171\040\162\145\146\056\040\050\154\151\155\151\164\163\040\154  
\151\141\142\056\051\061\045\060\043\006\003\125\004\013\023\034  
\050\143\051\040\061\071\071\071\040\105\156\164\162\165\163\164  
\056\156\145\164\040\114\151\155\151\164\145\144\061\072\060\070  
\006\003\125\004\003\023\061\105\156\164\162\165\163\164\056\156  
\145\164\040\123\145\143\165\162\145\040\123\145\162\166\145\162  
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101  
\165\164\150\157\162\151\164\171\060\036\027\015\071\071\060\065  
\062\065\061\066\060\071\064\060\132\027\015\061\071\060\065\062  
\065\061\066\063\071\064\060\132\060\201\303\061\013\060\011\006  
\003\125\004\006\023\002\125\123\061\024\060\022\006\003\125\004  
\012\023\013\105\156\164\162\165\163\164\056\156\145\164\061\073  
\060\071\006\003\125\004\013\023\062\167\167\167\056\145\156\164  
\162\165\163\164\056\156\145\164\057\103\120\123\040\151\156\143  
\157\162\160\056\040\142\171\040\162\145\146\056\040\050\154\151  
\155\151\164\163\040\154\151\141\142\056\051\061\045\060\043\006  
\003\125\004\013\023\034\050\143\051\040\061\071\071\071\040\105  
\156\164\162\165\163\164\056\156\145\164\040\114\151\155\151\164  
\145\144\061\072\060\070\006\003\125\004\003\023\061\105\156\164  
\162\165\163\164\056\156\145\164\040\123\145\143\165\162\145\040  
\123\145\162\166\145\162\040\103\145\162\164\151\146\151\143\141  
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\060\201  
\235\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000  
\003\201\213\000\060\201\207\002\201\201\000\315\050\203\064\124  
\033\211\363\017\257\067\221\061\377\257\061\140\311\250\350\262  
\020\150\355\237\347\223\066\361\012\144\273\107\365\004\027\077  
\043\107\115\305\047\031\201\046\014\124\162\015\210\055\331\037  
\232\022\237\274\263\161\323\200\031\077\107\146\173\214\065\050  
\322\271\012\337\044\332\234\326\120\171\201\172\132\323\067\367  
\302\112\330\051\222\046\144\321\344\230\154\072\000\212\365\064  
\233\145\370\355\343\020\377\375\270\111\130\334\240\336\202\071  
\153\201\261\026\031\141\271\124\266\346\103\002\001\003\243\202  
\001\327\060\202\001\323\060\021\006\011\140\206\110\001\206\370  
\102\001\001\004\004\003\002\000\007\060\202\001\031\006\003\125  
\035\037\004\202\001\020\060\202\001\014\060\201\336\240\201\333  
\240\201\330\244\201\325\060\201\322\061\013\060\011\006\003\125  
\004\006\023\002\125\123\061\024\060\022\006\003\125\004\012\023

\013\105\156\164\162\165\163\164\056\156\145\164\061\073\060\071  
\006\003\125\004\013\023\062\167\167\167\056\145\156\164\162\165  
\163\164\056\156\145\164\057\103\120\123\040\151\156\143\157\162  
\160\056\040\142\171\040\162\145\146\056\040\050\154\151\155\151  
\164\163\040\154\151\141\142\056\051\061\045\060\043\006\003\125  
\004\013\023\034\050\143\051\040\061\071\071\071\040\105\156\164  
\162\165\163\164\056\156\145\164\040\114\151\155\151\164\145\144  
\061\072\060\070\006\003\125\004\003\023\061\105\156\164\162\165  
\163\164\056\156\145\164\040\123\145\143\165\162\145\040\123\145  
\162\166\145\162\040\103\145\162\164\151\146\151\143\141\164\151  
\157\156\040\101\165\164\150\157\162\151\164\171\061\015\060\013  
\006\003\125\004\003\023\004\103\122\114\061\060\051\240\047\240  
\045\206\043\150\164\164\160\072\057\057\167\167\167\056\145\156  
\164\162\165\163\164\056\156\145\164\057\103\122\114\057\156\145  
\164\061\056\143\162\154\060\053\006\003\125\035\020\004\044\060  
\042\200\017\061\071\071\071\060\065\062\065\061\066\060\071\064  
\060\132\201\017\062\060\061\071\060\065\062\065\061\066\060\071  
\064\060\132\060\013\006\003\125\035\017\004\004\003\002\001\006  
\060\037\006\003\125\035\043\004\030\060\026\200\024\360\027\142  
\023\125\075\263\377\012\000\153\373\120\204\227\363\355\142\320  
\032\060\035\006\003\125\035\016\004\026\004\024\360\027\142\023  
\125\075\263\377\012\000\153\373\120\204\227\363\355\142\320\032  
\060\014\006\003\125\035\023\004\005\060\003\001\001\377\060\031  
\006\011\052\206\110\206\366\175\007\101\000\004\014\060\012\033  
\004\126\064\056\060\003\002\004\220\060\015\006\011\052\206\110  
\206\367\015\001\001\005\005\000\003\201\201\000\220\334\060\002  
\372\144\164\302\247\012\245\174\041\215\064\027\250\373\107\016  
\377\045\174\215\023\012\373\344\230\265\357\214\370\305\020\015  
\367\222\276\361\303\325\325\225\152\004\273\054\316\046\066\145  
\310\061\306\347\356\077\343\127\165\204\172\021\357\106\117\030  
\364\323\230\273\250\207\062\272\162\366\074\342\075\237\327\035  
\331\303\140\103\214\130\016\042\226\057\142\243\054\037\272\255  
\005\357\253\062\170\207\240\124\163\031\265\134\005\371\122\076  
\155\055\105\013\367\012\223\352\355\006\371\262

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Entrust.net Secure Server Certification Authority"

# Issuer: CN=Entrust.net Secure Server Certification Authority,OU=(c) 1999 Entrust.net  
Limited,OU=www.entrust.net/CPS incorp. by ref. (limits liab.),O=Entrust.net,C=US

# Serial Number:37:4a:d2:43

# Subject: CN=Entrust.net Secure Server Certification Authority,OU=(c) 1999 Entrust.net  
Limited,OU=www.entrust.net/CPS incorp. by ref. (limits liab.),O=Entrust.net,C=US

# Not Valid Before: Tue May 25 16:09:40 1999

# Not Valid After: Sat May 25 16:39:40 2019

```

Fingerprint (MD5): df:f2:80:73:cc:f1:e6:61:73:fc:f5:42:e9:c5:7c:ee
Fingerprint (SHA1): 99:a6:9b:e6:1a:fe:88:6b:4d:2b:82:00:7c:b8:54:fc:31:7e:15:39
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Entrust.net Secure Server Certification Authority"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\231\246\233\346\032\376\210\153\115\053\202\000\174\270\124\374
\061\176\025\071
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\337\362\200\163\314\361\346\141\163\374\365\102\351\305\174\356
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\303\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\024\060\022\006\003\125\004\012\023\013\105\156\164\162\165
\163\164\056\156\145\164\061\073\060\071\006\003\125\004\013\023
\062\167\167\167\056\145\156\164\162\165\163\164\056\156\145\164
\057\103\120\123\040\151\156\143\157\162\160\056\040\142\171\040
\162\145\146\056\040\050\154\151\155\151\164\163\040\154\151\141
\142\056\051\061\045\060\043\006\003\125\004\013\023\034\050\143
\051\040\061\071\071\071\040\105\156\164\162\165\163\164\056\156
\145\164\040\114\151\155\151\164\145\144\061\072\060\070\006\003
\125\004\003\023\061\105\156\164\162\165\163\164\056\156\145\164
\040\123\145\143\165\162\145\040\123\145\162\166\145\162\040\103
\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164
\150\157\162\151\164\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\004\067\112\322\103
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "UTN-USERFirst-Object"
Issuer: CN=UTN-USERFirst-Object,OU=http://www.usertrust.com,O=The USERTRUST Network,L=Salt Lake
City,ST=UT,C=US
Serial Number:44:be:0c:8b:50:00:24:b4:11:d3:36:2d:e0:b3:5f:1b
Subject: CN=UTN-USERFirst-Object,OU=http://www.usertrust.com,O=The USERTRUST Network,L=Salt Lake
City,ST=UT,C=US
Not Valid Before: Fri Jul 09 18:31:20 1999
Not Valid After: Tue Jul 09 18:40:36 2019
Fingerprint (MD5): a7:f2:e4:16:06:41:11:50:30:6b:9c:e3:b4:9c:b0:c9
Fingerprint (SHA1): e1:2d:fb:4b:41:d7:d9:c3:2b:30:51:4b:ac:1d:81:d8:38:5e:2d:46

```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "UTN-USERFirst-Object"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\225\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\013\060\011\006\003\125\004\010\023\002\125\124\061\027\060
\025\006\003\125\004\007\023\016\123\141\154\164\040\114\141\153
\145\040\103\151\164\171\061\036\060\034\006\003\125\004\012\023
\025\124\150\145\040\125\123\105\122\124\122\125\123\124\040\116
\145\164\167\157\162\153\061\041\060\037\006\003\125\004\013\023
\030\150\164\164\160\072\057\057\167\167\167\056\165\163\145\162
\164\162\165\163\164\056\143\157\155\061\035\060\033\006\003\125
\004\003\023\024\125\124\116\055\125\123\105\122\106\151\162\163
\164\055\117\142\152\145\143\164
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\225\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\013\060\011\006\003\125\004\010\023\002\125\124\061\027\060
\025\006\003\125\004\007\023\016\123\141\154\164\040\114\141\153
\145\040\103\151\164\171\061\036\060\034\006\003\125\004\012\023
\025\124\150\145\040\125\123\105\122\124\122\125\123\124\040\116
\145\164\167\157\162\153\061\041\060\037\006\003\125\004\013\023
\030\150\164\164\160\072\057\057\167\167\167\056\165\163\145\162
\164\162\165\163\164\056\143\157\155\061\035\060\033\006\003\125
\004\003\023\024\125\124\116\055\125\123\105\122\106\151\162\163
\164\055\117\142\152\145\143\164
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\104\276\014\213\120\000\044\264\021\323\066\055\340\263
\137\033
END
CKA_VALUE MULTILINE_OCTAL
\060\202\004\146\060\202\003\116\240\003\002\001\002\002\020\104
\276\014\213\120\000\044\264\021\323\066\055\340\263\137\033\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\201
\225\061\013\060\011\006\003\125\004\006\023\002\125\123\061\013
\060\011\006\003\125\004\010\023\002\125\124\061\027\060\025\006
\003\125\004\007\023\016\123\141\154\164\040\114\141\153\145\040
\103\151\164\171\061\036\060\034\006\003\125\004\012\023\025\124
\150\145\040\125\123\105\122\124\122\125\123\124\040\116\145\164
\167\157\162\153\061\041\060\037\006\003\125\004\013\023\030\150
\164\164\160\072\057\057\167\167\167\056\165\163\145\162\164\162
\165\163\164\056\143\157\155\061\035\060\033\006\003\125\004\003
\023\024\125\124\116\055\125\123\105\122\106\151\162\163\164\055
```

\117\142\152\145\143\164\060\036\027\015\071\071\060\067\060\071  
\061\070\063\061\062\060\132\027\015\061\071\060\067\060\071\061  
\070\064\060\063\066\132\060\201\225\061\013\060\011\006\003\125  
\004\006\023\002\125\123\061\013\060\011\006\003\125\004\010\023  
\002\125\124\061\027\060\025\006\003\125\004\007\023\016\123\141  
\154\164\040\114\141\153\145\040\103\151\164\171\061\036\060\034  
\006\003\125\004\012\023\025\124\150\145\040\125\123\105\122\124  
\122\125\123\124\040\116\145\164\167\157\162\153\061\041\060\037  
\006\003\125\004\013\023\030\150\164\164\160\072\057\057\167\167  
\167\056\165\163\145\162\164\162\165\163\164\056\143\157\155\061  
\035\060\033\006\003\125\004\003\023\024\125\124\116\055\125\123  
\105\122\106\151\162\163\164\055\117\142\152\145\143\164\060\202  
\001\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005  
\000\003\202\001\017\000\060\202\001\012\002\202\001\001\000\316  
\252\201\077\243\243\141\170\252\061\000\125\225\021\236\047\017  
\037\034\337\072\233\202\150\060\300\112\141\035\361\057\016\372  
\276\171\367\245\043\357\125\121\226\204\315\333\343\271\156\076  
\061\330\012\040\147\307\364\331\277\224\353\107\004\076\002\316  
\052\242\135\207\004\011\366\060\235\030\212\227\262\252\034\374  
\101\322\241\066\313\373\075\221\272\347\331\160\065\372\344\347  
\220\303\233\243\233\323\074\365\022\231\167\261\267\011\340\150  
\346\034\270\363\224\143\210\152\152\376\013\166\311\276\364\042  
\344\147\271\253\032\136\167\301\205\007\335\015\154\277\356\006  
\307\167\152\101\236\247\017\327\373\356\224\027\267\374\205\276  
\244\253\304\034\061\335\327\266\321\344\360\357\337\026\217\262  
\122\223\327\241\324\211\241\007\056\277\341\001\022\102\036\032  
\341\330\225\064\333\144\171\050\377\272\056\021\302\345\350\133  
\222\110\373\107\013\302\154\332\255\062\203\101\363\245\345\101  
\160\375\145\220\155\372\372\121\304\371\275\226\053\031\004\054  
\323\155\247\334\360\177\157\203\145\342\152\253\207\206\165\002  
\003\001\000\001\243\201\257\060\201\254\060\013\006\003\125\035  
\017\004\004\003\002\001\306\060\017\006\003\125\035\023\001\001  
\377\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004  
\026\004\024\332\355\144\164\024\234\024\074\253\335\231\251\275  
\133\050\115\213\074\311\330\060\102\006\003\125\035\037\004\073  
\060\071\060\067\240\065\240\063\206\061\150\164\164\160\072\057  
\057\143\162\154\056\165\163\145\162\164\162\165\163\164\056\143  
\157\155\057\125\124\116\055\125\123\105\122\106\151\162\163\164  
\055\117\142\152\145\143\164\056\143\162\154\060\051\006\003\125  
\035\045\004\042\060\040\006\010\053\006\001\005\005\007\003\003  
\006\010\053\006\001\005\005\007\003\010\006\012\053\006\001\004  
\001\202\067\012\003\004\060\015\006\011\052\206\110\206\367\015  
\001\001\005\005\000\003\202\001\001\000\010\037\122\261\067\104  
\170\333\375\316\271\332\225\226\230\252\125\144\200\265\132\100  
\335\041\245\305\301\363\137\054\114\310\107\132\151\352\350\360  
\065\065\364\320\045\363\310\246\244\207\112\275\033\261\163\010  
\275\324\303\312\266\065\273\131\206\167\061\315\247\200\024\256  
\023\357\374\261\110\371\153\045\045\055\121\266\054\155\105\301



```
\230\310\212\126\135\076\356\103\116\076\153\047\216\320\072\113
\205\013\137\323\355\152\247\165\313\321\132\207\057\071\165\023
\132\162\260\002\201\237\276\360\017\204\124\040\142\154\151\324
\341\115\306\015\231\103\001\015\022\226\214\170\235\277\120\242
\261\104\252\152\317\027\172\317\157\017\324\370\044\125\137\360
\064\026\111\146\076\120\106\311\143\161\070\061\142\270\142\271
\363\123\255\154\265\053\242\022\252\031\117\011\332\136\347\223
\306\216\024\010\376\360\060\200\030\240\206\205\115\310\175\327
\213\003\376\156\325\367\235\026\254\222\054\240\043\345\234\221
\122\037\224\337\027\224\163\303\263\301\301\161\005\040\000\170
\275\023\122\035\250\076\315\000\037\310
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE
```

# Microsoft Code Signing Only Certificate

# Trust for "UTN-USERFirst-Object"

# Issuer: CN=UTN-USERFirst-Object,OU=http://www.usertrust.com,O=The USERTRUST Network,L=Salt Lake City,ST=UT,C=US

# Serial Number:44:be:0c:8b:50:00:24:b4:11:d3:36:2d:e0:b3:5f:1b

# Subject: CN=UTN-USERFirst-Object,OU=http://www.usertrust.com,O=The USERTRUST Network,L=Salt Lake City,ST=UT,C=US

# Not Valid Before: Fri Jul 09 18:31:20 1999

# Not Valid After: Tue Jul 09 18:40:36 2019

# Fingerprint (MD5): a7:f2:e4:16:06:41:11:50:30:6b:9c:e3:b4:9c:b0:c9

# Fingerprint (SHA1): e1:2d:fb:4b:41:d7:d9:c3:2b:30:51:4b:ac:1d:81:d8:38:5e:2d:46

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "UTN-USERFirst-Object"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\341\055\373\113\101\327\331\303\053\060\121\113\254\035\201\330
\070\136\055\106
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\247\362\344\026\006\101\021\120\060\153\234\343\264\234\260\311
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\201\225\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\013\060\011\006\003\125\004\010\023\002\125\124\061\027\060
\025\006\003\125\004\007\023\016\123\141\154\164\040\114\141\153
\145\040\103\151\164\171\061\036\060\034\006\003\125\004\012\023
\025\124\150\145\040\125\123\105\122\124\122\125\123\124\040\116
\145\164\167\157\162\153\061\041\060\037\006\003\125\004\013\023
\030\150\164\164\160\072\057\057\167\167\167\056\165\163\145\162
\164\162\165\163\164\056\143\157\155\061\035\060\033\006\003\125
```

\004\003\023\024\125\124\116\055\125\123\105\122\106\151\162\163  
\164\055\117\142\152\145\143\164

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\104\276\014\213\120\000\044\264\021\323\066\055\340\263  
\137\033

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST  
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "BYTE Root Certification Authority 001"

# Issuer: CN=BYTE Root Certification Authority 001,O=BYTE Computer S.A.,C=GR

# Serial Number:71:8c:2f:39:7c:40:74:40

# Subject: CN=BYTE Root Certification Authority 001,O=BYTE Computer S.A.,C=GR

# Not Valid Before: Wed Sep 10 22:01:54 2014

# Not Valid After: Sat Sep 10 22:01:54 2039

# Fingerprint (MD5): fa:fb:82:6a:e5:b3:a2:83:50:9b:83:28:b6:41:42:03

# Fingerprint (SHA1): 3f:0f:eb:17:a7:ef:58:04:cf:d9:0a:77:b7:bb:02:1e:a6:9c:64:18

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "BYTE Root Certification Authority 001"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\132\061\013\060\011\006\003\125\004\006\023\002\107\122\061  
\033\060\031\006\003\125\004\012\014\022\102\131\124\105\040\103  
\157\155\160\165\164\145\162\040\123\056\101\056\061\056\060\054  
\006\003\125\004\003\014\045\102\131\124\105\040\122\157\157\164  
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101  
\165\164\150\157\162\151\164\171\040\060\060\061

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\132\061\013\060\011\006\003\125\004\006\023\002\107\122\061  
\033\060\031\006\003\125\004\012\014\022\102\131\124\105\040\103  
\157\155\160\165\164\145\162\040\123\056\101\056\061\056\060\054  
\006\003\125\004\003\014\045\102\131\124\105\040\122\157\157\164  
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101  
\165\164\150\157\162\151\164\171\040\060\060\061

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\010\161\214\057\071\174\100\164\100

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\231\060\202\003\201\240\003\002\001\002\002\010\161  
\214\057\071\174\100\164\100\060\015\006\011\052\206\110\206\367  
\015\001\001\013\005\000\060\132\061\013\060\011\006\003\125\004  
\006\023\002\107\122\061\033\060\031\006\003\125\004\012\014\022  
\102\131\124\105\040\103\157\155\160\165\164\145\162\040\123\056  
\101\056\061\056\060\054\006\003\125\004\003\014\045\102\131\124  
\105\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141  
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\040\060  
\060\061\060\036\027\015\061\064\060\071\061\060\062\062\060\061  
\065\064\132\027\015\063\071\060\071\061\060\062\062\060\061\065  
\064\132\060\132\061\013\060\011\006\003\125\004\006\023\002\107  
\122\061\033\060\031\006\003\125\004\012\014\022\102\131\124\105  
\040\103\157\155\160\165\164\145\162\040\123\056\101\056\061\056  
\060\054\006\003\125\004\003\014\045\102\131\124\105\040\122\157  
\157\164\040\103\145\162\164\151\146\151\143\141\164\151\157\156  
\040\101\165\164\150\157\162\151\164\171\040\060\060\061\060\202  
\002\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005  
\000\003\202\002\017\000\060\202\002\012\002\202\002\001\000\355  
\022\056\027\163\236\157\364\363\231\350\236\010\127\011\064\044  
\021\100\037\214\041\176\033\257\070\303\321\307\346\024\345\372  
\033\272\136\146\365\045\151\367\355\315\156\202\160\257\272\102  
\360\261\031\134\053\374\105\204\030\054\172\027\117\141\205\106  
\031\174\316\301\215\237\124\236\167\045\146\017\340\366\370\222  
\312\051\316\047\127\025\052\154\202\070\155\047\346\276\115\163  
\016\163\257\343\161\075\274\011\102\017\325\015\241\355\175\153  
\256\367\301\360\154\315\302\227\241\130\375\065\025\226\027\114  
\237\277\365\361\071\113\160\267\347\112\154\034\077\301\160\133  
\317\326\213\353\357\157\060\350\137\310\106\167\041\142\026\136  
\306\124\105\071\365\164\272\147\044\150\245\161\133\076\301\373  
\011\223\353\042\231\370\322\365\173\002\154\217\130\342\253\357  
\335\164\041\344\044\151\224\100\326\301\004\030\016\330\102\360  
\375\327\212\005\300\137\033\212\353\056\300\015\007\006\163\001  
\205\216\037\301\300\212\241\130\246\121\271\130\221\102\017\156  
\341\274\012\350\273\050\203\025\165\345\015\376\111\060\051\051  
\102\302\302\066\377\244\074\175\056\367\332\362\242\057\026\274  
\141\250\231\130\030\244\111\306\152\007\022\353\033\174\264\316  
\347\373\041\200\053\160\246\310\316\255\125\036\037\035\204\320  
\375\124\152\114\126\143\310\335\176\240\371\071\333\357\174\132  
\367\214\065\245\156\052\126\372\376\343\137\223\124\162\016\150  
\343\111\053\223\115\065\042\227\024\225\146\117\247\167\072\056  
\045\114\366\011\213\022\033\161\305\162\247\233\271\274\353\034  
\240\245\311\124\203\141\334\127\125\255\265\346\332\170\053\166  
\247\376\370\333\376\214\063\244\212\243\106\134\255\262\012\022  
\016\212\344\120\236\360\270\313\231\123\114\144\041\153\212\070  
\052\340\210\206\000\324\027\254\146\262\347\276\055\073\051\345  
\370\247\224\333\214\130\370\322\113\060\237\362\304\142\145\120  
\107\162\200\317\244\160\100\266\275\104\376\331\277\050\053\056  
\067\307\263\121\016\202\051\265\261\157\255\176\054\223\300\251

\177\221\372\307\037\065\360\273\227\311\117\141\050\220\204\101  
\350\175\041\100\305\311\206\074\355\232\255\205\234\242\123\002  
\003\001\000\001\243\143\060\141\060\035\006\003\125\035\016\004  
\026\004\024\264\115\146\267\323\263\310\231\174\001\062\320\221  
\072\367\326\250\022\061\336\060\017\006\003\125\035\023\001\001  
\377\004\005\060\003\001\001\377\060\037\006\003\125\035\043\004  
\030\060\026\200\024\264\115\146\267\323\263\310\231\174\001\062  
\320\221\072\367\326\250\022\061\336\060\016\006\003\125\035\017  
\001\001\377\004\004\003\002\001\006\060\015\006\011\052\206\110  
\206\367\015\001\001\013\005\000\003\202\002\001\000\034\032\353  
\006\256\125\275\073\077\066\054\141\236\352\307\123\374\160\252  
\062\157\344\102\252\353\275\205\354\033\212\132\362\225\226\051  
\241\004\006\222\316\044\127\377\100\043\170\116\311\370\060\115  
\102\125\104\116\067\242\175\153\216\150\376\016\376\177\337\260  
\237\143\121\363\341\305\245\224\237\212\043\050\110\363\101\213  
\322\376\170\355\331\320\010\017\155\175\325\235\225\254\325\376  
\022\146\032\344\276\165\124\363\321\115\234\116\023\324\236\160  
\064\155\250\272\012\063\210\215\255\005\067\376\113\171\177\175  
\003\101\171\023\015\237\075\367\070\234\065\132\104\117\076\074  
\242\345\201\305\177\137\166\117\033\073\156\157\232\155\267\355  
\017\313\062\037\210\264\105\014\234\021\322\370\004\132\023\067  
\131\230\201\316\114\364\345\224\050\004\304\265\123\311\124\215  
\160\077\150\001\333\314\023\012\344\045\243\154\231\355\020\263  
\172\040\251\111\274\005\364\370\033\150\326\272\040\035\202\147  
\146\340\260\237\134\312\065\322\105\256\325\210\031\333\172\006  
\233\214\240\067\207\121\043\276\105\332\134\263\177\153\317\306  
\250\034\063\212\173\035\221\372\236\274\354\175\073\105\025\117  
\033\247\073\065\264\171\363\133\202\120\340\234\247\355\026\165  
\333\143\200\142\241\332\030\002\152\200\336\202\252\104\115\104  
\070\050\252\156\372\030\143\071\140\367\103\051\111\132\272\044  
\300\277\263\012\227\035\147\111\132\042\262\147\004\234\130\251  
\370\014\064\134\100\226\264\207\265\105\141\031\345\216\357\006  
\336\221\025\300\270\212\312\224\311\012\165\175\161\073\130\201  
\063\310\367\007\101\125\230\051\103\265\313\232\103\351\162\372  
\317\360\213\061\274\347\357\271\152\343\101\235\041\076\015\025  
\250\205\275\033\116\207\216\107\262\020\376\067\030\152\204\345  
\211\034\024\143\350\271\203\251\265\273\350\143\232\172\031\214  
\313\164\367\370\027\010\361\213\031\330\264\354\036\156\111\163  
\077\134\040\335\065\052\226\167\351\106\157\026\073\313\251\357  
\233\012\041\021\310\303\244\311\043\105\155\077\142\225\235\323  
\050\307\235\017\263\376\067\215\035\110\262\120\346\045\271\116  
\063\141\066\326\026\034\312\062\067\040\166\034\054

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

```

Trust for "BYTE Root Certification Authority 001"
Issuer: CN=BYTE Root Certification Authority 001,O=BYTE Computer S.A.,C=GR
Serial Number:71:8c:2f:39:7c:40:74:40
Subject: CN=BYTE Root Certification Authority 001,O=BYTE Computer S.A.,C=GR
Not Valid Before: Wed Sep 10 22:01:54 2014
Not Valid After: Sat Sep 10 22:01:54 2039
Fingerprint (MD5): fa:fb:82:6a:e5:b3:a2:83:50:9b:83:28:b6:41:42:03
Fingerprint (SHA1): 3f:0f:eb:17:a7:ef:58:04:cf:d9:0a:77:b7:bb:02:1e:a6:9c:64:18
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "BYTE Root Certification Authority 001"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\077\017\353\027\247\357\130\004\317\331\012\167\267\273\002\036
\246\234\144\030
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\372\373\202\152\345\263\242\203\120\233\203\050\266\101\102\003
END
CKA_ISSUER MULTILINE_OCTAL
\060\132\061\013\060\011\006\003\125\004\006\023\002\107\122\061
\033\060\031\006\003\125\004\012\014\022\102\131\124\105\040\103
\157\155\160\165\164\145\162\040\123\056\101\056\061\056\060\054
\006\003\125\004\003\014\045\102\131\124\105\040\122\157\157\164
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101
\165\164\150\157\162\151\164\171\040\060\060\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\161\214\057\071\174\100\164\100
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

```

```

Microsoft Code Signing Only Certificate
Certificate "CISRCA1"
Issuer: CN=CISRCA1,OU=Certification Authorities,O=Carillon Information Security Inc.,C=CA
Serial Number:0b:82:dc:94:33:76
Subject: CN=CISRCA1,OU=Certification Authorities,O=Carillon Information Security Inc.,C=CA
Not Valid Before: Tue Oct 16 18:28:33 2012
Not Valid After: Sat Oct 16 18:28:33 2032
Fingerprint (MD5): 21:48:4b:8f:d5:50:78:27:86:80:c9:86:93:ad:b1:38
Fingerprint (SHA1): a6:9e:03:36:c4:e5:90:23:ff:65:3c:71:f9:28:eb:73:f2:1c:00:f0
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE

```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "CISRCA1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\160\061\013\060\011\006\003\125\004\006\023\002\103\101\061
\053\060\051\006\003\125\004\012\023\042\103\141\162\151\154\154
\157\156\040\111\156\146\157\162\155\141\164\151\157\156\040\123
\145\143\165\162\151\164\171\040\111\156\143\056\061\042\060\040
\006\003\125\004\013\023\031\103\145\162\164\151\146\151\143\141
\164\151\157\156\040\101\165\164\150\157\162\151\164\151\145\163
\061\020\060\016\006\003\125\004\003\023\007\103\111\123\122\103
\101\061
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\160\061\013\060\011\006\003\125\004\006\023\002\103\101\061
\053\060\051\006\003\125\004\012\023\042\103\141\162\151\154\154
\157\156\040\111\156\146\157\162\155\141\164\151\157\156\040\123
\145\143\165\162\151\164\171\040\111\156\143\056\061\042\060\040
\006\003\125\004\013\023\031\103\145\162\164\151\146\151\143\141
\164\151\157\156\040\101\165\164\150\157\162\151\164\151\145\163
\061\020\060\016\006\003\125\004\003\023\007\103\111\123\122\103
\101\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\006\013\202\334\224\063\166
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\242\060\202\003\212\240\003\002\001\002\002\006\013
\202\334\224\063\166\060\015\006\011\052\206\110\206\367\015\001
\001\013\005\000\060\160\061\013\060\011\006\003\125\004\006\023
\002\103\101\061\053\060\051\006\003\125\004\012\023\042\103\141
\162\151\154\154\157\156\040\111\156\146\157\162\155\141\164\151
\157\156\040\123\145\143\165\162\151\164\171\040\111\156\143\056
\061\042\060\040\006\003\125\004\013\023\031\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\151\145\163\061\020\060\016\006\003\125\004\003\023\007\103
\111\123\122\103\101\061\060\036\027\015\061\062\061\060\061\066
\061\070\062\070\063\063\132\027\015\063\062\061\060\061\066\061
\070\062\070\063\063\132\060\160\061\013\060\011\006\003\125\004
\006\023\002\103\101\061\053\060\051\006\003\125\004\012\023\042
\103\141\162\151\154\154\157\156\040\111\156\146\157\162\155\141
\164\151\157\156\040\123\145\143\165\162\151\164\171\040\111\156
\143\056\061\042\060\040\006\003\125\004\013\023\031\103\145\162
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157
\162\151\164\151\145\163\061\020\060\016\006\003\125\004\003\023
\007\103\111\123\122\103\101\061\060\202\002\042\060\015\006\011
\052\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000
```

\060\202\002\012\002\202\002\001\000\304\166\361\142\152\137\315  
\051\315\004\066\177\156\141\176\163\364\235\146\337\042\132\232  
\203\104\201\146\375\116\021\260\076\254\350\210\262\123\071\377  
\343\272\276\324\377\323\205\330\275\133\257\150\117\063\254\270  
\024\175\022\133\172\225\153\307\066\376\053\217\364\210\140\211  
\072\252\131\070\114\301\135\125\201\245\337\330\037\061\172\323  
\243\116\360\121\313\303\061\207\256\013\336\312\136\033\241\164  
\070\360\222\167\161\074\313\023\176\240\301\012\230\275\330\270  
\370\124\064\230\116\147\026\232\127\113\046\206\137\033\146\162  
\252\301\362\150\202\235\130\101\174\161\042\342\317\001\061\376  
\342\340\126\251\150\340\255\063\257\065\071\056\234\156\006\114  
\363\043\166\057\151\046\350\005\071\151\267\365\110\032\367\337  
\331\071\067\062\125\021\047\004\201\037\235\074\213\214\203\122  
\167\301\256\054\315\053\052\112\345\055\361\031\151\272\207\136  
\213\235\340\161\310\164\322\315\356\156\070\067\152\135\031\000  
\322\166\335\242\353\156\073\252\035\365\066\006\117\137\136\154  
\302\020\363\335\157\265\332\171\132\376\325\106\104\064\110\257  
\206\000\064\174\044\204\335\105\220\371\026\202\254\250\221\324  
\351\106\063\157\176\272\107\037\341\357\257\345\120\326\306\371  
\247\355\154\227\252\053\051\116\135\305\370\036\366\164\311\253  
\044\370\015\123\307\150\025\276\374\134\253\075\162\013\322\160  
\004\267\026\343\151\251\361\147\272\306\000\114\173\200\064\065  
\056\136\355\037\240\045\367\245\202\152\020\177\277\217\131\157  
\303\106\246\312\102\116\102\043\205\006\071\065\214\265\361\327  
\301\043\102\105\375\057\045\161\370\363\007\323\007\150\276\333  
\230\154\052\366\245\107\367\260\145\140\255\256\174\346\021\035  
\047\124\010\145\260\330\202\300\141\153\351\176\217\042\326\161  
\035\153\101\040\145\330\127\232\037\174\016\132\124\340\224\260  
\155\165\357\050\062\065\074\125\303\155\147\370\044\275\373\100  
\363\132\235\066\331\065\114\273\342\153\331\261\066\017\344\157  
\040\032\305\157\172\303\221\071\257\257\314\363\366\275\040\206  
\272\323\044\041\074\037\067\051\346\237\374\032\277\230\337\074  
\272\040\041\022\251\302\072\052\223\002\003\001\000\001\243\102  
\060\100\060\035\006\003\125\035\016\004\026\004\024\352\225\025  
\332\134\071\000\342\232\333\304\272\055\147\372\241\367\165\064  
\355\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001  
\001\377\060\016\006\003\125\035\017\001\001\377\004\004\003\002  
\001\306\060\015\006\011\052\206\110\206\367\015\001\001\013\005  
\000\003\202\002\001\000\065\320\330\270\236\362\011\370\360\237  
\262\156\110\262\327\352\241\233\050\211\071\315\376\026\152\035  
\351\234\202\137\121\107\072\365\236\321\274\256\037\237\342\134  
\112\310\354\355\106\102\361\174\103\007\025\337\156\227\366\355  
\206\374\237\305\010\136\202\016\243\056\250\012\056\274\216\033  
\061\022\050\366\171\050\301\042\266\321\225\151\100\350\131\011  
\047\242\221\144\166\352\320\023\215\160\374\145\303\157\021\237  
\052\110\312\247\142\365\203\024\345\032\026\307\221\213\264\011  
\305\316\173\343\344\035\155\227\242\351\313\046\036\153\264\334  
\076\203\166\057\136\115\250\150\211\124\375\116\322\106\250\100

\366\330\312\170\317\066\032\075\131\145\214\233\365\053\037\114  
\202\337\170\170\115\046\112\107\151\255\157\063\037\003\036\042  
\116\331\006\131\236\106\374\120\065\137\306\205\033\344\033\370  
\000\311\340\323\072\253\046\103\315\107\372\132\370\205\013\307  
\062\332\265\015\055\060\051\072\171\263\024\351\245\017\160\045  
\321\215\011\120\224\355\115\222\236\060\067\100\333\132\170\111  
\217\017\071\057\275\056\327\253\010\224\311\051\212\367\335\214  
\275\202\174\060\133\142\350\065\106\126\070\135\221\366\016\157  
\214\356\225\237\375\164\235\355\355\020\253\316\213\217\267\255  
\177\115\151\111\360\307\021\125\233\232\202\367\242\372\063\362  
\104\021\372\025\113\106\251\233\153\227\102\326\264\267\011\021  
\024\171\123\246\347\177\055\047\072\012\064\044\104\316\125\214  
\172\200\165\163\002\113\342\372\106\224\175\063\024\015\102\126  
\271\240\346\057\205\110\221\237\104\272\241\050\251\261\037\211  
\172\046\012\123\134\205\271\174\204\230\214\050\140\245\266\172  
\215\075\240\000\075\334\177\252\110\351\250\056\254\137\336\207  
\055\134\244\153\026\352\275\350\225\265\316\170\011\370\161\066  
\345\220\150\322\007\226\272\274\000\213\016\230\155\115\160\123  
\300\303\314\033\023\234\110\232\231\075\022\300\047\216\141\222  
\114\150\122\157\215\003\034\211\365\323\206\300\377\161\111\117  
\040\153\375\321\157\221\044\365\361\107\043\115\131\337\320\275  
\111\102\375\100\070\076\342\361\005\134\045\350\020\344\132\002  
\003\343\273\174\045\052

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "CISRCA1"  
# Issuer: CN=CISRCA1,OU=Certification Authorities,O=Carillon Information Security Inc.,C=CA  
# Serial Number:0b:82:dc:94:33:76  
# Subject: CN=CISRCA1,OU=Certification Authorities,O=Carillon Information Security Inc.,C=CA  
# Not Valid Before: Tue Oct 16 18:28:33 2012  
# Not Valid After: Sat Oct 16 18:28:33 2032  
# Fingerprint (MD5): 21:48:4b:8f:d5:50:78:27:86:80:c9:86:93:ad:b1:38  
# Fingerprint (SHA1): a6:9e:03:36:c4:e5:90:23:ff:65:3c:71:f9:28:eb:73:f2:1c:00:f0  
CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "CISRCA1"  
CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL  
\246\236\003\066\304\345\220\043\377\145\074\161\371\050\353\163  
\362\034\000\360

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL  
\041\110\113\217\325\120\170\047\206\200\311\206\223\255\261\070



END

CKA\_ISSUER MULTILINE\_OCTAL

\060\160\061\013\060\011\006\003\125\004\006\023\002\103\101\061  
\053\060\051\006\003\125\004\012\023\042\103\141\162\151\154\154  
\157\156\040\111\156\146\157\162\155\141\164\151\157\156\040\123  
\145\143\165\162\151\164\171\040\111\156\143\056\061\042\060\040  
\006\003\125\004\013\023\031\103\145\162\164\151\146\151\143\141  
\164\151\157\156\040\101\165\164\150\157\162\151\164\151\145\163  
\061\020\060\016\006\003\125\004\003\023\007\103\111\123\122\103  
\101\061

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\006\013\202\334\224\063\166

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "ePKI Root Certification Authority - G2"

# Issuer: CN=ePKI Root Certification Authority - G2,O=Chunghwa Telecom Co., Ltd.,C=TW

# Serial Number:d6:96:2e:c1:0a:15:93:12:af:8f:63:bc:d4:44:c9:5b

# Subject: CN=ePKI Root Certification Authority - G2,O=Chunghwa Telecom Co., Ltd.,C=TW

# Not Valid Before: Tue Nov 17 08:23:42 2015

# Not Valid After: Thu Dec 31 15:59:59 2037

# Fingerprint (MD5): 7d:f0:01:73:ed:fc:31:9d:16:86:7b:35:c7:26:dd:72

# Fingerprint (SHA1): d9:9b:10:42:98:59:47:63:f0:b9:a9:27:b7:92:69:cb:47:dd:15:8b

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "ePKI Root Certification Authority - G2"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\143\061\013\060\011\006\003\125\004\006\023\002\124\127\061  
\043\060\041\006\003\125\004\012\014\032\103\150\165\156\147\150  
\167\141\040\124\145\154\145\143\157\155\040\103\157\056\054\040  
\114\164\144\056\061\057\060\055\006\003\125\004\003\014\046\145  
\120\113\111\040\122\157\157\164\040\103\145\162\164\151\146\151  
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171  
\040\055\040\107\062

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\143\061\013\060\011\006\003\125\004\006\023\002\124\127\061  
\043\060\041\006\003\125\004\012\014\032\103\150\165\156\147\150  
\167\141\040\124\145\154\145\143\157\155\040\103\157\056\054\040

\114\164\144\056\061\057\060\055\006\003\125\004\003\014\046\145  
\120\113\111\040\122\157\157\164\040\103\145\162\164\151\146\151  
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171  
\040\055\040\107\062

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\021\000\326\226\056\301\012\025\223\022\257\217\143\274\324  
\104\311\133

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\223\060\202\003\173\240\003\002\001\002\002\021\000  
\326\226\056\301\012\025\223\022\257\217\143\274\324\104\311\133  
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060  
\143\061\013\060\011\006\003\125\004\006\023\002\124\127\061\043  
\060\041\006\003\125\004\012\014\032\103\150\165\156\147\150\167  
\141\040\124\145\154\145\143\157\155\040\103\157\056\054\040\114  
\164\144\056\061\057\060\055\006\003\125\004\003\014\046\145\120  
\113\111\040\122\157\157\164\040\103\145\162\164\151\146\151\143  
\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171\040  
\055\040\107\062\060\036\027\015\061\065\061\061\061\067\060\070  
\062\063\064\062\132\027\015\063\067\061\062\063\061\061\065\065  
\071\065\071\132\060\143\061\013\060\011\006\003\125\004\006\023  
\002\124\127\061\043\060\041\006\003\125\004\012\014\032\103\150  
\165\156\147\150\167\141\040\124\145\154\145\143\157\155\040\103  
\157\056\054\040\114\164\144\056\061\057\060\055\006\003\125\004  
\003\014\046\145\120\113\111\040\122\157\157\164\040\103\145\162  
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157  
\162\151\164\171\040\055\040\107\062\060\202\002\042\060\015\006  
\011\052\206\110\206\367\015\001\001\001\005\000\003\202\002\017  
\000\060\202\002\012\002\202\002\001\000\244\131\037\240\057\337  
\276\340\373\351\334\265\211\376\132\227\003\311\072\167\247\216  
\134\257\362\343\030\071\365\252\335\017\106\322\150\017\127\234  
\247\143\140\323\130\316\065\302\247\366\210\302\117\177\033\050  
\351\320\247\000\304\027\115\155\342\017\305\016\046\043\040\253  
\367\072\050\242\114\012\013\314\216\316\346\000\232\132\100\015  
\324\120\032\233\321\015\234\224\371\333\356\134\320\361\212\007  
\315\232\053\100\054\111\244\135\142\137\247\153\337\356\126\010  
\120\363\102\030\154\061\260\136\345\234\163\222\274\016\322\014  
\175\305\070\127\274\273\130\333\046\031\002\355\343\103\204\212  
\116\126\153\333\255\241\061\331\314\042\147\226\170\377\167\235  
\314\144\305\062\040\152\357\116\060\325\044\045\375\210\171\257  
\161\032\376\325\113\033\025\210\274\030\160\252\275\255\070\012  
\146\060\106\345\211\205\325\166\044\251\251\263\346\131\140\017  
\264\251\123\302\072\235\105\032\326\256\343\167\136\304\142\066  
\063\057\060\304\277\225\361\055\070\245\165\350\321\152\223\056  
\105\207\113\112\242\337\277\130\047\232\312\142\031\252\136\324  
\261\200\111\226\335\053\354\137\217\233\340\235\227\210\365\204  
\003\243\257\263\245\163\055\101\272\345\007\267\157\153\161\367

\367\311\132\257\151\231\263\057\310\117\102\353\154\153\161\147  
\170\337\012\254\117\327\112\205\000\106\032\325\315\270\237\352  
\225\235\017\174\321\306\005\205\346\010\336\210\027\201\366\325  
\265\156\352\241\034\327\141\252\343\131\102\211\234\131\176\261  
\174\144\064\335\141\043\052\071\265\020\253\374\206\251\123\032  
\305\353\152\342\200\116\131\221\300\070\211\376\263\135\326\373  
\221\351\327\260\175\331\170\010\314\365\053\314\053\341\241\326  
\224\163\301\376\121\364\214\175\012\265\232\212\271\365\332\340  
\311\263\330\217\252\202\203\215\151\123\055\375\000\004\030\112  
\240\332\124\341\171\214\211\353\177\365\202\347\240\271\167\115  
\256\371\272\002\073\210\166\353\174\135\263\132\023\333\174\051  
\026\153\231\321\035\344\110\041\242\015\136\001\210\350\276\361  
\230\115\076\307\026\127\034\137\341\010\157\034\114\130\103\126  
\367\200\145\214\161\016\242\004\147\117\002\003\001\000\001\243  
\102\060\100\060\017\006\003\125\035\023\001\001\377\004\005\060  
\003\001\001\377\060\035\006\003\125\035\016\004\026\004\024\162  
\133\272\252\162\070\356\045\220\044\265\224\042\372\011\210\312  
\213\012\373\060\016\006\003\125\035\017\001\001\377\004\004\003  
\002\001\006\060\015\006\011\052\206\110\206\367\015\001\001\013  
\005\000\003\202\002\001\000\006\243\361\266\163\125\306\147\146  
\041\345\235\133\326\224\056\112\042\140\362\124\001\220\241\375  
\265\277\300\225\277\030\137\054\366\153\065\016\374\061\310\355  
\104\016\222\227\334\257\335\126\317\265\037\272\162\234\060\310  
\233\261\221\300\166\167\324\017\032\225\032\351\115\024\210\241  
\317\153\002\246\152\353\144\105\115\144\215\336\374\353\154\362  
\123\011\241\205\121\025\320\117\236\142\372\021\271\316\310\044  
\016\162\144\210\165\064\043\060\052\077\274\074\071\314\314\335  
\013\066\273\275\006\202\217\022\001\305\161\005\321\044\241\231  
\154\312\344\367\252\355\212\327\247\012\255\257\360\340\200\273  
\241\262\077\132\207\144\160\206\063\173\015\036\327\000\206\203  
\103\227\165\365\073\301\110\375\266\016\103\250\002\156\270\076  
\177\217\116\342\135\264\175\236\060\064\057\250\361\353\047\207  
\150\015\132\012\115\001\333\311\024\130\225\362\232\115\026\252  
\163\333\364\045\210\027\070\267\257\131\011\011\264\037\055\017  
\253\365\270\047\125\356\105\060\063\270\355\033\216\274\210\154  
\257\370\132\052\153\340\254\261\005\044\241\011\374\243\017\363  
\260\055\173\226\272\266\224\007\025\105\216\051\334\130\016\251  
\005\330\073\072\240\173\315\212\307\146\202\227\317\326\063\340  
\147\374\246\333\100\057\005\345\305\213\172\052\172\360\260\066  
\233\014\030\366\067\351\101\241\375\261\050\371\157\153\275\353  
\037\114\143\161\173\120\335\051\362\377\356\367\307\105\137\350  
\066\012\350\154\133\042\303\350\300\347\046\334\343\250\225\200  
\345\271\072\023\333\000\113\032\375\256\063\107\176\170\224\343  
\261\135\053\265\126\265\102\213\237\201\305\374\223\114\020\265  
\272\012\274\176\067\343\372\124\155\365\004\305\160\263\251\004  
\322\121\327\205\315\175\157\103\217\131\150\345\061\126\021\161  
\371\144\051\011\023\376\320\037\274\213\000\070\262\320\312\064  
\126\166\020\071\126\163\146\303\321\111\331\276\127\117\077\026

```
\175\152\170\267\250\202\270\133\316\256\205\212\012\102\014\003
\321\027\304\030\367\330\127\210\306\202\270\007\271\076\375\244
\351\056\334\157\272\220\222\356\145\260\120\064\323\007\332\001
\227\017\274\347\163\202\173
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

# Microsoft Code Signing Only Certificate

# Trust for "ePKI Root Certification Authority - G2"

# Issuer: CN=ePKI Root Certification Authority - G2,O=Chunghwa Telecom Co., Ltd.,C=TW

# Serial Number:d6:96:2e:c1:0a:15:93:12:af:8f:63:bc:d4:44:c9:5b

# Subject: CN=ePKI Root Certification Authority - G2,O=Chunghwa Telecom Co., Ltd.,C=TW

# Not Valid Before: Tue Nov 17 08:23:42 2015

# Not Valid After: Thu Dec 31 15:59:59 2037

# Fingerprint (MD5): 7d:f0:01:73:ed:fc:31:9d:16:86:7b:35:c7:26:dd:72

# Fingerprint (SHA1): d9:9b:10:42:98:59:47:63:f0:b9:a9:27:b7:92:69:cb:47:dd:15:8b

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "ePKI Root Certification Authority - G2"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\331\233\020\102\230\131\107\143\360\271\251\047\267\222\151\313
\107\335\025\213
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\175\360\001\163\355\374\061\235\026\206\173\065\307\046\335\162
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\143\061\013\060\011\006\003\125\004\006\023\002\124\127\061
\043\060\041\006\003\125\004\012\014\032\103\150\165\156\147\150
\167\141\040\124\145\154\145\143\157\155\040\103\157\056\054\040
\114\164\144\056\061\057\060\055\006\003\125\004\003\014\046\145
\120\113\111\040\122\157\157\164\040\103\145\162\164\151\146\151
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171
\040\055\040\107\062
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\021\000\326\226\056\301\012\025\223\022\257\217\143\274\324
\104\311\133
```

END

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

```
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

```
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

```
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
Certificate "ePKI EV SSL Certification Authority - G1"
Issuer: CN=ePKI Root Certification Authority - G2,O=Chunghwa Telecom Co., Ltd.,C=TW
Serial Number:f7:4e:18:0c:99:e2:7b:8d:9f:79:4f:b1:b7:c0:bf:48
Subject: CN=ePKI EV SSL Certification Authority - G1,O=Chunghwa Telecom Co., Ltd.,C=TW
Not Valid Before: Thu Feb 04 03:06:31 2016
Not Valid After: Mon Feb 04 03:06:31 2030
Fingerprint (MD5): bc:4d:9d:ca:03:11:b5:bc:94:7a:f1:1b:2a:20:16:d6
Fingerprint (SHA1): 81:ac:5d:e1:50:d1:b8:de:5d:3e:0e:26:6a:13:6b:73:78:62:d3:22
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ePKI EV SSL Certification Authority - G1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\145\061\013\060\011\006\003\125\004\006\023\002\124\127\061
\043\060\041\006\003\125\004\012\014\032\103\150\165\156\147\150
\167\141\040\124\145\154\145\143\157\155\040\103\157\056\054\040
\114\164\144\056\061\061\060\057\006\003\125\004\003\014\050\145
\120\113\111\040\105\126\040\123\123\114\040\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\171\040\055\040\107\061
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\143\061\013\060\011\006\003\125\004\006\023\002\124\127\061
\043\060\041\006\003\125\004\012\014\032\103\150\165\156\147\150
\167\141\040\124\145\154\145\143\157\155\040\103\157\056\054\040
\114\164\144\056\061\057\060\055\006\003\125\004\003\014\046\145
\120\113\111\040\122\157\157\164\040\103\145\162\164\151\146\151
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171
\040\055\040\107\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\021\000\367\116\030\014\231\342\173\215\237\171\117\261\267
\300\277\110
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\315\060\202\003\265\240\003\002\001\002\002\021\000
\367\116\030\014\231\342\173\215\237\171\117\261\267\300\277\110
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060
\143\061\013\060\011\006\003\125\004\006\023\002\124\127\061\043
\060\041\006\003\125\004\012\014\032\103\150\165\156\147\150\167
\141\040\124\145\154\145\143\157\155\040\103\157\056\054\040\114
\164\144\056\061\057\060\055\006\003\125\004\003\014\046\145\120
\113\111\040\122\157\157\164\040\103\145\162\164\151\146\151\143
\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171\040
```

\055\040\107\062\060\036\027\015\061\066\060\062\060\064\060\063  
\060\066\063\061\132\027\015\063\060\060\062\060\064\060\063\060  
\066\063\061\132\060\145\061\013\060\011\006\003\125\004\006\023  
\002\124\127\061\043\060\041\006\003\125\004\012\014\032\103\150  
\165\156\147\150\167\141\040\124\145\154\145\143\157\155\040\103  
\157\056\054\040\114\164\144\056\061\061\060\057\006\003\125\004  
\003\014\050\145\120\113\111\040\105\126\040\123\123\114\040\103  
\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164  
\150\157\162\151\164\171\040\055\040\107\061\060\202\001\042\060  
\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202  
\001\017\000\060\202\001\012\002\202\001\001\000\232\204\130\047  
\136\236\036\371\147\367\036\234\052\203\070\072\150\356\263\137  
\163\345\215\372\265\167\234\245\000\257\174\223\051\102\356\300  
\377\337\015\331\035\110\057\320\312\017\064\163\025\323\166\273  
\241\342\150\104\317\206\256\352\120\075\363\130\245\123\344\036  
\264\360\243\021\135\037\344\103\353\226\276\212\177\133\227\026  
\340\212\103\222\374\370\264\061\116\006\307\303\125\040\005\113  
\204\257\251\012\210\274\360\306\344\076\012\330\051\167\340\033  
\061\171\055\153\101\302\032\177\344\055\012\303\000\013\111\036  
\052\125\355\230\167\136\225\363\234\324\330\124\041\035\311\022  
\214\337\173\154\053\203\066\154\276\374\077\020\216\026\051\267  
\105\141\040\117\344\316\321\332\161\061\052\023\001\372\237\230  
\352\324\350\247\165\205\046\353\316\211\343\344\172\001\277\060  
\036\371\246\037\313\155\052\171\076\041\354\132\047\341\101\137  
\361\351\364\171\114\155\345\004\032\026\130\366\360\147\120\356  
\035\151\326\237\261\107\364\227\353\350\330\223\053\217\217\000  
\356\300\220\164\031\357\200\162\014\357\363\373\002\003\001\000  
\001\243\202\001\170\060\202\001\164\060\037\006\003\125\035\043  
\004\030\060\026\200\024\162\133\272\252\162\070\356\045\220\044  
\265\224\042\372\011\210\312\213\012\373\060\035\006\003\125\035  
\016\004\026\004\024\131\070\252\133\120\201\354\322\050\012\067  
\343\012\244\006\204\251\222\231\071\060\016\006\003\125\035\017  
\001\001\377\004\004\003\002\001\006\060\074\006\003\125\035\037  
\004\065\060\063\060\061\240\057\240\055\206\053\150\164\164\160  
\072\057\057\145\143\141\056\150\151\156\145\164\056\156\145\164  
\057\162\145\160\157\163\151\164\157\162\171\057\103\122\114\062  
\057\103\101\056\143\162\154\060\201\213\006\010\053\006\001\005  
\005\007\001\001\004\177\060\175\060\104\006\010\053\006\001\005  
\005\007\060\002\206\070\150\164\164\160\072\057\057\145\143\141  
\056\150\151\156\145\164\056\156\145\164\057\162\145\160\157\163  
\151\164\157\162\171\057\103\145\162\164\163\057\111\163\163\165  
\145\144\124\157\124\150\151\163\103\101\056\160\067\142\060\065  
\006\010\053\006\001\005\005\007\060\001\206\051\150\164\164\160  
\072\057\057\157\143\163\160\056\145\143\141\056\150\151\156\145  
\164\056\156\145\164\057\117\103\123\120\057\157\143\163\160\107  
\062\163\150\141\062\060\022\006\003\125\035\023\001\001\377\004  
\010\060\006\001\001\377\002\001\000\060\102\006\003\125\035\040  
\004\073\060\071\060\067\006\005\147\201\014\001\001\060\056\060

\054\006\010\053\006\001\005\005\007\002\001\026\040\150\164\164  
\160\163\072\057\057\145\143\141\056\150\151\156\145\164\056\156  
\145\164\057\162\145\160\157\163\151\164\157\162\171\060\015\006  
\011\052\206\110\206\367\015\001\001\013\005\000\003\202\002\001  
\000\024\176\101\241\225\160\343\303\026\140\321\153\074\006\373  
\025\251\123\316\325\072\371\002\026\010\042\153\325\330\252\336  
\115\212\033\123\141\335\276\207\134\035\247\177\277\065\124\250  
\146\045\337\157\051\017\326\236\076\307\164\063\231\220\175\210  
\314\141\346\151\070\060\136\216\150\023\013\316\123\113\210\330  
\324\333\216\264\261\023\233\317\243\047\000\072\334\322\102\171  
\046\166\063\067\157\146\271\033\020\072\314\270\013\355\223\321  
\240\274\346\066\323\257\061\164\227\174\170\140\075\212\252\264  
\123\215\163\115\371\030\016\303\344\027\252\120\351\030\013\060  
\353\026\343\160\273\117\332\165\261\073\104\132\265\100\261\322  
\225\304\200\001\264\024\257\173\105\075\215\067\046\200\313\063  
\056\372\212\004\076\030\052\175\064\325\056\242\171\072\143\253  
\315\233\040\305\125\203\200\136\321\260\273\263\272\223\173\073  
\215\121\133\054\173\213\377\246\253\334\034\031\144\136\245\021  
\226\164\231\034\016\234\016\015\173\350\330\363\223\235\132\310  
\244\356\315\024\010\345\343\102\353\235\212\124\333\063\354\344  
\352\133\160\126\006\263\173\130\053\330\345\015\261\332\344\323  
\244\127\140\351\113\243\236\077\342\155\346\203\060\040\306\335  
\231\276\265\327\057\063\252\003\117\365\213\140\301\062\304\000  
\164\250\265\310\065\327\102\320\004\174\350\066\037\003\016\303  
\364\057\326\074\317\055\357\214\302\064\125\140\127\147\346\033  
\164\165\251\042\105\313\316\154\145\171\207\101\221\066\305\354  
\044\206\367\322\120\141\327\255\234\341\253\060\346\371\063\012  
\007\101\050\370\270\023\170\341\277\027\035\136\031\265\112\227  
\253\343\346\222\014\200\221\354\253\172\312\224\156\004\236\143  
\014\041\106\220\132\223\234\221\063\370\104\134\255\170\314\232  
\103\326\347\212\337\351\272\167\314\067\035\310\075\302\106\345  
\031\123\260\234\341\345\275\322\047\321\152\034\273\256\120\265  
\353\130\326\261\161\352\330\231\325\056\111\077\123\272\271\204  
\110\264\321\016\203\343\367\105\323\301\252\304\201\136\020\215  
\134\276\255\322\336\202\270\030\162\273\144\032\315\173\033\045  
\333\242\202\212\324\315\142\157\134\061\074\127\166\371\017\045  
\167

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "ePKI EV SSL Certification Authority - G1"  
# Issuer: CN=ePKI Root Certification Authority - G2,O=Chunghwa Telecom Co., Ltd.,C=TW  
# Serial Number:f7:4e:18:0c:99:e2:7b:8d:9f:79:4f:b1:b7:c0:bf:48  
# Subject: CN=ePKI EV SSL Certification Authority - G1,O=Chunghwa Telecom Co., Ltd.,C=TW  
# Not Valid Before: Thu Feb 04 03:06:31 2016

```

Not Valid After: Mon Feb 04 03:06:31 2030
Fingerprint (MD5): bc:4d:9d:ca:03:11:b5:bc:94:7a:f1:1b:2a:20:16:d6
Fingerprint (SHA1): 81:ac:5d:e1:50:d1:b8:de:5d:3e:0e:26:6a:13:6b:73:78:62:d3:22
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ePKI EV SSL Certification Authority - G1"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\201\254\135\341\120\321\270\336\135\076\016\046\152\023\153\163
\170\142\323\042
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\274\115\235\312\003\021\265\274\224\172\361\033\052\040\026\326
END
CKA_ISSUER MULTILINE_OCTAL
\060\143\061\013\060\011\006\003\125\004\006\023\002\124\127\061
\043\060\041\006\003\125\004\012\014\032\103\150\165\156\147\150
\167\141\040\124\145\154\145\143\157\155\040\103\157\056\054\040
\114\164\144\056\061\057\060\055\006\003\125\004\003\014\046\145
\120\113\111\040\122\157\157\164\040\103\145\162\164\151\146\151
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171
\040\055\040\107\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\021\000\367\116\030\014\231\342\173\215\237\171\117\261\267
\300\277\110
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

```

```

Microsoft Code Signing Only Certificate
Certificate "SSL.com EV Root Certification Authority RSA"
Issuer: CN=SSL.com EV Root Certification Authority RSA,O=SSL Corporation,L=Houston,ST=Texas,C=US
Serial Number:1d:6c:11:eb:6f:da:39:9d
Subject: CN=SSL.com EV Root Certification Authority RSA,O=SSL Corporation,L=Houston,ST=Texas,C=US
Not Valid Before: Fri Feb 12 17:50:48 2016
Not Valid After: Tue Feb 12 17:50:48 2041
Fingerprint (MD5): ad:b7:7b:b6:c4:5a:d9:dd:9f:eb:b3:ef:3f:c6:31:31
Fingerprint (SHA1): 1c:b7:ed:e1:76:bc:df:ef:0c:86:6f:46:fb:f9:80:e9:01:e5:ce:35
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SSL.com EV Root Certification Authority RSA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

```



CKA\_SUBJECT MULTILINE\_OCTAL

\060\177\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\016\060\014\006\003\125\004\010\014\005\124\145\170\141\163\061  
\020\060\016\006\003\125\004\007\014\007\110\157\165\163\164\157  
\156\061\030\060\026\006\003\125\004\012\014\017\123\123\114\040  
\103\157\162\160\157\162\141\164\151\157\156\061\064\060\062\006  
\003\125\004\003\014\053\123\123\114\056\143\157\155\040\105\126  
\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164  
\151\157\156\040\101\165\164\150\157\162\151\164\171\040\122\123  
\101

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\177\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\016\060\014\006\003\125\004\010\014\005\124\145\170\141\163\061  
\020\060\016\006\003\125\004\007\014\007\110\157\165\163\164\157  
\156\061\030\060\026\006\003\125\004\012\014\017\123\123\114\040  
\103\157\162\160\157\162\141\164\151\157\156\061\064\060\062\006  
\003\125\004\003\014\053\123\123\114\056\143\157\155\040\105\126  
\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164  
\151\157\156\040\101\165\164\150\157\162\151\164\171\040\122\123  
\101

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\010\035\154\021\353\157\332\071\235

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\343\060\202\003\313\240\003\002\001\002\002\010\035  
\154\021\353\157\332\071\235\060\015\006\011\052\206\110\206\367  
\015\001\001\013\005\000\060\177\061\013\060\011\006\003\125\004  
\006\023\002\125\123\061\016\060\014\006\003\125\004\010\014\005  
\124\145\170\141\163\061\020\060\016\006\003\125\004\007\014\007  
\110\157\165\163\164\157\156\061\030\060\026\006\003\125\004\012  
\014\017\123\123\114\040\103\157\162\160\157\162\141\164\151\157  
\156\061\064\060\062\006\003\125\004\003\014\053\123\123\114\056  
\143\157\155\040\105\126\040\122\157\157\164\040\103\145\162\164  
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162  
\151\164\171\040\122\123\101\060\036\027\015\061\066\060\062\061  
\062\061\067\065\060\064\070\132\027\015\064\061\060\062\061\062  
\061\067\065\060\064\070\132\060\177\061\013\060\011\006\003\125  
\004\006\023\002\125\123\061\016\060\014\006\003\125\004\010\014  
\005\124\145\170\141\163\061\020\060\016\006\003\125\004\007\014  
\007\110\157\165\163\164\157\156\061\030\060\026\006\003\125\004  
\012\014\017\123\123\114\040\103\157\162\160\157\162\141\164\151  
\157\156\061\064\060\062\006\003\125\004\003\014\053\123\123\114  
\056\143\157\155\040\105\126\040\122\157\157\164\040\103\145\162  
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157  
\162\151\164\171\040\122\123\101\060\202\002\042\060\015\006\011

\052\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000  
\060\202\002\012\002\202\002\001\000\306\067\174\023\157\317\017  
\331\120\317\346\327\252\150\057\134\121\324\277\315\114\246\325  
\067\061\100\020\064\101\172\375\313\224\215\142\177\270\220\315  
\316\151\226\072\304\377\331\327\143\346\320\204\045\200\021\277  
\321\355\060\350\204\006\341\240\227\270\125\220\035\255\363\244  
\232\033\116\234\021\367\365\331\326\217\140\052\076\067\370\165  
\354\200\243\125\240\364\047\101\302\252\071\344\122\337\020\371  
\365\145\071\077\214\235\314\173\047\317\006\024\167\116\075\122  
\347\204\201\061\154\022\062\254\204\132\027\152\304\301\134\200  
\061\302\332\107\173\166\017\102\350\347\042\024\323\215\304\133  
\217\213\145\130\051\054\217\016\216\111\324\324\330\012\132\323  
\046\323\011\216\330\103\262\224\117\322\300\034\335\164\142\021  
\151\274\124\042\350\072\036\320\125\126\105\217\160\160\215\057  
\357\302\135\275\136\124\335\056\173\351\030\213\212\111\331\117  
\215\020\363\245\127\341\153\253\030\113\216\256\056\361\362\272  
\365\135\101\367\071\330\243\302\135\336\237\132\261\057\104\223  
\076\077\361\042\071\224\100\155\047\306\314\015\170\014\013\275  
\052\126\046\255\051\127\270\161\344\177\353\023\262\310\175\365  
\153\135\363\362\000\060\063\372\133\313\022\152\172\101\157\157  
\011\114\267\151\015\017\171\043\043\032\146\215\131\066\143\226  
\200\173\030\042\153\036\042\030\055\344\245\165\012\020\131\373  
\243\176\046\020\123\306\310\031\056\036\047\030\373\060\005\075  
\221\004\172\256\160\306\314\017\240\064\323\044\026\030\001\005  
\147\151\345\105\321\126\250\233\277\257\372\254\125\010\014\002  
\176\113\167\254\067\301\330\355\231\064\240\101\263\065\072\353  
\061\064\311\073\337\304\075\051\105\065\124\270\177\226\317\010  
\017\351\261\236\125\312\147\204\240\047\140\253\372\120\061\071  
\325\173\312\266\232\355\221\214\170\036\371\356\340\342\131\101  
\324\037\102\200\171\365\364\203\120\010\255\363\107\101\137\120  
\243\237\211\363\264\047\052\124\271\032\131\153\011\234\121\300  
\050\153\133\270\050\322\157\065\176\325\223\003\156\164\045\145  
\352\026\005\221\001\361\007\143\117\253\204\305\162\331\315\150  
\233\115\054\176\004\070\360\352\107\002\003\001\000\001\243\143  
\060\141\060\035\006\003\125\035\016\004\026\004\024\331\132\052  
\377\245\316\235\241\221\175\377\207\135\253\152\065\022\331\311  
\114\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001  
\001\377\060\037\006\003\125\035\043\004\030\060\026\200\024\331  
\132\052\377\245\316\235\241\221\175\377\207\135\253\152\065\022  
\331\311\114\060\016\006\003\125\035\017\001\001\377\004\004\003  
\002\001\206\060\015\006\011\052\206\110\206\367\015\001\001\013  
\005\000\003\202\002\001\000\274\214\317\043\372\275\063\127\226  
\037\320\202\360\022\256\064\104\352\361\274\041\327\365\211\306  
\064\036\170\246\342\121\337\335\170\200\325\352\155\306\252\157  
\011\002\214\247\346\313\310\211\132\224\172\112\263\126\357\335  
\335\123\062\143\360\151\357\335\100\271\220\242\056\003\167\226  
\265\051\000\122\356\373\016\247\224\150\305\074\003\055\351\153  
\252\235\356\247\330\147\222\342\021\132\070\337\230\146\243\240

\216\313\014\102\066\114\305\126\133\237\165\360\100\321\350\073  
\052\010\233\122\303\034\137\220\064\127\373\306\371\035\161\374  
\045\174\317\172\175\036\151\306\273\364\024\376\035\035\347\227  
\242\206\233\362\337\127\222\006\122\144\223\051\131\012\057\241  
\027\334\273\356\255\073\263\000\145\070\331\250\234\201\255\315  
\065\234\213\351\342\364\204\217\016\317\215\161\155\000\200\071  
\157\263\004\065\240\070\141\251\362\057\364\065\215\330\337\336  
\244\151\060\372\240\046\174\132\042\171\360\150\376\313\315\274  
\357\225\214\047\345\204\371\375\204\102\306\272\375\271\311\306  
\132\161\060\166\066\002\037\320\174\251\023\016\341\040\331\122  
\014\254\036\210\167\240\051\206\072\210\146\123\257\303\245\311  
\333\124\261\244\350\356\114\156\077\271\173\060\243\102\350\002  
\246\275\204\155\052\174\375\364\355\105\267\060\372\154\134\043  
\126\132\074\141\052\307\233\346\305\362\104\267\007\277\166\235  
\102\344\134\360\356\271\076\020\363\317\122\322\315\316\122\030  
\177\140\366\056\225\114\065\000\114\106\326\020\354\064\313\130  
\173\152\015\344\143\125\314\130\331\117\143\147\061\302\122\241  
\171\017\052\317\311\116\314\022\313\215\032\132\252\106\061\023  
\073\015\351\127\150\132\013\204\004\066\057\237\021\274\074\172  
\255\132\277\106\343\267\040\211\035\334\007\174\334\172\353\351  
\166\311\000\015\160\267\237\227\032\142\357\030\346\144\276\010  
\247\244\231\273\177\214\150\232\230\311\206\142\366\241\230\066  
\071\243\363\226\127\244\002\143\371\125\076\260\214\237\277\251  
\172\113\074\331\271\256\017\212\364\272\034\045\253\125\131\241  
\126\302\063\271\072\304\100\317\213\032\367\003\016\275\033\140  
\143\175\045\324\251\276\345

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "SSL.com EV Root Certification Authority RSA"  
# Issuer: CN=SSL.com EV Root Certification Authority RSA,O=SSL Corporation,L=Houston,ST=Texas,C=US  
# Serial Number:1d:6c:11:eb:6f:da:39:9d  
# Subject: CN=SSL.com EV Root Certification Authority RSA,O=SSL Corporation,L=Houston,ST=Texas,C=US  
# Not Valid Before: Fri Feb 12 17:50:48 2016  
# Not Valid After: Tue Feb 12 17:50:48 2041  
# Fingerprint (MD5): ad:b7:7b:b6:c4:5a:d9:dd:9f:eb:b3:ef:3f:c6:31:31  
# Fingerprint (SHA1): 1c:b7:ed:e1:76:bc:df:ef:0c:86:6f:46:fb:f9:80:e9:01:e5:ce:35  
CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "SSL.com EV Root Certification Authority RSA"  
CKA\_CERT\_SHA1\_HASH MULTILINE OCTAL  
\034\267\355\341\166\274\337\357\014\206\157\106\373\371\200\351  
\001\345\316\065

```

END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\255\267\173\266\304\132\331\335\237\353\263\357\077\306\061\061
END
CKA_ISSUER MULTILINE_OCTAL
\060\177\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\016\060\014\006\003\125\004\010\014\005\124\145\170\141\163\061
\020\060\016\006\003\125\004\007\014\007\110\157\165\163\164\157
\156\061\030\060\026\006\003\125\004\012\014\017\123\123\114\040
\103\157\162\160\157\162\141\164\151\157\156\061\064\060\062\006
\003\125\004\003\014\053\123\123\114\056\143\157\155\040\105\126
\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\101\165\164\150\157\162\151\164\171\040\122\123
\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\035\154\021\353\157\332\071\235
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "LuxTrust Global Root 2"
Issuer: CN=LuxTrust Global Root 2,O=LuxTrust S.A.,C=LU
Serial Number:0a:7e:a6:df:4b:44:9e:da:6a:24:85:9e:e6:b8:15:d3:16:7f:bb:b1
Subject: CN=LuxTrust Global Root 2,O=LuxTrust S.A.,C=LU
Not Valid Before: Thu Mar 05 13:21:57 2015
Not Valid After: Mon Mar 05 13:21:57 2035
Fingerprint (MD5): b2:e1:09:00:61:af:f7:f1:91:6f:c4:ad:8d:5e:3b:7c
Fingerprint (SHA1): 1e:0e:56:19:0a:d1:8b:25:98:b2:04:44:ff:66:8a:04:17:99:5f:3f
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "LuxTrust Global Root 2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\106\061\013\060\011\006\003\125\004\006\023\002\114\125\061
\026\060\024\006\003\125\004\012\014\015\114\165\170\124\162\165
\163\164\040\123\056\101\056\061\037\060\035\006\003\125\004\003
\014\026\114\165\170\124\162\165\163\164\040\107\154\157\142\141
\154\040\122\157\157\164\040\062
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\106\061\013\060\011\006\003\125\004\006\023\002\114\125\061

```

\026\060\024\006\003\125\004\012\014\015\114\165\170\124\162\165  
\163\164\040\123\056\101\056\061\037\060\035\006\003\125\004\003  
\014\026\114\165\170\124\162\165\163\164\040\107\154\157\142\141  
\154\040\122\157\157\164\040\062

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\024\012\176\246\337\113\104\236\332\152\044\205\236\346\270  
\025\323\026\177\273\261

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\303\060\202\003\253\240\003\002\001\002\002\024\012  
\176\246\337\113\104\236\332\152\044\205\236\346\270\025\323\026  
\177\273\261\060\015\006\011\052\206\110\206\367\015\001\001\013  
\005\000\060\106\061\013\060\011\006\003\125\004\006\023\002\114  
\125\061\026\060\024\006\003\125\004\012\014\015\114\165\170\124  
\162\165\163\164\040\123\056\101\056\061\037\060\035\006\003\125  
\004\003\014\026\114\165\170\124\162\165\163\164\040\107\154\157  
\142\141\154\040\122\157\157\164\040\062\060\036\027\015\061\065  
\060\063\060\065\061\063\062\061\065\067\132\027\015\063\065\060  
\063\060\065\061\063\062\061\065\067\132\060\106\061\013\060\011  
\006\003\125\004\006\023\002\114\125\061\026\060\024\006\003\125  
\004\012\014\015\114\165\170\124\162\165\163\164\040\123\056\101  
\056\061\037\060\035\006\003\125\004\003\014\026\114\165\170\124  
\162\165\163\164\040\107\154\157\142\141\154\040\122\157\157\164  
\040\062\060\202\002\042\060\015\006\011\052\206\110\206\367\015  
\001\001\001\005\000\003\202\002\017\000\060\202\002\012\002\202  
\002\001\000\327\205\227\277\021\230\351\360\142\203\114\074\207  
\371\123\152\067\013\362\017\074\207\316\157\334\046\051\275\305  
\211\272\311\203\075\367\356\312\133\306\155\111\163\264\311\106  
\243\033\064\023\077\301\211\105\127\364\331\261\373\066\145\113  
\373\010\342\110\161\021\310\156\073\236\235\337\211\145\067\246  
\205\366\073\104\030\266\306\067\060\142\104\222\227\151\175\102  
\060\044\344\015\014\211\153\143\336\305\341\337\116\251\024\154  
\123\340\141\316\366\027\057\035\074\275\346\042\114\035\223\365  
\020\304\241\166\354\152\336\305\154\337\226\264\126\100\102\300  
\142\222\060\241\055\025\224\240\322\040\006\011\156\152\155\345  
\353\267\276\324\360\361\025\174\213\346\116\272\023\314\113\047  
\136\231\074\027\135\217\201\177\063\075\117\323\077\033\354\134  
\077\360\074\114\165\156\362\246\325\235\332\055\007\143\002\306  
\162\351\224\274\114\111\225\117\210\122\310\333\350\151\202\370  
\314\064\133\042\360\206\247\211\275\110\012\155\146\201\155\310  
\310\144\373\001\341\364\341\336\331\236\335\333\133\324\052\231  
\046\025\033\036\114\222\051\202\236\325\222\201\222\101\160\031  
\367\244\345\223\113\274\167\147\061\335\034\375\061\160\015\027  
\231\014\371\014\071\031\052\027\265\060\161\125\325\017\256\130  
\341\075\057\064\233\317\237\366\170\205\302\223\172\162\076\146  
\217\234\026\021\140\217\236\211\157\147\276\340\107\132\073\014  
\232\147\213\317\106\306\256\070\243\362\247\274\346\326\205\153

\063\044\160\042\113\313\010\233\273\310\370\002\051\035\276\040  
\014\106\277\153\207\233\263\052\146\102\065\106\154\252\272\255  
\371\230\173\351\120\125\024\061\277\261\332\055\355\200\255\150  
\044\373\151\253\330\161\023\060\346\147\263\207\100\375\211\176  
\362\103\321\021\337\057\145\057\144\316\137\024\271\261\277\061  
\275\207\170\132\131\145\210\252\374\131\062\110\206\326\114\271  
\051\113\225\323\166\363\167\045\155\102\034\070\203\115\375\243  
\137\233\177\055\254\171\033\016\102\061\227\143\244\373\212\151  
\325\042\015\064\220\060\056\250\264\340\155\266\224\254\274\213  
\116\327\160\374\305\070\216\144\045\341\115\071\220\316\311\207  
\204\130\161\002\003\001\000\001\243\201\250\060\201\245\060\017  
\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060  
\102\006\003\125\035\040\004\073\060\071\060\067\006\007\053\201  
\053\001\001\001\012\060\054\060\052\006\010\053\006\001\005\005  
\007\002\001\026\036\150\164\164\160\163\072\057\057\162\145\160  
\157\163\151\164\157\162\171\056\154\165\170\164\162\165\163\164  
\056\154\165\060\016\006\003\125\035\017\001\001\377\004\004\003  
\002\001\006\060\037\006\003\125\035\043\004\030\060\026\200\024  
\377\030\050\166\371\110\005\054\241\256\361\053\033\053\262\123  
\370\113\174\263\060\035\006\003\125\035\016\004\026\004\024\377  
\030\050\166\371\110\005\054\241\256\361\053\033\053\262\123\370  
\113\174\263\060\015\006\011\052\206\110\206\367\015\001\001\013  
\005\000\003\202\002\001\000\152\031\024\355\156\171\301\054\207  
\324\015\160\176\327\366\170\311\013\004\116\304\261\316\223\160  
\376\260\124\300\062\315\231\060\144\027\277\017\345\342\063\375  
\007\066\100\162\016\032\266\152\131\326\000\345\150\040\335\056  
\162\015\037\152\144\061\040\204\175\111\246\132\067\353\105\311  
\205\365\324\307\027\231\007\346\233\125\344\014\350\251\264\316  
\214\133\265\021\134\317\212\016\015\326\254\167\201\376\062\234  
\044\236\162\316\124\363\320\157\242\126\326\354\303\067\054\145  
\130\276\127\000\032\362\065\372\353\173\061\135\302\301\022\075  
\226\201\210\226\211\301\131\134\172\346\177\160\064\347\203\342  
\261\341\341\270\130\357\324\225\344\140\234\360\226\227\162\214  
\353\204\002\056\145\217\244\267\322\177\147\335\310\323\236\134  
\252\251\244\240\045\024\006\233\354\117\176\055\013\177\035\165  
\361\063\330\355\316\270\165\155\076\133\271\230\035\061\015\126  
\330\103\017\060\221\262\004\153\335\126\276\225\200\125\147\276  
\330\315\203\331\030\356\056\017\206\055\222\236\160\023\354\336  
\121\311\103\170\002\245\115\310\371\137\304\221\130\106\026\167  
\132\164\252\100\274\007\237\060\271\261\367\022\027\335\343\377  
\044\100\035\172\152\321\117\030\012\252\220\035\353\100\036\337  
\241\036\104\222\020\232\362\215\341\321\113\106\236\350\105\102  
\227\352\105\231\363\354\146\325\002\372\362\246\112\044\252\336  
\316\271\312\371\077\223\157\371\243\272\352\245\076\231\255\375  
\377\173\231\365\145\356\360\131\050\147\327\220\225\244\023\204  
\251\204\301\350\316\316\165\223\143\032\274\074\352\325\144\037  
\055\052\022\071\306\303\132\062\355\107\221\026\016\274\070\301  
\120\336\217\312\052\220\064\034\356\101\224\234\136\031\056\370

```
\105\111\231\164\221\260\004\157\343\004\132\261\253\052\253\376
\307\320\226\266\332\341\112\144\006\156\140\115\275\102\116\377
\170\332\044\312\033\264\327\226\071\154\256\361\016\252\247\175
\110\213\040\114\317\144\326\270\227\106\260\116\321\052\126\072
\240\223\275\257\200\044\340\012\176\347\312\325\312\350\205\125
\334\066\052\341\224\150\223\307\146\162\104\017\200\041\062\154
\045\307\043\200\203\012\353
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE
```

# Microsoft Code Signing Only Certificate

# Trust for "LuxTrust Global Root 2"

# Issuer: CN=LuxTrust Global Root 2,O=LuxTrust S.A.,C=LU

# Serial Number:0a:7e:a6:df:4b:44:9e:da:6a:24:85:9e:e6:b8:15:d3:16:7f:bb:b1

# Subject: CN=LuxTrust Global Root 2,O=LuxTrust S.A.,C=LU

# Not Valid Before: Thu Mar 05 13:21:57 2015

# Not Valid After: Mon Mar 05 13:21:57 2035

# Fingerprint (MD5): b2:e1:09:00:61:af:f7:f1:91:6f:c4:ad:8d:5e:3b:7c

# Fingerprint (SHA1): 1e:0e:56:19:0a:d1:8b:25:98:b2:04:44:ff:66:8a:04:17:99:5f:3f

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "LuxTrust Global Root 2"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\036\016\126\031\012\321\213\045\230\262\004\104\377\146\212\004
\027\231\137\077
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\262\341\011\000\141\257\367\361\221\157\304\255\215\136\073\174
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\106\061\013\060\011\006\003\125\004\006\023\002\114\125\061
\026\060\024\006\003\125\004\012\014\015\114\165\170\124\162\165
\163\164\040\123\056\101\056\061\037\060\035\006\003\125\004\003
\014\026\114\165\170\124\162\165\163\164\040\107\154\157\142\141
\154\040\122\157\157\164\040\062
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\024\012\176\246\337\113\104\236\332\152\044\205\236\346\270
\025\323\026\177\273\261
```

END

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

```
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

```
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

```
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
Certificate "ACA ROOT"
Issuer: CN=ACA ROOT,O=CONSEJO GENERAL DE LA ABOGACIA,2.5.4.5=Q2863006I,C=ES
Serial Number:47:43:91:24:3f:ce:c3:0d:57:48:28:6b:ee:80:5d:ab
Subject: CN=ACA ROOT,O=CONSEJO GENERAL DE LA ABOGACIA,2.5.4.5=Q2863006I,C=ES
Not Valid Before: Fri May 27 10:58:51 2016
Not Valid After: Mon May 27 10:58:51 2041
Fingerprint (MD5): cc:49:10:f6:2f:f5:db:be:2f:8c:51:f3:8f:74:7c:12
Fingerprint (SHA1): d4:96:59:2b:30:57:07:38:6c:c5:f3:cd:b2:59:ae:66:d7:66:1f:ca
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ACA ROOT"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\135\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\022\060\020\006\003\125\004\005\023\011\121\062\070\066\063\060
\060\066\111\061\047\060\045\006\003\125\004\012\014\036\103\117
\116\123\105\112\117\040\107\105\116\105\122\101\114\040\104\105
\040\114\101\040\101\102\117\107\101\103\111\101\061\021\060\017
\006\003\125\004\003\014\010\101\103\101\040\122\117\117\124
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\135\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\022\060\020\006\003\125\004\005\023\011\121\062\070\066\063\060
\060\066\111\061\047\060\045\006\003\125\004\012\014\036\103\117
\116\123\105\112\117\040\107\105\116\105\122\101\114\040\104\105
\040\114\101\040\101\102\117\107\101\103\111\101\061\021\060\017
\006\003\125\004\003\014\010\101\103\101\040\122\117\117\124
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\107\103\221\044\077\316\303\015\127\110\050\153\356\200
\135\253
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\310\060\202\003\260\240\003\002\001\002\002\020\107
\103\221\044\077\316\303\015\127\110\050\153\356\200\135\253\060
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\135
\061\013\060\011\006\003\125\004\006\023\002\105\123\061\022\060
\020\006\003\125\004\005\023\011\121\062\070\066\063\060\060\066
\111\061\047\060\045\006\003\125\004\012\014\036\103\117\116\123
\105\112\117\040\107\105\116\105\122\101\114\040\104\105\040\114
\101\040\101\102\117\107\101\103\111\101\061\021\060\017\006\003
\125\004\003\014\010\101\103\101\040\122\117\117\124\060\036\027
\015\061\066\060\065\062\067\061\060\065\070\065\061\132\027\015
```



\064\061\060\065\062\067\061\060\065\070\065\061\132\060\135\061  
\013\060\011\006\003\125\004\006\023\002\105\123\061\022\060\020  
\006\003\125\004\005\023\011\121\062\070\066\063\060\060\066\111  
\061\047\060\045\006\003\125\004\012\014\036\103\117\116\123\105  
\112\117\040\107\105\116\105\122\101\114\040\104\105\040\114\101  
\040\101\102\117\107\101\103\111\101\061\021\060\017\006\003\125  
\004\003\014\010\101\103\101\040\122\117\117\124\060\202\002\042  
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003  
\202\002\017\000\060\202\002\012\002\202\002\001\000\271\053\136  
\365\076\272\211\036\235\365\321\023\317\273\243\136\272\351\337  
\071\162\144\230\122\207\151\245\266\336\341\277\224\105\276\305  
\370\244\123\147\025\120\334\122\117\052\166\054\056\215\040\152  
\214\346\135\271\331\150\276\221\033\272\151\003\030\255\030\116  
\066\242\254\106\253\040\370\003\152\252\255\171\325\337\035\301  
\356\105\157\041\164\371\115\261\261\075\220\073\074\062\200\355  
\377\025\317\121\312\327\244\207\056\252\345\016\266\321\172\132  
\307\271\370\121\273\331\224\335\076\306\206\116\012\376\073\211  
\362\370\156\044\316\221\003\130\005\022\112\335\120\253\101\172  
\316\355\251\037\021\123\036\245\023\333\141\360\365\252\200\336  
\164\171\035\244\343\051\326\373\340\374\227\332\242\270\253\042  
\076\145\260\041\304\345\305\020\104\207\262\343\340\052\202\056  
\175\346\364\270\244\023\045\363\167\140\137\143\123\256\056\261  
\235\212\153\166\173\072\161\275\222\201\066\260\234\202\361\367  
\305\211\050\135\377\274\102\006\263\010\152\117\141\315\244\055  
\220\323\071\270\167\377\310\307\243\171\273\003\271\221\003\001  
\064\022\330\060\213\266\214\002\312\344\110\354\070\052\062\114  
\155\312\166\050\132\206\012\272\324\040\216\257\240\137\040\055  
\142\234\210\371\361\025\155\133\275\261\003\120\300\077\066\327  
\256\077\121\321\312\343\130\146\104\346\243\233\167\056\061\372  
\331\177\042\304\005\114\353\164\033\134\143\172\246\002\223\176  
\103\016\166\024\017\115\157\062\225\210\200\222\122\227\024\365  
\074\374\224\007\323\154\051\005\225\106\017\344\161\341\177\370  
\155\024\022\202\222\265\363\123\076\231\021\227\107\166\112\011  
\162\356\324\303\226\011\254\332\377\361\113\113\266\327\045\317  
\036\114\227\046\013\064\273\266\224\361\054\144\161\137\211\362  
\025\073\067\247\002\344\015\117\110\211\063\243\214\150\170\061  
\121\147\012\031\333\264\342\164\057\075\172\363\167\000\237\161  
\022\143\377\163\052\144\151\124\354\254\072\256\332\362\130\143  
\064\176\370\074\136\300\102\072\245\333\263\250\324\132\301\116  
\130\270\151\266\254\202\142\333\321\373\032\103\041\042\374\035  
\365\234\117\116\073\345\215\377\166\132\043\136\133\002\003\001  
\000\001\243\201\203\060\201\200\060\017\006\003\125\035\023\001  
\001\377\004\005\060\003\001\001\377\060\016\006\003\125\035\017  
\001\001\377\004\004\003\002\001\006\060\035\006\003\125\035\016  
\004\026\004\024\032\125\344\025\061\342\061\233\021\324\210\161  
\172\000\075\160\050\005\277\315\060\076\006\003\125\035\040\004  
\067\060\065\060\063\006\004\125\035\040\000\060\053\060\051\006  
\010\053\006\001\005\005\007\002\001\026\035\150\164\164\160\072

\057\057\167\167\167\056\141\143\141\142\157\147\141\143\151\141  
\056\157\162\147\057\144\157\143\060\015\006\011\052\206\110\206  
\367\015\001\001\013\005\000\003\202\002\001\000\173\060\312\125  
\206\323\257\356\032\327\270\225\230\354\371\073\335\220\023\243  
\234\222\105\240\222\211\151\241\161\221\274\161\205\207\240\055  
\060\011\344\302\123\075\364\251\267\150\055\115\231\315\244\317  
\236\073\220\235\232\012\051\015\052\102\301\075\133\153\100\202  
\305\213\023\261\101\147\217\276\244\167\340\300\166\344\363\266  
\051\126\054\357\161\117\302\144\361\332\264\013\312\320\071\137  
\123\262\203\001\373\262\175\331\203\164\172\065\320\301\135\217  
\233\367\136\347\122\337\356\252\067\223\253\331\075\175\036\361  
\275\034\333\350\165\335\270\133\114\343\026\243\366\165\210\016  
\217\074\303\013\154\333\140\131\344\005\253\050\106\367\146\151  
\045\167\336\312\112\063\330\130\136\173\217\232\317\122\216\075  
\155\375\321\262\275\076\171\127\206\036\104\034\007\115\364\302  
\020\252\170\313\363\121\027\015\166\075\215\156\150\111\351\357  
\007\111\321\270\026\311\171\235\314\256\013\005\107\172\375\230  
\254\061\241\220\132\207\142\371\370\253\142\132\340\041\166\320  
\150\102\350\034\276\162\201\360\306\147\175\176\164\074\325\125  
\157\217\245\150\226\021\361\312\323\060\027\275\106\266\061\257  
\160\351\244\204\067\127\272\011\074\056\331\013\023\126\007\076  
\225\304\265\160\057\223\302\256\257\201\135\106\024\060\373\256  
\305\363\232\367\101\172\261\336\113\026\331\105\165\107\002\174  
\024\036\325\261\073\240\054\101\265\233\113\173\243\203\360\271  
\314\316\036\224\267\136\056\043\006\225\221\034\070\107\034\355  
\304\170\016\244\017\374\033\174\326\362\153\320\212\133\352\226  
\363\061\324\136\152\304\224\270\060\237\225\341\007\211\270\210  
\322\047\205\244\141\164\345\250\104\061\172\040\165\350\370\330  
\353\263\117\252\377\123\077\226\355\352\273\374\121\100\246\053  
\354\044\241\373\371\104\215\043\347\246\227\000\017\313\244\152  
\277\120\240\312\161\242\154\256\157\337\331\203\202\146\334\123  
\135\257\372\124\367\203\377\253\077\211\225\247\264\155\363\017  
\012\015\110\063\057\201\051\307\113\005\304\306\127\164\204\303  
\230\066\377\357\205\062\253\142\234\023\321\042\207\261\276\230  
\333\164\232\217\352\302\326\223\171\105\040\303

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "ACA ROOT"

# Issuer: CN=ACA ROOT,O=CONSEJO GENERAL DE LA ABOGACIA,2.5.4.5=Q2863006I,C=ES

# Serial Number:47:43:91:24:3f:ce:c3:0d:57:48:28:6b:ee:80:5d:ab

# Subject: CN=ACA ROOT,O=CONSEJO GENERAL DE LA ABOGACIA,2.5.4.5=Q2863006I,C=ES

# Not Valid Before: Fri May 27 10:58:51 2016

# Not Valid After: Mon May 27 10:58:51 2041

# Fingerprint (MD5): cc:49:10:f6:2f:f5:db:be:2f:8c:51:f3:8f:74:7c:12

# Fingerprint (SHA1): d4:96:59:2b:30:57:07:38:6c:c5:f3:cd:b2:59:ae:66:d7:66:1f:ca

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "ACA ROOT"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\324\226\131\053\060\127\007\070\154\305\363\315\262\131\256\146

\327\146\037\312

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\314\111\020\366\057\365\333\276\057\214\121\363\217\164\174\022

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\135\061\013\060\011\006\003\125\004\006\023\002\105\123\061

\022\060\020\006\003\125\004\005\023\011\121\062\070\066\063\060

\060\066\111\061\047\060\045\006\003\125\004\012\014\036\103\117

\116\123\105\112\117\040\107\105\116\105\122\101\114\040\104\105

\040\114\101\040\101\102\117\107\101\103\111\101\061\021\060\017

\006\003\125\004\003\014\010\101\103\101\040\122\117\117\124

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\107\103\221\044\077\316\303\015\127\110\050\153\356\200

\135\253

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "Security Communication ECC RootCA1"

# Issuer: CN=Security Communication ECC RootCA1,O=SECOM Trust Systems CO.,LTD.,C=JP

# Serial Number:d6:5d:9b:b3:78:81:2e:eb

# Subject: CN=Security Communication ECC RootCA1,O=SECOM Trust Systems CO.,LTD.,C=JP

# Not Valid Before: Thu Jun 16 05:15:28 2016

# Not Valid After: Mon Jan 18 05:15:28 2038

# Fingerprint (MD5): 7e:43:b0:92:68:ec:05:43:4c:98:ab:5d:35:2e:7e:86

# Fingerprint (SHA1): b8:0e:26:a9:bf:d2:b2:3b:c0:ef:46:c9:ba:c7:bb:f6:1d:0d:41:41

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Security Communication ECC RootCA1"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\141\061\013\060\011\006\003\125\004\006\023\002\112\120\061

\045\060\043\006\003\125\004\012\023\034\123\105\103\117\115\040

\124\162\165\163\164\040\123\171\163\164\145\155\163\040\103\117  
\056\054\114\124\104\056\061\053\060\051\006\003\125\004\003\023  
\042\123\145\143\165\162\151\164\171\040\103\157\155\155\165\156  
\151\143\141\164\151\157\156\040\105\103\103\040\122\157\157\164  
\103\101\061

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\141\061\013\060\011\006\003\125\004\006\023\002\112\120\061  
\045\060\043\006\003\125\004\012\023\034\123\105\103\117\115\040  
\124\162\165\163\164\040\123\171\163\164\145\155\163\040\103\117  
\056\054\114\124\104\056\061\053\060\051\006\003\125\004\003\023  
\042\123\145\143\165\162\151\164\171\040\103\157\155\155\165\156  
\151\143\141\164\151\157\156\040\105\103\103\040\122\157\157\164  
\103\101\061

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\011\000\326\135\233\263\170\201\056\353

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\002\070\060\202\001\276\240\003\002\001\002\002\011\000  
\326\135\233\263\170\201\056\353\060\012\006\010\052\206\110\316  
\075\004\003\003\060\141\061\013\060\011\006\003\125\004\006\023  
\002\112\120\061\045\060\043\006\003\125\004\012\023\034\123\105  
\103\117\115\040\124\162\165\163\164\040\123\171\163\164\145\155  
\163\040\103\117\056\054\114\124\104\056\061\053\060\051\006\003  
\125\004\003\023\042\123\145\143\165\162\151\164\171\040\103\157  
\155\155\165\156\151\143\141\164\151\157\156\040\105\103\103\040  
\122\157\157\164\103\101\061\060\036\027\015\061\066\060\066\061  
\066\060\065\061\065\062\070\132\027\015\063\070\060\061\061\070  
\060\065\061\065\062\070\132\060\141\061\013\060\011\006\003\125  
\004\006\023\002\112\120\061\045\060\043\006\003\125\004\012\023  
\034\123\105\103\117\115\040\124\162\165\163\164\040\123\171\163  
\164\145\155\163\040\103\117\056\054\114\124\104\056\061\053\060  
\051\006\003\125\004\003\023\042\123\145\143\165\162\151\164\171  
\040\103\157\155\155\165\156\151\143\141\164\151\157\156\040\105  
\103\103\040\122\157\157\164\103\101\061\060\166\060\020\006\007  
\052\206\110\316\075\002\001\006\005\053\201\004\000\042\003\142  
\000\004\244\245\157\140\003\003\303\275\061\364\323\027\234\053  
\204\165\254\345\375\075\127\156\327\143\277\346\004\211\222\216  
\201\234\343\351\107\156\312\220\022\310\023\340\247\235\367\145  
\164\037\154\020\262\350\344\351\357\155\205\062\231\104\261\136  
\375\314\166\020\330\133\275\242\306\371\326\102\344\127\166\334  
\220\302\065\251\113\210\074\022\107\155\134\377\111\117\032\112  
\120\261\243\102\060\100\060\035\006\003\125\035\016\004\026\004  
\024\206\034\347\376\055\245\112\213\010\376\050\021\372\276\243  
\146\370\140\131\057\060\016\006\003\125\035\017\001\001\377\004  
\004\003\002\001\006\060\017\006\003\125\035\023\001\001\377\004

```
\005\060\003\001\001\377\060\012\006\010\052\206\110\316\075\004
\003\003\003\150\000\060\145\002\060\025\135\102\075\374\266\356
\367\073\261\066\350\236\366\304\106\050\111\063\320\130\103\052
\143\051\314\115\261\264\172\242\271\015\070\245\135\110\052\375
\313\262\163\135\243\210\010\307\014\002\061\000\300\253\055\016
\155\355\030\242\333\123\351\045\333\125\010\340\120\314\337\104
\141\026\202\253\111\260\262\201\354\163\207\170\264\114\262\142
\033\022\372\026\115\045\113\143\275\036\067\331
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE
```

# Microsoft Code Signing Only Certificate

# Trust for "Security Communication ECC RootCA1"

# Issuer: CN=Security Communication ECC RootCA1,O=SECOM Trust Systems CO.,LTD.,C=JP

# Serial Number:d6:5d:9b:b3:78:81:2e:eb

# Subject: CN=Security Communication ECC RootCA1,O=SECOM Trust Systems CO.,LTD.,C=JP

# Not Valid Before: Thu Jun 16 05:15:28 2016

# Not Valid After: Mon Jan 18 05:15:28 2038

# Fingerprint (MD5): 7e:43:b0:92:68:ec:05:43:4c:98:ab:5d:35:2e:7e:86

# Fingerprint (SHA1): b8:0e:26:a9:bf:d2:b2:3b:c0:ef:46:c9:ba:c7:bb:f6:1d:0d:41:41

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "Security Communication ECC RootCA1"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\270\016\046\251\277\322\262\073\300\357\106\311\272\307\273\366
\035\015\101\101
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\176\103\260\222\150\354\005\103\114\230\253\135\065\056\176\206
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\141\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\045\060\043\006\003\125\004\012\023\034\123\105\103\117\115\040
\124\162\165\163\164\040\123\171\163\164\145\155\163\040\103\117
\056\054\114\124\104\056\061\053\060\051\006\003\125\004\003\023
\042\123\145\143\165\162\151\164\171\040\103\157\155\155\165\156
\151\143\141\164\151\157\156\040\105\103\103\040\122\157\157\164
\103\101\061
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\011\000\326\135\233\263\170\201\056\353
```

END

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

```
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Certificate "Security Communication RootCA3"  
# Issuer: CN=Security Communication RootCA3,O=SECOM Trust Systems CO.,LTD.,C=JP  
# Serial Number:e1:7c:37:40:fd:1b:fe:67  
# Subject: CN=Security Communication RootCA3,O=SECOM Trust Systems CO.,LTD.,C=JP  
# Not Valid Before: Thu Jun 16 06:17:16 2016  
# Not Valid After: Mon Jan 18 06:17:16 2038  
# Fingerprint (MD5): 1c:9a:16:ff:9e:5c:e0:4d:8a:14:01:f4:35:5d:29:26  
# Fingerprint (SHA1): c3:03:c8:22:74:92:e5:61:a2:9c:5f:79:91:2b:1e:44:13:91:30:3a

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "Security Communication RootCA3"  
CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL  
\060\135\061\013\060\011\006\003\125\004\006\023\002\112\120\061  
\045\060\043\006\003\125\004\012\023\034\123\105\103\117\115\040  
\124\162\165\163\164\040\123\171\163\164\145\155\163\040\103\117  
\056\054\114\124\104\056\061\047\060\045\006\003\125\004\003\023  
\036\123\145\143\165\162\151\164\171\040\103\157\155\155\165\156  
\151\143\141\164\151\157\156\040\122\157\157\164\103\101\063

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL  
\060\135\061\013\060\011\006\003\125\004\006\023\002\112\120\061  
\045\060\043\006\003\125\004\012\023\034\123\105\103\117\115\040  
\124\162\165\163\164\040\123\171\163\164\145\155\163\040\103\117  
\056\054\114\124\104\056\061\047\060\045\006\003\125\004\003\023  
\036\123\145\143\165\162\151\164\171\040\103\157\155\155\165\156  
\151\143\141\164\151\157\156\040\122\157\157\164\103\101\063

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\011\000\341\174\067\100\375\033\376\147

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\177\060\202\003\147\240\003\002\001\002\002\011\000  
\341\174\067\100\375\033\376\147\060\015\006\011\052\206\110\206  
\367\015\001\001\014\005\000\060\135\061\013\060\011\006\003\125  
\004\006\023\002\112\120\061\045\060\043\006\003\125\004\012\023  
\034\123\105\103\117\115\040\124\162\165\163\164\040\123\171\163  
\164\145\155\163\040\103\117\056\054\114\124\104\056\061\047\060  
\045\006\003\125\004\003\023\036\123\145\143\165\162\151\164\171  
\040\103\157\155\155\165\156\151\143\141\164\151\157\156\040\122  
\157\157\164\103\101\063\060\036\027\015\061\066\060\066\061\066

\060\066\061\067\061\066\132\027\015\063\070\060\061\061\070\060  
\066\061\067\061\066\132\060\135\061\013\060\011\006\003\125\004  
\006\023\002\112\120\061\045\060\043\006\003\125\004\012\023\034  
\123\105\103\117\115\040\124\162\165\163\164\040\123\171\163\164  
\145\155\163\040\103\117\056\054\114\124\104\056\061\047\060\045  
\006\003\125\004\003\023\036\123\145\143\165\162\151\164\171\040  
\103\157\155\155\165\156\151\143\141\164\151\157\156\040\122\157  
\157\164\103\101\063\060\202\002\042\060\015\006\011\052\206\110  
\206\367\015\001\001\001\005\000\003\202\002\017\000\060\202\002  
\012\002\202\002\001\000\343\311\162\111\367\060\336\011\174\251  
\100\201\130\323\264\072\335\272\141\017\223\120\156\151\074\065  
\302\356\133\163\220\033\147\114\041\354\137\065\273\071\076\053  
\012\140\357\273\155\053\206\373\161\242\310\254\344\126\224\371  
\311\257\261\162\324\040\254\164\322\270\025\255\121\376\205\164  
\241\271\020\376\005\200\371\122\223\263\100\075\165\020\254\300  
\226\267\247\176\166\274\343\033\122\031\316\021\037\013\004\064  
\365\330\365\151\074\167\363\144\364\015\252\205\336\340\011\120  
\004\027\226\204\267\310\212\274\115\162\374\034\273\317\363\006  
\115\371\237\144\367\176\246\146\206\065\161\310\021\200\114\301  
\161\100\130\036\276\240\163\366\374\076\120\341\340\057\046\075  
\176\134\043\265\171\160\336\372\340\321\245\326\014\101\161\173  
\367\352\214\034\210\307\354\213\365\321\057\125\226\106\174\132  
\073\130\073\373\272\330\055\265\045\332\172\116\317\104\256\041  
\246\236\230\312\040\156\174\273\210\205\133\373\300\020\142\273  
\362\371\047\107\357\321\211\071\103\304\337\336\341\101\277\124  
\163\040\227\055\154\332\363\324\007\243\346\271\330\157\256\374  
\214\031\056\323\147\147\053\225\333\130\134\265\152\002\363\270  
\203\136\264\153\276\101\176\127\011\165\104\120\125\315\132\021  
\141\041\012\141\302\251\210\375\023\274\055\211\057\315\141\340  
\225\276\312\265\173\341\173\064\147\013\037\266\014\307\174\036  
\031\123\312\247\261\112\025\040\126\024\160\075\053\202\054\017  
\235\025\035\107\200\107\377\170\231\016\061\257\157\076\217\355  
\206\151\036\173\030\210\024\262\302\374\202\063\056\234\113\055  
\373\160\073\161\252\053\173\046\047\363\032\302\334\373\027\270  
\241\352\313\240\264\256\323\224\176\172\320\253\303\354\070\055  
\021\056\210\277\324\077\255\022\073\102\254\217\002\156\175\314  
\321\137\141\276\241\274\072\152\110\352\046\125\042\026\135\137  
\015\377\047\063\237\030\003\164\212\133\122\040\107\153\105\115  
\042\167\214\125\047\360\257\036\214\311\203\042\124\267\232\320  
\117\331\316\374\331\056\034\226\050\261\002\323\003\275\045\122  
\034\064\146\117\043\253\364\167\202\226\035\321\127\060\010\021  
\005\375\127\321\331\307\002\003\001\000\001\243\102\060\100\060  
\035\006\003\125\035\016\004\026\004\024\144\024\174\374\130\162  
\026\246\012\051\064\025\157\052\313\274\374\257\250\253\060\016  
\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060\017  
\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060  
\015\006\011\052\206\110\206\367\015\001\001\014\005\000\003\202  
\002\001\000\334\002\043\010\342\357\041\072\307\015\267\046\322

\142\223\247\245\043\162\007\040\202\140\337\030\327\124\255\151  
\045\222\236\331\024\317\231\271\122\201\317\256\154\212\073\132  
\071\310\154\001\103\302\042\155\002\360\142\315\116\143\103\300  
\024\332\364\143\360\352\364\161\356\116\207\343\161\251\364\311  
\127\345\056\137\034\171\273\043\252\207\104\127\351\275\065\115  
\101\273\113\050\243\230\262\033\331\013\027\007\345\367\352\235  
\365\166\327\277\304\266\201\130\377\310\377\144\151\142\171\255  
\156\016\037\177\356\035\151\345\267\162\161\263\376\245\001\065  
\224\124\053\300\122\155\217\125\304\311\322\270\313\312\064\010  
\121\205\240\365\274\264\027\130\352\012\134\172\275\143\306\072  
\057\377\226\111\031\204\352\147\330\004\261\141\364\000\133\112  
\267\234\161\067\031\205\171\277\201\260\307\023\016\166\161\076  
\072\200\006\256\006\026\247\215\265\302\304\313\377\100\245\134  
\215\245\311\072\355\162\201\312\134\230\074\322\064\003\167\010  
\375\360\051\131\135\041\010\307\140\277\244\161\173\270\331\036  
\202\276\011\257\145\157\050\253\277\113\265\356\076\010\107\047  
\240\017\157\017\213\077\254\225\030\363\271\016\334\147\125\156  
\142\236\106\016\321\004\170\312\162\256\166\331\245\370\262\337  
\210\011\141\213\357\044\116\321\131\077\132\324\075\311\223\074  
\053\144\365\201\015\026\226\367\222\303\376\061\157\350\052\062  
\164\016\364\114\230\112\030\016\060\124\325\305\353\274\305\025  
\236\350\231\041\353\047\053\011\012\333\361\346\160\030\126\273  
\014\344\276\371\350\020\244\023\222\270\034\340\333\147\035\123  
\003\244\042\247\334\135\222\020\074\352\377\374\033\020\032\303  
\330\320\234\235\145\313\320\053\047\061\003\036\066\341\075\166  
\165\014\377\105\046\271\335\121\274\043\307\137\330\330\207\020  
\100\022\015\075\070\067\347\104\074\030\300\123\011\144\217\377  
\325\232\246\174\160\056\163\125\041\350\337\377\203\271\035\076  
\062\036\326\246\175\054\361\146\351\134\035\247\243\316\136\045  
\062\053\343\225\254\052\007\316\264\050\170\206\074\055\246\235  
\115\322\164\060\335\144\121\025\333\203\203\121\327\257\375\063  
\235\115\146

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "Security Communication RootCA3"  
# Issuer: CN=Security Communication RootCA3,O=SECOM Trust Systems CO.,LTD.,C=JP  
# Serial Number:e1:7c:37:40:fd:1b:fe:67  
# Subject: CN=Security Communication RootCA3,O=SECOM Trust Systems CO.,LTD.,C=JP  
# Not Valid Before: Thu Jun 16 06:17:16 2016  
# Not Valid After: Mon Jan 18 06:17:16 2038  
# Fingerprint (MD5): 1c:9a:16:ff:9e:5c:e0:4d:8a:14:01:f4:35:5d:29:26  
# Fingerprint (SHA1): c3:03:c8:22:74:92:e5:61:a2:9c:5f:79:91:2b:1e:44:13:91:30:3a  
CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST  
CKA\_TOKEN CK\_BBOOL CK\_TRUE



```

CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Security Communication RootCA3"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\303\003\310\042\164\222\345\141\242\234\137\171\221\053\036\104
\023\221\060\072
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\034\232\026\377\236\134\340\115\212\024\001\364\065\135\051\046
END
CKA_ISSUER MULTILINE_OCTAL
\060\135\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\045\060\043\006\003\125\004\012\023\034\123\105\103\117\115\040
\124\162\165\163\164\040\123\171\163\164\145\155\163\040\103\117
\056\054\114\124\104\056\061\047\060\045\006\003\125\004\003\023
\036\123\145\143\165\162\151\164\171\040\103\157\155\155\165\156
\151\143\141\164\151\157\156\040\122\157\157\164\103\101\063
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\011\000\341\174\067\100\375\033\376\147
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

```

```

Microsoft Code Signing Only Certificate
Certificate "CHAMBERS OF COMMERCE ROOT - 2016"
Issuer: CN=CHAMBERS OF COMMERCE ROOT - 2016,O=AC CAMERFIRMA S.A.,2.5.4.97=VATES-
A82743287,2.5.4.5=A82743287,OU=CHAMBERS OF COMMERCE ROOT - 2016,OU=see current address at
www.camerfirma.com/address,L=MADRID,ST=MADRID,C=ES
Serial Number:34:9a:2d:a1:82:06:b2:b3
Subject: CN=CHAMBERS OF COMMERCE ROOT - 2016,O=AC CAMERFIRMA S.A.,2.5.4.97=VATES-
A82743287,2.5.4.5=A82743287,OU=CHAMBERS OF COMMERCE ROOT - 2016,OU=see current address at
www.camerfirma.com/address,L=MADRID,ST=MADRID,C=ES
Not Valid Before: Thu Apr 14 07:35:48 2016
Not Valid After: Sun Apr 08 07:35:48 2040
Fingerprint (MD5): d9:84:45:a4:8b:62:ec:c1:fc:51:54:8a:d1:58:8d:e8
Fingerprint (SHA1): 2d:e1:6a:56:77:ba:ca:39:e1:d6:8c:30:dc:b1:4a:be:22:a6:17:9b

```

```

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "CHAMBERS OF COMMERCE ROOT - 2016"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\202\001\014\061\013\060\011\006\003\125\004\006\023\002\105
\123\061\017\060\015\006\003\125\004\010\014\006\115\101\104\122

```

\111\104\061\017\060\015\006\003\125\004\007\014\006\115\101\104  
\122\111\104\061\072\060\070\006\003\125\004\013\014\061\163\145  
\145\040\143\165\162\162\145\156\164\040\141\144\144\162\145\163  
\163\040\141\164\040\167\167\167\056\143\141\155\145\162\146\151  
\162\155\141\056\143\157\155\057\141\144\144\162\145\163\163\061  
\051\060\047\006\003\125\004\013\014\040\103\110\101\115\102\105  
\122\123\040\117\106\040\103\117\115\115\105\122\103\105\040\122  
\117\117\124\040\055\040\062\060\061\066\061\022\060\020\006\003  
\125\004\005\023\011\101\070\062\067\064\063\062\070\067\061\030  
\060\026\006\003\125\004\141\014\017\126\101\124\105\123\055\101  
\070\062\067\064\063\062\070\067\061\033\060\031\006\003\125\004  
\012\014\022\101\103\040\103\101\115\105\122\106\111\122\115\101  
\040\123\056\101\056\061\051\060\047\006\003\125\004\003\014\040  
\103\110\101\115\102\105\122\123\040\117\106\040\103\117\115\115  
\105\122\103\105\040\122\117\117\124\040\055\040\062\060\061\066  
END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\202\001\014\061\013\060\011\006\003\125\004\006\023\002\105  
\123\061\017\060\015\006\003\125\004\010\014\006\115\101\104\122  
\111\104\061\017\060\015\006\003\125\004\007\014\006\115\101\104  
\122\111\104\061\072\060\070\006\003\125\004\013\014\061\163\145  
\145\040\143\165\162\162\145\156\164\040\141\144\144\162\145\163  
\163\040\141\164\040\167\167\167\056\143\141\155\145\162\146\151  
\162\155\141\056\143\157\155\057\141\144\144\162\145\163\163\061  
\051\060\047\006\003\125\004\013\014\040\103\110\101\115\102\105  
\122\123\040\117\106\040\103\117\115\115\105\122\103\105\040\122  
\117\117\124\040\055\040\062\060\061\066\061\022\060\020\006\003  
\125\004\005\023\011\101\070\062\067\064\063\062\070\067\061\030  
\060\026\006\003\125\004\141\014\017\126\101\124\105\123\055\101  
\070\062\067\064\063\062\070\067\061\033\060\031\006\003\125\004  
\012\014\022\101\103\040\103\101\115\105\122\106\111\122\115\101  
\040\123\056\101\056\061\051\060\047\006\003\125\004\003\014\040  
\103\110\101\115\102\105\122\123\040\117\106\040\103\117\115\115  
\105\122\103\105\040\122\117\117\124\040\055\040\062\060\061\066  
END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\010\064\232\055\241\202\006\262\263

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\006\340\060\202\004\310\240\003\002\001\002\002\010\064  
\232\055\241\202\006\262\263\060\015\006\011\052\206\110\206\367  
\015\001\001\013\005\000\060\202\001\014\061\013\060\011\006\003  
\125\004\006\023\002\105\123\061\017\060\015\006\003\125\004\010  
\014\006\115\101\104\122\111\104\061\017\060\015\006\003\125\004  
\007\014\006\115\101\104\122\111\104\061\072\060\070\006\003\125  
\004\013\014\061\163\145\145\040\143\165\162\162\145\156\164\040  
\141\144\144\162\145\163\163\040\141\164\040\167\167\167\056\143

\141\155\145\162\146\151\162\155\141\056\143\157\155\057\141\144  
\144\162\145\163\163\061\051\060\047\006\003\125\004\013\014\040  
\103\110\101\115\102\105\122\123\040\117\106\040\103\117\115\115  
\105\122\103\105\040\122\117\117\124\040\055\040\062\060\061\066  
\061\022\060\020\006\003\125\004\005\023\011\101\070\062\067\064  
\063\062\070\067\061\030\060\026\006\003\125\004\141\014\017\126  
\101\124\105\123\055\101\070\062\067\064\063\062\070\067\061\033  
\060\031\006\003\125\004\012\014\022\101\103\040\103\101\115\105  
\122\106\111\122\115\101\040\123\056\101\056\061\051\060\047\006  
\003\125\004\003\014\040\103\110\101\115\102\105\122\123\040\117  
\106\040\103\117\115\115\105\122\103\105\040\122\117\117\124\040  
\055\040\062\060\061\066\060\036\027\015\061\066\060\064\061\064  
\060\067\063\065\064\070\132\027\015\064\060\060\064\060\070\060  
\067\063\065\064\070\132\060\202\001\014\061\013\060\011\006\003  
\125\004\006\023\002\105\123\061\017\060\015\006\003\125\004\010  
\014\006\115\101\104\122\111\104\061\017\060\015\006\003\125\004  
\007\014\006\115\101\104\122\111\104\061\072\060\070\006\003\125  
\004\013\014\061\163\145\145\040\143\165\162\162\145\156\164\040  
\141\144\144\162\145\163\163\040\141\164\040\167\167\167\056\143  
\141\155\145\162\146\151\162\155\141\056\143\157\155\057\141\144  
\144\162\145\163\163\061\051\060\047\006\003\125\004\013\014\040  
\103\110\101\115\102\105\122\123\040\117\106\040\103\117\115\115  
\105\122\103\105\040\122\117\117\124\040\055\040\062\060\061\066  
\061\022\060\020\006\003\125\004\005\023\011\101\070\062\067\064  
\063\062\070\067\061\030\060\026\006\003\125\004\141\014\017\126  
\101\124\105\123\055\101\070\062\067\064\063\062\070\067\061\033  
\060\031\006\003\125\004\012\014\022\101\103\040\103\101\115\105  
\122\106\111\122\115\101\040\123\056\101\056\061\051\060\047\006  
\003\125\004\003\014\040\103\110\101\115\102\105\122\123\040\117  
\106\040\103\117\115\115\105\122\103\105\040\122\117\117\124\040  
\055\040\062\060\061\066\060\202\002\042\060\015\006\011\052\206  
\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060\202  
\002\012\002\202\002\001\000\352\306\244\241\324\255\231\226\311  
\237\365\274\120\000\364\054\317\362\170\350\362\054\002\047\326  
\203\214\004\253\323\016\173\127\040\311\324\257\145\364\207\335  
\060\010\327\316\101\243\166\012\333\212\106\344\246\375\355\010  
\316\160\077\372\020\140\171\114\153\201\124\200\125\344\347\172  
\041\266\165\232\334\136\366\016\231\374\370\302\337\101\216\057  
\253\307\133\155\034\120\131\300\355\350\254\202\102\376\271\257  
\057\014\101\121\234\275\000\156\144\121\262\073\345\066\253\225  
\221\022\373\061\307\163\254\034\330\145\166\073\316\033\114\116  
\260\037\040\006\373\120\264\373\233\241\171\216\026\225\343\237  
\353\030\113\204\253\071\223\315\067\203\320\351\174\013\047\217  
\355\102\010\351\206\106\062\254\232\046\151\160\141\055\030\275  
\077\120\360\236\366\150\120\116\151\225\160\301\355\223\251\227  
\116\051\242\272\335\302\237\156\111\010\053\243\372\043\361\051  
\136\260\175\061\131\233\355\214\315\246\156\370\370\367\330\030  
\350\332\126\351\110\362\100\164\176\236\315\040\257\024\044\131

\356\167\065\205\277\112\231\112\251\165\335\263\046\343\006\316  
\175\157\113\144\243\166\064\031\076\024\157\205\124\070\342\213  
\055\100\265\144\146\037\127\063\034\160\315\303\264\050\132\024  
\043\134\374\270\275\263\376\073\022\137\366\271\214\035\310\224  
\012\126\333\162\176\357\047\007\015\000\264\277\175\231\077\115  
\105\263\233\367\035\031\320\117\004\372\307\163\224\210\175\213  
\024\052\231\340\351\231\222\011\306\326\001\153\267\360\333\103  
\127\142\033\307\104\122\342\227\143\272\317\352\316\140\346\012  
\345\030\150\055\063\200\165\240\060\007\150\366\325\367\023\054  
\072\260\236\350\130\125\156\214\126\104\115\103\027\101\002\314  
\167\334\137\105\005\131\317\315\140\323\277\322\366\342\364\325  
\334\207\161\063\007\032\365\157\264\177\075\227\373\137\144\364  
\116\016\000\104\011\351\353\354\076\161\031\004\027\071\110\140  
\270\113\377\136\310\145\231\053\246\062\362\133\206\250\235\350  
\043\164\020\170\357\313\047\235\061\272\140\213\116\006\120\342  
\120\035\007\140\302\101\214\025\264\133\067\034\012\345\011\031  
\162\004\212\074\343\001\333\002\003\001\000\001\243\102\060\100  
\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001  
\377\060\035\006\003\125\035\016\004\026\004\024\236\056\145\117  
\076\127\365\253\175\226\306\213\337\263\065\155\112\350\236\213  
\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006  
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\003  
\202\002\001\000\005\151\052\205\227\046\120\272\102\071\034\223  
\054\322\117\133\321\135\104\046\332\157\151\053\265\173\236\320  
\364\112\056\110\307\354\177\237\312\131\172\271\104\367\076\275  
\367\120\153\121\237\164\377\220\032\100\320\223\171\222\017\212  
\043\136\213\257\201\013\320\213\255\146\340\052\334\232\051\275  
\065\330\154\100\024\111\102\075\211\057\272\233\053\070\274\032  
\243\013\267\210\327\255\306\024\014\356\174\111\254\256\354\362  
\075\030\117\214\155\024\135\016\252\267\337\167\253\073\217\142  
\116\213\014\145\306\031\216\315\300\014\241\167\252\264\335\172  
\247\023\005\346\071\030\307\225\144\176\003\266\213\220\301\345  
\137\000\043\230\346\163\332\021\322\020\377\036\123\042\047\307  
\323\001\311\057\305\073\062\156\360\303\070\312\022\147\274\272  
\043\051\273\304\225\111\132\006\335\324\132\220\324\023\155\347  
\325\302\174\342\130\004\300\354\304\275\242\074\176\306\043\201  
\165\174\253\160\137\064\204\225\367\263\325\107\226\117\161\312  
\170\062\010\040\264\102\244\102\153\325\045\234\262\047\353\301  
\016\107\104\011\341\053\017\320\043\066\156\034\271\272\116\254  
\314\360\014\224\316\101\017\153\335\017\325\310\340\027\213\336  
\072\135\122\276\351\165\045\035\272\005\007\332\126\031\074\215  
\321\327\361\121\066\331\222\357\242\170\121\005\130\275\122\314  
\012\136\157\257\332\320\345\014\333\154\301\043\357\071\061\167  
\027\007\000\214\366\272\017\160\371\274\276\341\344\175\341\314  
\104\172\244\041\354\107\077\250\326\025\245\354\001\251\310\160  
\350\230\147\035\275\131\124\176\241\127\025\065\007\305\162\311  
\076\267\051\206\215\237\332\062\171\062\334\333\250\345\011\377  
\357\126\052\376\223\261\216\052\023\355\255\242\053\153\057\004

\336\315\057\222\222\326\076\140\265\170\001\225\007\010\251\154  
\343\034\332\373\345\233\043\126\040\133\351\320\134\306\112\044  
\073\274\343\266\042\026\052\204\222\377\250\376\227\277\243\235  
\333\141\136\356\031\052\054\327\353\015\166\126\070\165\176\111  
\000\223\127\311\374\043\132\374\364\361\337\052\235\260\214\151  
\364\020\243\125\235\160\074\042\377\007\326\053\266\231\300\227  
\320\364\052\240

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "CHAMBERS OF COMMERCE ROOT - 2016"

# Issuer: CN=CHAMBERS OF COMMERCE ROOT - 2016,O=AC CAMERFIRMA S.A.,2.5.4.97=VATES-  
A82743287,2.5.4.5=A82743287,OU=CHAMBERS OF COMMERCE ROOT - 2016,OU=see current address at  
www.camerfirma.com/address,L=MADRID,ST=MADRID,C=ES

# Serial Number:34:9a:2d:a1:82:06:b2:b3

# Subject: CN=CHAMBERS OF COMMERCE ROOT - 2016,O=AC CAMERFIRMA S.A.,2.5.4.97=VATES-  
A82743287,2.5.4.5=A82743287,OU=CHAMBERS OF COMMERCE ROOT - 2016,OU=see current address at  
www.camerfirma.com/address,L=MADRID,ST=MADRID,C=ES

# Not Valid Before: Thu Apr 14 07:35:48 2016

# Not Valid After: Sun Apr 08 07:35:48 2040

# Fingerprint (MD5): d9:84:45:a4:8b:62:ec:c1:fc:51:54:8a:d1:58:8d:e8

# Fingerprint (SHA1): 2d:e1:6a:56:77:ba:ca:39:e1:d6:8c:30:dc:b1:4a:be:22:a6:17:9b

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "CHAMBERS OF COMMERCE ROOT - 2016"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\055\341\152\126\167\272\312\071\341\326\214\060\334\261\112\276  
\042\246\027\233

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\331\204\105\244\213\142\354\301\374\121\124\212\321\130\215\350

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\202\001\014\061\013\060\011\006\003\125\004\006\023\002\105  
\123\061\017\060\015\006\003\125\004\010\014\006\115\101\104\122  
\111\104\061\017\060\015\006\003\125\004\007\014\006\115\101\104  
\122\111\104\061\072\060\070\006\003\125\004\013\014\061\163\145  
\145\040\143\165\162\162\145\156\164\040\141\144\144\162\145\163  
\163\040\141\164\040\167\167\167\056\143\141\155\145\162\146\151  
\162\155\141\056\143\157\155\057\141\144\144\162\145\163\163\061  
\051\060\047\006\003\125\004\013\014\040\103\110\101\115\102\105  
\122\123\040\117\106\040\103\117\115\115\105\122\103\105\040\122  
\117\117\124\040\055\040\062\060\061\066\061\022\060\020\006\003

```
\125\004\005\023\011\101\070\062\067\064\063\062\070\067\061\030
\060\026\006\003\125\004\141\014\017\126\101\124\105\123\055\101
\070\062\067\064\063\062\070\067\061\033\060\031\006\003\125\004
\012\014\022\101\103\040\103\101\115\105\122\106\111\122\115\101
\040\123\056\101\056\061\051\060\047\006\003\125\004\003\014\040
\103\110\101\115\102\105\122\123\040\117\106\040\103\117\115\115
\105\122\103\105\040\122\117\117\124\040\055\040\062\060\061\066
END
```

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\010\064\232\055\241\202\006\262\263
```

```
END
```

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

```
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

```
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

```
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
```

```
Certificate "Network Solutions RSA Certificate Authority"
```

```
Issuer: CN=Network Solutions RSA Certificate Authority,O=Network Solutions
```

```
L.L.C.,L=Jacksonville,ST=FL,C=US
```

```
Serial Number:4c:03:4b:ac:67:18:4c:7f:af:44:08:4d:82:96:c7:b2
```

```
Subject: CN=Network Solutions RSA Certificate Authority,O=Network Solutions
```

```
L.L.C.,L=Jacksonville,ST=FL,C=US
```

```
Not Valid Before: Wed Nov 18 00:00:00 2015
```

```
Not Valid After: Mon Jan 18 23:59:59 2038
```

```
Fingerprint (MD5): 5a:2f:58:bc:83:2c:2d:99:b4:9b:78:24:d4:8f:f9:67
```

```
Fingerprint (SHA1): 8e:92:8c:0f:c2:7b:b7:ab:a3:4e:6b:c0:ca:12:50:cb:57:b6:0f:84
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "Network Solutions RSA Certificate Authority"
```

```
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
```

```
CKA_SUBJECT MULTILINE_OCTAL
```

```
\060\201\212\061\013\060\011\006\003\125\004\006\023\002\125\123
```

```
\061\013\060\011\006\003\125\004\010\023\002\106\114\061\025\060
```

```
\023\006\003\125\004\007\023\014\112\141\143\153\163\157\156\166
```

```
\151\154\154\145\061\041\060\037\006\003\125\004\012\023\030\116
```

```
\145\164\167\157\162\153\040\123\157\154\165\164\151\157\156\163
```

```
\040\114\056\114\056\103\056\061\064\060\062\006\003\125\004\003
```

```
\023\053\116\145\164\167\157\162\153\040\123\157\154\165\164\151
```

```
\157\156\163\040\122\123\101\040\103\145\162\164\151\146\151\143
```

```
\141\164\145\040\101\165\164\150\157\162\151\164\171
```

```
END
```

```
CKA_ID UTF8 "0"
```

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\201\212\061\013\060\011\006\003\125\004\006\023\002\125\123
```

```
\061\013\060\011\006\003\125\004\010\023\002\106\114\061\025\060
```

\023\006\003\125\004\007\023\014\112\141\143\153\163\157\156\166  
\151\154\154\145\061\041\060\037\006\003\125\004\012\023\030\116  
\145\164\167\157\162\153\040\123\157\154\165\164\151\157\156\163  
\040\114\056\114\056\103\056\061\064\060\062\006\003\125\004\003  
\023\053\116\145\164\167\157\162\153\040\123\157\154\165\164\151  
\157\156\163\040\122\123\101\040\103\145\162\164\151\146\151\143  
\141\164\145\040\101\165\164\150\157\162\151\164\171

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\114\003\113\254\147\030\114\177\257\104\010\115\202\226  
\307\262

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\342\060\202\003\312\240\003\002\001\002\002\020\114  
\003\113\254\147\030\114\177\257\104\010\115\202\226\307\262\060  
\015\006\011\052\206\110\206\367\015\001\001\014\005\000\060\201  
\212\061\013\060\011\006\003\125\004\006\023\002\125\123\061\013  
\060\011\006\003\125\004\010\023\002\106\114\061\025\060\023\006  
\003\125\004\007\023\014\112\141\143\153\163\157\156\166\151\154  
\154\145\061\041\060\037\006\003\125\004\012\023\030\116\145\164  
\167\157\162\153\040\123\157\154\165\164\151\157\156\163\040\114  
\056\114\056\103\056\061\064\060\062\006\003\125\004\003\023\053  
\116\145\164\167\157\162\153\040\123\157\154\165\164\151\157\156  
\163\040\122\123\101\040\103\145\162\164\151\146\151\143\141\164  
\145\040\101\165\164\150\157\162\151\164\171\060\036\027\015\061  
\065\061\061\061\070\060\060\060\060\060\060\132\027\015\063\070  
\060\061\061\070\062\063\065\071\065\071\132\060\201\212\061\013  
\060\011\006\003\125\004\006\023\002\125\123\061\013\060\011\006  
\003\125\004\010\023\002\106\114\061\025\060\023\006\003\125\004  
\007\023\014\112\141\143\153\163\157\156\166\151\154\154\145\061  
\041\060\037\006\003\125\004\012\023\030\116\145\164\167\157\162  
\153\040\123\157\154\165\164\151\157\156\163\040\114\056\114\056  
\103\056\061\064\060\062\006\003\125\004\003\023\053\116\145\164  
\167\157\162\153\040\123\157\154\165\164\151\157\156\163\040\122  
\123\101\040\103\145\162\164\151\146\151\143\141\164\145\040\101  
\165\164\150\157\162\151\164\171\060\202\002\042\060\015\006\011  
\052\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000  
\060\202\002\012\002\202\002\001\000\204\337\250\246\243\214\013  
\170\036\310\115\031\225\335\051\220\222\040\065\220\052\224\215  
\202\063\055\160\022\130\245\010\212\236\301\010\363\223\326\150  
\300\057\024\276\171\244\374\175\314\325\274\076\217\355\234\112  
\002\141\131\075\252\303\157\164\000\322\370\032\064\324\124\236  
\152\164\107\232\057\340\322\367\017\367\303\335\077\245\277\301  
\372\175\102\151\140\000\200\354\074\346\273\201\067\244\036\006  
\024\075\127\217\220\244\065\112\064\163\207\266\032\303\135\220  
\357\006\115\160\166\066\074\202\211\355\317\144\031\203\045\103  
\116\034\342\361\152\122\206\376\121\344\176\070\337\025\215\114  
\154\140\101\112\117\260\100\125\106\071\165\311\201\071\000\163

\212\142\352\017\145\267\217\117\227\100\316\317\356\301\152\050  
\240\161\251\231\047\321\075\311\065\163\172\200\231\370\175\206  
\271\235\171\072\355\323\052\372\176\246\270\377\127\052\163\262  
\246\277\332\211\272\006\033\332\145\240\346\276\140\224\210\366  
\337\146\341\047\152\033\376\320\136\251\215\040\213\012\304\037  
\176\210\101\057\262\301\320\363\266\150\355\310\073\361\357\252  
\007\336\176\327\042\340\201\366\245\352\173\026\364\102\124\235  
\226\176\366\142\026\123\315\375\012\253\262\102\241\116\052\210  
\102\165\203\275\214\345\115\172\347\035\343\114\270\336\343\253  
\140\070\055\147\051\376\344\137\256\302\250\350\277\256\154\371  
\353\263\122\361\177\351\354\302\057\331\235\312\027\236\102\372  
\073\130\301\076\210\142\117\137\223\301\227\155\146\217\034\042  
\363\232\301\364\355\271\153\032\176\066\204\310\061\270\360\136  
\053\176\225\344\171\317\165\114\302\330\004\277\070\216\050\263  
\335\133\266\330\117\043\156\222\350\067\225\256\203\256\326\374  
\071\052\106\006\037\361\204\165\041\326\270\116\246\052\227\130  
\145\365\232\030\001\327\365\303\177\051\311\020\356\163\112\103  
\166\173\321\246\060\121\377\326\053\035\036\142\204\276\371\276  
\151\227\231\307\015\347\174\044\120\165\027\375\244\040\347\065  
\150\003\140\224\247\331\015\306\032\054\345\342\116\325\314\016  
\300\172\060\126\357\140\222\276\331\056\365\307\360\350\105\317  
\332\206\256\357\330\167\251\022\047\002\003\001\000\001\243\102  
\060\100\060\035\006\003\125\035\016\004\026\004\024\017\361\112  
\112\165\164\005\021\014\035\330\133\231\353\277\376\252\175\136  
\327\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001  
\206\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001  
\001\377\060\015\006\011\052\206\110\206\367\015\001\001\014\005  
\000\003\202\002\001\000\075\313\322\106\170\365\366\072\027\350  
\303\173\144\321\305\273\220\170\215\365\117\271\304\055\227\373  
\013\346\305\270\361\266\352\350\130\113\064\255\167\171\054\065  
\037\162\175\002\076\356\265\320\026\212\006\067\226\265\357\103  
\320\011\020\054\227\146\307\201\037\036\346\047\305\202\221\130  
\136\363\310\133\101\150\200\203\221\271\234\201\370\047\372\105  
\337\356\171\362\134\155\160\002\124\356\300\123\330\103\353\005  
\172\314\364\121\335\251\324\042\175\152\073\362\376\210\324\122  
\111\072\205\222\144\123\370\152\123\140\210\217\362\133\324\256  
\053\122\340\352\377\124\176\241\344\357\206\033\247\203\013\006  
\146\136\060\200\214\125\240\107\063\377\153\036\104\110\113\141  
\252\036\076\350\114\144\307\330\155\175\016\256\074\074\102\075  
\312\044\032\160\361\141\024\234\072\030\325\360\006\051\221\042  
\262\072\072\241\026\124\143\032\371\063\225\104\237\044\243\041  
\144\004\010\342\233\325\336\010\122\034\142\034\123\026\107\065  
\102\046\307\247\014\375\363\133\023\167\002\214\134\342\026\360  
\030\037\331\175\365\337\002\044\210\172\363\136\377\027\016\263  
\142\147\241\253\261\027\216\075\072\106\260\365\106\214\253\204  
\330\365\016\241\040\353\302\360\231\164\075\216\263\003\330\044  
\305\154\353\153\014\123\277\140\151\335\214\050\305\157\317\273  
\322\201\167\053\306\174\261\304\112\154\025\020\067\051\135\256



```
\370\261\021\005\304\024\215\354\023\243\104\375\115\213\150\270
\301\377\235\325\067\056\110\370\050\174\334\371\163\123\331\266
\001\165\102\172\277\013\337\121\120\270\123\262\341\356\164\220
\313\274\252\320\161\203\242\253\116\311\020\266\075\034\357\100
\327\117\103\220\063\271\001\226\124\135\052\325\006\133\222\206
\270\006\020\201\006\310\221\333\051\040\262\123\275\363\113\133
\114\333\151\037\211\156\124\077\327\211\135\347\265\315\014\276
\077\175\170\070\001\322\266\147\246\317\130\110\224\032\105\375
\220\163\111\312\265\103\240\041\142\215\111\004\046\252\370\037
\056\077\362\056\241\362\253\364\006\036\260\055\304\301\160\102
\075\375\303\121\111\210\000\016\312\202\015\233\171\002\342\300
\056\223\337\344\362\361
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
```

```
Trust for "Network Solutions RSA Certificate Authority"
```

```
Issuer: CN=Network Solutions RSA Certificate Authority,O=Network Solutions
L.L.C.,L=Jacksonville,ST=FL,C=US
```

```
Serial Number:4c:03:4b:ac:67:18:4c:7f:af:44:08:4d:82:96:c7:b2
```

```
Subject: CN=Network Solutions RSA Certificate Authority,O=Network Solutions
L.L.C.,L=Jacksonville,ST=FL,C=US
```

```
Not Valid Before: Wed Nov 18 00:00:00 2015
```

```
Not Valid After: Mon Jan 18 23:59:59 2038
```

```
Fingerprint (MD5): 5a:2f:58:bc:83:2c:2d:99:b4:9b:78:24:d4:8f:f9:67
```

```
Fingerprint (SHA1): 8e:92:8c:0f:c2:7b:b7:ab:a3:4e:6b:c0:ca:12:50:cb:57:b6:0f:84
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "Network Solutions RSA Certificate Authority"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\216\222\214\017\302\173\267\253\243\116\153\300\312\022\120\313
\127\266\017\204
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\132\057\130\274\203\054\055\231\264\233\170\044\324\217\371\147
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\201\212\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\013\060\011\006\003\125\004\010\023\002\106\114\061\025\060
\023\006\003\125\004\007\023\014\112\141\143\153\163\157\156\166
\151\154\154\145\061\041\060\037\006\003\125\004\012\023\030\116
\145\164\167\157\162\153\040\123\157\154\165\164\151\157\156\163
\040\114\056\114\056\103\056\061\064\060\062\006\003\125\004\003
\023\053\116\145\164\167\157\162\153\040\123\157\154\165\164\151
```

```
\157\156\163\040\122\123\101\040\103\145\162\164\151\146\151\143
\141\164\145\040\101\165\164\150\157\162\151\164\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\114\003\113\254\147\030\114\177\257\104\010\115\202\226
\307\262
```

END

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

# Microsoft Code Signing Only Certificate

# Certificate "Network Solutions ECC Certificate Authority"

# Issuer: CN=Network Solutions ECC Certificate Authority,O=Network Solutions

L.L.C.,L=Jacksonville,ST=FL,C=US

# Serial Number:79:38:4b:b4:19:1a:8d:74:22:cc:ff:85:32:f2:e4:ba

# Subject: CN=Network Solutions ECC Certificate Authority,O=Network Solutions

L.L.C.,L=Jacksonville,ST=FL,C=US

# Not Valid Before: Wed Nov 18 00:00:00 2015

# Not Valid After: Mon Jan 18 23:59:59 2038

# Fingerprint (MD5): a5:a8:cc:e3:1c:41:11:8c:6a:8c:38:bd:a2:47:fe:b2

# Fingerprint (SHA1): 80:f9:5b:74:1c:38:39:94:95:c3:4f:20:c2:3e:73:36:31:4d:3c:6b

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "Network Solutions ECC Certificate Authority"
```

```
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
```

```
CKA_SUBJECT MULTILINE_OCTAL
```

```
\060\201\212\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\013\060\011\006\003\125\004\010\023\002\106\114\061\025\060
\023\006\003\125\004\007\023\014\112\141\143\153\163\157\156\166
\151\154\154\145\061\041\060\037\006\003\125\004\012\023\030\116
\145\164\167\157\162\153\040\123\157\154\165\164\151\157\156\163
\040\114\056\114\056\103\056\061\064\060\062\006\003\125\004\003
\023\053\116\145\164\167\157\162\153\040\123\157\154\165\164\151
\157\156\163\040\105\103\103\040\103\145\162\164\151\146\151\143
\141\164\145\040\101\165\164\150\157\162\151\164\171
```

END

```
CKA_ID UTF8 "0"
```

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\201\212\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\013\060\011\006\003\125\004\010\023\002\106\114\061\025\060
\023\006\003\125\004\007\023\014\112\141\143\153\163\157\156\166
\151\154\154\145\061\041\060\037\006\003\125\004\012\023\030\116
\145\164\167\157\162\153\040\123\157\154\165\164\151\157\156\163
\040\114\056\114\056\103\056\061\064\060\062\006\003\125\004\003
```

\023\053\116\145\164\167\157\162\153\040\123\157\154\165\164\151  
\157\156\163\040\105\103\103\040\103\145\162\164\151\146\151\143  
\141\164\145\040\101\165\164\150\157\162\151\164\171

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\171\070\113\264\031\032\215\164\042\314\377\205\062\362  
\344\272

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\002\224\060\202\002\031\240\003\002\001\002\002\020\171  
\070\113\264\031\032\215\164\042\314\377\205\062\362\344\272\060  
\012\006\010\052\206\110\316\075\004\003\003\060\201\212\061\013  
\060\011\006\003\125\004\006\023\002\125\123\061\013\060\011\006  
\003\125\004\010\023\002\106\114\061\025\060\023\006\003\125\004  
\007\023\014\112\141\143\153\163\157\156\166\151\154\154\145\061  
\041\060\037\006\003\125\004\012\023\030\116\145\164\167\157\162  
\153\040\123\157\154\165\164\151\157\156\163\040\114\056\114\056  
\103\056\061\064\060\062\006\003\125\004\003\023\053\116\145\164  
\167\157\162\153\040\123\157\154\165\164\151\157\156\163\040\105  
\103\103\040\103\145\162\164\151\146\151\143\141\164\145\040\101  
\165\164\150\157\162\151\164\171\060\036\027\015\061\065\061\061  
\061\070\060\060\060\060\060\060\132\027\015\063\070\060\061\061  
\070\062\063\065\071\065\071\132\060\201\212\061\013\060\011\006  
\003\125\004\006\023\002\125\123\061\013\060\011\006\003\125\004  
\010\023\002\106\114\061\025\060\023\006\003\125\004\007\023\014  
\112\141\143\153\163\157\156\166\151\154\154\145\061\041\060\037  
\006\003\125\004\012\023\030\116\145\164\167\157\162\153\040\123  
\157\154\165\164\151\157\156\163\040\114\056\114\056\103\056\061  
\064\060\062\006\003\125\004\003\023\053\116\145\164\167\157\162  
\153\040\123\157\154\165\164\151\157\156\163\040\105\103\103\040  
\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164\150  
\157\162\151\164\171\060\166\060\020\006\007\052\206\110\316\075  
\002\001\006\005\053\201\004\000\042\003\142\000\004\024\341\003  
\013\145\157\255\131\326\036\356\311\277\264\114\305\306\134\057  
\060\307\237\122\333\150\141\300\151\020\342\222\172\032\303\277  
\222\250\211\071\212\373\347\240\273\161\244\240\303\337\167\326  
\224\067\023\137\176\123\135\120\272\343\114\010\307\145\342\101  
\260\346\131\362\234\370\300\262\167\301\012\221\046\167\362\151  
\266\273\320\101\074\052\210\032\224\221\026\306\076\243\102\060  
\100\060\035\006\003\125\035\016\004\026\004\024\233\173\353\310  
\377\203\362\122\230\107\060\012\126\370\070\276\343\353\000\316  
\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\206  
\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001  
\377\060\012\006\010\052\206\110\316\075\004\003\003\003\151\000  
\060\146\002\061\000\251\144\130\367\234\271\023\146\042\111\177  
\262\321\002\351\023\374\034\373\244\064\222\344\312\007\015\267  
\261\122\170\050\064\313\362\041\126\221\206\206\310\212\013\257  
\062\204\124\145\211\002\061\000\354\171\015\235\211\360\014\030

\352\173\127\122\255\013\346\324\171\133\313\233\342\006\105\165  
\030\275\320\374\247\335\307\341\307\042\266\343\101\044\135\043  
\346\250\237\000\152\120\062\045

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Network Solutions ECC Certificate Authority"

# Issuer: CN=Network Solutions ECC Certificate Authority,O=Network Solutions

L.L.C.,L=Jacksonville,ST=FL,C=US

# Serial Number:79:38:4b:b4:19:1a:8d:74:22:cc:ff:85:32:f2:e4:ba

# Subject: CN=Network Solutions ECC Certificate Authority,O=Network Solutions

L.L.C.,L=Jacksonville,ST=FL,C=US

# Not Valid Before: Wed Nov 18 00:00:00 2015

# Not Valid After: Mon Jan 18 23:59:59 2038

# Fingerprint (MD5): a5:a8:cc:e3:1c:41:11:8c:6a:8c:38:bd:a2:47:fe:b2

# Fingerprint (SHA1): 80:f9:5b:74:1c:38:39:94:95:c3:4f:20:c2:3e:73:36:31:4d:3c:6b

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Network Solutions ECC Certificate Authority"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\200\371\133\164\034\070\071\224\225\303\117\040\302\076\163\066  
\061\115\074\153

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\245\250\314\343\034\101\021\214\152\214\070\275\242\107\376\262

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\212\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\013\060\011\006\003\125\004\010\023\002\106\114\061\025\060  
\023\006\003\125\004\007\023\014\112\141\143\153\163\157\156\166  
\151\154\154\145\061\041\060\037\006\003\125\004\012\023\030\116  
\145\164\167\157\162\153\040\123\157\154\165\164\151\157\156\163  
\040\114\056\114\056\103\056\061\064\060\062\006\003\125\004\003  
\023\053\116\145\164\167\157\162\153\040\123\157\154\165\164\151  
\157\156\163\040\105\103\103\040\103\145\162\164\151\146\151\143  
\141\164\145\040\101\165\164\150\157\162\151\164\171

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\171\070\113\264\031\032\215\164\042\314\377\205\062\362  
\344\272

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR  
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Certificate "Australian Defence Public Root CA"  
# Issuer: CN=Australian Defence Public Root CA,OU=CAs,OU=PKI,OU=DoD,O=GOV,C=AU  
# Serial Number:29:eb:92:33:46:4f:32:41:ff:83:19:00:a9:ad:c4:d9:f8:e3:e2:7f  
# Subject: CN=Australian Defence Public Root CA,OU=CAs,OU=PKI,OU=DoD,O=GOV,C=AU  
# Not Valid Before: Mon Nov 28 22:25:28 2016  
# Not Valid After: Fri Nov 28 22:13:48 2036  
# Fingerprint (MD5): a2:6b:fb:f8:f3:14:59:bf:16:d7:3c:ce:f3:20:0a:97  
# Fingerprint (SHA1): a9:ca:fe:9d:fd:67:f4:14:5a:d3:97:d0:e2:f3:05:0d:19:8d:e6:ee

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "Australian Defence Public Root CA"  
CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL  
\060\161\061\013\060\011\006\003\125\004\006\023\002\101\125\061  
\014\060\012\006\003\125\004\012\023\003\107\117\126\061\014\060  
\012\006\003\125\004\013\023\003\104\157\104\061\014\060\012\006  
\003\125\004\013\023\003\120\113\111\061\014\060\012\006\003\125  
\004\013\023\003\103\101\163\061\052\060\050\006\003\125\004\003  
\023\041\101\165\163\164\162\141\154\151\141\156\040\104\145\146  
\145\156\143\145\040\120\165\142\154\151\143\040\122\157\157\164  
\040\103\101

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL  
\060\161\061\013\060\011\006\003\125\004\006\023\002\101\125\061  
\014\060\012\006\003\125\004\012\023\003\107\117\126\061\014\060  
\012\006\003\125\004\013\023\003\104\157\104\061\014\060\012\006  
\003\125\004\013\023\003\120\113\111\061\014\060\012\006\003\125  
\004\013\023\003\103\101\163\061\052\060\050\006\003\125\004\003  
\023\041\101\165\163\164\162\141\154\151\141\156\040\104\145\146  
\145\156\143\145\040\120\165\142\154\151\143\040\122\157\157\164  
\040\103\101

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\024\051\353\222\063\106\117\062\101\377\203\031\000\251\255  
\304\331\370\343\342\177

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\042\060\202\003\012\240\003\002\001\002\002\024\051  
\353\222\063\106\117\062\101\377\203\031\000\251\255\304\331\370  
\343\342\177\060\015\006\011\052\206\110\206\367\015\001\001\013  
\005\000\060\161\061\013\060\011\006\003\125\004\006\023\002\101

\125\061\014\060\012\006\003\125\004\012\023\003\107\117\126\061  
\014\060\012\006\003\125\004\013\023\003\104\157\104\061\014\060  
\012\006\003\125\004\013\023\003\120\113\111\061\014\060\012\006  
\003\125\004\013\023\003\103\101\163\061\052\060\050\006\003\125  
\004\003\023\041\101\165\163\164\162\141\154\151\141\156\040\104  
\145\146\145\156\143\145\040\120\165\142\154\151\143\040\122\157  
\157\164\040\103\101\060\036\027\015\061\066\061\061\062\070\062  
\062\062\065\062\070\132\027\015\063\066\061\061\062\070\062\062  
\061\063\064\070\132\060\161\061\013\060\011\006\003\125\004\006  
\023\002\101\125\061\014\060\012\006\003\125\004\012\023\003\107  
\117\126\061\014\060\012\006\003\125\004\013\023\003\104\157\104  
\061\014\060\012\006\003\125\004\013\023\003\120\113\111\061\014  
\060\012\006\003\125\004\013\023\003\103\101\163\061\052\060\050  
\006\003\125\004\003\023\041\101\165\163\164\162\141\154\151\141  
\156\040\104\145\146\145\156\143\145\040\120\165\142\154\151\143  
\040\122\157\157\164\040\103\101\060\202\001\042\060\015\006\011  
\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017\000  
\060\202\001\012\002\202\001\001\000\323\116\124\004\033\320\364  
\233\235\270\043\207\340\040\307\236\230\261\161\172\006\220\056  
\342\255\110\376\223\005\154\354\206\277\050\100\205\263\114\171  
\357\107\123\230\020\036\124\356\175\170\270\030\023\014\104\122  
\375\320\201\252\223\010\043\071\276\137\017\153\335\045\227\363  
\001\102\337\324\201\000\304\120\276\172\211\055\031\257\163\112  
\077\314\072\300\277\242\250\305\025\367\076\174\101\164\202\153  
\056\167\146\342\152\245\221\210\156\006\061\247\257\013\346\132  
\340\256\175\132\257\057\107\320\362\373\204\163\234\106\241\036  
\204\104\121\304\137\056\332\220\002\137\201\337\021\016\322\373  
\273\072\027\163\243\362\215\143\252\117\377\162\172\145\142\203  
\132\052\074\362\315\054\043\215\317\353\041\037\277\324\003\127  
\365\067\026\014\136\345\127\021\302\250\372\377\154\071\362\075  
\122\346\265\171\300\133\342\262\352\143\040\014\016\245\052\136  
\022\341\346\257\137\213\174\240\255\071\065\065\230\137\361\257  
\070\320\046\323\115\275\142\167\165\075\257\153\024\206\173\132  
\366\041\217\326\352\342\247\016\255\002\003\001\000\001\243\201  
\261\060\201\256\060\017\006\003\125\035\023\001\001\377\004\005  
\060\003\001\001\377\060\113\006\003\125\035\040\004\104\060\102  
\060\006\006\004\125\035\040\000\060\070\006\011\052\044\001\202  
\116\001\001\001\007\060\053\060\051\006\010\053\006\001\005\005  
\007\002\001\026\035\150\164\164\160\072\057\057\143\162\154\056  
\144\145\146\145\156\143\145\056\147\157\166\056\141\165\057\160  
\153\151\060\016\006\003\125\035\017\001\001\377\004\004\003\002  
\001\306\060\037\006\003\125\035\043\004\030\060\026\200\024\254  
\231\341\002\057\350\134\113\101\267\064\270\036\351\233\203\066  
\015\224\264\060\035\006\003\125\035\016\004\026\004\024\254\231  
\341\002\057\350\134\113\101\267\064\270\036\351\233\203\066\015  
\224\264\060\015\006\011\052\206\110\206\367\015\001\001\013\005  
\000\003\202\001\001\000\170\274\201\112\330\072\127\273\275\046  
\277\352\052\050\360\210\212\362\120\114\220\147\332\113\365\270

```
\024\010\272\333\177\162\250\232\131\274\361\034\211\250\364\072
\003\020\124\023\172\135\306\332\272\076\017\210\325\152\323\033
\227\055\142\141\072\157\371\000\257\162\006\163\354\020\300\141
\036\314\134\117\031\062\106\070\301\335\077\322\067\032\245\216
\206\240\360\011\314\065\326\031\002\174\315\071\374\367\371\037
\347\224\171\116\075\267\370\227\116\073\104\152\315\224\260\271
\367\176\342\343\371\231\177\305\323\246\120\264\111\373\026\176
\116\101\054\317\076\307\171\100\272\201\030\046\010\371\305\235
\343\330\361\157\034\150\077\152\133\167\027\122\243\006\336\031
\302\113\156\242\225\374\325\010\277\054\265\151\065\121\343\343
\337\117\032\051\155\203\170\075\070\044\312\002\077\124\020\341
\263\144\341\325\232\336\363\067\366\063\020\265\166\263\253\327
\311\037\123\072\255\125\101\034\110\311\066\236\207\377\165\334
\151\320\257\331\172\127\306\312\261\103\374\071\201\374\334\172
\243\232\245\230\120\124
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
Trust for "Australian Defence Public Root CA"
Issuer: CN=Australian Defence Public Root CA,OU=CAs,OU=PKI,OU=DoD,O=GOV,C=AU
Serial Number:29:eb:92:33:46:4f:32:41:ff:83:19:00:a9:ad:c4:d9:f8:e3:e2:7f
Subject: CN=Australian Defence Public Root CA,OU=CAs,OU=PKI,OU=DoD,O=GOV,C=AU
Not Valid Before: Mon Nov 28 22:25:28 2016
Not Valid After: Fri Nov 28 22:13:48 2036
Fingerprint (MD5): a2:6b:fb:f8:f3:14:59:bf:16:d7:3c:ce:f3:20:0a:97
Fingerprint (SHA1): a9:ca:fe:9d:fd:67:f4:14:5a:d3:97:d0:e2:f3:05:0d:19:8d:e6:ee
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Australian Defence Public Root CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\251\312\376\235\375\147\364\024\132\323\227\320\342\363\005\015
\031\215\346\356
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\242\153\373\370\363\024\131\277\026\327\074\316\363\040\012\227
END
```

```
CKA_ISSUER MULTILINE_OCTAL
\060\161\061\013\060\011\006\003\125\004\006\023\002\101\125\061
\014\060\012\006\003\125\004\012\023\003\107\117\126\061\014\060
\012\006\003\125\004\013\023\003\104\157\104\061\014\060\012\006
\003\125\004\013\023\003\120\113\111\061\014\060\012\006\003\125
\004\013\023\003\103\101\163\061\052\060\050\006\003\125\004\003
\023\041\101\165\163\164\162\141\154\151\141\156\040\104\145\146
```

\145\156\143\145\040\120\165\142\154\151\143\040\122\157\157\164  
\040\103\101

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\024\051\353\222\063\106\117\062\101\377\203\031\000\251\255  
\304\331\370\343\342\177

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "SI-TRUST Root"

# Issuer: CN=SI-TRUST Root,2.5.4.97=VATSI-17659957,O=Republika Slovenija,C=SI

# Serial Number:90:ae:77:76:00:00:00:00:57:1d:d0:6f

# Subject: CN=SI-TRUST Root,2.5.4.97=VATSI-17659957,O=Republika Slovenija,C=SI

# Not Valid Before: Mon Apr 25 07:38:17 2016

# Not Valid After: Fri Dec 25 08:08:17 2037

# Fingerprint (MD5): 3a:ba:c6:f3:c7:d1:b7:8a:86:22:7d:ee:99:81:fc:90

# Fingerprint (SHA1): 3a:49:79:b4:0f:a8:41:48:82:00:b5:82:fb:ee:b6:3a:ab:99:19:ae

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "SI-TRUST Root"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\134\061\013\060\011\006\003\125\004\006\023\002\123\111\061  
\034\060\032\006\003\125\004\012\023\023\122\145\160\165\142\154  
\151\153\141\040\123\154\157\166\145\156\151\152\141\061\027\060  
\025\006\003\125\004\141\023\016\126\101\124\123\111\055\061\067  
\066\065\071\071\065\067\061\026\060\024\006\003\125\004\003\023  
\015\123\111\055\124\122\125\123\124\040\122\157\157\164

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\134\061\013\060\011\006\003\125\004\006\023\002\123\111\061  
\034\060\032\006\003\125\004\012\023\023\122\145\160\165\142\154  
\151\153\141\040\123\154\157\166\145\156\151\152\141\061\027\060  
\025\006\003\125\004\141\023\016\126\101\124\123\111\055\061\067  
\066\065\071\071\065\067\061\026\060\024\006\003\125\004\003\023  
\015\123\111\055\124\122\125\123\124\040\122\157\157\164

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\015\000\220\256\167\166\000\000\000\000\127\035\320\157

END

CKA\_VALUE MULTILINE\_OCTAL



\060\202\004\212\060\202\002\362\240\003\002\001\002\002\015\000  
\220\256\167\166\000\000\000\000\127\035\320\157\060\015\006\011  
\052\206\110\206\367\015\001\001\013\005\000\060\134\061\013\060  
\011\006\003\125\004\006\023\002\123\111\061\034\060\032\006\003  
\125\004\012\023\023\122\145\160\165\142\154\151\153\141\040\123  
\154\157\166\145\156\151\152\141\061\027\060\025\006\003\125\004  
\141\023\016\126\101\124\123\111\055\061\067\066\065\071\071\065  
\067\061\026\060\024\006\003\125\004\003\023\015\123\111\055\124  
\122\125\123\124\040\122\157\157\164\060\036\027\015\061\066\060  
\064\062\065\060\067\063\070\061\067\132\027\015\063\067\061\062  
\062\065\060\070\060\070\061\067\132\060\134\061\013\060\011\006  
\003\125\004\006\023\002\123\111\061\034\060\032\006\003\125\004  
\012\023\023\122\145\160\165\142\154\151\153\141\040\123\154\157  
\166\145\156\151\152\141\061\027\060\025\006\003\125\004\141\023  
\016\126\101\124\123\111\055\061\067\066\065\071\071\065\067\061  
\026\060\024\006\003\125\004\003\023\015\123\111\055\124\122\125  
\123\124\040\122\157\157\164\060\202\001\242\060\015\006\011\052  
\206\110\206\367\015\001\001\001\005\000\003\202\001\217\000\060  
\202\001\212\002\202\001\201\000\323\313\234\055\302\340\060\103  
\145\061\044\377\113\260\070\331\251\123\327\065\321\333\267\113  
\223\264\162\215\361\313\225\322\123\053\164\233\062\232\244\057  
\076\002\006\335\257\160\025\241\252\317\021\207\212\146\173\313  
\314\035\160\104\134\217\254\312\346\303\133\047\264\215\243\216  
\020\277\156\124\164\010\160\212\043\350\312\307\164\304\146\221  
\040\335\113\350\245\204\165\245\230\225\202\213\033\341\040\044  
\007\106\253\014\145\066\100\147\213\165\356\251\331\221\051\033  
\355\157\055\105\302\326\342\140\001\261\363\116\071\053\073\157  
\077\205\276\010\366\123\053\173\242\311\105\241\104\201\200\146  
\232\140\072\033\304\276\014\314\060\020\177\021\066\070\112\346  
\233\241\226\123\234\224\314\021\306\004\114\242\125\113\377\200  
\341\257\214\034\065\374\271\223\067\337\371\135\075\334\353\015  
\047\154\104\311\131\146\053\126\157\377\004\033\367\365\151\303  
\135\303\030\376\275\247\331\144\057\242\237\140\331\162\154\075  
\074\165\362\045\047\230\056\072\270\311\335\115\165\275\253\260  
\042\141\130\001\067\050\246\040\235\056\140\134\373\220\274\106  
\103\270\376\155\330\300\146\042\044\153\064\170\042\345\271\342  
\130\351\110\070\356\114\275\001\173\156\076\100\352\321\302\012  
\102\223\147\303\046\057\077\007\133\317\257\343\035\350\072\342  
\145\341\204\221\077\365\146\000\375\252\063\106\102\354\026\076  
\322\023\145\057\016\011\123\366\344\052\165\024\234\031\063\026  
\232\105\341\333\127\317\317\070\324\247\367\355\130\103\344\016  
\230\134\304\340\061\077\224\244\157\113\112\242\325\112\215\046  
\251\035\144\045\010\065\015\347\002\003\001\000\001\243\113\060  
\111\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001  
\001\377\060\016\006\003\125\035\017\001\001\377\004\004\003\002  
\001\006\060\023\006\003\125\035\043\004\014\060\012\200\010\114  
\243\303\150\136\010\002\143\060\021\006\003\125\035\016\004\012  
\004\010\114\243\303\150\136\010\002\143\060\015\006\011\052\206

\110\206\367\015\001\001\013\005\000\003\202\001\201\000\046\043  
\205\273\135\101\031\156\222\203\212\356\001\213\004\065\031\177  
\253\217\334\326\063\301\371\171\226\136\043\365\360\316\335\352  
\333\141\073\132\257\335\130\351\102\211\100\357\371\331\147\021  
\177\115\361\355\351\021\173\261\101\017\355\244\322\026\266\357  
\301\375\213\366\021\053\054\357\374\007\006\106\014\317\002\013  
\355\073\336\217\011\271\063\253\046\200\124\104\102\145\327\347  
\257\315\120\016\312\310\210\241\022\234\052\225\073\076\124\074  
\110\163\366\174\170\324\233\377\223\367\105\344\051\204\143\374  
\372\176\032\347\134\340\162\127\260\057\170\035\060\306\023\375  
\210\137\261\145\210\332\136\227\023\201\173\376\036\317\173\277  
\127\060\301\160\222\103\246\231\360\125\237\230\305\043\102\275  
\164\034\061\216\022\245\331\105\152\052\132\310\130\315\275\326  
\335\076\065\013\031\177\003\034\316\007\017\207\105\223\025\241  
\153\275\064\034\340\336\365\324\270\345\221\034\113\005\265\047  
\046\274\317\321\011\230\026\306\341\361\125\113\072\173\155\336  
\306\147\266\301\067\055\237\250\216\131\307\267\246\305\357\337  
\026\342\355\336\262\267\363\242\066\244\050\062\072\012\224\313  
\077\136\376\156\131\355\272\066\262\223\326\306\303\031\376\365  
\231\170\353\107\107\345\255\102\172\354\274\173\311\056\101\116  
\115\017\004\016\212\113\063\207\334\361\166\174\132\030\214\234  
\012\022\327\242\263\302\205\207\256\155\061\120\142\062\041\240  
\150\026\137\224\065\164\125\051\322\161\201\010\112\341\327\135  
\252\124\001\263\033\174\131\256\276\254\014\312\270\100\144\147  
\133\235\352\006\006\021\326\320\060\163\036\343\274\053

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "SI-TRUST Root"

# Issuer: CN=SI-TRUST Root,2.5.4.97=VATSI-17659957,O=Republika Slovenija,C=SI

# Serial Number:90:ae:77:76:00:00:00:00:57:1d:d0:6f

# Subject: CN=SI-TRUST Root,2.5.4.97=VATSI-17659957,O=Republika Slovenija,C=SI

# Not Valid Before: Mon Apr 25 07:38:17 2016

# Not Valid After: Fri Dec 25 08:08:17 2037

# Fingerprint (MD5): 3a:ba:c6:f3:c7:d1:b7:8a:86:22:7d:ee:99:81:fc:90

# Fingerprint (SHA1): 3a:49:79:b4:0f:a8:41:48:82:00:b5:82:fb:ee:b6:3a:ab:99:19:ae

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "SI-TRUST Root"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\072\111\171\264\017\250\101\110\202\000\265\202\373\356\266\072  
\253\231\031\256

END

```

CKA_CERT_MD5_HASH MULTILINE_OCTAL
\072\272\306\363\307\321\267\212\206\042\175\356\231\201\374\220
END
CKA_ISSUER MULTILINE_OCTAL
\060\134\061\013\060\011\006\003\125\004\006\023\002\123\111\061
\034\060\032\006\003\125\004\012\023\023\122\145\160\165\142\154
\151\153\141\040\123\154\157\166\145\156\151\152\141\061\027\060
\025\006\003\125\004\141\023\016\126\101\124\123\111\055\061\067
\066\065\071\071\065\067\061\026\060\024\006\003\125\004\003\023
\015\123\111\055\124\122\125\123\124\040\122\157\157\164
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\015\000\220\256\167\166\000\000\000\000\127\035\320\157
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "Halcom Root Certificate Authority"
Issuer: CN=Halcom Root Certificate Authority,2.5.4.97=VATSI-43353126,O=Halcom d.d.,C=SI
Serial Number: 843675 (0xcd9b)
Subject: CN=Halcom Root Certificate Authority,2.5.4.97=VATSI-43353126,O=Halcom d.d.,C=SI
Not Valid Before: Fri Jun 10 07:07:50 2016
Not Valid After: Tue Jun 10 07:07:50 2036
Fingerprint (MD5): 69:16:83:a1:f7:27:b9:ec:7c:d2:c6:b3:79:b2:a3:61
Fingerprint (SHA1): 23:d7:31:fe:dc:5c:8b:b9:7d:e6:dc:8e:13:b4:11:bd:4f:24:00:4f
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Halcom Root Certificate Authority"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\150\061\013\060\011\006\003\125\004\006\023\002\123\111\061
\024\060\022\006\003\125\004\012\023\013\110\141\154\143\157\155
\040\144\056\144\056\061\027\060\025\006\003\125\004\141\023\016
\126\101\124\123\111\055\064\063\063\065\063\061\062\066\061\052
\060\050\006\003\125\004\003\023\041\110\141\154\143\157\155\040
\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164\145
\040\101\165\164\150\157\162\151\164\171
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\150\061\013\060\011\006\003\125\004\006\023\002\123\111\061
\024\060\022\006\003\125\004\012\023\013\110\141\154\143\157\155
\040\144\056\144\056\061\027\060\025\006\003\125\004\141\023\016

```

\126\101\124\123\111\055\064\063\063\065\063\061\062\066\061\052  
\060\050\006\003\125\004\003\023\041\110\141\154\143\157\155\040  
\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164\145  
\040\101\165\164\150\157\162\151\164\171

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\003\014\337\233

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\200\060\202\002\150\240\003\002\001\002\002\003\014  
\337\233\060\015\006\011\052\206\110\206\367\015\001\001\013\005  
\000\060\150\061\013\060\011\006\003\125\004\006\023\002\123\111  
\061\024\060\022\006\003\125\004\012\023\013\110\141\154\143\157  
\155\040\144\056\144\056\061\027\060\025\006\003\125\004\141\023  
\016\126\101\124\123\111\055\064\063\063\065\063\061\062\066\061  
\052\060\050\006\003\125\004\003\023\041\110\141\154\143\157\155  
\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164  
\145\040\101\165\164\150\157\162\151\164\171\060\036\027\015\061  
\066\060\066\061\060\060\067\060\067\065\060\132\027\015\063\066  
\060\066\061\060\060\067\060\067\065\060\132\060\150\061\013\060  
\011\006\003\125\004\006\023\002\123\111\061\024\060\022\006\003  
\125\004\012\023\013\110\141\154\143\157\155\040\144\056\144\056  
\061\027\060\025\006\003\125\004\141\023\016\126\101\124\123\111  
\055\064\063\063\065\063\061\062\066\061\052\060\050\006\003\125  
\004\003\023\041\110\141\154\143\157\155\040\122\157\157\164\040  
\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164\150  
\157\162\151\164\171\060\202\001\042\060\015\006\011\052\206\110  
\206\367\015\001\001\001\005\000\003\202\001\017\000\060\202\001  
\012\002\202\001\001\000\351\122\246\306\032\357\143\273\255\201  
\364\220\262\132\217\015\325\026\063\264\034\030\373\313\211\052  
\060\273\145\201\304\341\373\002\251\224\007\166\345\327\025\344  
\172\144\020\200\352\074\320\263\242\255\256\034\037\352\273\201  
\141\230\324\371\215\151\225\304\105\056\003\011\312\206\372\134  
\132\021\027\100\060\076\360\306\143\011\311\361\215\101\245\126  
\015\005\144\151\113\130\254\052\051\226\273\100\063\026\064\113  
\147\154\327\361\264\106\245\352\131\250\103\150\017\214\070\052  
\252\074\366\104\003\206\370\212\333\105\041\053\051\036\022\267  
\372\245\145\101\336\006\010\130\160\225\076\364\114\331\353\017  
\051\251\221\212\236\255\312\022\365\345\225\346\070\331\032\246  
\213\234\117\246\110\023\020\245\171\104\275\152\073\051\365\026  
\167\100\313\176\233\134\337\276\213\353\347\240\031\157\237\025  
\077\047\236\051\261\365\015\374\137\107\242\074\335\056\013\002  
\373\364\215\352\354\014\261\371\264\005\254\371\217\251\075\156  
\054\035\071\237\320\116\237\116\310\152\236\200\003\141\334\317  
\370\155\224\313\017\317\002\003\001\000\001\243\063\060\061\060  
\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377  
\060\021\006\003\125\035\016\004\012\004\010\102\256\246\103\307  
\230\050\260\060\013\006\003\125\035\017\004\004\003\002\001\006

```
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\003
\202\001\001\000\122\271\171\320\333\143\376\031\201\373\014\371
\301\345\120\131\312\235\262\373\134\063\320\070\250\253\265\032
\116\123\045\165\042\323\111\277\312\201\317\323\341\173\243\221
\106\165\312\032\353\331\365\135\274\173\206\065\375\201\227\234
\204\327\046\230\042\374\261\065\320\251\225\266\174\377\344\227
\264\100\176\111\135\150\310\342\324\071\165\047\117\003\221\262
\061\127\277\206\327\155\312\161\000\042\067\320\073\130\044\120
\240\234\214\232\211\216\365\050\106\154\347\026\355\260\201\253
\364\106\046\257\246\350\032\105\167\160\026\222\262\173\161\161
\334\367\337\111\147\300\063\010\016\056\123\301\167\253\307\112
\221\114\022\357\347\016\011\345\165\061\040\256\156\374\132\212
\200\234\020\260\333\250\112\314\363\053\334\066\064\246\367\251
\013\147\235\220\313\075\046\237\165\315\114\311\035\006\012\165
\213\122\300\201\360\321\046\254\314\222\246\024\234\134\074\026
\102\373\223\314\002\250\023\363\332\256\012\303\270\025\364\260
\320\324\340\026\040\117\254\120\230\170\046\224\036\150\353\224
\162\376\367\213
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
Trust for "Halcom Root Certificate Authority"
Issuer: CN=Halcom Root Certificate Authority,2.5.4.97=VATSI-43353126,O=Halcom d.d.,C=SI
Serial Number: 843675 (0xcdf9b)
Subject: CN=Halcom Root Certificate Authority,2.5.4.97=VATSI-43353126,O=Halcom d.d.,C=SI
Not Valid Before: Fri Jun 10 07:07:50 2016
Not Valid After: Tue Jun 10 07:07:50 2036
Fingerprint (MD5): 69:16:83:a1:f7:27:b9:ec:7c:d2:c6:b3:79:b2:a3:61
Fingerprint (SHA1): 23:d7:31:fe:dc:5c:8b:b9:7d:e6:dc:8e:13:b4:11:bd:4f:24:00:4f
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Halcom Root Certificate Authority"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\043\327\061\376\334\134\213\271\175\346\334\216\023\264\021\275
\117\044\000\117
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\151\026\203\241\367\047\271\354\174\322\306\263\171\262\243\141
```

END

```
CKA_ISSUER MULTILINE_OCTAL
\060\150\061\013\060\011\006\003\125\004\006\023\002\123\111\061
\024\060\022\006\003\125\004\012\023\013\110\141\154\143\157\155
\040\144\056\144\056\061\027\060\025\006\003\125\004\141\023\016
```

```
\126\101\124\123\111\055\064\063\063\065\063\061\062\066\061\052
\060\050\006\003\125\004\003\023\041\110\141\154\143\157\155\040
\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164\145
\040\101\165\164\150\157\162\151\164\171
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\003\014\337\233
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "Application CA G3 Root"

# Issuer: CN=Application CA G3 Root,O=LGPKI,C=JP

# Serial Number: 49 (0x31)

# Subject: CN=Application CA G3 Root,O=LGPKI,C=JP

# Not Valid Before: Tue Jun 03 15:00:00 2014

# Not Valid After: Sat Jun 03 14:59:59 2034

# Fingerprint (MD5): 47:5e:d1:73:5a:e8:95:77:04:01:a3:3f:33:02:5c:20

# Fingerprint (SHA1): 6f:38:84:56:8e:99:c8:c6:ac:0e:5d:de:2d:b2:02:dd:00:2e:36:63

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Application CA G3 Root"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

```
\060\076\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\016\060\014\006\003\125\004\012\023\005\114\107\120\113\111\061
\037\060\035\006\003\125\004\003\023\026\101\160\160\154\151\143
\141\164\151\157\156\040\103\101\040\107\063\040\122\157\157\164
```

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\076\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\016\060\014\006\003\125\004\012\023\005\114\107\120\113\111\061
\037\060\035\006\003\125\004\003\023\026\101\160\160\154\151\143
\141\164\151\157\156\040\103\101\040\107\063\040\122\157\157\164
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\001\061
```

END

CKA\_VALUE MULTILINE\_OCTAL

```
\060\202\003\132\060\202\002\102\240\003\002\001\002\002\001\061
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060
\076\061\013\060\011\006\003\125\004\006\023\002\112\120\061\016
```

\060\014\006\003\125\004\012\023\005\114\107\120\113\111\061\037  
\060\035\006\003\125\004\003\023\026\101\160\160\154\151\143\141  
\164\151\157\156\040\103\101\040\107\063\040\122\157\157\164\060  
\036\027\015\061\064\060\066\060\063\061\065\060\060\060\132  
\027\015\063\064\060\066\060\063\061\064\065\071\065\071\132\060  
\076\061\013\060\011\006\003\125\004\006\023\002\112\120\061\016  
\060\014\006\003\125\004\012\023\005\114\107\120\113\111\061\037  
\060\035\006\003\125\004\003\023\026\101\160\160\154\151\143\141  
\164\151\157\156\040\103\101\040\107\063\040\122\157\157\164\060  
\202\001\042\060\015\006\011\052\206\110\206\367\015\001\001\001  
\005\000\003\202\001\017\000\060\202\001\012\002\202\001\001\000  
\315\105\076\367\321\226\042\134\221\057\076\012\000\003\314\266  
\367\154\124\374\050\067\324\004\030\354\255\230\311\257\323\245  
\271\347\331\277\116\346\243\231\074\231\156\241\040\036\106\033  
\342\165\125\274\322\354\366\210\032\354\064\105\113\203\235\323  
\262\346\335\007\211\301\010\331\370\073\213\222\144\162\135\232  
\073\314\255\067\211\307\334\140\171\010\340\160\254\367\053\355  
\237\003\111\037\216\076\203\250\156\342\222\134\124\321\171\337  
\354\030\072\175\270\155\217\326\243\045\115\255\037\100\246\137  
\324\252\116\261\160\030\131\231\362\013\124\151\076\171\050\104  
\210\367\161\227\315\177\005\334\312\334\166\112\220\114\153\140  
\350\372\046\061\330\265\370\347\374\155\213\044\152\266\357\102  
\327\043\124\305\032\143\212\073\307\374\252\155\074\217\313\154  
\332\040\260\362\274\145\034\001\114\042\225\015\034\043\037\254  
\325\371\316\165\133\352\060\275\114\001\044\037\165\324\141\111  
\303\033\231\145\216\010\134\071\070\315\051\303\070\105\315\144  
\171\267\233\115\107\352\130\062\372\246\366\222\360\301\267\137  
\002\003\001\000\001\243\143\060\141\060\035\006\003\125\035\016  
\004\026\004\024\251\065\052\110\276\054\067\355\206\333\174\125  
\207\000\046\276\030\055\134\056\060\016\006\003\125\035\017\001  
\001\377\004\004\003\002\001\006\060\017\006\003\125\035\023\001  
\001\377\004\005\060\003\001\001\377\060\037\006\003\125\035\043  
\004\030\060\026\200\024\251\065\052\110\276\054\067\355\206\333  
\174\125\207\000\046\276\030\055\134\056\060\015\006\011\052\206  
\110\206\367\015\001\001\013\005\000\003\202\001\001\000\266\202  
\275\305\106\320\161\213\245\221\075\176\055\132\371\234\204\175  
\007\047\225\035\347\115\310\174\354\346\223\350\126\032\172\060  
\110\073\014\372\116\365\011\262\257\210\255\224\354\375\262\255  
\057\346\005\164\041\033\204\213\070\052\303\355\357\106\150\265  
\335\122\372\160\302\165\117\377\243\101\056\074\027\224\114\011  
\042\264\216\301\177\304\246\254\355\203\150\317\145\136\354\172  
\275\305\146\356\320\243\177\362\127\261\010\302\171\160\353\162  
\177\101\131\011\171\165\361\274\261\041\376\203\263\104\075\211  
\243\276\261\172\330\235\303\037\346\304\124\341\215\345\330\120  
\334\344\126\067\173\276\050\000\363\054\167\332\043\177\140\230  
\075\005\026\362\170\151\255\231\303\072\164\154\076\232\262\224  
\355\217\252\366\123\153\347\310\267\350\074\214\373\307\174\117  
\031\135\244\146\025\351\177\207\240\320\325\255\040\244\106\011

```
\105\254\345\310\145\207\273\006\337\374\327\150\126\103\163\242
\000\231\062\222\302\016\240\034\016\221\275\225\130\274\223\237
\204\302\245\146\347\145\315\051\342\142\362\005\222\140
END
```

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
Trust for "Application CA G3 Root"
Issuer: CN=Application CA G3 Root,O=LGPKI,C=JP
Serial Number: 49 (0x31)
Subject: CN=Application CA G3 Root,O=LGPKI,C=JP
Not Valid Before: Tue Jun 03 15:00:00 2014
Not Valid After: Sat Jun 03 14:59:59 2034
Fingerprint (MD5): 47:5e:d1:73:5a:e8:95:77:04:01:a3:3f:33:02:5c:20
Fingerprint (SHA1): 6f:38:84:56:8e:99:c8:c6:ac:0e:5d:de:2d:b2:02:dd:00:2e:36:63
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Application CA G3 Root"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\157\070\204\126\216\231\310\306\254\016\135\336\055\262\002\335
\000\056\066\143
END
```

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\107\136\321\163\132\350\225\167\004\001\243\077\063\002\134\040
END
```

```
CKA_ISSUER MULTILINE_OCTAL
\060\076\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\016\060\014\006\003\125\004\012\023\005\114\107\120\113\111\061
\037\060\035\006\003\125\004\003\023\026\101\160\160\154\151\143
\141\164\151\157\156\040\103\101\040\107\063\040\122\157\157\164
END
```

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\061
END
```

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
Certificate "GLOBALTRUST 2015"
Issuer: CN=GLOBALTRUST 2015,OU=GLOBALTRUST Certification Service,O=e-commerce monitoring
GmbH,L=Wien,ST=Wien,C=AT
Serial Number: 0 (0x0)
```



```
Subject: CN=GLOBALTRUST 2015,OU=GLOBALTRUST Certification Service,O=e-commerce monitoring
Not Valid Before: Thu Jun 11 00:00:00 2015
Not Valid After: Sun Jun 10 00:00:00 2040
Fingerprint (MD5): da:5a:b9:da:8e:0a:38:d4:82:63:03:9d:6c:96:6c:ed
Fingerprint (SHA1): 46:5b:26:be:be:71:06:dd:85:44:c1:13:9d:9f:a2:57:00:c1:d7:bd
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GLOBALTRUST 2015"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\227\061\013\060\011\006\003\125\004\006\023\002\101\124
\061\015\060\013\006\003\125\004\010\023\004\127\151\145\156\061
\015\060\013\006\003\125\004\007\023\004\127\151\145\156\061\043
\060\041\006\003\125\004\012\023\032\145\055\143\157\155\155\145
\162\143\145\040\155\157\156\151\164\157\162\151\156\147\040\107
\155\142\110\061\052\060\050\006\003\125\004\013\023\041\107\114
\117\102\101\114\124\122\125\123\124\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\123\145\162\166\151\143\145\061
\031\060\027\006\003\125\004\003\023\020\107\114\117\102\101\114
\124\122\125\123\124\040\062\060\061\065
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\227\061\013\060\011\006\003\125\004\006\023\002\101\124
\061\015\060\013\006\003\125\004\010\023\004\127\151\145\156\061
\015\060\013\006\003\125\004\007\023\004\127\151\145\156\061\043
\060\041\006\003\125\004\012\023\032\145\055\143\157\155\155\145
\162\143\145\040\155\157\156\151\164\157\162\151\156\147\040\107
\155\142\110\061\052\060\050\006\003\125\004\013\023\041\107\114
\117\102\101\114\124\122\125\123\124\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\123\145\162\166\151\143\145\061
\031\060\027\006\003\125\004\003\023\020\107\114\117\102\101\114
\124\122\125\123\124\040\062\060\061\065
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\000
END
CKA_VALUE MULTILINE_OCTAL
\060\202\006\014\060\202\003\364\240\003\002\001\002\002\001\000
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060
\201\227\061\013\060\011\006\003\125\004\006\023\002\101\124\061
\015\060\013\006\003\125\004\010\023\004\127\151\145\156\061\015
\060\013\006\003\125\004\007\023\004\127\151\145\156\061\043\060
\041\006\003\125\004\012\023\032\145\055\143\157\155\155\145\162
\143\145\040\155\157\156\151\164\157\162\151\156\147\040\107\155
```

\142\110\061\052\060\050\006\003\125\004\013\023\041\107\114\117  
\102\101\114\124\122\125\123\124\040\103\145\162\164\151\146\151  
\143\141\164\151\157\156\040\123\145\162\166\151\143\145\061\031  
\060\027\006\003\125\004\003\023\020\107\114\117\102\101\114\124  
\122\125\123\124\040\062\060\061\065\060\036\027\015\061\065\060  
\066\061\061\060\060\060\060\060\060\132\027\015\064\060\060\066  
\061\060\060\060\060\060\060\060\132\060\201\227\061\013\060\011  
\006\003\125\004\006\023\002\101\124\061\015\060\013\006\003\125  
\004\010\023\004\127\151\145\156\061\015\060\013\006\003\125\004  
\007\023\004\127\151\145\156\061\043\060\041\006\003\125\004\012  
\023\032\145\055\143\157\155\155\145\162\143\145\040\155\157\156  
\151\164\157\162\151\156\147\040\107\155\142\110\061\052\060\050  
\006\003\125\004\013\023\041\107\114\117\102\101\114\124\122\125  
\123\124\040\103\145\162\164\151\146\151\143\141\164\151\157\156  
\040\123\145\162\166\151\143\145\061\031\060\027\006\003\125\004  
\003\023\020\107\114\117\102\101\114\124\122\125\123\124\040\062  
\060\061\065\060\202\002\040\060\015\006\011\052\206\110\206\367  
\015\001\001\001\005\000\003\202\002\015\000\060\202\002\010\002  
\202\002\001\000\324\246\227\250\362\364\220\021\103\255\264\202  
\106\101\361\057\221\157\143\242\315\015\040\334\275\014\070\212  
\145\112\012\053\072\250\164\251\167\241\213\216\362\057\201\367  
\204\030\315\255\353\142\266\222\175\340\101\345\116\124\070\067  
\202\357\313\340\355\317\273\312\314\243\113\367\133\376\270\174  
\247\010\155\313\103\304\114\042\024\146\343\235\003\271\167\041  
\253\104\153\041\107\043\310\040\372\052\313\221\166\035\165\154  
\370\233\351\017\046\351\103\057\232\040\005\150\030\307\216\231  
\205\055\101\007\246\144\216\130\341\215\225\200\244\115\137\365  
\002\330\201\171\333\325\347\337\242\042\375\024\247\147\026\354  
\331\130\114\312\251\335\352\032\216\251\010\144\117\121\041\266  
\162\242\116\377\120\161\275\073\145\344\275\177\123\021\256\337  
\020\071\173\135\366\107\160\027\367\103\221\003\172\141\045\137  
\054\374\370\211\021\074\354\071\124\026\111\304\041\232\161\340  
\171\213\166\035\166\075\007\131\270\007\261\214\334\307\315\116  
\341\373\255\103\115\077\100\357\041\142\057\061\104\116\151\307  
\157\042\313\253\124\113\350\302\372\021\150\254\310\156\016\336  
\154\305\047\226\011\121\002\115\001\266\127\277\062\050\325\011  
\103\226\367\304\210\265\371\124\376\032\072\152\267\054\265\044  
\144\373\112\170\162\303\374\331\117\310\116\043\271\051\330\015  
\241\110\101\223\002\155\277\022\205\233\306\305\140\055\360\221  
\374\231\375\040\224\236\161\143\253\325\111\253\220\354\207\071  
\205\177\215\205\314\013\350\333\113\073\016\374\302\166\175\106  
\347\071\046\236\337\125\337\036\204\371\101\066\046\154\002\131  
\053\216\373\274\351\037\047\044\142\004\147\204\341\077\330\235  
\030\116\226\240\045\356\312\050\003\117\002\121\317\367\065\067  
\151\244\264\326\326\325\036\031\103\047\026\037\107\121\356\112  
\011\114\021\132\266\133\075\141\350\073\020\276\326\106\346\364  
\034\375\270\105\275\174\372\165\132\354\341\122\043\015\216\037  
\206\227\123\221\134\233\233\050\326\216\345\156\047\255\040\214

\247\301\101\251\227\067\213\054\352\156\030\005\227\366\316\003  
\122\361\275\171\064\233\100\307\043\222\164\363\157\355\243\351  
\131\360\125\113\002\001\003\243\143\060\141\060\017\006\003\125  
\035\023\001\001\377\004\005\060\003\001\001\377\060\016\006\003  
\125\035\017\001\001\377\004\004\003\002\001\006\060\035\006\003  
\125\035\016\004\026\004\024\313\260\335\075\214\074\337\142\054  
\053\146\074\236\074\351\025\155\161\264\327\060\037\006\003\125  
\035\043\004\030\060\026\200\024\313\260\335\075\214\074\337\142  
\054\053\146\074\236\074\351\025\155\161\264\327\060\015\006\011  
\052\206\110\206\367\015\001\001\013\005\000\003\202\002\001\000  
\242\175\125\004\146\356\026\024\274\202\201\207\045\031\071\142  
\364\376\073\037\341\300\163\000\161\312\165\251\342\163\361\305  
\015\101\243\135\216\301\055\331\145\133\331\211\342\360\216\305  
\240\175\275\313\314\106\123\037\137\355\040\266\002\052\326\023  
\362\235\175\121\112\100\125\161\255\236\354\166\352\105\040\216  
\252\372\172\103\232\160\147\176\023\336\230\350\313\215\335\037  
\254\064\322\241\265\355\376\270\347\026\317\370\321\070\060\215  
\064\211\322\316\175\201\322\036\377\121\030\123\066\223\334\011  
\313\010\026\270\010\327\132\060\220\212\012\371\057\265\317\304  
\315\124\162\052\306\275\001\347\130\013\156\006\100\264\011\316  
\264\216\263\232\351\211\221\224\254\172\124\341\373\343\204\054  
\203\240\117\376\353\350\301\364\353\266\046\323\070\304\055\255  
\254\105\200\064\155\041\075\135\205\072\342\173\376\124\267\335  
\350\205\124\313\244\361\253\051\120\170\327\044\265\243\057\236  
\257\021\146\256\030\270\375\135\050\317\100\327\125\340\054\353  
\122\061\150\103\146\005\227\222\273\305\361\041\054\375\022\144  
\061\231\103\157\213\235\113\140\376\024\136\122\263\043\250\341  
\230\172\356\024\311\241\342\314\077\166\041\142\375\153\015\331  
\264\112\225\346\156\133\172\044\303\323\306\326\037\242\353\067  
\153\116\243\337\142\353\353\016\112\010\277\353\030\210\373\107  
\032\255\302\121\303\325\174\367\037\053\263\310\112\120\016\151  
\130\040\142\001\112\133\312\143\226\046\042\256\366\351\234\100  
\254\147\003\235\235\151\025\302\300\370\135\247\044\261\047\074  
\277\005\342\253\242\312\311\260\055\176\243\301\061\040\106\041  
\145\222\335\312\336\337\223\033\274\155\057\137\251\026\244\127  
\207\054\162\232\132\202\147\321\104\342\075\011\012\201\214\036  
\020\375\306\064\150\354\377\167\141\166\177\046\367\333\374\022  
\106\022\252\300\321\370\171\205\242\002\314\213\252\244\255\154  
\024\300\275\374\150\256\104\175\042\371\012\105\135\354\004\346  
\372\343\244\305\346\371\262\031\303\331\214\250\223\173\072\212  
\151\073\122\023\074\035\063\002\116\226\100\237\271\225\375\223  
\027\063\301\311\013\366\375\275\151\020\365\255\051\373\343\332  
END  
CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

```

Trust for "GLOBALTRUST 2015"
Issuer: CN=GLOBALTRUST 2015,OU=GLOBALTRUST Certification Service,O=e-commerce monitoring
GmbH,L=Wien,ST=Wien,C=AT
Serial Number: 0 (0x0)
Subject: CN=GLOBALTRUST 2015,OU=GLOBALTRUST Certification Service,O=e-commerce monitoring
GmbH,L=Wien,ST=Wien,C=AT
Not Valid Before: Thu Jun 11 00:00:00 2015
Not Valid After: Sun Jun 10 00:00:00 2040
Fingerprint (MD5): da:5a:b9:da:8e:0a:38:d4:82:63:03:9d:6c:96:6c:ed
Fingerprint (SHA1): 46:5b:26:be:be:71:06:dd:85:44:c1:13:9d:9f:a2:57:00:c1:d7:bd
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GLOBALTRUST 2015"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\106\133\046\276\276\161\006\335\205\104\301\023\235\237\242\127
\000\301\327\275
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\332\132\271\332\216\012\070\324\202\143\003\235\154\226\154\355
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\227\061\013\060\011\006\003\125\004\006\023\002\101\124
\061\015\060\013\006\003\125\004\010\023\004\127\151\145\156\061
\015\060\013\006\003\125\004\007\023\004\127\151\145\156\061\043
\060\041\006\003\125\004\012\023\032\145\055\143\157\155\155\145
\162\143\145\040\155\157\156\151\164\157\162\151\156\147\040\107
\155\142\110\061\052\060\050\006\003\125\004\013\023\041\107\114
\117\102\101\114\124\122\125\123\124\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\123\145\162\166\151\143\145\061
\031\060\027\006\003\125\004\003\023\020\107\114\117\102\101\114
\124\122\125\123\124\040\062\060\061\065
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\000
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "Microsoft ECC Product Root Certificate Authority 2018"
Issuer: CN=Microsoft ECC Product Root Certificate Authority 2018,O=Microsoft
Corporation,L=Redmond,ST=Washington,C=US
Serial Number:14:98:26:66:dc:7c:cd:8f:40:53:67:7b:b9:99:ec:85
Subject: CN=Microsoft ECC Product Root Certificate Authority 2018,O=Microsoft

```

Corporation,L=Redmond,ST=Washington,C=US  
# Not Valid Before: Tue Feb 27 20:42:08 2018  
# Not Valid After: Fri Feb 27 20:50:46 2043  
# Fingerprint (MD5): 1f:12:4e:de:13:e0:6a:02:3c:d7:c0:9a:4f:48:c3:d6  
# Fingerprint (SHA1): 06:f1:aa:33:0b:92:7b:75:3a:40:e6:8c:df:22:e3:4b:cb:ef:33:52  
CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "Microsoft ECC Product Root Certificate Authority 2018"  
CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509  
CKA\_SUBJECT MULTILINE\_OCTAL  
\060\201\224\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\023\060\021\006\003\125\004\010\023\012\127\141\163\150\151  
\156\147\164\157\156\061\020\060\016\006\003\125\004\007\023\007  
\122\145\144\155\157\156\144\061\036\060\034\006\003\125\004\012  
\023\025\115\151\143\162\157\163\157\146\164\040\103\157\162\160  
\157\162\141\164\151\157\156\061\076\060\074\006\003\125\004\003  
\023\065\115\151\143\162\157\163\157\146\164\040\105\103\103\040  
\120\162\157\144\165\143\164\040\122\157\157\164\040\103\145\162  
\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151  
\164\171\040\062\060\061\070  
END  
CKA\_ID UTF8 "0"  
CKA\_ISSUER MULTILINE\_OCTAL  
\060\201\224\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\023\060\021\006\003\125\004\010\023\012\127\141\163\150\151  
\156\147\164\157\156\061\020\060\016\006\003\125\004\007\023\007  
\122\145\144\155\157\156\144\061\036\060\034\006\003\125\004\012  
\023\025\115\151\143\162\157\163\157\146\164\040\103\157\162\160  
\157\162\141\164\151\157\156\061\076\060\074\006\003\125\004\003  
\023\065\115\151\143\162\157\163\157\146\164\040\105\103\103\040  
\120\162\157\144\165\143\164\040\122\157\157\164\040\103\145\162  
\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151  
\164\171\040\062\060\061\070  
END  
CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL  
\002\020\024\230\046\146\334\174\315\217\100\123\147\173\271\231  
\354\205  
END  
CKA\_VALUE MULTILINE\_OCTAL  
\060\202\003\043\060\202\002\250\240\003\002\001\002\002\020\024  
\230\046\146\334\174\315\217\100\123\147\173\271\231\354\205\060  
\012\006\010\052\206\110\316\075\004\003\003\060\201\224\061\013  
\060\011\006\003\125\004\006\023\002\125\123\061\023\060\021\006  
\003\125\004\010\023\012\127\141\163\150\151\156\147\164\157\156  
\061\020\060\016\006\003\125\004\007\023\007\122\145\144\155\157  
\156\144\061\036\060\034\006\003\125\004\012\023\025\115\151\143

\162\157\163\157\146\164\040\103\157\162\160\157\162\141\164\151  
\157\156\061\076\060\074\006\003\125\004\003\023\065\115\151\143  
\162\157\163\157\146\164\040\105\103\103\040\120\162\157\144\165  
\143\164\040\122\157\157\164\040\103\145\162\164\151\146\151\143  
\141\164\145\040\101\165\164\150\157\162\151\164\171\040\062\060  
\061\070\060\036\027\015\061\070\060\062\062\067\062\060\064\062  
\060\070\132\027\015\064\063\060\062\062\067\062\060\065\060\064  
\066\132\060\201\224\061\013\060\011\006\003\125\004\006\023\002  
\125\123\061\023\060\021\006\003\125\004\010\023\012\127\141\163  
\150\151\156\147\164\157\156\061\020\060\016\006\003\125\004\007  
\023\007\122\145\144\155\157\156\144\061\036\060\034\006\003\125  
\004\012\023\025\115\151\143\162\157\163\157\146\164\040\103\157  
\162\160\157\162\141\164\151\157\156\061\076\060\074\006\003\125  
\004\003\023\065\115\151\143\162\157\163\157\146\164\040\105\103  
\103\040\120\162\157\144\165\143\164\040\122\157\157\164\040\103  
\145\162\164\151\146\151\143\141\164\145\040\101\165\164\150\157  
\162\151\164\171\040\062\060\061\070\060\166\060\020\006\007\052  
\206\110\316\075\002\001\006\005\053\201\004\000\042\003\142\000  
\004\307\021\026\052\166\035\126\216\276\271\142\145\324\303\316  
\264\360\303\060\354\217\155\327\156\071\274\310\111\253\253\270  
\343\103\170\325\201\006\135\357\307\175\237\316\326\263\220\165  
\336\014\260\220\336\043\272\310\321\076\147\340\031\251\033\206  
\061\036\137\064\055\356\027\375\025\373\176\047\212\062\241\352  
\311\217\311\176\030\313\057\073\054\110\172\175\246\364\001\007  
\254\243\201\274\060\201\271\060\016\006\003\125\035\017\001\001  
\377\004\004\003\002\001\206\060\017\006\003\125\035\023\001\001  
\377\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004  
\026\004\024\103\357\160\207\270\235\277\354\210\031\334\306\304  
\153\165\015\165\064\063\010\060\020\006\011\053\006\001\004\001  
\202\067\025\001\004\003\002\001\000\060\145\006\003\125\035\040  
\004\136\060\134\060\006\006\004\125\035\040\000\060\122\006\014  
\053\006\001\004\001\202\067\114\203\175\001\001\060\102\060\100  
\006\010\053\006\001\005\005\007\002\001\026\064\150\164\164\160  
\072\057\057\167\167\167\056\155\151\143\162\157\163\157\146\164  
\056\143\157\155\057\160\153\151\157\160\163\057\104\157\143\163  
\057\122\145\160\157\163\151\164\157\162\171\056\150\164\155\000  
\060\012\006\010\052\206\110\316\075\004\003\003\003\151\000\060  
\146\002\061\000\241\300\111\104\135\062\125\047\314\076\220\156  
\045\042\235\044\133\233\121\065\307\221\111\111\052\243\371\157  
\117\034\315\335\234\341\265\127\311\236\302\042\105\233\006\025  
\160\034\105\277\002\061\000\305\323\050\353\162\307\076\260\254  
\047\011\177\142\075\140\171\345\222\361\105\052\271\245\002\344  
\140\273\376\172\053\234\140\247\265\231\024\362\260\276\360\273  
\005\226\126\126\217\301\150

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

```

Microsoft Code Signing Only Certificate
Trust for "Microsoft ECC Product Root Certificate Authority 2018"
Issuer: CN=Microsoft ECC Product Root Certificate Authority 2018,O=Microsoft
Corporation,L=Redmond,ST=Washington,C=US
Serial Number:14:98:26:66:dc:7c:cd:8f:40:53:67:7b:b9:99:ec:85
Subject: CN=Microsoft ECC Product Root Certificate Authority 2018,O=Microsoft
Corporation,L=Redmond,ST=Washington,C=US
Not Valid Before: Tue Feb 27 20:42:08 2018
Not Valid After: Fri Feb 27 20:50:46 2043
Fingerprint (MD5): 1f:12:4e:de:13:e0:6a:02:3c:d7:c0:9a:4f:48:c3:d6
Fingerprint (SHA1): 06:f1:aa:33:0b:92:7b:75:3a:40:e6:8c:df:22:e3:4b:cb:ef:33:52
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Microsoft ECC Product Root Certificate Authority 2018"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\006\361\252\063\013\222\173\165\072\100\346\214\337\042\343\113
\313\357\063\122
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\037\022\116\336\023\340\152\002\074\327\300\232\117\110\303\326
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\224\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\023\060\021\006\003\125\004\010\023\012\127\141\163\150\151
\156\147\164\157\156\061\020\060\016\006\003\125\004\007\023\007
\122\145\144\155\157\156\144\061\036\060\034\006\003\125\004\012
\023\025\115\151\143\162\157\163\157\146\164\040\103\157\162\160
\157\162\141\164\151\157\156\061\076\060\074\006\003\125\004\003
\023\065\115\151\143\162\157\163\157\146\164\040\105\103\103\040
\120\162\157\144\165\143\164\040\122\157\157\164\040\103\145\162
\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151
\164\171\040\062\060\061\070
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\024\230\046\146\334\174\315\217\100\123\147\173\271\231
\354\205
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "emSign Root CA - G2"
Issuer: CN=emSign Root CA - G2,O=eMudhra Technologies Limited,OU=emSign PKI,C=IN

```

```
Serial Number:86:4d:bf:0f:e3:5e:d7:7d:8e:d8
Subject: CN=emSign Root CA - G2,O=eMudhra Technologies Limited,OU=emSign PKI,C=IN
Not Valid Before: Sun Feb 18 18:30:00 2018
Not Valid After: Wed Feb 18 18:30:00 2043
Fingerprint (MD5): 63:ac:61:e5:f7:da:aa:05:80:53:bd:e4:ab:fd:bb:30
Fingerprint (SHA1): 1e:65:77:b9:cf:70:d0:17:ca:e1:bd:a1:35:1d:47:25:a9:73:c0:6d
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "emSign Root CA - G2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\147\061\013\060\011\006\003\125\004\006\023\002\111\116\061
\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156
\040\120\113\111\061\045\060\043\006\003\125\004\012\023\034\145
\115\165\144\150\162\141\040\124\145\143\150\156\157\154\157\147
\151\145\163\040\114\151\155\151\164\145\144\061\034\060\032\006
\003\125\004\003\023\023\145\155\123\151\147\156\040\122\157\157
\164\040\103\101\040\055\040\107\062
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\147\061\013\060\011\006\003\125\004\006\023\002\111\116\061
\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156
\040\120\113\111\061\045\060\043\006\003\125\004\012\023\034\145
\115\165\144\150\162\141\040\124\145\143\150\156\157\154\157\147
\151\145\163\040\114\151\155\151\164\145\144\061\034\060\032\006
\003\125\004\003\023\023\145\155\123\151\147\156\040\122\157\157
\164\040\103\101\040\055\040\107\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\013\000\206\115\277\017\343\136\327\175\216\330
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\225\060\202\003\175\240\003\002\001\002\002\013\000
\206\115\277\017\343\136\327\175\216\330\060\015\006\011\052\206
\110\206\367\015\001\001\014\005\000\060\147\061\013\060\011\006
\003\125\004\006\023\002\111\116\061\023\060\021\006\003\125\004
\013\023\012\145\155\123\151\147\156\040\120\113\111\061\045\060
\043\006\003\125\004\012\023\034\145\115\165\144\150\162\141\040
\124\145\143\150\156\157\154\157\147\151\145\163\040\114\151\155
\151\164\145\144\061\034\060\032\006\003\125\004\003\023\023\145
\155\123\151\147\156\040\122\157\157\164\040\103\101\040\055\040
\107\062\060\036\027\015\061\070\060\062\061\070\061\070\063\060
\060\060\132\027\015\064\063\060\062\061\070\061\070\063\060\060
\060\132\060\147\061\013\060\011\006\003\125\004\006\023\002\111
\116\061\023\060\021\006\003\125\004\013\023\012\145\155\123\151
```



\147\156\040\120\113\111\061\045\060\043\006\003\125\004\012\023  
\034\145\115\165\144\150\162\141\040\124\145\143\150\156\157\154  
\157\147\151\145\163\040\114\151\155\151\164\145\144\061\034\060  
\032\006\003\125\004\003\023\023\145\155\123\151\147\156\040\122  
\157\157\164\040\103\101\040\055\040\107\062\060\202\002\042\060  
\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202  
\002\017\000\060\202\002\012\002\202\002\001\000\303\160\030\205  
\226\332\101\337\034\257\254\135\063\160\304\135\073\053\342\025  
\311\044\356\310\123\066\257\133\364\323\154\024\175\307\123\373  
\073\071\070\316\120\154\306\005\026\167\235\135\002\072\200\041  
\113\262\062\253\161\247\243\343\306\155\337\263\262\021\275\342  
\150\373\073\012\303\370\220\014\223\303\062\207\365\246\136\352  
\005\330\036\262\152\343\117\331\124\303\134\101\122\066\075\302  
\051\343\100\177\110\003\166\201\106\176\145\245\055\040\353\325  
\214\114\166\353\367\233\065\245\321\042\313\141\226\103\206\375  
\306\201\371\004\160\017\015\155\227\275\367\361\231\157\320\315  
\250\114\025\062\340\035\336\355\321\217\346\230\027\037\275\114  
\216\241\317\012\203\150\373\033\375\177\103\123\005\077\241\120  
\066\274\207\314\024\265\301\220\253\320\203\170\224\351\215\147  
\003\331\263\366\000\307\125\033\252\025\244\300\024\171\114\350  
\160\054\240\226\373\105\165\103\043\202\014\101\157\016\052\205  
\253\265\035\163\306\360\353\175\207\002\373\144\310\274\266\104  
\363\256\365\010\307\026\374\033\322\305\377\271\012\170\041\073  
\264\146\132\127\060\323\235\173\242\176\135\346\261\036\004\254  
\173\020\340\376\345\126\355\200\042\062\000\206\260\027\241\347  
\103\211\326\373\244\307\037\355\060\001\166\266\024\117\122\150  
\033\360\042\053\342\175\214\356\206\116\067\200\014\076\013\060  
\064\201\146\021\314\270\022\277\074\237\340\322\101\201\267\357  
\302\324\277\277\035\104\163\102\022\144\062\124\147\063\244\157  
\136\200\255\174\252\051\112\131\354\346\332\331\231\070\275\357  
\125\243\156\177\074\101\163\372\326\121\251\004\045\017\300\050  
\354\356\272\116\142\364\224\046\322\076\225\306\305\373\176\352  
\220\212\216\135\211\025\117\167\056\244\064\251\303\341\374\366  
\101\155\217\221\212\143\345\347\313\202\361\143\355\310\274\062  
\021\213\047\172\223\055\103\076\076\365\334\062\064\312\253\336  
\022\233\010\257\160\064\075\334\056\311\102\073\011\055\143\203  
\103\147\030\124\372\137\034\253\323\020\176\124\073\174\334\122  
\130\133\313\365\352\115\251\155\244\070\221\134\100\335\245\335  
\137\327\131\143\045\121\325\056\175\050\316\371\002\003\001\000  
\001\243\102\060\100\060\035\006\003\125\035\016\004\026\004\024  
\355\354\115\105\141\030\050\347\263\043\050\021\034\115\245\047  
\015\136\354\364\060\016\006\003\125\035\017\001\001\377\004\004  
\003\002\001\006\060\017\006\003\125\035\023\001\001\377\004\005  
\060\003\001\001\377\060\015\006\011\052\206\110\206\367\015\001  
\001\014\005\000\003\202\002\001\000\010\120\277\212\124\040\360  
\244\302\124\034\105\045\157\354\153\072\046\221\055\044\065\206  
\304\041\230\070\007\172\033\253\013\011\355\045\375\363\077\031  
\201\374\301\247\075\047\140\051\160\300\230\326\154\123\165\107

\154\330\362\220\204\242\336\277\166\011\200\361\126\352\320\154  
\141\300\363\071\140\337\322\146\253\215\311\022\061\073\167\024  
\166\120\034\301\377\257\111\354\335\124\047\375\300\354\357\110  
\001\167\253\106\271\226\073\333\165\263\111\066\227\322\161\005  
\151\355\105\035\346\300\154\146\117\043\134\355\112\103\370\050  
\375\127\377\030\063\347\254\201\146\306\220\010\030\115\354\202  
\163\274\224\013\375\027\065\032\001\353\257\354\165\236\343\274  
\115\364\236\376\155\014\305\367\174\207\270\205\300\010\364\313  
\245\001\341\203\154\314\277\220\273\004\006\356\014\167\333\217  
\120\256\333\336\031\363\175\262\205\047\301\163\070\226\032\311  
\016\276\135\336\263\141\034\037\053\133\113\327\075\077\355\063  
\062\231\032\357\061\202\324\121\353\274\266\377\026\207\156\037  
\316\223\171\233\164\102\066\172\245\312\145\067\072\032\304\071  
\303\277\064\311\350\040\266\022\174\276\250\177\300\074\120\256  
\125\113\371\377\010\360\027\341\317\233\303\356\247\140\021\217  
\327\004\247\335\276\322\247\036\255\361\332\160\332\271\204\307  
\206\145\326\300\375\334\335\121\037\371\317\234\327\167\020\044  
\236\137\046\161\361\233\321\343\015\111\065\320\232\140\177\213  
\200\036\160\331\353\357\153\230\217\071\132\135\101\230\067\263  
\153\157\245\350\270\155\051\236\035\077\004\033\126\132\235\024  
\112\022\017\245\141\000\252\316\321\044\030\372\373\126\124\141  
\166\170\071\272\302\303\336\266\017\030\115\332\235\175\037\034  
\075\056\333\224\121\302\352\251\063\353\025\166\057\300\356\055  
\242\350\373\050\231\300\221\244\324\175\161\235\021\241\125\264  
\130\240\324\100\067\321\154\311\143\145\365\274\004\073\205\131  
\347\210\050\340\151\160\006\252\073\024\352\311\045\064\317\147  
\304\074\171\254\120\202\010\113\143\364\250\174\120\170\306\053  
\144\052\200\376\144\302\013\155\214\340\051\100\306\202\241\354  
\314\174\256\012\017\265\251\071\165

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "emSign Root CA - G2"  
# Issuer: CN=emSign Root CA - G2,O=eMudhra Technologies Limited,OU=emSign PKI,C=IN  
# Serial Number:86:4d:bf:0f:e3:5e:d7:7d:8e:d8  
# Subject: CN=emSign Root CA - G2,O=eMudhra Technologies Limited,OU=emSign PKI,C=IN  
# Not Valid Before: Sun Feb 18 18:30:00 2018  
# Not Valid After: Wed Feb 18 18:30:00 2043  
# Fingerprint (MD5): 63:ac:61:e5:f7:da:aa:05:80:53:bd:e4:ab:fd:bb:30  
# Fingerprint (SHA1): 1e:65:77:b9:cf:70:d0:17:ca:e1:bd:a1:35:1d:47:25:a9:73:c0:6d  
CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "emSign Root CA - G2"

```

CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\036\145\167\271\317\160\320\027\312\341\275\241\065\035\107\045
\251\163\300\155
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\143\254\141\345\367\332\252\005\200\123\275\344\253\375\273\060
END
CKA_ISSUER MULTILINE_OCTAL
\060\147\061\013\060\011\006\003\125\004\006\023\002\111\116\061
\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156
\040\120\113\111\061\045\060\043\006\003\125\004\012\023\034\145
\115\165\144\150\162\141\040\124\145\143\150\156\157\154\157\147
\151\145\163\040\114\151\155\151\164\145\144\061\034\060\032\006
\003\125\004\003\023\023\145\155\123\151\147\156\040\122\157\157
\164\040\103\101\040\055\040\107\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\013\000\206\115\277\017\343\136\327\175\216\330
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "emSign Root CA - C2"
Issuer: CN=emSign Root CA - C2,O=eMudhra Inc,OU=emSign PKI,C=US
Serial Number:2f:0a:b7:6b:0d:cb:4a:af:27:58
Subject: CN=emSign Root CA - C2,O=eMudhra Inc,OU=emSign PKI,C=US
Not Valid Before: Sun Feb 18 18:30:00 2018
Not Valid After: Wed Feb 18 18:30:00 2043
Fingerprint (MD5): eb:24:3b:fa:70:63:c8:e1:cd:5f:0e:ea:c8:97:2f:21
Fingerprint (SHA1): bc:a2:18:80:74:c3:14:7e:16:f4:c4:8c:59:10:a8:9e:f7:52:f4:79
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "emSign Root CA - C2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\126\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156
\040\120\113\111\061\024\060\022\006\003\125\004\012\023\013\145
\115\165\144\150\162\141\040\111\156\143\061\034\060\032\006\003
\125\004\003\023\023\145\155\123\151\147\156\040\122\157\157\164
\040\103\101\040\055\040\103\062
END
CKA_ID UTF8 "0"

```

CKA\_ISSUER MULTILINE\_OCTAL

\060\126\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156  
\040\120\113\111\061\024\060\022\006\003\125\004\012\023\013\145  
\115\165\144\150\162\141\040\111\156\143\061\034\060\032\006\003  
\125\004\003\023\023\145\155\123\151\147\156\040\122\157\157\164  
\040\103\101\040\055\040\103\062

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\012\057\012\267\153\015\313\112\257\047\130

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\162\060\202\003\132\240\003\002\001\002\002\012\057  
\012\267\153\015\313\112\257\047\130\060\015\006\011\052\206\110  
\206\367\015\001\001\014\005\000\060\126\061\013\060\011\006\003  
\125\004\006\023\002\125\123\061\023\060\021\006\003\125\004\013  
\023\012\145\155\123\151\147\156\040\120\113\111\061\024\060\022  
\006\003\125\004\012\023\013\145\115\165\144\150\162\141\040\111  
\156\143\061\034\060\032\006\003\125\004\003\023\023\145\155\123  
\151\147\156\040\122\157\157\164\040\103\101\040\055\040\103\062  
\060\036\027\015\061\070\060\062\061\070\061\070\063\060\060\060  
\132\027\015\064\063\060\062\061\070\061\070\063\060\060\060\132  
\060\126\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156  
\040\120\113\111\061\024\060\022\006\003\125\004\012\023\013\145  
\115\165\144\150\162\141\040\111\156\143\061\034\060\032\006\003  
\125\004\003\023\023\145\155\123\151\147\156\040\122\157\157\164  
\040\103\101\040\055\040\103\062\060\202\002\042\060\015\006\011  
\052\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000  
\060\202\002\012\002\202\002\001\000\214\175\175\145\003\344\333  
\232\037\130\042\171\221\200\345\275\354\205\161\340\265\011\177  
\140\321\145\373\074\337\262\153\232\137\251\313\256\032\126\166  
\040\130\356\055\350\056\374\176\010\337\113\270\327\371\316\023  
\212\162\063\022\253\226\160\217\263\213\107\335\341\047\074\064  
\067\373\044\343\151\333\265\126\137\112\260\121\212\263\054\064  
\102\267\353\073\316\222\334\177\035\144\313\114\325\040\230\372  
\057\116\256\077\042\267\220\212\375\371\200\054\255\130\376\337  
\333\255\233\247\266\060\024\054\104\333\055\110\215\337\011\006  
\000\032\372\020\115\017\037\120\266\256\116\243\126\151\200\044  
\065\201\136\350\165\007\035\003\351\332\355\124\153\115\050\164  
\305\342\017\232\021\027\022\334\016\161\200\160\115\110\377\321  
\075\230\260\235\222\010\027\212\066\024\232\047\050\357\345\360  
\145\341\150\076\033\332\351\342\011\346\235\067\056\335\303\273  
\225\267\021\301\321\321\302\146\231\215\151\311\340\067\350\226  
\227\051\144\115\063\322\021\215\203\025\064\047\051\342\070\101  
\332\322\030\211\237\213\126\117\033\301\017\177\325\315\267\267  
\031\257\336\357\173\265\246\145\127\155\215\027\213\155\113\132  
\252\334\237\214\072\235\050\031\102\301\316\222\237\107\035\052

\031\132\233\076\351\020\064\140\043\070\262\015\360\240\315\100  
\334\333\107\130\200\227\147\174\037\343\022\242\047\001\243\200  
\042\167\304\343\055\147\015\277\217\050\011\142\371\335\232\305  
\004\304\303\215\242\000\351\372\306\326\336\010\245\271\307\151  
\320\073\250\042\111\173\152\251\044\336\247\331\344\012\001\111  
\372\122\044\003\034\373\022\250\320\145\161\110\120\341\217\364  
\143\111\224\346\270\041\233\143\201\366\265\320\113\121\133\324  
\224\102\174\223\015\234\222\046\344\005\001\333\355\221\133\072  
\271\116\014\373\111\264\241\243\303\154\146\115\024\155\011\305  
\305\310\252\103\333\250\125\060\054\053\136\022\223\332\006\361  
\015\363\176\303\064\361\307\117\241\026\364\132\122\031\222\124  
\172\230\240\373\057\311\307\377\067\306\273\303\310\046\377\170  
\030\140\175\105\237\124\340\016\275\257\167\217\233\057\014\276  
\274\337\067\021\312\264\176\254\277\002\003\001\000\001\243\102  
\060\100\060\035\006\003\125\035\016\004\026\004\024\263\367\212  
\244\326\017\210\000\131\350\121\027\117\325\176\354\206\042\201  
\235\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001  
\006\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001  
\001\377\060\015\006\011\052\206\110\206\367\015\001\001\014\005  
\000\003\202\002\001\000\064\045\246\045\214\321\313\366\235\235  
\007\346\065\154\006\255\061\332\256\266\103\102\360\250\004\354  
\010\133\362\271\276\340\304\320\262\265\033\250\003\313\055\230  
\363\204\273\371\140\360\210\061\217\201\110\216\214\241\042\265  
\224\127\034\242\055\116\315\243\203\376\132\061\024\073\005\023  
\304\212\144\020\353\157\031\104\075\176\043\245\160\141\355\041  
\220\315\006\126\152\355\152\144\265\160\061\171\136\171\104\363  
\354\242\275\272\247\141\115\000\304\105\175\224\041\322\302\327  
\204\250\044\362\053\245\111\050\040\253\037\036\316\003\362\173  
\255\305\152\046\004\213\207\077\167\064\143\334\163\202\236\306  
\142\301\226\124\323\147\137\345\212\115\026\074\122\301\233\304  
\343\127\043\032\233\053\245\143\037\100\122\066\263\235\321\155  
\345\351\343\271\122\003\026\004\340\334\343\004\123\036\370\114  
\005\270\113\336\004\042\101\020\001\371\256\366\056\336\230\266  
\242\273\011\343\156\023\251\141\020\127\133\102\260\051\020\317  
\346\052\374\351\032\227\274\207\002\102\203\170\345\334\077\272  
\015\340\017\223\165\167\066\245\332\261\271\120\247\004\355\021  
\231\154\366\046\221\222\111\342\143\211\071\077\070\374\021\260  
\363\126\267\001\277\051\162\364\342\215\255\153\170\342\076\222  
\156\040\045\155\130\060\034\365\035\332\270\021\040\046\136\153  
\112\024\146\005\333\063\033\102\346\316\301\356\144\360\205\111  
\200\265\345\020\103\010\340\154\153\306\303\104\237\051\004\125  
\066\132\057\302\125\160\200\010\113\232\276\012\057\170\016\005  
\153\226\355\337\312\064\075\154\154\004\377\214\246\207\002\165  
\133\103\062\254\320\207\034\275\042\210\112\271\165\200\032\267  
\254\240\213\312\016\015\361\026\116\253\004\352\343\175\134\011  
\172\134\042\377\020\042\262\210\307\074\225\120\277\325\265\315  
\122\050\036\237\204\102\017\370\061\000\266\324\326\310\137\144  
\150\212\200\176\127\170\112\343\177\133\377\016\335\171\117\061

```
\330\317\034\227\123\206\322\163\337\156\160\021\227\221\217\063
\273\311\202\056\073\322\073\150\341\047\214\203\241\314\001\155
\304\201\276\172\265\007\015\057\002\075\123\311\231\234\333\321
\201\103\053\220\010\013
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

# Microsoft Code Signing Only Certificate

# Trust for "emSign Root CA - C2"

# Issuer: CN=emSign Root CA - C2,O=eMudhra Inc,OU=emSign PKI,C=US

# Serial Number:2f:0a:b7:6b:0d:cb:4a:af:27:58

# Subject: CN=emSign Root CA - C2,O=eMudhra Inc,OU=emSign PKI,C=US

# Not Valid Before: Sun Feb 18 18:30:00 2018

# Not Valid After: Wed Feb 18 18:30:00 2043

# Fingerprint (MD5): eb:24:3b:fa:70:63:c8:e1:cd:5f:0e:ea:c8:97:2f:21

# Fingerprint (SHA1): bc:a2:18:80:74:c3:14:7e:16:f4:c4:8c:59:10:a8:9e:f7:52:f4:79

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "emSign Root CA - C2"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\274\242\030\200\164\303\024\176\026\364\304\214\131\020\250\236
\367\122\364\171
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\353\044\073\372\160\143\310\341\315\137\016\352\310\227\057\041
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\126\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156
\040\120\113\111\061\024\060\022\006\003\125\004\012\023\013\145
\115\165\144\150\162\141\040\111\156\143\061\034\060\032\006\003
\125\004\003\023\023\145\155\123\151\147\156\040\122\157\157\164
\040\103\101\040\055\040\103\062
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\012\057\012\267\153\015\313\112\257\047\130
```

END

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

```
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

```
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

```
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

# Microsoft Code Signing Only Certificate

# Certificate "Microsoft ECC TS Root Certificate Authority 2018"

```

Issuer: CN=Microsoft ECC TS Root Certificate Authority 2018,O=Microsoft
Corporation,L=Redmond,ST=Washington,C=US
Serial Number:15:38:75:e1:64:7e:d1:b0:47:b4:ef:af:41:12:82:45
Subject: CN=Microsoft ECC TS Root Certificate Authority 2018,O=Microsoft
Corporation,L=Redmond,ST=Washington,C=US
Not Valid Before: Tue Feb 27 20:51:34 2018
Not Valid After: Fri Feb 27 21:00:12 2043
Fingerprint (MD5): 37:94:29:58:86:2a:06:e6:bb:cf:d7:ab:59:c7:f2:3c
Fingerprint (SHA1): 31:f9:fc:8b:a3:80:59:86:b7:21:ea:72:95:c6:5b:3a:44:53:42:74
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Microsoft ECC TS Root Certificate Authority 2018"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\217\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\023\060\021\006\003\125\004\010\023\012\127\141\163\150\151
\156\147\164\157\156\061\020\060\016\006\003\125\004\007\023\007
\122\145\144\155\157\156\144\061\036\060\034\006\003\125\004\012
\023\025\115\151\143\162\157\163\157\146\164\040\103\157\162\160
\157\162\141\164\151\157\156\061\071\060\067\006\003\125\004\003
\023\060\115\151\143\162\157\163\157\146\164\040\105\103\103\040
\124\123\040\122\157\157\164\040\103\145\162\164\151\146\151\143
\141\164\145\040\101\165\164\150\157\162\151\164\171\040\062\060
\061\070
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\217\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\023\060\021\006\003\125\004\010\023\012\127\141\163\150\151
\156\147\164\157\156\061\020\060\016\006\003\125\004\007\023\007
\122\145\144\155\157\156\144\061\036\060\034\006\003\125\004\012
\023\025\115\151\143\162\157\163\157\146\164\040\103\157\162\160
\157\162\141\164\151\157\156\061\071\060\067\006\003\125\004\003
\023\060\115\151\143\162\157\163\157\146\164\040\105\103\103\040
\124\123\040\122\157\157\164\040\103\145\162\164\151\146\151\143
\141\164\145\040\101\165\164\150\157\162\151\164\171\040\062\060
\061\070
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\025\070\165\341\144\176\321\260\107\264\357\257\101\022
\202\105
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\027\060\202\002\236\240\003\002\001\002\002\020\025
\070\165\341\144\176\321\260\107\264\357\257\101\022\202\105\060
\012\006\010\052\206\110\316\075\004\003\003\060\201\217\061\013

```

\060\011\006\003\125\004\006\023\002\125\123\061\023\060\021\006  
\003\125\004\010\023\012\127\141\163\150\151\156\147\164\157\156  
\061\020\060\016\006\003\125\004\007\023\007\122\145\144\155\157  
\156\144\061\036\060\034\006\003\125\004\012\023\025\115\151\143  
\162\157\163\157\146\164\040\103\157\162\160\157\162\141\164\151  
\157\156\061\071\060\067\006\003\125\004\003\023\060\115\151\143  
\162\157\163\157\146\164\040\105\103\103\040\124\123\040\122\157  
\157\164\040\103\145\162\164\151\146\151\143\141\164\145\040\101  
\165\164\150\157\162\151\164\171\040\062\060\061\070\060\036\027  
\015\061\070\060\062\062\067\062\060\065\061\063\064\132\027\015  
\064\063\060\062\062\067\062\061\060\060\061\062\132\060\201\217  
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\023\060  
\021\006\003\125\004\010\023\012\127\141\163\150\151\156\147\164  
\157\156\061\020\060\016\006\003\125\004\007\023\007\122\145\144  
\155\157\156\144\061\036\060\034\006\003\125\004\012\023\025\115  
\151\143\162\157\163\157\146\164\040\103\157\162\160\157\162\141  
\164\151\157\156\061\071\060\067\006\003\125\004\003\023\060\115  
\151\143\162\157\163\157\146\164\040\105\103\103\040\124\123\040  
\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164\145  
\040\101\165\164\150\157\162\151\164\171\040\062\060\061\070\060  
\166\060\020\006\007\052\206\110\316\075\002\001\006\005\053\201  
\004\000\042\003\142\000\004\336\315\273\160\040\361\045\040\264  
\224\350\327\264\073\017\156\207\335\253\254\317\115\100\057\201  
\063\153\131\011\030\326\207\015\046\043\234\264\215\225\235\166  
\237\245\271\006\102\346\255\066\262\304\263\256\172\074\010\325  
\313\235\072\136\105\041\154\013\343\040\365\233\302\335\104\063  
\343\102\271\352\362\050\102\222\252\376\014\007\312\212\023\231  
\073\142\000\355\332\363\065\243\201\274\060\201\271\060\016\006  
\003\125\035\017\001\001\377\004\004\003\002\001\206\060\017\006  
\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060\035  
\006\003\125\035\016\004\026\004\024\350\107\310\102\232\260\235  
\256\157\013\050\073\230\025\217\343\261\350\200\262\060\020\006  
\011\053\006\001\004\001\202\067\025\001\004\003\002\001\000\060  
\145\006\003\125\035\040\004\136\060\134\060\006\006\004\125\035  
\040\000\060\122\006\014\053\006\001\004\001\202\067\114\203\175  
\001\001\060\102\060\100\006\010\053\006\001\005\005\007\002\001  
\026\064\150\164\164\160\072\057\057\167\167\167\056\155\151\143  
\162\157\163\157\146\164\056\143\157\155\057\160\153\151\157\160  
\163\057\104\157\143\163\057\122\145\160\157\163\151\164\157\162  
\171\056\150\164\155\000\060\012\006\010\052\206\110\316\075\004  
\003\003\003\147\000\060\144\002\060\024\206\120\300\046\032\353  
\352\241\024\167\072\133\337\143\071\245\063\307\120\100\325\153  
\065\153\017\264\337\175\126\271\341\245\235\170\031\202\241\103  
\156\032\327\130\243\125\003\102\333\002\060\030\224\264\036\072  
\215\144\372\014\047\033\207\023\112\322\267\072\000\224\306\362  
\345\143\277\257\343\372\334\223\325\347\106\232\153\201\151\076  
\002\337\121\015\217\050\161\101\211\221\057

END



CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "Microsoft ECC TS Root Certificate Authority 2018"

# Issuer: CN=Microsoft ECC TS Root Certificate Authority 2018,O=Microsoft Corporation,L=Redmond,ST=Washington,C=US

# Serial Number:15:38:75:e1:64:7e:d1:b0:47:b4:ef:af:41:12:82:45

# Subject: CN=Microsoft ECC TS Root Certificate Authority 2018,O=Microsoft Corporation,L=Redmond,ST=Washington,C=US

# Not Valid Before: Tue Feb 27 20:51:34 2018

# Not Valid After: Fri Feb 27 21:00:12 2043

# Fingerprint (MD5): 37:94:29:58:86:2a:06:e6:bb:cf:d7:ab:59:c7:f2:3c

# Fingerprint (SHA1): 31:f9:fc:8b:a3:80:59:86:b7:21:ea:72:95:c6:5b:3a:44:53:42:74

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Microsoft ECC TS Root Certificate Authority 2018"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\061\371\374\213\243\200\131\206\267\041\352\162\225\306\133\072  
\104\123\102\164

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\067\224\051\130\206\052\006\346\273\317\327\253\131\307\362\074

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\217\061\013\060\011\006\003\125\004\006\023\002\125\123  
\061\023\060\021\006\003\125\004\010\023\012\127\141\163\150\151  
\156\147\164\157\156\061\020\060\016\006\003\125\004\007\023\007  
\122\145\144\155\157\156\144\061\036\060\034\006\003\125\004\012  
\023\025\115\151\143\162\157\163\157\146\164\040\103\157\162\160  
\157\162\141\164\151\157\156\061\071\060\067\006\003\125\004\003  
\023\060\115\151\143\162\157\163\157\146\164\040\105\103\103\040  
\124\123\040\122\157\157\164\040\103\145\162\164\151\146\151\143  
\141\164\145\040\101\165\164\150\157\162\151\164\171\040\062\060  
\061\070

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\025\070\165\341\144\176\321\260\107\264\357\257\101\022  
\202\105

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

```

Microsoft Code Signing Only Certificate
Certificate "DigiCert CS ECC P384 Root G5"
Issuer: CN=DigiCert CS ECC P384 Root G5,O=DigiCert\, Inc.,C=US
Serial Number:03:69:8f:e7:12:d5:19:f3:ce:d0:fd:b7:b1:64:30:11
Subject: CN=DigiCert CS ECC P384 Root G5,O=DigiCert\, Inc.,C=US
Not Valid Before: Fri Jan 15 00:00:00 2021
Not Valid After: Sun Jan 14 23:59:59 2046
Fingerprint (MD5): dd:b4:30:09:e8:67:1f:45:a0:80:ec:9d:d9:b1:a1:54
Fingerprint (SHA1): 84:35:73:11:2a:3b:31:93:44:e5:e4:ec:ab:c9:f2:6c:7c:d5:4d:07
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "DigiCert CS ECC P384 Root G5"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\115\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145
\162\164\054\040\111\156\143\056\061\045\060\043\006\003\125\004
\003\023\034\104\151\147\151\103\145\162\164\040\103\123\040\105
\103\103\040\120\063\070\064\040\122\157\157\164\040\107\065
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\115\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145
\162\164\054\040\111\156\143\056\061\045\060\043\006\003\125\004
\003\023\034\104\151\147\151\103\145\162\164\040\103\123\040\105
\103\103\040\120\063\070\064\040\122\157\157\164\040\107\065
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\003\151\217\347\022\325\031\363\316\320\375\267\261\144
\060\021
END
CKA_VALUE MULTILINE_OCTAL
\060\202\002\026\060\202\001\235\240\003\002\001\002\002\020\003
\151\217\347\022\325\031\363\316\320\375\267\261\144\060\021\060
\012\006\010\052\206\110\316\075\004\003\003\060\115\061\013\060
\011\006\003\125\004\006\023\002\125\123\061\027\060\025\006\003
\125\004\012\023\016\104\151\147\151\103\145\162\164\054\040\111
\156\143\056\061\045\060\043\006\003\125\004\003\023\034\104\151
\147\151\103\145\162\164\040\103\123\040\105\103\103\040\120\063
\070\064\040\122\157\157\164\040\107\065\060\036\027\015\062\061
\060\061\061\065\060\060\060\060\060\060\132\027\015\064\066\060
\061\061\064\062\063\065\071\065\071\132\060\115\061\013\060\011
\006\003\125\004\006\023\002\125\123\061\027\060\025\006\003\125
\004\012\023\016\104\151\147\151\103\145\162\164\054\040\111\156
\143\056\061\045\060\043\006\003\125\004\003\023\034\104\151\147

```

\151\103\145\162\164\040\103\123\040\105\103\103\040\120\063\070  
\064\040\122\157\157\164\040\107\065\060\166\060\020\006\007\052  
\206\110\316\075\002\001\006\005\053\201\004\000\042\003\142\000  
\004\177\024\255\205\266\227\375\002\041\065\115\140\350\070\223  
\223\233\075\005\020\155\257\323\376\357\372\273\373\163\231\363  
\354\062\022\215\307\150\270\213\336\211\242\210\124\167\215\273  
\041\176\063\225\126\226\011\350\325\214\241\004\270\233\156\031  
\000\142\350\102\050\246\130\067\204\031\125\046\173\063\067\147  
\362\232\162\255\241\256\256\000\102\074\034\176\270\172\236\041  
\234\243\102\060\100\060\035\006\003\125\035\016\004\026\004\024  
\360\214\230\161\071\070\145\302\072\033\246\027\146\035\310\355  
\145\336\222\066\060\016\006\003\125\035\017\001\001\377\004\004  
\003\002\001\206\060\017\006\003\125\035\023\001\001\377\004\005  
\060\003\001\001\377\060\012\006\010\052\206\110\316\075\004\003  
\003\003\147\000\060\144\002\060\043\157\341\000\031\046\120\344  
\106\040\145\213\067\247\317\353\006\341\314\062\311\052\241\354  
\062\015\163\242\036\002\034\065\141\052\116\151\253\071\167\355  
\227\210\300\175\153\352\211\335\002\060\103\361\321\130\243\165  
\076\206\233\266\125\021\213\027\367\075\376\012\151\305\177\116  
\306\165\033\132\224\313\352\021\021\306\010\042\210\336\320\172  
\242\245\171\350\343\041\247\315\023\263

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "DigiCert CS ECC P384 Root G5"  
# Issuer: CN=DigiCert CS ECC P384 Root G5,O=DigiCert, Inc.,C=US  
# Serial Number:03:69:8f:e7:12:d5:19:f3:ce:d0:fd:b7:b1:64:30:11  
# Subject: CN=DigiCert CS ECC P384 Root G5,O=DigiCert, Inc.,C=US  
# Not Valid Before: Fri Jan 15 00:00:00 2021  
# Not Valid After: Sun Jan 14 23:59:59 2046  
# Fingerprint (MD5): dd:b4:30:09:e8:67:1f:45:a0:80:ec:9d:d9:b1:a1:54  
# Fingerprint (SHA1): 84:35:73:11:2a:3b:31:93:44:e5:e4:ec:ab:c9:f2:6c:7c:d5:4d:07

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "DigiCert CS ECC P384 Root G5"  
CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL  
\204\065\163\021\052\073\061\223\104\345\344\354\253\311\362\154  
\174\325\115\007

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL  
\335\264\060\011\350\147\037\105\240\200\354\235\331\261\241\124  
END

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\115\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145
\162\164\054\040\111\156\143\056\061\045\060\043\006\003\125\004
\003\023\034\104\151\147\151\103\145\162\164\040\103\123\040\105
\103\103\040\120\063\070\064\040\122\157\157\164\040\107\065
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\020\003\151\217\347\022\325\031\363\316\320\375\267\261\144
\060\021
```

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "DigiCert CS RSA4096 Root G5"

# Issuer: CN=DigiCert CS RSA4096 Root G5,O=DigiCert, Inc.,C=US

# Serial Number:06:ce:e1:31:be:6d:55:c8:07:f7:c0:c7:fb:44:e6:20

# Subject: CN=DigiCert CS RSA4096 Root G5,O=DigiCert, Inc.,C=US

# Not Valid Before: Fri Jan 15 00:00:00 2021

# Not Valid After: Sun Jan 14 23:59:59 2046

# Fingerprint (MD5): a7:33:ed:bf:1b:5d:e1:19:c4:91:c9:4a:ea:f7:6d:c7

# Fingerprint (SHA1): 5e:ee:d8:6f:a3:7c:67:52:30:64:2f:55:c8:4d:db:f6:7c:d3:3c:80

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "DigiCert CS RSA4096 Root G5"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

```
\060\114\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145
\162\164\054\040\111\156\143\056\061\044\060\042\006\003\125\004
\003\023\033\104\151\147\151\103\145\162\164\040\103\123\040\122
\123\101\064\060\071\066\040\122\157\157\164\040\107\065
```

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\114\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145
\162\164\054\040\111\156\143\056\061\044\060\042\006\003\125\004
\003\023\033\104\151\147\151\103\145\162\164\040\103\123\040\122
\123\101\064\060\071\066\040\122\157\157\164\040\107\065
```

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\020\006\316\341\061\276\155\125\310\007\367\300\307\373\104
\346\040
```

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\144\060\202\003\114\240\003\002\001\002\002\020\006  
\316\341\061\276\155\125\310\007\367\300\307\373\104\346\040\060  
\015\006\011\052\206\110\206\367\015\001\001\014\005\000\060\114  
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\027\060  
\025\006\003\125\004\012\023\016\104\151\147\151\103\145\162\164  
\054\040\111\156\143\056\061\044\060\042\006\003\125\004\003\023  
\033\104\151\147\151\103\145\162\164\040\103\123\040\122\123\101  
\064\060\071\066\040\122\157\157\164\040\107\065\060\036\027\015  
\062\061\060\061\061\065\060\060\060\060\060\132\027\015\064  
\066\060\061\061\064\062\063\065\071\065\071\132\060\114\061\013  
\060\011\006\003\125\004\006\023\002\125\123\061\027\060\025\006  
\003\125\004\012\023\016\104\151\147\151\103\145\162\164\054\040  
\111\156\143\056\061\044\060\042\006\003\125\004\003\023\033\104  
\151\147\151\103\145\162\164\040\103\123\040\122\123\101\064\060  
\071\066\040\122\157\157\164\040\107\065\060\202\002\042\060\015  
\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202\002  
\017\000\060\202\002\012\002\202\002\001\000\266\063\163\200\330  
\142\003\160\024\054\021\034\071\136\174\256\174\203\206\035\376  
\046\057\114\044\255\213\352\203\137\251\274\075\133\374\013\230  
\114\002\107\060\354\342\376\354\350\064\133\146\136\277\073\327  
\054\246\045\377\214\131\263\337\352\332\174\051\331\106\120\162  
\010\035\156\321\033\012\335\037\315\231\211\372\017\017\163\304  
\341\234\035\165\062\315\157\227\332\052\152\225\262\154\311\011  
\320\352\013\173\175\027\006\111\231\357\326\336\340\310\123\324  
\256\306\167\361\206\273\043\034\270\300\337\131\367\216\175\321  
\357\202\346\046\213\132\070\265\377\165\325\262\331\117\011\363  
\067\210\120\332\021\244\212\024\024\321\123\004\000\175\363\152  
\104\030\376\120\160\062\007\034\250\232\016\072\035\305\012\037  
\156\013\046\151\267\074\242\127\160\054\206\372\114\156\225\251  
\130\103\271\254\022\326\377\077\355\327\103\027\153\114\316\236  
\304\220\253\377\372\020\120\232\243\220\127\326\347\214\020\256  
\237\026\032\317\065\035\177\327\166\355\212\234\065\247\050\270  
\247\135\041\374\060\067\335\336\010\031\117\025\306\347\246\332  
\220\107\216\367\224\123\114\216\123\002\276\375\231\345\352\206  
\320\257\003\002\323\233\252\223\361\253\050\216\040\001\377\114  
\373\314\267\051\100\365\207\244\022\023\005\037\103\156\327\121  
\120\237\070\264\040\355\027\011\022\217\314\271\031\257\237\315  
\276\151\021\323\257\125\020\155\027\206\171\226\122\306\262\000  
\235\345\257\070\260\065\364\210\153\217\016\004\075\174\356\257  
\315\323\152\020\112\306\315\206\312\042\075\241\112\134\373\016  
\377\210\337\134\142\247\300\271\036\331\254\154\176\070\067\376  
\167\223\045\302\205\212\117\265\067\006\132\006\201\024\361\316  
\224\235\231\221\352\062\132\316\147\075\156\004\146\255\014\117  
\055\243\056\367\236\365\170\235\367\012\375\176\217\343\102\212  
\125\226\274\361\237\067\055\374\236\137\225\376\214\030\033\374  
\216\375\113\220\257\327\003\150\022\143\254\342\223\247\242\313

\004\345\117\144\316\003\372\306\024\237\331\213\350\314\324\142  
\214\153\344\000\054\031\237\032\006\306\061\201\124\373\123\044  
\232\257\125\231\272\235\165\256\270\302\335\002\003\001\000\001  
\243\102\060\100\060\035\006\003\125\035\016\004\026\004\024\150  
\001\223\261\322\112\100\102\151\224\106\054\034\132\210\251\045  
\264\107\117\060\016\006\003\125\035\017\001\001\377\004\004\003  
\002\001\206\060\017\006\003\125\035\023\001\001\377\004\005\060  
\003\001\001\377\060\015\006\011\052\206\110\206\367\015\001\001  
\014\005\000\003\202\002\001\000\222\374\356\270\002\171\027\002  
\121\175\041\305\111\147\247\244\361\250\044\070\353\014\150\352  
\132\102\153\234\364\163\301\151\112\055\263\067\005\120\102\230  
\222\236\006\171\054\056\006\231\366\357\337\053\240\315\263\222  
\001\203\265\240\313\047\265\074\043\032\230\111\242\354\055\231  
\245\131\103\254\322\261\223\326\127\327\034\274\223\326\306\100  
\341\263\157\031\125\267\023\327\345\103\063\244\265\253\313\332  
\301\061\144\015\164\326\054\355\303\215\156\353\273\257\031\107  
\141\141\055\300\364\005\271\157\170\334\072\367\102\100\145\123  
\221\275\231\015\223\222\124\246\251\067\131\053\233\313\231\306  
\274\075\367\004\204\360\224\063\035\017\202\132\071\313\056\105  
\303\050\031\243\262\233\230\310\374\061\153\140\217\366\351\206  
\050\274\340\074\175\164\135\026\211\133\151\044\307\020\213\304  
\113\273\066\117\324\131\077\303\260\244\221\231\370\056\321\112  
\001\235\365\210\022\357\277\132\021\152\131\117\131\153\132\147  
\363\217\264\023\017\300\330\057\075\050\162\252\031\177\021\175  
\152\133\237\225\347\137\267\224\117\361\076\241\132\377\055\314  
\235\337\047\167\217\062\163\034\147\012\166\363\372\134\261\277  
\274\035\275\014\050\233\262\307\027\147\013\063\017\303\275\066  
\334\373\272\102\013\253\355\204\303\142\326\204\026\251\261\007  
\153\251\156\356\306\317\346\260\104\051\302\360\263\141\200\052  
\213\157\322\024\134\045\207\124\144\363\244\114\301\241\370\247  
\153\352\376\352\072\374\171\333\016\217\334\306\363\311\324\154  
\336\351\203\241\216\035\042\354\311\072\262\000\173\334\073\247  
\102\032\177\334\213\251\021\075\216\247\300\040\157\135\011\135  
\103\104\346\217\146\314\251\133\007\361\357\233\172\016\263\124  
\341\224\375\016\054\306\223\327\125\375\161\230\065\270\011\112  
\377\306\051\050\054\366\122\055\333\024\030\222\047\342\026\176  
\214\312\324\141\276\202\207\221\353\230\067\077\277\137\135\167  
\077\064\254\033\070\103\253\150\162\231\062\036\072\032\031\245  
\243\070\114\043\327\243\347\314\325\052\222\027\220\013\132\113  
\275\026\275\373\206\152\342\211\231\354\344\240\125\030\311\243  
\010\037\023\340\062\010\162\320

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "DigiCert CS RSA4096 Root G5"

```

Issuer: CN=DigiCert CS RSA4096 Root G5,O=DigiCert\, Inc.,C=US
Serial Number:06:ce:e1:31:be:6d:55:c8:07:f7:c0:c7:fb:44:e6:20
Subject: CN=DigiCert CS RSA4096 Root G5,O=DigiCert\, Inc.,C=US
Not Valid Before: Fri Jan 15 00:00:00 2021
Not Valid After: Sun Jan 14 23:59:59 2046
Fingerprint (MD5): a7:33:ed:bf:1b:5d:e1:19:c4:91:c9:4a:ea:f7:6d:c7
Fingerprint (SHA1): 5e:ee:d8:6f:a3:7c:67:52:30:64:2f:55:c8:4d:db:f6:7c:d3:3c:80
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "DigiCert CS RSA4096 Root G5"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\136\356\330\157\243\174\147\122\060\144\057\125\310\115\333\366
\174\323\074\200
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\247\063\355\277\033\135\341\031\304\221\311\112\352\367\155\307
END
CKA_ISSUER MULTILINE_OCTAL
\060\114\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145
\162\164\054\040\111\156\143\056\061\044\060\042\006\003\125\004
\003\023\033\104\151\147\151\103\145\162\164\040\103\123\040\122
\123\101\064\060\071\066\040\122\157\157\164\040\107\065
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\006\316\341\061\276\155\125\310\007\367\300\307\373\104
\346\040
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "DigiCert RSA4096 Root G5"
Issuer: CN=DigiCert RSA4096 Root G5,O=DigiCert\, Inc.,C=US
Serial Number:08:bf:a2:6f:9a:3f:33:65:a2:ac:f0:a6:38:c4:01:70
Subject: CN=DigiCert RSA4096 Root G5,O=DigiCert\, Inc.,C=US
Not Valid Before: Fri Jan 15 00:00:00 2021
Not Valid After: Sun Jan 14 23:59:59 2046
Fingerprint (MD5): 26:18:9c:6e:60:22:79:b6:8d:0f:65:4c:99:17:56:12
Fingerprint (SHA1): 87:b8:e6:d3:8f:1a:39:cd:97:f0:4a:9e:17:4b:3c:9e:e7:ee:11:15
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE

```

```
CKA_LABEL UTF8 "DigiCert RSA4096 Root G5"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\111\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145
\162\164\054\040\111\156\143\056\061\041\060\037\006\003\125\004
\003\023\030\104\151\147\151\103\145\162\164\040\122\123\101\064
\060\071\066\040\122\157\157\164\040\107\065
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\111\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145
\162\164\054\040\111\156\143\056\061\041\060\037\006\003\125\004
\003\023\030\104\151\147\151\103\145\162\164\040\122\123\101\064
\060\071\066\040\122\157\157\164\040\107\065
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\010\277\242\157\232\077\063\145\242\254\360\246\070\304
\001\160
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\136\060\202\003\106\240\003\002\001\002\002\020\010
\277\242\157\232\077\063\145\242\254\360\246\070\304\001\160\060
\015\006\011\052\206\110\206\367\015\001\001\014\005\000\060\111
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\027\060
\025\006\003\125\004\012\023\016\104\151\147\151\103\145\162\164
\054\040\111\156\143\056\061\041\060\037\006\003\125\004\003\023
\030\104\151\147\151\103\145\162\164\040\122\123\101\064\060\071
\066\040\122\157\157\164\040\107\065\060\036\027\015\062\061\060
\061\061\065\060\060\060\060\060\060\132\027\015\064\066\060\061
\061\064\062\063\065\071\065\071\132\060\111\061\013\060\011\006
\003\125\004\006\023\002\125\123\061\027\060\025\006\003\125\004
\012\023\016\104\151\147\151\103\145\162\164\054\040\111\156\143
\056\061\041\060\037\006\003\125\004\003\023\030\104\151\147\151
\103\145\162\164\040\122\123\101\064\060\071\066\040\122\157\157
\164\040\107\065\060\202\002\042\060\015\006\011\052\206\110\206
\367\015\001\001\001\005\000\003\202\002\017\000\060\202\002\012
\002\202\002\001\000\252\276\015\262\006\175\046\371\107\352\344
\033\347\102\151\270\231\302\271\356\044\261\106\220\313\131\044
\122\124\065\246\044\302\137\221\031\310\266\102\326\363\107\145
\225\144\347\205\145\147\251\256\174\000\117\340\170\003\120\255
\363\177\216\270\021\347\201\142\261\213\337\362\111\046\011\336
\017\026\274\332\050\233\241\310\227\057\223\220\332\040\052\343
\204\324\377\251\236\260\055\277\264\000\336\233\037\310\240\143
\123\150\205\157\115\205\306\252\143\371\215\262\065\166\142\164
\003\334\223\230\150\005\236\315\220\145\335\322\172\061\253\044
\055\155\100\056\220\077\143\154\054\353\372\036\200\124\215\171
```



\002\220\024\263\265\117\116\365\210\004\103\200\303\110\263\046  
\057\254\121\225\062\125\045\057\101\226\260\126\241\010\073\334  
\230\037\162\205\054\167\312\230\314\070\373\216\162\311\155\354  
\005\354\355\115\267\074\133\024\120\205\335\227\373\131\367\220  
\022\364\023\277\203\115\200\262\025\145\021\227\140\345\326\134  
\346\004\265\120\346\161\063\266\040\223\251\150\000\070\316\111  
\333\264\134\073\162\327\105\134\124\277\315\074\001\043\036\174  
\326\370\151\054\245\000\012\154\062\110\264\336\160\055\072\023  
\027\301\177\144\313\363\060\355\241\075\226\147\361\224\265\140  
\154\133\151\150\365\202\063\011\242\266\331\363\205\262\156\240  
\224\360\302\304\175\241\054\312\163\365\256\340\122\234\242\146  
\346\003\316\352\337\355\030\324\271\143\213\367\350\377\373\263  
\133\217\103\305\257\267\164\224\120\065\145\256\326\057\361\205  
\217\123\241\160\364\215\062\135\274\226\303\036\302\004\004\234  
\004\017\263\135\176\211\040\312\136\047\015\211\112\022\043\264  
\366\304\335\330\037\370\150\263\066\370\036\274\306\367\204\266  
\350\212\116\210\060\070\300\046\330\160\012\011\072\064\016\153  
\202\022\226\034\057\346\236\255\330\161\065\201\261\214\006\156  
\364\156\146\377\113\112\256\275\360\376\327\134\137\123\273\062  
\074\315\142\321\024\240\051\037\020\336\251\162\117\261\255\144  
\345\203\052\217\213\352\204\225\356\230\045\230\232\263\161\074  
\301\247\120\362\254\102\142\061\302\241\220\306\356\342\267\212  
\250\265\266\033\073\002\003\001\000\001\243\102\060\100\060\035  
\006\003\125\035\016\004\026\004\024\142\155\267\221\117\304\352  
\243\142\140\217\240\320\276\265\217\006\174\150\000\060\016\006  
\003\125\035\017\001\001\377\004\004\003\002\001\206\060\017\006  
\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060\015  
\006\011\052\206\110\206\367\015\001\001\014\005\000\003\202\002  
\001\000\141\350\373\047\155\326\342\270\263\011\257\252\360\261  
\202\114\376\075\027\211\115\055\025\235\373\356\320\273\204\354  
\204\165\333\103\023\336\214\237\307\051\357\207\164\313\023\160  
\201\126\000\164\374\256\364\331\072\336\042\010\121\245\240\134  
\202\146\266\173\114\251\332\217\253\254\034\101\226\146\326\235  
\336\126\346\277\116\261\262\136\137\300\303\156\324\302\204\220  
\365\175\261\272\026\321\051\212\310\235\351\317\320\307\031\073  
\077\317\356\367\341\063\256\102\310\230\300\010\236\363\132\363  
\337\324\053\073\216\250\050\126\031\307\116\167\074\045\124\334  
\270\110\110\321\371\047\152\076\354\023\257\262\005\211\375\125  
\137\363\175\216\015\234\011\135\054\212\176\205\316\370\341\277  
\021\075\062\214\132\327\176\075\364\063\130\317\242\005\230\243  
\263\373\316\211\277\375\302\026\335\156\334\210\111\015\013\240  
\003\377\347\105\351\004\301\351\375\252\235\165\370\270\037\207  
\203\331\353\071\323\132\247\313\230\254\023\211\000\374\157\225  
\116\341\175\021\106\155\366\070\106\243\023\240\054\001\365\142  
\317\277\034\120\221\047\164\135\267\354\107\174\320\321\165\313  
\173\356\321\115\043\012\303\140\245\167\055\200\332\147\017\216  
\153\166\007\360\246\017\352\204\256\036\171\277\010\212\332\011  
\363\364\356\265\066\363\324\172\103\272\224\065\341\372\301\073

\033\226\231\244\127\143\353\265\250\202\367\255\370\167\327\166  
\206\363\166\123\126\133\374\046\102\204\316\237\203\221\221\257  
\364\276\160\025\200\245\330\350\151\261\330\221\124\270\031\262  
\142\371\242\372\125\355\004\277\271\104\206\344\317\361\233\000  
\277\021\017\276\265\164\044\121\377\167\064\143\354\110\043\016  
\350\021\353\167\155\332\312\202\221\276\244\204\223\114\332\241  
\376\314\006\204\350\041\350\124\272\346\323\035\143\075\302\132  
\374\346\311\203\236\162\144\251\206\131\000\214\302\367\023\203  
\266\320\244\061\306\254\221\216\173\244\042\126\023\306\165\307  
\043\274\213\133\374\106\075\376\135\122\051\257\257\350\311\303  
\166\113\350\253\107\002\362\232\015\323\054\210\200\007\206\300  
\143\017\002\114\216\004\123\166\271\130\102\157\174\051\160\135  
\277\047

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "DigiCert RSA4096 Root G5"

# Issuer: CN=DigiCert RSA4096 Root G5,O=DigiCert\, Inc.,C=US

# Serial Number:08:bf:a2:6f:9a:3f:33:65:a2:ac:f0:a6:38:c4:01:70

# Subject: CN=DigiCert RSA4096 Root G5,O=DigiCert\, Inc.,C=US

# Not Valid Before: Fri Jan 15 00:00:00 2021

# Not Valid After: Sun Jan 14 23:59:59 2046

# Fingerprint (MD5): 26:18:9c:6e:60:22:79:b6:8d:0f:65:4c:99:17:56:12

# Fingerprint (SHA1): 87:b8:e6:d3:8f:1a:39:cd:97:f0:4a:9e:17:4b:3c:9e:e7:ee:11:15

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "DigiCert RSA4096 Root G5"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\207\270\346\323\217\032\071\315\227\360\112\236\027\113\074\236  
\347\356\021\025

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\046\030\234\156\140\042\171\266\215\017\145\114\231\027\126\022  
END

CKA\_ISSUER MULTILINE\_OCTAL

\060\111\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145  
\162\164\054\040\111\156\143\056\061\041\060\037\006\003\125\004  
\003\023\030\104\151\147\151\103\145\162\164\040\122\123\101\064  
\060\071\066\040\122\157\157\164\040\107\065

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\010\277\242\157\232\077\063\145\242\254\360\246\070\304

```
\001\160
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
Microsoft Code Signing Only Certificate
Certificate "DigiCert ECC P384 Root G5"
Issuer: CN=DigiCert ECC P384 Root G5,O=DigiCert, Inc.,C=US
Serial Number:0d:f3:d9:37:65:a3:79:c5:95:66:ea:92:e2:24:4f:34
Subject: CN=DigiCert ECC P384 Root G5,O=DigiCert, Inc.,C=US
Not Valid Before: Fri Jan 15 00:00:00 2021
Not Valid After: Sun Jan 14 23:59:59 2046
Fingerprint (MD5): 11:7f:85:ae:47:1f:51:61:6e:06:94:1e:6a:43:08:0b
Fingerprint (SHA1): d1:ee:b1:e8:c0:90:20:ba:b8:5d:3d:e2:7f:78:ee:33:a0:6c:ae:db
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "DigiCert ECC P384 Root G5"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
```

```
\060\112\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145
\162\164\054\040\111\156\143\056\061\042\060\040\006\003\125\004
\003\023\031\104\151\147\151\103\145\162\164\040\105\103\103\040
\120\063\070\064\040\122\157\157\164\040\107\065
```

```
END
```

```
CKA_ID UTF8 "0"
```

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\112\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145
\162\164\054\040\111\156\143\056\061\042\060\040\006\003\125\004
\003\023\031\104\151\147\151\103\145\162\164\040\105\103\103\040
\120\063\070\064\040\122\157\157\164\040\107\065
```

```
END
```

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\020\015\363\331\067\145\243\171\305\225\146\352\222\342\044
\117\064
```

```
END
```

```
CKA_VALUE MULTILINE_OCTAL
```

```
\060\202\002\021\060\202\001\227\240\003\002\001\002\002\020\015
\363\331\067\145\243\171\305\225\146\352\222\342\044\117\064\060
\012\006\010\052\206\110\316\075\004\003\003\060\112\061\013\060
\011\006\003\125\004\006\023\002\125\123\061\027\060\025\006\003
\125\004\012\023\016\104\151\147\151\103\145\162\164\054\040\111
\156\143\056\061\042\060\040\006\003\125\004\003\023\031\104\151
```

\147\151\103\145\162\164\040\105\103\103\040\120\063\070\064\040  
\122\157\157\164\040\107\065\060\036\027\015\062\061\060\061\061  
\065\060\060\060\060\060\060\132\027\015\064\066\060\061\061\064  
\062\063\065\071\065\071\132\060\112\061\013\060\011\006\003\125  
\004\006\023\002\125\123\061\027\060\025\006\003\125\004\012\023  
\016\104\151\147\151\103\145\162\164\054\040\111\156\143\056\061  
\042\060\040\006\003\125\004\003\023\031\104\151\147\151\103\145  
\162\164\040\105\103\103\040\120\063\070\064\040\122\157\157\164  
\040\107\065\060\166\060\020\006\007\052\206\110\316\075\002\001  
\006\005\053\201\004\000\042\003\142\000\004\374\131\037\316\231  
\154\177\233\016\266\051\143\157\306\205\363\012\323\326\233\256  
\127\025\114\016\355\135\343\011\176\155\052\243\206\252\272\170  
\240\247\161\275\104\372\010\300\112\006\326\157\335\054\112\070  
\164\345\320\275\377\172\377\345\071\116\275\275\027\036\037\103  
\255\325\274\047\330\113\277\166\214\060\062\244\373\371\123\345  
\330\252\070\123\135\250\240\067\240\147\012\243\102\060\100\060  
\035\006\003\125\035\016\004\026\004\024\222\226\367\346\272\325  
\021\272\371\042\056\173\176\132\331\360\045\345\005\033\060\016  
\006\003\125\035\017\001\001\377\004\004\003\002\001\206\060\017  
\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060  
\012\006\010\052\206\110\316\075\004\003\003\003\150\000\060\145  
\002\061\000\375\300\115\361\244\247\333\247\014\046\021\364\111  
\275\007\070\143\053\104\142\006\171\010\307\303\324\317\233\076  
\253\072\047\252\220\307\375\131\242\270\062\122\333\312\216\027  
\013\012\220\002\060\135\032\354\121\211\324\144\334\371\345\036  
\070\275\133\056\343\345\104\344\073\030\172\327\360\225\100\217  
\362\353\317\364\371\320\145\242\101\362\260\346\174\301\066\054  
\217\136\071\335\067

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "DigiCert ECC P384 Root G5"  
# Issuer: CN=DigiCert ECC P384 Root G5,O=DigiCert, Inc.,C=US  
# Serial Number:0d:f3:d9:37:65:a3:79:c5:95:66:ea:92:e2:24:4f:34  
# Subject: CN=DigiCert ECC P384 Root G5,O=DigiCert, Inc.,C=US  
# Not Valid Before: Fri Jan 15 00:00:00 2021  
# Not Valid After: Sun Jan 14 23:59:59 2046  
# Fingerprint (MD5): 11:7f:85:ae:47:1f:51:61:6e:06:94:1e:6a:43:08:0b  
# Fingerprint (SHA1): d1:ee:b1:e8:c0:90:20:ba:b8:5d:3d:e2:7f:78:ee:33:a0:6c:ae:db  
CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST  
CKA\_TOKEN CK\_BBOOL CK\_TRUE  
CKA\_PRIVATE CK\_BBOOL CK\_FALSE  
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE  
CKA\_LABEL UTF8 "DigiCert ECC P384 Root G5"  
CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\321\356\261\350\300\220\040\272\270\135\075\342\177\170\356\063  
\240\154\256\333

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\021\177\205\256\107\037\121\141\156\006\224\036\152\103\010\013  
END

CKA\_ISSUER MULTILINE\_OCTAL

\060\112\061\013\060\011\006\003\125\004\006\023\002\125\123\061  
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145  
\162\164\054\040\111\156\143\056\061\042\060\040\006\003\125\004  
\003\023\031\104\151\147\151\103\145\162\164\040\105\103\103\040  
\120\063\070\064\040\122\157\157\164\040\107\065

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\015\363\331\067\145\243\171\305\225\146\352\222\342\044  
\117\064

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "HARICA Code Signing RSA Root CA 2021"

# Issuer: CN=HARICA Code Signing RSA Root CA 2021,O=Hellenic Academic and Research Institutions  
CA,C=GR

# Serial Number:15:c2:ae:2a:4d:99:9a:63:8c:d3:ba:13:19:76:08:f5

# Subject: CN=HARICA Code Signing RSA Root CA 2021,O=Hellenic Academic and Research Institutions  
CA,C=GR

# Not Valid Before: Fri Feb 19 10:59:54 2021

# Not Valid After: Mon Feb 13 10:59:53 2045

# Fingerprint (MD5): 00:5d:c9:e3:b2:c0:90:e0:61:9a:42:c0:29:a1:6b:ba

# Fingerprint (SHA1): 8d:de:b8:20:46:b6:22:7c:79:24:6a:3e:ad:7b:32:c3:e8:8f:fc:ac

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "HARICA Code Signing RSA Root CA 2021"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\165\061\013\060\011\006\003\125\004\006\023\002\107\122\061  
\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156  
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040  
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165  
\164\151\157\156\163\040\103\101\061\055\060\053\006\003\125\004  
\003\014\044\110\101\122\111\103\101\040\103\157\144\145\040\123  
\151\147\156\151\156\147\040\122\123\101\040\122\157\157\164\040  
\103\101\040\062\060\062\061

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\165\061\013\060\011\006\003\125\004\006\023\002\107\122\061  
\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156  
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040  
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165  
\164\151\157\156\163\040\103\101\061\055\060\053\006\003\125\004  
\003\014\044\110\101\122\111\103\101\040\103\157\144\145\040\123  
\151\147\156\151\156\147\040\122\123\101\040\122\157\157\164\040  
\103\101\040\062\060\062\061

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\025\302\256\052\115\231\232\143\214\323\272\023\031\166  
\010\365

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\266\060\202\003\236\240\003\002\001\002\002\020\025  
\302\256\052\115\231\232\143\214\323\272\023\031\166\010\365\060  
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\165  
\061\013\060\011\006\003\125\004\006\023\002\107\122\061\067\060  
\065\006\003\125\004\012\014\056\110\145\154\154\145\156\151\143  
\040\101\143\141\144\145\155\151\143\040\141\156\144\040\122\145  
\163\145\141\162\143\150\040\111\156\163\164\151\164\165\164\151  
\157\156\163\040\103\101\061\055\060\053\006\003\125\004\003\014  
\044\110\101\122\111\103\101\040\103\157\144\145\040\123\151\147  
\156\151\156\147\040\122\123\101\040\122\157\157\164\040\103\101  
\040\062\060\062\061\060\036\027\015\062\061\060\062\061\071\061  
\060\065\071\065\064\132\027\015\064\065\060\062\061\063\061\060  
\065\071\065\063\132\060\165\061\013\060\011\006\003\125\004\006  
\023\002\107\122\061\067\060\065\006\003\125\004\012\014\056\110  
\145\154\154\145\156\151\143\040\101\143\141\144\145\155\151\143  
\040\141\156\144\040\122\145\163\145\141\162\143\150\040\111\156  
\163\164\151\164\165\164\151\157\156\163\040\103\101\061\055\060  
\053\006\003\125\004\003\014\044\110\101\122\111\103\101\040\103  
\157\144\145\040\123\151\147\156\151\156\147\040\122\123\101\040  
\122\157\157\164\040\103\101\040\062\060\062\061\060\202\002\042  
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003  
\202\002\017\000\060\202\002\012\002\202\002\001\000\212\152\356  
\252\012\043\125\014\213\006\102\343\225\133\124\170\137\305\216  
\006\054\174\074\061\276\257\015\251\241\354\112\040\130\005\235  
\342\150\262\273\353\137\177\052\063\271\362\125\234\157\252\244  
\036\355\020\276\203\051\021\066\346\236\077\372\155\173\121\341  
\325\167\245\275\313\151\016\073\042\040\224\014\061\145\100\015  
\011\257\020\065\172\233\352\171\010\104\244\213\147\251\053\115  
\301\347\320\327\247\366\265\072\215\331\243\251\171\270\244\145  
\134\274\363\076\367\237\231\366\270\303\145\150\055\253\203\056  
\335\205\231\004\251\365\321\134\325\121\102\001\271\237\101\265

\113\042\262\000\364\313\147\020\357\151\304\020\255\372\224\006  
\166\120\022\127\202\256\305\024\255\074\175\273\235\361\163\341  
\174\360\256\161\336\133\367\022\335\367\200\361\334\076\361\140  
\272\311\031\227\157\165\164\205\114\375\071\103\303\144\156\064  
\254\023\301\034\145\266\122\102\361\106\353\057\372\135\246\317  
\016\111\235\367\164\174\170\015\006\072\054\022\373\342\113\046  
\344\157\213\041\201\063\102\071\023\350\102\253\133\125\324\033  
\273\067\266\022\221\367\363\175\274\322\377\354\261\303\325\240  
\314\262\053\307\217\135\176\114\122\102\110\373\217\375\132\220  
\163\020\325\251\162\124\215\111\333\070\122\252\106\110\016\057  
\372\000\054\314\163\014\066\113\044\316\023\154\246\244\244\243  
\326\174\233\351\070\013\306\044\333\115\254\147\041\111\133\101  
\067\144\346\140\153\037\355\052\057\140\031\060\036\330\074\234  
\031\103\207\337\300\012\364\344\312\140\210\172\326\243\271\344  
\045\056\171\342\376\301\313\074\267\367\317\116\130\114\373\303  
\255\253\175\252\312\210\373\016\070\015\037\236\134\071\353\270  
\007\304\120\042\115\370\205\177\156\354\214\372\266\161\115\336  
\175\226\151\304\335\076\036\336\046\220\012\054\115\025\225\251  
\242\076\334\075\016\167\174\215\101\050\117\270\203\121\276\076  
\267\217\220\072\160\061\211\132\372\223\123\374\140\311\215\165  
\220\356\132\057\035\204\237\000\251\346\303\206\043\242\036\335  
\022\343\241\106\140\033\147\277\120\025\042\222\174\112\264\214  
\217\156\234\225\302\054\334\073\072\040\266\274\213\002\003\001  
\000\001\243\102\060\100\060\017\006\003\125\035\023\001\001\377  
\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026  
\004\024\264\144\026\110\350\374\132\113\063\051\211\353\231\100  
\271\040\264\366\141\032\060\016\006\003\125\035\017\001\001\377  
\004\004\003\002\001\206\060\015\006\011\052\206\110\206\367\015  
\001\001\013\005\000\003\202\002\001\000\053\254\131\213\346\071  
\104\334\373\255\112\210\340\144\377\253\303\362\322\316\160\057  
\003\345\157\262\304\365\066\326\123\153\207\253\035\213\231\007  
\310\060\216\107\162\375\241\270\165\326\027\241\026\275\144\163  
\221\060\127\255\175\375\005\100\206\223\321\111\226\262\013\324  
\174\144\023\213\323\041\111\070\273\373\350\314\076\061\361\256  
\173\114\052\337\202\006\243\216\005\204\234\177\160\316\300\273  
\105\027\337\135\145\014\344\120\110\007\104\213\244\057\126\332  
\306\172\366\140\215\244\070\361\235\207\026\060\262\360\137\172  
\102\125\040\161\317\314\356\000\261\022\107\277\102\271\344\263  
\265\035\031\204\271\230\155\340\151\264\025\101\265\342\120\110  
\307\037\352\232\267\171\221\335\325\325\123\031\374\256\030\154  
\151\333\255\131\050\233\144\230\247\074\307\125\216\321\060\000  
\317\324\062\236\142\261\303\052\356\065\042\306\273\360\174\273  
\203\270\000\211\365\334\032\227\331\070\232\051\123\141\031\246  
\247\364\073\107\375\335\147\225\017\216\244\146\054\202\232\267  
\055\161\346\337\256\370\370\150\301\273\017\352\120\240\105\227  
\267\032\225\022\157\310\263\266\005\150\332\152\036\016\065\205  
\204\254\164\014\212\264\364\165\237\042\257\260\124\273\266\236  
\042\371\331\353\325\212\015\307\334\370\230\061\137\236\372\306

```
\227\364\101\020\165\323\201\266\061\137\172\335\210\205\010\257
\160\107\002\067\173\342\112\354\135\362\335\051\022\104\310\212
\252\335\322\125\170\027\165\257\161\151\015\167\160\112\260\037
\177\102\333\307\161\334\130\326\030\275\120\305\271\162\004\307
\147\173\174\123\140\312\111\030\025\274\100\163\256\053\250\053
\254\157\021\104\071\354\202\110\176\021\312\373\326\077\266\300
\271\270\006\223\165\275\223\047\167\027\015\134\245\236\352\301
\133\000\055\014\250\065\140\307\342\157\065\033\075\166\265\347
\255\335\164\043\117\206\262\107\357\310\057\320\205\174\071\226
\067\241\053\051\002\275\076\207\317\250\366\035\165\062\317\070
\343\163\261\356\020\201\265\052\261\210\006\121\036\132\072\110
\121\363\066\131\142\337\102\146\131\120\267\130\276\365\166\100
\232\022\026\346\016\252\327\154\240\325
```

END

```
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

# Microsoft Code Signing Only Certificate

# Trust for "HARICA Code Signing RSA Root CA 2021"

# Issuer: CN=HARICA Code Signing RSA Root CA 2021,O=Hellenic Academic and Research Institutions  
CA,C=GR

# Serial Number:15:c2:ae:2a:4d:99:9a:63:8c:d3:ba:13:19:76:08:f5

# Subject: CN=HARICA Code Signing RSA Root CA 2021,O=Hellenic Academic and Research Institutions  
CA,C=GR

# Not Valid Before: Fri Feb 19 10:59:54 2021

# Not Valid After: Mon Feb 13 10:59:53 2045

# Fingerprint (MD5): 00:5d:c9:e3:b2:c0:90:e0:61:9a:42:c0:29:a1:6b:ba

# Fingerprint (SHA1): 8d:de:b8:20:46:b6:22:7c:79:24:6a:3e:ad:7b:32:c3:e8:8f:fc:ac

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "HARICA Code Signing RSA Root CA 2021"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\215\336\270\040\106\266\042\174\171\044\152\076\255\173\062\303
\350\217\374\254
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\000\135\311\343\262\300\220\340\141\232\102\300\051\241\153\272
```

END

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\165\061\013\060\011\006\003\125\004\006\023\002\107\122\061
\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165
\164\151\157\156\163\040\103\101\061\055\060\053\006\003\125\004
\003\014\044\110\101\122\111\103\101\040\103\157\144\145\040\123
```



\151\147\156\151\156\147\040\122\123\101\040\122\157\157\164\040  
\103\101\040\062\060\062\061

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\025\302\256\052\115\231\232\143\214\323\272\023\031\166  
\010\365

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "HARICA Code Signing ECC Root CA 2021"

# Issuer: CN=HARICA Code Signing ECC Root CA 2021,O=Hellenic Academic and Research Institutions  
CA,C=GR

# Serial Number:4c:8a:63:1d:a9:63:8f:05:a2:fb:76:14:ff:5b:a2:cd

# Subject: CN=HARICA Code Signing ECC Root CA 2021,O=Hellenic Academic and Research Institutions  
CA,C=GR

# Not Valid Before: Fri Feb 19 11:04:36 2021

# Not Valid After: Mon Feb 13 11:04:35 2045

# Fingerprint (MD5): 9d:dd:7d:39:b4:1c:95:fa:82:e0:c3:11:38:ba:69:84

# Fingerprint (SHA1): e4:36:e5:37:b7:13:42:b6:2e:8e:00:30:5a:d9:a3:d1:d7:33:47:e9

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "HARICA Code Signing ECC Root CA 2021"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\165\061\013\060\011\006\003\125\004\006\023\002\107\122\061  
\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156  
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040  
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165  
\164\151\157\156\163\040\103\101\061\055\060\053\006\003\125\004  
\003\014\044\110\101\122\111\103\101\040\103\157\144\145\040\123  
\151\147\156\151\156\147\040\105\103\103\040\122\157\157\164\040  
\103\101\040\062\060\062\061

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\165\061\013\060\011\006\003\125\004\006\023\002\107\122\061  
\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156  
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040  
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165  
\164\151\157\156\163\040\103\101\061\055\060\053\006\003\125\004  
\003\014\044\110\101\122\111\103\101\040\103\157\144\145\040\123  
\151\147\156\151\156\147\040\105\103\103\040\122\157\157\164\040

```
\103\101\040\062\060\062\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\114\212\143\035\251\143\217\005\242\373\166\024\377\133
\242\315
END
CKA_VALUE MULTILINE_OCTAL
\060\202\002\146\060\202\001\355\240\003\002\001\002\002\020\114
\212\143\035\251\143\217\005\242\373\166\024\377\133\242\315\060
\012\006\010\052\206\110\316\075\004\003\003\060\165\061\013\060
\011\006\003\125\004\006\023\002\107\122\061\067\060\065\006\003
\125\004\012\014\056\110\145\154\154\145\156\151\143\040\101\143
\141\144\145\155\151\143\040\141\156\144\040\122\145\163\145\141
\162\143\150\040\111\156\163\164\151\164\165\164\151\157\156\163
\040\103\101\061\055\060\053\006\003\125\004\003\014\044\110\101
\122\111\103\101\040\103\157\144\145\040\123\151\147\156\151\156
\147\040\105\103\103\040\122\157\157\164\040\103\101\040\062\060
\062\061\060\036\027\015\062\061\060\062\061\071\061\061\060\064
\063\066\132\027\015\064\065\060\062\061\063\061\061\060\064\063
\065\132\060\165\061\013\060\011\006\003\125\004\006\023\002\107
\122\061\067\060\065\006\003\125\004\012\014\056\110\145\154\154
\145\156\151\143\040\101\143\141\144\145\155\151\143\040\141\156
\144\040\122\145\163\145\141\162\143\150\040\111\156\163\164\151
\164\165\164\151\157\156\163\040\103\101\061\055\060\053\006\003
\125\004\003\014\044\110\101\122\111\103\101\040\103\157\144\145
\040\123\151\147\156\151\156\147\040\105\103\103\040\122\157\157
\164\040\103\101\040\062\060\062\061\060\166\060\020\006\007\052
\206\110\316\075\002\001\006\005\053\201\004\000\042\003\142\000
\004\103\237\274\134\102\152\103\341\254\113\270\016\137\200\006
\343\005\167\213\177\013\171\327\141\240\220\277\362\123\050\243
\130\272\224\300\146\152\034\131\332\200\130\201\000\114\274\311
\171\230\020\014\307\035\013\343\223\334\205\071\150\331\277\247
\103\322\061\314\202\202\047\272\210\321\322\055\126\067\367\072
\332\156\071\334\161\020\145\356\070\013\207\172\003\272\060\137
\144\243\102\060\100\060\017\006\003\125\035\023\001\001\377\004
\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026\004
\024\152\161\301\163\152\223\102\246\227\162\136\273\220\137\202
\222\017\053\326\353\060\016\006\003\125\035\017\001\001\377\004
\004\003\002\001\206\060\012\006\010\052\206\110\316\075\004\003
\003\003\147\000\060\144\002\060\036\245\325\013\104\225\020\344
\147\174\116\205\136\271\105\111\002\163\260\262\034\263\247\042
\321\000\141\100\017\263\207\067\026\215\000\355\266\213\125\045
\006\224\220\334\327\347\165\237\002\060\177\164\153\361\112\337
\360\367\204\173\362\305\171\060\003\110\362\036\040\042\127\144
\124\127\064\200\167\267\077\043\117\264\365\200\230\302\301\126
\133\240\347\326\241\217\365\014\157\035
END
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_FALSE
```

CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Trust for "HARICA Code Signing ECC Root CA 2021"

# Issuer: CN=HARICA Code Signing ECC Root CA 2021,O=Hellenic Academic and Research Institutions  
CA,C=GR

# Serial Number:4c:8a:63:1d:a9:63:8f:05:a2:fb:76:14:ff:5b:a2:cd

# Subject: CN=HARICA Code Signing ECC Root CA 2021,O=Hellenic Academic and Research Institutions  
CA,C=GR

# Not Valid Before: Fri Feb 19 11:04:36 2021

# Not Valid After: Mon Feb 13 11:04:35 2045

# Fingerprint (MD5): 9d:dd:7d:39:b4:1c:95:fa:82:e0:c3:11:38:ba:69:84

# Fingerprint (SHA1): e4:36:e5:37:b7:13:42:b6:2e:8e:00:30:5a:d9:a3:d1:d7:33:47:e9

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "HARICA Code Signing ECC Root CA 2021"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\344\066\345\067\267\023\102\266\056\216\000\060\132\331\243\321  
\327\063\107\351

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\235\335\175\071\264\034\225\372\202\340\303\021\070\272\151\204  
END

CKA\_ISSUER MULTILINE\_OCTAL

\060\165\061\013\060\011\006\003\125\004\006\023\002\107\122\061  
\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156  
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040  
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165  
\164\151\157\156\163\040\103\101\061\055\060\053\006\003\125\004  
\003\014\044\110\101\122\111\103\101\040\103\157\144\145\040\123  
\151\147\156\151\156\147\040\105\103\103\040\122\157\157\164\040  
\103\101\040\062\060\062\061

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\114\212\143\035\251\143\217\005\242\373\166\024\377\133  
\242\315

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate

# Certificate "Microsoft Identity Verification Root Certificate Authority 2020"

# Issuer: CN=Microsoft Identity Verification Root Certificate Authority 2020,O=Microsoft Corporation,C=US

```
Serial Number:54:98:d2:d1:d4:5b:19:95:48:13:79:c8:11:c0:87:99
Subject: CN=Microsoft Identity Verification Root Certificate Authority 2020,O=Microsoft Corporation,C=US
Not Valid Before: Thu Apr 16 18:36:16 2020
Not Valid After: Sun Apr 16 18:44:40 2045
Fingerprint (MD5): be:95:4f:16:01:21:22:44:8c:a8:bc:27:96:02:ac:f5
Fingerprint (SHA1): f4:00:42:e2:e5:f7:e8:ef:81:89:fe:d1:55:19:ae:ce:42:c3:bf:a2
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Microsoft Identity Verification Root Certificate Authority 2020"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\167\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\036\060\034\006\003\125\004\012\023\025\115\151\143\162\157\163
\157\146\164\040\103\157\162\160\157\162\141\164\151\157\156\061
\110\060\106\006\003\125\004\003\023\077\115\151\143\162\157\163
\157\146\164\040\111\144\145\156\164\151\164\171\040\126\145\162
\151\146\151\143\141\164\151\157\156\040\122\157\157\164\040\103
\145\162\164\151\146\151\143\141\164\145\040\101\165\164\150\157
\162\151\164\171\040\062\060\062\060
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\167\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\036\060\034\006\003\125\004\012\023\025\115\151\143\162\157\163
\157\146\164\040\103\157\162\160\157\162\141\164\151\157\156\061
\110\060\106\006\003\125\004\003\023\077\115\151\143\162\157\163
\157\146\164\040\111\144\145\156\164\151\164\171\040\126\145\162
\151\146\151\143\141\164\151\157\156\040\122\157\157\164\040\103
\145\162\164\151\146\151\143\141\164\145\040\101\165\164\150\157
\162\151\164\171\040\062\060\062\060
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\124\230\322\321\324\133\031\225\110\023\171\310\021\300
\207\231
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\314\060\202\003\264\240\003\002\001\002\002\020\124
\230\322\321\324\133\031\225\110\023\171\310\021\300\207\231\060
\015\006\011\052\206\110\206\367\015\001\001\014\005\000\060\167
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\036\060
\034\006\003\125\004\012\023\025\115\151\143\162\157\163\157\146
\164\040\103\157\162\160\157\162\141\164\151\157\156\061\110\060
\106\006\003\125\004\003\023\077\115\151\143\162\157\163\157\146
\164\040\111\144\145\156\164\151\164\171\040\126\145\162\151\146
\151\143\141\164\151\157\156\040\122\157\157\164\040\103\145\162
\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151
```

\164\171\040\062\060\062\060\060\036\027\015\062\060\060\064\061  
\066\061\070\063\066\061\066\132\027\015\064\065\060\064\061\066  
\061\070\064\064\064\060\132\060\167\061\013\060\011\006\003\125  
\004\006\023\002\125\123\061\036\060\034\006\003\125\004\012\023  
\025\115\151\143\162\157\163\157\146\164\040\103\157\162\160\157  
\162\141\164\151\157\156\061\110\060\106\006\003\125\004\003\023  
\077\115\151\143\162\157\163\157\146\164\040\111\144\145\156\164  
\151\164\171\040\126\145\162\151\146\151\143\141\164\151\157\156  
\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164  
\145\040\101\165\164\150\157\162\151\164\171\040\062\060\062\060  
\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001  
\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001  
\000\263\221\052\007\203\006\147\375\236\235\340\307\300\267\244  
\346\102\004\177\017\246\333\137\373\325\132\327\105\240\373\167  
\013\360\200\363\246\155\132\115\171\123\330\240\206\204\127\105  
\040\307\242\124\373\307\242\277\212\307\156\065\363\242\025\304  
\057\116\343\112\205\226\111\015\377\276\231\330\024\366\274\047  
\007\356\102\233\053\365\013\222\006\344\375\151\023\145\250\221  
\162\362\230\204\353\203\075\016\344\327\161\022\110\041\313\015  
\355\366\107\111\267\233\371\311\307\027\266\204\117\377\270\254  
\232\327\163\147\111\205\343\206\275\067\100\320\045\206\324\336  
\265\302\155\142\152\325\251\170\274\055\157\111\371\345\154\024  
\024\375\024\307\323\145\026\067\336\313\156\274\136\051\215\375  
\142\233\025\054\326\005\346\271\211\062\063\243\142\307\327\326  
\122\147\010\304\056\364\126\053\236\013\207\314\354\247\264\246  
\252\353\005\315\031\127\245\072\013\004\047\034\221\147\236\055  
\142\055\057\036\276\332\300\040\313\004\031\312\063\373\211\276  
\230\342\162\240\162\065\276\171\341\234\203\157\344\155\027\157  
\220\363\075\000\206\165\070\216\320\340\111\232\273\333\323\370  
\060\312\325\127\210\150\115\162\323\277\155\177\161\330\375\275  
\015\256\222\144\110\267\133\157\171\046\265\315\233\225\041\204  
\321\357\017\062\075\173\127\214\363\105\007\114\174\340\136\030  
\016\065\166\213\155\236\313\066\164\253\005\370\340\163\135\062  
\126\224\147\227\045\012\306\065\075\224\227\347\301\104\213\200  
\375\301\370\364\164\031\345\060\366\006\373\041\127\076\006\034  
\213\153\025\206\047\111\173\202\223\312\131\350\165\107\350\077  
\070\364\307\123\171\240\266\264\342\134\121\357\275\137\070\301  
\023\346\170\014\225\132\056\305\100\131\050\314\017\044\300\354  
\272\011\167\043\231\070\246\266\034\332\307\272\040\266\327\067  
\330\177\067\257\010\343\073\161\333\156\163\033\175\231\162\260  
\344\206\063\131\164\265\026\000\173\120\155\306\206\023\332\375  
\304\071\202\075\044\000\232\140\332\272\224\300\005\121\054\064  
\254\120\231\023\207\273\263\005\200\262\115\060\002\134\270\046  
\203\135\264\143\163\357\256\043\225\117\140\050\276\067\325\133  
\245\002\003\001\000\001\243\124\060\122\060\016\006\003\125\035  
\017\001\001\377\004\004\003\002\001\206\060\017\006\003\125\035  
\023\001\001\377\004\005\060\003\001\001\377\060\035\006\003\125  
\035\016\004\026\004\024\310\176\322\152\205\052\033\312\031\230

\004\007\047\317\120\020\117\150\250\242\060\020\006\011\053\006  
\001\004\001\202\067\025\001\004\003\002\001\000\060\015\006\011  
\052\206\110\206\367\015\001\001\014\005\000\003\202\002\001\000  
\257\152\335\346\031\347\055\224\103\031\116\313\351\120\225\144  
\245\003\221\002\213\342\066\200\073\025\242\122\302\026\031\266  
\152\132\135\164\103\060\364\233\377\140\164\011\261\041\036\220  
\026\155\305\044\217\134\146\210\143\364\117\314\175\362\022\114  
\100\020\213\001\237\332\251\310\256\362\225\033\317\235\005\353  
\111\076\164\240\150\133\345\126\054\145\034\202\176\123\332\126  
\331\106\027\171\222\105\304\020\066\010\122\051\027\313\057\246  
\362\176\324\151\044\212\036\217\260\163\015\314\034\112\253\262  
\252\355\247\221\143\001\144\042\250\062\270\176\062\050\263\147  
\163\055\221\264\334\061\001\013\367\107\012\246\361\327\112\355  
\126\140\304\054\010\243\173\100\260\274\164\047\122\207\326\276  
\210\335\067\212\211\156\147\210\035\365\311\135\240\376\266\253  
\072\200\327\032\227\074\027\066\042\101\036\254\115\325\203\346  
\074\070\275\117\060\351\124\251\323\266\004\303\062\166\141\273  
\260\030\305\053\030\263\300\200\325\267\225\260\136\121\115\042  
\374\354\130\252\350\330\224\264\245\056\355\222\336\347\030\174  
\041\127\335\125\143\367\277\155\315\037\322\246\167\050\160\307  
\342\133\072\133\010\322\133\116\310\000\226\263\341\203\066\257  
\206\012\145\134\164\366\352\354\172\152\164\240\360\113\356\357  
\224\243\254\120\362\207\355\327\072\060\203\311\373\175\127\276  
\345\343\370\101\312\345\144\256\263\243\354\130\354\205\232\314  
\357\271\352\363\126\030\271\134\163\232\257\305\167\027\203\131  
\333\067\032\030\162\124\245\101\322\266\043\165\243\103\232\345  
\167\174\226\171\267\101\215\277\354\334\200\240\237\321\167\165  
\130\137\065\023\340\045\032\147\013\175\316\045\372\007\012\344  
\141\041\330\324\034\345\007\306\066\231\364\226\320\306\025\376  
\116\315\327\256\213\235\333\026\375\004\306\222\275\324\210\346  
\251\243\252\273\367\144\070\073\137\314\014\320\065\276\164\031  
\003\246\305\252\114\242\141\066\202\076\035\363\053\274\227\135  
\333\113\170\073\055\365\073\357\140\043\350\365\354\013\043\066  
\225\257\230\146\277\123\323\173\270\151\112\052\226\146\151\304  
\224\306\364\137\156\254\230\170\210\200\006\134\242\262\355\242  
END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_FALSE  
CKA\_NSS\_SERVER\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE  
CKA\_NSS\_EMAIL\_DISTRICT\_AFTER CK\_BBOOL CK\_FALSE

# Microsoft Code Signing Only Certificate  
# Trust for "Microsoft Identity Verification Root Certificate Authority 2020"  
# Issuer: CN=Microsoft Identity Verification Root Certificate Authority 2020,O=Microsoft Corporation,C=US  
# Serial Number:54:98:d2:d1:d4:5b:19:95:48:13:79:c8:11:c0:87:99  
# Subject: CN=Microsoft Identity Verification Root Certificate Authority 2020,O=Microsoft Corporation,C=US  
# Not Valid Before: Thu Apr 16 18:36:16 2020  
# Not Valid After: Sun Apr 16 18:44:40 2045  
# Fingerprint (MD5): be:95:4f:16:01:21:22:44:8c:a8:bc:27:96:02:ac:f5

```

Fingerprint (SHA1): f4:00:42:e2:e5:f7:e8:ef:81:89:fe:d1:55:19:ae:ce:42:c3:bf:a2
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Microsoft Identity Verification Root Certificate Authority 2020"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\364\000\102\342\345\367\350\357\201\211\376\321\125\031\256\316
\102\303\277\242
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\276\225\117\026\001\041\042\104\214\250\274\047\226\002\254\365
END
CKA_ISSUER MULTILINE_OCTAL
\060\167\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\036\060\034\006\003\125\004\012\023\025\115\151\143\162\157\163
\157\146\164\040\103\157\162\160\157\162\141\164\151\157\156\061
\110\060\106\006\003\125\004\003\023\077\115\151\143\162\157\163
\157\146\164\040\111\144\145\156\164\151\164\171\040\126\145\162
\151\146\151\143\141\164\151\157\156\040\122\157\157\164\040\103
\145\162\164\151\146\151\143\141\164\145\040\101\165\164\150\157
\162\151\164\171\040\062\060\062\060
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\124\230\322\321\324\133\031\225\110\023\171\310\021\300
\207\231
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

```

Found in path(s):

\* /opt/cola/permits/1424607275\_1663921779.3008218/0/ca-certificates-2022.2.54-80.2.el8.src.rpm-cosi-expand-archive-1VafRX8f/certdata.txt

No license file was found, but licenses were detected in source scan.

/\* This Source Code Form is subject to the terms of the Mozilla Public

\* License, v. 2.0. If a copy of the MPL was not distributed with this

\* file, You can obtain one at <http://mozilla.org/MPL/2.0/>. \*/

Found in path(s):

\* /opt/cola/permits/1424607275\_1663921779.3008218/0/ca-certificates-2022.2.54-80.2.el8.src.rpm-cosi-expand-archive-1VafRX8f/nssckbi.h

No license file was found, but licenses were detected in source scan.

////

Copyright (C) 2013 Red Hat, Inc.

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

////

update-ca-trust(8)

=====

:doctype: manpage

:man source: update-ca-trust

## NAME

----

update-ca-trust - manage consolidated and dynamic configuration of CA certificates and associated trust

## SYNOPSIS

-----

\*update-ca-trust\* ['COMMAND']

## DESCRIPTION

-----

update-ca-trust(8) is used to manage a consolidated and dynamic configuration feature of Certificate Authority (CA) certificates and associated trust.

The feature is available for new applications that read the consolidated configuration files found in the /etc/pki/ca-trust/extracted directory or that load the PKCS#11 module p11-kit-trust.so

Parts of the new feature are also provided in a way to make it useful for legacy applications.

Many legacy applications expect CA certificates and trust configuration in a fixed location, contained in files with particular path and name, or by referring to a classic PKCS#11 trust module provided by the NSS cryptographic library.

The dynamic configuration feature provides functionally compatible replacements



for classic configuration files and for the classic NSS trust module named libnssckbi.

In order to enable legacy applications, that read the classic files or access the classic module, to make use of the new consolidated and dynamic configuration feature, the classic filenames have been changed to symbolic links. The symbolic links refer to dynamically created and consolidated output stored below the /etc/pki/ca-trust/extracted directory hierarchy.

The output is produced using the 'update-ca-trust' command (without parameters), or using the 'update-ca-trust extract' command.

In order to produce the output, a flexible set of source configuration is read, as described in section <<sourceconf,SOURCE CONFIGURATION>>.

In addition, the classic PKCS#11 module is replaced with a new PKCS#11 module (p11-kit-trust.so) that dynamically reads the same source configuration.

[[sourceconf]]

## SOURCE CONFIGURATION

-----

The dynamic configuration feature uses several source directories that will be scanned for any number of source files. \*It is important to select the correct subdirectory for adding files, as the subdirectory defines how contained certificates will be trusted or distrusted, and which file formats are read.\*

Files in \*subdirectories below the directory hierarchy /usr/share/pki/ca-trust-source/\* contain CA certificates and trust settings in the PEM file format. The trust settings found here will be interpreted with a \*low priority\*.

Files in \*subdirectories below the directory hierarchy /etc/pki/ca-trust/source/\* contain CA certificates and trust settings in the PEM file format. The trust settings found here will be interpreted with a \*high priority\*.

.You may use the following rules of thumb to decide, whether your configuration files should be added to the /etc or rather to the /usr directory hierarchy:

\* If you are manually adding a configuration file to a system, you probably want it to override any other default configuration, and you most likely should add it to the respective subdirectory in the /etc hierarchy.

\* If you are creating a package that provides additional root CA certificates, that is intended for distribution to several computer systems, but you still want to allow the administrator to override your list, then your package should add your files to the respective subdirectory in the /usr hierarchy.

\* If you are creating a package that is supposed to override the default system trust settings, that is intended for distribution to several computer systems, then your package should install the files to the respective subdirectory in the /etc hierarchy.

.**\*QUICK HELP 1\***: To add a certificate in the simple PEM or DER file formats to the list of CAs trusted on the system:

- \* add it as a new file to directory `/etc/pki/ca-trust/source/anchors/`
- \* run `'update-ca-trust extract'`

.**\*QUICK HELP 2\***: If your certificate is in the extended BEGIN TRUSTED file format (which may contain distrust/blacklist trust flags, or trust flags for usages other than TLS) then:

- \* add it as a new file to directory `/etc/pki/ca-trust/source/`
- \* run `'update-ca-trust extract'`

.In order to offer simplicity and flexibility, the way certificate files are treated depends on the subdirectory they are installed to.

- \* simple trust anchors subdirectory: `/usr/share/pki/ca-trust-source/anchors/` or `/etc/pki/ca-trust/source/anchors/`
- \* simple blacklist (distrust) subdirectory: `/usr/share/pki/ca-trust-source/blacklist/` or `/etc/pki/ca-trust/source/blacklist/`
- \* extended format directory: `/usr/share/pki/ca-trust-source/` or `/etc/pki/ca-trust/source/`

.In the main directories `/usr/share/pki/ca-trust-source/` or `/etc/pki/ca-trust/source/` you may install one or multiple files in the following file formats:

- \* certificate files that include trust flags, in the BEGIN/END TRUSTED CERTIFICATE file format (any file name), which have been created using the openssl x509 tool and the `-adddistrust` `-addtrust` options.

Bundle files with multiple certificates are supported.

- \* files in the p11-kit file format using the `.p11-kit` file name extension, which can (e.g.) be used to distrust certificates based on serial number and issuer name, without having the full certificate available.

(This is currently an undocumented format, to be extended later.

For examples of the supported formats, see the files shipped with the `ca-certificates` package.)

- \* certificate files without trust flags in either the DER file format or in the PEM (BEGIN/END CERTIFICATE) file format (any file name). Such files will be added with neutral trust, neither trusted nor distrusted.

They will simply be known to the system, which might be helpful to assist cryptographic software in constructing chains of certificates.

(If you want a CA certificate in these file formats to be trusted, you should remove it from this directory and move it to the `./anchors` subdirectory instead.)

In the anchors subdirectories `/usr/share/pki/ca-trust-source/anchors/` or `/etc/pki/ca-trust/source/anchors/` you may install one or multiple certificates in either the DER file format or in the PEM (BEGIN/END CERTIFICATE) file format.

Each certificate will be treated as `*trusted*` for all purposes.

In the blacklist subdirectories `/usr/share/pki/ca-trust-source/blacklist/` or `/etc/pki/ca-trust/source/blacklist/` you may install one or multiple certificates in either the DER file format or in the PEM (BEGIN/END CERTIFICATE) file format.

Each certificate will be treated as `*distrusted*` for all purposes.

Please refer to the x509(1) manual page for the documentation of the BEGIN/END CERTIFICATE and BEGIN/END TRUSTED CERTIFICATE file formats.

Applications that rely on a static file for a list of trusted CAs may load one of the files found in the /etc/pki/ca-trust/extracted directory. After modifying any file in the /usr/share/pki/ca-trust-source/ or /etc/pki/ca-trust/source/ directories or in any of their subdirectories, or after adding a file, it is necessary to run the 'update-ca-trust extract' command, in order to update the consolidated files in /etc/pki/ca-trust/extracted/.

Applications that load the classic PKCS#11 module using filename libnssckbi.so (which has been converted into a symbolic link pointing to the new module) and any application capable of loading PKCS#11 modules and loading p11-kit-trust.so, will benefit from the dynamically merged set of certificates and trust information stored in the /usr/share/pki/ca-trust-source/ and /etc/pki/ca-trust/source/ directories.

[[extractconf]]

#### EXTRACTED CONFIGURATION

-----

The directory /etc/pki/ca-trust/extracted/ contains generated CA certificate bundle files which are created and updated, based on the <<sourceconf,SOURCE CONFIGURATION>> by running the 'update-ca-trust extract' command.

If your application isn't able to load the PKCS#11 module p11-kit-trust.so, then you can use these files in your application to load a list of global root CA certificates.

Please never manually edit the files stored in this directory, because your changes will be lost and the files automatically overwritten, each time the 'update-ca-trust extract' command gets executed.

In order to install new trusted or distrusted certificates, please rather install them in the respective subdirectory below the /usr/share/pki/ca-trust-source/ or /etc/pki/ca-trust/source/ directories, as described in the <<sourceconf,SOURCE CONFIGURATION>> section.

The directory /etc/pki/ca-trust/extracted/java/ contains a CA certificate bundle in the java keystore file format. Distrust information cannot be represented in this file format, and distrusted certificates are missing from these files. File cacerts contains CA certificates trusted for TLS server authentication.

The directory /etc/pki/ca-trust/extracted/openssl/ contains CA certificate bundle files in the extended BEGIN/END TRUSTED CERTIFICATE file format,

as described in the x509(1) manual page.  
File `ca-bundle.trust.crt` contains the full set of all trusted or distrusted certificates, including the associated trust flags.

The directory `/etc/pki/ca-trust/extracted/pem/` contains CA certificate bundle files in the simple BEGIN/END CERTIFICATE file format, as described in the x509(1) manual page.

Distrust information cannot be represented in this file format, and distrusted certificates are missing from these files.

File `tls-ca-bundle.pem` contains CA certificates trusted for TLS server authentication.

File `email-ca-bundle.pem` contains CA certificates trusted for E-Mail protection.

File `objsign-ca-bundle.pem` contains CA certificates trusted for code signing.

The directory `/etc/pki/ca-trust/extracted/edk2/` contains a CA certificate bundle ("`cacerts.bin`") in the "sequence of EFI\_SIGNATURE\_LISTs" format, defined in the UEFI-2.7 specification, sections "31.4.1 Signature Database" and "EFI\_CERT\_X509\_GUID". Distrust information cannot be represented in this file format, and distrusted certificates are missing from these files. File "`cacerts.bin`" contains CA certificates trusted for TLS server authentication.

## COMMANDS

-----

(absent/empty command)::

Same as the `*extract*` command described below. (However, the command may print fewer warnings, as this command is being run during rpm package installation, where non-fatal status output is undesired.)

`*extract*::`

Instruct `update-ca-trust` to scan the `<<sourceconf,SOURCE CONFIGURATION>>` and produce updated versions of the consolidated configuration files stored below the `/etc/pki/ca-trust/extracted` directory hierarchy.

## FILES

-----

`/etc/pki/tls/certs/ca-bundle.crt::`

Classic filename, file contains a list of CA certificates trusted for TLS server authentication usage, in the simple BEGIN/END CERTIFICATE file format, without distrust information.

This file is a symbolic link that refers to the consolidated output created by the `update-ca-trust` command.

`/etc/pki/tls/certs/ca-bundle.trust.crt::`

Classic filename, file contains a list of CA certificates in the extended BEGIN/END TRUSTED CERTIFICATE file format, which includes trust (and/or distrust) flags specific to certificate usage.

This file is a symbolic link that refers to the consolidated output created by the update-ca-trust command.

/etc/pki/java/cacerts::

Classic filename, file contains a list of CA certificates trusted for TLS server authentication usage, in the Java keystore file format, without distrust information.

This file is a symbolic link that refers to the consolidated output created by the update-ca-trust command.

/usr/share/pki/ca-trust-source::

Contains multiple, low priority source configuration files as explained in section <<sourceconf,SOURCE CONFIGURATION>>. Please pay attention to the specific meanings of the respective subdirectories.

/etc/pki/ca-trust/source::

Contains multiple, high priority source configuration files as explained in section <<sourceconf,SOURCE CONFIGURATION>>. Please pay attention to the specific meanings of the respective subdirectories.

/etc/pki/ca-trust/extracted::

Contains consolidated and automatically generated configuration files for consumption by applications, which are created using the 'update-ca-trust extract' command. Don't edit files in this directory, because they will be overwritten.

See section <<extractconf,EXTRACTED CONFIGURATION>> for additional details.

## AUTHOR

-----

Written by Kai Engert and Stef Walter.

Found in path(s):

\* /opt/cola/permits/1424607275\_1663921779.3008218/0/ca-certificates-2022.2.54-80.2.el8.src.rpm-cosi-expand-archive-1VafRX8f/update-ca-trust.8.txt

No license file was found, but licenses were detected in source scan.

License: Public Domain

Found in path(s):

\* /opt/cola/permits/1424607275\_1663921779.3008218/0/ca-certificates-2022.2.54-80.2.el8.src.rpm-cosi-expand-archive-1VafRX8f/ca-certificates.spec

No license file was found, but licenses were detected in source scan.

```
This program is free software; you can redistribute it and/or modify
it under the terms of the GNU General Public License as published by
the Free Software Foundation; either version 2 of the License, or
(at your option) any later version.
This program is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
GNU General Public License for more details.
You should have received a copy of the GNU General Public License
along with this program; if not, write to the Free Software
```

Found in path(s):

\* /opt/cola/permits/1424607275\_1663921779.3008218/0/ca-certificates-2022.2.54-80.2.el8.src.rpm-cosi-expand-archive-1VafRX8f/certdata2pem.py

# 1.387 mail 1.4.5

## 1.387.1 Available under license :

COMMON DEVELOPMENT AND DISTRIBUTION LICENSE (CDDL) Version 1.0

### 1. Definitions.

1.1. Contributor. means each individual or entity that creates or contributes to the creation of Modifications.

1.2. Contributor Version. means the combination of the Original Software, prior Modifications used by a Contributor (if any), and the Modifications made by that particular Contributor.

1.3. Covered Software. means (a) the Original Software, or (b) Modifications, or (c) the combination of files containing Original Software with files containing Modifications, in each case including portions thereof.

1.4. Executable. means the Covered Software in any form other than Source Code.

1.5. Initial Developer. means the individual or entity that first makes Original Software available under this License.

1.6. Larger Work. means a work which combines Covered Software or portions thereof with code not governed by the terms of this License.

1.7. License. means this document.

1.8. Licensable. means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently acquired, any and all of the rights conveyed herein.

1.9. Modifications. means the Source Code and Executable form of any of the following:

A. Any file that results from an addition to, deletion from or modification of the contents of a file containing Original Software or previous Modifications;

B. Any new file that contains any part of the Original Software or previous Modification; or

C. Any new file that is contributed or otherwise made available under the terms of this License.

1.10. Original Software. means the Source Code and Executable form of computer software code that is originally released under this License.

1.11. Patent Claims. means any patent claim(s), now owned or hereafter acquired, including without limitation, method, process, and apparatus claims, in any patent Licensable by grantor.

1.12. Source Code. means (a) the common form of computer software code in which modifications are made and (b) associated documentation included in or with such code.

1.13. You. (or .Your.) means an individual or a legal entity exercising rights under, and complying with all of the terms of, this License. For legal entities, .You. includes any entity which controls, is controlled by, or is under common control with You. For purposes of this definition, .control. means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

## 2. License Grants.

### 2.1. The Initial Developer Grant.

Conditioned upon Your compliance with Section 3.1 below and subject to third party intellectual property claims, the Initial Developer hereby grants You a world-wide, royalty-free, non-exclusive license:

(a) under intellectual property rights (other than patent or trademark) Licensable by Initial Developer, to use, reproduce, modify, display, perform, sublicense and distribute the Original Software (or portions thereof), with or without Modifications, and/or as part of a Larger Work; and

(b) under Patent Claims infringed by the making, using or selling of Original Software, to make, have made, use, practice, sell, and offer for sale, and/or otherwise dispose of the Original Software (or portions thereof).

(c) The licenses granted in Sections 2.1(a) and (b) are effective on the date Initial Developer first distributes or otherwise makes the Original Software available to a third party under the terms of this License.

(d) Notwithstanding Section 2.1(b) above, no patent license is granted: (1) for code that You delete from the Original Software, or (2) for infringements caused by: (i) the modification of the Original Software, or (ii) the combination of the Original Software with other software or devices.

### 2.2. Contributor Grant.

Conditioned upon Your compliance with Section 3.1 below and subject to third party intellectual property claims, each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:

(a) under intellectual property rights (other than patent or trademark) Licensable by Contributor to use, reproduce, modify, display, perform, sublicense and distribute the Modifications created by such Contributor (or portions thereof), either on an unmodified basis, with other Modifications, as Covered Software and/or as part of a Larger Work; and

(b) under Patent Claims infringed by the making, using, or selling of Modifications made by that Contributor either alone and/or in combination with its Contributor Version (or portions of such combination), to make, use, sell, offer for sale, have made, and/or otherwise dispose of: (1) Modifications made by that Contributor (or portions thereof); and (2) the combination of Modifications made by that Contributor with its Contributor Version (or portions of such combination).

(c) The licenses granted in Sections 2.2(a) and 2.2(b) are effective on the date Contributor first distributes or otherwise makes the Modifications available to a third party.

(d) Notwithstanding Section 2.2(b) above, no patent license is granted: (1) for any code that Contributor has deleted from the Contributor Version; (2) for infringements caused by: (i) third party modifications of Contributor Version, or (ii) the combination of Modifications made by that Contributor with other software (except as part of the Contributor Version) or other devices; or (3) under Patent Claims infringed by Covered Software in the absence of Modifications made by that Contributor.

### 3. Distribution Obligations.

#### 3.1. Availability of Source Code.

Any Covered Software that You distribute or otherwise make available in Executable form must also be made available in Source Code form and that Source Code form must be distributed only under the terms of this License. You must include a copy of this License with every copy of the Source Code form of the Covered Software You distribute or otherwise make available. You must inform recipients of any such Covered Software in Executable form as to how they can obtain such Covered Software in Source Code form in a reasonable manner on or through a medium customarily used for software exchange.

#### 3.2. Modifications.

The Modifications that You create or to which You contribute are governed by the terms of this License. You represent that You believe Your Modifications are Your original creation(s) and/or You have sufficient rights to grant the rights conveyed by this License.

#### 3.3. Required Notices.

You must include a notice in each of Your Modifications that identifies You as the Contributor of the Modification. You may not remove or alter any copyright, patent or trademark notices contained within the Covered Software, or any notices of licensing or any descriptive text giving attribution to any Contributor or the Initial Developer.

#### 3.4. Application of Additional Terms.

You may not offer or impose any terms on any Covered Software in Source Code form that alters or restricts the applicable version of this License or the recipients' rights hereunder. You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Software. However, you may do so only on Your own behalf, and not on behalf of the Initial Developer or any Contributor. You must make it absolutely clear that any such warranty, support, indemnity or liability obligation is offered by You alone, and You hereby agree to indemnify the Initial Developer and every Contributor for any liability incurred by the Initial Developer or such Contributor as a result of warranty, support, indemnity or liability terms You offer.

#### 3.5. Distribution of Executable Versions.

You may distribute the Executable form of the Covered Software under the terms of this License or under the terms of a license of Your choice, which may contain terms different from this License, provided that You are in compliance with the terms of this License and that the license for the Executable form does not attempt to limit or alter the recipient's rights in the Source Code form from the rights set forth in this License. If You distribute the Covered Software in Executable form under a different license, You must make it absolutely clear that any terms which differ from this License are offered by You alone, not by the Initial Developer or Contributor. You hereby agree to indemnify the Initial Developer and every Contributor for any liability incurred by the Initial Developer or such Contributor as a result of any such terms You offer.

#### 3.6. Larger Works.



You may create a Larger Work by combining Covered Software with other code not governed by the terms of this License and distribute the Larger Work as a single product. In such a case, You must make sure the requirements of this License are fulfilled for the Covered Software.

#### 4. Versions of the License.

##### 4.1. New Versions.

Sun Microsystems, Inc. is the initial license steward and may publish revised and/or new versions of this License from time to time. Each version will be given a distinguishing version number. Except as provided in Section 4.3, no one other than the license steward has the right to modify this License.

##### 4.2. Effect of New Versions.

You may always continue to use, distribute or otherwise make the Covered Software available under the terms of the version of the License under which You originally received the Covered Software. If the Initial Developer includes a notice in the Original Software prohibiting it from being distributed or otherwise made available under any subsequent version of the License, You must distribute and make the Covered Software available under the terms of the version of the License under which You originally received the Covered Software. Otherwise, You may also choose to use, distribute or otherwise make the Covered Software available under the terms of any subsequent version of the License published by the license steward.

##### 4.3. Modified Versions.

When You are an Initial Developer and You want to create a new license for Your Original Software, You may create and use a modified version of this License if You: (a) rename the license and remove any references to the name of the license steward (except to note that the license differs from this License); and (b) otherwise make it clear that the license contains terms which differ from this License.

#### 5. DISCLAIMER OF WARRANTY.

COVERED SOFTWARE IS PROVIDED UNDER THIS LICENSE ON AN .AS IS. BASIS, WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTIES THAT THE COVERED SOFTWARE IS FREE OF DEFECTS, MERCHANTABLE, FIT FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE COVERED SOFTWARE IS WITH YOU. SHOULD ANY COVERED SOFTWARE PROVE DEFECTIVE IN ANY RESPECT, YOU (NOT THE INITIAL DEVELOPER OR ANY OTHER CONTRIBUTOR) ASSUME THE COST OF ANY NECESSARY SERVICING, REPAIR OR CORRECTION. THIS DISCLAIMER OF WARRANTY CONSTITUTES AN ESSENTIAL PART OF THIS LICENSE. NO USE OF ANY COVERED SOFTWARE IS AUTHORIZED HEREUNDER EXCEPT UNDER THIS DISCLAIMER.

#### 6. TERMINATION.

6.1. This License and the rights granted hereunder will terminate automatically if You fail to comply with terms herein and fail to cure such breach within 30 days of becoming aware of the breach. Provisions which, by their nature, must remain in effect beyond the termination of this License shall survive.

6.2. If You assert a patent infringement claim (excluding declaratory judgment actions) against Initial Developer or a Contributor (the Initial Developer or Contributor against whom You assert such claim is referred to as .Participant.) alleging that the Participant Software (meaning the Contributor Version where the Participant is a Contributor or the Original Software where the Participant is the Initial Developer) directly or indirectly infringes

any patent, then any and all rights granted directly or indirectly to You by such Participant, the Initial Developer (if the Initial Developer is not the Participant) and all Contributors under Sections 2.1 and/or 2.2 of this License shall, upon 60 days notice from Participant terminate prospectively and automatically at the expiration of such 60 day notice period, unless if within such 60 day period You withdraw Your claim with respect to the Participant Software against such Participant either unilaterally or pursuant to a written agreement with Participant.

6.3. In the event of termination under Sections 6.1 or 6.2 above, all end user licenses that have been validly granted by You or any distributor hereunder prior to termination (excluding licenses granted to You by any distributor) shall survive termination.

## 7. LIMITATION OF LIABILITY.

UNDER NO CIRCUMSTANCES AND UNDER NO LEGAL THEORY, WHETHER TORT (INCLUDING NEGLIGENCE), CONTRACT, OR OTHERWISE, SHALL YOU, THE INITIAL DEVELOPER, ANY OTHER CONTRIBUTOR, OR ANY DISTRIBUTOR OF COVERED SOFTWARE, OR ANY SUPPLIER OF ANY OF SUCH PARTIES, BE LIABLE TO ANY PERSON FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES OF ANY CHARACTER INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOST PROFITS, LOSS OF GOODWILL, WORK STOPPAGE, COMPUTER FAILURE OR MALFUNCTION, OR ANY AND ALL OTHER COMMERCIAL DAMAGES OR LOSSES, EVEN IF SUCH PARTY SHALL HAVE BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. THIS LIMITATION OF LIABILITY SHALL NOT APPLY TO LIABILITY FOR DEATH OR PERSONAL INJURY RESULTING FROM SUCH PARTY'S NEGLIGENCE TO THE EXTENT APPLICABLE LAW PROHIBITS SUCH LIMITATION. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THIS EXCLUSION AND LIMITATION MAY NOT APPLY TO YOU.

## 8. U.S. GOVERNMENT END USERS.

The Covered Software is a .commercial item., as that term is defined in 48 C.F.R. 2.101 (Oct. 1995), consisting of .commercial computer software. (as that term is defined at 48 C.F.R. 252.227-7014(a)(1)) and .commercial computer software documentation. as such terms are used in 48 C.F.R. 12.212 (Sept. 1995). Consistent with 48 C.F.R. 12.212 and 48 C.F.R. 227.7202-1 through 227.7202-4 (June 1995), all U.S. Government End Users acquire Covered Software with only those rights set forth herein. This U.S. Government Rights clause is in lieu of, and supersedes, any other FAR, DFAR, or other clause or provision that addresses Government rights in computer software under this License.

## 9. MISCELLANEOUS.

This License represents the complete agreement concerning subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable. This License shall be governed by the law of the jurisdiction specified in a notice contained within the Original Software (except to the extent applicable law, if any, provides otherwise), excluding such jurisdiction's conflict-of-law provisions. Any litigation relating to this License shall be subject to the jurisdiction of the courts located in the jurisdiction and venue specified in a notice contained within the Original Software, with the losing party responsible for costs, including, without limitation, court costs and reasonable attorneys' fees and expenses. The application of the United Nations Convention on Contracts for the International Sale of Goods is expressly excluded. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not apply to this License. You agree that You alone are responsible for compliance with the United States export administration

regulations (and the export control laws and regulation of any other countries) when You use, distribute or otherwise make available any Covered Software.

## 10. RESPONSIBILITY FOR CLAIMS.

As between Initial Developer and the Contributors, each party is responsible for claims and damages arising, directly or indirectly, out of its utilization of rights under this License and You agree to work with Initial Developer and Contributors to distribute such responsibility on an equitable basis. Nothing herein is intended or shall be deemed to constitute any admission of liability.

### NOTICE PURSUANT TO SECTION 9 OF THE COMMON DEVELOPMENT AND DISTRIBUTION LICENSE (CDDL)

The code released under the CDDL shall be governed by the laws of the State of California (excluding conflict-of-law provisions). Any litigation relating to this License shall be subject to the jurisdiction of the Federal Courts of the Northern District of California and the state courts of the State of California, with venue lying in Santa Clara County, California.

The GNU General Public License (GPL) Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc. 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

## TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that

version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

One line to give the program's name and a brief idea of what it does.

Copyright (C)

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

Gnomovision version 69, Copyright (C) year name of author

Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'. This is free software, and you are welcome to redistribute it under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program `Gnomovision' (which makes passes at compilers) written by James Hacker.

signature of Ty Coon, 1 April 1989

Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

## "CLASSPATH" EXCEPTION TO THE GPL VERSION 2

Certain source files distributed by Sun Microsystems, Inc. are subject to the following clarification and special exception to the GPL Version 2, but only where Sun has expressly included in the particular source file's header the words

"Sun designates this particular file as subject to the "Classpath" exception as provided by Sun in the License file that accompanied this code."

Linking this library statically or dynamically with other modules is making a combined work based on this library. Thus, the terms and conditions of the GNU General Public License Version 2 cover the whole combination.

As a special exception, the copyright holders of this library give you permission to link this library with independent modules to produce an executable, regardless of the license terms of these independent modules, and to copy and



distribute the resulting executable under terms of your choice, provided that you also meet, for each linked independent module, the terms and conditions of the license of that module.? An independent module is a module which is not derived from or based on this library.? If you modify this library, you may extend this exception to your version of the library, but you are not obligated to do so.? If you do not wish to do so, delete this exception statement from your version.

# 1.388 drbd 9.0.0-1.el7.centos

## 1.388.1 Available under license :

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.  
59 Temple Place - Suite 330, Boston, MA 02111-1307, USA  
Everyone is permitted to copy and distribute verbatim copies  
of this license document, but changing it is not allowed.

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

#### GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it,

under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are

prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the

original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

### Appendix: How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) 19yy <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place - Suite 330, Boston, MA 02111-1307, USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) 19yy name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if

necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program  
'Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989

Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

## 1.389 simpleclient-httpserver 0.12.0

### 1.389.1 Available under license :

No license file was found, but licenses were detected in source scan.

<url><http://www.apache.org/licenses/LICENSE-2.0.txt></url>

Found in path(s):

\* /opt/cola/permits/1251024440\_1641571174.93/0/simpleclient-httpserver-0-12-0-sources-jar/META-INF/maven/io.prometheus/simpleclient\_httpserver/pom.xml

## 1.390 spring-plugin-metadata 2.0.0.RELEASE

### 1.390.1 Available under license :

Apache License

Version 2.0, January 2004

<https://www.apache.org/licenses/>

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

##### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition,

"control" means (i) the power, direct or indirect, to cause the



direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of

this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and

wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor

has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[ ]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");  
you may not use this file except in compliance with the License.  
You may obtain a copy of the License at

<https://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

=====

To the extent any open source subcomponents are licensed under the EPL and/or other similar licenses that require the source code and/or modifications to source code to be made available (as would be noted above), you may obtain a copy of the source code corresponding to the binaries for such open source components and modifications thereto, if any, (the "Source Files"), by downloading the Source Files from <https://www.springsource.org/download>,

or by sending a request, with your name and address to: VMware, Inc., 3401 Hillview Avenue, Palo Alto, CA 94304, United States of America or email info@vmware.com. All such requests should clearly specify: OPEN SOURCE FILES REQUEST, Attention General Counsel. VMware shall mail a copy of the Source Files to you on a CD or equivalent physical medium. This offer to obtain a copy of the Source Files is valid for three years from the date you acquired this Software product.

\${project.name} \${project.version}

Copyright (c) [2008-2019] Pivotal Software, Inc.

This product is licensed to you under the Apache License, Version 2.0 (the "License"). You may not use this product except in compliance with the License.

This product may include a number of subcomponents with separate copyright notices and license terms. Your use of the source code for these subcomponents is subject to the terms and conditions of the subcomponent's license, as noted in the LICENSE file.

## 1.391 jaxb-api 2.2.1

### 1.391.1 Available under license :

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2005 Sun Microsystems, Inc. All rights reserved.

\* SUN PROPRIETARY/CONFIDENTIAL. Use is subject to license terms.

\*/

Found in path(s):

\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/annotation/XmlMimeType.java

\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/Binder.java

\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/annotation/XmlAccessOrder.java

\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/annotation/DomHandler.java

\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/annotation/adapters/XmlJavaTypeAdapters.java

\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/annotation/XmlSchemaTypes.java

\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/annotation/XmlAnyElement.java

\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/annotation/XmlAccessorType.java

\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/annotation/XmlAccessorOrder.java

\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/annotation/XmlAnyAttribute.java

\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/annotation/W3CDomHandler.java  
\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/annotation/XmlSchemaType.java  
\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/annotation/XmlMixed.java  
\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/annotation/XmlAttachmentRef.java  
\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/annotation/XmlAccessType.java  
\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/annotation/XmlInlineBinaryData.java

No license file was found, but licenses were detected in source scan.

@(#)package.html 1.60 98/01/27

Copyright 1998 Sun Microsystems, Inc. 901 San Antonio Road,  
Palo Alto, California, 94303, U.S.A. All Rights Reserved.

This software is the confidential and proprietary information of Sun Microsystems, Inc. ("Confidential Information"). You shall not disclose such Confidential Information and shall use it only in accordance with the terms of the license agreement you entered into with Sun.

CopyrightVersion 1.2

Found in path(s):

\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/package.html  
\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/helpers/package.html  
\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/attachment/package.html  
\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/util/package.html  
\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/annotation/package.html

No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2004 Sun Microsystems, Inc. All rights reserved.  
\* SUN PROPRIETARY/CONFIDENTIAL. Use is subject to license terms.  
\*/

Found in path(s):

\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/annotation/XmlEnum.java  
\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/annotation/XmlID.java

\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/annotation/XmlNsForm.java  
 \* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/annotation/XmlEnumValue.java  
 \* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/annotation/adapters/NormalizedStringAdapter.java  
 \* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/annotation/XmlRegistry.java  
 \* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/annotation/XmlRootElement.java  
 \* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/JAXBIntrospector.java  
 \* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/annotation/adapters/XmlAdapter.java  
 \* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/annotation/XmlType.java  
 \* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/annotation/XmlElement.java  
 \* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/annotation/XmlElementRef.java  
 \* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/annotation/XmlNs.java  
 \* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/annotation/XmlAttribute.java  
 \* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/JAXBElement.java  
 \* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/annotation/XmlElementRefs.java  
 \* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/annotation/XmlSchema.java  
 \* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/annotation/adapters/HexBinaryAdapter.java  
 \* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/annotation/XmlValue.java  
 \* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/annotation/XmlElementDecl.java  
 \* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/annotation/XmlElements.java  
 \* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/annotation/adapters/XmlJavaTypeAdapter.java  
 \* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/annotation/XmlTransient.java  
 \* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/annotation/adapters/CollapsedStringAdapter.java  
 \* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/annotation/XmlIDREF.java  
 No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2008 Sun Microsystems, Inc. All rights reserved.  
\* SUN PROPRIETARY/CONFIDENTIAL. Use is subject to license terms.  
\*/

Found in path(s):

\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/ContextFinder.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Copyright 2003 Sun Microsystems, Inc. All rights reserved.  
\* SUN PROPRIETARY/CONFIDENTIAL. Use is subject to license terms.  
\*/

Found in path(s):

\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/helpers/PrintConversionEventImpl.java  
\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/helpers/ValidationEventImpl.java  
\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/Messages.java  
\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/ValidationEventHandler.java  
\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/helpers/ValidationEventLocatorImpl.java  
\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/ValidationException.java  
\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/DatatypeConverter.java  
\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/Unmarshaller.java  
\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/helpers/AbstractMarshallerImpl.java  
\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/UnmarshallerHandler.java  
\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/helpers/Messages.java  
\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/PrintConversionEvent.java  
\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/Element.java  
\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/util/Messages.java  
\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/ParseConversionEvent.java  
\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/TypeConstraintException.java  
\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/util/JAXBResult.java  
\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/JAXBContext.java  
\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/ValidationEvent.java  
\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-



jar/javax/xml/bind/ValidationEventLocator.java  
\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-  
jar/javax/xml/bind/UnmarshalException.java  
\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-  
jar/javax/xml/bind/NotIdentifiableEvent.java  
\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-  
jar/javax/xml/bind/helpers/ParseConversionEventImpl.java  
\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-  
jar/javax/xml/bind/MarshalException.java  
\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-  
jar/javax/xml/bind/helpers/NotIdentifiableEventImpl.java  
\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-  
jar/javax/xml/bind/util/JAXBSource.java  
\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-  
jar/javax/xml/bind/DatatypeConverterInterface.java  
\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-  
jar/javax/xml/bind/PropertyException.java  
\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-  
jar/javax/xml/bind/JAXBException.java  
\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/Marshaller.java  
\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-jar/javax/xml/bind/Validator.java  
\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-  
jar/javax/xml/bind/helpers/AbstractUnmarshallerImpl.java  
\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-  
jar/javax/xml/bind/util/ValidationEventCollector.java  
\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-  
jar/javax/xml/bind/helpers/DefaultValidationEventHandler.java  
No license file was found, but licenses were detected in source scan.

@(#)package.html 1.60 98/01/27

Copyright 1998 Sun Microsystems, Inc. 901 San Antonio Road,  
Palo Alto, California, 94303, U.S.A. All Rights Reserved.

This software is the confidential and proprietary information of Sun  
Microsystems, Inc. ("Confidential Information"). You shall not  
disclose such Confidential Information and shall use it only in  
accordance with the terms of the license agreement you entered into  
with Sun.

CopyrightVersion 1.2

Found in path(s):

\* /opt/cola/permits/1178914335\_1625807737.59/0/jaxb-api-2-2-1-sources-1-  
jar/javax/xml/bind/annotation/adapters/package.html

Cisco and the Cisco logo are trademarks or registered trademarks of Cisco and/or its affiliates in the U.S. and other countries. To view a list of Cisco trademarks, go to this URL: [www.cisco.com/go/trademarks](http://www.cisco.com/go/trademarks). Third-party trademarks mentioned are the property of their respective owners. The use of the word partner does not imply a

partnership relationship between Cisco and any other company. (1110R)

©2022 Cisco Systems, Inc. All rights reserved.